

# EXCESS BAGGAGE

REDUCING PLASTIC BAG WASTE IN MAJOR CITIES OF CAMBODIA

DESIGN OF PRODUCT SERVICE ALTERNATIVES TO PLASTIC BAGS

# NOTES FROM IDEATION PHASE ON TESTING ALTERNATIVES

SUMMARY REPORT



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PROGRAMME

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# 1

## INTRODUCTION TO IDEATION PHASE

### FOUNDATION

Understand the context for this project. Engaging stakeholders and initial immersions.

### DISCOVERY

Generate user, product and system insights to inform the identification of use cases for intervention.

### IDEATION

Define and test concepts in conjunction with key users, stakeholders and experts.

### PROTOTYPING

Develop and iterate product and service prototypes for chosen use case.

The end of the discovery (research) phase highlighted two focus areas - Buying perishables at local wet markets and Food & beverage consumption on-the-go, as potential hot-spots for targeted interventions.

**Both focus areas have an equal share of opportunities and challenges, which made it extremely difficult to immediately short-list a single way-forward.**

The government's concern towards initiatives around littering and reducing visible waste (which is largely caused by food on the go packaging) and the overall health impact affecting a diverse target audience - one that spans people of different age groups and genders would make food-takeaway an obvious choice. But the dispersed nature of food vendors, lack of zoning instruments and volatility

of a trend driven market makes this a challenging focus area.

On the other hand you have the traditional wet markets, which are primarily frequented only by the women of the household for their daily grocery needs, or by different vendors or small businesses. It is a complex behemoth, but beyond doubt the nerve center of all retail activity in the city. It would be fair to assume that even the tiniest change in this ecosystem can create a ripple effect through other retail practices and stakeholders that are in its radius of influence.

**It was thus proposed that we employ quick ideation and testing loops for both focus areas and allow for the voices from the ground to add more insight to our own internal speculation.**

The ideation phase had two objectives :

1. To evaluate which focus area to pursue after co-creating and testing ideas between team members, vendors and customers - based on different criteria around potential for change, implementation and impact.
2. To prioritize the portfolio of ideas (for the final focus area) and create a more defined brief for the subsequent prototyping phase.



The Ideation Phase was spread over 5 weeks and consisted of the following sub-phases :

## WEEK 1 AND 2

### **Inspiration**

Leveraging the secondary research we have been maintaining through the project, we created a small library of inspirations around product design, materials, social initiatives, etc that could be used as stimuli for our internal brainstorming sessions. We also procured different proxies of alternate materials that could be used as proxies for our field tests with users.

### **Brainstorming**

Exploring insights and hypothesis from the research phase, we mapped 'opportunity areas' and created a framework to come up with as many different ideas for both focus areas. These 'opportunity areas' were articulated in the form of 'How might we...' scenarios, enabling us with a larger room to play with solutions that were agnostic to our domain of enquiry (design of alternatives) and looked at the entire system.

## WEEK 3 AND 4

### **Prototyping and Testing**

The 5 opportunity areas that guided our ideation sessions were quickly tested and iterated with users in the field. These comprised of produce vendors and buyers at wet markets, food vendors

in commercial, residential and public spaces as well as their customers. These tests helped us gauge reactions around needs, enablers and barriers to adoption as well as the underlying motivations to sustain the use of an 'alternative' from the end users' perspective. While these tests didn't point us to 'a solution' that will work, it gave us a lot of insight into different physical as well as social factors that need to be considered while we go into the next round.

## WEEK 5

### **Synthesis and Evaluation**

The observations and conversations from the field tests were laid into a framework that helped us develop a better understanding of the two focus areas. Additionally, conversations with stakeholders from local governmental organizations (responsible for eventual implementation and support) as well as conversations with some experts from different domains (material alternatives, manufacturing, social programs, etc) provided us with critical considerations that helped us prioritize a focus area to go ahead with.

# 2

# MAPPING OPPORTUNITY AREAS

A critical mandate through the course of the project for us, has been to define the spectrum of immediate to near future possibilities that can support Quicksand's work stream - that of 'designing an affordable, viable and sustainable alternative' that can facilitate 'reduction in plastic bag waste' in a particular focus area, in the chosen cities.

