Name student	Pijke Daalder	Student number	

PROJECT TITLE, INTRODUCTION, PROBLEM DEFINITION and ASSIGNMENT
Complete all fields, keep information clear, specific and concise

Project title ___ A toilet for the Imvepi refugee settlement in Uganda

Please state the title of your graduation project (above). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

Introduction

Describe the context of your project here; What is the domain in which your project takes place? Who are the main stakeholders and what interests are at stake? Describe the opportunities (and limitations) in this domain to better serve the stakeholder interests. (max 250 words)

The project takes place at the Imvepi refugee settlement, located in North-West Uganda. Around 65.000 people are housed there. The client, Semilla Sanitation, has set up a bio-digester to process the human waste streams (faeces and urine) servicing 25.000 people. For the project, I will look at the waste collection & transportation to the bio-digester. By designing a toilet that works together with users and personell to succesfully collect sludge in the digester. It will be manufactured in Kampala and assembled, maintained and repaired by local people, with the available knowledge, tools & materials.

Stakeholders and their interests:
The client (Semilla Sanitation): Clean sanitary facilities at the settlement, maximizing yield from bio-digester.
Settlement inhabitants: Safe & clean sanitary facilities, a chance to earn money/provisions.
Prime Minister Office, Humanitarian organisations: General health & wellbeing within the settlement, finances (cost of implementing improvements).

Opportunities & limitations
The client is currently very strong in the technical aspect of the project: processing human waste to create biofuel, compost and irrigation water. But for a more complete system, creating a human centred design for a toilet that involves the community, could create the following opportunities & limitations:
+ Improved sanitation & health of the inhabitants
+ More input into the bio-digester
+ Job/task creation for the inhabitants
- Misuse of the toilet
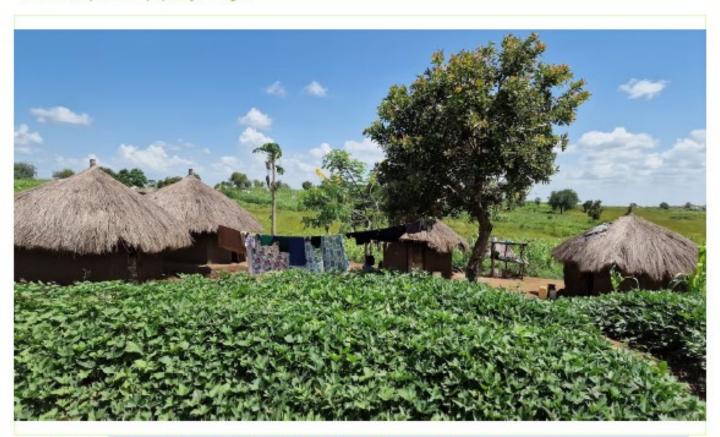- Misuse of the reward system for participation (scams & theft)

→ *space available for images / figures on next page*

image / figure 1   The Imvepi Refugee Settlement in Terego District, North-West Uganda

image / figure 2   Current infographic on the working of the Bio-Digester in context

Problem Definition

What problem do you want to solve in the context described in the introduction, and within the available time frame of 100 working days? (= Master Graduation Project of 30 EC). What opportunities do you see to create added value for the described stakeholders? Substantiate your choice.
(max 200 words)

From studies on the informal settlements in Kampala, Uganda, the following quotes were extracted: 'Diarrhea causes 1.6 million deaths annually, including 525,000 children.' ... 'many toilets are inaccessible to sanitation trucks as the roads are impassable.' ... 'the toilets often became filthy to the extent that people did not want to use them much less clean them.' ... 'As garbage and trash are often dumped into drainage canals, they are often blocked. During the rainy season, this means that many of the homes become flooded, and faeces and garbage that are dumped into the canals end up in people's homes.' It is important to note that the refugee camp is not a permanent informal settlement (or slum), but it is assumed to face similar problems. The main problem areas that were found were: lack of infrastructure to dispose of human waste; poverty & insecurity of financial resources for inhabitants; faecal matter & urine now seep into the soil and contaminate the groundwater; high level of groundwater & frequent floodings, spreading faecal matter and decease.

