

# STIMULATING THE SEPARATION OF FOOD WASTE AMONG VISITORS

*Graduation report by Tom Legendijk*

*Oktober 2015*

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### **Special thanks**

Walter Bak, Joost de Boer, Ingeborg Pinkcaers, Beaujoura, Lisa van de Merwe, Sanne Jongeling, Sophie Boonen, Govert Reeskamp, Laura van de Voort, Dago Houben, Eva Verboon, Dieder Prince, Oscar van de Reyden, Marnix Bramer, Alex Laman, Nadine Jongeling, Robin Koens, Silvia Lagendijk, Fresco, Bram and Marlinka.

## Executive summary.

KOOSIE is a new festival-catering concept that enables and stimulates visitors to separate their waste and create their own cosy and comfortable eating location at festivals. KOOSIE enables this by facilitating a compact crate that includes, a picnic rug, waste compartments, a transformable table leaf and space for food and drinks. Visitors have the freedom to comfortably carry the compact crate towards any desired location at the festival.



KOOSIE enables festival organizations and eateries to increase the service value and total experience of the festival through limiting the shortage of seating spots and decreasing the food related waste problem in a commercially feasible way.

Current solutions on the festival market are focused on the plastic cup waste problem and do not focus on the food related waste problem. Currently the food related waste problem

is one of the big problems at festivals. KOOSIE does focus on the food by encouraging /challenging visitors to separate waste. The design is based on a thorough analysis of current eateries at festivals and of the psychological aspects of behavioural change.

Several other concepts, next to KOOSIE were created during this phase. First, the **Cone Food**, a concept that is focused on limiting the amount of packaging used and on enabling people to 'stay in their moment'. The second and third concepts **Battle of colours** and **Your waste is our Food** are focussed on behavioural change through gamification. Finally, **the warehouse** concept is based on convenience for visitors. Koosie came out as the most ideal solution for this problem.

Festivals have to create a mono waste stream to solve the food related waste problem. The enormous amount of different materials used for packaging by eateries, the lack of agreements between eateries and festival organisations and the current behaviour of visitors do not stimulate these mono waste streams. Therefore, we recommend eateries and festival organisation to limit the amount of different packaging by making clear agreements about the materials used for food packaging. These decisions must be based on the facilities of the cooperated

waste management companies. Festivals and eateries can use KOOSIE to create the needed behavioural change and facilitation of waste separation, which is needed for festival to create these mono waste streams.



KOOSIE

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# CHAPTER 1

## INTRODUCTION

This Chapter provides a first introduction about the company Schaalwerk and the waste problem at festivals.

## The company

Schaalwerk is a Utrecht based company, which encompasses several design disciplines, from exhibition design (mainly for museums), theatre stands, to graphic design and prototyping. Exhibitions and stands are their core business. Over the last 15 years Schaalwerk has also designed and built a wide range of concepts for festivals in the Netherlands. Examples of their festival work are: pop-up restaurants, pop-up bowling clubs, entrance of Best Kept Secret festival, and the decoration for ***Into the Great Wide Open*** festival. Schaalwerk mainly works with a variety of freelancers. These freelancers are specialised in a specific aspect of the design and production process.



Figure 1 Logo of Schaalwerk



Figure 2 Schaalwerk's premises

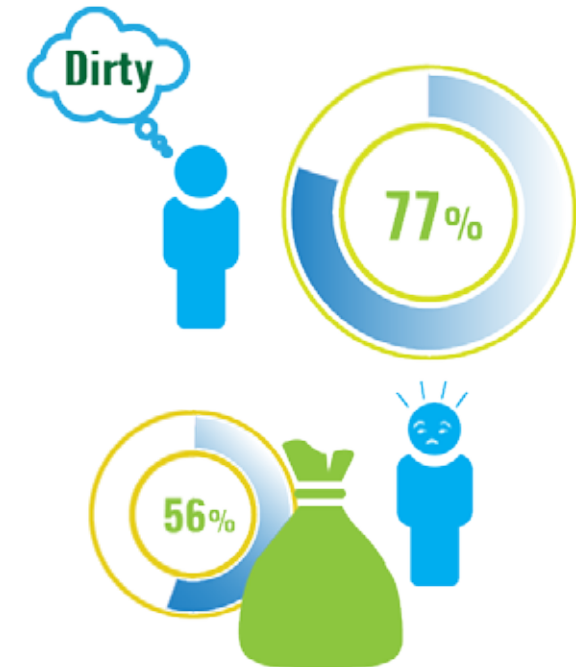
## Waste problem

Waste is currently a big problem at festivals. 29% of the total environmental damage of festivals is caused by waste. [1] According to Razag Raj and James Musgrave (2009) who did research on Sziget festival in Hungary, measures the amount of waste per visitor at approximately between 0,5 - 0,8 kilogram. [2] The Dutch festival **Into The Great Wide Open** creates a waste amount of proximally 1 kilogram per person per day. [3] In 2013, a total of 12.820.000 people visited Dutch music festivals. [4] This means that only in the year 2013 festival visitors have produced an enormously amount of about 10 million kilograms of waste.

## The impact of waste

According to research of Felia Lanno (2011) 77% of the Belgium festival visitors associate the word "dirty" with festivals and 56% of the Belgium festival visitors think that waste is a disturbing factor of festivals. [5] Hereby one may assume that a significant amount of the festival visitors are confronted with and experiencing this problem of waste. Among visitors food and drink related waste, like plastic cups and food, were experienced as the most disturbing types of waste. The main reasons, according to Lanno, why people experience it as disturbing were the horrible smell, attractiveness for insects and the look of the environment.

According to Laura van de Voort (interview, 2015), sustainable manager at Extrema Outdoor and founder of Greenevents Nederland, these negative experiences leads to damage of their festival image and of the desired total experience. Hence, we can conclude that eateries on festivals are definitely a source of the waste problem. Sustainable wise and experience wise it is important for festivals to solve this problem. [6]



2013



12.820.000 visitors

Figure 3 Waste problem and impact at festivals



# CHAPTER 2

## ANALYSIS AND RESEARCH

After an internal analysis of the company Schaalwerk., this chapter provides a more in-depth analysis about the current situation and developments of the festival market related to the waste problem. It will also give insides into several socio-psychological theories focused on behavioural change.

## Internal analysis Schaalwerk

This paragraph will give you insights into the company Schaalwerk and its strength and weaknesses by analysing the company's structure, facilities and strategies.

### **Structure of Schaalwerk.**

The founder of Schaalwerk is Walter Bak. All employees in the company are freelancers. This is a conscious choice made by Walter. The amount of assignments in the theatre, museum and festival market does fluctuate a lot. In this way the company becomes flexible and can respond to the fluctuation of those markets.

Each freelancer has his or her own specialism and skills. The types of freelancers working for Schaalwerk vary between crafts man, mechanical engineers, programmers, painters, woodworkers, art directors, special effects specialists, and industrial designers. This variety of people increases the knowledge, skills and connections that Schaalwerk can offer their clients. The disadvantage of this structure is that freelancers are usually more expensive to hire than permanent employees. In this way Schaalwerk increases their costs for themselves and their clients.

80% of the projects are supervised by Walter Bak. He is a very experienced designer and builder. He has the knowledge and experience to lead those big projects. Yet the amount of projects running at the same time can cause that sometimes the planning in

the company is not optimal. This leads to stress and a decrease in efficiency of the building process.

### **Company Strategy.**

There is not a real defined strategy within Schaalwerk. Schaalwerk executes projects that vary from big productions, such as for museum, to small such as a dinner table for a household. The main selling strategy of Schaalwerk towards their client is focused on costs reduction. Schaalwerk is mainly involved in the end process of a design project. Eight out of ten projects are consisting out of building the installations, which are designed by other companies.

To acquire these assignments Schaalwerk tries to convince most of their clients by offering the cheapest solution instead of selling high quality. Cost reduction is a good selling point towards their client, although Schaalwerk does not always calculate realistic prices. Therefore, they have to cut in their own profit percentage of 20% on the whole project and this leads to less profit, which limit the growth of the company.



Figure 4 Schaalwerk's office.



Figure 5 Schaalwerk's wood processing cabine

### ***Production techniques.***

Schaalwerk's workplace does facilitate a wide variety of production techniques. It facilitates the tools for woodworking, metalworking, painting and many more. They have a welding area, a woodcutting area with two professional woodcutting machines and have a paint cabin.

### ***Strengths and Weakness.***

So after this analysis of the company, the strengths and weaknesses of the internal factor of the company can be defined. Internal factors can only give information about the strength and weaknesses and not something about the opportunities and threats.

#### ***Strengths***

- Flexible
- Lot of specialism
- Lot of connections
- Wide variety of production techniques.
- Involvement of Walter with his freelancers

#### ***Weakness***

- No real defined company structure
- Too much focussed on cost reduction and not on offering quality
- Planning and communication



Figure 6 Schaalwerk's metal processing cabine



Figure 7 Schaalwerk's paint cabine





Figure 8 Schaalwerk's workspace





## Festivals and Sustainability

This paragraph will explain the definitions of a festival and sustainability. Secondly it will give insight about the current movement of the festival market.

### What is a Festival?

In this sub-paragraph we try to answer this question. This will be done by defining the characteristics of a festival and by looking into the origins of the current modern festivals.

### Characteristics of Festivals.

According to Harry van Vliet (2012) a festival can be described by four characteristics. These four characteristics are :

#### # Public Space.

A festival has to make use of public spaces. Public spaces can differ from a city centre to a meadow in the middle of nowhere. Public spaces are sometimes used as décor for festivals. Festivals can transform a certain public space into a whole new world.

#### # Defined period of Time.

Every festival has a certain period of time in which they are organised. This can differ from a couple hours until multiple years.

#### # Planned and organized activities.

A Festival consists of activities. These activities can for example be sports, music or film related. The

activities are defining the type of festival.

#### # Unique experience.

Every festival has its unique experience. Unique experiences can be created by the visitors but also by other factors. The importance of a unique experience is huge for festivals. Ronny Hooch Antink of Lowlands festival in the Netherlands said in an interview *“De Lowlander has to experience what they experience nowhere else”* (Harry van Vliet 2012, p56) [7]. By mentioning the words ‘nowhere else’ he emphasizes the importance of the uniqueness of their festival experience. By creating a unique experience festivals are trying to bear an own authenticity as festival.

***“Festivals create the sense of unique, one-off experiences, for which it is important to say ‘I was there’, and which therefore bear their own authenticity.”***

*(Giorgi, Sassatelli & Delanty, 2011 p.18) [8]*

Next to those four characterizes, festivals use transformation and games to give visitors opportunities to behave and feel different than in their every day life. This indicates that visitors are creating and defining rules and standards during this period of time on a festival, which are different from those

in society. This indicates that visitors may also have different standards and rules towards sustainability during a festival. I can say from my own experience as a visitor, that I usually behave less sustainable at festival than in my daily life.

### History of the modern festival.

The first known music festival took approximately place in 4500 B.C. in Egypt. Over the years festivals changed and evolved into the festivals we know nowadays. The modern way of the festival we know now started in the late sixties with most influential festival Woodstock with 400.000 visitors. Woodstock was about the hippie themes love, peace and music. Woodstock was seen as a festival created by the hippie culture. In the late 60ties and beginning of the 70ties the hippie culture had mayor influences on the festival world, first Woodstock in 1969 and a year later Isle of the Wight festival in the UK. Both festivals had the ideals to go back to nature and make love, not war. The hippie culture in New Zealand named Nambassa was known for promoting environmentally friendly lifestyle. Also the Nambassa organized a music festival in 1979. At least we know now that sustainability was considered important for the very first organisers and visitors of today known modern festivals. [9 & 10]

The first major Dutch pop music festival named Holland Pop Festival was organized in 1970. It was a reaction on the Woodstock festival we mentioned earlier. Holland Pop Festival was also organised by

a reaction on the Woodstock festival we mentioned earlier. Holland Pop festival was also organised by people who were part of the hippie culture. In comparison with Woodstock there was no political message behind the festival. Holland pop was all about the music. In the same years as Holland Pop festival was growing another festival was born, named Pinkpop. After all these years Pinkpop is still one of the major Dutch music festival nowadays. [11 &12] Were these first major Dutch pop festivals and their visitors already focussed on reducing waste? Organizers and visitors of these first festivals had a hippie background and had the ideal of an environmentally friendly lifestyle. Therefore, you would expect that the problem of not throwing away the garbage would not exist. Unfortunately this is not the case. Old pictures of all three festivals show a significant amount of waste on the ground. (see Figure 9 and 10) One of the reasons causing this problem is the fact that some festivals were not prepared for the huge amount of visitors and therefore did not have enough facility to collect waste. We can assume that both visitors and organisation had an ideal, which was to be environmentally friendly, but in reality they could not prevent people to throw garbage on the ground instead of into the trash bins. [10]

### **Conclusion.**

We can conclude that the hippie movement created the modern festival that we currently know. Current Festivals can be described by the four characteristics: public space, defined period of time, activities

and unique experience. The definition of a festival by Van Vliet gives a good summary:

***“ A festival is a gathering of a relative big group of people, on a specific public place in a certain defined period of time. Where they offer a unique experience, which is planned and organized from a certain goal and whereby the use of transformation and games the visitors have the possibilities to behave different and feel different than in their everyday society ”*** (Harry van Vliet 2012, p. 20) [7]



Figure 9 Woodstock, 1969



Figure 10 Holland Pop, 1970



## What is sustainability?

In this paragraph we try to find answers to the question what sustainability is.

### The three dimensions of sustainability.

In 1987 the World Commission on environment and development came with a report named 'Our common future'. It was the first time in the history that they were calling for sustainable development. In this report sustainability was divided in three different dimensions: social, environmentally and economical sustainability . [13]

*Social sustainability* is about sustainability of the topics like the work environment, social securities, payment, safety condition, and child labour.

*Economical sustainability* is about the sustainability of topics like economic growth, development and productivity.

*Environmentally sustainability* is about the sustainability of topics like waste reduction, reducing co2 emission.

In this project we are focussed on the waste problem at festivals. As described in Chapter 1 festival waste causes 29% of the environmental damage of festivals. Therefore we will only take a look through the eye of the environmental dimension. This does not mean the other dimensions are not important, but during the project we are focused on the environmental sustainability.

### Circular economy.

Circular economy is an economic model proposed by the Ellen MacArthur Foundation. A model that is enhanced by design, and which aims to keep products, components and materials at their highest utility and value, at all times [14]. Thereby they decouple economic growth and development from the consumption of finite resources. In this model the technical and biological materials are separated. The Foundation is trying with this model to come up with effective design and use of materials to optimize their flow and maintain or increase technical and natural resources stocks. Circular economy is influenced by the Cradle2Cradle (C2C) philosophy of Michael Braungart and Bill McDonough (2002). C2C is philosophy where they split materials into biosphere and technosphere and have their vision on "waste equals food". This means that they strive to products designed with materials that should be biodegradable or can be recycled for 100%.

This circular model shown in Figure 11 shows us possibilities on how to make your product circular. The shorter the loop the more sustainable your system is according to this model. For example, companies that use technical materials like plastics should be stimulated to use a model whereby it maintains the product or reuses the product, and eventually recycle 100%. In this way companies are creating a circular economy and are increasing their sustainability. [14]

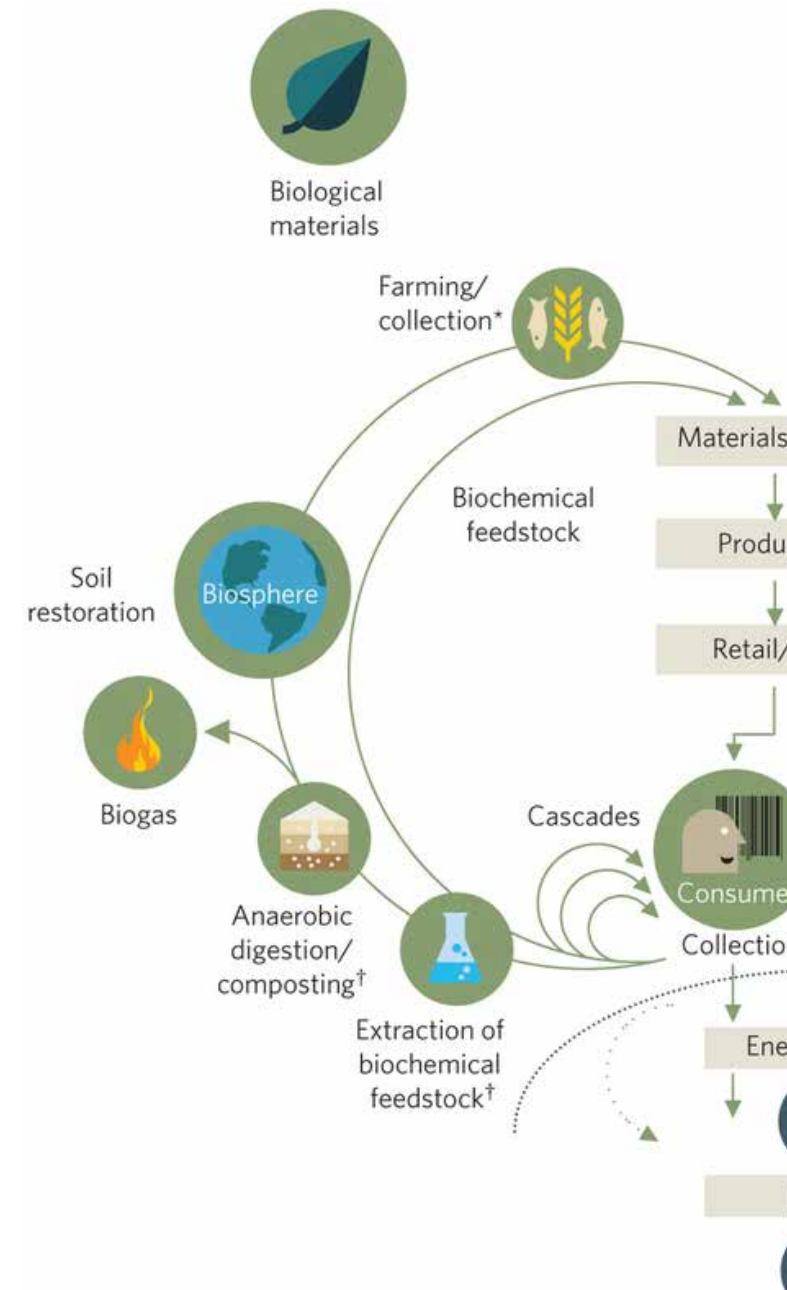
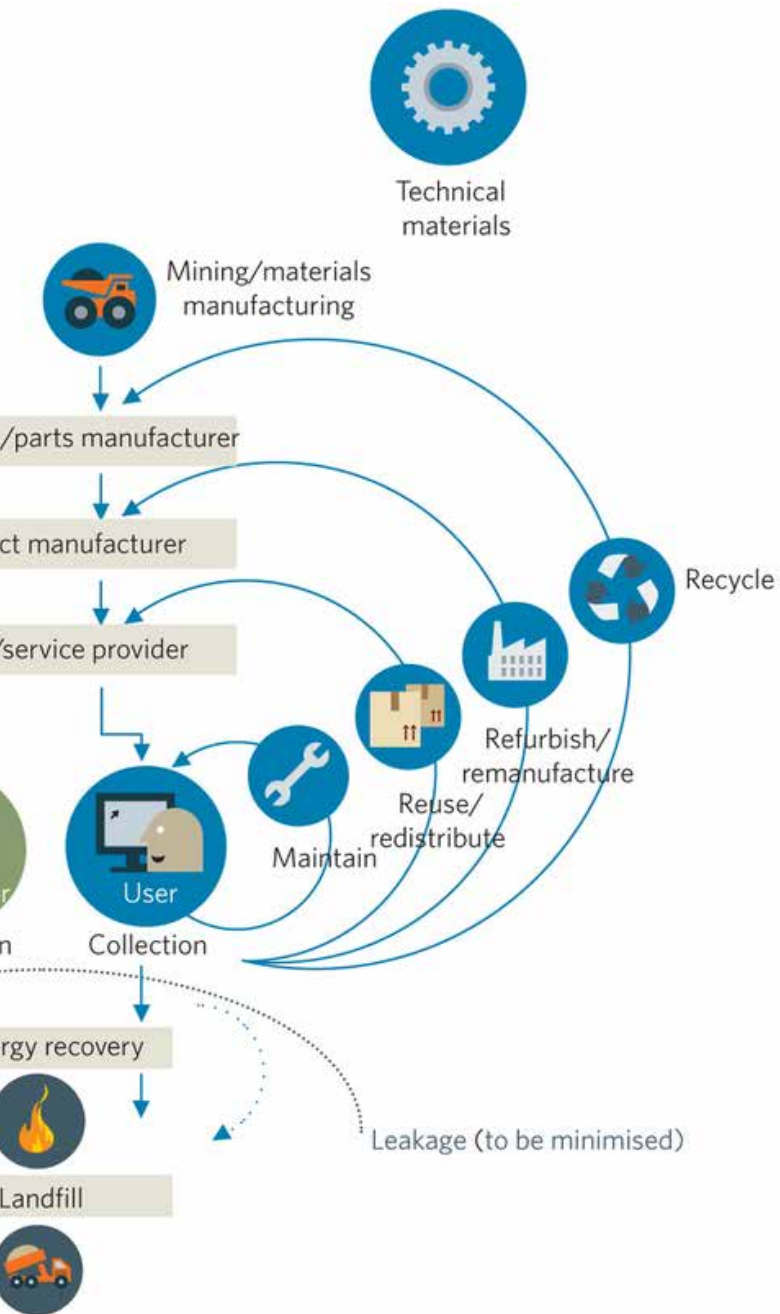


Figure 11 Circular model by the Ellen MacArthur Foundation



### Conclusion.

Sustainability can be divided into three types of sustainability. In this project we focus on **the environmental sustainability**. According to the World Commission on environment and development and the Ellen MacArthur Foundation reducing the amount of waste and creating a circular material stream can improve environmental sustainability. This circular economy model gives us a better understanding about material types on this planet and can guide us in future decision making about which circular model fits best within the festival market.

### Sustainable festivals.

In the previous paragraphs we have described what a festival is and what sustainability is, but this does not answer the questions about what a sustainable festival is? In this paragraph we will try to give an answer and describe the sustainable movement in the European and Dutch festival market.

### What is a sustainable festival?

Bert Boone did answer this question in 2010. He described a sustainable festival as follows:

**“ A sustainable music festivals is a music festival organized with respect for human and environment, on a way that fit the needs of the current generation and the future generation. This means that certain measures have to be taken, for example on the field of waste reduction, mobility or energy use. These measures help to not exceed the limit of capacity of the plant and the impact on nature to become as little as possible.”** (Bert Boone, 2010) [15]

## AGF.

Since 'Our common future' (1987), sustainability became more important in Western society. This also applies to the festival market. Since 2007 a non-profit organization called 'A Greener Festival' (AGF) has started in Europe. This organization helps music festival organizations to become more sustainable. Each year AGF organizes the A Greener Festival Awards. AGF are presenting their results on four different levels. The first level is outstanding (award), the second highly commended, third commended and fourth improving. Several Dutch festivals have won awards at the AGF Awards last years. [16,17 and 18] These festivals are:

- Extrema Outdoor, (commended, 2014)
- DGTL Festival (commended, 2014)
- Mysteryland (highly commended, 2014)
- Welcome to the future (outstanding, 2013 and 2014)
- Indian summer Festival (commended, 2013).



Figure 12 Logo AGF

## Green Events.

Not all Dutch music festivals are participating within the AGF awards. Several other Dutch music festivals are also focusing on their sustainability. In 2014 a new platform started by Laura van de Voort and Paul

Schurink named 'Green events'. Both founders have more than 10 years experience in the sustainability approach of festivals. **Green events** is a platform for supporting events to become more sustainable. During Noorderslag in January 2015 **Green Events** announced the **Green Deal**; this deal is a collaboration between nine festivals and the ministry of Infrastructure and Milieu. They are striving for waste-free festivals in the future. They want to accomplish this by implementing a circular economy system for festivals whereby 100% of the waste has to be reused, upcycled or recycled. With these measures the event sector wants to inspire and change the behaviour of visitors according to waste reduction. [19] The Nine festivals involved are;

**Pinkpop, Extrema Outdoor, Solar Festival, DGTL, Into The Great Wide Open, Mysteryland, Zwarte Cross, Welcome to the Future, Amsterdam Open Air.**

## Conclusion.

Solving the waste problem by waste reduction and increasing the circular material stream is becoming more important in the Dutch festival market. Several big names in de Dutch festival market like Pinkpop and Mysteryland have signed the Green Deal, which is focussed on the waste problem. This increases the chances for Schaalwerk in the potential growing market to sell designs in this area.

Potential clients for Schaalwerk can be:



Figure 13 Potential clients for Schaalwerk

## Waste and Festivals

Waste is a big problem and there is a growing movement to solve this problem among festivals. In this paragraph we describe the different type of waste, importance of creating a mono waste stream, importance of behavioural change and the current waste management of festival organisations.

### **Types of waste on festivals.**

The question we want to answer in this sub-paragraph is what type of waste does a festival create? As described, 29% of the environmental damage of a festival is created by waste. [2] Festival waste does consist out of food and drink related, camping, production and toilet waste.

During Sziget Festival in 2008 approximately 80% of the waste consisted of food and drink related waste(table). [2] Together with the fact that the negative experiences of festival visitors with waste are caused by food and drink related waste, indicates that this is a problem, which need to be solved for festivals and shows us much potential.



### Food and Drink related waste

Waste created by the consumption and producing of food and drinks. This type of waste is mostly consisting out of plastic bottles, carton cups, plates, cutlery, and food waste. [3 and 6]



### Camping waste

Waste created on the camping area of the festival. This type of waste is mostly consisting out of broken tents, plastic bottles, broken air matrass, broken or dirty sleeping bags. [3 and 6]



### Production waste

Waste created during the production of the festival. This type of waste is mostly consisting out of construction materials like wood, steel, tapes etcetera. [3 and 6]



### Toilet waste

Waste created on the toilet. This type of waste is consisting out of toilet paper, poop, urine and vomit. [3 and 6]

Figure 14  
Type of waste on festival



### **Importance of mono waste stream.**

As you have read in previous paragraph it is important to create a circular material stream. But how do we accomplish this circular material streams? The most obvious way is by separating the different materials and creating a mono stream. Laura van de Voort described these streams as mono waste streams.

Mono waste streams are waste streams, which consists of one single material. They give the opportunity for waste management companies to upcycle, recycle, reuse or make compost out of the waste materials. Currently there is a huge part of waste consisting of a mixed waste stream. Mixed waste streams mostly end up in the incinerator. Incinerators are transforming waste into CO<sub>2</sub>, which is not maintaining the material and is not circular but linear.

Festival organizations can reduce financial costs by delivering this mono waste stream of materials. A packaging fund is created whereby festival can get 760 euro's per one tonne of delivered separate waste. [3] Mono waste stream are cheaper to process by waste management companies than mixed waste. Mono waste stream does not always reduce the costs for waste management companies. The transport of mono waste streams is mostly more expensive and less sustainable in comparison with mixed waste stream. With mono waste stream, you will find out that some of the waste streams are

creating less volume. So, in that case a truck will only be loaded for 50% of their capacity meaning more trucks for transport.[20] Some of the waste management companies do prefer the transport of mixed waste stream. Afterwards they will separate most of the waste. Unfortunately the techniques used by waste management companies are not advanced enough to separate all the waste. This means that still a very high percentage is ending up in the incinerator. On top of that, each festival has a different waste management company. Not all waste management companies have those technologies to separate their waste. Therefore, it is still important for festival organizations that mono waste streams are created. According to Laura van de Voort, to achieve this goal of 100% mono waste stream at festivals, festival organizations have to separate waste and reduce the amount of different materials.

The percentage of mono waste streams at Extrema Outdoor and Solar festival does currently fluctuate a lot: over the last years from 20% to 70%. One of the reasons of this fluctuation is the weight of different waste materials. The percentage is expressed in kilograms. So for example, a lot of plastic cups are very light weighted, but wood is very heavy. If you throw plastic away in the wrong trash bin the percentage will not drop significant. But if you throw wood in the wrong bin the percentage can drop increasingly. [6]



Figure 15 Illustration of the mono waste stream





Recycling

Upcycling

Reuse

Reduce costs

Compost

**“In the end we want a 100% separation of waste, so there is no mixed waste and nothing has to go into the incinerator and everything become a new raw materials.” ( Laura van de Voort, 2015)**

**Importance of creating awareness and changing behaviour.**

According to Van de Voort (2015) and Van Reeskamp(2015) festival organizations need the help of visitors to create this 100% mono waste stream. By separating their waste during the festival, visitors can have a big influence on the realization of the 100 % mono waste stream, because the moment visitors throw their trash into the bin is the only moment for festival organisations to separate their waste. According to Van de Voort of GreenEvents the Netherlands is creating awareness and changing the sustainable behaviour of visitors the solution to solve this problem. [6]

Festival organisations are trying to tackle the current problem by providing signing, trash teams and extra trash bins.

**Inspiration not education.**

According to Claire O’Neill (2012), Reeswijk(2015) and Van de Voort (2015) festivals are good occasions to engage with music fans on environmentally issues. Research of AGF & NBU in 2012 [20] has shown that 43.1% of the festival visitors in Europe said that they have changed their behaviour as results of green initiatives and ideas they discovered at festivals. This indicates that festival have an influence on the behaviour. Claire O’Neill (2012) mentioned that organisation should be aware of the mixed audience opinions about the subject of sustainability. Secondly the job for festival organisation is to offer a fun day for their visitors. This will always be priority number one for festival organisations. The intention of festival organisation is to let people be inspired at festival. Visitors should not feel obliged or felt like they get taught how to behave.[3] and 6]

**“We need the visitors to solve these waste problems”**

( laura van de Voort, 2015)

One of the tools that is currently been used by festival organisations are the Trash team of Helden van Nu. These teams consist of volunteers that are cleaning up the festival areas and communicate the importance of sustainable behaviour towards the visitors with use of P2P communication.



### **Current waste management at festivals.**

This sub paragraph tries to give answer on the question, what is the current waste management at festival? This answer is based on interviews with Laura van de Voort and Govert Reeskamp and the observations on DGTL and HCTS.

Each festival differs in their waste management. The waste management depends on the size of a festival, policy of the waste management companies and the attitude of the internal organisation. Small festivals are usually limited in budget and have other priorities during the organisation of their festivals. Solutions like a hard cup system need a big investment and these small festivals do not always have the budgets to accomplish this. Secondly the amount of different materials that are separated by an organisation is based on the policy of the waste management companies that they are cooperating with. Thirdly some of the internal organisations have a higher moral to change the waste problem than other organisations. [3, 6 and 21]

The current waste management of festivals in general consist of:

#### *Backstage waste separation.*

Most festivals are separating their waste backstage. This is mainly during the production of the festival. Construction materials are separated. Most festivals separate carton boxes that were used for supplies of food and drinks.

#### *No deals, conversations or appointments with eateries about their use of packaging.*

Festival organisations do not make appointments with eateries about what type of materials they use for their packaging. They keep this decision and responsibility for eateries. Therefore it is very hard for festival organisations to have a clear overview on what type of materials they have on their festivals. On top of that they increases the amount of different materials used.

#### *No facilitations of waste separation for festival visitors.*

Because festival organisations do not have a good view on the amount of different materials that are used on their festival it becomes difficult to facilitate waste separation. Therefore almost no festival is facilitating waste separation for visitors.

#### *Use of a cleaning cart afterwards.*

A lot of the waste is currently thrown on the ground. Especially the plastic cups are everywhere on the festival area. To solve this problem, festival use cleaning carts afterwards.

#### *Trying to stimulate visitors to throw trash into trash bins.*

Several festivals are already trying to stimulate people to throw their trash inside the bins. By implementing trash teams they try to fix this.

### **Examples of other waste management.**

DGTL is one of the few festival, which does facilitate waste separation. They are separating plastic and residual waste. On top of that they try to increase the awareness and try to stimulate people to separate their waste by using trash teams. Unfortunately is their current system of waste separation not optimal. Firstly I took pictures of the content of the bins during my observation on DGTL festival. From these pictures we can conclude that not all visitors were separating their waste. DGTL created a special team of volunteers who were eliminating other materials from the plastic materials. In this way they could melt plastic into string, which could be used to 3d print plastic sunglass frames. People were able to win these sunglasses by retrieving plastic cups at a special point. Unfortunately nobody was doing this. We can conclude that DGTL is taking the first steps towards a waste free festival, but their system does not fully function. Only graphical signing on top of the trash bins together with the trash teams is not the full solution on the waste problem. On top of that the waste separation stopped after eight o'clock on the festival.



Figure 16 Pictures taken of trash bins at DGTL festival

### **Conclusion.**

Food waste is one of the big causes of the waste problem. To solve the waste problem visitors should create mono waste streams. This mono waste stream can only be achieved with the help of visitors. Therefore is the behavioural change of visitors important for festival organisation. This behavioural change should not feel obliged. The current waste management on festivals is not creating these mono waste streams of food and drink related waste, mainly because they are not facilitating separation of waste and their lack of control on eateries. Even if they facilitate and stimulate waste separation like DGTL, the waste management is still not optimal.

***“ If we continue to live like we do now, we will destroying our planet. In the end we have to start working on a circular model. If we continue our current behaviour and do not work towards an circular economy, then my son cannot life happy and become old. That is what has to happen. I think that festivals are a good tool, to reach and stimulate youth to change their behaviour and mind-set”***

*( Laura van de Voort, 2015)*



Figure 17 Pictures taken of a trash bin at DGTL festival



## Eateries and festivals

We currently know that a significant amount of the waste is food and drink related. Eateries and bars on festivals create this type of waste. In this paragraph we explain the role of eateries, the current situation with packaging and waste management on festival. After that we will explain the different options eateries and festivals have on packaging.

### **The role of eateries on festivals.**

From the beginning of our existence people need to eat and drink. Therefore eateries and festival always have been connected with each other. The main goal of eateries on festivals is than of course supplying food for the festival visitors. [6] In the beginning of the modern music festivals until 10 years ago this was mainly the only function eateries had. Eateries on festival were therefore also mainly boring and did not have any other dimension than supplying food. Over the last ten years the role of eateries is changing. Offering an experience becomes more important. A festival visitor does not only want to have food but also wants an experience during the eating ritual. Therefore, there a rise of special food trucks and complete restaurants on festivals. Also the quality of the food and amount of choices has increased. Biological and local food is currently more standard than limited. [6]

The relation between eateries and festival organisation is mainly focused on the menu and the hygiene of their kitchen. Eateries do mainly decide by their own what type of packaging they use and how they manage their waste.



Figure 18 Image of TREK festival.

### **Current situation with packaging: a study.**

By doing observational research at DGTL and Here Comes the Summer (HCTS) festival we tried to get a good indication on the current situation with packaging on festivals. From this research we could conclude that:

#### *Many different materials used for packaging.*

Both on DGTL and HCTS we observed that every eatery had their own chosen packaging. Therefore they create a high diversity of materials. The type of materials found were carton, high variety of different plastics, bamboo, wood and paper.

*Almost every food type is served on plates or bowls.* At DGTL and HCTS almost all the food was served with a plate or bowl. Hamburgers and French fries were the only food not served on a plate or bowl. They only had a paper napkin around it.



Figure 19 Picture of dining people at HCTS

#### *Mainly disposables.*

All packaging used by eateries on both festivals were consisting of disposables.



Figure 20 Picture of disposables people at DGTL

### *Luxurious look leads to more waste.*

Spring rolls and sauces were served in separate packaging made out of different materials. The eatery made this choice, to make it feel more luxurious, yet some visitors mentioned to me that they thought it was unnecessary.



Figure 21 Picture of dining people at HCTS

### *Big festival sponsors selling their own bottles at the festival.*

Festival sponsors such as Lipton ice tea and Jack Daniels, were selling their own bottles and designed packaging on the festivals.

### **Packaging.**

The different packaging types and the packaging developments are described in this sub-paragraph. In the end of this sub-paragraph we will give a summary of all the pro's and cons of the different packaging methods.

### *Plastic disposables.*

Drinking cups and cutlery at festivals are currently mainly consisting of plastic disposables. The material used to make these disposables is mainly PET. Advantages of using disposables are the decreasing change of spreading diseases and reducing cost by eliminating dishwashers and washing facilities. A big percentage of the waste management companies are only able to recycle plastic disposables when the plastic disposables are delivered in a mono stream. As described before, the current festival organizations are not capable of delivering this mono stream of materials. One of the causes is the current non-sustainable behaviour of festival visitors and the amount of different plastics used for disposables. Another disadvantage of the use of plastic disposables is the enormous volume in proportion of the weight of the produced waste. [6]



Figure 22 Image of plastic disposables

### *Carton/paper disposables.*

Carton disposables are commonly used by festival eateries. Carton or Kraft paper is commonly used for food dishes, napkins, coffee cups and food bags. Advantages like decreasing change of spreading diseases and reducing the costs also applies for carton disposables. Secondly cardboard is consisting out of one material. In this way it has a higher change of creating a mono stream. The big difference of carton disposables compared with plastic disposables is that waste management companies cannot recycle carton packaging that has been used for food. Therefore, the use of carton at eateries is a non-sustainable choice. [6 and 22]



Figure 23 Picture of cardboard disposables at DGTL

### Biodegradable disposables.

Advantages like decreasing change of spreading diseases, reducing the costs and consisting out of one material also applies for Biodegradable disposables. Beside these advantages, biodegradable disposables have an extra advantage of being compostable. The fact that in theory a festival organization does not have to separate food waste and packaging to create a mono stream is one of the big advantages of biodegradable packaging. Unfortunately, in an interview with Laura van de Voort (2015) she mentioned that the current biodegradable materials are not composting as fast as food waste. Biodegradable plastics have to compost in specific conditions, which has to be facilitated by waste management companies. Not every waste management company has those facilities. This causes that biodegradable material currently ends up in the mixed waste stream and eventually in the incinerator. It means that it will not be converted into compost.

Bio Futura is a company specialized in sustainable disposables. According to this company, biodegradable plastic/materials benefits festivals, because it is possible to collect and process biodegradable packaging together with food waste. Bio Futura admits that biodegradable packaging takes a little bit more time to compost than food waste, but from their contacts and observations at waste management companies they dare to say that almost every Bio degradable packaging is currently composting together with food and organic waste. The turnaround

time or cycle is fast enough to be able to compost together with the food waste. The time that takes biodegradable packaging to compost is within the time norm En-13432, except for thicker biodegradable packaging. The leftovers of these thicker parts will afterwards be burned in the incinerator. [23]



Figure 24 Image of biodegradable disposables.

Another critic by Reeskamp (2015) is the fact that biodegradable plastics are not supporting people to throw their waste in the trash bins. On the contrary it is even stimulating the behaviour of people to throw their waste on the ground. Reeskamp's reason for this is that people think that biodegradable materials can be thrown into the nature without damaging the environment. As mentioned before biodegradable materials need special conditions to be transformed into compost.

Other critic is that during the production of raw materials a lot of non-sustainable pesticides and fer-

tilizers are used. On top of that people are wondering if using agriculture to produce raw materials for biodegradable products instead of food for people is the right thing to do. [24 and 25]

Still, visitors are supporting the composting of food waste and biodegradable packaging. According to research of A greener festival (2012) 86% of the visitors are supporting the composting of food waste. [21]

### Hemcell.

Hemcell is a new material developed by a Dutch company. This material is completely biodegradable within 6 months under home compost conditions. [23] The material consists of 50% PLA and 50% biomaterial. The biomaterial is consisting of side products of agricultural waste. Hemcell prevents the use of any land intended for food agriculture, by using the side products of agricultural waste. This revolutionary material can be used for injection moulding in lower temperatures than other plastics. The price for producing Hemcell is around the same price as PLA. Therefore, it is suitable for mass production for festivals. One of the disadvantages is that Hemcell is not usable for producing thin foil packaging.

The used biomaterials are shipped from continents like Africa, South America and Southeast Asia. One of the critics is that this long distance transport is not sustainable for the environment. [26 & 27]



### Re-usable Packaging.

Dutch festivals are not using re-usable packaging very often. Re-usable packaging is mostly made out of hard thick plastic, porcelain, steel and wood. Mostly these packaging are going along with a deposit system or traditional restaurant system. This deposit system means that visitors have to pay an extra amount of money to use the packaging. They will receive their money back, when they retrieve the packaging. According to AGF and NBU a majority of 68.5% of the festival visitors are willing to use a system with re-usable cups. 65.5% of the festival visitors would be happy to pay a deposit on reusable cups and glasses. Still 17.7% of the visitors will not be happy to pay a deposit. [21]



Figure 25 Image of hard cups used at ITGWO.

One of the sustainable advantages of this system is that it reduces the amount of plastic waste created on festivals. Which has been proved by ITGWO festival with their hard cups system. [3] It is strange that most current festivals and festival eateries are

not using this system of re-usable packaging, when almost 70% of the visitors are willing to pay and use this system. One of the reasons for not implementing this system is the fear of a decreasing sales volume by eateries and beer suppliers. Eateries and beer suppliers expect visitors to have a negative experience with the price hike and the collecting of cups before bringing it to the bar. The deposit system with hard cups at ITGWO has proved that this is not the case for a festival like ITGWO. The sales volume did not decrease.

The disadvantages compared to disposables are the higher chance of spreading diseases and the increasing costs for eateries and festivals. Increasing of costs are caused by the fact that eateries have to hire dishwashers and equipment/machineries to clean the re-usable packaging. Costs are increasing, but on the other hand festivals create an improvement of their total experience by having less waste on the ground. [3]



Figure 26 Image of re-usable packaging

### Husk Biodegradable re-usable packaging.

Husk is a re-usable biodegradable packaging. This type of packaging has the same advantages and disadvantages as normal reusable packaging. Yet the advantage of Husk differs from biodegradable disposables. This biodegradable reusable packaging consists of 80% of husks of riced and 20% lignin. These husks of rice will normally be burned or thrown away after production of rice, now this material is been used for making this material. This material is washable, heat resistant and safe for use of food like regular reusable packaging. Secondly, the critic of Reeskamp (2015) that sustainable packaging stimulates behaviour of throwing waste on the ground is not applicable when you use a deposit system along with these reusable packaging. This all looks very promising for the future. Unfortunately, Husk is not applicable in the current system of waste management. According to Wouter Moekotte of Bio Furtura, Husk takes around three years to be transformed into compost within industrial conditions. The standard for compostable products is three months. [28 & 29]



Figure 27 Image of HUSK

### **Packaging Developments.**

This sub-paragraph will show the current packaging developments.

#### *Edible packaging.*

A company named Wikifoods developed a packaging, which is edible. This packaging is made out of natural materials, like the skin of grapes. This packaging can only be used around small food bites to protect it from the environment. It is not applicable for packaging like tableware, cups or another type of packaging at festivals. [30]. Another example of edible packaging is the coffee cup made out of cookies or the munch bowls made out of edible materials. [31 and 32] These packaging have as an advantage, that it reduces the waste if visitors ate the packaging. The question is if visitors are going to eat the packaging? From my own experience with edible packaging I can say it is not really tasteful.



Figure 28 Image Edible packaging of Wikifoods

The critics of Govert Reeskamp that biodegradable packaging stimulates festival visitors to throw their waste on the ground also applies on biodegradable edible packaging. People will probably think when packaging can be eaten it can also be thrown into the nature.

#### *Self-opening packaging.*

A Swedish company called Inventia made in collaboration with Tomorrowmachine a packaging out of smart materials. This packaging opens itself by being exposed to a certain temperature. Smart materials are materials, which can change enormously in shape by external factors. [33]



Figure 29 Image of self-opening packaging

#### *Self cleaning plate.*

Swedish company named Tomorrowmachine developed a super-hydrophobic coating on the dishware that repels dirt and water. Thereby it is possible that the plate cleans itself. Yet some critics say you cannot use hydrophobic materials with food. [34]



Figure 30 Image of self cleaning plate

#### *Oil package.*

A package made of caramelized sugar, coated with wax. To open it you crack it like an egg. When the material is cracked the wax no longer protects the sugar and the package melts when it comes in contact with water. This package is made for oil-based food. [35]



Figure 31 Image of oil packaging



**Conclusion.**

The role of eateries has influenced the way of serving food. Every eatery tries to offer a different experience. This experience, appearances and feel of eateries do influence the choice of packaging. Like luxurious look and feel leads to more use of packaging. The current lack of communication between festival organisations and eateries and the enormous amount of different packaging used by eateries is not stimulating to the solution of the current waste problem.

Every type of packaging has their advantages and their disadvantages. From a sustainable perspective we can say that biodegradable disposables and re-usable packaging are giving us the potential to make the festival world more sustainable. These are the packaging types that have the highest potential to be implemented into a circular system. Still factors like, what types of waste management companies are in reach for festivals, the lack of agreements with eateries, waste management by festival organisations, types of festival visitors, profits of eateries and the current behaviour of festival visitors are influencing the choice of type of packaging. These factors should be considered and improved while making choices of what type of packaging eateries and festival are going to use.

	<b>Advantages</b>	<b>Disadvantages</b>
<b>Plastic disposables</b>	<ul style="list-style-type: none"> <li># Decreasing change of spreading diseases</li> <li># Reducing cost</li> <li># Recyclable</li> </ul>	<ul style="list-style-type: none"> <li># Only able to recycle when delivered in a mono stream</li> <li># Enormous volume in proportion of the weight of the produced waste</li> </ul>
<b>Cardboard disposables</b>	<ul style="list-style-type: none"> <li># Decreasing change of spreading diseases</li> <li># Reducing cost</li> <li># One material</li> </ul>	<ul style="list-style-type: none"> <li># Waste management companies cannot recycle carton packaging that has been used for food.</li> </ul>
<b>Biodegradable disposables</b>	<ul style="list-style-type: none"> <li># Decreasing change of spreading diseases</li> <li># Reducing cost</li> <li># Compostable</li> <li># Can be throw away together with food.</li> </ul>	<ul style="list-style-type: none"> <li># Only able to be transformed into compost when delivered in a mono stream.</li> <li># Stimulating the behaviour of people to throw their waste on the ground.</li> <li># Only compostable in special conditions.</li> </ul>
<b>Hemcell</b>	<ul style="list-style-type: none"> <li># Decreasing change of spreading diseases</li> <li># Reducing cost</li> <li># Compostable under normal conditions</li> <li># Can be throw away together with food.</li> </ul>	<ul style="list-style-type: none"> <li># Only able to be transformed into compost when delivered in a mono stream.</li> <li># Stimulating the behaviour of people to throw their waste on the ground.</li> </ul>
<b>Re-usable packaging</b>	<ul style="list-style-type: none"> <li># Reduces the amount of waste</li> <li># Improving total experience</li> </ul>	<ul style="list-style-type: none"> <li># Increasing change of spreading diseases</li> <li># Increasing cost</li> </ul>
<b>Husk</b>	<ul style="list-style-type: none"> <li># Reduces the amount of waste</li> <li># Improving total experience</li> </ul>	<ul style="list-style-type: none"> <li># 3 years before transformed into compost</li> </ul>

Figure 32 Advantages and disadvantages of the different packaging types

## Trends and developments, current solutions and technical developments

In this paragraph the latest trends and developments about waste management on festivals and the technical developments are described.