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**For this exercise 'alternative' has been defined as the following :**

- **As a suitable physical replacement (material/ product/ accessory) for one or more plastic bags in a particular use occasion, or,**
- **As an ecosystem (new rituals/ practices/ support systems) that reduces the number of bags that are used in a particular use occasion.**

**For this exercise 'reduction of plastic waste' has been defined as the following :**

- **As reducing wasteful use of plastic bags, thus affecting eventual waste generation.**
  - **As enabling positive disposal rituals by leveraging post-use reclaim.**
- 

For the sake of creating a larger pool of ideas for this phase, we gave an equal weightage to all of these definitions, even though some already require supply side buy-in or civic infrastructure support, both of which we have very little agency over. The opportunity areas and the stimuli we created to test them with end stakeholders are as follows :

## 2.1 OPPORTUNITY AREA 1

# FROM DISPOSABLE TO REUSABLE

Many people shop at the same local places as part of their daily routine. Personal accessories (like shopping baskets in the case of wet market shopping) are used by some of them but are slowly losing favor due to the convenience provided by plastic bags. We find this reuse behavior more prevalent amongst the older generation. New rituals and practices that create a shift in this culture around disposables is an unexpressed, yet pivotal opportunity.

HOW MIGHT WE...create an eco-system for reuse?

HOW MIGHT WE... make reuse relevant for different ages, needs and lifestyles?

HOW MIGHT WE... create a vendor-customer friendly reusable system?

**IMAGES :** (Top) Prototype for Borrow-a-bag, where consumers can either buy or rent a non woven plastic bag for their purchases. (Middle left) A local shopping basket with built-in partitions to aid in segregation (Middle right) A coffee stall passerby poses with the re-usable cup handle - "What happens if it gets wet" was his first concern. (Bottom) Prototype of the re-usable cloth handle for beverage glasses.

## OPPORTUNITY AREA 1 | Behind the scenes



HOW MIGHT WE... provide good customer service without a plastic bag?



HOW MIGHT WE...create a returnable or reusable accessories for food?



## 2.2 OPPORTUNITY AREA 2

# FROM UNCONSCIOUS BAGGING TO AWARENESS

Bags are given freely with every transaction, they have become the norm and part of the expected customer service. These bags are often given when the purchase really doesn't require it. Moreover, these bags are mostly only used very briefly and discarded shortly after their first use. Both vendors and buyers are prone to blame each other for this wanton use of plastic bags.

HOW MIGHT WE...bring more awareness into the act of giving and accepting a plastic bag with a purchase?

HOW MIGHT WE...help vendors measure and visualize their bag consumption?

HOW MIGHT WE... create a solution that requires no additional secondary packaging, functionally and perceptibly?

**IMAGES :** (Top) One of the few signboards we tested, to see if just messaging can prompt reduction of plastic bag use. This board roughly translates to "I am giving up plastic, will you?" (Middle) A vendor arguing that customers want extra bags (for segregation and later use), while her customers deny the need, saying they are okay with consolidating purchases in one bag. (Bottom) "You have to provide a bag, people won't come to my shop again. If everybody stopped, only then will it be possible" - Concerned vendor, Psar Loo

## OPPORTUNITY AREA 2 | Behind the scenes



HOW MIGHT WE... provide good customer service without a plastic bag?



HOW MIGHT WE... create awareness around unnecessary bag use?





## 2.3 OPPORTUNITY AREA 3

# OPERATIONS WITHOUT BAGS

Bags are deeply embedded in vendor's operations practices. Bags are used to sort, measure or weigh dry foods in the market, and as preparation tools by food vendors to make transactions more efficient. Bags are often the first part of the transaction, and often mirror the size of the purchase at a particular vendor.

HOW MIGHT WE... we make vendor operations more efficient by replacing bags with new tools?

HOW MIGHT WE... design for a wide range of permutations and combinations?

HOW MIGHT WE... change habits, rituals and perceptions about needing to segregate vegetables and other items at the market?

**IMAGES :** (Top) A vendor tries packaging chopped pork in a wax paper sheet. After wrapping it, she promptly put them in a glossy transparent plastic bag, claiming that "it looked better that way." (Middle row) A dried fish seller wraps several pieces of dried snake meat with wax paper - "I use a newspaper to cover the dried meat so it doesn't tear the plastic bag, this is somewhat similar." When we asked her not to use a plastic bag and fasten it with thread instead, she said "Some people carry this to foreign countries. They won't accept it." (Bottom) A fruit vendor uses who uses bags for sorting uses baskets in her operations for the first time.

## OPPORTUNITY AREA 3 | Behind the scenes



HOW MIGHT WE...provide for smaller, loose or delicate items?



HOW MIGHT WE...create operation tools for vendors to sell without the need for bags?





## 2.4 OPPORTUNITY AREA 4

# HEALTH POSITIVE PACKAGING

Plastic bags are currently used as primary packaging to contain wet foods, from fresh fish and meat in the wet markets to soups, noodles, fruit, (etc...) at food stalls. Most people are already aware of the chemicals and dangers associated with plastic bags and their effects on food (especially hot liquids), but currently see no alternative.

HOW MIGHT WE...create health focused packaging that is modern and aspirational ?

HOW MIGHT WE... inspire packaging from the eco-organic movements sprouting across the world?

HOW MIGHT WE... break the comfort and affinity between food and plastics?

**IMAGES :** (Top) Montage of different paper based prototypes we created for primary packaging for snacks, grilled food and hot soups. (Middle left) A num-pang vendor holds a sand-wich wrapped in wax paper. (Middle Center) "In European countries, they all use paper for food. I am concerned for health, so I will prefer this. But most Cambodians will only use plastic, they don't know how bad it is." - Kunthea, a regular to street food near Independence Monument. (Middle Right) A customer sniffs a bio-plastic bag with the words "I am a plant" written on it to check if it smells of chemicals. (Bottom) A bio plastic bag with message "0% Chemical, 100 Riel" displayed next to a regular plastic bag with the text "100% Chemical, 0 Riel" kept at a fruit shop to gather reactions from passersby.

## OPPORTUNITY AREA 4 | Behind the scenes

HOW MIGHT WE...design a safe and health friendly food container?



HOW MIGHT WE...design a food and health friendly carrier?





## 2.5 OPPORTUNITY AREA 5

# REINFORCING POSITIVE BEHAVIOR AROUND DISPOSAL

People willingly use bins to dispose of their waste when provided in public areas. These systems are often however restricted to small tourist areas and often not adequate for the volume of waste generated. Moreover, a majority of households outside of Phnom penh, might not have access to formal collectors and have to be self-sufficient in waste management. Any alternative recommendation from our side, will require a rigorous analysis of post-use treatment with current infrastructure (collection and recycling) constraints. Hence it is crucial to focus part of our efforts on strengthening positive behaviors or seeding new ones around responsible disposal (or recovery).

HOW MIGHT WE... build on the positive current behavior around disposal?

HOW MIGHT WE... provide adequate waste collection in litter sensitive areas?

HOW MIGHT WE... empower people to handle the disposal of their own waste?

HOW MIGHT WE... enhance the value of used/soiled packaging in order to recover materials?

## OPPORTUNITY AREA 5 | Behind the scenes



HOW MIGHT WE...use current behavior to reduce plastic bag waste?

HOW MIGHT WE... make people more conscious about littering?



**NOTE :** We didn't test standalone interventions for this opportunity area. A lot of the provocations to gauge post-use behaviors and practices, were conversation based and closely linked to people's perceptions of the alternative materials and systems we came up with for the other opportunity areas.

Interventions around this opportunity area will be more rigorously tested in the next phase when we have a better definition and understanding of critical points for intervention as well as the alternative materials we decide to use.

# 3

## TARGET AUDIENCE

### WOMEN AS CHANGE MAKERS

The older generation of women are eco-conscious - They save plastic bags that come into the households, and reuse it for many purposes. They are aware of the problems plastic cause to people and the environment. They actively seek out organic vegetables and meat. They dislike the amount of MSG in the street food. They are also the heart of a majority of the businesses in the city's neighborhoods and markets. Their involvement and participation is pivotal in creating a sustained change when it comes to the plastic bag epidemic.

They also constitute a majority of the retail business owners. Their understanding of the customer's psyche as well as their own business, make them critical allies to have, to ensure the success of any alternative (product or system).



HOW MIGHT WE...  
empower women in their  
communities to generate  
awareness around the  
effects of plastic bags?  
(on people, their city and  
the environment)



# 3

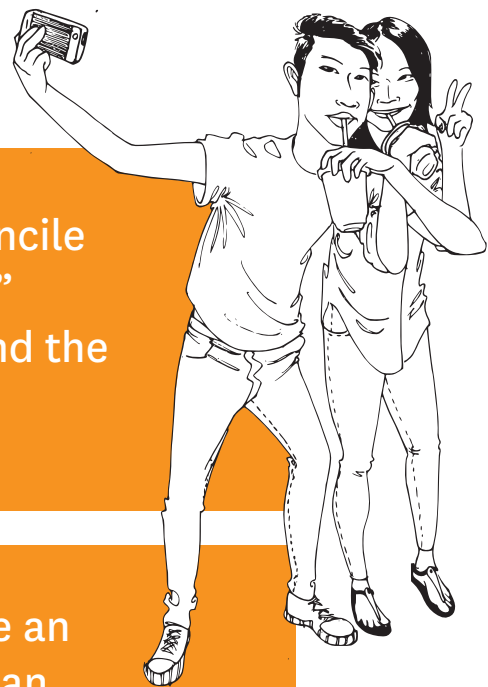
# TARGET AUDIENCE

## ENGAGING THE NEXT GENERATION

65% of Cambodians are under the age of 30. They are the future vanguard, and any sustained change in future practices requires their participation and involvement. They are highly aware of the problems plastic cause but are captivated by the western influence of modern trends, pop culture and brands. Plastics in many aspects are the enabler to this lifestyle. It therefore makes it very difficult for them to reconcile what they know and what they desire.