### **Trends and developments.**

#### *Stimulating sustainable behaviour of visitors.*

According to UMEF there is a transition going on in the festival market to stimulate the sustainable behaviour of visitors. For example, we observed that festivals like DGTL are trying to encourage visitors to separate their waste. For example, the concept of Helden van Nu is a method in which they want to stimulate sustainable behaviour. This method is used by Extrema outdoor, Solar festival and DGTL. [36]



Figure 33 Picture of Trash team at DGTL

#### *Trash Army*

A trash army is a collective of volunteers, which helps festivals picking up waste. As reward for their hard work, volunteers receive a free ticket for the festival. One of the biggest suppliers of those volunteers is the charity named Helden van Nu. This is a charity started by a company named Entropt. They offer the Dutch festival markets the opportunity to use volunteers that clean up the festival areas. The volunteers have a P2P communicational function on top of the function of cleaning up the festival area. Their task is to communicate with other visitors about being responsible and thereby trying to stimulate their sustainable behaviour. [37 and 6]



Figure 34 Picture of human powered energy at DGTL

#### *Increasing awareness of sustainability of visitors.*

More and more festivals like DGTL and ITGWOW are trying to increase the awareness of sustainability. By showing and demonstrating new sustainable solutions. Like for example ITGWOW who are showing do solar energy panel's power work and DGTL who

are demonstrating human powered lightning, by letting people ride on a bicycle.

#### *Fining festival visitors.*

A Belgium festival decided to fine their visitors when they throw waste on the ground. This method is controversial and in contradiction with the opinions of experts like Laura van de Voort. [38]

#### *Stimulating waste separation.*

In our daily society most of the Dutch citizens are separating their waste. 51% of our waste has been separated. [39] Citizens become aware of the importance by commercials of the government. At festivals it has not always been this way. According to Laura van de Voort, you see a development among festival to become more active on waste separation with the green deal. Festivals like DGTL are already trying to facilitate trash bins backstage for waste separation

### **Current technological developments and solutions.**

#### *Hardcup system.*

The hardcup system is not a complete new system or development. Yet this solution is a good system to decrease the amount of plastic waste created on festivals. Plastic cups are the biggest problem currently. Hard cup system is a system with hard plastic cups that is linked with a deposit system. In Germany is this system becoming a standard. In the

Dutch festival market only a few festival are using this system. As described in previous paragraphs the expectation of decrease in sales is a reason it is still not implemented in the Dutch festival market.

#### *Perceptual Plastic Project.*

This project of five TU Delft students created in 2012 a new Design. This design is a machine, which gives people the possibility to produce a material out of their plastic waste, which can be used for a 3d-printer. From this material they produce 3d printed products. For example rings. The crushing of plastic cans into the fibres is done by manpower. The components of this machine that are using electricity are the 3d printer, the cleaning, drying of plastic and melting of plastic fibres. This project is on such a small scale, that it only has been used as a promotional tool. In this way they try to create awareness for the plastic waste problem. [40]



Figure 35 Picture of perceptual plastic project at DGTL

#### *DGTL Trash bin.*

This is a Trash bin created by Dutch Music Festival DGTL and Dutch artist Dirk van der Kooj. It is made of recycled plastic created out of old plastic cups and bottles of their own festival and during plastic fishing in the Amsterdam canals. These trash bins are been put back on the area they organize their festival. In this way they give something back towards the surrounding environment.

#### *Interactive Trashbin.*

To stimulate people to separate their waste, 4 students from Breda have developed an interactive trashcan. By throwing trash into the trash bins certain umbrellas are lightning up. They are symbolic for flowers. At the same time a water jet out pops out of the trash bin. The message is to keep the park clean, so nature can fully bloom. [41]



Figure 36 Image of the Interactive trashbin

#### *WECUP.*

Wecup is an interactive installation whereby people can take a public stand on urban, social and cultural issues with their waste. It is designed for festivals and open-air events. People can throw their plastic cups in the bin with the statement they agree on. [42]

#### *R3D3.*

Is a trash bin, which separate waste by itself. It divides three different materials by using infrared technology. It divides plastics bottles, metal cans and plastic cups within the trash bin it self. Inside the trash bin it compresses the cans, cups and bottles. Therefore it will fit for almost more than 200 bottles, 500 cups and 700 cans. [43]



Figure 37 Image of Wecup



#### *Food waste rocket composter.*

A new mobile composter that decrease the time of composting of food and gives companies the possibility to compost their food. So they can use this compost in their garden or bring to their suppliers. [44]

#### *Dehydra food waste dewatering systems.*

Dehydra is a food waste dewatering systems, which reduce the volume and weight of food waste. The reduction in volume can be as great as 80%, which contributes significantly to lessening your collection and disposal costs. [45]

#### *The Dragon food.*

The Dragon, transforms food waste into energy biomass process. It takes food waste and creates a valuable resource, biomass fuel. The dried food fuels the plant, which generates heat and hot water. This can be connected to one or more of eateries heat or hot water demands, the production of hot water reduces the amount eateries need to spend on fossil fuel supply, gas or electric for heating your water. [46]

#### *Waste separation of mixed streams.*

Omrin is a waste management company, which has a brand new technology. With this technology they are able separate several materials from a mixed waste stream. Even plastic can be separated in this machine. [47]

#### **Conclusion.**

Many of the current technological developments are focused on stimulating waste separation of plastic cups. Unfortunately are these developments on a small scale and will not solve the plastic cup problem. The only real solution for this problem with plastic drinking cups can be found in the hard cup system. This hard cup system has already proven to be a real solution at the ITGWO festival. Still technological developments like the food composters and waste separation of mixed streams are giving us much potential in the future. Waste separation of mixed streams, creates the possibilities to limit the amount of pre separation needed to create these mono waste streams.



Figure 38 Image of the food waste rocket composter



Figure 39 Image of the dehydra food waste dewatering system



Figure 40 Image of the the dragon food

## Festival Visitors

As said before we need visitors to solve the waste problem. Therefore, it is useful to have an understanding of the current festival visitors. In this paragraph we are looking at the current behaviour, attitude and motives of festival visitors. In this way I tried to get a better understanding about the current festival visitors.

### General motives to visit a festival.

Visitors have motives to visit a certain festival. Several studies have been done into motives. Harry van Vliet (2012) has combined those studies and came up with four general motives[7], which are:

#### 1. Novelty.

Visitors have a desire to experience new and novel things. The reason for this desire is because visitors have the need to experience excitement, adventure and surprise, so they can prevent boredom.

#### 2. Escape.

People have the need to escape from their daily life. At festivals people have the freedom to create a new world on their own with new norms and values, which differ from their daily life.

#### 3. Socialization.

Visitors have a desire/need to interact with other people in a group. Therefore, they are visiting festi-

val to have a good time with friends or they are visiting to meet new people and find a group of people (external socialization).

#### 4. Family Togetherness.

Visitors have a desire to experience new things with their family and spend time together with their family.

### Attitude towards sustainable behaviour.

In 2012 A Greener Festival and the New Bucks University did research among 2300 festival visitors all around Europe. They asked visitors several questions about their attitude and behaviour towards sustainable subjects. 86.6% of the visitors say they are willing to separate their waste when separated recycle bins are provided.

In the same report of AGF & NBU Claire O'Neil, general secretary of the Association of the Independent Festivals said "Whilst 86.6% of fans say they will recycle – we know that a substantial minority – probably one in five – leave tents and other camping gear behind at festivals which causes a huge headache for organizers – and the environment."

From this statement we can take into account that a significant number of people are answering these questionnaires with socially desirable answers instead of their real answer. Or it might be that the conditions to throw waste away are not provided in the right way.

According to AGF and NBU 68.5% of the visitors are supporting the use of re-usable cups, plates and glasses. 65.5% of the festival visitors would be happy to pay a deposit on reusable cups and glasses, but 17.7% will not be happy.

86% of the visitors are supporting the composting of food waste. According to AGF this give event organizers the possibility in collaboration with bars and stall holders to implement friendly practices, which is being accepting by a large majority of the visitors. [21]

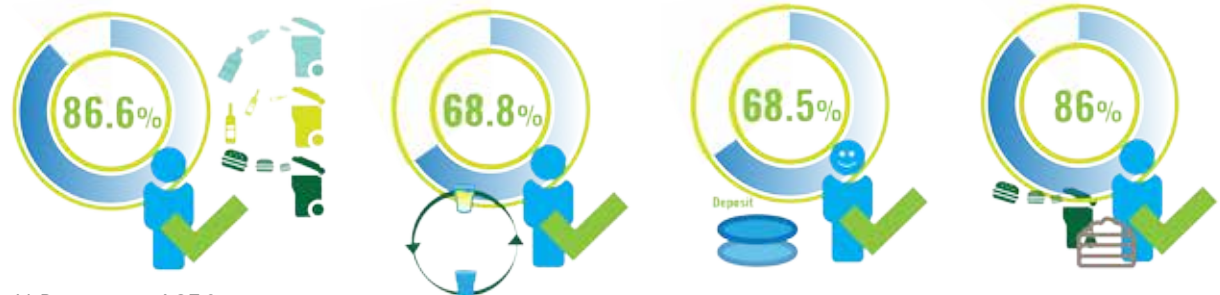


Figure 41 Percentages AGF Survey

### **Current behaviour.**

Observational research at DGTL festival and Here Comes The Summer festival has been done to get insights about the current behaviour of festival visitors. The focus in this project is on food waste; therefore the observational research is focussed on the eating and sustainable behaviour of festival visitors. In this paragraph we will describe the findings and assumptions of my own interpretations of the observations on the two separate festivals. This means that the findings are partly subjective. Observations were done by filming, photographing or writing in a notebook while observing. Whole research is placed in Appendix C

### **Eating behaviour.**

*Food like hamburgers and wraps were eaten with their hands.*

A lot of people eat food like hamburgers and wraps by hand. They do not use the added cutlery.



Figure 42 Picture of eating visitors at DGTL

*A high percentage of people eat while standing.*

A lot of people are eating their food while standing. One of the reasons of this behaviour is that DGTL did not facilitate enough sitting places.



Figure 43 Picture of standing eating visitors at DGTL

*Most people eat while socializing in groups.*

Most people were eating in groups and a lot of socializing was going on while eating.

*Most people split up and have a meeting point to eat together.*

The many choices of food offered make that people want to eat different types of food. Therefore, people split up and gather at a meeting point.

*Eating while sitting on the hill watching a performance*

While eating visitors also wanted to see the performance at the festival. Another reason that leads to this behaviour was that there were not enough seats at the tables.

***“ I am not gonna sit there, because you can not see the stage***

***““***

*Random Visitor*

*Small snacks were mostly eaten by hand, while standing.*

Small snacks like spring rolls were eaten out of hand without any cutlery.

*Cutlery forces people to sit at a table.*

Food served with cutlery forced people to eat at tables.



Figure 44 Picture of an eating visitor on top of the hill at HCTS



### Different eating moments.

There are four different types of eating moments. These four are breakfast, lunch, dinner and snack moments.

#### Breakfast.

Breakfast is usually not been done at the festival areas but at the camping areas. Food like sandwiches, croissants, coffee etcetera are typical food that people prefer during breakfast.

#### Lunch.

Lunch moments are mostly happening at the festival areas. During those eating moments people decide to eat a more complete meal.

#### Snack.

These moments are mainly happening between Lunch and Dinner. This snack moment is mainly consisting of eating a small snack while watching a performance. These are eaten while standing or sitting.

#### Dinner.

Dinner moments are mostly happening at the festival areas. During those eating moments people decide to eat a complete meal.

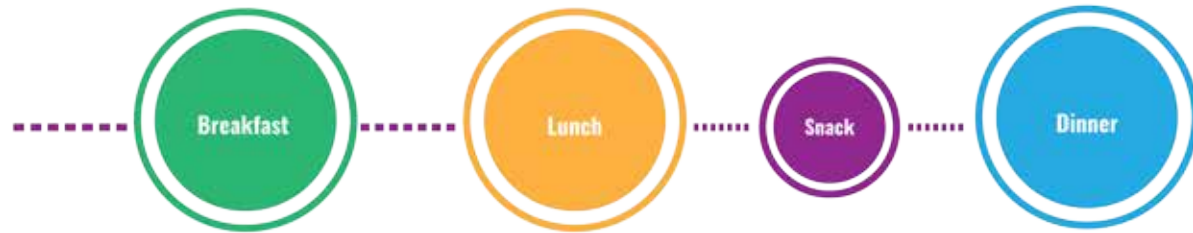


Figure 45 Four eating moments

### Sustainable behaviour.

#### Trash teams have a positive influence on the behaviour.

When trash teams were picking up waste in front of the visitors, visitors were inclined to show the right behaviour. Multiple times when trash teams were passing by tables people brought their waste to those teams. Sometimes visitors saw the trash teams picking up waste. From that moment on a lot of visitors had a small eureka moment. Like, 'oh I forgot to throw my waste away and picked it up'.

#### Turning their back towards the dining table increases the change of leaving waste on the table.

Visitors were sometimes socializing while turning their back to the table. In this way they could easily communicate with other people of the group. This distraction increases the possibility that people forget they had trash left on the tables. During HCTS summer the reason visitors were turning their back was also caused due the fact that visitors wanted to have a good view on the performing artist.

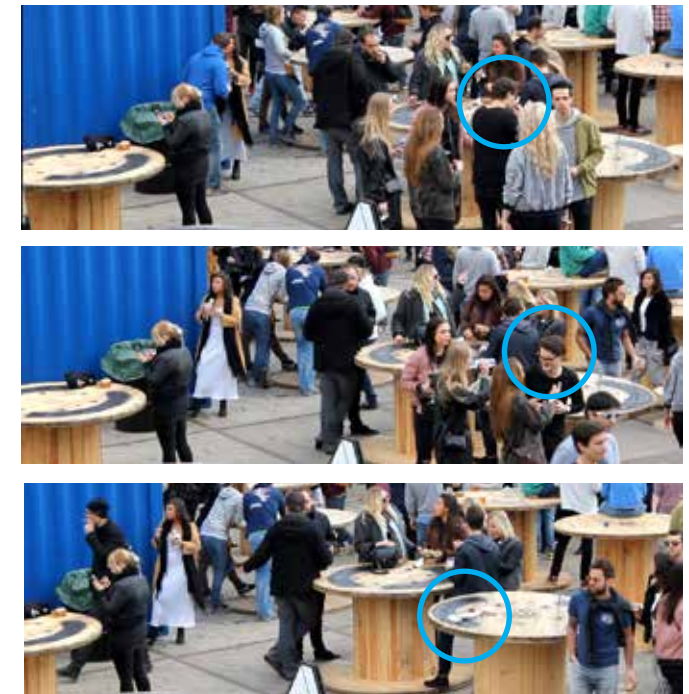


Figure 46 Screenshots of video footage, whereby the person in the black t-shirt turns his back towards dining table.

*Dirty table leads to increase of unsustainable behaviour.* Visitors who were sitting at a dirty table were more likely to let their trash behind on the table.

*In general festival visitors behaved pretty sustainable on HCTS.*

Festival visitors were already throwing a lot of trash in the trash bin. The reason could be that the festival was in the middle of a forest and therefore people felt obliged to throw their trash into the bins. On top of that the Festival organisation facilitated a lot of trash bins and ashtrays.

*Children throw trash away because of social pressure of parents.*

Children were mostly forced by their parents to throw their trash away. Multiple situations happened whereby children were done eating and wanted to walk away. Yet parents told their kids to clean up.



Figure 47 Picture of eating family at HCTS

*People squeezed and cram their waste before throwing away.*

People were squeezing and cramming their packaging before they threw it away; mainly to make it as small as possible, so it was easy for them to carry it towards the trash bin.

*Tables are bigger obstacle than distance.*

One incident happened, whereby a woman could throw her trash into a bin 1,5 meter away from her. In between was a table; she made the choice to throw her trash into a bin five meters further away without any obstacles.

### **Conclusion.**

Visitors are most likely to visit a festival to discover novelty, escape from daily society and to socialize with friends or family. Socializing with friends and family is important during their eating ritual. The eating behaviour of visitors is influenced by many factors, for example the amount of choices influence the way people are meeting. The use of cutlery, the amount of available dining tables and the view can also influence the eating locations.

Visitors have a positive attitude towards sustainability, and they are definitely open to transformation of the current festival system. Still visitors were not always behaving like they said they would. During DGTL a number of people were not separating their waste properly or even not throwing their waste away. The observations led to several insights; social

pressure and the ambiance of an environment are influencing the behaviour of visitors. Like the fact, that dirty tables or turning their back can lead to unsustainable behaviour. I must say that on DGTL and HCTS people were definitely behaving more sustainable than on a general festival. From my own experiences on Dour, Sziget and many dance events, I can say that the behaviour of just throwing waste on the ground is dominant. Even on festivals like DGTL and HCTS a lot of improvement of behaviour is needed.



## How to influence behaviour.

Visitors are currently not behaving sustainable enough. Therefore, festivals are not being able to create the needed mono waste streams. As previously described, the stimulation of behaviour is important for festival organisations. Therefore, we want to know how we can stimulate and influence the behaviour of people. In this paragraph we look at several theories of social psychological research done on human and sustainable behaviour. There will be a description in the end of this paragraph about the different directions and factors that designers can use to positively influence the behaviour change.

### **Planned behaviour.**

Icek Azjen has developed a theory whereby beliefs and behavior are linked. Changes in performing intended behavior is influenced by the strength of the intention. How higher the intention the more likely people will perform the intended behavior. The following three factors have an influence on the intention of a person: subjective norm, attitude towards the behavior, and perceived behavioral control. [48]

### *Subjective norm.*

Is the pressure and influence from the social environment. The social environment can consist of family, friends, colleagues etcetera.

### *Attitude towards the behaviour.*

This means if the person believes in their behaviour.

### *Perceived behavioural control.*

The perceived behaviour control means that people are evaluating and predicting if their intended behaviour is possible to perform within the conditions.

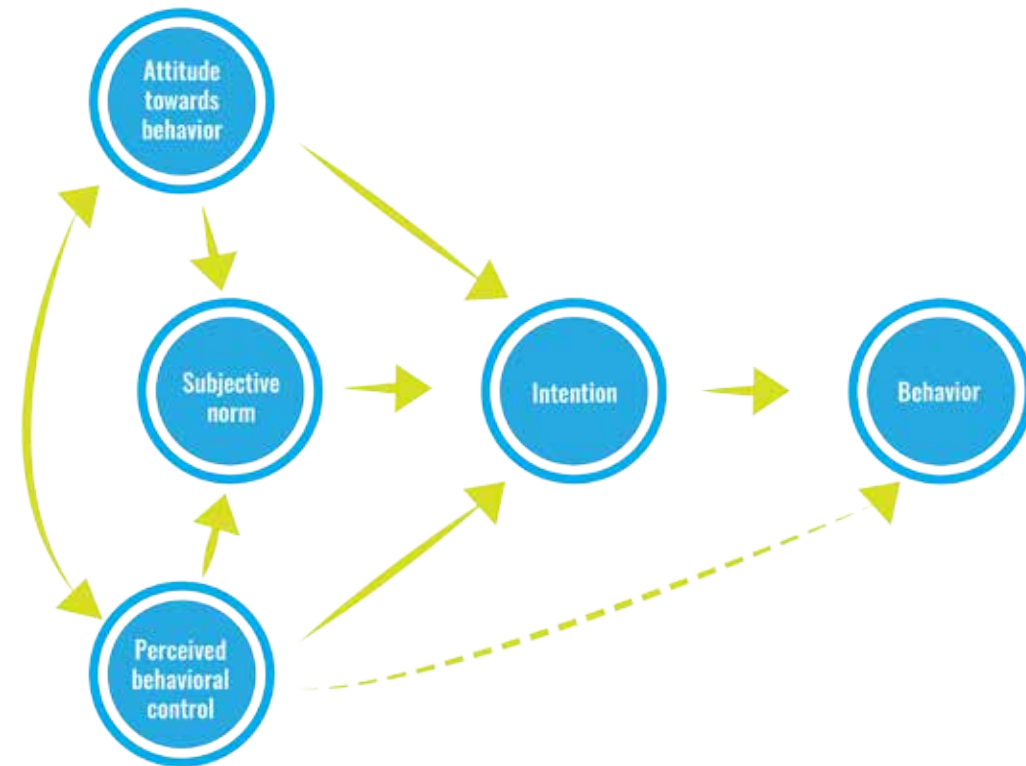


Figure 48 Model of Planned Behaviour by Azjen

### Four bricks of behaviour.

Behaviour can be separated into conscious behaviour and unconsciously behaviour. The conscious and unconscious behaviour is influenced by three different factors: Individual factors, social environment and physical environment. [49]

#### Individual Factors.

Human behaviour is influenced by personal beliefs and lifestyles. These beliefs arise by their norms and values that they develop during their life. These personal beliefs are called attitude. People's lifestyles and attitude create a certain perception of the world. These perceptions have an influence on the behaviour of people. Other individual factors like physical limitations, stress or inattention are able to influence behaviour.

Still there are several rules, which hold for the majority of human beings. These are:

#### # Not to many options.

The more options people have to choose, the more difficult the decision is to make. People like to keep it simple and prefer less choice.

#### # Better to err on the side of caution.

People like to know what is going to happen. Therefore people like to choose the safest option.

#### # Prefer existing things to new things.

People are comfortable with existing things.

#### # Sooner than later.

A decision which gives immediately benefits is preferred rather than a decision which has benefits on the long term.

#### Social environment.

The social environment influences people. The social environment consists of parents, friends, government etcetera. This social environment of a person has certain norms and values. These norms can be divided into prescriptive and descriptive norms. Prescriptive norms are norms that tell what people should do. These norms are commonly used to stimulate desired behaviour, like sustainable behaviour. A descriptive norm is based on the behaviour, which is shown by most people. Whether it is good or bad does not matter. The society does not let people know that their behaviour is problematic, when most of the people show certain behaviour. Descriptive norms have a way bigger influence on the behaviour of people than prescriptive norms.

According to Cialdini (2001) [50] there are 6 social principles that influence behaviour.

#### 1. Reciprocity.

People are likely to return a favour, when someone did a favour for them.

#### 2. Social proof.

When most people are showing certain behaviour other people are tended to copy this behaviour. This

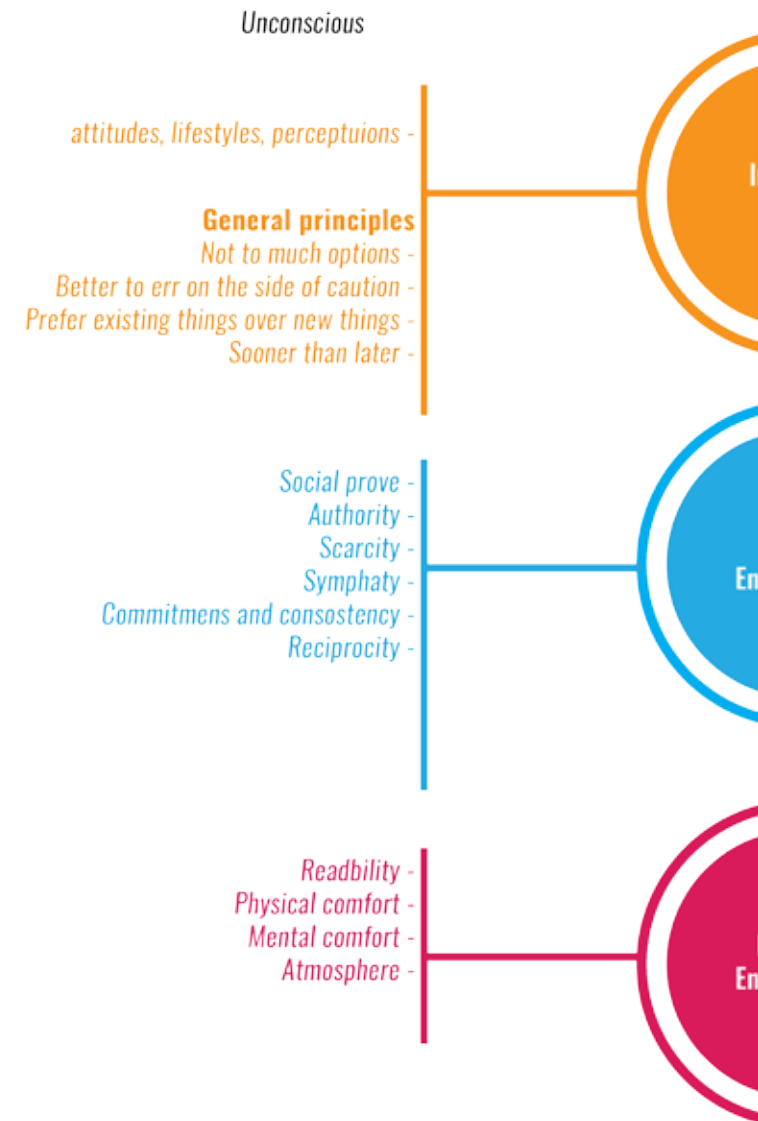
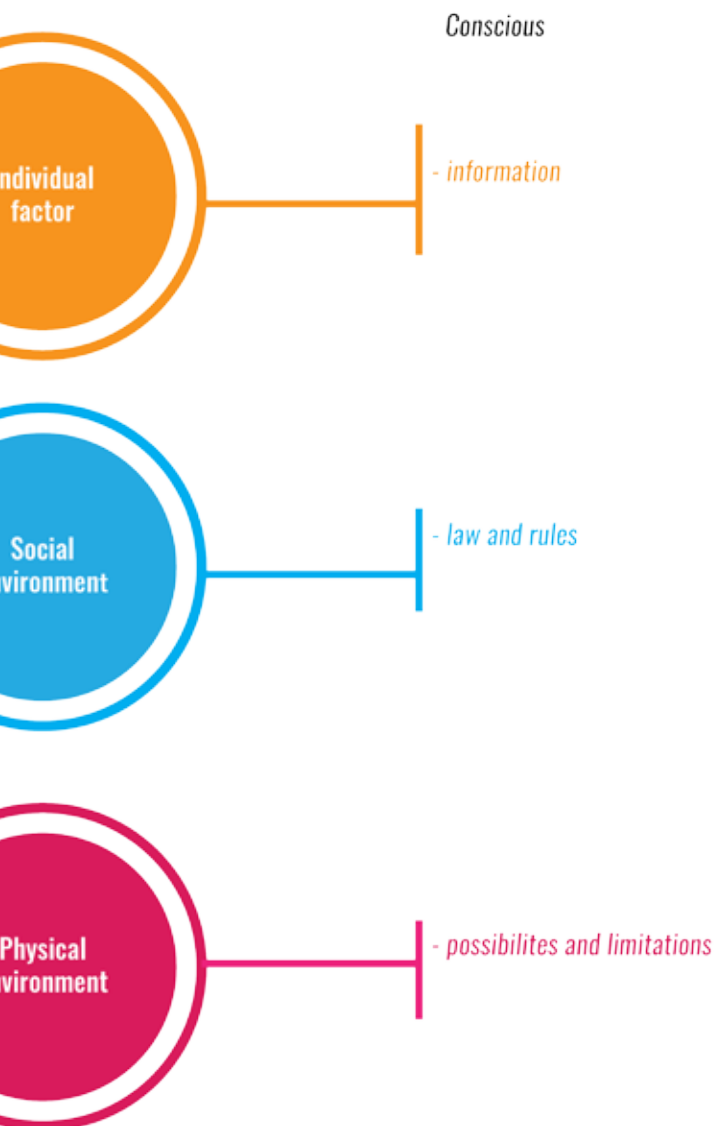


Figure 49 Four bricks of behaviour model.



is the influence of the descriptive norm.

### 3. Authority.

People like to listen to people with more authority about certain topics, such as for example to doctors or lawyers.

### 4. Commitments and Consistency.

When people are committed to a certain opinion they will behave towards this commitment. People are consistent in their behaviour and will not easily change their behaviour, because they committed to it.

### 5. Liking/sympathy.

People are most likely to be more influenced by people they like.

### 6. Scarcity.

When something is rare or scarce it has to be good. People believe that things that are rare or limited in time are more important than other things.

### *Physical environment.*

The physical environment influences people. This happens in a conscious or unconscious way. There are at least three factors in our environment, which influence our behaviour. These are readability, ambience and convenience.

### 1. Readability/Convenience.

The surrounding area is giving people signals,

which are influencing the behaviour in a conscious or unconscious way. When an environment is not ordered or chaotic it has a different influence than when people have a good sight and overview on the environment. People like to have control and to know what is happening; therefore, they prefer an environment with a good overview.

### 2. Ambiance.

The Ambiance of an environment is very important. It influences the physical and mental comfort of people. Like for example, people tend to feel more welcome in a clean, light shop with happy colours. It can also be the other way around. When trains are covered with graffiti and there is a lot of trash in the train people will not feel comfortable with the environment. A dirty environment leads to a negative feel/ambience, which leads to negative behaviour. A positive ambience leads to positive behaviour.

***“In contrast, approaches based on “changing contexts” - the environment within which we make decisions and respond to cues - have the potential to bring about significant changes in behaviour at relatively low cost “*** (Paul dolan, etc, Mindspace, 2011) [51]

### Goal Framing,

Goal-framing theory is a theory of Lindenberg and Steg. They distinguish three different frames: Hedonic goal, Gain goal and Normative goal frame. [52]

#### Hedonic goal frame.

Hedonic goal frame activates one or more sub-goals that promise to improve a person's feel in a particular situation. It has a short time horizon. This includes avoiding effort, negative thoughts, direct uncertainty or seeking direct improvements in self-esteem and excitement. The goal of the showed behaviour is to improve the way a person feels.

#### Gain goal frame,

The goal of the behaviour shown is to improve, prevent or decrease in one's resources or efficiency of resources. It has a middle or long time horizon.

*“ For example, if a particular spray that is environmentally harmful is cheaper than the environmentally sound spray, a person in a gain goal frame will choose the former simply because it is cheaper. Sub-goals having to do with resources (such as saving money, increasing one's income, dealing with threats to one's financial security), will be easily activated, but sub-goals having to do with the way one feels and with normative behaviour (see below), are pushed into the cognitive background. “ Linderberg and Steg, 2007)[55]*

***“ These frames give a indication what people attend to, what knowledge and attitudes become cognitively most accessible, how people evaluate various aspects of the situation, and what alternatives are being considered. “ Lindenberg and Steg, 2007 [55]***

#### Normative goal frame.

According to Lindenberg and Steg(2007) the normative goal frame activates all sorts of sub-goals associated with appropriateness. Such as behaving the right way, contributing to a clean environment, showing exemplary behaviour. Normative goal are based on the norms that a society or individual creates. Some norms can only be created when an individual has enough knowledge about a certain topic. These norms are called smart norms. So when people want to behave appropriately but they have a lack of knowledge, they are more likely to go with the more selfish motives than the normative goal.

*“ The kind of intrinsic motivation needed for pro-environmental behaviour is more likely to be obligation-based (which is linked to a normative goal-frame) ”  
Linderberg and Steg, 2007)[53]*

#### Influences.

According to Pelletier, L. C., Tuson, K. M., Green-De-mers, I., & Noels, K. (1998) [54] People are more likely to engage in sustainable behaviour when they experience pleasure and satisfaction by acting sustainable. This can be placed into the hedonic goal frame. Hedonic goal-frames are affecting behaviour more strongly than normative goal-frames. Yet the intrinsic motivation needed for sustainable behaviour is linked to a normative goal.

Figure 50  
Goal Framing





## **Gamification / Persuasive Game design.**

As described in the previous paragraph people are more likely to behave sustainably when they experience pleasure and satisfaction. According to Valenti-jn Visch are immersive and enjoyable two dominant experiential qualities in the game world. [57] So this indicates that the use of the persuasive game design can be a possible solution to let people experience pleasure and satisfaction while acting sustainably. Persuasive game design is a design aiming to change the users behaviour in the real world by creating a user-experienced game. A person is driven by the same motivational needs in the real world as in the game worlds. Like the need for autonomy, competence and social relatedness govern his behaviour. To change the user experience by creating a user-experienced game they implement gamification. Thereby designers can apply game elements on real world attributes to create a user experienced game-world. According to Visser, van der kooi(2013) games can change behaviour in the game world and in the real world. The enjoyable and immersive game world can help, motivate, or persuade users to behave in ways they experience as difficult in the real world Yet the transfer from the game-world into the real world has to be made. There are three main design methods to make this transfer from the game world to the real world. [55 and 56]

1) *Sudden change*, in which there is no transfer. The game world experience functions as a prime for the behaviour in the real world;

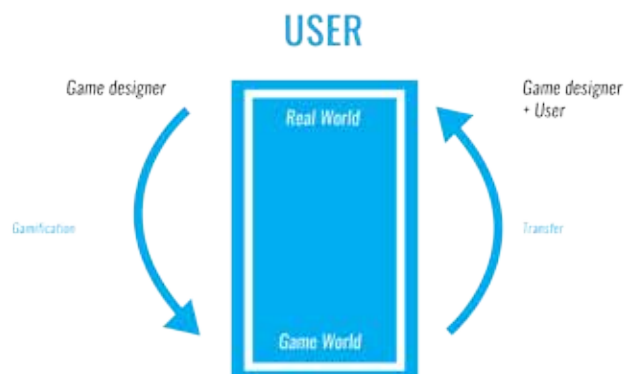


Figure 51 Persuasive Game Design Model by Valentijn Visch

(2) *Gradual change*, in which the game world dissolves gradually into the real world and vice versa. The game world may (a) finally vanish into the real world (dissolve) or (b) parts of the game world may remain present in the real world.

(3) *Adaptive change*, when the level of transfer from the game world into the real world is dependent from the actual user's behavioural change in the real world.

**Transfer = Effect of user experienced game world on forming, altering, or reinforcing user-compliance, -behaviour, or -attitude, in the real world.**

Behavioural change of people can be achieved by stimulating their intrinsic motivation or extrinsic motivation. By stimulating intrinsic motivation you

have a higher chance that people are repeating your desired behaviour. [57] The critics on using extrinsic motivation is when you stop rewarding people their behaviour is changing back to their old behaviour. Yet according to Zicherman & Cunningham(2011) [57], when extrinsic motivation is designed in a good way it can feel intrinsic for the user. In this way by using extrinsic motivation you can trigger the intrinsic motivation.

*"Intrinsic motivations are those that derive from our core self and are not necessarily based on the world around us." (Zicherman & Cunningham, 2011) [58]*

*"Extrinsic motivations are driven mostly by the world around us, such as the desire to make money or win a spelling bee". (Zicherman & Cunningham, 2011)[58]*



Figure 52 Gamification Bartle Model, 1996

***“ Gamification is not about the reward but about the hunt. “***

*(Rutger Teunissen 24 sessions, 2013) [59]*

**MINDSPACE.**

MINDSPACE is a checklist of influences on our behaviour when making policy made by Institute for Government in England. The checklist consists out of nine influences. [60]

<b>Messenger</b>	<i>We are heavily influenced by who communicates information</i>
<b>Incentives</b>	<i>Our responses to incentives are shaped by predictable mental short cuts, such as strongly avoiding losses</i>
<b>Norms</b>	<i>We are strongly influenced by what others do</i>
<b>Defaults</b>	<i>We 'go with the flow' of pre-set options</i>
<b>Salience</b>	<i>Our attention is drawn to what is novel and seems relevant to us</i>
<b>Priming</b>	<i>Our actions are often influenced by subconscious cues</i>
<b>Affect</b>	<i>Our emotional associations can powerfully shape our actions</i>
<b>Commitments</b>	<i>We seek to be consistent with our public promises, and reciprocate acts</i>
<b>Ego</b>	<i>We act in ways that make us feel better about ourselves</i>

Figure 53 Mindspace checklist



**DEFRA MODEL.**

Is a model for realization of behavioural change made by the Department for environment food a rural affairs. It is based on the 4E's. Enable, Encourage, Engage and Exemplify. [61] This model is more useful on a management level.

*Enable.*

Make it easier

*Engage.*

Get people involved.

*Exemplify.*

Demonstrate shared responsibility

*Encourage.*

Give the right signals

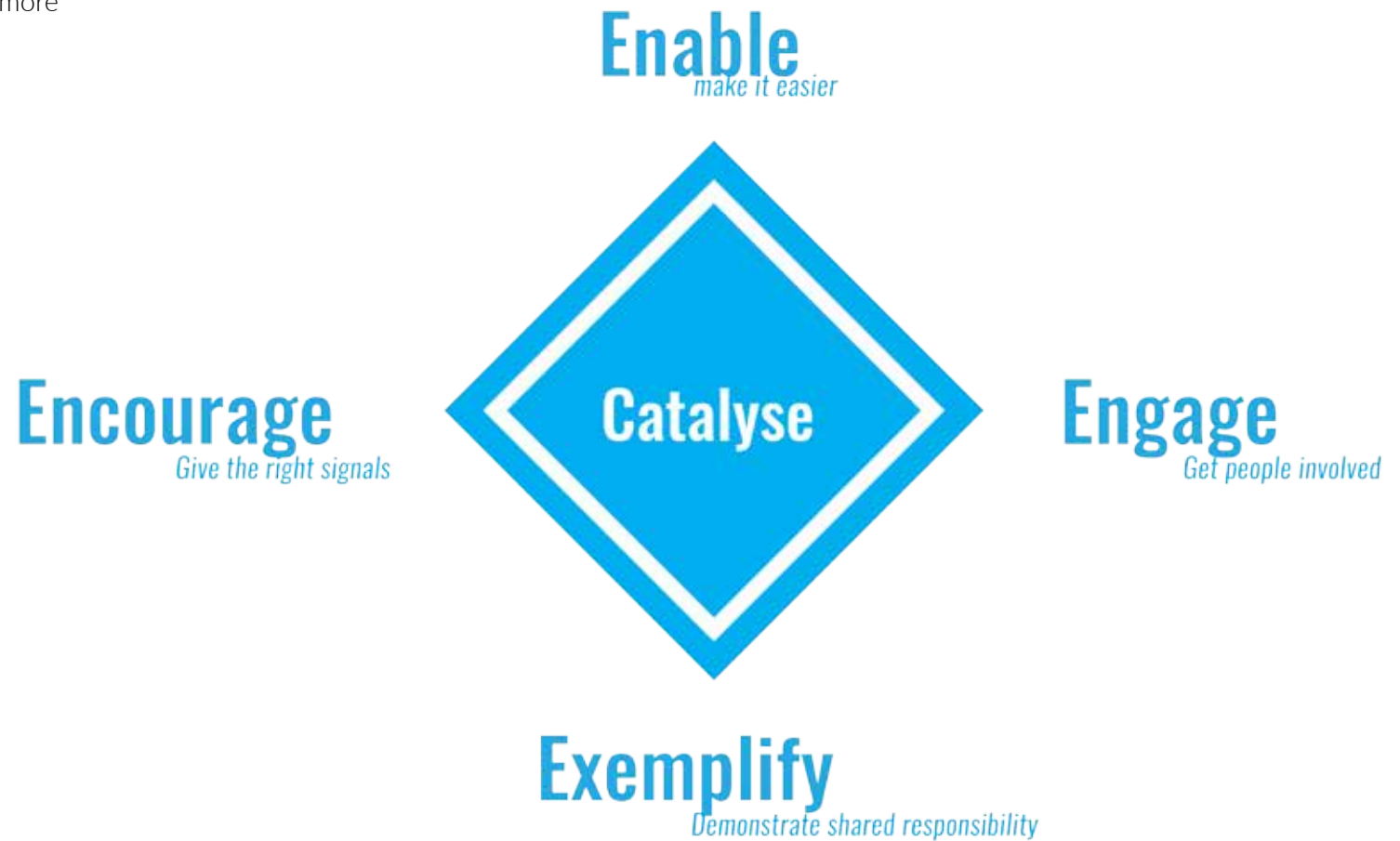


Figure 54 DEFRA Model

## **Conclusion.**

As described before there are many factors that influence the behaviour of people. Azjen showed us that by stimulating the intention you increase the changes that people behave in the right way. In figure 55 you see all the theories in a combined model. In this conclusion we describe the different direction in which we can have an influence on as a designer.

### **Stimulating the Hedonic goal.**

As we have read before, festival visitors have a positive attitude towards sustainable behaviour. A positive attitude is not always enough. Other factors like the goals can negatively or positively influence this attitude towards behaviour. As described before when people are experiencing pleasure or satisfaction (hedonic) while acting sustainable they are more likely to perform their intended sustainable behaviour. By stimulating the hedonic goal, we can increase this positive attitude towards the intended behaviour. Hedonic goals are dominant and have a bigger influence on the attitude than normative. So people will have a higher intention of behaving the right way by stimulating the hedonic goal of the behaviour. Stimulating the hedonic goal can be accomplished by implementing persuasive game design / gamification into your design. Whereby you use game elements to add pleasure and satisfaction while acting sustainable. Whereby you can focus on the three general motives autonomy, social relatedness and competence.

Stimulating perceived behavioural control

Secondly we can influence the behaviour by stimulating the perceived behavioural control. We can stimulate the perceived behavioural control by creating the right environment for people. Creating the right environment can be accomplished in two different ways.

### **1. Creating the right ambiance for physical and mental comfort.**

Visitors experience there surrounding as positive when people feel mental and physical comfort. Therefore they will believe that their intended behaviour fits with the situation and is more likely to be achieved.

### **2. Increasing readability and conveniences.**

By increasing the readability and conveniences you let people feel that their intended behaviour can be easily accomplished. They will have a feeling that the surrounded environment is supporting them to perform their intended behaviour. In this way people are more likely to behave the right way.

### **Avoid or anticipate on general principles.**

General principles can negatively influence the intention of the behaviour. Therefore it decreases the change that people are performing the right behaviour. By taking these principles in account you can increase the changes of people behaving sustainable. For example people do not like too much options. So you can increase the change of people performing the sustainable behaviour by limiting the

amount of waste separation options.

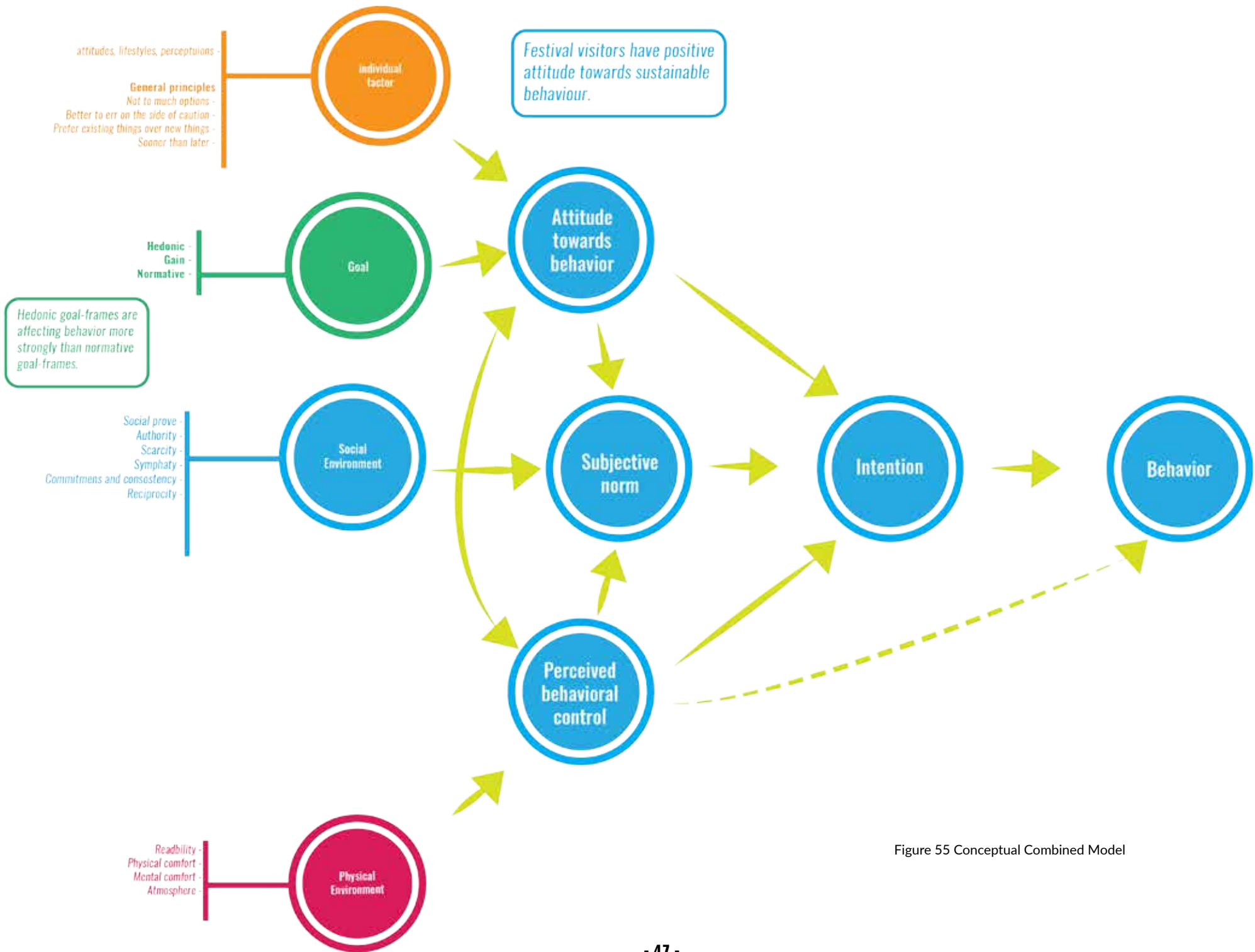


Figure 55 Conceptual Combined Model

## Ideal eating environment

As mentioned before creating the physical and mental comfort is important to increase the change that people are going to behave the right way. Visitors are most likely to experience a physical and mental comfort in their ideal eating environment. During HCTS I used context mapping to find inspiration and insights on which factors are important to create this ideal eating environment. The method together with the transcript and clustered quotes can be found in appendix D I found several factors, which can be important to create this ideal eating environment. These factors are:

### *In the moment.*

Visitors like to eat while able to stay close to performances and be able to watch performances. These performances can be a music artist, but also playing children. In this way visitors do not have to leave the intense moment they were experiencing.

### *Relaxed.*

Eating is a moment of rest, peace and relaxation for visitors. People do not want to be overwhelmed by stimuli from everywhere. This means people like to sit down so their legs can relax.

### *Accessible.*

Visitors like to have things easy accessible. Therefore trash bins, food eateries etcetera should be accessible and visible during visitors eating ritual.