HOW MIGHT WE... reconcile the need for a “modern” experience/aesthetic and the waste this generates?



HOW MIGHT WE... make an alternative desirable in an increasingly branded and experience driven marketplace?



HOW MIGHT WE... engage the younger generation in transcending the plastic bag epidemic?



# 4

# FEEDBACK FROM FIELD SESSIONS / WET MARKETS



## FROM DISPOSABLE TO REUSABLE

The convenience of a plastic bag is very tough to overcome. But with the correct incentives and programs, there is a potential to shift some consumers to a reusable bag. For this system to really work, it might require a disruption of current norms and practices.

Constructs like renting and borrowing are not well established and are tougher to sell. Most customers were open to buying a re-usable bag rather than renting - the novelty of a new material being a key trigger for adoption.

The system (of reuse or incentivisation) has to be extremely simple to understand and execute - both for the vendor as well as the consumer.

Unless there's a way to prompt users (at-least in the beginning) to actively bring the reusable carrier, it might end up as just another bag in their household.

New materials that are non-plastic in nature face a higher push back due to high need for water-resistance and strength.

## FROM UNCONSCIOUS BAGGING TO AWARENESS

One of the most interesting outcomes during testing, was that most of these alternatives started a conversation on a largely silent act (give and take of plastic bags) between the vendor and the customer, thus challenging many assumptions that the former has about the latter's need/ want for a plastic bag to complete a transaction.

This is a critical behavior that needs to be addressed. The success of any alternative that promotes reuse or reducing the dependency of giving plastic bags, is directly dependent on challenging the vendors assumptions around these bags being a non-negotiable part of the transaction.

The fear of alienating or aggravating their customers looms large on the vendor's head, even though the percentage that might push back is very small.

There is however, comfort in numbers. If many vendors around them adopt this as a strategy, their resistance might weaken.

Its easier for vendors to start a conversation around optimizing use (for e.g., asking customers if they need a bag), if this is a visible norm in the market.



# 4

# FEEDBACK FROM FIELD SESSIONS / WET MARKETS



## OPERATIONS WITHOUT BAG

In the absence of an alternative (carrier or other packaging material) this intervention might still end up with the vendor using a plastic bag.

This is a small additional ritual that can be built onto other opportunity areas in order to prevent plastic bags to become the first step of the transaction. It has to work hand in hand with a larger systemic solution.

A size-able portion of vendors actually have baskets and trays in their shop. But in the absence of a homogeneous system, some may or may not use them, often resorting to using a plastic bag to speed up the transaction time.

The efficiency provided by plastic bags are unmatched specially in the case of wax paper based alternatives which take a longer time to wrap and fasten.

## HEALTH POSITIVE PACKAGING

‘Chemical free’ packaging has very high acceptance, even without explicit health messaging to accompany it.

We tested a part cassava fiber ‘bio-bag’ as one of the proxies (the rest were paper or cloth based proxies) Both vendors and customers were quick to point that it didn’t have a ‘plastic’ odor and a much softer texture. The material sensories combined with the chemical free messaging made it an alluring prospect.

In few cases, some customers were also amenable to paying for the bio-bag proxy. This prompts us to believe that health positive alternatives are a viable trigger for adoption in the wet markets as well.

There is still a higher affinity to stick to plastic based materials, even if health is one of the central provocations. Wax paper, non-absorbent cloth and other ‘natural’ materials did not seem to fare as well as the part cassava fiber based bio-bag proxy.

The strong affinities and comfort around plastic being a ‘modern’ and ‘aesthetic’ material need to be broken in order to pave the way for better material platforms.



“Its nice looking, but I don't want to charge for a (re-usable) bag. If someone is buying something for 1500 Riel why will they pay 500 Riel for a bag?” - Vegetable Vendor

I don't usually shop at wet markets, but my sister who does will love this! She's really into this eco-friendly, re-usable 'stuff' - Young Shopper

“The (cloth and non woven plastic) materials are nice, but I think its more for lifestyle or chab houy purchases. I feel plastic bags are the most apt for packing perishables.” - Vegetable vendor

FEEDBACK FROM FIELD SESSIONS / MARKETS



FEEDBACK FROM FIELD SESSIONS / MARKETS

“The paper hides the product, you can't see what you have purchased. When I put it in a plastic bag, it makes it look really good.” - Meat Vendor

“Everybody knows there are chemicals in plastic bags, but we don't have any other option. I don't mind paying for this bag, the green print makes it look beautiful.” - Shopper



# 5

# FEEDBACK FROM FIELD SESSIONS / FOOD ON THE GO



## FROM DISPOSABLE TO REUSABLE

There is certain discomfort with re-usable personal accessories, specially because they soiled through the journey of consumption.

But pro-environment messaging, could be a way to motivate the younger audiences to see value in adopting such alternatives.

Even for routine and ritualized purchases, there seems to be a larger barrier to adopt re-usable products or accessories, specially because it requires fore-thought and planning.

## FROM UNCONSCIOUS BAGGING TO AWARENESS/ OPERATIONS WITHOUT BAG

The justification for each and every plastic bag in the case of food take-away is far more difficult to challenge as compared to the wet markets.

There however, might be a smaller subset of transactions where these interventions could be applicable, if limited to items such as non cooked food (like sandwiches), small dry snacks and beverage take-aways, specially when the nature of consumption is personal or where the radius of travel is not considerably large.

Plastic bags have to account for a more complex portfolio of needs in the case of food packaging - heat and leak-proofing, protection from the elements, hand hygiene, etc in addition to that of being a carrier and a customer service tool. Therefore vendors have a harder time justifying reduction (without replacement with another alternative)

Food retail has a higher level of hospitality based service orientation, as compared to shopping at wet markets. Compared to wet markets, vendors are more weary/ apprehensive of starting a conversation around reducing plastic packaging with their customers, as it goes against their natural mental models around service and hospitality.

# 5

# FEEDBACK FROM FIELD SESSIONS / FOOD ON THE GO



## HEALTH POSITIVE PACKAGING

There is a larger stated need for an alternative (the level of health consciousness and the despondence of not having a choice in the matter is quite high in this category)

The fact that some food vendors are already stocking up on alternatives for those who don't want their food being served directly in plastic bags is a positive sign that the trend is only on the rise (important to note that right now, the cost of the health +ve packaging is being borne by the customer)

We feel that there might be a lot of potential in just the simple act of food vendors presenting both plastic and health safe packaging as options upfront - by bringing in higher visibility and creating 'choice' one could definitely trigger adoption as well as facilitate in awareness building.

The health positive packaging still needs to factor in modern aesthetics and taste which are largely enjoyed by plastic based alternatives.

Paper based alternatives that we tested are appreciated but most vendors felt that it lacked the strength and engineered quality of plastic bag. They saw its utility as a food safe primary packaging, but still felt the need for a secondary plastic bag packaging to assuage all other needs. We are also concerned about the actual 'waste reduction' that we will be able to effect. If not thought through properly, we might end up adding one more packaging material to the mix where previously there existed only one.

It is also very crucial to note that the alternatives in this opportunity area are most likely to come through the existing supply chains and are extremely expensive when compared to current day solutions. While the health benefits are coveted by the vendors, the adoption of a new untested product (for eg paper or sugarcane bagasse), is going to be slow. Vendors look for market confirmation - visibility in local markets, adoption by similar vendors as well as a critical mass demand from their own consumers, before investing in a new product.



*"I have never seen anything like this! (referring to wax paper envelope for corn) If I see other people using it, then I might give it a try. If you really want this to be popular, you should sell it in the local markets first." - Boiled corn vendor*

*"In Philippines, people just tie a bottle with a thread like this. You have to teach Cambodians that plastic is not the only solution for everything." - Young professional*

*"Paper is good as it melts away when you throw it. But its not as fast use and good-looking as plastic bags. If a customers specifically ask for it, I might keep it." - Fried snacks vendor*



*"I know plastic bags are bad for hot food, it has chemicals. Is paper better because it doesn't? Even if it is better for health, soups might be difficult to package. It will become soft because of the hot liquids - Soup vendor, on a paper based container for hot liquids*

*"This (paper wrapper) looks beautiful and is easy to use. But I don't know if I can do away with plastic bags - its difficult to hold when the corn is too hot. - Grilled corn seller*

*"Anything re-usable is better for the environment. I don't mind trying it, but I know keeping it with easy reach is going to be tricky." - School student, on the re-usable cloth-made beverage carrier*

*"The way she wrapped it, made it look and feel special. It's different, it looks cool, better than a plastic bag." - Young tuk tuk driver, on wax paper packaging for num pang.*



# 6

## CONCLUSIONS FROM IDEATION PHASE

**From the field tests it is evident that the first step in tackling this challenge is to bring about a change in existing social practices by optimizing on the excessive use of plastic bags.**

While health or the environment can be used as triggers for behavior change, we have to be cautious that any new material alternative we might introduce on the back of it, could have unintended consequences if they are allowed to exist under the current practices and systems of use (for example bio-plastics could lead to an escalation in use and hence create more waste).