### *Balanced Choices.*

People like to have balanced choices of food. This means a balance in the type and quantity of food one offers. This balance of type of foods can consist of fast, culinary, biological, fish, meat, and vegetarian. With quantity visitors mean that they do not want to have too much, but also not too little choice.

### *Cosy.*

Visitors like to have a cosy ambiance while eating. Things like warm comfortable place and small interactions with the chef can already increase this cosy ambiance.

### *Comfortable.*

Visitors like to have a certain level of comfort. This means enough seating places, enough personal space around them and no waiting lines.

### *Clear.*

Visitors need clear and good communication with what eateries have to offer. This communication is not only about signing. Look and feel of the eateries is also important to communicate their food.

### *Ambiance fit with festival.*

Look and feel of the eateries and their environment should fit with the general experience of the festival.

### *Easy.*

Food has to be served in such a way, that it can easily be carried and been eaten.



## Case: Into The Great Wide Open

During my interview with Govert Reeskamp of Into the great wide open (ITGWO) we discussed the possibility to apply the design process to the ITGWO festival. ITGWO together with Lab Vlieland were interested in the design process and eventually the end result. Especially because they tackled the problem of plastic cups, but want to improve the food waste problem, which is still present in their current situation. In this paragraph we will give an introduction about the festival, their visitors and explain their sustainable policy.

### **The festival.**

ITGWO is founded by several programmers and booking agents of several music venues. The festival is located on Vlieland and it takes place 4th till the 6th of September. Vlieland is an island, which is located in the north of the Netherlands and is part of the seven-wadden islands. ITGWO has a maximum capacity of 6000 visitors and facilitates 3 music stages, art program and a children program. In addition to that, the visitors can visit several other activities at the beach or forest.

ITGWO has three shortcomings. Firstly logistics wise

the island is the most clumsy location in whole the Netherlands. You have to travel by boat and it is located in the most northern part of the Netherlands. Secondly, the whole island is a Natura 2000 area which means that every aspect has to be ecological approved. Thirdly, the festival has a capacity of only 6000 visitors, which has the consequence that the festival cannot make any serious profit. The area together with the good music and art program makes this festival unique. The festival organization wants the visitor to experience their festival as relaxed and reposed. Thereby, the organization programs its music in such a way that people can stay at one area and do not have to rush to see another performance. In addition to that the creation of curiosity for the island is important for the organization. They would like visitors to visit other locations than their festival locations. [3]



Figure 56 Vlieland

### **Three Areas.**

ITGWO consists of three different areas on the island. These three locations are the Forest, Fortweg and main area.

### **Main Area.**

The main area is located at the sport fields of Vlieland. It has capacity of 4500 visitors. It facilitates the main stage, two water tap points and around 15 eateries/bars.



Figure 57 Main Area

### **Forest Area.**

The forest area has the capacity for around 1500 visitors. It facilitates 1 eatery and 1 bar.



Figure 58 Forest Area

### Fortweg Area.

The fortweg is located in the dunes of the island. It has a capacity for around 1500 visitors. It facilitates 2 eateries and 2 bars.



Figure 59 Fortweg

### Visitors.

Around 90% of the ITGWO visitors are 26+ and 3% of the visitors are children between the ages of 0-14. The biggest age group is 31-35 with 24% and secondly with 22% the group of 41-50 years. The ITGWO visitors are relatively older than visitors of most other music festivals. In their research among 811 participants 87% has a degree in higher education.. High-educated people are in general more conscious about sustainability and their environment. 86% of the visitors are visiting ITGWO because of the total experience of the festival and 86% of the visitors visit because of the ambiance. This indicates that creating this total experience of the festival and the ambiance is of great importance for the festival organization.

Regarding food, 76% of the visitors eat lunch on the festival areas and another 85% have diner. Therefore, we can assume that the eateries should have a capacity for 85% of the visitors. [62]

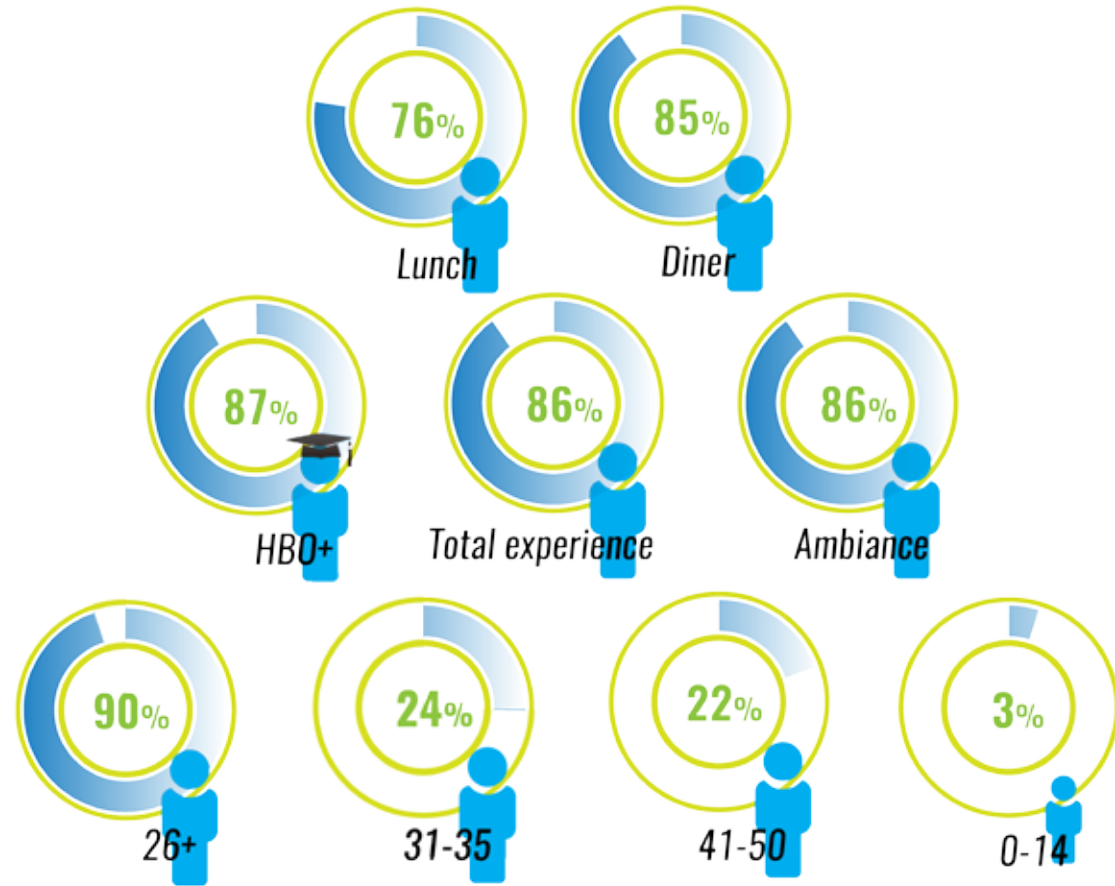


Figure 60 Statistics of ITGWO visitors

### Visitors complains.

Every year ITGWO has an online questionnaire for their visitors. A comment section is included in this questionnaire. The participants of this online questionnaire were able to write down the positive and negative points about the festival. The results from this comment section are as followed;

(Quotes I selected can be found in appendix E)

#### *Expensive food.*

In general visitors are very satisfied about the quality of the meals. Still the price is in their opinion too high.

#### *Waiting lines are to long.*

The waiting lines are to long at the forest and dune location. The reason is, according to visitors, that ITGWO does not provide enough bars and have slow bartenders. This leads to irritation.

#### *No good eating location provided at the forest location.*

Particularly at the forest location, there are not enough tables and seats to eat at.

#### *Eateries at the forest location were not easy accessible.*

Location of eateries at forest was on top of a hill. Not easy accessible for people.

### Sustainable policy.

This paragraph will explain the sustainable policy of ITGWO. First we explain the relationship between

ITGWO and Lab Vlieland.

### Role of ITGWO and LAB Vlieland.

Lab Vlieland was created to house the sustainable projects of ITGWO. In the last years the role of Lab Vlieland has changed. Lab Vlieland is now more focused on solving the big transitions of a linear economy towards a circular economy of the whole island. Thereby they use ITGWO as a place where they can test their new inventions. ITGWO and Lab Vlieland are focusing on five sustainable factors: energy, logistics, public transport, water and waste.

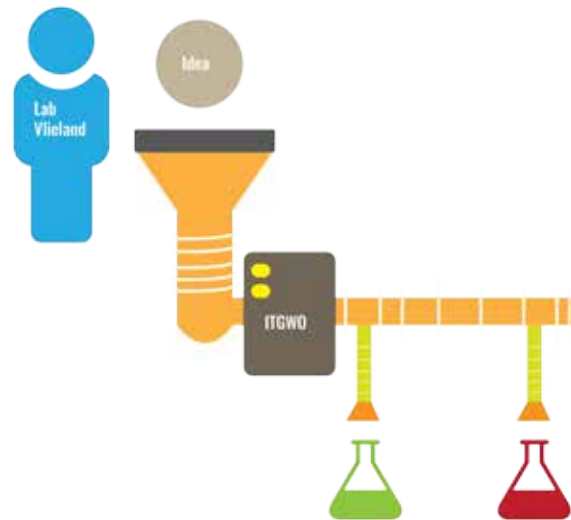


Figure 61 Lab Vlieland - ITGWO

### Intrinsic motivation.

As described before, ITGWO is almost impossible to organize. Yet the organization succeeded to tackle

those problems. According to Reeskamp the reason that they succeeded is the intrinsic motivation of the people that are working, building and participating at the festival. ITGWO is not applying a tight policy, which is driven on statistics. The key to their sustainability is their intrinsic motivation. This intrinsic motivation gives the organization a possibility to implement certain solutions easier. When ideas are a even slightly related to economic responsibility the ideas are pretty fast implemented.

***“ To sell a crazy idea within our organization is not that hard. So changes are easily been made. It is a flat organization, with a motivation coming from the heart. When something feels good you already accomplish a lot. And if it is a bit economically responsible, than you can complete it”***

Govert Reeskamp

### **Energy.**

ITGWO is focused on reducing the amount of energy use and implementing green energy as much as possible. They currently use the system of a smart grid to get a clear overview of their energy use. In the future they want to implement green battery cars or solar panels to supply their power.

### **Logistics.**

ITGWO is trying to make the logistics more efficient. Several solutions are implemented like for example putting different suppliers in one truck. This causes less use of the boat and this leads to less CO2 emission.

### **Public Transport.**

During the festival ITGWO implemented electric transport. ITGWO have collaborations with Tesla and Renault. These electric busses are only used for this week. They tried to change the mind states of chauffeurs about electric transport. In this way it becomes easier for the local government to implement the electric transport on their island.

### **Water.**

By supplying free water taps they want to stimulate people to not buy any water bottles from the supermarket. In this way they solve part of the waste problem and are stimulating the healthy choice of drinking water.

### **Waste policy.**

This project is focussed on the waste problem. Therefore, I choose to explain ITGWO's waste policy more in-depth. Waste is a big problem on the ITGWO festival. ITGWO wants to improve their waste policy and the waste policy of the island. The current waste policy is focused on reducing and separating waste. As described before, ITGWO has signed the green deal to have zero waste policy in the future. Lab Vlieland thinks from the island perspective, therefore they have to work together with the local waste management company. This local waste management company has not the capabilities to process green waste and is relatively expensive. Lab Vlieland is currently trying to solve this problem by working together with the architectural office 'de Namen', which is working on a mobile composting box. This box can facilitate the process of composting green waste and is odourless.

### *Reducing waste.*

ITGWO is working on reducing its amount of waste and is trying to reduce the waste on the ground. One of its solutions is a hard cup system. Later on will come back to this hard cup system. Other actions of ITGWO are trying to work as efficient as possible with materials while building the festival by having a good procurement policy for its festival. By facilitating trash bins the organization tries to reduce the amount of waste on the ground. Other implementations are the use of volunteers to clean up areas.

### *Separating waste.*

ITGWO is currently separating its backstage and production waste. ITGWO separate wood, paper, glass, compostable parts and construction waste. The waste created by the visitors is not separated. Like almost every other festival, ITGWO is not facilitating separate trash bins. In its future vision ITGWO wants to implement separate trash bins at all the locations.

### *Omrin post separation.*

Omrin is the waste management company of Vlieland. Omrin has a brand new technology with which it is able separate several materials from a mixed waste stream. Even plastic can be separated in the equipment Omrin developed. ITGWO does not have to separate any plastic waste, because of this technology. [47]

### *Stimulating sustainable behaviour.*

As mentioned before, ITGWO strongly believes in intrinsic behaviour. It would like to stimulate people to change their sustainable behaviour. Currently it tries to do this by showing and demonstrating sustainable solutions like solar panels. The festival organization strongly believes it is important to stimulate visitors to reuse products as much as possible. Increasing the life length through reuse is according to the model of circular economy a good solution for mechanical materials. That is why 3 years ago ITGWO chose to implement a Hard Cup system.



### Compost project.

The ecological core value of the island is an arid landscape; thence that ITGWO cannot dump their compostable materials into the nature. ITGWO has come up with a plan to build a greenhouse. In this way it can control the compost at the island and will it not change the core value of the island. The organization is currently cooperating with a company named De Namen. This company is designing a mobile compost compartment whereby there is no nuisance. De Namen is going to promote its home compost bin on the festival.

### Hard cup system.

Currently ITGWO is one of the few Dutch festivals that works with a reusable hard cup system. This hard cup system goes along with a deposit system. A deposit system means that visitors have to pay an extra amount on top of the normal price to receive the hard cup. Visitors will get this money returned when they retrieve the hard cup. The deposit amount for one cup is worth one coin. The advantage of this system compared with the current system of plastic disposables, is the fact that it reduces the amount of plastic waste.

After ITGWO implemented this system, the amount of waste on the ground decreased enormously and the service value of the festival increased. A disadvantage compared with plastic disposable system is the increase of costs. This is caused by the fact that the festival organization has to hire dishwashers and dishwashing facilities. As mentioned before ITGWO is driven by intrinsic motivation, therefore the decrease of waste on the ground is more valuable for the organization than the increase of costs.

The beer supplier was afraid of an enormous decrease of sales volume, caused by the deposit amount. However, the deposit system did not result into a decrease of sales volume. The festival made even surprisingly profits. This was caused by the fact that some of the visitors took the hard cups to their home. The price of the deposit is higher than the purchase of the cup. The high value of the cups also has a downside. ITGWO has to store the cups in a safe place; otherwise people can steal the cups. In the first year of implementing the current system the organization got some adaption complaints of visitors, but in the second year the amount of complaints dropped.

In terms of logistics, the new hard cup system is less efficient than the system with plastic disposables. The washing streets are located at a nearby sport accomodation, so ITGWO has to transport the hard cups from the other two locations towards this

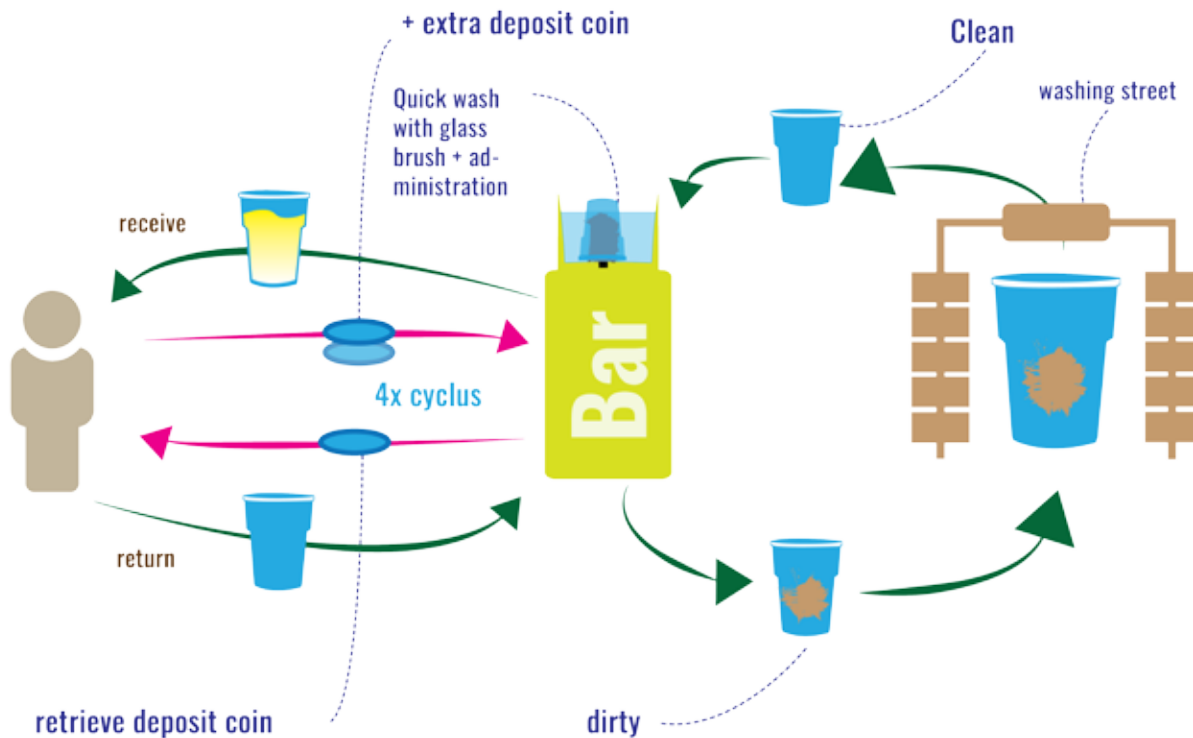


Figure 62 Hard cup system

accomodation.

The hard cup system is decreasing the efficiency of bartenders. Plastic disposables were normally located in front of the bartender. In these conditions the bartender is able to work fast. The volume and financial value of the hard cups makes it necessary that cups have to be put behind the bartender wich makes it less efficient.

Another point to tackle for the ITGWO organisation is the administration and creation of a failure proof system for the cash flow. Currently the returning of the cups is happening at the bar. The ideal situation

### **Eateries at ITGWO**

Eateries at ITGWO differ from many other festivals. In this paragraph we explain the current situation of eateries at ITGWO

#### *Locations of eateries.*

As mentioned before ITGWO consists of three different areas. At the Sport accomodation there are around 15 eateries. The forest location contains one restaurant and one bar, and the dune location contains one restaurant and two bars.

#### *Food Menu.*

Eateries at the ITGWO do not serve fast food meals, like a bag of frites. ITGWO has special food programmers who together with the eateries select a menu. The menu of the eateries must have restau

rant quality. This menu is balanced with local, biological and culinary meals, which fit the core values of ITGWO. [3]

#### *Framework eateries.*

Like mentioned before ITGWO is serving food with culinary qualities. Therefore are the meals at ITGWO mostly served with re-usable tableware. Terraces on the Sport accomodation are located close to the eateries. These terraces have a capacity to facilitate dinner places for almost every visitor. The organization is trying to limit the amount visitors that walk with their food towards other locations by using terraces and reusable plates .Therefore they try to limit the waste problem to the borders of the area intended for eateries. Other locations like the forest location and dune location have less capacity. [3]

#### *Current Packaging.*

The type of packaging differs a lot between eateries. Like mentioned before ITGWO policy is based on intrinsic motivations; therefore they do not want to force eateries any waste policy. By giving briefings about its core values ITGWO tries to stimulate and help eateries in their decision-making. Eventually the eateries have a free choice of what type of policy and appearances they want. The festival is implementing joint purchasing; thereby they increase the efficiency of transport. The organization of ITGWO would prefer that all the eateries used the same reusable packaging [3]

#### *Waste policy.*

The current policy consists of facilitating trash bins and people that clean up the terraces. It does not facilitate trash bins to separate waste. Therefore the possibilities to recycle materials are not possible. Still backstage food waste is collected by eateries and transformed into compost. ITGWO is already trying to create this sustainable mind state during the conversations and meetings with the eateries and are discussing the waste stream. But there is not a real policy. [3]



Figure 63 Framework Eateries

### **Conclusion.**

ITGWO is a festival, which has a sustainable mind state. In corporation with Lab Vlieland it is the innovator and early adopter of sustainable solutions In the Dutch festival market. It started with the introduction of electrical transport and applying a hard cup system. The problem of food waste also occurs at this festival. Therefore, this festival is suited to have this collaboration for this project.

Combining the knowledge about the current packaging, the importance of limiting the amount of material types and the current waste policy of ITGWO lead to a recommendation of a future system for eateries at ITGWO. This recommendation is an ideal situation.

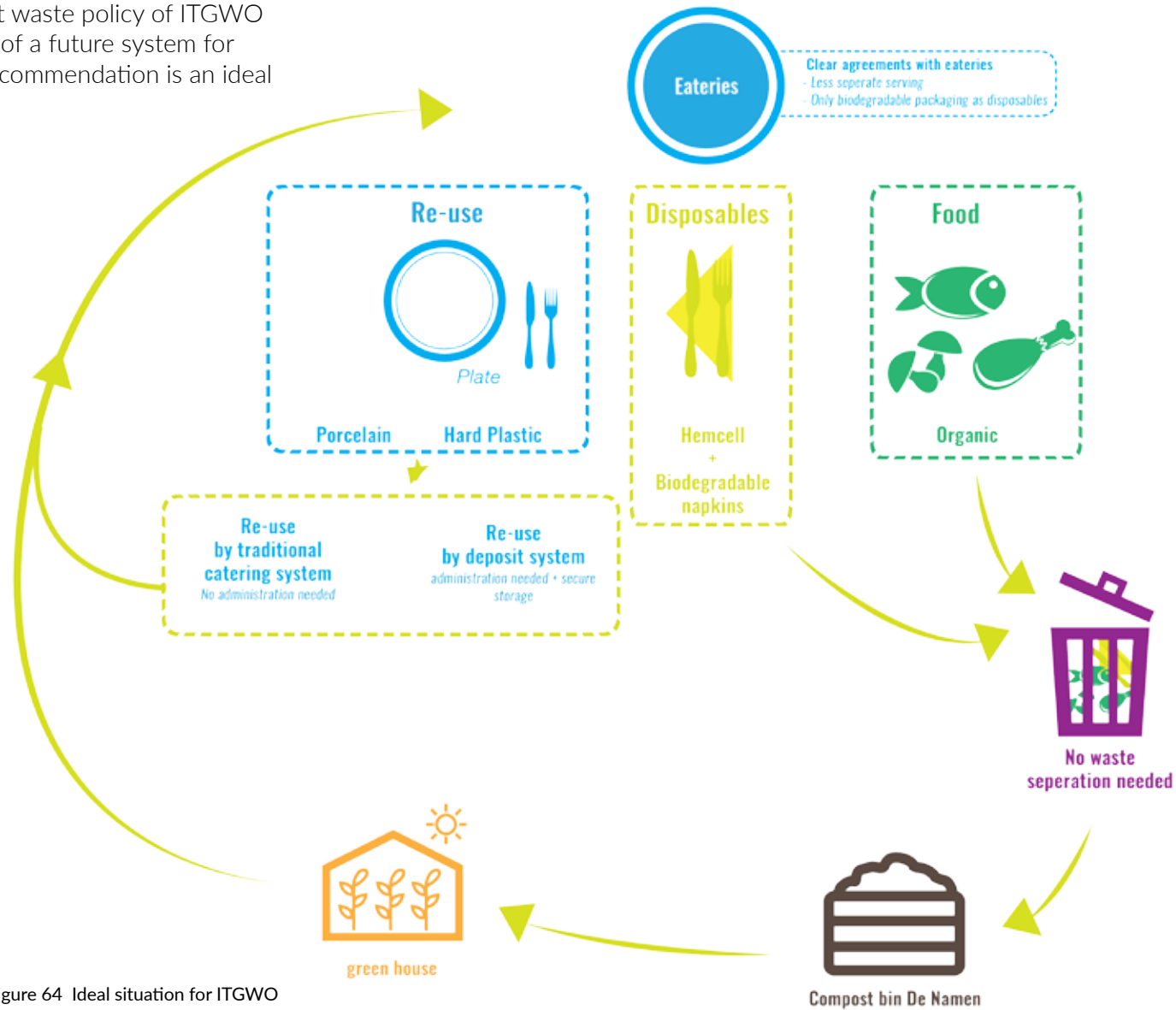


Figure 64 Ideal situation for ITGWO

## Conclusion Chapter 2

29% of the environmental damage on Dutch festivals is caused by waste. Food and drink related waste is one of the main causes of this environmental damage and negative impact on the festival experience. The green deal between several Dutch festivals is indicating that a movement to solve this waste problem is growing. Therefore it is interesting for Schaalwerk to come up with designs and solutions towards this problem. Festivals have to create a mono waste stream, to solve this waste problem. In this way festivals make it possible to create a circular material stream. The current waste management of festivals, facilities of waste management companies, management of eateries and the current behaviour of visitors are not providing this mono waste stream. According to specialists Laura van de Voort en Govert Reeskamp are visitors the key to solve this waste problem. Visitors can solve this waste problem by separating their waste. Unfortunately is the current behaviour of visitors not sustainable at all. Therefore we need behavioural change of the visitors. This behavioural change can be achieved through stimulating the hedonic goal, stimulating mental and physical comfort, increasing conveniences and readability of the environment or avoiding general principles. Together with limiting the amount of materials by making agreements with eateries and facilitating waste separation at eateries are festivals capable of creating these mono waste streams. ITGWO is a good partner for further development of the project. ITGWO's waste problem is mainly caused due food related waste. Lab Vlieland

and ITGWO are interested and both organisations are flexible enough to apply a pilot.



# CHAPTER 3

## DESIGN SPECIFICATIONS

The requirements and wishes in this chapter are based on the previous analysis and research. The requirements are divided into the segments waiting and ordering, eating, disposing, retrieving. These segments are based on the eating ritual of visitors.

## Requirements

### *Waiting & Ordering.*

- Design should allow customer to understand easily what eateries have to offer.
- Customer has to experience comfort while ordering or waiting for their food.
- Design should prevent customers to be intrusive while waiting.

### *Eating.*

- Design should provide customer feel relaxed and reposeful while eating.
- Design should provide customer be able watch performance while eating.
- Design should provide customer to stay as close as possible at performance.
- Design should provide customer to eat in a cosy environment.

### *Disposing.*

- Location of the trash bins should accessible and easy to identify.
- Design should make it possible to dispose trash easily.
- Design should provide customers to understand easy and clearly which type of trash belongs in

which compartment of the trash bin.

- Design should provide no obstacles between trash bin and customer.
- Trash bins should only provide a maximum of three different compartments for separation.

### *Retrieving.*

- The location for retrieving re-usable packaging should be accessible and easy to identify.
- Design should make it possible to place re-usable packaging easily.

### *Overall.*

- Feel and look of the design fits with festival ambience.
- Design should provide enough seating places.
- Environment should be readable for the visitor.
- Location of eatery should be accessible.
- Design should not be promoted as sustainable towards visitors.
- Design should not feel obligatory.
- The amount of different materials used by eateries

## Wishes

should be decreases as much as possible.

- The amount of separate serving should be decreased by eateries as much as possible.
- Every customer should be able to sit comfortable with his or her food.
- Customer has to experience pleasure and satisfaction while acting sustainable/deposing waste.
- While retrieving re-usable packaging customer should experience pleasure and satisfaction.
- Design should stimulate the intrinsic motivation.
- Visitors should get inspired instead of educated.
- Food should be eaten easily.
- Design prevents people to sit with their back towards the table.

# CHAPTER 4

## IDEA GENERATION

During the idea generation phase I used the method of HKJ's ('how can you...') and Mind maps. The questions were based on the requirements and wishes written in Chapter 3 and the scenario of eating on a festival. The HKJ's, the mind maps and drawings of the idea generation phase can be found in the Appendix F On top of that a one-hour brainstorm session with freelancers and interns of Schaalwerk has been held.

The outcome of these mind-maps and brainstorm sessions resulted in a number of ideas. Some of these ideas were combined into concepts. The concepts are described in this chapter

## Concept 1. Your waste is our food

This concept is inspired by games like Tamagotchi and Farmville. It is based on the game elements achieving, growing, teamwork and social relatedness. This concept tries to stimulate the intrinsic motivation of visitors with these game elements. A virtual environment will grow and blossom when visitors separate their waste and retrieve their plates. As a result of the growing environment, a virtual animal population will increase, become more happy and active in this virtual world.

The growing status of this virtual environment is displayed with levels and percentages. The virtual environment reaches a new level by achieving 100% on the status bar. This stimulates the intrinsic motivation of people. Visitors will not only receive positive feedback on the screens, but will also receive a positive, motivational sound message, spoken by the characters on the screen. This motivational message stimulates the feeling of satisfaction while acting sustainable. The virtual world will decrease in population when visitors are not separating their waste. Visitors will then receive a negative sound message. This will let people experience negative emotions like guilt or shame.

The concept includes a trash bin. The trash bin consist of three compartments. Each compartment has to collect a certain type of material. The colour of the packaging and compartments are linked. In this way it will be clear and easier for visitors to identify the right trash bin for their waste.



The screen above the trash bin will show regularly updates and messages towards the eating visitors. These updates consist out of positive or explanatorily messages.

The virtual world will also be broadcasted on a big screen in the middle of the festival area. The big screen should grab the attention and interest of people. In this way the concept creates awareness about the virtual world. The screen also provides information about music, food, artist, art, and time-tables. Besides they can provide ambiance videos of the festival area's and activities.

The animal characters of the virtual world can be used as an entertainment tool for the children program at the festival. Like for example by making a digital animation movie. Such a movie can learn children about the environmental issues in a positive and fun way.



Figure 65 Scenario and visualisation of concept 1





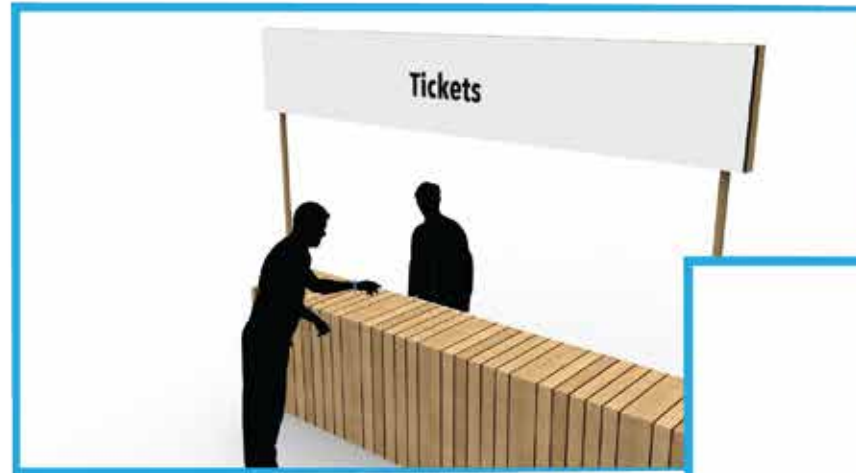
## Concept 2. Battle of the colours

This concept is inspired by the books of Harry Potter and a design of the company One Second. The concept tries to stimulate visitors to separate their waste by stimulating their intrinsic motivations with game elements, like achieving, competence, team-work and social relatedness.

The concept starts from the moment when visitors are entering the festival. Every festival has a system whereby visitors receive a bracelet as prove that they bought a ticket. Visitors will be randomly divided into two teams by giving them a red or a blue bracelet. The colour of their bracelet decides in which team they belong. Each visitor is able to score points for their team. The total score of the teams are shown on mobile screens. The concept provides an opportunity of competence by dividing the visitors in to two teams. This competence is an intrinsic motivation for people to behave in a certain way. Visitors can increase the score of their team in multiple fun and playful ways.

A centre game field will be provided at every eatery location at a festival. Sitting platforms and eateries surrounds these game fields. This field facilitates games where visitors can increase the score of their team. Visitors will receive a ticket when they separate their waste. This ticket provides an opportunity to participate in one of the activities on the game field, for example tug-of-war.

As previous concept 1, the material colours are



linked with the compartment colours. So it will be clear and easier for visitors to identify the right compartment.

This concept goes a long with a re-use system for cutlery and plates. To stimulate visitors to retrieve their plates and cutlery the field facilitates two retrieving games. Visitors can score points for their team with these retrieving games. The dining plates are functioning as Frisbee. These Frisbees can be thrown into a wall with holes to score points. The cutlery, like knives and forks can be thrown into a huge foam wall to score points.

This concept is integrated with a traditional ticket system to get rid of the traditional waiting lines. It give visitors the opportunity to wait in a relaxing environment before they order their food. The sitting platforms give the possibilities for visitors to wait comfortable and pleasant on their food while being entertained by other visitors playing games.



Timetables, information and highlights of the games will also be shown on the screens. These highlights can consist of footage of people scoring points or enjoying the games. By showing these high lights, the concept stimulates visitors to become more active and create a connection with other members of their team. For instance someone from team red will be recognized on the screen by scoring a lot of points, other members of team red will cheer for him. This increases the positive feeling and new meeting among visitors.

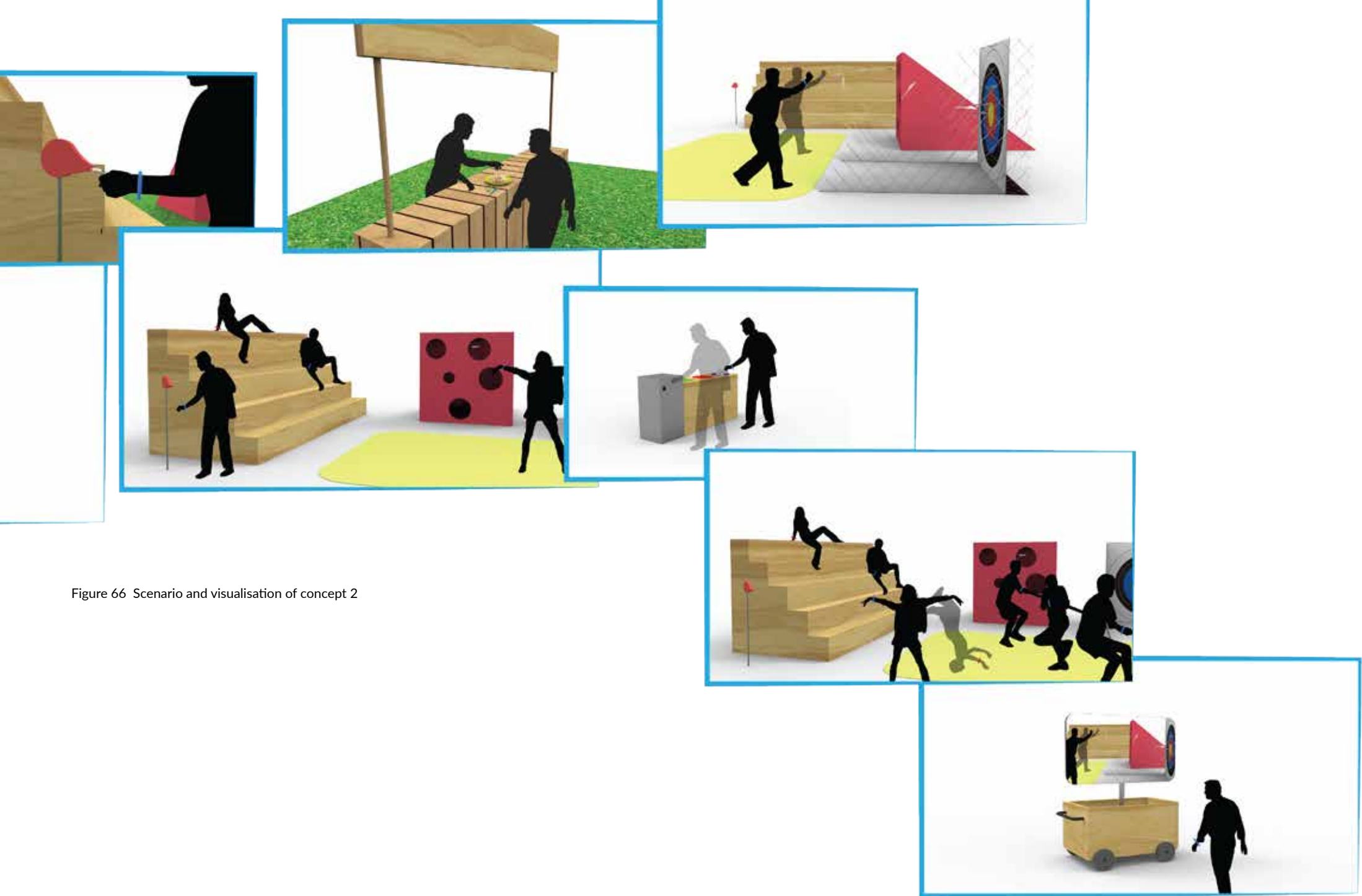


Figure 66 Scenario and visualisation of concept 2

### Concept 3. Cone Food

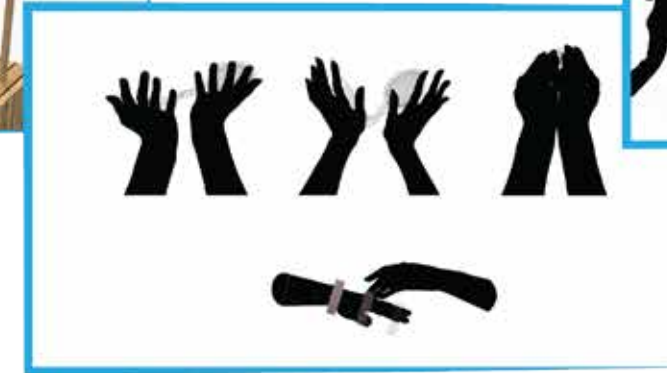
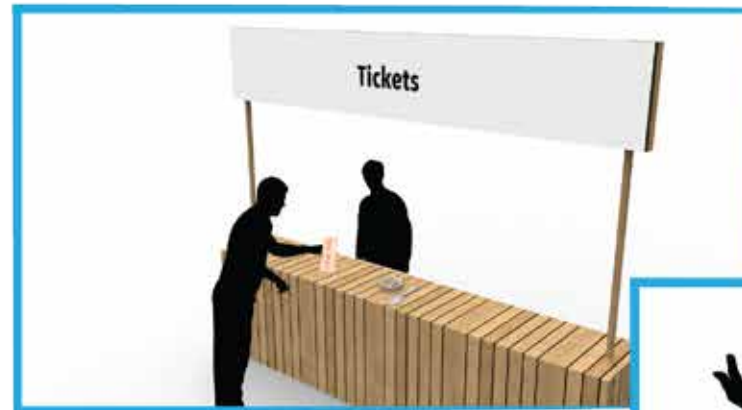
This concept is based on limiting the amount of packaging and supporting visitors to stay in their moment. The cone shape is known that it can easily be held in one hand. Therefore the cone shape is ideal to eat while standing or sitting. This gives visitors the freedom to choose their desired eating location. Which is mostly nearby the performances of an artist. Supporting visitors to eat while sitting or standing in front of the stages can reduce the facilitation of picnic tables.

The cones are edible. In this way it decreases the amount of packaging. The remaining waste will mostly consist out of compostable napkins, which are served along with the cones. Burrito's can be used as an edible alternative napkin to reduce the remaining waste.

Still trash bins have to be facilitated. The communication of waste separation is provided in the same way as in the previous concepts.

The term rolling kitchen becomes literally. The cone food will be brought and presented through mobile carts towards the visitors. In this way the eateries are supporting people to stay in their moment. Each individual mobile cart will have a different look based on the type of food they sell. Hence eateries create a clear indication about what type of food they sell.

There will arise waiting lines in front of the mo-

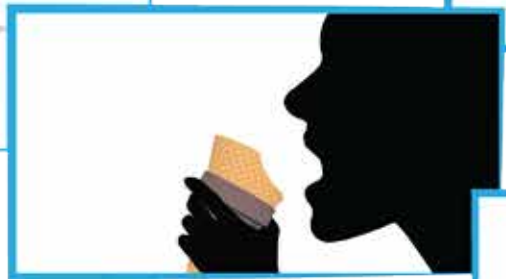


bile carts. The salesman with the mobile carts will present their food in a theatrical way. In this way the waiting lines can be experienced more comfortable. The concept goes along with two items that visitors should carry the whole festival with them. These items are the cone holder and a foldable spork (Fork, spoon and knife in one). The cone holder can be folded and used as a bracelet. The function of the cone holder is to prevent visitors to get dirty hands. The spork can be folded into a pocket size format and provides visitors to eat pasta's or other food out of the cones. Both the spork and cone holder should be cleaned after dinner.

Figure 67 Scenario and visualisation of concept 3



Pizza Pizza cones!!  
voor maar 2  
muntjes.



## Concept 4. Picnic

Concept Picnic is based on supporting visitors to experience a mental and physical comfort. This concept is stimulating people to stay in their moment and gives them the freedom to find their ideal eating environment. The term cosy is related to the picnic ritual. Cosiness is one of the factors that are needed to create this ideal eating environment.

Individuals in a group are usually ordering different type of foods. This concept provides a picnic basket, which facilitates visitors to insert their different bought meals and cutlery in the intended compartments. In this way the basket provides visitors to walk in a comfortable way with all their meals towards their ideal location.

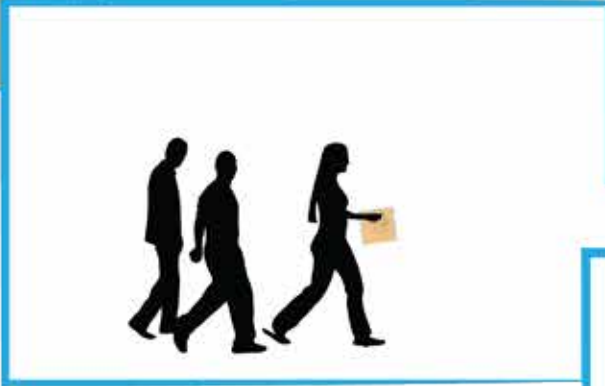
This picnic basket provides a foldable seating place/blanket. The blanket facilitates people to sit dry and comfortable while eating. Inside the basket are waste compartments for waste separation. The fact that the waste compartments are located inside the basket makes it more convenient for visitors to throw their waste away. So they do not have to search for a trash bin anymore.

Like in the previous concepts the colour of the packaging is linked to the colour of the compartments. In this way it becomes easy and accessible for visitors to separate their waste and retrieve their cutlery. The picnic basket can be picked up before or after visitors have ordered their food at the eateries. Visitors have to pay a deposit amount before they



receive a picnic basket. When they are finished with their dinner they can retrieve the picnic basket on multiple locations. Visitors will then receive their deposit back. Eventually volunteers will empty the compartments and clean the picnic basket.

Figure 68 Scenario and visualisation of concept 4

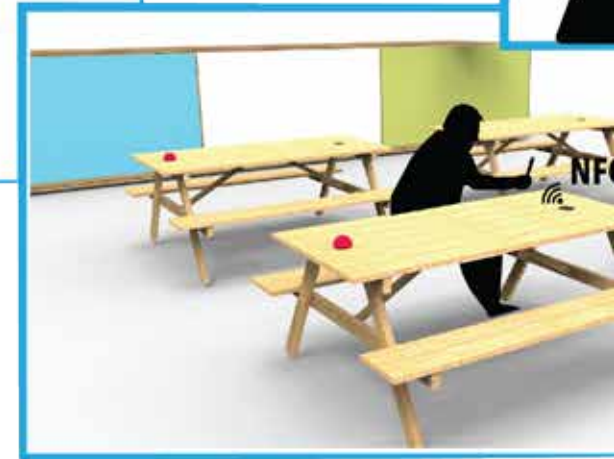
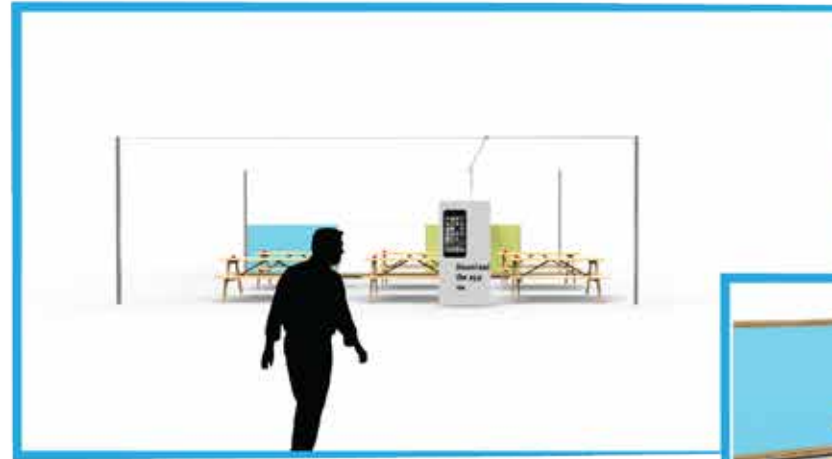


## Concept 5. Warehouse

The modern automatic warehouses have inspired this concept. This concept is based on the eating convenience. The concept consists of an eatery terrace, an app and a modern payment system. The app provides visitors to order their food. The implementation of a modern digital payment system provides them to pay for their food and drinks in an easy and quick way.

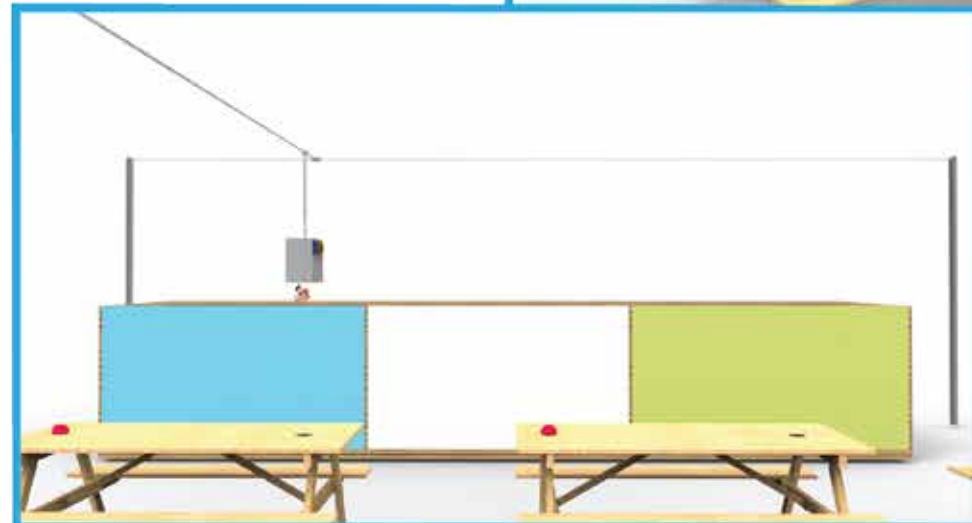
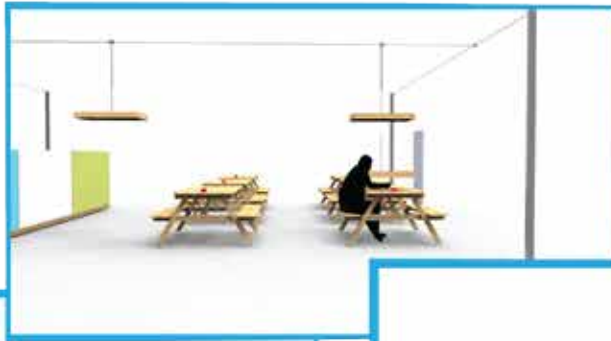
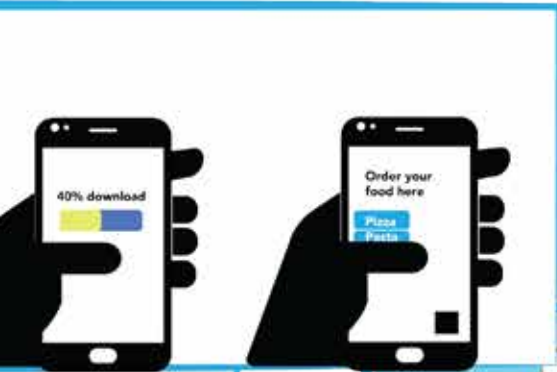
The tables on the terrace are facilitated with a NFC chip. NFC reading technology is present in almost every current smart phone. The signal of the NFC chip automatically provides people to download the app. The app recognizes the NFC chip code and knows the exact table. Visitors are able to order their food, when they have downloaded the app. To pay for their food visitors have to hold their bracelet against the NFC reader in the table. The NFC technology inside the bracelet makes it possible to pay for their food.