Based on our tests and conversations, we see a more impactful theory of change if we focus our efforts on tackling plastic bag use in **perishables shopping at the wet markets** because of the following reasons :

**IT HAS HIGHER POTENTIAL FOR OPTIMIZING PLASTIC BAG USE.**

Some consumers shopping in wet markets already display positive behaviors around consolidation and refusing unwanted plastic bags. Furthermore, our investigations have shown that the universe of needs fulfilled by a plastic bag in this use occasion as well as the portfolio of products that we have to design for, are far less complex than those of food and beverage packaging, and hence optimizing or curtailing unnecessary use seems more probable in the case of wet markets.

**IT OFFERS A CRITICAL MASS THAT IS REQUIRED TO SHIFT PRACTICES.**

Markets provide for a common platform to reach many vendors and consumers, and building new practices and systems can be approached in an iterative and sustained manner. We feel that by galvanizing the community in the markets (both vendors and consumers) we can create a larger social sanction against plastic bags. Women constitute a majority of vendors as well as consumers, and their agency to co-create and adopt better social practices seems higher than other target user groups.

**THE ECOSYSTEM OF MARKETS IS A CORNERSTONE OF LOCAL BEST PRACTICES.**

Most retail vendors outside the ecosystem also learn from the markets. If we can demonstrate a shift in practices here, the probability of it diffusing into other retail practices is considerably high.

**THERE IS AN OPPORTUNITY TO LEVERAGE GOVERNMENT AND INSTITUTIONAL MECHANISMS.**

Conversations with government stakeholders as well as market chiefs through the course of this phase, show promise of more oversight and support in the market ecosystem as compared to food related ecosystems - public or school spaces. This is a very critical factor to enable any kind of systemic alterations to that we might need to aid our endeavors

# 7

# INTENDED IMPACT

## PRIMARY IMPACT

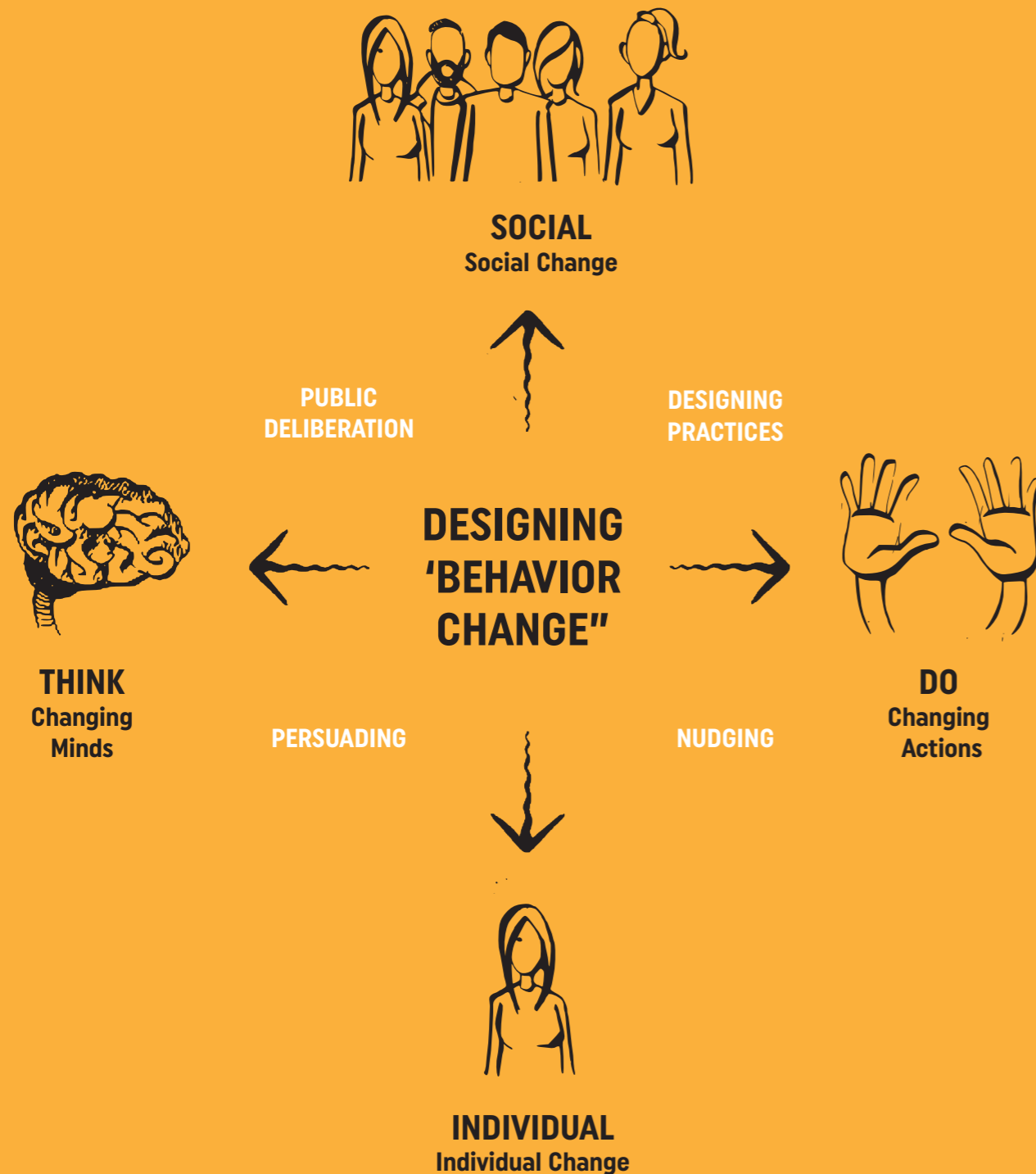
- Reduce plastic bag use (and hence subsequent waste) in a consumption case that is estimated to be amongst the largest contributors to plastic waste across the country.
- Reduce the use of colored bags, thereby reducing the potential impact from leaching of chemical additives. Also, minimize the potential health impact from such bags.
- Reduce the emissions and toxic discharges from plastic bags that are eventually burnt by households with little or no access to formal waste management systems.
- Reduce the impact of improper disposal (litter, pollution of water bodies, impact on natural ecosystems) of plastic bag waste by households with little or no access to formal waste management systems.