The tables are facilitated with power charges. Visitors can charge their mobile phone. In this way are visitors capable to order food. When the food is ready, food will be brought by a cable mechanism above the tables. In this way the concept leaves out the annoying waiting lines and make it easier and more comfortable for people to order their food. A red button is available on the table. This red button should be pressed, when visitors are finished with their meal. A trash bin that facilitates waste separation is brought by a cable mechanism. These trash



bins make it possible to separate waste. Like all previous concepts, the colour of packaging is linked with the colour of the waste compartments. The trash bin travels along the trash wall. Each compartment will drop their waste in the right compartment of the trash wall. In this way visitors will observe that their behaviour is efficient and useful. This direct feedback gives them a feeling of satisfaction.

Figure 69 Scenario and visualisation of concept 5







# CHAPTER 5

## CONCEPT CHOICE

This chapter provides the concept choice and the criteria and reasons that the decision is based on. We chose for the Picnic concept.

## Concept choice

The concept choice is made by a consultation between Schaalwerk, ITGWO, my mentor Erik Jepma and chair Henri Christiaans. During this consultation we looked at the financial and commercial feasibility, practicability, and the applicability at festivals like ITGWO. Secondly we looked, which concept had the most potential to influence the behaviour in our opinion. Eventually we choose for the Picnic concept.

The Picnic concept has a lot of potential. Of all the concepts it facilitates the most factors to create the ideal eating environment. Secondly the concept is compared with other concepts more commercially feasible. Screens, technology and big installations in other concepts need big investments and do not have any potential for festival to make profit on it. The picnic basket is relatively cheap as investment and has the potential to be turned into a commercial project. Thirdly the ritual of picnic is fitting well with the experience and target group of the ITGWO festival. Other concepts like the battle of colours is more focussed on a younger target group.

Still a lot of adjustments have to be made on this concept to make it work. In the next chapter we explain the detailing of the concept. The concept will change in a lot of aspects, but stays the same in the core.

# CHAPTER 6

## DETAILING

This chapter will give a more in-depth explanation about the final design, with information about each individual part and the use of the product. It will show three different types of serving scenarios for eateries and how this will influence the design.

## Interaction Vision

The interaction vision is as followed:

I want people to experience a *cosy, bonding and relaxing* moment with friends or family during there eating moment. Whereby the interaction with the crate will be experienced as *free and convenient*.

### Cosy.

The design should be experienced as cosy. This means that the concept stimulates the ambiance of cosiness within the group.



Figure 70 Cosiness

### Bonding.

The design should stimulate a bigger bonding between people. This fits with the fact that people are looking for social relatedness on festivals.



Figure 71 Bonding

### Relaxing.

This means that people experience the whole ritual as relaxed and do not have to stress or hurry during the use of the product.



Figure 72 Relaxing

### Free

The design should support people to have the freedom to go wherever they want to eat.



Figure 73 Free

### Convenient.

The design should be convenient in use.



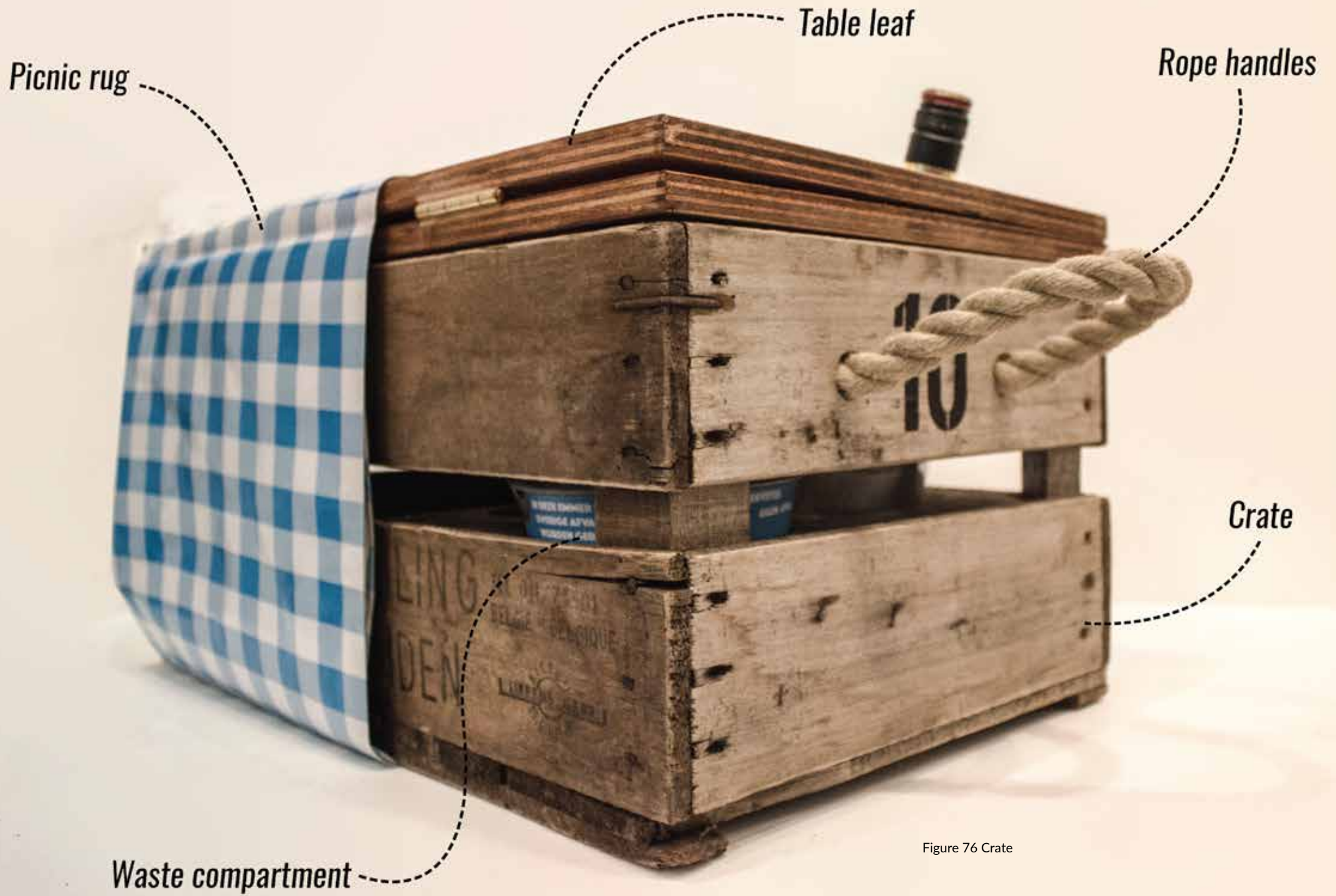
Figure 74 Convenience





Figure 75 Photo of the design in use





Picnic rug

Table leaf

Rope handles

Crate

Waste compartment

Figure 76 Crate

## The basic design

KOOSIE has a basic design. This basic design is consisting of elements that do not radically change through the way of serving, eating and presenting the food. Later on this chapter we will describe the different scenarios in which we can serve, eat and present the food and how they influence and change the design. The basic design consists out of the crate, rug, waste compartments and the rope handles. The foldable table leaf is the only part of the basic design for the second and third scenario. The description of the production of the basic design can be found in Appendix H

### **The Crate.**

The crate is the frame of the design. It facilitates space for food, drinks, the picnic rug and the waste compartments. Through the crate is the design compact and are users able to carry the food and drinks in a comfortable way. The size of the crate is depending on the type of food, presentation of the food and the supply of crate dealers. Therefore the exact sizes of the crate can be found in the paragraph about the different scenarios. The crate of the design is consisting out of a old fruit crate. The choice for old fruit crates is based on several arguments.

### *Nostalgic look and feel.*

The nostalgic look and feel fits with the ritual of picnic and the ITGW0 festival.

### *Sustainable choice.*

By re-using old fruit crates we expire the life length and this is more sustainable than creating new crates. The crates we are using are already 30 till 50 years old.

### *Limited numbers and cheap.*

The design will not be a mass production product from the start. Therefore we are limited on the material choices and production techniques. Techniques like injection moulding or vacuum forming of plastic are too expensive. Secondly producing these crates by wood workers of Schaalwerk would be to expensive in comparison of the purchasing price of old crates.

### *Relatively easy to clean.*

When the crates are cleaned, polished and eventually varnished with transparent varnish from the inside then the crates are relatively easily to clean. Water and soap can be used to clean. The varnish prevents that liquids are damaging the wood of the crates.

### *Adjustable by Schaalwerk.*

Old wooden fruit crates can be adjusted and changed very easily by the woodworkers of Schaalwerk.

### *Strong and stiff.*

Old fruit crates are mostly old and do not have the best quality. That is why they are mainly used for decorative functions. The old fruit crates we selected are still from a decent/good quality. Some of

them need a small adaption, but are strong and stiff enough for the purpose.

### *Weight of the crates.*

A wooden crate is not the lightest option available. Still the weight of the crates together with the content of the crate is relatively easy to carry.



Figure 77 Knot

### **Rope Handles.**

The spleitex rope handles make it possible to carry the crate alone or with two persons in a comfortable and ergonomic way. The design tries to create a more bonding experience, by giving people the possibility to carry the crate together. Spleitex is known by his soft and strong structure. Therefore we choose to use this material. Secondly the chosen spleitex ropes are fitting with the look and feel of the old crates. The crate has two holes on each side where the rope is going through. The handles are attached to the crate by a knot. The solution of a knot is a cheap solution, because of the time efficiency during the assemblage of the product.



Figure 78 Crate and Handles









Figure 79 Waste Compartments

### **Waste Compartment.**

The design includes two waste compartments. This gives eateries the possibility to separate two types of waste. The choice of two compartments is based on the fact that most festivals are separating two types of waste. Like for example DGTL, which is separating residual and plastic waste. By facilitating only two options you makes it more convenient for users to separate their waste. The type of waste that is separated in those compartments is depending on the waste management companies and festival policy. The sizes of the waste compartments are depending on the amount of waste created by the design. For example during the pilot we choose to separate biodegradable and residual waste. The biodegradable waste compartment had a volume of 2.5 litres and the residual waste compartment was 1 litre. This was based on a calculation and estimations of the amount of waste created during the pilot.

### *Material and shape.*

The waste compartments are standard sink buckets that can be purchased at wholesalers. Why did I choose for zinc buckets? Next to food, we want to serve drinks inside the picnic crate. Wine is a drink that perfectly fits with the picnic ritual and is served in bottles. So the drinks will be presented in bottles. The association with wine buckets inspired me to choose for zinc buckets. So the waste compartment has a second function, which is facilitating a place to put the bottles stabilized in the crate.

Secondly zinc buckets are relatively cheap, water-proof, durable and fit with the look of the old fruit crates. So by purchasing existing zinc buckets we reduce the costs.



Figure 80 Waste compartment with wine bottle

### *Communication.*

Graphical communication is needed to inform users that they can separate their waste. Therefore I choose to put graphical information on the outer ring of the design. The design communicates which waste belongs in which waste compartment by using words and silhouettes. This graphical information is printed on a matt sticker that is placed on the buckets. A special template is created to make the stickers fit on the cone shaped buckets. On figure 81 you will see the graphical information and on figure 82 you will see the templates of the stickers for the pilot.

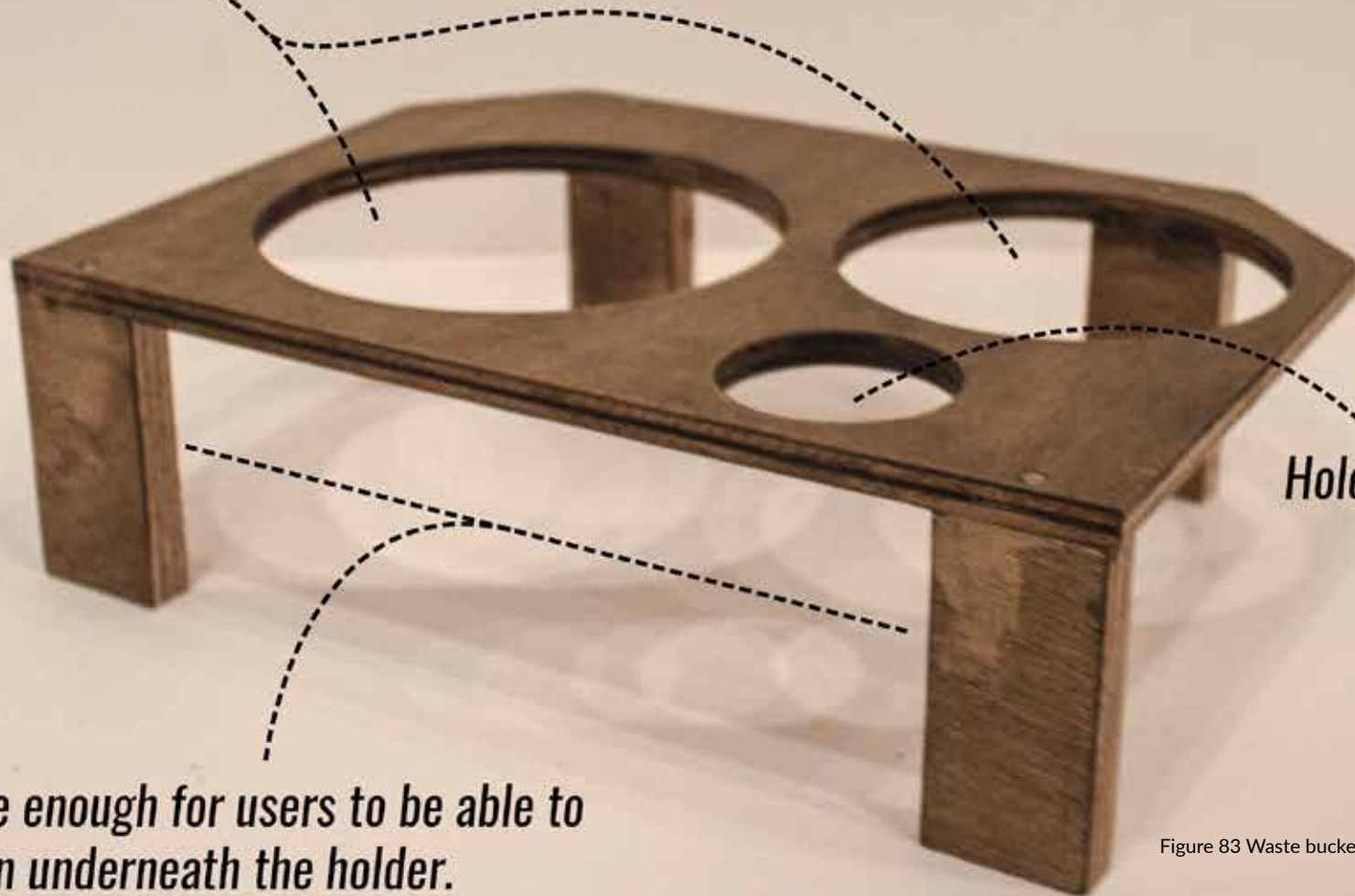


Figure 81 Waste compartment



Figure 82 Template of stickers

*Holes for buckets*



*Hole for drinking cups*

*Wide enough for users to be able to clean underneath the holder.*

Figure 83 Waste bucket holder

### **Waste bucket holder.**

The crate does sway when people carry their crate towards their ideal eating location. Therefore we need to stabilize the waste compartments. The design includes a bucket holder, to prevent that the buckets will fall over inside the crate. The bucket holder is shown on figure 83. The buckets can be placed inside the holes. The third hole inside the holder can be used to place your drinking cups.

The sizes of the holes are calculated that the waste compartment gets clamed when the bottom of the bucket is touching the ground. This size is depending on the height of the holder and the size of the bucket. The diameter of the cup hole is 60mm. This is a size, whereby almost every type of drinking cup used at festivals can fit in. The space underneath the holder can easily be cleaned, because every spot underneath the holder can be reached by hand. The waste bucket holder is fixed inside the crate with screws with a length of 16mm and diameter of 3.5mm.

### **Material.**

The bucket holder is made out of 9mm gaboon multiplex and small blocks of 15mm gaboon multiplex. Gaboon multiplex is known for being waterproof and is relatively cheap. Therefore we choose for this material. Gaboon multiplex is also applicable for mill production.



Figure 84 Top view of the crate



Figure 85 Waste bucket holder





Figure 86 Front view Crate



### **Picnic Rug.**

A picnic rug is a must during the picnic ritual. The main function of the rug is to facilitate a dry seating place for people. A maximum of four people can use one KOOSIE. The rug has a size of 1.40 meter by 1.40 meter; in this way it is able to facilitate enough space for four people. The second function of the rug is to hold together the crate and the foldable table leaf. Therefore the rug is folded around the crate when served. This system is handy but also looks aesthetical and fits with the look and feel of the product. More information about the foldable table leaf can be found later on in this report.

### **Material.**

The picnic rug is made of a plastic material. This material is usually used for table covers. This material is easily to clean, strong and stiff and durable.

### **Prints and customizations.**

It is possible to order the rugs in many different prints or even customized prints. Customization of the rug can be used as a marketing function. Companies print their logo or advertisement on the rugs. This creates an extra commercial advantages and selling points towards future clients. Standard rugs have a cost of 10 – 15 euro per rug. Customized prints on rug costs 25 – 30 euro per rug. Typical chequered prints are chosen in our basic design, because of the nostalgic look and feel

### **Folding system.**

We created a method to fold the rug easily. In this way it is time efficient and easily to be performed by employees of eateries. The method on how to fold the rug is shown on figure 87. There are two stripes of velcro placed on the rug. The position of the velcro is defined in such away that when you fold the rug the Velcro is in the exact middle.

### **Velcro.**

The function of the velcro is to hold together the two ends of the rug when it is folded around the crate. By connecting the two velcro stripes the rug is capable of fulfilling the function of holding the table leaf and the crate together. The velcro strip is located on top of the rug when it is folded around the crate. In this way users will easily understand how to disconnect the Velcro and will probably not rip the rug apart. The Velcro system is a convenient, time efficient and simple solution for users.

### **Administration system.**

It is possible to order a 2, 3 or 4 person's menu with the crate. The rug colour is used for the administration. Each menu has its own colour. Each crate has to be retrieved with a specific amount of plates, cutlery etcetera. By just looking at the colour the employees of the eateries can recognize if the crate is retrieved completely. This is more time efficient in comparison by looking into an administration folder.

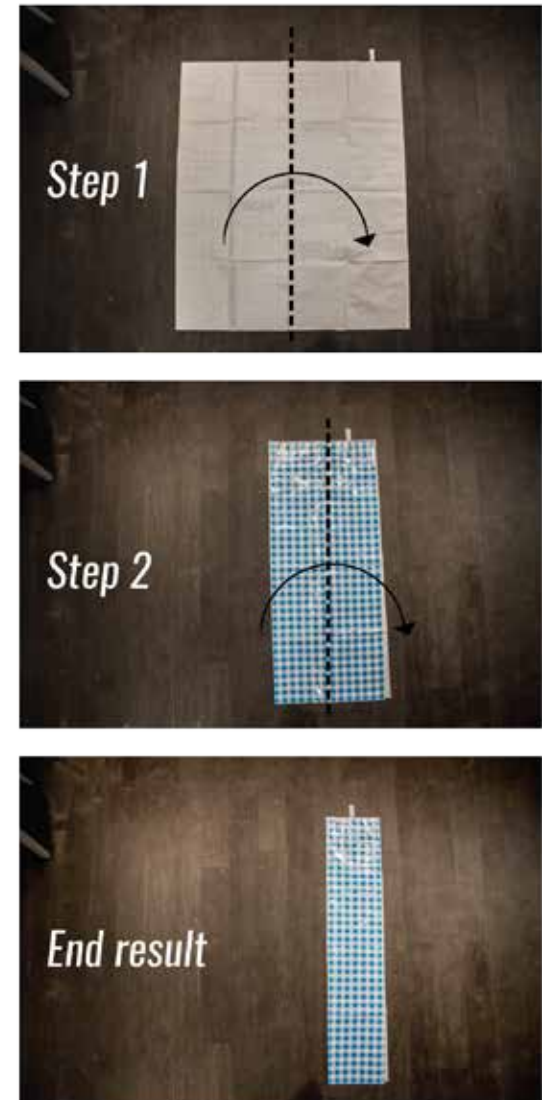


Figure 87 Folding system





Figure 88 Customized Rug and Administration System



Figure 89 Foldable table

### **Foldable Table Leaf.**

As described in previous chapters, eating with cutlery forces people to sit at a table. Two out of the three scenarios includes food that needs to be eaten with cutlery. The foldable table leaf facilitates users to transform the crate into a small table. Thence it facilitates users to eat comfortable with their cutlery.

The foldable table leaf can be folded into a cover. In this way the table leaf becomes compact and can be placed on top of the crate. The surface of the unfolded table leaf is large enough to facilitate enough space to place food, plates, cutlery and drinking glasses for four persons. As you can see on figure 89, two holes are drilled in each part of the foldable table leaf. The drinking bottles in length are higher than the height of the crates; therefore these holes are created. In this way the drinking bottles can be placed inside the crate. The second function of the holes is to stabilize the bottles. All the corner and edges of the table leaf are sanded to prevent sharp edges. In this way it prevents users to hurt them self while using the product.

The table leaf has to be placed on top of the crate with the hinges upwards. Otherwise the table is not stable enough. The hinges are made of a brass of steel and copper. The table leaf is 15mm thick. When it is folded it has a thickness of around 35mm.

### **Material.**

The table leaf is made out of gaboon multiplex. We choose this material because of its water resistance, relatively cheap price and the lightweight.



Figure 92 Hinges



Figure 91 unfolding the table leaf.



## **Use of KOOSIE**

The next pages will explain the use of the product with images. This will give you a better understanding of the use.

Figure 92 Carrying of the crate





Figure 93 Placing of the crate





Figure 94 Releasing the velcro





Figure 95 Moving the crate





Figure 96 Unfolding the rug





Figure 97 Moving the crate





Figure 98 Moving the crate





Figure 99 Removing the table leaf





Figure 98 Moving the compartments





Figure 99 Getting food out of the crate





Figure 100 Unfolding the table leaf





Figure 101 unfolding the table leaf





Figure 102 Eating and drinking





Figure 103 Eating and drinking





Figure 104 throwing food in the right compartment





Figure 105 Removing the foldable table leaf





Figure 106 Putting the compartments back





Figure 107 Placing table leaf on top of the crate





Figure 108 Folding the rug





Figure 109 Folding the rug around the crate





Figure 110 Retrieving of the crate





## Scenarios

Food can be ordered, served and eaten in many different ways. Thereby the design of the picnic crate can differ due those factors. We choose to develop three different scenarios. They differ in the food type, the way of serving and eating the food. All three scenarios' does offer food for groups between 2 and 4 people. A survey I did among 92 people have shown that 87.4% of the people are visiting festivals with a group of friends or family between 2 and 8 people. By offering menus for 2,3 or 4 people are eateries able to offer food for those groups with 1 or 2 picnic crates. The results of this survey can be found in Appendix I

The original scenario of the first picnic concept, explained in chapter 4 is not applicable in the current situation with eateries. According to food programmers of ITGWO Eva Verboon and Dago Houben is the difference in serving time among eateries too large. This time difference can lead to cold food for one of the persons in the group. All the scenarios are now based on serving the food and crate from one and the same eatery. So the user will receive a picnic crate completely filled with warm food and cold drinks.

Waste management and safety policy differ a lot between each festival. Therefore each scenario has two versions of the design, one with re-usable packaging and the other version with disposables. The advantages and disadvantages of each option will be explained later on this report.

### Scenario 1. Picnic tapas.

This scenario is inspired by the traditional picnic, Asian eating culture and the Spanish tapas culture. The served foods in those cultures are mainly consisting of a lot of different small bites. From my own experience I can say that sharing food like in those rituals can create a cosy environment.



Figure 111 Asian eating culture

#### Type of foods.

This scenario is based on selling a diversity of finger foods and small bites. The criterion for the type of food is that it can be eaten by hand or by using a single fork/chopsticks. Therefore type of food like spring rolls, quiche, sausages, chicken wings, small wraps, sushi, corn, shrimps, cheese can be used.

#### Ordering and serving.

Visitors can choose between several menus. The different finger food and small bites will be served in separate bowls along with the cutlery. The type of

cutlery is depending on the type of food. Asian food for example will be served with chopsticks.

Food has to be eaten directly from the bowls. Therefore no dining plates are served with the bowls. In this way it reduces the amount of packaging.



Figure 112 Example of menu



Figure 113 Type of foods

### Packaging.

The packaging consists of cutlery, bowls and napkins. In this scenario we made two version of the design. The first is with re-usable packaging and the second type is with disposables. Later on this chapter the advantages and disadvantages will be explained.



Figure 114 Packaging

### Re-usable packaging. (Figure 117)

The material choice is depending on the type of food eateries are serving. From my own perspective I recommend open wooden bowls, because these fit with the look of the crate. A total of eight bowls can fit inside the crate. This total of eight bowls facilitates enough volume to serve food for four people. The bowls can have a maximum diameter of 13 centimetres.

The crate does sway during the walk. The round shape of the wooden bowls causes that it can easily topple. Therefore we choose to stabilize the bowls. Later on this paragraph we will explain the stabilizer.

The cutlery used in this version will consist of wooden chopsticks and forks made out of hard plastic or metal.



Figure 115 Wooden bowl

### Disposable packaging. (Figure 116)

The bowls and cutlery are replaced with disposables. I recommend eateries to choose disposables made of the same material. Disposable bowls can be purchased with a lid. The lid prevents leaking of the bowl. Therefore is there no stabilisation needed in this version.

### Consequences on the design.

This tapas scenario has consequences on the design of KOOSIE. First the scenario influences the size of the crate. Secondly the bowl holder is needed to stabilize the bowls.

### Crate size.

The size and volume of the packaging inside the crate does influence the size of the crate. In this scenario the size of the crate is 52 cm length, 34 cm width and a height of 24cm.

### Bowl holder.

The bowl holder applies only for the version with reusable packaging. The bowl holder is needed to stabilize the bowls. The size of the bowl holder is depending on the size of the used bowls. This can easily be adapted. In total you need two bowl holders in the crate. The bowls can be placed inside the crate as shown in figure 117 . These holders are made out of gaboon multiplex and are produced and finished on the same way as the waste compartment holder.



Figure 116 Disposable version

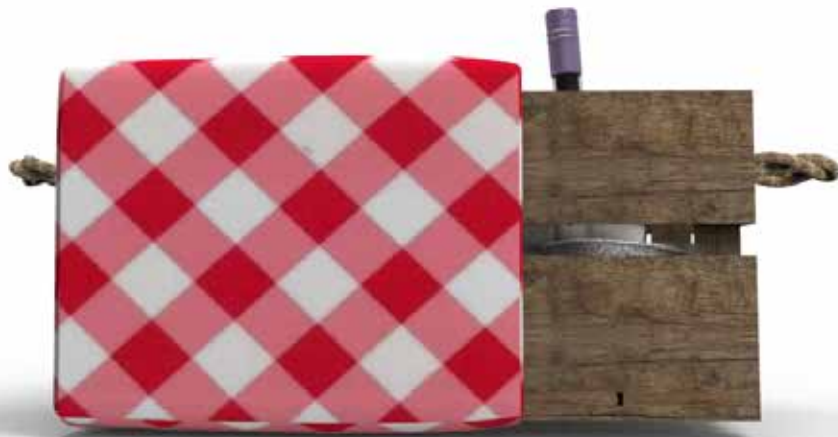
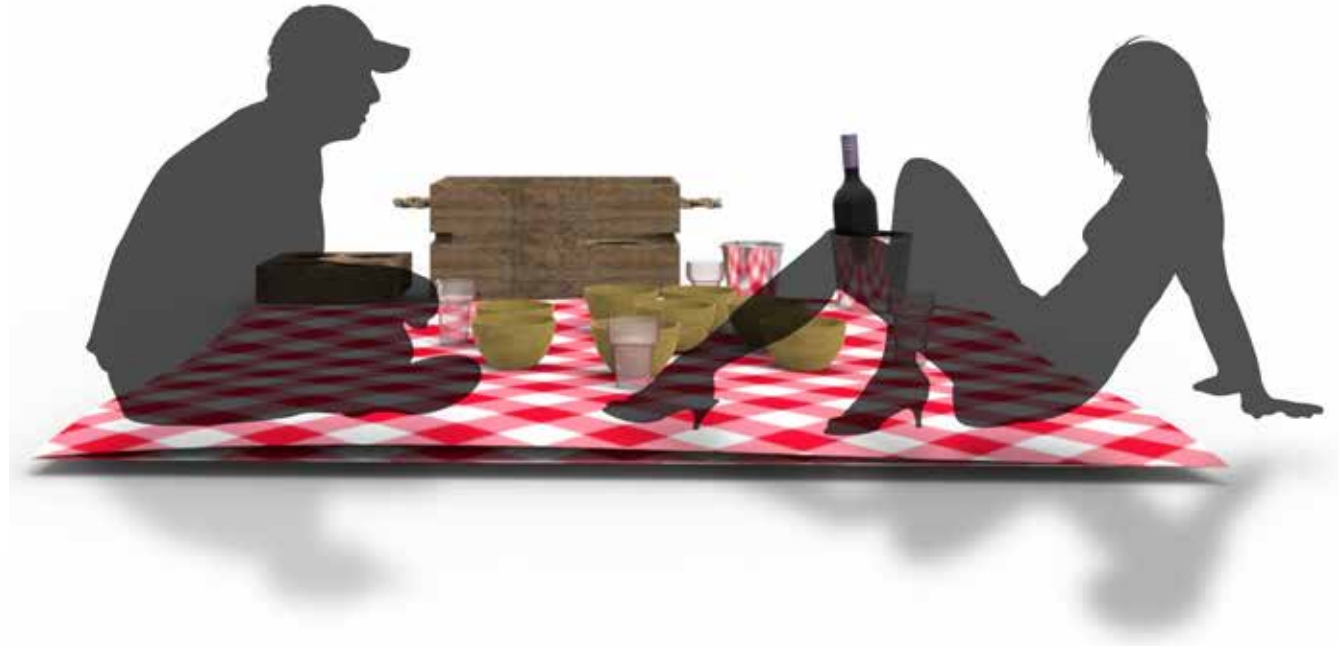


Figure 117 Re-usable version

### Eating ritual.

The picnic rug will be removed from the crate. The rug can then be unfolded and placed on the ground as shown on figure 118. In this scenario are the bowls and waste compartments placed on the rug. Users have the freedom to decide where they want to place the bowls, drinking bottles, glasses and waste compartments. For example people can sit around the bowls.

Food can directly be eaten from the bowls by using chopsticks or hands. The tapas scenario stimulates people to share their food. In this way the eating ritual gives people a more bonding and cosy experience





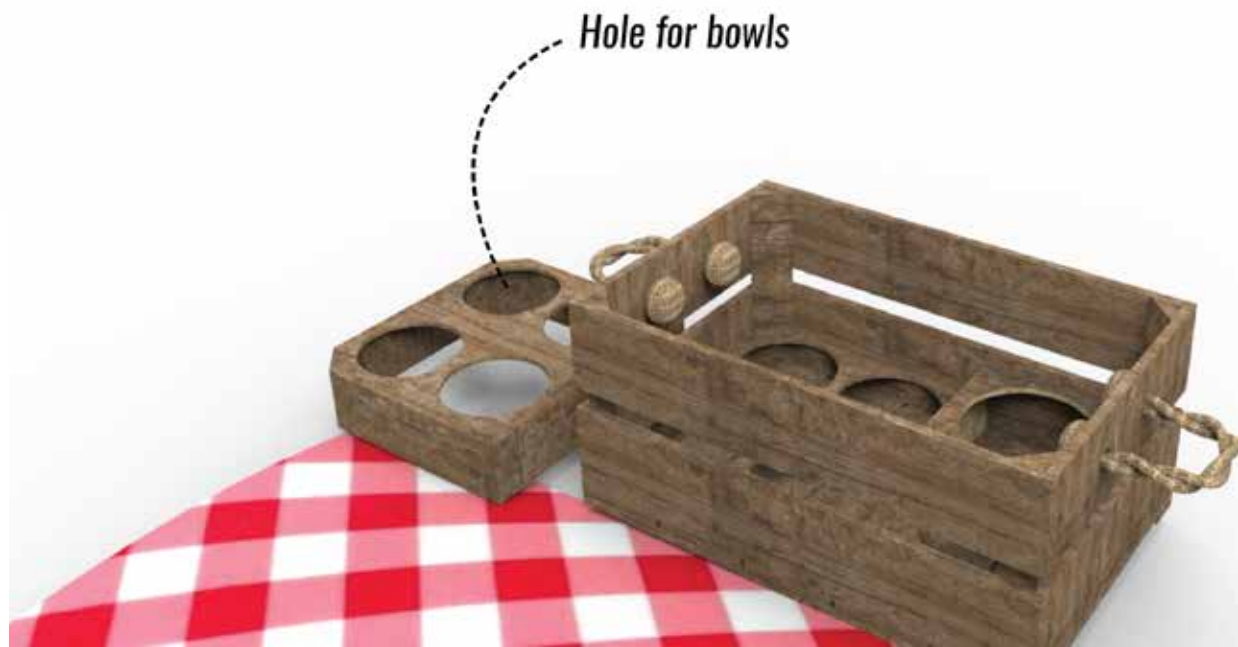


Figure 118 Images of Tapas Scenario Design

## Scenario 2 Family Picnic.

The traditional Dutch eating ritual of stamppots inspires this scenario. The strength of the stamppot ritual is the simplicity. One dish for everyone creates a feeling of equality. Equality is a high principle in the Dutch society. The stamppot eating ritual presents this equality in a nice way. So this scenario is based on bonding and equality.



Figure 119 Traditional dutch eating ritual

### Type of food.

The foods that are served in this scenario are one-pan dishes. These one-pan dishes can consist out of stews like sauerkraut, kale or other stews. Not only stews can be served. Foods like pasta's, nasi, bami or paella are suitable for this scenario.

### Ordering and serving.

As a group you order one dish. In this way does this scenario tries to stimulate the bonding between people by letting people discuss and decide what

they are going to eat. On the other hand this scenario gives people a limited choice.

The food is served in a pan. The size of the pan depends on the amount of people that have ordered. A two person pan has a volume of 1 litre a three person pan has volume of 1.5 litre and a four people pan has a volume of 2 litre. People receive a serving spoon, dining plates, cutlery and napkins next to the pan. The dining plates can have a maximum diameter of 20cm.



Figure 120 Menu



Figure 121 Stew and Bami

### Packaging.

This scenario has a bigger variety of packaging, than the previous tapas scenario. The packaging consists of a pan, dining plates, cutlery, serving spoons and napkins.

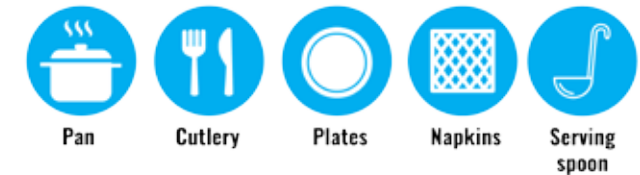


Figure 122 Packaging

### Re-usable packaging.

For the re-usable packaging version we recommend a metal pan, cutlery and serving spoon. For the dining plates we recommend porcelain. These materials fit with the nostalgic feeling of the picnic crate. To prevent that the pan slides around the crate it needs a holder. Porcelain is fragile; therefore it needs to be stabilized in the crate.

### Disposables packaging.

Every part of packaging is replaced with disposables. We recommend eateries to choose as many possible disposables made of the same material. Disposable are not fragile. Therefore is there no need for a plate holder and pan holder.

### Consequences on the design.

#### Crate height.

The height of the crate influences the level of comfort while eating at a table. During the design process of the crate we looked at the most preferred eating height. Standard old fruit crates mainly have a height between 23-24 cm or 28-30 cm. During a small research among 9 colleagues we looked at the most preferred height. The 23-24 cm eating height was preferred above the 28-30 cm. Therefore is the height of this crate 24cm. For the complete research you can go to Appendix J.

#### Crate size.

The size of the crate for this design is 52 cm length, 34 cm width and a height of 24cm.

#### Plate holder

The design includes a plate holder when eateries use porcelain plates. This plate holder is consisting of two straps with velcro attached on it. The middle parts of the two straps are sewn together. So the two straps are creating a pouch. This pouch provides that plates are stabilized. A small test has proved that Velcro was strong enough to hold four porcelain plates. The straps are connected with the crate by rivets.

#### Pan holder.

The pan holder is consisting of three wooden rings. These rings are preventing the pan from sliding

inside the crate. All three different pan size can be stabilized in the pan holder. The smallest ring has a height of 5mm the second ring has a height 1cm and the third ring has a height of 1.5cm. The rings are made of gaboon multiplex.

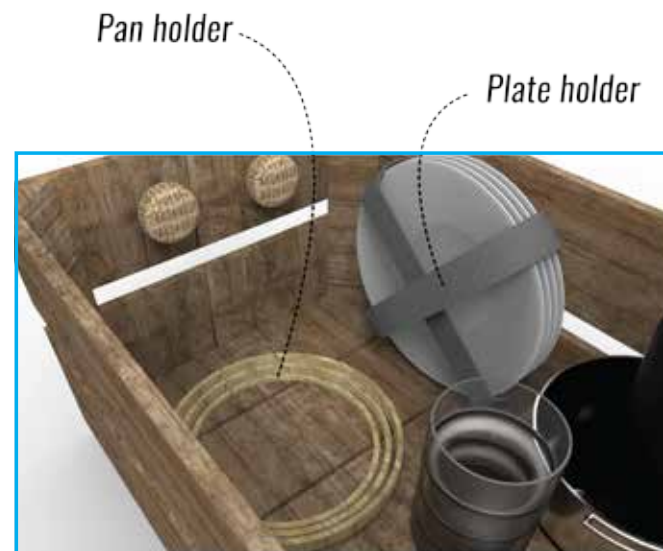


Figure 123 Additions inside the crate for family scenario

### Eating ritual.

The rug will be removed from the crate and placed on the ground. The pan including the tableware and cutlery are removed out of the crate. The foldable table leaf can be unfolded and placed on top of the crate. The pan, dining plates, serving spoon, drinking bottles and cutlery are placed on top of the table

leaf. One member of the group can serve the food on the plates with the serving spoon. This type of serving increases the cosy ambiance.

The crate has to be placed in the middle of rug; so four people can sit comfortable around the table to eat.



Figure 124 Disposable version



Figure 125 Re-usable version





Figure 126 Images of Family scenario design



### Scenario 3 Take away.

Scenario 3 is based on the current situation of eateries. The current situation at eateries is that people receive one plate with food. This scenario is based on the convenience and freedom.



Figure 127 Current serving at festivals

#### Type of food.

In this scenario all type of food can be served.

#### Ordering and serving.

Each person in the group can choose individually what type of food they want. This individual choice gives people the freedom of choice. Each individual dish is served on a dining plate with cutlery and placed inside the crate. The diameter of the dining plates can differ from 18 cm till 24 cm. This way of ordering and serving is easier for existing eateries to implement, because it is based on the current situation. We recommend a maximum time differences of 5 minutes between the first dish and the last dish.

Otherwise the temperature of the first dish may become too cold.



Figure 128 Menu

#### Packaging.

This scenario uses less packaging than previous scenarios. The packaging consists of dining plates, cutlery and napkins.

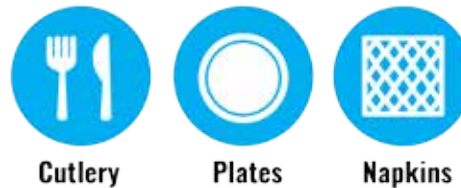


Figure 129 Packaging

#### Re-usable version.

We recommend porcelain plates, because it fits with the nostalgic look and feel of the crate. Cutlery will be made out of steel or hard plastic. The dining plates have to be stabilized otherwise the food will fall off the plates.

#### Disposables version.

Every packaging is replaced with disposables. We recommend eateries to choose disposables made of the same material. The dining plates have to be stabilized; otherwise the food will fall off the plates.

#### Consequences on the design

##### Crate height.

The crate has a height of 30cm; in this way it facilitates enough space between the different plate holders. This distance between the plate holders is 7.5 cm. This height is less preferred than the 24cm eating height. Therefore we have looked at a different option. This option was based on removing each plate holder individually. In our small research we discovered that people equally preferred both 30 cm and 7.5cm. Therefore we choose for the option of 30cm.

##### Crate size.

As mentioned before old fruit crates are offered in basic designs. Therefore we are limited on the size of the standard fruit crates. The size of the crate in this scenario is 50 cm length, 40 cm wide and 30 cm height.

##### Plate holder.

The plate holder stabilizes the dining plates by using a hole. The size of the hole is based on the used plates by eateries.



**Crate design.**

The plates have to be removed horizontal. Otherwise the food will fall of the plates. Therefore a part of the crate has to be removed. Like shown in figure 130.

**Size Table leaf.**

The size of the table leaf will increase, because the size of the crate changes. This means more space for user to place their plates, cutlery, drinking cups and bottles.



Figure 130 Scenario Take Away



Figure 131 Images of Take away scenario design





### Reusable vs. Disposable.

From a sustainable perspective I recommend the use of re-usable packaging. Yet to be realistic the disposable versions are economically more attractive for eateries.

### Drinks.

A picnic is not complete without drinks. Drink and food selling points are usually separated at festivals. Within this concept I want to merge those fields. Eateries can create an extra selling point by offering drinks together with the food. In this way eateries can create an advantage in comparison with other eateries.

Why should an organisation give eateries that uses KOOSIE the right to sell drinks? Firstly with KOOSIE does eateries offer a solution for the shortage of seating places and tables, secondly you encourage waste separation. Thirdly it increases the sustainable image of a festival and increases the service value of the festival. I recommend eateries to offer a large percentage of their profit made from selling drinks towards the festival organisation.

### Type of drinks and bottles.

The drinks that can be served with the picnic are bottles of wine, water, soda and beer. Glass is prohibited on festivals, therefore should every beer, water or wine bottle be made of PET.

Reusable	Advantages	Disadvantages	Scenario
	<b>Through the use of re-usable packaging the design create less waste.</b> As described in previous chapter is a decrease of waste a result of the use of re-usable packaging.	<b>Need more washing facilities and employee in eatery</b> Plates, bowls or pans have to be cleaned before re-using; therefore the eateries will need more washing facilities. Also through retrieving dirty bowls/plates and pans you increase the change of a dirtier crate.	1,2,3
	<b>Smaller waste compartments than disposable version.</b> Creating less waste, means smaller waste compartments.	<b>Needs to adjust for some festivals.</b> Every festival has there own policy. Some of the festivals are prohibiting sharp element like metal and hard plastic knives. Therefore disposable cutlery has to be used in some occasions.	1,2,3
	<b>Luxurious and more aesthetically presentation of the food.</b> Wood or porcelain gives a more luxurious and aesthetical presentation of the food in comparison with disposables. Re-usable packaging is linked with restaurants; therefore people will also have a feeling that the food has a higher quality.	<b>Need stabilisation of tableware; otherwise food will fall out of the bowls.</b> Reusable packaging is mostly made of porcelain or the packaging can not been closed. We want to prevent that packaging moves, or topple by stabilizing the bowls.	1,2,3
		<b>More expensive than disposables version.</b> The fact you need a stabilisation makes the crate more expensive to produce than the version with disposables.	1,2

Disposable	Advantages	Disadvantages	Scenario
	<b>Less washing facilities</b> Because eateries do not need to wash the packaging afterwards.	<b>Creates more waste</b> Disposables equals waste. That is why this version creates a higher amount of waste than the re-usable version.	1,2,3
	<b>Suitable for every festival.</b> Disposables can always be used on festivals.	<b>Bigger waste compartments.</b> More waste leads to bigger waste compartments. This takes more space. This also increases the costs of the crate. But compared with the cost reduction of the holder the crate is still cheaper.	1,2,3
	<b>No stabilisation needed.</b> Disposables can have a lid on top of the packaging. In this way they prevent leaking. The stabilisation is not needed anymore. (Does not count for scenario 3)	<b>Type of packaging depending on waste management companies.</b> Every festival is cooperating with a different waste management company. Those waste management companies have all different facilities. That is why the eateries have to adapt the packaging to support the mono streams on the festivals.	1,2,3
	<b>Cheaper solution than reusable version.</b> The costs of the holders are not applicable for this version. Therefore it is cheaper to produce. (Does not count for scenario 3)	<b>Changing of visual communication.</b> The difference of packaging used on festival causes that the visual communication on the waste compartments should change occasionally. Having multiple different waste compartments with different visual communication can be a solution to this.	1,2
	<b>Weights lighter than the re-usable version.</b> The weight of disposables is significant less than wooden or porcelain bowls. Secondly holders are not needed. Therefore it reduces the weight of the complete crate.	<b>Less aesthetical look than reusable version.</b> Disposables usually have a cheap feel and look compared with re-usable packaging.	1,2,3

Figure 132 Reusable vs Disposable

## Deposit & Administration system.

An administration and deposit system is needed to offer the service of the picnic crate. The crates have a financial value and eateries do not want to lose their investment. Eateries need to encourage people to retrieve the crates to minimize the risks. The administration and deposit system should prevent people of stealing the crate.

### Administration system.

Each crate is numbered. This number gives eateries the possibility to link the crate to several data. The data used in the administration system consist of menu type, drinks, name of a group member and a telephone number. The telephone number and name provides that people can pre-order the crate. So eateries can send a message that people are able to pick up the crate. Secondly when people forget to retrieve the crate, eateries have the possibility to remind them. The table used for administration can be found in Appendix K.