## SECONDARY IMPACT

- Reduce the overall consumption of natural resources that go into the production, transport and supply of plastic bags.
- Leverage the markets as a starting point for building awareness and eventually bringing change in the wider ecosystem of retailers and consumers.
- Empower small businesses and traditional retail with solutions that can create new efficiencies and experiences that can be shared with consumers.
- Raise the profile of the local markets in the minds of the youth and tourists.

# 8

## WAY FORWARD / MARKETS AS A PLATFORM FOR CHANGE



The market is a nucleus for the community. It is also the center which many other businesses rely on for supplies and it seems, for practices, trends and news. We have the opportunity to consciously create a diffusion strategy that will emanate new practices from the market place.

We see interventions for designing behaviour change falling within four domains as seen in the graphic on the left : **Persuading** (bottom left), **Nudging** (bottom right), **Public Deliberation** (top left) and **Designing Practices** (top right).

Within the context of the market it may be helpful for us to generate interventions through the lens of each of these.

However, it is interesting to note that people currently need little Persuading, they already are aware of the issues and at the Public Deliberation level, policy is already being set in motion to address. It is therefore on the right hand side of this axis that our efforts are most likely to yield results.

If we wish to affect long term change at a larger scale, then we will need not only to change current behaviour, but to **redesign current practices themselves through redesigning the system.** (top right)