The data list can be provided in a digital or hard-copy form. Depending on the eateries preference and budget. In the pilot I tested the system with a hardcopy version. The digital version will be more expensive, but you reduce the amount of paper.

### Deposit system.

There are two realistic deposit options for eateries. The two options are a coin-deposit or a photo of an identification card deposit.



#### Coins.

65.6 % of the people of the survey (See appendix I) preferred this system. An average price of a festival coin is around 2.50€. 51.6 % of those people were willing to pay 2-4 coins and 31.3% were willing to pay 4-6 coins. This means that people on average are willing to pay around 10€ as deposit amount. A crate will cost a minimum of 70 euro. This means that there is a significant risk for eateries to lose money if people decide not to retrieve their crate. Increasing the deposit amount could solve this problem. Only this solution can work dissuasive towards potential clients. Secondly this is depending on the paying system. Digital paying system would reduce the barrier for people to pay a large amount as deposit.



#### Photo of an identification card.

7.8% of the people preferred a system with photo of an identification card and 13.3% had preference of just giving an identification card. So a total of 21.1% has a preference for system with identification cards. Taking identification cards for deposit is illegal in the Netherlands, yet taking photo/copy of identification is legal. With this system eateries decrease the risks of losing their investment. People will feel compulsory to retrieve the crates, because eateries have their identity. If people decide not to retrieve the crate, eateries can report them at the local police. This system may experience by people to personal and this can lead to not purchasing KOOSIE. My recommendation is to choose for a photo system. During the

pilot I have shown that this system works fine.

### Retrieving points.

People have to retrieve their crates. So I asked in a survey, how much time people are willing to walk to retrieve their crate. 42.7% is willing to walk between the 2 and 4 minutes. 23.6% are willing to walk 4-6 minutes. 20.2% are willing to walk between 30 seconds and a minute and 7% is willing to walk 10-15 minutes. On average I can say that a walk of around 4 minutes is acceptable for visitors. Depending on the size of a festival field, you can calculate how many retrieving points are needed to facilitate these wishes. When eateries choose for multiple retrieving points, then the administration system should be made digital. In this way they can communicate between the different points.





# CHAPTER 7

## EVALUATION AND RECOMMENDATIONS

In this chapter we describe the conclusions of our pilot at the into the great wide open festival ITGWO. Next, a first rough redesign is provided together with several recommendations to improve the design. Further in this chapter the commercial and financial feasibility of the design is estimated. The chapter ends with a general conclusion of the whole project..

## Pilot

A pilot is done at ITGWO festival to evaluate our design. I cooperated with Yum Saap. This is an eatery, which serves Thai food. Biodegradable disposables were used in the pilot. I sold the crates under the name THE THAI BOX in a separate selling point. During the pilot I offered one type of menu for four people. In this way Yum Saap was able to run a pilot and a restaurant together. People could choose which deposit system they wanted to use.

In our research I evaluated the following points:

1. *Evaluate the intended behavioural change of the user. This means to evaluate if the user is separating their waste. (Efficiency of the crate)*
2. *Evaluate the usability and user experience of the picnic crate.*
3. *Evaluate the serving, administration and deposit system.*
4. *Finding insights about the use of the crate and the behaviour.*

More detail about the structure and results of this research can be found in Appendix L

### Conclusion pilot.

At first the pilot research showed that our design is not stimulating people to separate their waste. Only 4 out of the 13 people did separate their waste.



Figure 133 Selling stand of the pilot

This was mainly caused due the fact people were not noticing the visual communication on the waste compartments and that the volumes of the waste compartments were too small. Informing people in a clearer way about the role of waste compartments and increasing the volume of the waste compartment can be a possible solution for this problem.

Secondly I can conclude that the amount of sales, the chosen eating location by people and the use of the crate are influenced by the weather conditions. Bad weather condition like heavy rainfall causes that people will choose dry and more hygienic places, like dining tables at terraces. The use of the crate changes due the weather conditions, but the crate still creates the desired eating experience. Not only negative results were showed. The important factors like cosiness, convenience and relaxation were definitely present at peoples eating ritual with the picnic crate. In this way I reached my goal to stimulate the



Figure 134 People using the design

mental and physical comfort of people during their eating ritual. Therefore I can conclude that the use of the crate has a positive influence on the eating experience and comfort of the people.

In general I can conclude that the design definitely need improvements in many different aspects of the design, but with the right adjustments and improvements it has the potential to stimulate people to separate their waste in an commercially feasible way for caterers and festival organisations.



Figure 135 Instagram post of user.

## Recommendations

### Recommendation for improving the design.

*Increasing volume of waste compartments for the version with disposables.* The version with disposables does create more waste in comparison than the reusable version. During the pilot I found out that people do not want to compress waste inside the waste compartment. Therefore the volume of the waste compartment needs to be increased for the version with disposables.



Figure 136 Retrieved crate

### *Improving communication of waste compartments.*

The pilot research has shown that the visual communication on the waste compartments is not visible enough for users. The current position on the outer ring is a bad location. Therefore the location of the visual communication should be changed. Another possible solution for this problem is explaining users about the waste compartment while handing over the crate.

*Prevent confusing about the use of the picnic rug and table leaf.* 1 group during the research had some confusion about the use of the rug. Therefore the use of the rug should be explained when handing over the crate.

### Recommendation for improving the selling stand.

#### *Kitchen should be visible for visitors.*

A lack of communication had occurred during the pilot. Visitors did not understand that the stand was selling food. Most of the people want to see and smell where the food is coming from. Showing chefs working in the kitchen creates a better experience for the potential clients.

#### *Crates should be presented in the front of the stand.*

Eateries can grab attention by presenting the crate packed and unpacked in front of the stand. In this way it becomes clearer for visitors to understand what eateries are selling.

#### *Facilitating a large washing street.*

During the pilot I had not enough washing facilities. A big table is needed to be able to clean the rug in an easy and comfortable way.

### Recommendation for eateries.

#### *Depend the choice for disposables on food type.*

Some disposables are not suitable for certain type of

food. Therefore eateries should make sure that the used disposables are suitable for their type of food.

#### *Make clear agreements and deals with festival organisations about use of packaging and waste management.*

Eateries are able to give a better overview for festival organisation about the used materials, by making clear agreements with the festival organisation. Secondly eateries will have a clear indication which type of materials can be separated.

#### *Make it possible to sell drinks.*

Selling drinks next to the food is completing the picnic ritual and creates an extra selling point. Firstly people do not have to wait in line for their drinks anymore and it increases the luxurious feeling. I recommend selling cold water bottle for free, this worked excellent during the pilot and people appreciated the extra service.

#### *Make clear agreements about tasks.*

During the pilot, there were some miscommunications. Eateries can prevent this by making clear agreements about the tasks each person has to fulfil.

#### *Communicate sustainability and the use of the crate.*

Sustainability of the crate can be a selling point towards visitors. Still this depends on the type of visitors and how an eatery wants to present itself.



## Rough Redesign

As described in the previous paragraph, is the design not stimulating visitors to separate their waste. Improving the communication and increasing the volume of the waste compartments could solve this problem. In this paragraph I give the first rough redesign.

### Trash-bags.

In the redesign, I made the choice to use small trash-bags instead of the zinc buckets. The reason for this choice is that the maximum volume of the bucket was limited by the size of the crate. Thence it could not give enough volume for a disposable version. Secondly trash-bags are familiar for users. In this way the bags are already improving the communication towards the user. Thirdly the amount of different separated materials was limited by the amount of buckets fitting inside the crate. The use of trash bags makes it possible to separate more than two type of waste. Fourthly trash bags make it easier to adapt and change the waste types and volume of the compartments per festival.

But how do the design communicate towards the user that they can separate their waste? Each trash bag will have an individual colour. Still communication towards users is needed about which packaging belongs in which compartment. Customized prints are available to apply on trash bags. Even biodegradable trash bags can have a customized print. [63]

Eateries can order the waste bags by themselves,

so this also decreases the costs of the design. Still Schaalwerk can do the design of the visual communication.

[63] <http://www.dimensio.nl/nl/producten/custom-made-zakken/>

### Bottle holder.

The bottle needs to be stabilized in a new way due to the disappearing of the zinc buckets. Therefore I choose to create a bottle holder. It is similar to the bucket holder. Instead now the holes are based on the size of the wine bottles used by eateries and festivals. Therefore the bottle holder is much smaller than in the original design. In this way it creates more space for food storage. Secondly the bottle holder keeps the function to hold the drinking cups. The bottle holder has influence on the table leaf design. In the next part I explain the influence on the table leaf.



Figure 137 Rough Redesign



Figure 138 Rough Redesign

### Table leaf.

Changes in the position of the wine bottles inside the crate, does change the position of the holes inside the table leaf. In the redesign the holes for the wine bottles are located directly above the wine holder. These holes are now symmetrical and this improves the aesthetics of the crate.



Figure 139 Collection of images of the Rough Redesign

## Financial & commercial feasibility

This paragraph provides the costs to produce the design, the commercial selling points, the possible potential clients, business models and financial advice for eateries or festivals. Firstly it explains which of the three scenarios is most popular among visitors and explains how much they are willing to pay for the extra service.

### Market research (Survey).

I asked some questions about peoples preferences and the amount they were willing to pay. The complete results of this survey can be found in appendix I.

### Preferred scenario.

48.3% of the people have a preference for the tapas scenario. This means that this type of serving with the crate is most popular among visitors and has the highest potential for commercial feasibility. Therefore I will recommend eateries or festivals to choose for this scenario. In this chapter I am calculating the costs price for the tapas version.

### Extra service costs.

43.3% of the people are willing to pay 1 coin of 2.50€ per person extra on top of the food price. 23.3 % of the people are willing to pay ½ coin per person. 18.9 % of the people are willing to pay 2

coins per person and 7.8% is willing to pay 1.5 coins. So on average is 1 coin per person service costs an amount, which is acceptable for a significant part of the visitors.

### Potential festivals.

Not every festival vision, ambiance and target group does fit with KOOSIE. The festivals mentioned underneath are festival, which can be interested of having the crate on their festival. This is based on their sustainable policy, target group, location and their total experience of the festival. One of these festivals is Best Kept Secret. The director of this festival has already shown interests in this concept, during my pilot on ITGWO.

*Best Kept secret* (15.000 – 17.000 visitors per day, 3 day events) [64]

*ITGWO* (6000 visitors per day, 3 day event) [3]

Welcome to the village (6500 visitors per day, 3 day event)[65]

*Lowlands* 50.000 – 55.000 visitors per day, 3 day event [66]

*Down the Rabbit Hole* 10.000 -15.000 visitors per day, 3 day event [67]

*Trek festival* ( 3 days 15.000 and 22.500 visitors in a whole weekend) [68]

*Solar and Extrema outdoor festival* ( 3 days, 10.000-20.000 visitors per day) [6]

### Production costs

The calculated costs for the design are based on the redesign and Tapas scenario and on a quantity of 100 pieces. The production costs are separated in production, material, staff, machinery and transport costs. We calculate the price for the disposable and re-usable version. For more detail and calculations see appendix M.

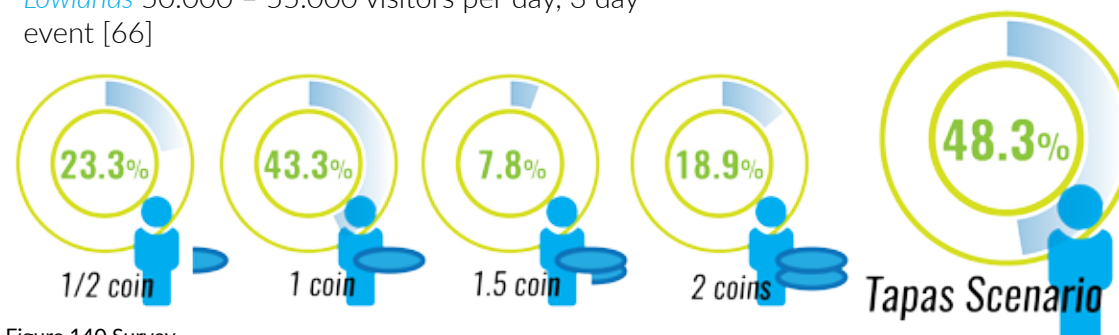


Figure 140 Survey



	<b>Tapas Version Disposable</b>	<b>Tapas Version Re-usable</b>	<b>Table leaf</b>	<b>Spleitex Handle</b>	<b>Printed Rug</b>	<b>Buckets</b>
<b>Material costs</b>	2462, - €	2978, - €	1412, - €	178, - €	1870, - €	808, - €
<b>Labour costs</b>	2250, - €	3538, - €	875, - €	0, - €	0, - €	175, - €
<b>Machinery /Workplace costs</b>	600, - €	800, - €	200, - €	0, - €	0, - €	50, - €
<b>Administration costs</b>	475, - €	550, - €	25, - €	0, - €	0, - €	25, - €
<b>Total</b>	<b>5787, - €</b>	<b>7866, - €</b>	<b>2512, - €</b>	<b>178, - €</b>	<b>1870, - €</b>	<b>1058, - €</b>
<b>20% profit margin</b>	1157, - €	1574, - €	508 - €	36, - €	374, - €	212, - €
<b>Selling price</b>	6944, - €	9440, - €	3020, - €	214, - €	2244, - €	1270, - €

Figure 141 Production costs

## **Business models.**

There are three different business models realistic for Schaalwerk. This paragraph explains the different business models.

### *Direct sales model.*

The name does already describe the model. This model is based on direct sales towards eateries or festivals. Eateries can buy KOOSIE from Schaalwerk for a certain amount of money. KOOSIE will be adjusted towards the wishes of the eatery or festival. On each sold KOOSIE Schaalwerk put a profit percentage of 20%. Schaalwerk does not only provides KOOSIE, but also advise them for certain decision like the deposit system, packaging and waste management. The whole package sold by Schaalwerk is included with the administration system. By offering storage of KOOSIE or designing and building new signing and selling stands Schaalwerk can achieve an extra income. This business model facilitates that Schaalwerk is staying in their core business and is not going into a new market.

### *Lease model.*

The lease model is based on leasing KOOSIE per festival. Schaalwerk offers a package of 100 crates, a selling counter, a complete administration system and transport. Eateries or festivals can rent this package. This model increases the financial investment and risks for Schaalwerk. One of the reasons for this financial risk is that eateries or festival may not feel responsible for the crates and this may

causes that not all crates will be retrieved in good conditions. With this model Schaalwerk will expand their rental portfolio.

### *Profit Share model.*

This model is based on sharing the investments with eateries or festival. Schaalwerk sells their crates including crates for certain % of the costs price. Eateries have to pay a remittance per festival over their profits towards Schaalwerk. This makes it more interesting for eateries because they share the risks of investment together with Schaalwerk. Unfortunately for Schaalwerk has this model a higher financial risk. Nevertheless Schaalwerk can make more profit on the long run than the direct sales model, if the eateries do sell a lot.

### **Break-even point (Direct sales).**

In this paragraph we try to estimate how fast eateries can get their investment back when purchasing 100 crates. This is based on the survey and estimated numbers and values. First of all the investment of the crates, is not the only investment needed for eateries. The type and amount of investments needed differ for each version. On top of that additional costs for eateries will be created by the use of the crate. These investment and costs are explained in Appendix M. The break-even point in this report is calculated by only using the service costs of 1 coin per person above the food price. This means that the profit on selling food is not been included in the calculation.

### *Maximum sales capacity.*

Festival areas are usually open from 12:00 till 24:00. This means you can sell between these hours. The dining time is mostly between 12:00 and 21:00. On average are people using the crate around 30-45 minutes. It takes around 3 minutes to clean and dry the crate. This means that a crate can be served a maximum of 8 times a day. The prime time for eateries is mostly, between 12:00 and 14:00 and eventually between 17:00 and 20:00. I estimated that on average a crate is serving food for three people. This means that the crates can offer food for 1500 people a day.

### *Sales % of maximum capacity.*

The potential festivals are mostly medium sized festivals of 10.000 till 20.000 visitors per day. Eateries have a lot of competition. For example at Best Kept Secret are there around 30 different eateries. So I assumed that visitors are evenly divided over these 30 eateries. This will mean that eateries will sell towards 3.33% of the visitors. That is between the 330 visitors on small festivals (10.000) and around 660 visitors on bigger festival (20.000). So our estimation is that we sell food for around 495 people a day. So this is around 30% of maximum capacity of 100 crates.

### *Remittance.*

Remittance differs between 25-40% at festivals. Therefore we choose for 32.5% in our calculation. Still the remittance % may be able to drop, because

you increase the service value of festival and are working on a sustainable solution. This estimation that it the remittance can drop is not used in the calculation of the break-even point.

To calculate the break-even points for disposable version we made the following sum:

## Break even point =

(Purchasing Price Crates + Investment selling stand + Investment Administration system + Investment washing facilities + Investment Fridge + 40 cents \* number crates sold per festival + Employee costs \* per festival + Storage costs + Transport costs per Festival) - (Amount of people per festival \* price of 1 coin \* remittance of sales for festival organisation)

	<b>Tapas version disposable</b>	<b>Tapas version disposable with table</b>	<b>Tapas version disposable with table and printed rug</b>
<b>Break even point</b>	<b>7 festivals</b> <i>( 21 festival days)</i>	<b>9 festivals</b> <i>( 27 festival days)</i>	<b>10 festivals</b> <i>( 30 festival days)</i>
	<b>Tapas version reusable</b>	<b>Tapas version reusable with table</b>	<b>Tapas version reusable with table and printed rug</b>
<b>Break even point</b>	<b>12 festivals</b> <i>( 36 festival days)</i>	<b>14 festivals</b> <i>( 42 festival days)</i>	<b>15 festivals</b> <i>( 45 festival days)</i>

Figure 141 Break even point



## Commercial selling points

In this paragraph we explain why KOOSIE has value for festivals and eateries.

### *Increasing sustainability of festival.*

Using the crates at festival limits the amount of waste on the ground and provides people to separate their waste. In this way it increases the sustainability of festival.

### *Solves the problem of shortage of seats and tables.*

With the crates people are able to create their own comfortable seats and table. Seats and tables are rare during a lot of festival. The crate is helping to solve the problem.

### *Offering visitors the freedom to create their own ideal eating environment.*

With this design you offer people the freedom to create their ideal eating environment. This improves the quality of the eating experience.

### *Improves service value and eating experience of festival.*

The design improves the service value and eating experience by decreasing the amount of waste on ground, facilitating seating places and give people the possibility to choose their own eating environment.

### *Possible for selling drinks.*

Eateries can request festival to give them the possibility to sell drinks in return of the increase of service value of the festivals.

### *Branding on crates.*

The crate gives brands or eateries the possibility to promote their brand. This branding can be used for eateries to sponsor a part of the investment. It is a new way of advertisement at festivals that may interest brands.



Figure 142 Branding with rugs

### *Reach group of people instead of individuals.*

Normally individuals buy food. KOOSIE increases the change that a group of people will choose for the same food. This may increase the sales of eateries.

### *Decreasing of waiting lines*

Waiting lines are experienced as negative. By making it possible to reserve the crates you can decrease the waiting lines.

### *Innovative and new.*

It is innovative and new for the festival market.

This can have a positive influence on the image of festival and eateries. With the use of KOOSIE are festivals and eateries ahead of the rest of the market and do they distinguish them from others.

## Conclusion

The goal of this project was to come up with a design that was helping festivals to solve the waste problem. Food and drink related waste were the most interesting type of waste to tackle. Through behavioural change of visitors it is possible to help festivals to solve this problem and create a mono waste stream. Our pilot research has shown that my current design is not stimulating waste separation among visitors, but has the potential to stimulate waste separation among visitors. Improving the communication and increasing the volume of waste compartments may resolve it. A second pilot has to be done to know if the redesign will work properly. Even if the outcome of the second research shows positive results, will the design not solve the complete food related waste problem at festivals. Still it can be part of the process towards the complete solution to solve this waste problem. On top of that the design has the commercial feasibility to be implemented in the current festival market and has the potential to be even profitable on the long run for eateries or festivals.

## Next Steps

Several steps are planned to continue this project.

### *Best kept secret meeting.*

Best kept secret festival has shown interest in the design. In the month November we will probably have a meeting with the director of Best kept secret.

### *Welcome to the village meeting.*

Welcome to the villages has shown interest in the design. In the month November we will probably have a meeting with the sustainable manger of the WTTV festival.

### *ITGWO meeting.*

ITGWO already showed interest due cooperation and facilitating a place to have a pilot. There will be a meeting in the future.

### *Searching for collaboration with other festival and eateries.*

Schaalwerk will send several emails and phone calls towards connections to see if eateries or festival are interested in KOOSIE.

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# APPENDIX

*Report: stimulating the separation of food waste among visitors*



## Appendix A: Interview Govert Reestkamp

### **#1 Who are you and what is your function at Lab Vlieland/ITGWO?**

Lab Vlieland? Or Into the great wide open, those are two different things. I am Govert Reestkamp and I am the technical producer at ITGWO. I design the hardware part of the festival. I create the drawings; the construction planning and find out if the things we want are possible. And at Lab vlieland we housed the sustainable projects of ITGWO. And this has been extended. Lab Vlieland is using the festival as testing ground. Lab Vlieland started as institute to create and design smart solutions for festivals and this has changed into a place where the smart things that are needed for the transition can be developed on a festival. So the roles have changed. At Lab Vlieland we do a lot more than only festival focused. We are currently working on a support research for wind power. This subject is not festival related anymore, and we are working on which possibilities are possible to reduce energy use during the water treatment. This items also do not have a huge relation with festivals. But the techniques that are useful for this water treatment can be tested on our festival. And with the subject of waste you will later on see the same. With waste, from the point of view of Lab vlieland we think it is more important to improve the waste system on the island itself, than if we have the best waste system on the festival.

### **Which measures do you currently take on sustainability?**

Yeah, this can be a long conversation if you do not

watch out. What I already explained is that with Lab Vlieland, is that is a testing ground for this transition. Whatever place does not matter. Every place where they have to transition towards a sustainable system or circular system or how you want to name it. You need changes/transitions to get such a system. And if a festival can be a test garden for this, we become enthusiastic. That's the core. And which is the most important for ITGWO is the intrinsic motivation of the people who are working, building or participating at the festival. That's the key to the sustainability of this festival, so we do not have a tight policy, which is driven on statistics but we are really focused on this intrinsic motivation. As I said before in the hall. ITGWO has 3 impossibilities it is almost unattainable, so for logistics it is the most unhandy place to be. It is completely Natura 2000 environment, everything you do have to be ecological approved and there is only a capacity of 6000 people on this island. So we can only sell 6000 tickets, so there is never going to be a serious profit. It is always unhandy with nature and always a drama with logistics. So these 3 impossibilities are causing that all the people who want to be involved and be part of it that are doing from a different drive. So you do have to talk about the subject of easy and fast, because it is not possible. Where you end up is that the logistics of the festival is a lot of puzzling. So sometimes there are even 8 different supplier in one truck. You do not see this very often in the regular festival market. We have the practical problem of the boat, whereby sustainability an exiting thing

is. Therefore we are forced to be as efficient as possible. We know from every car, if they have a hitch, their width and height, their weight, when it arrives, how much space it got and if there is space left. And we know that about everyone and everything. We are trying to combine everything, because we have the bottleneck of the boat. So that's transport. What we also do is promoting the use of electric transport. Then you see the function of Lab Vlieland, that the island is more important for us. So last year we have work together with Tesla, Frisian motors. Bluekens, Renault and more of those type of brands. A big part of our transport was electric transport. An also changed the city bus of the island into electric city bus. Those city busses were not used for the festival, but we could take them with us, because we were making a story about electric transport. It was interesting for the producer of this bus to get involved in this project, and for the island it was interesting to test such a bus for a week. The bus driver had all nonsense stories about electric busses were not trustable and by let him drive the bus for a week he became enthusiastic about the electric bus. This is a good example to see the role of a club/stakeholder with a different goal to test things on festival. And then we have to transport products with a sailing ship, all the art and wine is transported from Amsterdam with a sailing boat towards the island. That has nothing to do with the fast and easy, it a lot of work. Every artist has been asked if their package can fit into the door of the boat. 8 people needed to load and unload. Nothing to do with practical use,

but it has something to do with an iconic statement. And the boat has sailed on the IJ and arrived there. 20 people have worked very hard to get this done, which normally can be done by 2 people and a truck. But in the end those people were proud that they did it on another way. And we have doged a small piece of the diesel boat. And maybe we can expand this. That's transport, than on the subject of waste, like I mentioned before we use the festival as mirror on the policy on the island. We have made a clear choice to not choose another waste management company than is located on this island. But if we wanted a thoroughbred a very sustainable festival, we would maybe have chosen another waste management company, who for example also collect green waste. But we did not choose for that option. We choose to look how we can work together with the local municipality so the waste policy of the municipality will be improved. It has very specific problems, and what we do is with the attractively of festival we make collaborations with universities, to research can we improve the island. And we are looking on what can stay on the island, what can we compost and how can we compost. And we are currently in conversation with the riding school and staatsbosbeheer to collect al the horse fertilizer. So that is already a certain amount of containers. So we are looking on what type of stream we can implement as well. So currently with the omrin a waste management company we are starting some projects, on how can we improve the waste policy. It is pretty specific problem, because there is a huge

peak in the summer of use of energy and waste. That's on the subject of waste and on ITGWO. On the island we have left all the compostable materials collected from the crew catering. It is more iconic, which is expanding, with as goal to keep al the compostable materials on the island.

### ***So you want to use this compost In the agriculture?***

That an exiting point of this project. The ecological core value of the island is skimpy. So a rich ground is not desired. But we are looking if we can build a greenhouse to protect the core values of the environment and you have the possibilities to grow food. And by this system you make a smaller circle, like getting sulphate out of urine and use it into the greenhouses. This small area is representative for the sulphate surplus of the whole western Europe. The cause of this problem is the import from outside and this can be seen on a smaller scale on this island. Scientifically it is interesting to see that such a small area is representative for a whole Europe, in a clear way. And we try to solve this problem in a small scale, and than we are going to look if it possible to implement this on a more bigger scale. Transport. Waste, and energy I will go threw all the themes and than we will discuss waste in more depth. Energy, with the study of TU Delft we can implement a smart grid on or festival, during this research we already took a look at the whole island. And we asked ourself, how is it working? Now then we came up with a goal to get the island energy

neutral in 2020. As continuation on this research on smart grid we have let done some research by university of Utrecht about. What is the progress to accomplish this 2020 goal. And which measures have to be done to reach this goal. And than you notice in % you see that we did not reach a lot only 0,2% of goal reached in 7 years. And there are only two realistic sources that is solar energy and wind energy. Whereby Wind is a no go area in our policy and solar energy is to expensive and is an pretty extensive solution to implement. And on the area of solar energy we are now working on a project together with the local energy supplier to make a business model to create the first hectare of solar energy panels. That's what we do with lab vlieland. And for wind energy we are currently working on a research on the support for wind energy. IS there a support for wind? And what is possible? Un till 15meters is aloud but why not 20. Where can we place these mills? Do you want to make an icon from it, or do you want to hide it. And on this project we work together with academic for art and industry. We want to have that designer vision. A white windmill on the best place is from my technical perspective the best solution. But this is in contradiction with others. So that is not the solution. On our festival, smart grid we want to have an overview on our energy use. We are ahead of other festivals on this theme; we have an energy scheme of every location. And we are working on electric transport; therefore we were working together with Tesla. And with the problem with energy on the festival, we are looking what

the island can learn from this. We want to have as less as possible use of energy and we want to get as much as possible out the fixed voltages. We are implementing this already for three years. And on this subject we are ahead on the others. And I hope we are the first festival that can say, forget about these aggregates. We are working on car to grid or on other solutions like the green battery. So that's energy. Than we have water. And we are supplying free water for around three years. We sell the bottles and most people are taking the bottles to their homes. So they are going to start drinking out of the tape instead of out of blue bottle from Belgium(S-PA). And now we are looking how to implement on the island. So how can we decrease the use of blue bottles by tourists on the island? And the next spring, we have a small festival and than we leave a drinking tap behind on the sports area. Designers design it and it will be come a beautiful artwork with drinking tap on it. So than the children doing sports on the field do not have to go to the supermarket to buy AA bottles but can drink from the tap. And from my and Lab vlieland's perspective this will be the first drinking water point, but we want to expand this threw the whole island. And our goal is to accomplish that nobody has to buy a drinking water bottle. That is water and than we have completed all the themes. It is a risk; I can talk about this subject for another 2 hours.

**#7A ITGWO is one of the first festival with a hard cup system. According to research of AGF is 70%**

***of the festival visitors supporting this system. En does 20 % is not positive. Is this 20 % a reason to not have implemented the system?***

Yeah there has been a lot of discussion about this topic. That 20% was also attending at our table. So they were represented in our organization. Eventually there were more people supporting the project than people were against it. So then we tried it, and we were pleased with the results. We have implemented the deposit system in to three phases. First we had the disposables and a bunch of those cups were 1 coin worth. What you see at a lot of festivals, whereby we were lucky that a huge children economy arose. Those children were collecting all the cups. On other festival you do not have children, and you had a development whereby people especially came to your festival to collect cups. That is not always a good system. So that was the first phase of deposit system. Secondly we implemented hard cups at the sports area. So on our main area. And then we asked for 10 cups you get 1 coin. So we combined the old system with new cups. With this system we took a lot of risk, because the cup has more value than the deposit money. So in the end people take their cups to their homes. It has the logo of ITGWO on it, so it was a nice souvenir. In theory with the system of 10 cups for 1 coin you lose a lot of money. It is possible on a island, but we do not recommend it to other festivals. Also on the main area we had a clear view to keep all the cups on the area. But because of the risk and we wanted to implement this system for

all the area's. We raised the deposit to 1 coin for 1 cup. Intern there was a lot of discussion about this subject. We had a lot of discussion with the beer supplier. The beer supplier was afraid of a decrease of sales volume. Eventually we implemented the system and were very happy with the result. On certain levels we made surprising profits. Every cup you lost is a souvenir for a visitor, which is bought for a good price. 2,30 for a nice glass at home. On a technical level it was surprising to that first we had 10 cups for 1 coin, and than a lot of cups were picked up from the ground and we had a lot of dish washing logistics to deal with. On every bar you can wash the cups with water, like in a regular bar. But we also had a hot water washing street, whereby the cups can be used couple of times and than they are required to go into the washing street. Because the cups were not been picked up from the ground anymore because the value was increased to 1 coin, people kept the cups in their hands and therefore the cups were returned pretty clean. So the capacity of the use of Washing Street backstage decreased a lot.

***Did the beer supplier have a decrease of sales volume?***

No there was not a decrease of sales volume. No, it was just like normal.

***How does the visitors experience the current system?***

I do not have the numbers, but first years there



were some habituation complaints. And the second year, everybody was used to it, and thought it was normal.

### ***So they accepted it pretty fast?***

Yeah, first year the 20% you mentioned had some troubles with it, but second year they were used to it.

### ***What were the complaints?***

Hassle, it was difficult. And a certain dutch ritual “het rondje halen”, so you standing there with 8 people and you have to get 8 beers, than everybody has to deliver there beer, logistics wise it is unhandy. And every round you have to pay 8 extra coins, so that is a little bit unhandy. So they have to get used to it. We were afraid and the beer supplier was afraid that this was causing a decrease in the sales volume. They thought that this 8 extra coins together with collecting the cups from friends was a reason people thought well this time I will not get a “rondje voor iedereen”. And people get used to it pretty fast, because after a year almost no one had this complain anymore.

### ***Are the costs to wash the cups higher than collecting waste with disposables?***

Yeah, that is a difficult one. As I said before we are not really on the data, but more on the intrinsic motivation. We are on a scale where this is possible. We can have an indication what we expect it is going cost. So that is enough to convince the organi-

zation. So we do not need a closed business case and to prove it. I think on the sports area, so the most representative event location, it was almost even. And the decrease of amount of waste on the ground is causing such an increasing of service towards your visitors, that the extra costs are worth it.

### ***The other locations?***

On the other locations it was different. The wash street is located on the main area, therefore we had to create logistics to collect the dirty cups at other locations on the island. But that wasn't difficult. First year it was different, first year we needed double capacity of washing streets compared with now. We used the dish-washing water to flush the public toilet. There was a huge amount of water from the washing streets, because all these cups were picked up dirty from the ground. And the next year with other system we could wash all the cups with 50% of capacity of the year before. And if the hard cups are connected with the value deposit of 1 coin the difference is not that much. I know some festivals whereby they have a washing service and do collect the dirty cups into a trailer. That is really common in Germany. Than you do not need the washing streets. But I cannot say exactly the numbers of the real difference in costs, but on Vlieland we do not have a representative price for producing waste. They are quiet expensive.

### ***Which problems do you have with this system?***

Very practical problem is the difference between the

use of disposables and hard cups for the location of the cups on the bar. With disposables you have the cups in front of the bartender. They grab a glass and tab the beer. But with the system of hard cups this will not work. The volume of cups is way bigger with hard cups. Secondly the cups have a value, so that has impact on the front side of the bar. So the cups have to be behind the bartenders. And this is less efficient in logistics. And on some festival you have the rap-tap with a lot cups filled on same time. Than the problem is less. Also because the cups have values you have to keep the cups safe. Normally you could just put the cups behind the bars now they have to be stored in a trailer with a lock on it. So that is another practical problem. So the increase of value is exiting for the organization. Another problem is where do visitors deliver there cups for coins, so what is the cash flow on the festival. So how do you get a safe system whereby you have a complete administration? So that is also a difficult problem.

### ***So you collect the cups at the bar?***

Yeah first we had a special point for visitors to deliver the cups, to make the administration easier. But for the service level it was not optimal. For example, when you are standing with a group of 8 people, you get 6 cups and 2 are not finished yet. You want to go to the bar with old cups and get filled cups back. You do not want to to a special point to deliver the cups and then get some coins and than eventually go to the bar. Or you have to make a smart system with a machine that it goes

fast and you have your cash back in no time of your cash card. Which is the next step. So in the end we brought it back to the bar. It is difficult to make this system without any leaks.

### ***Did the amount of waste decrease?***

Yeah, definitely, the increase of service level on the locations is so much. If you compare with other festivals with waste carpets in front of their stages. We do not have those carpets. And in the pit there is probably something on the ground, people will sometimes drop something with no value. Like food. But the cups you will not find it on the ground anymore.

### ***Does eateries use this system as well?***

No that is the next step. I would like the challenge more people to change this. I think it is fantastic if we can change this. Food and Drinks are always separated. The difficulty is the facts that food is mostly fatty. So to wash those dishes is more difficult than cups. Beer is very easy to wash with water, if there is not lipstick on it. Or a fatty piece of chicken or salad is something different. I would like to implement this system and what we can do about it. This topic is this year very trending in our organization; we finally have a kind of control of the hard cups, as I can say. If you talk about waste, we give a purchase advice to eateries; we are not strict to them, because we think that it should be in dependable eateries. So we are directing them, but personally I would like the dishes and service to get

a nice product.

Why do you not use this system?

It is not there yet, you have the stone tableware, but that is not safe. Plastic tableware is ugly and does not have the right appearance. And the current solution is use of a lot of wood and carton and natural materials. In the end it is not the best solution.

### ***What are the reasons why other festival are not using this system?***

The scale of our festival is an advantage and other is the flexibility of our festival. Our festival is labeled as doomed to fail, and to sell a crazy idea within our organization is not that hard. So changes are easily been made. It is a flat organization, with a motivation coming from the heart. When something feels good you already accomplish a lot. And if it is a little bit economically responsible, than you can complete it. That is our advantage. And on a bigger scale of 40.000 visitors on the hard cup are bigger investments. We rent a washing street etc and does factors are clear. Does are not big amounts of money, so that can be placed into the margins. I think with the experience of our festival that the up scaling of the hard cup deposit system is feasible and that organizations should implement this. When it is a situation to get all the people in the same direction. And probably this is a lot more difficult in other organizations.

### ***Which packaging do you use for eateries?***

That differs per eatery. What we try to do is to stimulate the intrinsic motivation. All employee and eateries are getting a briefing whereby we tell them what we think is important. So we already are implementing joint purchasing. Eventually it is the choice of the eatery itself what type of appearance he wants to have. There are some people thinking with us on this subject but the decision is made by the eateries.

### ***#9 How do you look at biodegradable packaging in comparison of a reusable system?***

I am big proponent for the deposit system. I think it is more important to make a system circular than create a system, whereby we thrown waste away which gives a good feeling because it is not harming the environment. The reason for this is the influence on behavior. With biodegradable plastic you stimulate the habit of behavior of throwing on the ground, which I do not want to see at my visitors. Even if this system is not harming the environment. The corn cups, apart from all the hick ups in the processing of this material there is some mistake in this product. In a technical sustainable way it can maybe be right or can you make it circular. But if we look at behavior when people buy it use it and thrown away.(linear) I prefer the reuse of the product.(circular) Just like at home. There I am also doing the dishes and do I reuse cups and dishes. I will applaud when eateries want to use stone tableware than let facilitate the washing streets. And maybe

the eateries are technical and ecological doing worst than other, but the facts that they are showing the right behavior is more important for me.

**So you are saying that with the use of bioplastic you stimulate the current bad behavior of visitors?** And you want visitors to behave differently? Yeah, exactly.

**#10 During sziget 2008 was their around 0.5-0.8 kg per visitors created per day. How do you experience this waste problem as well? and do you have numbers?** We have 1kg of waste per person per day at our festival. And it is a problem; the less we have the better it is. And we want to have as much as possible reuse. And I would like to change that 1 into a zero.

**#11A Are you separating your waste?**

We do separate waste, wood, paper, glass, construction waste, compostable materials. Missing pieces.....

For us is important that the waste policy of the local government can be improved. At the festival we have to be an example for them, so we have to do it in a good way. But the tipping points are sometimes somewhere else. So we are very focused on the compostable parts on the island, so we can create a

green stream. So we can get more pressure on the waste management companies and the people who are setting up the policy of the island.

So now you're talking about waste separation during the producing of the festival (backstage)? But are you also separating waste with visitors? No not really, but we do at the places where the waste is arriving. And with the hard cup system there is not much waste on the festival. But on the locations we do not have separate trash bins. And we want to implement this in the future, but the difficulties is that on the sports area it is possible but at a forest location it difficult. But we definitely want to implement this. So also on the island. So I would to see separate waste bins at village.

**#11 D What is the current role of visitors according to this waste problem?**Biggest waste production is on the camping, and we cannot really control this. And there are to big waste separation locations, and people from the camping can go there. In practice we see that visitors are having too much difficulties with this. So that's a challenge. On the festival itself we have especially waste at the eateries, and this is not been separated yet. And to create a good system for that, is a challenge, and I did not have seen any good system to separate waste on those places.

And with your project your close to the source. And at ITGWO the waste is at the eateries. That is

because at eateries people eat. Relatively people do not walk a lot with food at ITGWO. We are not facilitating the quick bite, but it is a nice prepared dish with cutlery and there is a terrace so you eat over there. That is particular setting for ITGWO, which is different than you sell a bag of frites. With those products you walk and than 400meters further should be the solution. At our festival you have this setting, so I am happy that you are focusing on this subject

is the use of one material for all the packaging not the solution to create an easier mono stream? And are you trying this? Well the difficulty is our scale, so our scale is quiet marginal. When you convince restaurants to use one type of materials for their packaging, you will get two bags of waste and you are working iconic. So that the pitfall of our festival. But on a bigger scale, I think this will be the solution. You will have the control a huge part of the waste streams. Other part is that I think the reuse of products is more important in our opinion. And I do not want vegetables not been packed per one but are packed in a big grate. So at our festival our focus is not particular on this mono stream, but more how can you change the purchasing policy.

You said before that you do not want to direct the eateries? So if you want to change this policy is pretty difficult right? Well, we already are trying to work to one supplier for the island itself. So only one supplier does the purchase of supplies. This also de-



creases the amount of transport needed. In the past we had some scenarios whereby 8 different trucks were bringing the pickles. That was for us the reason to change to one supplier. And the collaboration with the eateries is something where we are focusing on right now, so you can create on big purchasing for all eateries. We are already trying to create this sustainable mind state during the conversations and meetings with the eateries and are discussing the waste stream. But there is not a real policy.

### **12A What is currently the biggest problem and how are you solving this?**

By using a lot of volunteers. And during the green deal we compared it with other festivals, and we are at the top on how many volunteers we have to keep the locations clean. We do this with people who also could be visitors. We are facilitating trash bins and we are trying to facilitate them nicely and as much as possible. And we have these special settings for eateries with terraces. And the restaurant is cleaning up those terraces.

So you are only solving the problem after they thrown on the ground or are you preventing it before? Well we prevents by facilitating the trash bins of course and to clean it up by using volunteers where people identify themselves. Volunteers also communicate with visitors on their responsibility.

### **Did you do any research, why festival visitors behave like they currently do?**

No we did not have any research done about it , but I have read about this topic. The conclusion of this report was that from a technological perspective it was easier to collect waste afterwards. This solution is a method of creating this waste carpet and than cleaning it up with a huge vacuum cleaner truck. No matter what, this truck has to drive over the festival area because there are cigarettes on the ground. It is more practical and cheaper. Therefore we kind of ruined on festivals.

### **12C Escaping from daily life is one the reason why people visit festivals. Could this be a reason for visitors to behave differently towards sustainability on festival than in their daily life?**

Uhm , It would be very bad if this is the reason their behavior, because nature is one our biggest values of our festival. So I do not hope this is the case. But it is a fact that you're less strict on your norms and values when you drank some beers. The mentality of I am going to party and get drunk is on every festival. So there is connection.

### **13 What is the roll of eateries at your festival?**

Yeah, food is very important on our festival, a frites with mayonnaise cannot been found on our festival. It is a meal, which has the qualities of a restaurant meal. So we are looking for a balance with the menu. Local, biological products are been used way

more often and fit with the core of the festival. Eating of oysters to solve the plaque of oysters on the island. A lot of people saying that it started at our festival, and now they do it on more festivals. First year it was little bit strange. And now it is a hip product, which you can buy for 2 euros. An inspiring function towards visitors and environment in the context of food, absolutely.

### **# 14 Do you have criteria to select food? and what do you think of the current trend with biological and local food?**

euhhh we have special food programmers on our festival. It is about the balance of the food. A meal fish or meal biological or meal local and how much this been in balance. Nature is a core of the festival so of course we use a lot of biological food. So it balance between culinary and biological/local and culinary is also very important on our festival. And if it can be biological it should be biological. And that is in al our advises and instruction towards eateries.

### **Is creating of awareness at festival something you use at your festival?**

Indirect yes, but as aim, no. We are placed in a Natura 2000 area's so everything we do has to be tested on their environmental impact. It is not practical but shows our theme immediately. It is very handy from the perspective of mine position. An example whereby we want to create awareness, six years ago we already had art driven by solar energy. At that

moment we were hiding the solar panels and nowadays we showing them towards the visitors. And then we are focused on creating this awareness. But we are a brand less festival and above our bar there is no sign of bar. So we are not signing towards our visitors. We are very transparent festival, and let particular do the things we think are good. Transparency means that the distance between organization, artist and visitor is really short. Everybody is on a bicycle; everybody is sleeping in a tent.

**#16 Why is it important to create more awareness?** In our ideal situation will the tourism be more sustainable and will they become aware of what amount of energy they use. And we are working on this to get an overview about this topic and to feel responsible and take responsibility towards this. So sustainable tourism is an subject that we want to solve as Lab Vlieland and ITGWO. So with tent on the beach etc.

So with the total experience of the nature of island you want to create this awareness? Yes it is a thin, vague line between what is festival and what is forest? So this should not be a real border. Next week we were in a program meeting, and then we said you do not have to put a lot of attributes on the island, because the island is already beautiful from it self. So we are aware of the fact that we should do to much art decoration, because the area is already beautiful. That is what it is about. So for Music and Art you want to put a good program in this beautiful

island. And the island is an important factor.

I Like the idea of limiting the borders. According to the rules you have to set your borders. So on which area's you are responsible for the visitors. In our history that border has even been a simple woolen thread. That is not possible in Amsterdam in an industrial area, but it is possible on an island.

**Which role does authenticity play a role in your festival?** It is very simple, it is a good program on a beautiful island. In the past we have decorated the forest area in a very beautiful way. And in the evaluation we said, but this is overdressed. So lets try next time to put as less as possible in an invisible way. So we provide only a stage with a good program in a forest or dune.

**#18 What is your ideal vision on how festival visitors have to behave and experience your festival?** I think the curiosity of visitors towards the island is an important one. And we want visitors not to experience a rushed and reared feeling. It would be fantastic when a visitor is not on the festival for a half day, but is looking at the vliehorst or is going on an expedition with the forester. So we want the island be involved and take part in the festival program. And with rushing we do not want people that they have a timetable and are continues thinking of where to go to see a certain artist. Our program-

mers/bookers are really focused on this point to not have enough movement between the locations. The rest and stay component are key components in our festival program. So we are also looking at the fact, what others things are to do next to the program on the locations. And how can we let them stay on that location during the switch between artists on a stage, and how we stimulate them to experience the whole island. Experiencing the island is stimulated at the art route, which is located in the forest routes between the locations and other locations. And a lot of the visitors is sleeping in a tent on a camping which is located in the forest or at the beach. In the morning you do yoga and swimming in the sea and that where it is all about.

**And towards sustainability?**

Uhm, for example with the solar panels insight, we hope that visitors see this and things, oh i am thinking already for 5 years about this and now i am going to put them on my house). So showing the techniques. I would like if people worked more together, so not only the educational role of the festival that educates their visitors. That is always a thing, which causes tension between visitors and festival.

**Yeah laura said, it should be inspiration instead of education.**

YEah, i think that is also our goal. And i think it is mutual, because it is weird to say that you know it better than your visitors. I think the visitors know exactly the same. It is already a boundary to go to

this island with your whole family and to get those tickets it is pretty hard. So I think it is naïf to say that you as festival organization have better knowledge on how sustainability works. So I would like to have this cooperation's between those two groups.

So what you want is to let visitors experience when they are separating waste that it is their choice and decision and not been done by festival. Yeah and we are already giving tours backstage and I think it is vary valuable if we get information how we can improve our festival.



## Appendix B: Interview Laura van de Voort

### **#1 who are you and what is your function at Extrema?**

My name is Laura van de Voort and I work here for around twelve years. And until 1th of April I am operational responsible for all events. And after that I am responsible for the sustainability. That's now a job I do next to the current function I got. I am going to quite my management function and starting to focus on sustainability. I am currently doing this as a freelancer. I am going to work less for Extrema and put more focus on my freelancers company and the sustainability. Until 2013 I was an employed at Extrema and I was managing all the project leaders of all the events. And since 2014 I am putting more focus on the sustainability, I already was focussing on sustainability before of course. And from 1th of April I am going to do more projects.