### EMPOWERING THE COMMUNITY

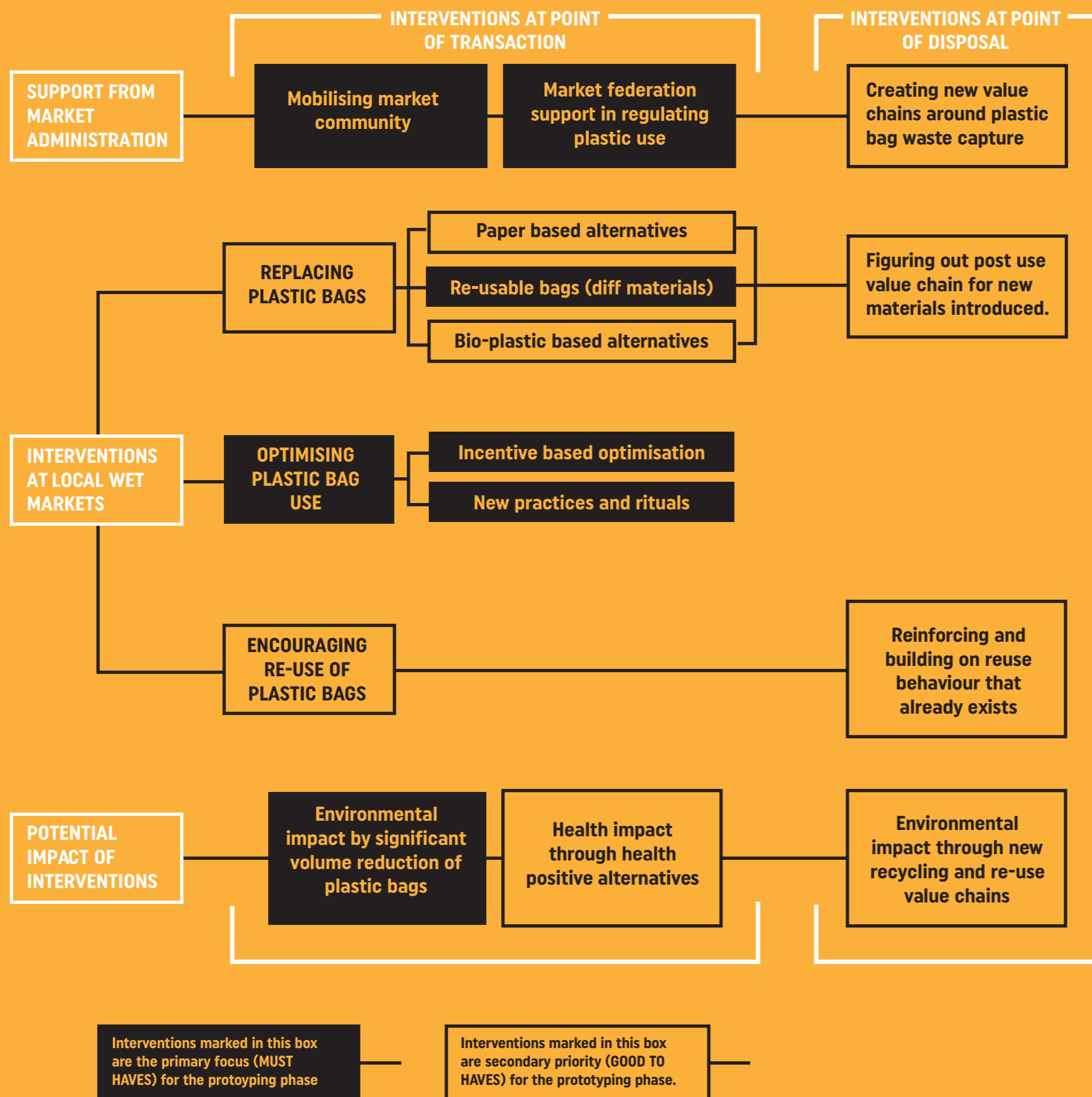
The market presents itself as the perfect platform for community-led change (top right: Designing Practices). By engaging the community to take action, we might be able to start affecting collective practices from within, rather than developing set-solutions for consumers.

In the course of the next few weeks, as we move ahead into the prototyping phase, we will set up a workspace in one of the local wet markets, and co-create exercises and experiments within the market ecosystem.

A laboratory set up within the market-space as a catalyst for change will empower people to develop solutions themselves, with the resources and support they require.

Furthermore, by engaging, sharing tools and resources, the community will be able to continue developing and effecting change beyond the scope and timeframe of this project.

*Designing behavior change framework, created by one of our experts, Simon Blyth from Actant.*



The reduction of plastic bag waste is a complex, multi-layered, multi-directional problem. No ONE solution alone will achieve the goal of optimization and reduction by any size-able amount. Some of the prototypes we used in the field will be iterated based on the feedback from the ideation phase and prototyped at scale, which will require support from the market administration. Here are some of the prototypes we will take forward into this phase :

#### SYSTEMS ORIENTED

**The Market Bag** - Exploring different ways to optimize usage by creating an alternate system for the provision of plastic bags to retailers and consumers. This may include ideas such as beginning shopping journeys with larger plastic bags to aid, encourage and ensure consolidation of different purchases (except meat and fish perhaps) into a single bag in a more consistent manner.

**Progressive Taxation:** Exploring alternate pricing mechanisms that could reward conscious/frugal usage amongst retailers. For example, vendors to pay only for the plastic bags they use at the end of each day thereby breaking standard purchase patterns and raising their awareness of their own usage.

**Gamifying Change** - Exploring gamified elements of interaction for the reduction of plastic bag use with both vendors and customers within the current frame of use.

**Reusable Bag System** - Exploring programs and systems that could encourage reuse behavior in consumers. This may be relevant to alternatives available today, or some standard reusable bags that can be chosen from the market (local or international) as of today.

#### PRODUCT ORIENTED

**A 'Made In The Market' Bag** - Creating an alternate carrier bag in collaboration with users - consumers retailers, makers (for example, tailors and weavers at the markets), market authorities, and potential SMEs in the manufacturing domain.

#### MATERIALS ORIENTED

**Materials Library** - Though initially we may opt for *reduction* and *optimisation* of the current materials used, in the long term, alternatives will need to be sought. There is the opportunity to develop a materials ecosystem to support the more ecologically sound practices we seek to bring to the community. Current systems and materials will potentially need to be replaced with ones that prioritise health for humans, animals and the environment.

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