### **#3 Extrema stands for love for people & planet? What does this mean?**

uhhh, you could read it on the website. The events we organise are organized with loved for the surrounding environment and the people who are concerned with the festival. People: is about how we threat or work staff, but also the charities. For example we are currently involved in a charity named 10.000 hours. Do you know 10.000 hours? It is a project started by ID&T, whereby they stimulate youth to do more volunteer work. We want to go back to the participation society and therefore we need the youth that likes to work as volunteer. What we do is asking 10 euros for everyone who is on the

guest list, and then with 50-100 volunteers, we go for example to Daalzicht in Helmond to repair and fix a experience forest for people with an handicap.

The planet side is about reducing use of energy, reducing use of diesel and reducing the CO2 emission. Waste, Waste separation and producing of less waste.

**#4 Which role plays authenticity in your festival and how are you working with it?** What you say in the beginning, Experience that's all about. And we are authentic because... Well firstly we already exist for 20 years with Extrama Outdoor and Solar Festival already 10 years. We keep the norms and values of the beginning; these are pretty steadfastly about the concept. And with Extrema outdoor, because we already exist for such a long time we made kind of facelift. In those 20 years we have changed in year 15 towards a new facelift. And over time we are very steadfastly about our values and who we are. And we try to show this to the outside world.

### **And what are your values?**

For extrema outdoor is about the experience love people love planet. Innovations , new things and shows. And for solar is our motto : build on creativity. Thereby we build together with artist the festival.

For evaluation on new concepts on your festival you always take your authenticity and experience in consideration? Yes, we always do this.

### **#4 Which measures do you take on the field of sustainability?**

It is a whole list, which you better can search on the Internet but hereby. We first make a zero measure and e measure??. We measure every year our CO2 emission, while more the impact on environment and not particular CO2 emission. I got an Online tool, in which I can calculate the exact numbers and get a top five. Thereby is waste important, energy, transport (business transport and visitors transport) and catering. Catering is hard to define, because it less measurable then other factors. You cannot go so deep into the subject to found out where the meat has been produced or from what type of cow it has been made off. With this top5 I create a plan with goals and a policy every year. And how we are going to improve on these points. And then for energy, it is about reducing the amount of energy used. Like, less use of diesel. And this has to do with smart buying, by exactly knowing what you need for which department. With waste it has to do with waste reduction but also re-use, which leads to reduction. But also waste separation; we are trying to create a mono flow with plastic. We want to have as many as possible of the same plastic PEP. If you only have on type of plastic it is easier to separate so better to have a connecting flow.

### **#5 What's your vision on the role of sustainability on your festival in the next five years?**

One thing that absolutely has to improve is waste. Next to my job I started a platform Greener Events. This

platform I created together with ministry of milieu and infrastructure and Rijkswaterstaat. We made a green-deal, in which we made an agreement with the ministry whereby we make a deal about making things more sustainable. Like the NS has done this, they are going to start separate waste on every train station. This agreement is together with nine big festivals, Into the great wide open, pinkpop, zwarte cross, mysteryland, welcome to the future, DGTI, Solar/Extrema outdoor and open Air. And with those nine festivals we are trying to fix the problem with waste. By the way Entropt helden van nu is maybe interesting. It is a new initiative whereby they trying to get volunteers to work in a Trash team. So maybe nice to get in contact with.

***I was already planning to walk with trash team of DGTI, yeah they come from the helden.***

To come back to your questions, yes waste has to be reduced. Those mountains plastic are just not done. In the green-deal we are formulating what to do. So that's not known now. We just get started on this subject. What we do here are the volunteers of helden van nu, more trash bins, better signing, better communication. Making waste separations possible, so it arrives correctly at the waste processing companies. That sound very logical, but it isn't. Those are the most important activities. And energy, I think within 2020, there are a lot of initiatives that makes it possible to create energy in a different way. Now we are doing everything with aggregates. And I

think this will be very different in 2020. In 2020 the sustainable energy sources will still be in a minority but in 2030 definitely not.

***Are you already planning to use solar cells etc?***

Those are activities that are currently on the very beginning stage and if there were those possibilities and affordable we will definitely use it. I do not have enough knowledge about energy. I think mine colleague can give a better answer of this question.

***Which technological developments are you currently working with? And how is this going to be implemented in the future.***

In that project with the government we are trying to solve the waste problem and we are looking at the possibilities. But we do not have any solutions or developments for in the future yet. And cannot say what the benefits are from that project.

***There is no vision about this subject?***

Personally I think we should go to a recyclable cup, which is a hard plastic cup with a bail on it. That festival quit with the use of disposables.

***What the reason that you are 1 of those 5 festivals that are ahead of the market according to AGF, and why is your approach unique?***

Yeah, it has something to do if you find it important. And I think it is important, so I started working on it on our own festival and for a lot of festivals

it does not have the highest priority. Why do you think that's the case? Because they probably think the same as I did before that being sustainable as a festival is really complicated and cost a lot of money. That's not really the case that it is difficult but the feeling is there for a lot of organizations.

***How do you think other festivals are going to developed on this subject?***

More festivals will join the club, but I can't predict how many % will be sustainable in 2020. But I would like to have 50% of all festivals in 2020. There are no numbers about it but currently; I think it not more then 10%.

***Yearly the amount of waste per visitor produced per day on sziget festival is around 0,5 kg -0,8kg. Do you experience this as well as a problem and are these numbers the same on extrema?*** For extrema outdoor the numbers are quit the same, but with a camping the amount of waste is a lot more. So at solar festival we have higher numbers. And this also has a relation with the amount of time you are open. There is way more waste, because of the people take more stuff with them on a camping, but also you are open 24 hours and in 24 hours your produce more waste then in 12 hours.

***#10B The amount of waste on festival per person is twice as much than households. How does it comes that people create more waste on festi-***

**vals, and are taking reducing waste less in account?**

Well to start, at home you do not use disposables products. Everything is disposable. But also at festival you have production waste and things you cannot reuse. So you can't compare these different situations.

**Do you think that the motivations to escape from current society of visitors are in relationship with the behaviour of throwing waste away on festivals?**

I think so. I think that during the last years we created or own new norm of, whereby it apparently became normal to drop a bottle or glass on the ground. And I think there is a reversal going to take place. Whereby organisations but also visitors will think, He is this normal? Do we like this? This current norm does not make any sense. When you are on the public street your not showing this behaviour, if you drank up your bottles of cassis you do not throw them on the ground but on a festival you do. The first couple of hours, people do not throw their bottles on the ground, because it is a little awkward. But after a couple of alcoholic drinks and people throw their brakes loose and then people think it is ok. But I think we should go to a new norm, because nobody is happy/satisfied with this current situation. We taught ourselves this behaviour, but it does not have any benefits.

This behaviour of people was this also already existing in the beginning of your festival?

I think later on this attitude became worst. 20 years ago I was not here, but 12 years ago I was. I think the attitude and problem was the same as now, cannot remember that well how it was back then. For example when foreigners are visiting our festival or queensday and then visitors are part the public area. Those foreigners are surprised and are asking themselves why is everybody throwing this on the ground? It is just not fun to chill on a waste dump. And it is not fun to clean it up. And it is almost something you should be ashamed for towards other countries.

**Does it benefits in amount cleaning service you have to use when people throw their waste into the bins?**

That doesn't really matters for us as organisation. For small festivals it is maybe different, but for the bigger festivals we use a cleaning car. And if there are a lot or less plastic waste, he still has to go over the whole area. So you cannot benefit money wise on solving the problem. For the organisation it is more about the experience and production on environment impact than on cost reduction. If there is a business model, which benefits us as organisation money wise, than we will definitely be interested in it. In particular in the context of separating waste. Because delivering a separate stream of waste does cost you less money then mixed/rest waste. If that's the case it is also easier to come to that 50% in

2020.

**What happens with the waste you use?**

Well if you have separated the waste, you can recycle. But mixed/rest waste is thrown into the incinerator.

**How much got separated?**

That differs a lot every year. That's between 20 and 70%. That a big difference and it depends a lot on that a plastic cup does not have a lot of weight. So takes some time to collect a lot kg of plastic, but when you for example thrown some wood in the wrong bin. And wood is very heavy in comparison with plastic. That the % can swing enormously. In the end we want a 100% separation of waste, so there is now mixed waste and nothing has to go into the incinerator and everything become new raw materials.

A lot of the trash doesn't end in the trash bin. If I personally look around on festivals, I see people throwing their trash on the ground all the time. What is the importance of this issue, and what are the solutions you use to solve this problem? Extra trash bins, trash teams, signing etc. Those trash teams are not only there to clean up the area, but also have a communicational purpose. We are currently working with a partner. And with this partner we are working design activation???. This is especially on improving communication. And of course facilitating, maybe you want to throw waste away, but then you need



trash bins.

Is there a certain amount of trash bins needed to and is there a maximum, which stimulates people to throw garbage away. We are currently researching this topic, and I cannot conclude anything out of this yet. You have to facilitate it, but then you still do not know the maximum. For example at main stage you can't put any trash bins. By facilitating trash bins you make the problem smaller, but you will not solve the issue.

**#11B Research of Felia Lanno showed us that 56% of the festival visitors think waste is an disturbing factor on festivals. And 77% of the people associate the word dirty with festivals. As an organiser of festival this numbers aren't nice. Does this also shown the importance of the problem of throwing waste at eateries?** Firstly, I think these numbers are right, where did they come from? **Uhhh from felia lanno a graduation student from Belgium. I see Belgium and Netherlands as kind of the same.** Well they are definitely different, but for this number it does not really matter. I think that even more people than the 56% see waste as a disturbing factor. But the mentality of the Belgium's differs definitely from the Dutch. I totally agree and it should be changed. The whole core of that green deal is, that changing things in your own as festival is quiet difficult, but we have to change the norm for behaviour on festivals. And it is not something

you changed instantly. And therefore we like to do it with a group of festivals and from that point on to with a group of koplopers to also stimulate the peloton of small festivals to join. So, that we together solve the problem of this behaviour. (Gezamenlijk).

### **How big is the % of this waste coming from eateries ?**

I can't say that in concrete numbers. And it also depends on how you are making the numbers up. Because if you look at the weight. Well the disposable are not that heavy. But if look at the volume of the disposable it becomes huge. Think about this on how you want to measure this.

### **What type of packaging do you use for food and drinks. (disposables, statiegeld, biodegradable)**

We use disposable and especially we work with the plastic PET. So we can create this PET mono flow/stream. But I prefer Biodegradable plastic, because it can throw away together with food waste, and than become compost. But currently those biodegradable plastic aren't that degradable. It takes to much time to become compost than food-waste. So therefore now biodegradable plastic been thrown in the incinerator. So we need biodegradable plastic with the same composting time as food. Than this will be the best solution. And this material isn't yet on the market. Therefore we do not implement this material yet in the festival market.

### **# 14 On your site there is a lot of information**

### **about organic eateries. Do you have criteria on which you select your eateries?**

We look especially at the look and feel of eateries. It is not that we are sending a questionnaire towards the eateries, with questions about what they do about sustainability. But we do take a look at the offer of vegetarian food, locally purchased food, organic food. And mostly it is the case that those eateries are already more sustainable and mostly those people are already more involved in this item. So we take a look at this, but we do not look particular towards the sustainability of the company.

### **You were talking about look and feel. What is important and what type of look and feel do they have to have?**

That differs very much, but it is about the fact that it is not standing anymore in a standard white tent with a bar. It has to look cosy and feels unique. So in that way support the desired experience of festivals. So this means that the amount of food trucks would increase in the future?

Yes,

### **Which function does eateries have on your festival? And do you see the change of this function?**

Beside the function of delivering food we also want eateries to be part of the experience. So we want it to fit the surrounding environment. If the stage has a certain experience, than you want the eateries to have this same experience, so it becomes a total

concept. And what type of experience this should be differs in every area or per festival.

**So if I come up with a design, I should take in consideration I can change the feeling of the concept according to the festival? Well,** I think something is authentic, when it is what it is. And it just has to fit in the festival, and when something has to be made, than it becomes less authentic, so less real. So I am not sure this is the case what you were suggesting. So the things that are real and authentic are the things that will survive the market. So not the conceived things, that makes the most profit, but things that are coming out of the heart. Those are the things that survive.

**Is this trend of organic food something, which is growing and does it become only organic?** Well I would like to be this case, but you also need eateries that can handle the huge crowd. On a certain time around 6 and 7 everyone is going to eat. So in a short time, there should be produced a lot of food in a short time. And this can be organic, but those are still two separate worlds. That food that has to be mass produced, because so many people have to eat in short time and the organic food from the heart. Those are two world, and in mine ideal this become one world.

**So the organic eateries are not only a trend but also a real development?**

Yes, and that will stay on festivals.

**Is there a difference between the behaviour of throwing garbage of people at organic food tents and normal food tents?** There are no real numbers about this subject but I do not think there is a difference in behaviour they behave probably the same.

**According to UMEF there is transition-taking place in the festival market by stimulating sustainable behaviour of festivals. Is this stimulating of behaviour something you are working on? You already said you were working on this theme. But why is it for you as festival important that visitors are more aware and involved in their sustainable behaviour?**

We need the visitors to solve these waste problems. But next to that, did you saw the wake up call of wubbo ockels? No I haven't seen it yet. You should google this, wake up call wubbo ockels. And he explains the exact reasons why there should be something be done about this problem. If we continue to live like we do now it is destroying our planet. And eventually we have to start working on a circular economy. If we keep continue this behaviour, and do not work towards on circular economy. Than it is done, and than my son cannot life happy and become old. That's what has to happen. And I think that festival is a good tool, to reach and stimulate youth to change their behaviour and mind-set.

So festival can be used as an inspiration source for

those people and not trying to learn the lesson on how to behave. No certainly not, as you said before you come to a festival to escape from the society. If you than suddenly arrive at a boarding school. Than you're done pretty fast. That's also not the intention, because you should keep in mind that we are festival organizers and our job is to offer a fun day to our visitors. And that will always be priority number 1. And next to that I think we should behave socially responsible, and we are lucky that we as festival and especially when we work together the possibility to reach a big group of people. And we got the power to make the difference.

**On your site you mention that to create more awareness among visitor you work together with van Gansewinkel en XO trash teams to make the festival area clean and the waste got separated as much as possible. How do you create this awareness with this approach?** And what the idea behind it? Because those trash teams work on communication, like I mentioned before. They do not have a yellow jersey and are cleaning up the festival, but they are volunteers, girls and boys who like to party. So the first party of the day they were cleaning up the area, and than the other party they can go party. Therefor you get a Peer2Peer communication. Those young kids are styled, so they look good and they make a party out of it to clean up the waste. They are really going to get into a conversa-

tion with visitors.

***What you vision on how visitors behave and experience your festival?***

(Not only in the context of sustainability) Well we already have nice visitors. And visitors are for sure coming to escape from reality. That they behave licentious and it is all about party. Than it is not a real surprise. And luckily we do not have to complain a lot about them. We do not have visitors that fight a lot or something like that. That should be a problem if that was the case. And I just hope for more awareness and involvement in separating waste and everybody is nice to each other. And if we look at camping's, people who take their tents with them.

Contact with the food line up.



## Appendix C: Observational Research DGTL and HCTS

AFU# 9PIEGEL 7  
Wim Grijders,

0950waler

#1 - Niet besloten maar er werd eten  
- Propaganda  
- Wil de hand eten wel aan tafel → aan kluis  
- Prullanket smooit meten weggevoerd

#2 - Eten in hand, Bafje met kuis Bani  
→ niet aan tafel  
→ niet lincuren → gooit ofaal weg door maek  
↑  
Social factor

#3 - Tanteje eten → hand in de hand  
- Scaetje in kopje  
- Kuis in kopje → gooit om al is maek  
↑  
1 meer ofaan  
Te veel maek extra

#4 - Parla eten met kuis  
- kuis op kuis met op  
- ouder blyou letter  
- eten alle met gezak  
- Lp 2a goois met weg

Vale verhelderd verpakkingen en reacties

#6 Bafje in bafje → Klein maek

#7 Loempia's tot goot bafje met rouw

#8 Kinderen loopt weg ofbedwing niet weggeois  
- Kuis riltet weg naar etet  
-  
- Bante 9 Hun gee ite die mit riltet, kan jodum niet  
zen  
- Teal meimeer eten hand, 6 woung ete, slact 202  
→ kuis van ofaal weggeois voor een lullitot maek  
Tafel kuis 4x zoveel ofbedwing die lopen vrgan  
andus.  
→ kuis ofaal bafje, meime riltet dicitting door jiltora



























## Appendix D: Context Mapping Research

Context mapping is a method used by designers to get information and insight to use as inspiration for their design. In this part we describe the method and attributes we used.

### Goal

Firstly the goal of this method is to get insights about the experience of visitors and get inspiration and insights about their idealistic eating environment.

### Sub goal:

Get insight on which emotion people feel during different times at a festival.

### Method

#### Participant's selection

I was searching between 4 and 5 participants for this research. This number of participants was a realistic number of participants I could get. Also with use of 4 -5 participants I would probably get enough insights to find inspiration I tried to find participants, by sending emails to all the 100 +/- people on the guests list. Only two participants did react. Therefore other 3 participants were founded on the first day of the festival. They were mixed age and divers from background.

#### Participants:

Viveka (Female), Graphic, Board Game designer  
Willem ( Male), Art Producer  
Sophie ( Female), IDE Student

Valerie ( Female), Management Student  
Katie ( Female), ???

### Sensitizing

During the sensitizing process participants received a booklet, which consisted out of small exercises. Those exercises were designed in such a way to let people think and express themselves about their experiences, emotions and opinions during different moments at the festival. The booklet was split into exercises about Friday and Saturday. Both days included a timeline where people could explain their activities and their emotions they felt. Participants could express their experiences on this time line, with the use of colored and stickers with emotion on it. Other exercises were taking pictures of their positive and negative moments. These pictures could be sent into a WhatsApp group. Next to this they had to describe their eating ritual. Participants had the complete freedom to choose their desired time and moment on the day to do these exercises. In this way we prepared the participants for the group session and we let them already think about their emotion and experiences. In this way it will be more easily for them to express themselves during the sessions. So they are relaxed while filling these booklets. The booklet can be found in appendix x.x.

### Session

The intentional session consisted out of three phases. In the first phase participants should discuss and interview each other about their book-

lets. The second phase participants make a collage about their experience of the festival and present and discuss them with other participants. In the third phase participants should describe, design your ideal eating environment and discuss this with other participants. If participants did not want to participate in a group session. They had the option to get a 1 on 1 interview about the booklet. Due to lack of time on the Sunday, I choose to let participants only participate in phase one and three. By asking directed questions and remarks I try to stimulate people in their discussion and explanations.

Eventually we did a group session with 3 participants and an interview with 2 other participants.

### Collages

I followed the instruction of the paper; Contextmapping: experiences from practice, written by Sleswijk Visser, Stappers and van der Vlugt (2005). Like using pictures and colors collages could be made. I facilitated a catalogue of 100 pictures. The content, context, people, emotions of the pictures had a high diversity. And we used not to aesthetical looking pictures.

#### Analyses

I recorded the presentation and discussion part of the sessions about the ideal eating environment. This data has been written down into a transcript. In these transcripts I search for **interesting and** inspiring quotes, which were giving information about their ideal eating environment. These quotes



will be clustered afterwards. These clusters are eventually factors that are inspiring us to design their ideal eating environment.

#### Discussion:

Due the lack of times not all the phases of the session were done. Therefor we miss some data, which could be interesting as well. Still the data we receive is good enough for me to get inspiration.

Pictures taken during the sensitizing for in the booklet was limited. This was too bad; I would have liked to see those pictures. This limited amount of pictures was caused by the fact that people smartphones were out of battery for the most part of the day.

## Transcript Context Mapping

### Participants:

Willem

Viveka

Sophie

### **who wants to start describing their ideal eating environment?**

Well, I wrote some things down. Firstly at a festival, I do not like it when you have all catering together and all picnic furniture is located next to each other. That it feels like a busy and noisy restaurant atmosphere. So I like it when it has more space between the furniture and that you can find a space whereby you are not between the people, but have overview of the festival area. Like watching playing children, dancing people, musicians but that you have an interesting view. I like to have normal chairs with a back where I can chill. Especially when you are standing a lot, like those picnic furniture without a back, pretty killing. When you just want to get some rest at that moment. And with the current situation I can sit down but not relax. And with cutlery and tableware, last year on the fortweg they had a restaurant with just normal cutlery and tableware from porcelain and metal, whereby they wash it. Instead of the plastic tableware, and wood like cutlery what does not eat very nicely. And then you still throwing some trash away. And when you wash the dishes you will have re-use the tableware, and that's maybe even better. I really like it

when you do not have to wait in line for your food. I am not saying that I have to be served. Maybe there is a compromise, whereby you pick a number and going to sit down, whereby you are not been forced to wait in line, especially when you are with a bigger group. Then you have to stand with a lot of people in the line or one person has to carry a lot of packaging. So maybe there is a solution that you not have to wait in line but also not have a serve with waitress.

### **Do you guys have a meaning or wants to add something about certain things he said?**

Well I got something different, In my opinion there are two things that is an ideal situation to eat. The first is when you stay in the middle of the festival and you do not have leave the festival to get some food and the other is when you really make it a moment for yourself. Like an own attraction, own world you enter. So you make it separate from the festival. And on the festival it seems for me the best way. Because you can still be watching the bands, yesterday we were sitting on the hill watching a music band and in front of us were people eating a loempia. So I got hungry as well. And I thought it would be super nice when eateries once a while will pass by with a cart, and where you can buy small bites and so not have to leave your place. So you can keep chilling and a lot of small bites that only pass by ones. And you have it or do not have it, so there is a certain excitement. Did you also had

that nice loempia? And then someone said, ooh noo I missed that one. And you have the chance to get it the day after. It should not be fancy and not too much choice, just one thing.

That's a good one!

The other thing is a sort of hap muur, but that so not personal. But it is quick and with your own personal attraction, world. So there should be a nice DJ or a band and people have to dance while waiting in the line. Well they do not have to but, there should be a possibility to dance in the line. It should not take too long and not too much distance to walk and not too much choice.

Or when the row already a thing on its own is. Where people do some animation or that they do a quiz with people or organising something crazy, whereby you do not have to get bored while waiting in line. Or maybe a waiting line whereby they sit down. Or a couch whereby you can just push it a little bit more forward while waiting in line.

or maybe an rollercoaster car!

Hahahah Yeah,

haha yeah things like that, so our own world with a lot of creativity or in the middle of the festival.

**So an own world on the festival ?** well it can be

on the festival, but you will not hear the music of the festival for example. When you hear the festival music than would be nicest to stay in that area. And for the first example someone is walking with wheelbarrow with for example 100 bites and makes a certain round.

**What kind of feeling and appearances does this man with wheelbarrow have?** It has to fit with the festival.

Well it has to be theatrical.

what do you mean with theatrical??

Like it is an act.  
Yeah it has to fit in the environment...

Maybe with a big cooking hat or

Yeah maybe it has to look like that.

It has to be clear that he should have food. Maybe he behave like a marketsales man , like delicious loempia's, who makes me loose.... Hahahhaa. That's what I think than.

But the idea it that you do not have to move from your place.

Well than he comes to you and speak to you like.

It is not the idea that everybody goes to the wheelbarrow to buy some stuff.

Well on bigger festival like lowlands, they already serve beer at your place. So you do not have to walk to the bar.

Yeah those magic thorn backpacks?

But than more cosy(Gezellig), because those things are always not so gezellig.

Yeah that's true.

With a flag on top of it and a light on top of it.

That concept is also if you want to have a quick beer.

It really has to fit with the festival feeling. It has to blend with the moment, maybe even with the band. Like during those heckensaw boys , the person has to have like straw coming out of his hair.

Or it doesn't need to have a wheelbarrow, but can also just have a like those cigarettes sales man from the past with a tray. And than with like 5 or 6 people with small bites for one coin.

Indeed for only 1 coin of even half coin.

And that we are not creating rows for food at the place.

So almost like a popcorn salesman, with healthy food. So should not been like unhealthy snacks. It has to be easy(lekker vlot) and definitely not become a "thing" or so.

Well in my opinion, to eat nicely it should have an combination of rest/peace and at the same time has an creative appearance. Usually I regret( well on this festival was not the case) to start eating, because I miss the shows and surely when you are with more people and everyone wants something different, than the eating ritual takes a lot of time. Yeah, I would like when you stay close to the performances of the festivals. But I like to have a place to sit with a table to eat. So it should provide the possibilities to eat normal. I do not know how to see this, but I want to have it close to performance, but also has a roof and is wind proof etc. Normally you cannot find a place to sit and eat.

Personnaly I would like to see the rest moments apart from the eating part. And just create a chill corner. Where people just can relax and chill. So without all the dancing people etc.

And if you are at a concert I would like to see that the food has to be served in a way so you can eat it in an easy way. Not with cutlery . Because with cutlery it is difficult to eat while standing. But those loempia's you can easily eat.



Those finger foods.

I am not only from the traditional cutlery but for examples with the loempia's here whereby the sauce is served in a separate cup. Than I think like, that sauce can be easily put on the plate of the loempia's. That is already less plastic and most people around us on this festival are already conscious/ aware about their sustainable behaviour. There are so much different packaging at the eateries at festival and it is all thrown away. Than I think you can easily use a re-use system or edible packaging.

Haha that you can eat your plate, I already see it when I am eating ohh plate is empty. Ahhh yum yum yum.

I had that once, I could eat the frites packaging.

Is that nice to eat?

It is kind of the same as an ice horn.

I always like it when packaging helps you with eating. Cannot come up with a good example but a part of the packaging also cutlery is.

***You were saying I would like to have less packaging? Is that because of the environment of maybe to much stuff to be thrown away?***

Well a little bit of both, maybe it is nice, when you can eat or use everything that you do not have to walk a trash bin. So you do not have all those trash anymore.

You have those papers with seeds in it, would be nice if you could grave your frites plate into the ground and than the year after you have some flower standing there.

Oh yeah that nice indeed, of course seeding of....

***You said do not have to walk so much?***

Yeah I so to walk away from the moment, you are there enjoying a moment of a band or whatever and you are chilling in the sun or something. And than you smell those delicious loempia's, And than you want to eat it as wel, And than it is not annoying to walk to it, and there maybe always should be a place where you can go to when you want to eat. But is also super chill , when you can sit where you are and suddenly someone is passing by with your wishes( Food).

At the beach in Barcelona you have all those beer and soda sales man. It more luxury than like a beach club. You do not pay a lot for that beer and they just pass by once a while. When you thirsty you just wave your hand and they will come to you. And that's kind of a luxury situation. Which you can try on a festival with movement.

What you also have in those countries is that on a certain place at the beach you have someone with a small bbq for example, and on top of that you have those cornkolven on it. And than they sell in a surrounding of 10 meters. And if they are done they move their whole bbq 30 meters further. Than they sell again in a surrounding of 10 meters around them. That is also a nice way. So you do not have to leave the area. You only have to take ten steps. Than you stay in your moment.

***How do you see the ritual of throwing waste away?***

***With waste I would like to have the trash bins as close as possible.***

I am thinking, on lowlands they had a sticker to place on your garbage bags and in that way you were participating with the lottery. When you were bringing your garbage bags than those stickers...

***Waitress asking something.***

So while delivering your garbage you are participating in a lottery. So maybe there is a code on your plate and than you can do something with it.

It explodes when you are finished with your food. And it's gone!

Or when it burns very good, that you can put it at such a heater at festival area.

Ahh that's a good one.

Or that the plate is also puzzle pieces, and that together with people around you are going to complete this puzzle about... yeah name something.

**Does this create this extra value for you?**

Mwhaaahh, It is a bit the general impact of the people, what there own opinion about this is. At a festival like these, there are a lot of people that are aware and conscious about sustainability. They would like to contribute, and if you make something with a sustainable feeling at a dance valley it would have less contribution of the people. It is depending on a festival, but if you really come up with a creative solution, whereby at such a festival you have a lot of people participating, than you can come up with fun designs.

Especially when there are so much children, than you can maybe also do something with that.

I was also thinking, food can be something whereby you get to know new people. When your standing in a line for food, or talking with the chef. Those are small moments, and if you take that away with mine first idea. Than you only stay with your own group.

Standing in the line, does not have to be bad. Currently at most of the festivals that people are pushing to get forward in the line. Than it is not

comfortable to be waiting in the line. But if you got entertained or something.

I experience a lot of times that we are a lot with only the two of us. And therefore less socialize with other groups. And even when your joining a group, than you are still are kind of two one unit within the group. That is very different, when your with a bigger group, people can join more easily the group.

When I am on a festival with a group or with just the two of us, when I said I am going to get some beers , that can be the moment that your not with the group and are with unknown people.

Some interaction, even if it is only with the bartender.

Yeah so, that can also be very short moment.

**Interview with Valerie and Katie about booklet:**

**Valerie**

**Katie**

**Oh your even filled in for Friday.**

Yeah we also filled in for Friday. Hahaha

**Yellow? What is yellow for you guys there?**

We were travelling by blablacar. I do not know if you know that? But you pay like 7 euro's to someone and than you are riding along with other people who are also visit HCTS. It was the first time we did this so it was very handy because in that way we avoided 3.5 hours train travel. But I put the yellow stickers, It was for us kind of exploring and but eventually it was very chill. So that's why we put some more green sticker on top of it.

**Was it comfortable because of the people you were driving with?**

Yes, Very relaxing girls, who knew each other. So that makes it very comfortable for us. And they knew also other people that we knew. So that was also really nice.

**There was excitement and happiness at the boat, because you were on time for the boat?**

hahaha, also! No we were right on time. because they had a boat one hour earlier. Especially because

we were heading to vlieland. Especially you, you were like VLIELAND!!!! Hahahahaa. It was back to vlieland, already have visit/worked two times HCTS en ITGWO so it feels familiar. On the moment you step on the boat, you think we are almost here!

**Like coming home?**

Yeah kind of,

**Relieved with the tent?**

Yeah we achieved it to setting up the tent. And it was bigger than expected.

Especially that it was bigger than expected! It was so chill.

It should be a two person tent, but eventually it was a 3 persons tent. IT was really big tent! When it was set up we were like oooh nice! Hahaha nice tent!

**So you were proud on your self?**

Absolutly!

**Maarten vos?**

Yeah maarten vos was our first performance we watched. I knew him from a name. I never have saw him live, and it was very beautiful performance.

**I see her chilling, were did you chill?**

In the front right?

Yeah we were in the front, on the ground. It was good weather.

What did we do after maarten vos?

Didn't we went to the beach?

No that was yesterday.

I think we stayed chilling at that spot. Ooh noo we went to the supermarket and did some groceries. We bought some chips and wine.

No that was before that right? Well we bought some wine and chips . hahhahaa Before or after that performance. And after that we started eating at the bolder. And we ate frites. There was paella on the menu, and we did not really wanted to eat that food at the ruige plak. So we want to the bolder restaurant.

**I guess that you guys drank a lot of beer?**

Hahaha ,

the scouts were getting beer all the time. When I had a beer and it was not even empty I already received the next beer.

Three gulp of beer and they already arrived with two tray of beers. But it was pretty nice evening.

**You liked the bolder zaal?**

Yeah

Well first it was very funny at the bolder restaurant, with the kiddo dancing. That was also nice to watch. And after the bolderzaal we have chilled outdoors.

**And eventually it was cold ? ;)**

Yeah we woke up in the middle of the evening, like fuck we are on the ground and fuck it is freezing cold over here. Hahahaha. And we put another pants and more pants, sweaters, socks.

Moment you woke up and was not so drunk anymore, you realised it was pretty cold.

Oh yeah all our food, we ate very healthy al these days(sarcastic voice) hahahaha.

We ate a lot of junk food especially.

**At the ruigeplak you only bought coffee and beer?**

We did not eat something there right?

No in the end we did not eat anything. It was especially because, it or cake or only those evening meals. And somehow we were not into the mood to eat that food. When we wanted to eat, we like to have a warm environment. Eventually we went to



the bolder.

Yeah to get a little more warmer indeed. So you can sit down and be warm when you are eating. So you can charge for the rest of the festival.

And more choice.

And still we ate two times frites hahaha,

yeah but not me I also ate pizza. That's also in the booklet.

***I would like to talk about de ruigeplak unfortunately you guys ate at the bolder.***

Yeah at the ruigeplak it was pretty specific and they were not offering the food we wanted at that moment. And that was also the reason we did not eat at the ruigeplak. There was just only one choice, and that was very difficult, I had the feeling that last year there was more choice. There was less sweet food and more hearty food. And I did not wanted to eat pie. I wanted to have more hearty food.

And for example at ITGWO you have more choice. ITGWO is HCTS times thirty. This part of the area is not even been used. Than you have more the food trucks idea. Everywhere are eateries and you can pass by everything.

Than should I also eat less often at the bolder, but because the choice is so limited over here than.

***Is it open during ITGWO?***

It is open , but I never ate there. I am always eating at the festival location. Because the locations are so big that. Like for example the fortweg is a 30 minut walk , then you are not going back to the bolder. Even during the route towards the different locations you have things to eat.

***How do you experience the food of ITGWO?***

uhm super, they have a lot of choices and a huge variance between different dishes. Prices are ok. If you want you can eat very expensive with the restaurant quality food but you can also eat very easily a simple bite.

***How do you experience eating there?***

Well usually I sit down during dinner, but not per se on the eating spot itself. Mostly I buy my food and than on ITGWO everybody wants something else, because you have so much choice and mostly everyone is leaving and than you meet at the mainstage. And than you are going sit over there with each other. Sitting or standing. But mostly it is people are splitting up and meet up somewhere else. Because it is nice to eat at the stage.

***Do you have a sitting place over there?***

At the eateries you have those tables, but mostly those tables are full. There are not enough seating's.

That risk is always there on festival, because you are with a lot of people. So there will be never a seating place for everyone.

Sometimes I even did with groups, that we were going to eat at a certain place and then if there was a table with seating empty than we were sitting over there. Also depends on the mood of myself. I think that dinner is also different than breakfast. During ITGWO at the bolder restaurant outside you have a lot of breakfast eateries and on the beach. And that is really nice that you can go to the beach on the island to recover from the hangover. So that is nice if there are eateries as well.

some rest and peace !!

That is nice, that you can eat breakfast on the beach.

A noisy environment during dinner is fine for me, but in the morning it is important that you have a moment of relaxation. So I can wake up.

***You have a lot of emotions here? Even guilt?***

haha yeah guilt because we drank so much. And I thought lets make good use of the stickers. And eventually relaxation and peace on the beach.

Usually on ITGWO in the morning, we thought about it today but it was to cold. Swimming. Normally I always take a dive into the ocean in the

morning. For a moment in the water is super nice.

**So is the charme of the festival that there is a lot of variety?**

Yeah definitely!

That makes the festival, Yesterday we went to the beach in the afternoon. In general I go to visit the village, that is also our planning this evening. And usually on ITGWO I got on a saturday afternoon to the village to be the tourist and buy some fun stuff and send ugly post cards.

**You had a moment of rest during this performance? Why because of the music the setting etc?**

A little bit of both, the sun was shining and it was relaxing music, it was also the music we could handle with our hangover.

But also our first beer!

So you can gradually change into the right mood. We were sitting on the top of those hills in the sun. With our first beer.

**Swinging. Ooh yeah you send me the picture.**

We were first in the bolder restaurant and than we saw that kinder garden so we thought he nice. So we watched the kids and swinging in the sun, that

was nice.

**Laying in the sun ?**

Yeah that was after the swings of the kinder garden.

**Yuko Yuko?**

Yeah we were with coffee at the ruigeplak and I really wanted to see that band. And than we found a blanket together with coffee so we were warm. And firstly we were sitting on those benches and after that we were standing to watch them perform. And than we had it cold again, ooh noo first we went to the beach to check the sun comes down. With beer!

**how were you guys sitting on the bench?**

We were sitting side-wards.

It was oke to sit like that.

Yeah but eventually we were standing because people were standing in front of the area. So you could not see the artist perform. Than we decided to stand between the mass people

**Again to the beach?**

Yeah the sun going down!

**Puzzles?**

Yeah we had puzzle booklet with us. We made puzzle for literary 2 a 3 hours. We were interested in the puzzles. All these stickers I placed in the

booklet.

**So that was your evening program?**

Yeah the evening before we drank to much and did not sleep a lot. We had something like lets just chill it is fine this way. Getting warm and enjoying the puzzling. And there was also music in the bolder so we also so children dancing.

**Children also give a lot of entertainment?**

Yeah that's what I enjoy. They do not realize yet how retarded they look like sometimes. And that is very funny. Especially the somersaults loin child. He just thought he was able to somersault towards the top of the dune back to the camping. And his mom was asking do you come with us and than he said yeah I will be there in a moment and he kept continuing with the somersaults.

**hopping people at heckensaw boys?**

Yeah that was an performance and people were hopping and jumping and those heads hopping from a distance was so funny.

**Sad because of the cold?**

Yeah we were cold and we could not sleep.

Hahaha Maybe it is overreacted with sad

Well I was sad because I could not sleep , because it was so freaking cold.

Yeah indeed it was pretty cold.

***That was only negative point?***

Well in the end the food choice was not enough. And those were complete menus and not simple bites.

Yeah sometimes if you wanted to eat something around 5 but you are not really hungry and just want a small bite. That possibility was not provided. And then you started to eat some chips in front of your tent. But then your outside of the festival.

***What your ideal menu or right amount of different meals offered?***

It is a small festival so not too much.

There should be more standard choices, like for example now. They had paella, that is pretty specific type of food. It is nice if you really enjoy that food, but in my opinion it is too specific. I think, do than more like frites or certain sandwiches.

Yeah, small bites or sandwiches or finger food.

And if you have not that much to offer than so that you than have some more standard things instead of the specific things.

In the end we found out that they sold burritos, but that was not communicated towards the visitors. And when we found out they sold that, we already

had dinner. Yeah communication was just bad, because they sold it but we did not know about it. And if they communicated this better than probably I would have bought their some food instead of the frites with kroket at the bolder.

***What is your ideal eat environment?***

It has to be warm, if the sun causes this or a heater does not matter.

Or you can use blankets or something.

Indeed something like that, when you get it warm. Do you talk about breakfast or dinner that is big difference. In my ideal breakfast situation, then you have a little hangover, mostly. What I like are hammocks.

Or beanbags!!

Yeah but I prefer hammocks. Beanbags are also fine. And also I want a lot of different dishes to choose from. Just more choices.

Or just even that you can get a sandwich and can take that with you on the beach. It has to be also very easy to take with you.

And if we talk about the environment, then I prefer a place whereby you can still enjoy the music and in such a way that is still can see and observe the artist who are performing. So you do not have to

split it.

So in that way like here on the ruigeplak that you have those tables and you still can watch the performance. That's perfect. Some extra heaters or something should be even better. And some bean bags. And for dinner it is kind of the same. What I really like is how the look and feel is of that coffee bar and this attracts me and as a visitor you immediately see what they offer. And with the other eatery, you had not clue what was going on, until you walked into the eatery. So there was no clear communication.

***So the ambiance and the food they sell has to be shown by design of the eatery?***

Yeah definitely. Which is already happening with the food trucks on ITGWO etc. And what you currently see is that burgundian and people want to see what they are eating and want to know what it is.

Those eateries are really have a specific look. And you know exactly what type of food you can buy.

It attracts you more to eat there something than to sit at a normal restaurant. Ooh that looks cool and I want to try this.

***Do you throw your garbage away after your dinner?***

When I am sitting at a table I usually do not throw



away. So I left my plate on the table. I should be honest, when I walk with the packaging than I will not throw it on the ground. But when I am sitting I have the trigger to let the plate on the table.

But when I have it in my hand, then I will not throw it on the ground.

Somehow everyone is eating at the table, so the function of the table is to put thing on top of it. And somehow I have the feeling that people will walk by and just check and clean up the mess. And if you are eating at a random place, they cannot easily walk threw the whole area to check if you thrown trash away. And when a trash bin is central located than I will thrown my garbage away. But when I have to look a lot than I will leave it on the table. I do not feel guilty when I leave the trash on the table, but when I hold it in my hand I feel to throw it in the trash bin.

### **how do you want to get served?**

Well for burritos I do not care about it. You just can give me a little plate with burritos. But sometimes you have those bamboo type of plates and that always look nice and is more stable. That is easier to take with you.

And there should be enough space on the plates for food. Had a lot of time when it is just big enough but really difficult to care but there is too much

food on it.

### **And during ITGWOW do are people also throwing their trash away like they do here during HCTS?**

Yeah, but I think the environment is already helping and the type of people who are visiting this festival are already kind of sustainable aware. Plus the hard cup system ofcourse with the deposit money. And in my opinion there are enough trash bins on ITGWOW. You see them always, enormous posts with trash bins, the same as here. But than way more! It seems to look mostly very clean at ITGWOW.

### **Do you think it is because of the type of visitors?**

People who are visiting the ITGWOW are typical type of people and a lot families and ITGWOW has relatively a lot of volunteers! And who love this festival and therefore there will be less trash thrown on the ground.

Especially the environment, when I think of other festival in like Amsterdam. Than you mostly think yeah whatever I just thrown on the ground. And it a lot less here. You do not want to have a lot of plastic in nature, like in the dunes. That is just sin. It is such a beautiful island, relaxing environment. So you can have so peace and rest on such days.

### **Do you want to separate trash?**

Well if it is communicated well and does not have a huge distance between each other yess I would do

that.

And what I thin is important they empty the trash bins a lot and when something is very full like at the bolder then you still do not thrown it away.

It is annoying I you want to thrown it away and you can't. When you have the intention but you do not see a trash bin to thrown in and it looks disgusting.

## **Selected Quotes from Transcript**

### **In the moment:**

*# I like it when it has more space between the furniture and that you can find a space whereby you are not between the people, but have overview of the festival area. Like watching playing children, dancing people, musicians but that you have an interesting view.*

*# On the festival it seems for me the best way. Because you can still be watching the bands, yesterday we were sitting on the hill watching a music band and in front of us were people eating a loempia.*

*# When you hear the festival music than would be nicest to stay in that area.*

*# I would like when you stay close to the performances of the festivals.*

*# Well usually I sit down during dinner, but not per se on the eating spot itself.*

*# And firstly we were sitting on those benches and after that we were standing to watch them perform.*

*# I regret( well on this festival was not the case) to start eating, because I miss the shows.*

*# And if we talk about the environment, than I prefer a place whereby you can still enjoy the music and in*

*such a way that is still can see and observe the artist who are performing. So you do not have to split it.*

*# Well first it was very funny at the bolder restaurant, with the kiddo dancing. That was also nice to watch.*

*# Yeah but eventually we were standing because people were standing in front of the area. So you could not see the artist perform*

*# Where you can buy small bites and so not have to leave your place.*

*# So in that way like here on the ruigeplak that you have those tables and you still can watch the performance. That's perfect*

*# So you do not have to leave the area. You only have to take ten steps. Than you stay in your moment.*

### **Relaxed:**

*# I do not like it when you have all catering together en all picnic furniture is located next to each other. That it feels like a busy and noisy restaurant atmosphere*

*# Some rest and peace !!*

*# When you just want to get some rest at that moment. And with the current situation I can sit down but not relax.*

*# Well in my opinion, to eat nicely it should have a*

*combination of rest/peace and at the same time has a creative appearance.*

*# It is such a beautiful island, relaxing environment. So you can have so peace and rest on such days.*

*# A noisy environment during dinner is fine for me, but in the morning it is important that you have a moment of relaxation. So I can wake up.*

### **Accessible:**

*# when you can eat or use everything that you do not have to walk a trash bin. So you do not have all those trash anymore.*

*# It is annoying I you want to thrown it away and you can't. When you have the intention but you do not see a trash bin to thrown in and it looks disgusting.*

*# And when a trash bin is central located than I will thrown my garbage away. But when I have to look a lot than I will leave it on the table.*

*# With waste I would like to have the trash bins as close as possible.*

### Balanced Choices

# There should be more standard choices

# Well in the end the food choice was not enough. And those were complete menus and not simple bites.

# if you wanted to eat something around 5 but you are not really hungry and just want a small bite. That possibility was not provided. And than you started to eat some chips in front of your tent. But than your outside of the festival

# There was just only one choice, and that was very difficult

# There was paella on the menu, and we did not really wanted to eat that food at the ruige plak. So we want to the bolder restaurant.

# It should not to be fancy and not to much choice, just one thing.

# It should not take to long and not to much distance to walk and not to much choice.

### Comfortable

# At the eateries you have those tables, but mostly those tables are full. There are not enough seating's

# But I like to have a place to sit with a table to eat.

Normally you cannot find a place to sit and eat.

# And that we are not creating rows for food at the place.

#I really like it when you do not have to wait in line for your food

# whereby you do not have to get bored while waiting in line.

# Currently at most of the festivals that people are pushing to get forward in the line. Than it is not comfortable to be waiting in the line. But if you got entertained or something.

### Cozy

# Yeah those magic thorn backpacks? But than more cosy(Gezellig), because those things are always not so gezellig.

# The other thing is a sort of hap muur, but that so not personal.

# Some interaction, even if it is only with the bartender.

# When your standing in a line for food, or talking with the chef. Those are small moments,

# When we wanted to eat, we like to have a warm

environment.

# It has to be warm, if the sun causes this or a heater does not matter.

### Clear:

# In the end we found out that they sold burritos, but that was not communicated towards the visitors.

# If they communicated this better than probably I would have bought their some food instead of the frites with kroket at the bolder.

# It has to be clear that he should have food.

# What I really like is how the look and feel is of that coffee bar and this attracts me and as a visitor you immediately see what they offer.

# Those eateries are really have a specific look. And you know exactly what type of food you can buy.

### Easy:

# for examples with the loempia's here whereby the sauce is served in a separate cup. Than I think like, that sauce can be easily put on the plate of the loempia's.

# It has to be also very easy to take with you.



# But it is quick.

# But sometimes you have those bamboo type of plates and that always look nice and is more stable. That is easier to take with you

# at a concert I would like to see that the food has to be served in a way so you can eat it in an easy way

# I always like it when packaging helps you with eating.

# When you thirsty you just wave your hand and they will come to you. And that's kind of a luxury situation

# It has to be easy(lekker vlot) and definitely not become a "thing" or so.

#### **Ambience fit with festival:**

# It has to fit with the festival.

# It really has to fit with the festival feeling. It has to blend with the moment, maybe even with the band

# if you make something with a sustainable feeling at a dance valley it would have less contribution of the people. It is depending on a festival

#### **Leftover Quotes:**

I miss the shows and surely when you are with more people and everyone wants something different, than the eating ritual takes a lot of time

Than I think you can easily use a re-use system or edible packaging.

on ITGWO everybody wants something else, because you have so much choice and mostly everyone is leaving and than you meet at the mainstage.

I think that dinner is also different than breakfast

So is the charme of the festival that there is a lot of variety?

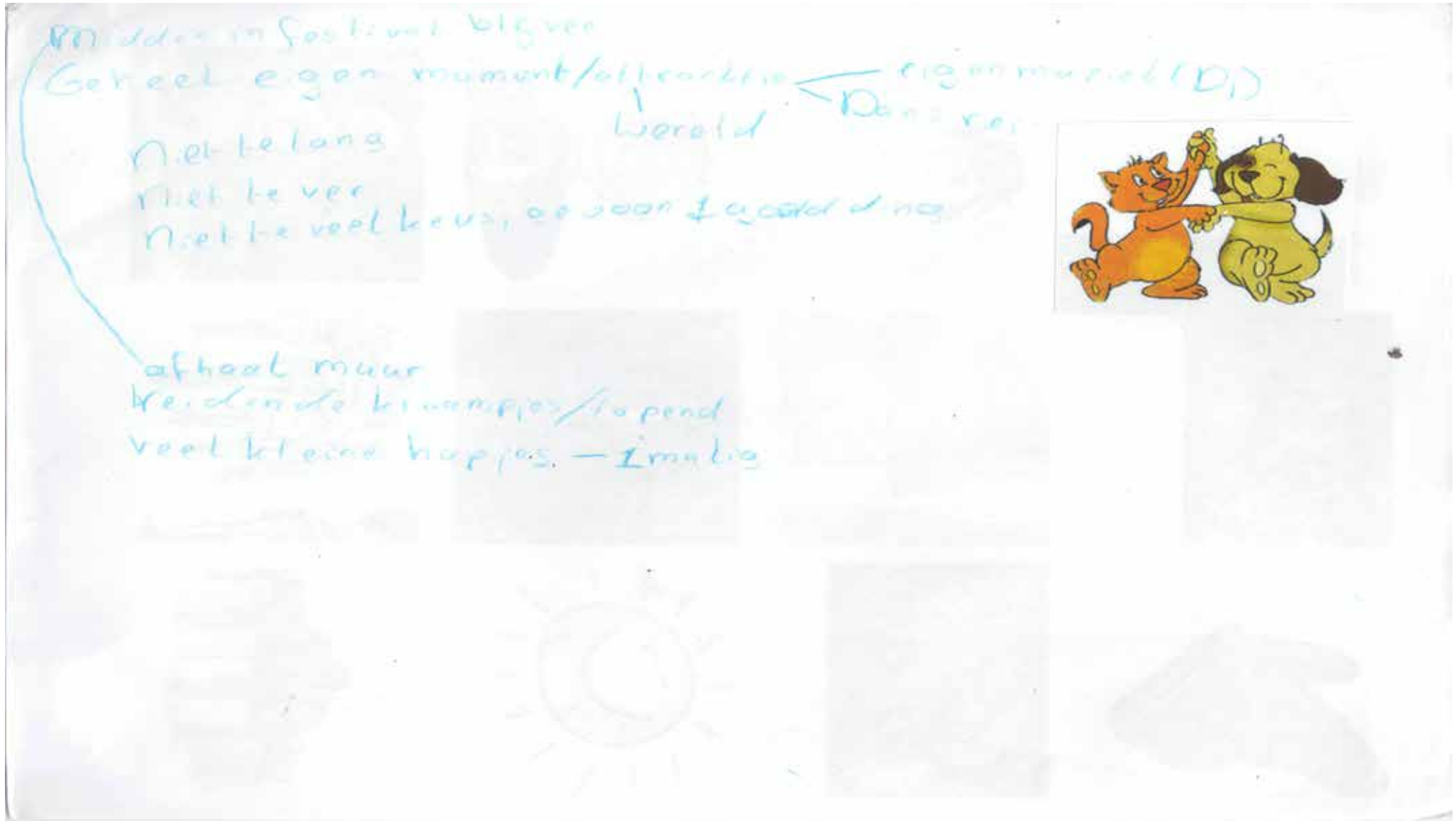
Yeah definitely! That makes the festival,

When I am sitting at a table I usually do not thrown away.

I should be honest, when I walk with the packaging than I will not throw it on the ground.

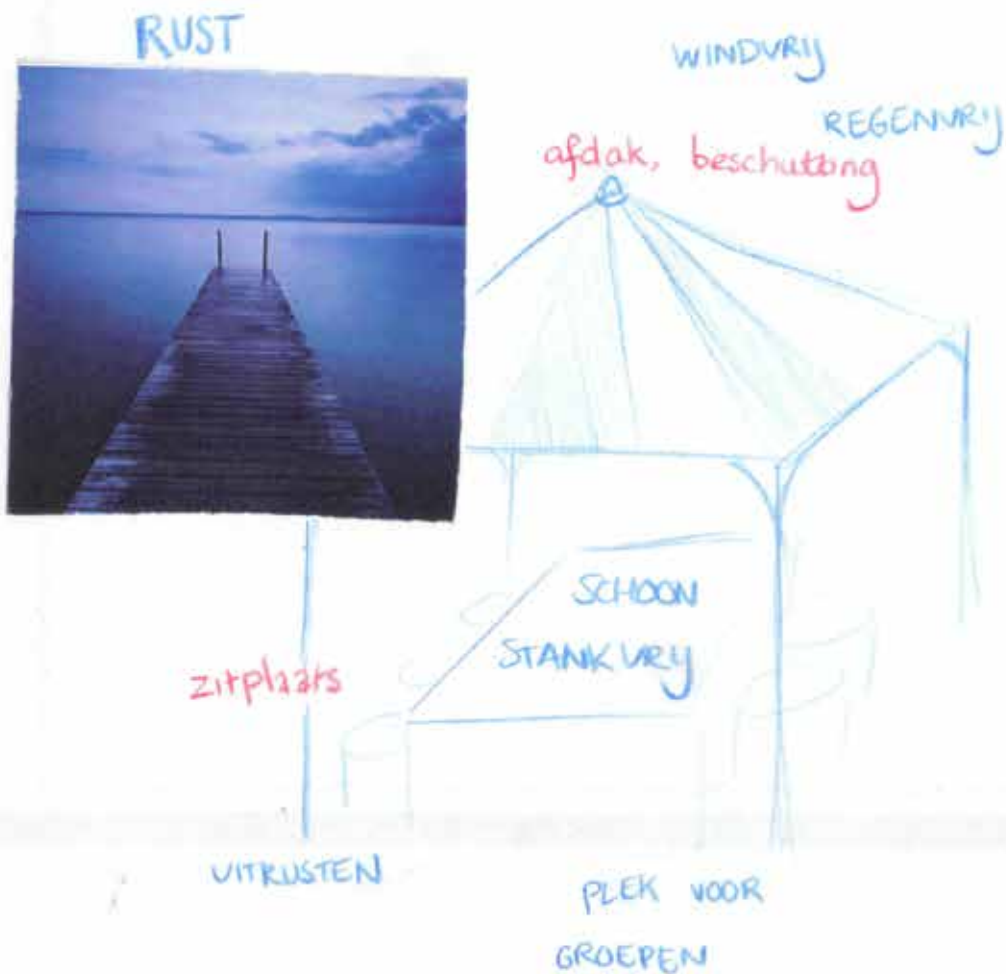
But when I have it in my hand, then I will not throw it on the ground.

Scans of participants collages/ description of the ideal eating situation



plek waar je even  
momentje kan nemen voor je eten,

maar waar je niet je optreden  
heeft te missen



kunst & muziek

NIKS MISSEN VAN  
OPTREDEN



## IDEALE EET GELEGENHEID

- NIET VEEL ERG HUTJE MUTJE RESTAURANT SITUATIE
- LIEVER LEKKER PLEKJE MET UITZICHT OVER MENSEN DIE DANSEN, KINDEREN DIE SPELEN OF MOVIE NATUUR OF MUZIEK
- GOED ZITTEN MET RUGLEUNING EN TAFEL. GEEN PICHNICH TAFEL OF DIERTAFELS EN -DANKEN.
- NIET TE VEEL PLASTIC SERVICE/BESTEK. LIEFST PORCELEIN EN METALEN BESTEK
- LIEVER GEEN RIJEN EN/OF BUFFETTEN



VRIJDAG

INTRODUCTIE

In deze introductie leggen we kort uit wat de bedoeling is. Het boekje is opgedeeld in twee delen. Het eerste deel gaat over je vrijdag en het tweede deel gaat over je zaterdag op Here Comes The Summer. In het boekje bevinden zich verschillende kleine vragen, teken en foto opdrachten over jou ervaring en activiteiten op het festival. Per dag zal het boekje maximaal rond de dertig minuten kosten om het in te vullen. Je hebt de volledige vrijheid om zelf te bepalen wanneer en hoelang je er over doet om het in te vullen. Je kan er ook voor kiezen om bijvoorbeeld drie keer per dag 10 minuten aan het boekje te besteden.

Zoals hierboven beschreven zijn er ook foto opdrachten. Probeer deze opdrachten tijdens het ontvangst van het boekje meteen door te nemen. Dit maakt het vervullen van deze opdrachten gemakkelijker.

Zondag zou ik graag de boekje weer in ontvangst nemen. Ik neem hiervoor persoonlijk contact met jullie via de telefoon of de groeps whatsapp. Alvast veel plezier op het festival en geniet van de komende dagen.

CONTACT GEGEVENS

Als dit boekje niet van u is en het heeft gevonden kunt u contact opnemen met

Tom Lagendijk  
06-30419999  
tom\_lagendijk@hotmail.com

of met de eigenaar van het boekje

Naam: .....

Tel: .....

TIJDLIJN

1. Geef jou dag weer op deze tijdlijn met woorden of kleine tekeningen. (reis, activiteiten, bezichtigingen etc)
2. Beschrijf of teken bij elk moment van jou dag hoe je je voelde en wat je ervaarde aan emoties, sfeer etc?  
*als je niet weet welke emoties het goed verwoorden is er achterin het boekje een stickerlijst met alle soorten emoties!*



3. Met stickers kan je aangeven welke momenten positief en welke negatief waren. (Groen positief, Rood Negatief)
4. Geef onder deze tijdlijn aan wanneer je rust ervaarde. (Blauwe stickers)



### POSITIEVE EN BELANGRIJKE MOMENTEN

Plaats hier foto's en een korte beschrijving van je positieve en belangrijkste momenten op het festival. (Foto's kunnen gemaakt worden met telefoon of eigen camera en digitaal naar mij gestuurd worden in de groeps whatsapp, beschrijving kan hier al geplaatst worden)

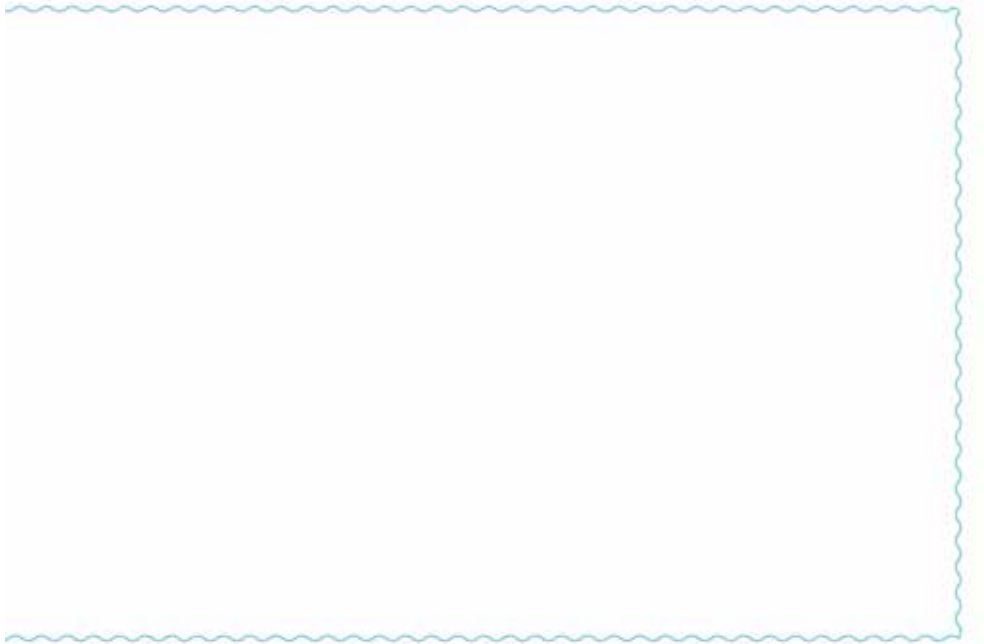
### NEGATIEVE MOMENTEN

Plaats hier foto's en een korte beschrijving van je negatieve momenten op het festival. Zoals bijvoorbeeld een vieze wc etc. (Foto's kunnen gemaakt worden met telefoon of eigen camera en digitaal naar mij gestuurd worden in de groeps whatsapp, beschrijving kan hier al geplaatst worden)

### ETEN OP HET FESTIVAL

Denk even terug aan moment dat je ging eten. Teken en beschrijf hier je handelingen en ervaringen die je hebt tijdens het eten op het festival. (Vanaf moment dat je honger krijgt tot moment dat je weer wegloopt naar een optreden, bijvoorbeeld het uitbuiken en ervaren van rust of een plekje zoeken voor de familie...)





## ZATERDAG



### TIJDLIJN

1. Geef jou dag weer op deze tijdlijn met woorden of kleine tekeningen. (reis, activiteiten, bezichtigingen etc)
2. Beschrijf of teken bij elk moment van jou dag hoe je je voelde en wat je ervaarde aan emoties, sfeer etc?  
*als je niet weet welke emoties het goed verwoorden is er achterin het boekje een stickerlijst met alle soorten emoties!*



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## UNIEK VOOR JOU

Beschrijf en token hier waarom de editie van here comes the summer het voor jou uniek maakte.

## LIJST MET EMOTIES

### Negatief

- Boos
- Geïrriteerd
- Minachtig
- Afschuw
- Angst
- Schaamte
- Vrees
- Hulpeloos
- Machteloos
- Bezorgd
- Twijfel
- Jaloezie
- Frustratie
- Schuld
- Schaamte
- Verveeld
- Wanhoop
- Teleurgesteld
- Gekwetst
- Verdrietig

- Onrust
- Stres
- Geschokt
- Spanning

### Positief

- Geamuseerd
- Genot
- Opgetogenheid
- Opwinding
- Blijheid
- Vreugde
- Plezier
- Zorgzaam
- Genegenheid
- Empathie
- Vriendelijkheid
- Liefde
- Moed
- Hoop
- Trots

- Verdoening
- Vertrouwen
- Kalmte
- Tevredenheid
- Relaxt
- Opgelucht
- Kalmte
- Reagerend
- Geïntereseerd
- Aardig
- Verrast





## Appendix E: Clustered Quotes ITGWO Survey

### Expensive

Eten en drinken is erg duur. Verder prachtig!

En sommige voedsel prijzen mogen echt wel wat minder exorbitant.

Daarnaast vond ik het eten en drinken wel erg aan de prijzige kant. Lekker en goed eten... Absoluut maar wel erg prijzig.

Enige punt van 'kritiek' is dat ik het eten wat aan de dure kant vond. (vis, thais e.d.)

Eten en drinken was doorgaans veels te duur. Normaal hoor je mij daar niet over, want ik begrijp hoe dat zit, maar nu laat ik dan toch weten.

Beste organisatie, Het is het beste festival wat er is, maar.....het eten en drinken is zo duur. Het is echt een rib uit je lijf, en zeker dé reden om van het festival af te zien!

### Waiting lines

Daarnaast vond ik het erg druk, wachtrijen, geven irritatie.

En leer die lieve vrijwilligers achter de bar om een beetje tempo te maken... Efficiëntie ipv liefdromerig voor je uit staren;-) de wachttijden bij fort en bos voor een biertje waren ronduit belachelijk en zeer frustrerend. En het kost jullie omzet! Verder

weer erg genoten en ga zo door..

Ik vond dat er bij de fortweg en het bospodium te weinig gelegenheid was om wat te drinken te halen. Er stonden lange rijen bij de bar. Erg jammer. Ook miste ik een goede eetplek bij het bospodium. Deze was er vorig jaar wel.

Verder was het jammer dat je voor het bospodium en fordweg in de rij moest staan.

### No good and accesible eating location at forest

Ik vond dat er bij de fortweg en het bospodium te weinig gelegenheid was om wat te drinken te halen. Er stonden lange rijen bij de bar. Erg jammer. Ook miste ik een goede eetplek bij het bospodium. Deze was er vorig jaar wel.

Bij het bospodium vond ik de horeca niet toereikend. Verder is het allemaal meer dan goed!

Er mag wel en extra bar bij t bospodium!

De horeca is langzaam, niet efficiënt en niet voorradig. Op zaterdagmiddag waren sommige etenwaren al op. Als men zich verheugt om op zondag iets te eten wat hij/zij eerder op het bord heeft zien staan, dan kan dat helemaal niet meer. Het eten is zeker smakelijk, maar het kan veel beter georganiseerd worden

De bar was slecht bereikbaar boven aan de berg,

en zeer kleine capaciteit. Hierdoor lukte het steeds niet om voor aanvang optreden een drankje te halen, de rij was enorm en service van de bar traag.

Vorig jaar was dit veel beter geregeld en was de indeling fijner. dit was echt een mega irritatie punt! No clear communication

-Watertappunten duidelijker aangeven

### Losse quotes

Itgwo, je bent geweldig! Bijzonder dat jullie de lieve sfeer met hoge kwaliteit muziek en food weten te behouden!

Ik vond het echt heel stom dat het bandje persé aan de rechterpols moest! Voor mij staat ITGWO ook voor vrijheid en daar past zo'n stomme verplichting echt niet bij. Heel irritant zo'n bandje aan je rechterpols.

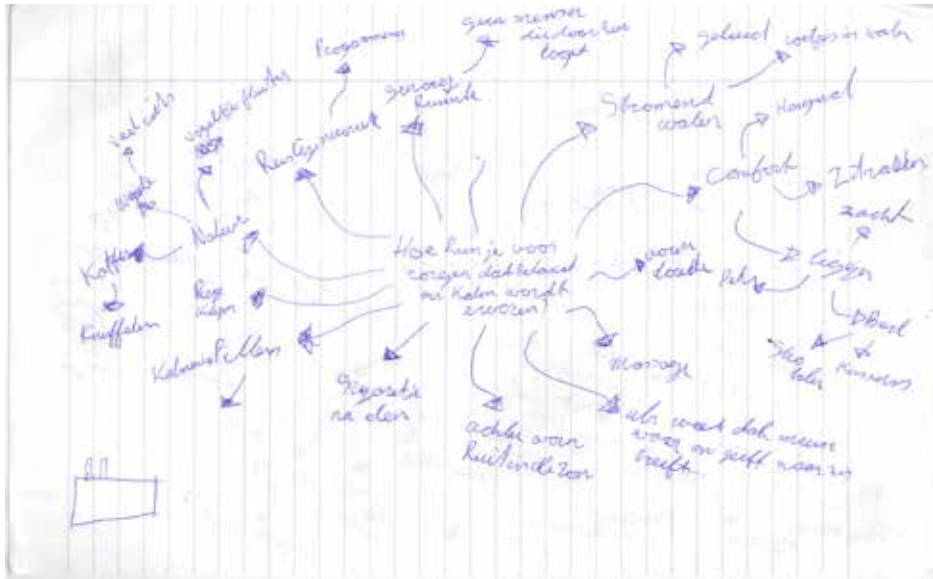
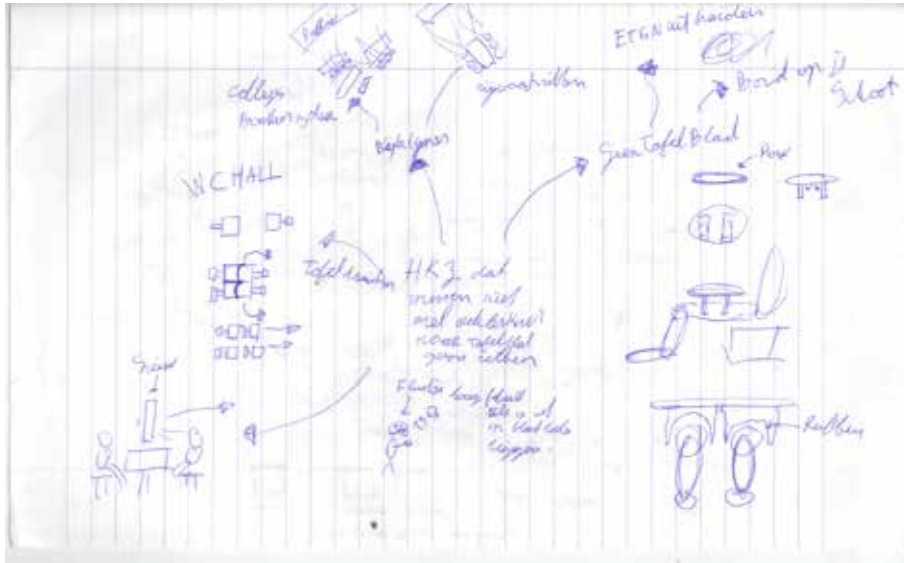
Tip, laat kinderen ook nadenken over vraagstukken omtrent duurzaamheid, dit kan soms verrassende en vindingrijke oplossingen opleveren.





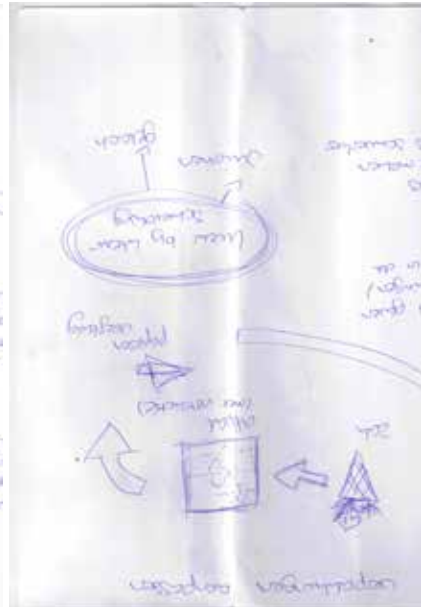
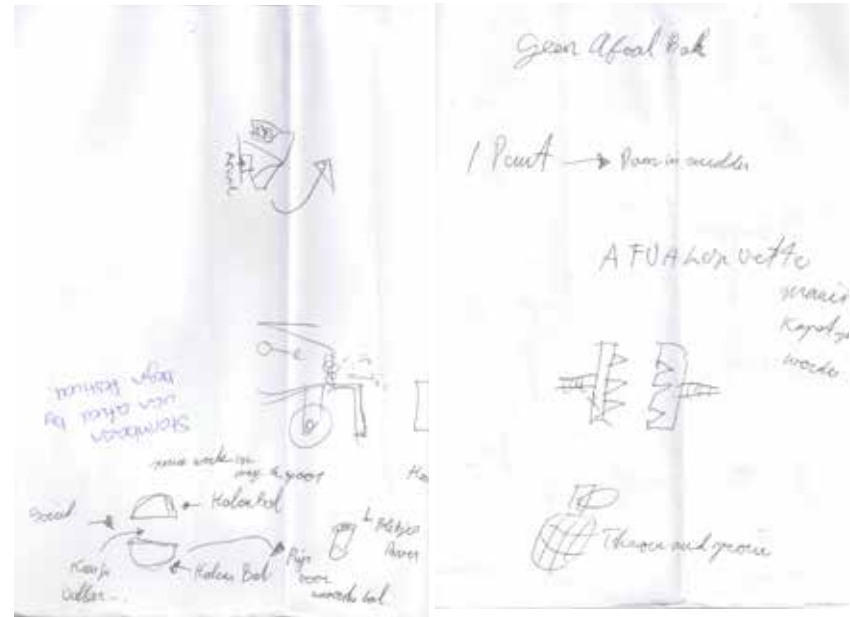




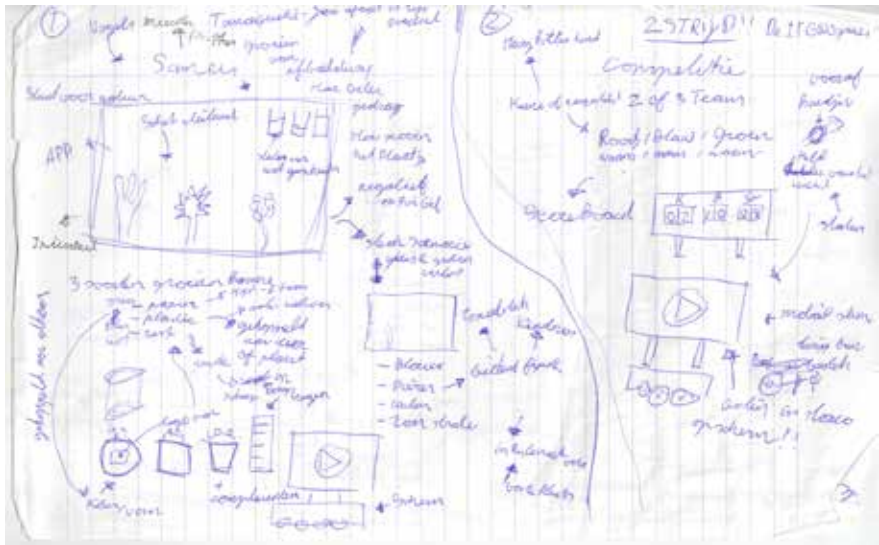
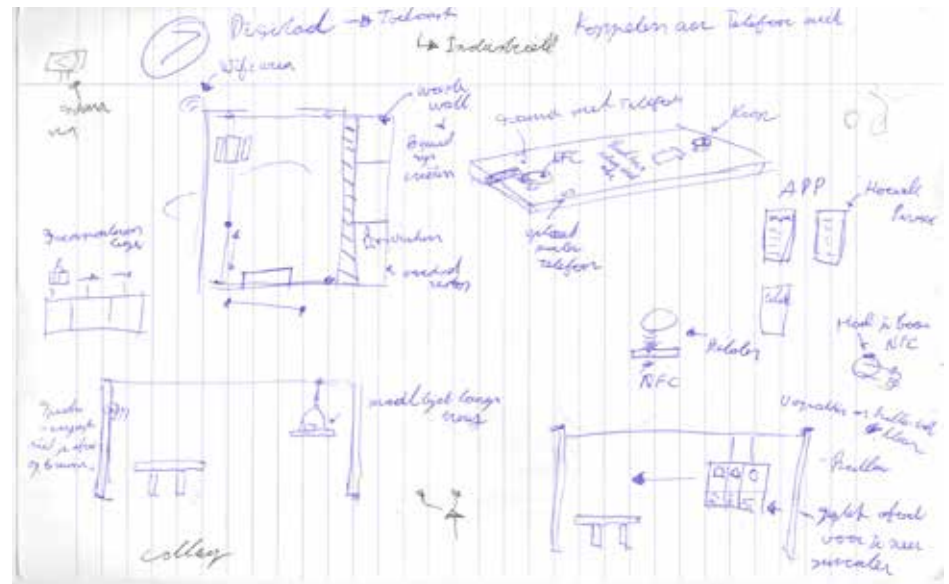
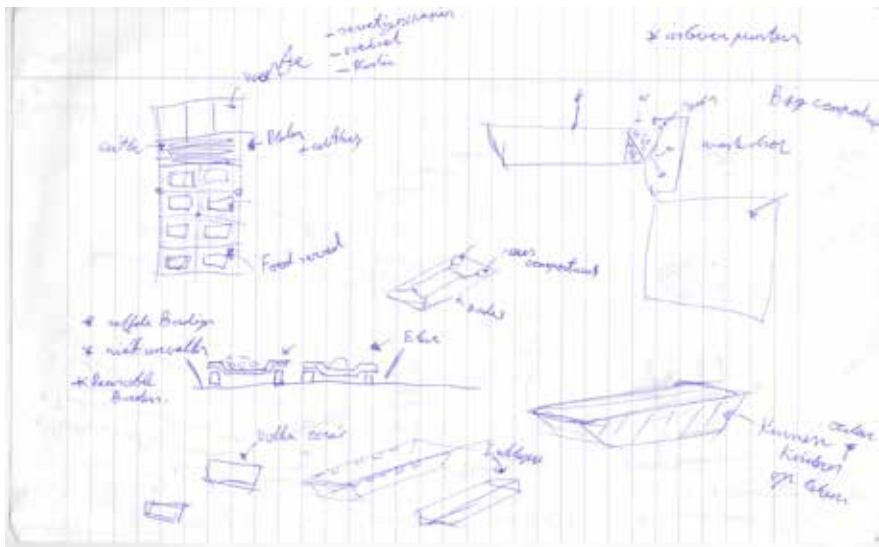






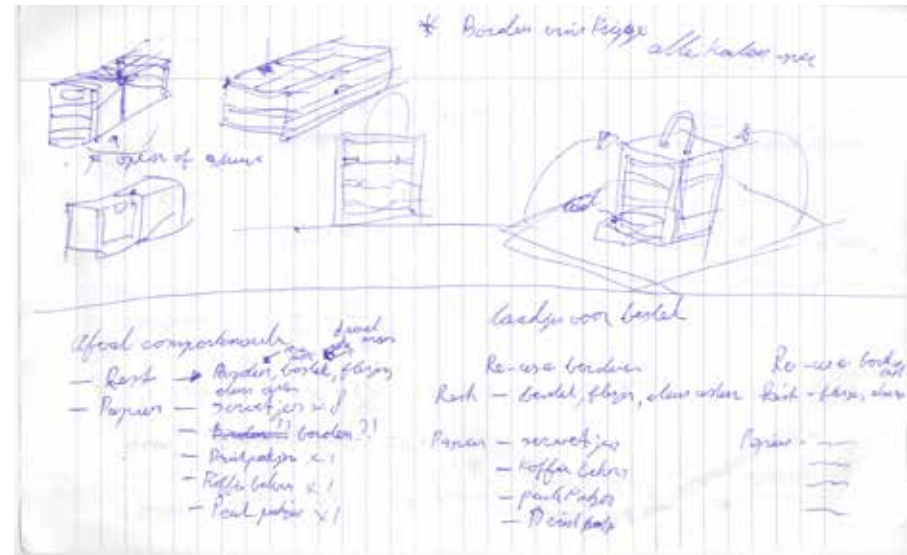
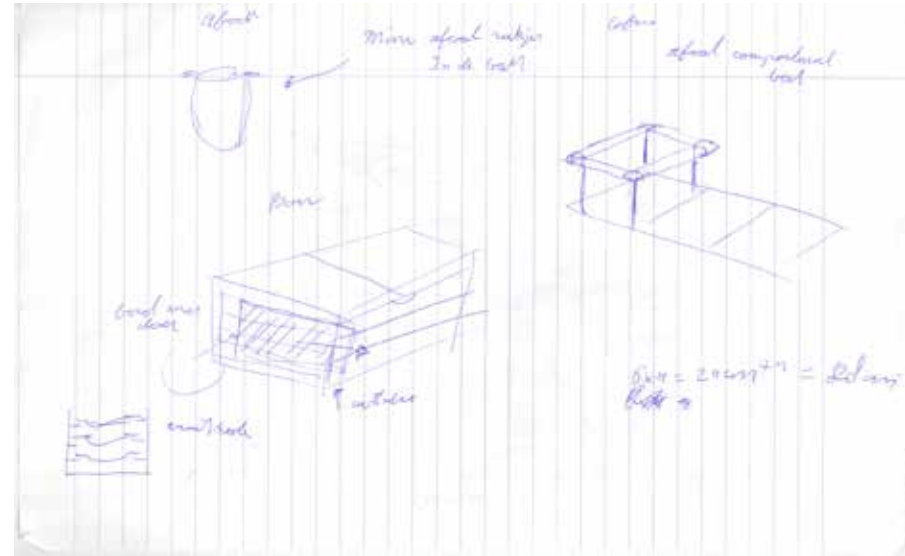
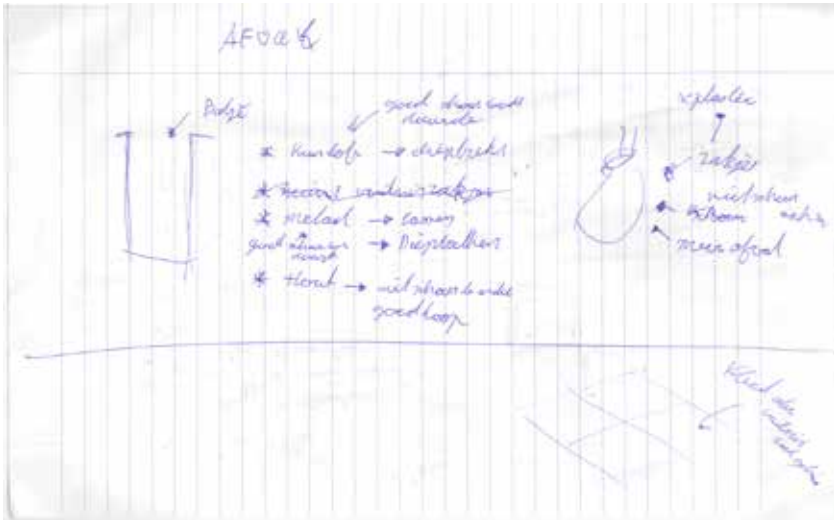


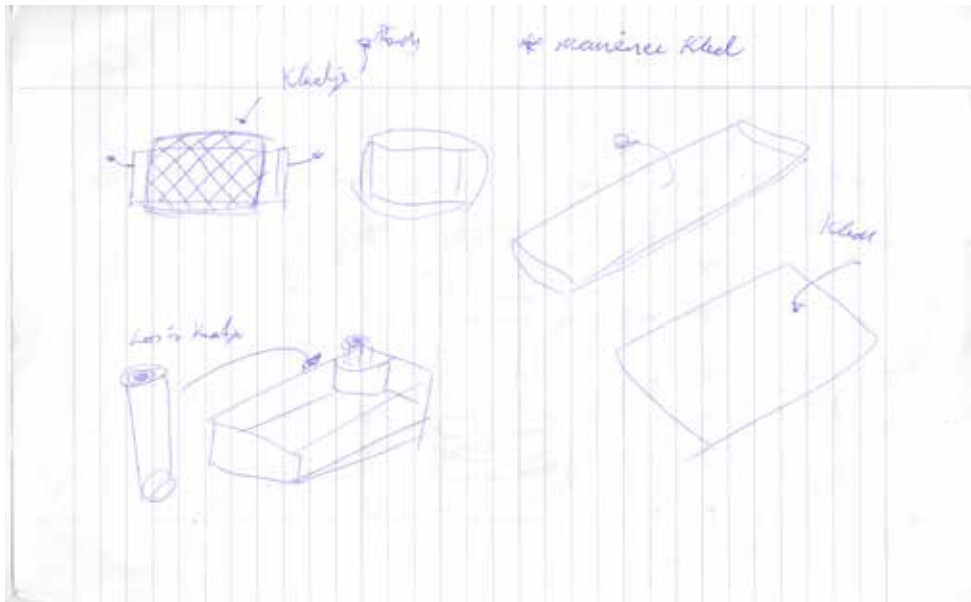












$$1,2 \text{ liter} = 1200 \text{ cm}^3 = 0,0012 \text{ m}^3$$

$$0,0012 \text{ m}^3 \times \frac{1}{\sqrt{8}} = 0,000424 \text{ m}^3$$

$$0,000424 \text{ m}^3 \times d = 0,000149 \text{ m}^3$$

Gewichtige geweven  $6 \times 6 \times 0,5 \text{ mm} = 0,149 \text{ dm}^3$   
 Lichtgewicht  $1,2 \times 2 \times 3,6 = 0,01 \times 0,02 \times 0,016 = 0,44 \text{ dm}^3$   
 Buis  $1,0 \text{ ml} = 0,2 \text{ dm}^3 \times 2 = 0,4 \text{ dm}^3$   
 $\frac{0,4 \text{ dm}^3}{0,25 \text{ dm}^3} = 1,6$   
 $1,6 \times 1,2 \text{ liter} = 18,9 \times 1,7 \times 0,9$   
 2,2 liter  $\text{Voor} = 12,5 \times 1,3 \times 1$   
 $\text{Lucht} = 17,5 \times 1,7 \times 1$   
 $\text{Aard} = 22 \times 1,7 \times 1$   
 $\text{of } 22 \times 1,7 \times 1 \times 0,9 \text{ m}$   
 Fluis  $= 0,5 \text{ dm}^3$   
 stam  $= 0,1 \text{ dm}^3$

$1,2 \text{ liter} = 0,0012 \text{ m}^3$   
 $0,0012 \text{ m}^3 \times \frac{1}{\sqrt{8}} = 0,000424 \text{ m}^3$   
 $0,000424 \text{ m}^3 \times d = 0,000149 \text{ m}^3$   
 $\times 4 = 0,000596 \text{ dm}^3$   
 $\times 4 = 0,002384 \text{ dm}^3$   
 $\times 4 = 0,009536 \text{ dm}^3$   
 $1,2 \text{ liter} = 0,0012 \text{ m}^3$   
 $0,0012 \text{ m}^3 \times \frac{1}{\sqrt{8}} = 0,000424 \text{ m}^3$   
 $0,000424 \text{ m}^3 \times d = 0,000149 \text{ m}^3$   
 $= 0,1 \text{ dm}^3$

**Inhoud kratje**

- 4 borden  $\rightarrow 22 \times 22 \text{ cm}$  diameter  $\rightarrow$  minimum hoogte 2,5 cm
- 2 coffee componenten  $- 15-20 \text{ liter}$  per ofalbad component
- 4 glazen of 8 glazen  $\text{Luz} + \text{Fier} \rightarrow 0,25 \text{ liter}$  glazen
- Kleefje 1,40 bij 1,40

**als Tafel**

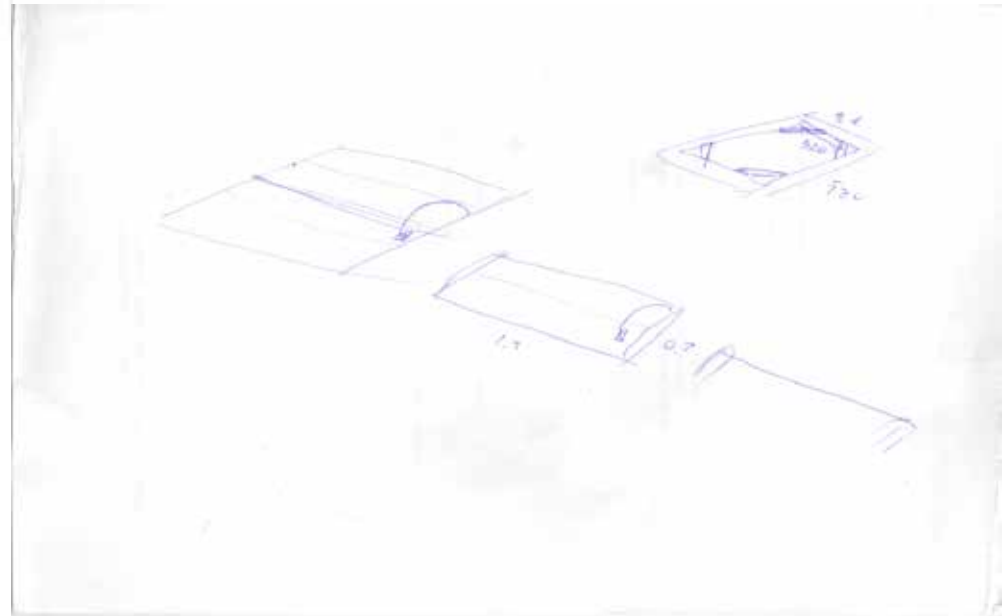
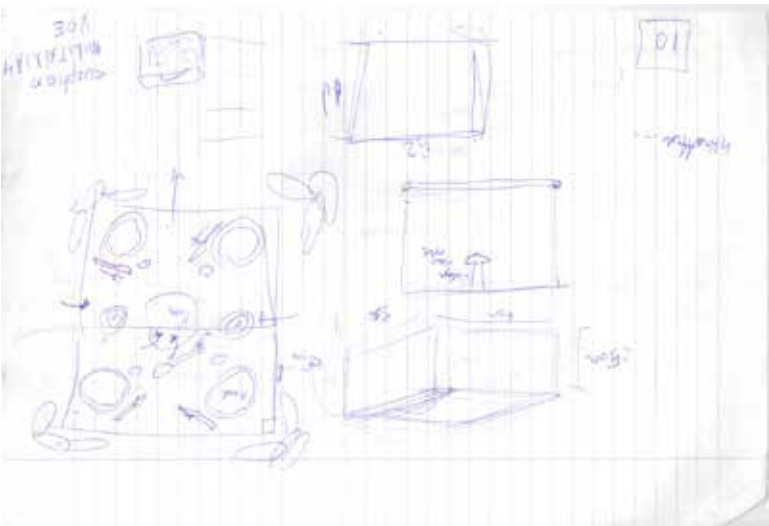
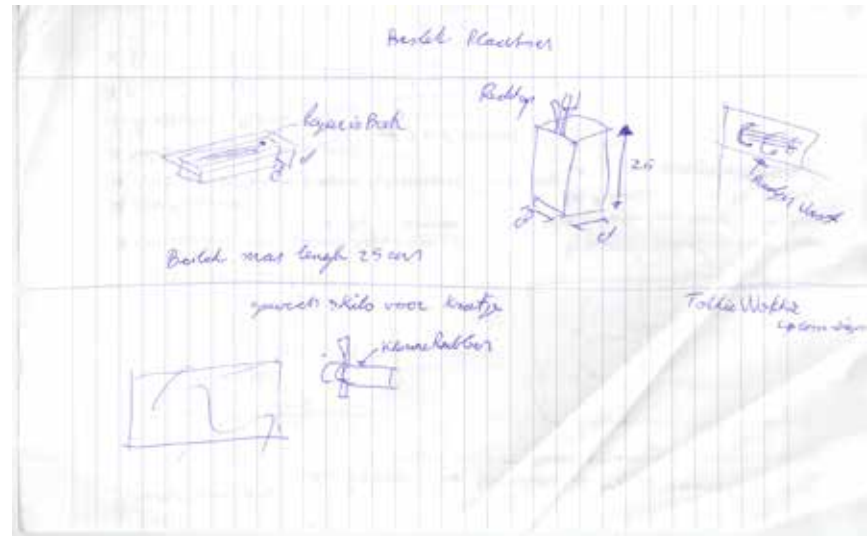
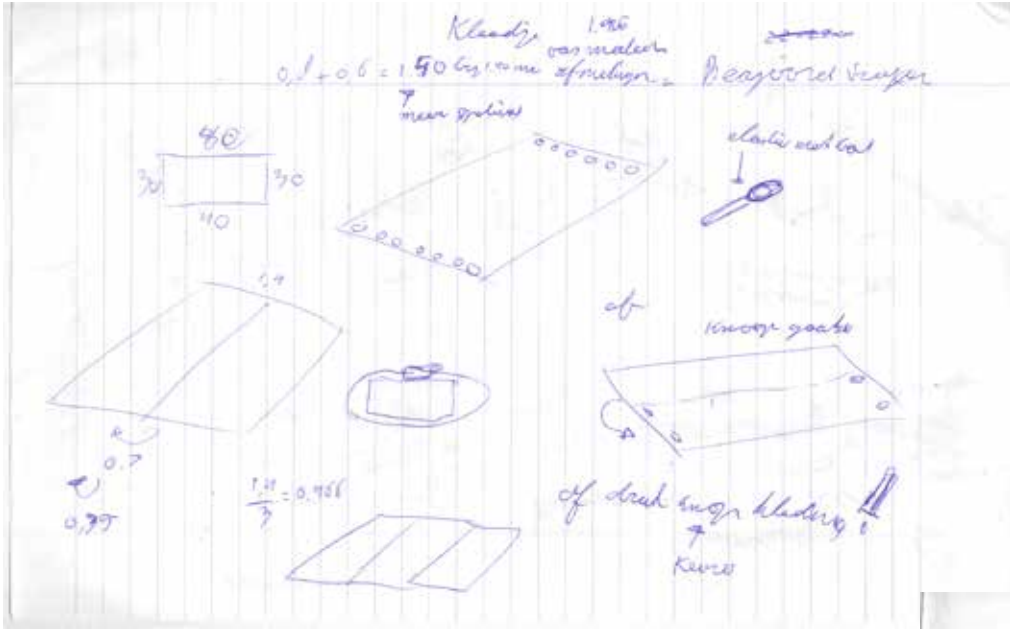
- \* Oppervlakte  $\rightarrow 4$  borden, 8 glazen geplaatst  $\rightarrow$  minimum 40x40
- \* Hoogte  $\rightarrow$  gemiddeld, alle

Borden Voor maken klein, zorgen die niet afvalt

1. Ring borden  $\rightarrow$  gat in middel
2. Ring borden  $\rightarrow$  Ring borden
3. Ring borden
4. Ring borden  $\rightarrow$  Ring borden













## Appendix H: Production

In this Appendix we describe how the different parts are made, changed and adapted for the design.

### Crate

The crates are purchased at a wholesaler. First we start with drilling the holes for the handles. Still the crates have to be sanded. The sharp edges are sanded and the whole inside of the crate is sanded. After that the crates are blown clean with an air press compressor. The inside of the crate will be varnished with a transparent varnish.

### Waste bucket Holder

The waste bucket holder consists out of two different parts. The first part is the holder and the second part is the blocks. The holder is made with a milling machine. First a standard plate of 1250 by 2500 must cut into two plates of 1250 by 1250. A DXF file of the 2D template of the holder gives the information needed towards the milling machine. The milling machine will mill the holder.

The blocks will be sawn out of leftover of old gaboon multiplex plates. These are blocks of 40mm by 75mm. The holder and the blocks are assembled by wood glue and 1 screw of 16 mm length and 3.5 mm diameter per block.

### Finishes

First the bucket holder is sand down after it comes out of the milling machine. The look of gaboon

multiplex does not fit with the look of the crate. Therefore dark oak wood-dye is used to make the gaboon darker. Secondly by using this oak wood-dye you give an extra protection for the multiplex against water.

### RUG

The rugs are purchased at wholesalers. First The Velcro will be placed on the rug with double-sided tape. After that the Velcro is sewn on the rug.

### Table Leaf

The foldable table leaf consists of 2 tables leaf, 2 hinges and 6 screws of 3.5mm diameter and length of 16mm. The table leaf is milled out of big plate of 2500mm by 1250mm of gaboon multiplex. The hinges are standardized hinges. A mould of wood is created to stabilize to assemble the tables leaves and hinges together. Without stabilizing you would create too much backlash between the two table leaves.

### Finishes

The tables leaf and holes are sanded before the dark oak wood-dye is used on the gaboon multiplex. The Oak wood-dye is used to make the colour of the material fit with the crate. Secondly it protects the wood and makes it easier to clean.







## Appendix I: Online Survey

Enquête Picknick

Wat is je leeftijd?

- A. 16 - 18 jaar
- B. 18 - 22 jaar
- C. 22- 28 jaar
- D. 28 - 40 jaar
- E. 40 jaar en ouder

Hoe vaak ga je naar een festival per jaar?

- A. 1 keer per jaar
- B. 2 tot 4 keer per jaar
- C. Meer dan 4 keer per jaar
- D. Nooit

Met hoeveel vrienden of familie leden ga je meestal naar een festival?

- A. 1 Vriend of familie lid
- B. 2 -3 vrienden/familie leden
- B. 4- 8 vrienden/ familie leden
- C. Geen, ik ga altijd alleen.

Naar wat voor festival gaat u 1 daags of meerdaags?

Welke festival?

.....

Deze enquête gaat over een nieuw eetconcept op Festivals. Het concept bestaat uit een picknick-kratje. Met het kratje bieden we je de mogeli-

jkheid met vrienden of familie je eigen eetplekje te vinden om aldaar van je maaltijd te genieten. Doordat alles in 1 kratje past is alles gemakkelijker te vervoeren over het terrein. In het kratje zit een kunststof kleedje, waarop je tijdens het eten droog en schoon kunt gaan zitten.

In het kratje bieden we niet alleen ruimte voor eten van 2, 3 of 4 personen aan, maar kun je ook je door jou bestelde dranken er in laten plaatsen. Hierdoor hoef je niet meer in de rij te staan bij de bar. Er zitten ook twee afval Emmertjes in voor het afval wat overblijft. De Emmertjes moeten bij het inleveren van het kratje bij het inleverpunt worden geleegd. Hierdoor hoef je niet meer te zoeken naar een afvalbak op het terrein en is het zelfs mogelijk om je afval te scheiden. Het bestek, de borden en andere tafelwaren zoals glazen zullen bij alle 3 de concepten worden hergebruikt.

We hebben drie verschillende versies voor de picknick-kratjes:

Versie 1

Je krijgt kleine hapjes in losse houten of porseleinen bakjes geserveerd. Deze hapjes kun je eten met je vingers, met houten stokjes of een metalen vork. De bakjes worden uit het kratje gehaald en op het picknick kleedje gezet. Als je klaar bent met eten kun je het afval in de Emmertjes deponeren en deze samen met het bestek terugplaatsen in het krat. Vervolgens lever je het krat in bij het inleverpunt.

Versie 2

Je bestelt 1 gerecht voor 2, 3 of 4 personen. Dit wordt geserveerd in 1 grote pan, samen met een metalen opscheplepel, porseleinen losse borden en metalen bestek. De deksel van het kratje kan worden opengeklapt en tot tafelblad getransformeerd. Het afval kan net als bij versie 1 in de Emmertjes worden gedeponeerd. De emmers en overige spullen worden na het eten teruggeplaatst in het kratje en teruggebracht naar het inleverpunt.

Versie 3:

Je bestelt een kratje voor 2,3 of 4 personen, maar iedere persoon bestelt/kiest zijn of haar eigen soort eten. Het eten wordt met bord en al in het kratje geplaatst door het personeel. Net als in versie 2 kan de deksel opengeklapt worden tot tafelblad en dient het kratje met lege spullen en de afval Emmertjes na het eten weer ingeleverd te worden bij een inleverpunt.

X nog 3d model van maken

Vraag 1.

Welk van de drie manieren van serveren en eten heeft je voorkeur?

- A. Versie 1
- B. Versie 2
- C. Versie 3
- D. Geen van de drie

En waarom?

Vraag 2

Wat ben je maximaal bereid om extra te betalen boven op je eten en drinken voor de service van het kratje?( Service kosten) ( 1 munt staat gelijk aan €2,50)

- A. ½ munt per persoon
- B 1 munt per persoon
- C 1.5 munt per persoon
- D. 2 munten per persoon
- E. 3 munten per persoon
- F Ik ben niet bereid om te betalen

De bedoeling is dat je het kratje uiteindelijk wel terugbrengt. Daarom willen we het koppelen aan een borgsysteem.

Vraag 3

Wat is het borgsysteem met uw voorkeur?

- A. Munten
- B. Identiteitsbewijs
- C. Sleutelbos
- D. Foto van je identiteitsbewijs
- E. Anders, namelijk.....

Vraag 4

Als je A hebt geantwoord bij vraag 3 beantwoord deze vraag ook:

Hoeveel borg ben je maximaal bereid te betalen, bovenop de prijs voor eten, drinken en service kosten. Munt = €2.50

- A. 2-4 munten
- B. 4-6 munten
- C. 8- 10 munten

De bedoeling is dat je als klant de volle afval-  
mertje zelf leegt bij het inleverpunt van de kratjes.

Vraag 5

Bent u bereid om na het eten de kleine afval em-  
mertjes te legen?

- A. Ja
- B. Nee
- C. Ligt eraan, want.....
- .....
- .....
- .....
- .....

Vraag 6

Hoever wil je maximaal lopen, in termen van tijd,  
om het kratje weer in te leveren bij een inlever-  
punt?

- A. 0 - 30 seconden
- B. 30 seconden tot - 1 minuut
- C. 2 - 4 minuten
- D 4 - 6 minuten
- E 5 - 10 minuten
- F 10 minuten -15 minuten

Vraag 7

“Een van deze picnickversies gaat straks daadw-  
erkelijk gebruikt worden. Het zou jammer zijn als

we iets over het hoofd hebben gezien.

Heb je nog suggesties, aanvullingen, verbeteringen  
voor deze nieuwe manier van eten en afval ver-  
zamelen?

Hartelijk dank voor je medewerking!

Tom Lagendijk







## Appendix J: Height Research

Goal of research:

Discover the most comfortable height to eat for scenario 1 and 3. There are different sizes of standard crates. But the heights of the crates are mostly 30cm or 22-24 cm. Yet for scenario 1 I had two different types of serving plates. The two different options were illustrated in figure x.x. These types of serving are depending on the height. 30 cm or 7 cm.

Second goal to discover is how people are sitting. To get some insight on people sit we can maybe adjust the layout of the crate.

Results

Total of 9 participants-->

1st is 3 points, 2nd is 2 points, 3th is 1 point.

Conclusion:

The participants mostly prefer the height of 24 centimetres. It was only chosen one time as most uncomfortable height. The Score of the 7cm eating height and 30 cm eating high do not much differ. Therefore we can assume that they are equally comfortable compared to eachother.

Participant	Outcome
Sanne	1. 30cm 2. 24cm 3. 7cm (te lange afstand met armen)
Tom(Myself)	1. 24 cm 2. 7 cm 3. 30cm
Tesco	1. 7cm 2. 24cm 3. 30cm
Dennis	1. 7cm 2. 30 cm 3. 24 cm
Ingeborg	1. 24 cm 2. 30 en 7 cm
Thomas	1. 24cm 2. 7cm 3. 30cm
Paul	1. 30 cm 2. 7 en 24 cm
Thijmen	1. 30 2. 24 3. 7
loost	1. 24 cm 2. 30 cm 3. 7cm

30 cm	24cm	7cm
3+1+1+2+2+1+3+3 +2 =18	2+3+2+1+3+3+2+2+3 =21	1+2+3+3+2+2+2+1+1 =17
Number 2	Number 1	Number 3





## Appendix K: Administration Table

**Date:**

<u>Krat num mer</u>	<u>Naam Besteller + Telefoon nummer</u>	<u>Drinken soort+ Aantal Glazen</u>	Menu	Borg
1				
2				
3				
4				

## Appendix L: Pilot Research

### Research goal.

There are four research goals. These four goals are:

# Evaluate the intended behavioural change of the user. This means to evaluate if the user is separating their waste. (Efficiency of the crate)

# Evaluate the usability and user experience of the picnic crate.

# Evaluate the serving, administration and deposit system.

# Too find new insights about the use of the crate and the behaviour of the user.

### Research questions

1. Do users separate their waste?

#### Usability

2. Do users understand the function of the waste compartments?

2.1 Is the graphical information enough to inform people?

3. Do users understand the system of the foldable table leaf?

3.1 How did people use the foldable table leaf?

4. Do users understand how to unfold the picnic rug?

5. Is there any undesirable/unexpected behavior of the users from using the design?

6. How is walking and carrying with the crate experienced by people?

#### User experience

How do users experience the picnic crate design?

What are the negative experiences people had with the crate design?

Serving, administration and deposit system  
How did experience the volunteers these system?

Did these systems make it easier for volunteers to do their tasks?

#### Insights

- What type of locations are they going to with the crate?

- Where do they put the crate?

- Where do they put the waste compartment?

- How long do they eat?

- What type of sitting positions do the users show?

- How does the crate look like when they bring it back?

### Where and when?

The research is done at the ITGWO festival on the 4th and 5th of September at Vlieland. This festival is already described in previous chapters.

The research would be done at the sportveld location of the festival. The sportveld is the main location with the biggest capacity of the festival. It is unfortunately also the location with the most terraces, which facilitates seating's and tables. Most of the time the location does offer enough seats for the amount of dining people. This is a unique situation, which does not occur a lot at festivals. Next to that there is less free open space to sit comfortable with your picnic rug in comparison with the other locations like the Fortweg or Forest location. So the selling

### With who

We worked together with Yum Saap. This is a caterer who serves Thai food and has a lot of experience in festival catering.

### How

#### Offer

Before we start describing how we will explain the situation with the caterer. The caterer is a very popular eatery at the festival. They already have a busy restaurant on the festival. They sell around 800 – 1000 meals in three days and sell about 8000 snacks. Therefore it would be very convenient for them to keep our pilot simple and efficient for

them. Therefore we had chosen to offer only one type of picnic box with one type of menu for four persons. In the original design we give people the opportunity to have more menu choices and also they will be able to use the crate for two or three persons. Yet for the pilot this was not possible. This menu including service costs of the crate costs 24 coins (62.40 €). ( 6 coins per person) 20 coins were for Yum Saap and 4 coins were to recoup some on the invested money of the pilot. On top of that we offered a free water bottle or a wine bottle for the costs of 7.5 coins.

### Types of packaging

In the original design we support the use of reusable tableware. Yet the caterer Yum Saap does only use disposables. Therefore we choose to use three type of packaging: Biodegradable packaging, plastic and paper packaging. We have chosen to separate biodegradable and residual waste. Because we use disposables we increased the volume of the waste compartment. The compostable waste compartment had a volume of 2.5 litres and the residual waste had a volume of 1 litre. This was based on estimated volume of the packaging used in the crate.

### Stand

The crate including the food was offered in a separate selling stand and was called the Thai Box. This stand was build next to the Yum Saap stand. In this way we could communicate very easily with the

kitchen. Communicate and signing was made with information about concept, menu and some separate quotes. Also next to the stand we placed two trash bins for the biodegradable waste and residual waste. There could people throw their trash in.

### Methods

# To answer the question, if people separate their waste we take photos of returned waste compartments. Next to that we check the trash bag afterwards if all the compostable packaging is in the right trash bag.

# To evaluate the Usability and User experience we have chosen to do this by observing and taking interviews with the users. Firstly we observe the user by taking photo's, film footage from a distance. In this way we do not disturb their eating ritual with family or friends.

Afterwards when people have brought back the crate, we take an interview with users. This interview is about their experiences and their stories of the use of the product. This interview will consist out of standard questions but also some improvised questions that are based on the things I observed. If there are many crates in usage I will not be able to interview every user. Therefore I can ask help of

# To evaluate the deposit system we will have a meeting with the volunteers and will discuss every detail of it.

# To find new insight we take pictures and film footage of the usage.

### **Evaluation of the 1st pilot.**

Before we start with the conclusions of the pilot research we have to mention that the weather condition during the ITGWO festival were not optimal for the research purpose. On the first day of the festival we experienced heavy rainfall for almost 80% of the time. The festival location was all soaked and wet and the ground was all muddy. These are conditions, which does not stimulate people to use a picnic concept. Still we sold a total of 13 picnic crates in 2 days. Not a significant big amount, but yet enough to get answers on the research questions.

#### 1. Do users separate their waste?

Only 4 out of 13 groups of people did separate their waste. So we could conclude the crate does not stimulate people to separate their waste. This means that there are multiple factors that hinder the right intended behaviour.

The two reasons that explain why people did not separate their wastes were:

1. They did not notice they were able to separate their waste.
2. Size of the waste compartments did not have enough volume to fit all the waste inside the



compartment and therefore did inhibit the right behaviour.

In the next part of this chapter we will explain it more in depth.

## Usability

### 2. Do users understand the function of the waste compartments?

#### 2.1 Is the graphical information enough to inform people?

9 out of the 13 groups did not understand the function of the waste compartments. The main causes were that people did not notice or understood the graphical information on the waste compartments. The graphical information is positioned on the outer ring of the waste compartment. I expected that people would notice this information and see the graphical information, because I expected people to take out the compartments. Unfortunately this is not the reality. Most of the people kept the compartments inside the crate. Thereby was the graphical information not easily visible for the users. The people who did understand the function of the waste compartments were the people that took the bucket out of the crate and placed them on the table.

Secondly one group of people did understand that they could separate their waste. Unfortunately they did not understand which type of packaging belonged in which waste compartment. The reason

given by people was that they did not notice the complete graphical information.

Thirdly the waste compartment did not have enough volume to easily collect all the compostable waste in one compartment. People became confused by the fact that not all the compostable waste could easily fit inside the waste compartment. That is why people doubted their own behaviour, they asked themselves; are we doing the right thing? Did we misunderstand the graphical information? It was possible to fit all the compostable waste inside the waste compartment, but you had to squeeze all the packaging. Hygiene has a high priority for people. This led to that people did not want to squeeze the dirty packaging. Especially with the Thai food you have a lot of greasy sauces, which leads to dirty packaging.

The fourth and last reason why people did not understand the waste compartment was the fact that in the beginning the waste compartments were used as a wine bucket. Thereby people thought it was only for the wine and not to separate waste afterwards. So by serving the wine in the compartment it misleads and confuses the user.

#### 3. Do users understand the system of the foldable table leaf?

The people that use the crate as a table did understand the system of the foldable leaf. Unfortunately only 3 out of the 13 people that bought the crate

used the foldable leaf as a table. Most of the people decided to use the crate on a normal dining table at the terraces. People decided to place the crate on top or underneath the table. The main cause that people were sitting at a normal dining table at the terraces was the bad weather and the muddy ground. People preferred to have a more hygienic and dry seat than the muddy ground.

#### 3.1 How did people use the foldable table leaf?

Mostly people just put the table leaf on the ground and started unfolding the rug on top of the dining table. This was caused by the fact that people made the choice to sit at a normal dining table.

Foto's toevoegen

#### 4. Do users understand how to unfold the picnic rug?

In all the observations we took people did understand how to unfold the picnic rug. The Velcro system was very easy to understand for people. There was only one person who did not know if the rug was meant to be a picnic rug or a table rug.

Foto's toevoegen

#### 5. Is there any undesirable/unexpected behavior of the users from using the design?

There are several undesirable and unexpected behaviors from the user with the crate. Firstly people were not using the table leaf and picnic rug to sit on the ground. Instead they were sitting at nor-

mal dining tables and did use the rug as table rug. Like mentioned before this was caused by the bad weather conditions and the muddy ground.

Secondly people threw all their trash into the crate and not into the waste compartment. I did not expect people to throw all their trash into the crate. This behavior of throwing the waste inside the crate leads to a very dirty crate. Thereby it took more time and effort to clean the crates as expected

### User experience

#### How do users experience the picnic crate design?

Leuk , Gezellig, gezelligheid, briljant, iets authentieks, lekker kneuterig, leuke ervaring, Netjes. Mooie belevenis, Verrassend , Heel gezellig, Prima , snel

We can conclude that people have a positive experience with the picnic crate. Especially the words cosy (gezellig) and nice (Leuk) were mentioned a lot to describe their experience. Especially cosy is an important factor. Cosy is one of the factors that are important to create an ideal eating environment. Which can increase the mental and physical comfort.

Nobody mentioned relaxed, but from the video observation we can say that the people that used the crate seemed very relaxed during their eating ritual. People did laugh a lot, did smile a lot and were not making hurry. They took their time and were really

enjoying their eating time.

This positive experience led to the fact that all the people who used the picnic crate during the pilot did mention that they would definitely use the picnic crate again.

#### How is walking with the crate experienced by people?

Walking with the crate is experienced as easy and comfortable. Especially when people carry it with two people at the same time, like most groups did. From my observations with the camera it looked in some cases a little bit uncomfortable while carrying, but when we asked people how they experienced the carrying of the crate they said it was easy and comfortable.

#### What are the negative experiences people had with the crate design?

As mentioned before people used the crate to sit at a normal table. They one group of people mentioned that the crate was too big to put on the table. It took too much space on the table.

Secondly like mentioned before one group of people were confused about the function of the picnic rug. This was experienced as negative.

Thirdly two groups mentioned that the waste compartments were too small for the amount of waste and this caused that they were not able to

throw their waste into the waste compartments in a comfortable way. This was experienced as negative because they felt it was dirty and unhygienic to compress the waste into the trash bin. On top of that the waste compartments were not easily been put back into the crate. They had some troubles with that as well.

At last one group mentioned that because of the type of food the disposables were leaking. Thereby it became dirty. The empty disposables were also blown away by the hard wind. Therefore the table became even dirtier. This all was experienced as negative. This experience is not directly caused by the design of the crate, but is mostly related to the choice of the disposables and type of food and of course the really bad weather conditions.

### Insights

#### What type of locations are they going to with the crate?

People were mainly going to some places where they could sit on a dry and clean place. They choose mainly to sit at normal picnic table. Yet the people who were using the crate as a table choose to sit at places on the ground, which were also dry and not muddy. One group took the crate to their camping spot on the camping. They travelled first by foot and then put the crate on a bicycle.

### Where do they put the crate?

Mostly they put the crate on top of the table, underneath the table or next to them on the bench.

### Where do they put the waste compartment?

The waste compartments were mostly staying inside the crate. But when people took them out of the crate they put them on top of the table.

### How long do they eat?

On average they took around 20-45 minutes to bring back the crates. Yet one group took over 2.5 hours. This was caused by the fact that they brought the crate to the camping.

### What type of sitting positions do the users show?

From the groups of people who used the crate as table we can say that they have two type of sitting positions. Firstly the legged position and secondly a position whereby the knee is bend upwards and the other leg is on the ground in full length. As shown in the images below.

### How does the crate look like when people bring it back?

It is dirty, unstructured and sloppy. See images. 11/13 people did not place the rug back on the place it belongs.

### Other insides

Next to all those inside and answers on the research questions, we have found several other

insides. We sum up the other insides here:

### Leaking packaging

Biodegradable disposables were leaking because of hot liquid thai food like curry. This means as caterer you need to be selective what type of packaging you use for the type of food you serve.

### Washstand needed to clean retrieved crates

To clean the crates you definitely need a good washstand with good facilities and enough surface for the picnic rugs. During the pilot we were putting the rug on a washing line and then tried to clean the rugs, but this was not working properly. You just need a big enough table to clean this properly.

### Better signing and look and feel.

A lot of people did not understand we sold food. This was caused by the fact that we did not have a look and feel of an eatery. They expect to see a kitchen behind the selling point. But people did not saw any kitchen so they were not expecting that we sold food. Also the signing I made for the pilot was not bringing this message. So there should be definitely some improvements on the communication and look and feel of the selling stand.

### Location is important

The location of your selling stand is very important. We did not have an optimal location. We were put in a small corner behind a lamppost. Therefore we were not insight of the people.

Provide more information during the serving.

Explaining the design could prevent a lot of miscommunication. This whole concept is completely new for people. People were definitely curious and willing to listen to some explanation. They mostly started asking questions themselves. So therefore there was not enough information provided by the signing.

### Serving of drinks should stay

Giving people an option to get some drinks with their food worked perfectly. People appreciated the extra service and thought it gave an extra dimension to the crate.

### Velcro is difficult to clean and becomes quiet dirty.

Velcro increases the convenience of unfolding and folding of the rug around the crate. Yet because of the sandy structure of the ground and food it quickly becomes dirty. On top of that you need a lot of effort to clean the Velcro. It is feasible to clean; yet we should take this in consideration for our final design.

### Picture of ID-Card deposit works fine

The deposit system of taking a picture of an ID-card work perfectly . Yet some people were firstly little bit sceptical when they were asked can we take a picture of your ID-Card. When the volunteers started to explain the reason why, people did not had any trouble with it. Even one of the people



who returned the crate said; “ I was thinking of keeping the crate, but because if gave a photo of my Id-card I felt obliged to bring back the crate. “

### Serving, administration and deposit system

How did the volunteers experience these systems?

#### Serving system:

They experienced it as easy and convenient. Still one of the improvements in the system is to fold the rugs in advance before people start ordering. This gave them a more relaxed and comfortable feeling while serving the crates. Otherwise it could lead to a little bit stress. On top of that you decrease the time that people have to wait.

#### Administration:

System of the administration worked fine according to the volunteers. Still there were some improvements to make. Firstly there were some miscommunications between the volunteers. Who was taking pictures, who was writing down numbers etc. You can prevent this kind of miscommunication by agreeing in advance which tasks are performed by who.

Secondly in the administration system should be added a column to communicate if there was already made a picture of the ID-Card.

#### Deposit:

Easy and worked perfectly.

#### Cleaning

this task, took the most time of all the tasks the volunteers had to fulfil during the day. The reason of this was that all the crates were retrieved in a very dirty status. According to the volunteers is the task of cleaning the rugs the most difficult and time consuming. The reason behind this was, because they did not have a table surface underneath the rugs while cleaning. Secondly during the evening it became dark. We did not had enough lights to make it easy for them to see what was dirty and what was clean.

Also the sharp edges in the crates were causing that food waste was not easily been removed from the crates.

#### Did these systems make it easier for volunteers to do their tasks?

IT did, but there are several improvements to be made to have a full functioning system.

#### Conclusion

The pilot research showed that our design is not stimulating people to separate their waste. According to this pilot research, informing people in a clearer way about the role of waste compartment and increasing the volume of the waste compartment can be possible solution to this problem.

Secondly we can conclude that the amount of sell,

the chosen location by people and the use of the crate are influenced by the weather conditions. Bad weather condition like heavy rainfall; causes that people will choose dry and more hygienic places. Like dining tables at terraces. The use of the crate changes due the weather conditions, but the crate still creates the desired eating experience.

Not only negative results were showed. The important factors like cosiness and relaxation were definitely present at peoples eating ritual with the picnic crate. In this way we reached our goal to stimulate the mental and physical comfort of people during their eating ritual. Therefore we can conclude that the use of the crate has a positive influence on the eating experience and comfort of the people.

In general we can conclude that the design definitely need improvements in many different aspects of the design, but with the right adjustments and improvements it has the potential to stimulate people to separate their waste in an commercially feasible way for caterers and festival organisations.

## Interviews

### # 1 Tina

1. Wat is u ervaring/belevens van het eten met het picnic kratje?

Leuk en gezellig!

2. Kunt u stap voor stap uitleggen hoe u het kratje heeft gebruikt?

Tafel opgezocht en kratje meegenomen.

3. Watervaarde u als positief tijdens het gebruik?

Makkelijk de emmertjes voor bestek

4. Watervaard u als negatief tijdens het gebruik?

niks

5. Waren er onduidelijkheden over het gebruik van het kratje?

nee

5. Heeft u uw afval gescheiden? Zo ja/Nee, Waarom?

Nee alles in afvalbak van het festival zelf gegooid.

6. Begreep u waar u het afval in moest deponeren?

Ja of Nee, en waardoor kwam dit?

Nee, niet verwacht dat dit in het kratje kon

7. Hoe beviel het eten op tafelblad?

Niet gebruikt, omdat we het krat op tafel hadden

gezet.

8. Hoeervaarde u het dragen van het kratje?

Soepel, geen problem

9. Zou u deze manier van eten nu vaker willen doen op een festival?

Ja

10. Wat is uw mening over het concept en wat zou u als verbeteringen nog kunnen zien?

Geen verbeteringen

### # 2 Joyce

1. Wat is u ervaring/belevens van het eten met het picnic kratje?

Vorm van gezelligheid, leuk, briljant en lekker kneuterig. Het had iets authentieks, vrij bereid.

2. Kunt u stap voor stap uitleggen hoe u het kratje heeft gebruikt?

x

3. Watervaarde u als positief tijdens het gebruik?

Alles

4. Watervaard u als negatief tijdens het gebruik?

niks

5. Waren er onduidelijkheden over het gebruik van het kratje?

nee

5. Heeft u uw afval gescheiden? Zo ja/Nee, Waarom?

Nee alles in de krat gestopt.

6. Begreep u waar u het afval in moest deponeren? Ja of Nee, en waardoor kwam dit?

Nee, ik had dit niet door. Lastig te zien dat het op de emmertjes staat.

7. Hoe beviel het eten op tafelblad?

Prima, we hebben vooral gebruikt als onderzetter voor alle losse bakjes. De bordjes hebben we in de hand gehouden en zo gegeten. → Vanwege het weer en de regen

8. Hoeervaarde u het dragen van het kratje? Appeltje eitje,.

9. Zou u deze manier van eten nu vaker willen doen op een festival?

Absoluut!

10. Wat is uw mening over het concept en wat zou u als verbeteringen nog kunnen zien?

Boven kant misschien een signing van scheiden plaatsen. Fles in krat plaatsen en niet in emmertjes waardoor er dan misschien geen misverstanden plaats vinden.

### #3 Yaga

1. Wat is u ervaring/belevens van het eten met het picnic kratje?

Was heel lekker eten, leuke ervaring. " Mensen keken heel jaloers naar ons gebruik met picnick mand.

2. Kunt u stap voor stap uitleggen hoe u het kratje heeft gebruikt?

Op tafel gebruikt , klaptafel niet gebruikt. Vooral omdat er modder lag. We hebben het kleedje dus toen als tafelkleed gebruikt aan tafel.

10. Wat is uw mening over het concept en wat zou u als verbeteringen nog kunnen zien?

Was heel leuk, leuk idee! We hebben er wel heel veel troep in laten zitten... !

### # 4 Emma

1. Wat is u ervaring/belevens van het eten met het picnic kratje?

Veel bekijks en leuk idee!

2. Kunt u stap voor stap uitleggen hoe u het kratje heeft gebruikt?

We gingen tafel zoeken en krat op tafel gezet. Daarna toch kratje op bankje geplaatst en tafel gedekt.

3. Watervaarde u als positief tijdens het gebruik?

Dat je echt alles kan uitstallen en dineren

4. Watervaarde u als negatief tijdens het gebruik? Beetje een groot ding voor op tafel.

5. Waren er onduidelijkheden over het gebruik van het kratje?

Nee

5. Heeft u uw afval gescheiden? Zo ja/Nee, Waarom?

Ja, daar waren de emmertjes heel handig voor.

6. Begreep u waar u het afval in moest deponeren? Ja of Nee, en waardoor kwam dit?

JA , we maakten er een soort van spelletje van om te discussieren wat composteerbaar was.

7. Hoe beviel het eten op tafelblad? NVT.

8. Hoeervaarde u het dragen van het kratje? Met zijn 2 en ging dit goed!

9. Zou u deze manier van eten nu vaker willen doen op een festival?

Ja , ook in een park en bijvoorbeeld op lowlands!!

10. Wat is uw mening over het concept en wat zou u als verbeteringen nog kunnen zien?

Vergeeten te vragen!

### # 5 Andre

1. Wat is u ervaring/belevens van het eten met het picnic kratje?

Netjes, leuk concept, ook als tafel. Je eigen plek opzoeken was top. Wij hebben em meegenomen naar de camping.

2. Kunt u stap voor stap uitleggen hoe u het kratje heeft gebruikt?

Meegenomen op de fiets naar camping en het daar uitgestalt.

3. Watervaarde u als positief tijdens het gebruik? Zelf plek uitzoeken en verweg kan meenemen en de presentatie!

4. Watervaarde u als negatief tijdens het gebruik? Wisten niet precies of het een tafelkleed of picnickkleed was waar je op moest zitten. En als picnickkleed functioneerde is het misschien iets te klein.

5. Waren er onduidelijkheden over het gebruik van het kratje?

Nee

5. Heeft u uw afval gescheiden? Zo ja/Nee, Waarom?

Nee, oh sorry helemaal niet door gehad.

6. Begreep u waar u het afval in moest deponeren? Ja of Nee, en waardoor kwam dit?



Ja we snapte het scheiden, maar op de camping was het rommelig dus niet gedaan.

7. Hoe beviel het eten op tafelblad?  
Tafelgrote was goed ?

8. Hoeervaarde u het dragen van het kratje?  
Achterop de fiets was prima te dragen zeker met zijn 2en.

9. Zou u deze manier van eten nu vaker willen doen op een festival?  
Op festival ja zeker, ITGWO wel goed festival, mysteryland is dan bvb niet echt een goede optie.

10. Wat is uw mening over het concept en wat zou u als verbeteringen nog kunnen zien?  
Afval scheiden is wel leuk bedacht en goed, maar ook lastig op een festival, want je wilt het toch snel doen!

#### # 6 ikzelf met vrienden.

1. Wat is u ervaring/belevens van het eten met het picnic kratje?  
Vrienden vonden het leuk.

2. Kunt u stap voor stap uitleggen hoe u het kratje heeft gebruikt?  
Vrienden liepen met zijn tweeën naar plek vlakbij podium en daar zijn we gaan zitten. Vergeten em-

mertjes eruit te halen .

3. Watervaarde u als positief tijdens het gebruik?

4. Watervaard u als negatief tijdens het gebruik?  
Bakjes waren aan lekken, daardoor kliederboel. Ook de harde wind liet soms dingen omwaaien waardoor het nog een grotere kliederboel werd.

5. Waren er onduidelijkheden over het gebruik van het kratje?  
Voor hun niet, kwam ook wel omdat ze er al vanaf wisten.

5. Heeft u uw afval gescheiden? Zo ja/Nee, Waarom?  
Ja,

6. Begreep u waar u het afval in moest deponeren?  
Ja of Nee, en waardoor kwam dit?  
JA ,

7. Hoe beviel het eten op tafelblad?  
Leuk, alleen door de wind waaiden lege bakjes of bordjes weg. Dit was beetje onhandig.

8. Hoeervaarde u het dragen van het kratje?  
Gemakkelijk.

9. Zou u deze manier van eten nu vaker willen doen op een festival?

10. Wat is uw mening over het concept en wat zou u als verbeteringen nog kunnen zien?  
Verbeteringen, grotere afval emmertjes, net te weinig ruimte voor afval. Zwaardere borden of dergelijken dat de wind tegen houdt.

#### # 7 Marijn ( twee vrouwen , twee mannen)

1. Wat is u ervaring/belevens van het eten met het picnic kratje?  
Heel goed gegeten! Leuk kratje! Veel aanspraak en bekijks van mensen om ons heen.

2. Kunt u stap voor stap uitleggen hoe u het kratje heeft gebruikt?  
Nu aan tafel gezeten en niet gepicknickt.

3. Watervaarde u als positief tijdens het gebruik?  
Handig ingericht, Bakjes leuk en gezellig!

4. Watervaard u als negatief tijdens het gebruik?  
Niets, complimenten, we hebben alleen iets te snel gegeten.

5. Waren er onduidelijkheden over het gebruik van het kratje?  
Nee

5. Heeft u uw afval gescheiden? Zo ja/Nee, Waarom?  
Nee, wel in de bakjes gedaan maar niet gescheiden.

Nee, wel in de bakjes gedaan maar niet gescheiden.

6. Begreep u waar u het afval in moest deponeren?

Ja of Nee, en waardoor kwam dit?

Zoon wel, die zei het nog. Was alleen een beetje propfen met de bakjes in de emmers. Het is wel handig en leuk idee. Maar moet iets duidelijker.

7. Hoe beviel het eten op tafelblad?

We hebben het niet uitgepakt. Met mooi weer waarschijnlijk wel uit gepakt en gezien.

8. Hoe ervaarde u het dragen van het kratje?

Leeg terug brengen was makkelijk en heen weg was ook prima te doen.

9. Zou u deze manier van eten nu vaker willen doen op een festival?

Ja leuk, zeker weer op een festival!

10. Wat is uw mening over het concept en wat zou u als verbeteringen nog kunnen zien?

Wijn erbij zou leuk zijn. Oh dat hebben we niet gezien. Goedzo dat jullie dat al deden!

#### # 8 Casper

1. Wat is u ervaring/belevens van het eten met het picnic kratje?

Mooie belevens. Grond is nat dus tafel ipc picknick. Mooi weer wel gebruikt als picknick waarschijnlijk.

2. Kunt u stap voor stap uitleggen hoe ue het kratje heeft gebruikt?

3. Wat ervaarde u als positief tijdens het gebruik?

Lekker, Mooi en handig

4. Wat ervaard u als negatief tijdens het gebruik?

Rommeltje met emmers, emmer was net iets te klein om afval in te gooien. Ook kreeg ik de emmertjes moeilijk weer terug in houten paneel.

5. Waren er onduidelijkheden over het gebruik van het kratje?

Nee

5. Heeft u uw afval gescheiden? Zo ja/Nee, Waarom?

Ja,

6. Begreep u waar u het afval in moest deponeren?

Ja of Nee, en waardoor kwam dit?

JA, snapte het ( maar helpt verkeerd weggegooid) Toen deze vraag gesteld werd, had hij het door en goodie die het al snog in de juiste afval bak.

7. Hoe beviel het eten op tafelblad?

NVt

8. Hoe ervaarde u het dragen van het kratje?

Prima

9. Zou u deze manier van eten nu vaker willen doen op een festival?

Ja zeker, gezellig!

10. Wat is uw mening over het concept en wat zou u als verbeteringen nog kunnen zien?

Goedzo, heb genoten en lekker wijn.

#### # 9 Lotte

1. Wat is u ervaring/belevens van het eten met het picnic kratje?

Verrassend, snell service, gezellig met eigen plekje!

2. Kunt u stap voor stap uitleggen hoe ue het kratje heeft gebruikt?

Tafel was vrij en daarheen gelopen. Daar het kratje uitgepakt en kratje onder tafel gezet.

3. Wat ervaarde u als positief tijdens het gebruik?

Compact, onder tafel kratje.

4. Wat ervaard u als negatief tijdens het gebruik?

Waaide, dus alle lege bakje waaiden weg.

5. Waren er onduidelijkheden over het gebruik van het kratje?

vergeteb te vragen

5. Heeft u uw afval gescheiden? Zo ja/Nee, Waarom?

nee, alles in kratjes gegooid, niet duidelijk met de emmertjes.

emmertjes.

6. Begreep u waar u het afval in moest deponeren?  
Ja of Nee, en waardoor kwam dit?  
Niet gescheiden, dacht achteraf gedaan werd door ons.

7. Hoe beviel het eten op tafelblad?  
NVt

8. Hoe ervaarde u het dragen van het kratje?  
Met zijn 2en ging prima!

9. Zou u deze manier van eten nu vaker willen doen op een festival?  
Leuke manier, en ga zeker vaker doen.

10. Wat is uw mening over het concept en wat zou u als verbeteringen nog kunnen zien?  
Uitleg zou handig zijn, en ook grotere signing en borden. Is allemaal beetje klein. Ooh en misschien meer rijst!

#### # 10 Edwin ( Beetje dronken mensen, dus lastig te interviewen)

1. Wat is u ervaring/belevens van het eten met het picnic kratje?  
Leuk idee

2. Kunt u stap voor stap uitleggen hoe u het kratje heeft gebruikt?

Kleed gebruikt als onderkleed.

3. Wat ervaarde u als positief tijdens het gebruik?  
Compact, onder tafel kratje.

4. Wat ervaarde u als negatief tijdens het gebruik?  
Waaide, dus alle lege bakje waaiden weg.

5. Waren er onduidelijkheden over het gebruik van het kratje?  
vergeteb te vragen

5. Heeft u uw afval gescheiden? Zo ja/Nee, Waarom?  
JA was duidelijk en ook gedaan. ( niet helemaal goed)

#### # 11 Huub

1. Wat is u ervaring/belevens van het eten met het picnic kratje?  
Leuk! Tafelkleed leuk! Presentatie ook leuk met water en bordjes!

2. Kunt u stap voor stap uitleggen hoe u het kratje heeft gebruikt?  
Gewoon een plek gezocht aan een tafel. Heel leuk dat tafeltje erbij maar het weer is niet optimal. Er is nu ook gewoon plek op tafel en het is koud.

3. Wat ervaarde u als positief tijdens het gebruik?  
Presentatie, waar voor geld, veel variatie kwa eten

4. Wat ervaarde u als negatief tijdens het gebruik?  
Curry te pittig en meer rijst → niets over kratje.

5. Waren er onduidelijkheden over het gebruik van het kratje?  
vergeteb te vragen

5. Heeft u uw afval gescheiden? Zo ja/Nee, Waarom?  
Niet helemaal gescheiden, we snappen het niet helemaal( in die ene moet alles? Bordjes bestek? Past niet allemaal in emmertjes. JE wilt wel netjes weggooien.

6. Begreep u waar u het afval in moest deponeren?  
Ja of Nee, en waardoor kwam dit?  
Wat is de de rest? Eten?

7. Hoe beviel het eten op tafelblad?  
NVt

8. Hoe ervaarde u het dragen van het kratje?  
Klein stukje is prima, langer is zwaar. Prima en leuke handvaten!

9. Zou u deze manier van eten nu vaker willen doen op een festival?  
Ja leuk!

10. Wat is uw mening over het concept en wat zou u als verbeteringen nog kunnen zien?  
Nee niet echt ( super life en enthousiast.



### # 12 Yde

1. Wat is u ervaring/belevens van het eten met het picnic kratje?

Heel gezellig. Leuk tafelkleed erbij. Goede presentatie. Stiekem wilde we em mee nemen. Maar we hadden een foto als borg. Misschien leuk om mee te kunnen nemen of als bouwpakket.

2. Kunt u stap voor stap uitleggen hoe u het kratje heeft gebruikt?

3. Watervaarde u als positief tijdens het gebruik? Praktisch, gezellig en leuk tafelkleed!

4. Watervaarde u als negatief tijdens het gebruik? Weinig rijst en emmertjes te klein voor afval. En tip misschien afvalzakje (klein in box en veel afval kan erin)

5. Waren er onduidelijkheden over het gebruik van het kratje? Nee sprak voor zich.

5. Heeft u uw afval gescheiden? Zo ja/Nee, Waarom? Geprobeerd, maar een emmer was te klein. Ook in andere emmer dus niet helemaal goed gescheiden.

6. Begreep u waar u het afval in moest deponeren? Ja of Nee, en waardoor kwam dit? Wat is de rest? Eten?

7. Hoe beviel het eten op tafelblad?

Ja op tafel, Nu was het te koud om te picknicken, anders was dat erg leuk geweest!

8. Hoeervaarde u het dragen van het kratje?

Licht dus prima, handvaten ook prima

9. Zou u deze manier van eten nu vaker willen doen op een festival?

Ja, inspirerend. Mijn vriend organiseert een festival op vlieland en wilt er misschien wel iets mee doen.

10. Wat is uw mening over het concept en wat zou u als verbeteringen nog kunnen zien?

Eten koelt snel af door koud weer. Voelt als op een festival uit eten te gaan, ook iedereen kijkt het geeft veel bekijks.

### # 13 Hannerieke

1. Wat is u ervaring/belevens van het eten met het picnic kratje?

Prima uitvinding.

2. Kunt u stap voor stap uitleggen hoe u het kratje heeft gebruikt?

Hebben eerst een plek proberen te vinden die goed was. Dit was bij een koffietent. Hebben op tafel geplaatst omdat dit makkelijk at.

3. Watervaarde u als positief tijdens het gebruik?

Alles er, vers compleet.

4. Watervaarde u als negatief tijdens het gebruik? Iets warmer eten, koelt snel af door eht weer. En er is extra rijst bijgehaald.

5. Waren er onduidelijkheden over het gebruik van het kratje?

Nee

5. Heeft u uw afval gescheiden? Zo ja/Nee, Waarom?

Label niet gezien, anders had ik wel de tijd genomen om afval te scheiden.

6. Begreep u waar u het afval in moest deponeren?

Ja of Nee, en waardoor kwam dit?

Wat is de rest? Eten?

7. Hoe beviel het eten op tafelblad?!

NVT.

8. Hoeervaarde u het dragen van het kratje?

vergeten

9. Zou u deze manier van eten nu vaker willen doen op een festival?

Ja op dit festival wel, er moet ruimte zijn om het uit te stallen.

10. Wat is uw mening over het concept en wat zou u als verbeteringen nog kunnen zien?

Nee, ik ga veel naar festivals (4-5 keer per jaar) en heb dit nog nooit gezien! Heel leuk!























## Appendix M: Financial calculations

### Material costs:

#### Disposable version

Part	Amount/size	Price per	Total
Crate	100	7.50€ + 100€ transport costs.	850 €
Picnic rug 1,40 by 1,40	100	10.80€ or 29.50 €	1080 € or 2950 €
Rope 16mm thickness	150 [m]	<i>Spleitex</i> 375€ for 220 meters. <i>Polypropeen</i> 100 € for 200 meter + 8€ transport costs	264 € or 86 €
Velcro for rug	20 [m]	25€ per 20 [m]	25 €
Plate wine and drink holder (1250 X 2500)	3 Plates	37.97€ per plate	114 €
Floor Vanisch for inside crate.	2.5 litres is enough for 33.33 crates.	69€ for 2.5 litre	207 €
Wood dye for wine holder.	2.5 litre is	40.90€ for 2.5 litre.	40.90 €
Screws 3.5 mm by 16 mm	7 screws per holder	4-5 € for 200 pieces	14- 17.5 €
Black Paint for numbers	0.50 litre is enough for 200 numbers	16.48€ for 0.75 litre.	16.48 €
One roll of Gaffa Tape.	1 roll	25€ per roll	25 €
<b>Total Cheapest</b>			<b>2462 €</b>
<b>Total with Spleitex</b>			<b>2640 €</b>
<b>Total with printed rug</b>			<b>4332 €</b>

#### Additional material costs Re-usable version

Plate for bowls (1250 X 2500)	10 plates (20 per plate) 9mm thickness	37.97€ per plate gaboon	380 €
Plate for height of bowls (1250 X 2500)	1 plates	37,97 € per plate	38 €
Wood dye for bowl holder	2.5 litre is 42.5M <sup>2</sup>	40.90€ for 2.5 litre.	81.80€
Screws 3.5 mm by 16mm	4 screws per holder	4€ for 200 pieces	16€
<b>Total</b>			<b>515.8 €</b>

#### Additional material costs buckets

Buckets 1 litre	100 buckets	2.12 € per bucket	212€
Buckets 2.5 litre	100 buckets	1.96 € per bucket	196€
Stickers	400 stickers	400€ for 400 stickers	400€
			<b>808 €</b>

#### Additional Material costs Table Leaf:

Plates for table leaf (1250 X 2500)	15 plates needed of 15mm	59.5 € per plate gaboon	900€
Wood dye	2.5 litre is for 42.5 M <sup>2</sup>	40.90€ for 2.5 litre.	98€
Screws 3.5 mm by 16mm	12 screws per leaf	4€ for 200 pieces	24€
Hinges	200	4 € per two	400€
<b>Total</b>			<b>1412 €</b>

Labour costs	Task	Amount	Hours	Costs
25 € per hour	Mark and Drill holes	400	3.5	87.5 €
	Cut Rope	400	4.5	112.5 €
	Knot Rope	200	1.5	37.5 €
	Milling of plates (60 minutes per plate)	3	3	75 €
	Sanding of crate	100 crates	6	150 €
	Placing Velcro	400	4	100 €
	Sewn Velcro	400	5	150 €
	Cut Velcro	400	1	25 €
	Paint numbers	200	4	100 €
	Plotting numbers	200	1.5	37.5 €
	Sanding Crate	100	25	625 €
	Sanding of holder	100	3	75 €
	Dying of wood	100	8	200 €
	Vanishing of Crate	100	20	500 €
<b>Total</b>			<b>90</b>	<b>2250 €</b>

Additional Labour costs Re-usable version

Labour costs	Task	Amount	Hours	Costs
25 € per hour	Milling of plates (60 minutes per plate)	10	10	250 €
	Saw of small height component	800	2.5	62.5 €
	Sanding of holder	200	8	200 €
	Screwing and gluing	200	16	400 €
	Dying of wood	200	15	375 €
<b>Total</b>				<b>1287.5 €</b>

Labour costs	Task	Amount	Hours	Costs
25 € per hour	Placing stickers	400	7	175 €
<b>Total</b>			<b>7</b>	<b>175 €</b>

Additional Labour costs Table leaf

Labour costs	Task	Amount	Hours	Costs
25 € per hour	Milling of plates ( 40 minutes per plate)	15	10	250 €
	Screwing of plates and hinges	200	5	125 €
	Sanding of table leaf	100	8	200 €
	Dying of plates	100	10	250 €
	Light sanding of table leaf second time	100	2	50 €
<b>Total</b>				<b>875 €</b>

Machinery and workplace costs

Machinery costs	Task	Hours	Costs
	Use of milling machine	23	230 €
	Workplace costs		400 €
<b>Total</b>			<b>630 €</b>



	Task	Labour costs	Hours	Costs
	Administration of ordering	35€ per hour	5	175€
	Transport	25€ per hour + gasoline and car.	8	300 €
<b>Total</b>				<b>475 €</b>

**Total costs for 100 pieces**

	Tapas Version Disposable	Tapas Version Re-usable	Table leaf	Spleitex Handle	Buckets
Material costs	2462, - €	2978, - €	1412, - €	178, - €	808, - €
Labour costs	2250, - €	3538, - €	875, - €	0, - €	175, - €
Machinery and workplace costs	600, - €	800, - €	200, - €	0, - €	50, - €
Administration and Transport	475, - €	550, - €	25, - €	0, - €	25, - €
<b>Total costs</b>	<b>5787, - €</b>	<b>7866, - €</b>	<b>2512, - €</b>	<b>178, - €</b>	<b>1058, - €</b>
20% profit	1157, - €	1574, - €	508 - €	36, - €	212, - €
<b>Selling Price</b>	<b>6944, - €</b>	<b>9440, - €</b>	<b>3020, - €</b>	<b>214, - €</b>	<b>1270, - €</b>

**Investments disposable version**

- **Selling stand.**

To sell food, you need a stand. Eateries mostly have already some facilities to for a selling stand. Still adaptions have to be done for the crates. There a new logo signing and counter design are needed for eateries. This will cost approximately around 1500 euro.

- **Washing facilities for crate and rugs.**

Extra washing facilities are needed to clean the crate and rugs. A table and waterspout are needed. This investment will cost approximately around 150-200 euro.

- **Administration system.**

Administration facilities have to be purchased. The paper version is cheap and does not cost much. Yet you need a photo camera to make pictures of the ID- Cards.

- **Fridge for drinks.**

A fridge for drinks has to rented or purchased. This will cost around 250 euro.

Extra investments.

- **Digital administration system.**

There is also a possibility to choose for a digital administration system. Therefore you need a tablet + Google docs. With this camera you can take pictures of the identification cards. As eatery you have to invest in Wi-Fi or 4G networks. Otherwise