Opportunities: cleaner sanitary facilities; more frequent emptying of the toilets; less garbage dumped into the drainage canals; more input into the bio-digester; less flooding; better inhabitant health.

Assignment

This is the most important part of the project brief because it will give a clear direction of what you are heading for.
Formulate an assignment to yourself regarding what you expect to deliver as result at the end of your project. (1 sentence)
As you graduate as an industrial design engineer, your assignment will start with a verb (Design/Investigate/Validate/Create), and you may use the green text format:

Create a localy manufactured and reproducable prototype to test the effects on sanitation of toilets for inhabitants in the Imvepi Refugee Settlement.

Then explain your project approach to carrying out your graduation project and what research and design methods you plan to use to generate your design solution (max 150 words)

Desk research:
Ugandan culture surrounding toilet use
Other toilet solutions for sudden settlements/events

On-site research:
Geographical (mapping of population density, roads and their accessibility for trucks, social meeting places)
User (qualitative interviews with inhabitants and management)
Material (to find what materials, tools and knowledge is available to the local builders)

Prototyping:
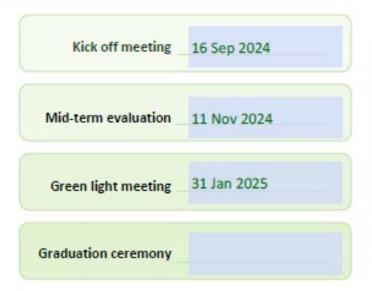Minimum viable product (MVP) (SCRUM method, forcing quick feedback)
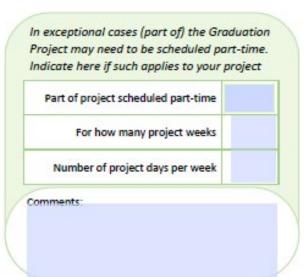Quantitative feedback (questionnaires filled out by users of the MVP)
Design for repair & reproduction (Co-creation sessions with local builders)

Project planning and key moments

*To make visible how you plan to spend your time, you must make a planning for the full project. You are advised to use a Gantt chart format to show the different phases of your project, deliverables you have in mind, meetings and in-between deadlines. Keep in mind that all activities should fit within the given run time of 100 working days. Your planning should include a **kick-off meeting, mid-term evaluation meeting, green light meeting and graduation ceremony**. Please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any (for instance because of holidays or parallel course activities).*

Make sure to attach the full plan to this project brief.
The four key moment dates must be filled in below

Kick off meeting	16 Sep 2024
Mid-term evaluation	11 Nov 2024
Green light meeting	31 Jan 2025
Graduation ceremony	

In exceptional cases (part of) the Graduation Project may need to be scheduled part-time. Indicate here if such applies to your project

Part of project scheduled part-time	
For how many project weeks	
Number of project days per week	

Comments:

Motivation and personal ambitions

Explain why you wish to start this project, what competencies you want to prove or develop (e.g. competencies acquired in your MSc programme, electives, extra-curricular activities or other).

Optionally, describe whether you have some personal learning ambitions which you explicitly want to address in this project, on top of the learning objectives of the Graduation Project itself. You might think of e.g. acquiring in depth knowledge on a specific subject, broadening your competencies or experimenting with a specific tool or methodology. Personal learning ambitions are limited to a maximum number of five.
(200 words max)

Since following the course 'Design for Emerging Markets' I have felt the desire to tackle a bigger project on the topic. I feel that there are actual problems in the world that require attention. Many of the problems I have tackled for the Dutch market have not quite seemed to be that urgent. So when I learned businesses that gave people in low income settings the tools to improve their lives in a way that was not available for them before, while also maintaining sustainable finances, I wanted to know more.

I love traveling and experiencing different cultures and this project gives me the chance to do so. I have always found it interesting that some people who seemingly have the least (financially), do not adopt a victimized mindset, but rather find their way to happiness in their community.

I really want to find out if I am capable of seeing the lives of the people in the settlement through their eyes, and not create a 'western solution' to their problems, but rather one that fits in the culture and context. The challenge is big in that regard, since I have always only seen the world from a western point of view, whether consciously or not, but answering that question is my main person learning goal for my graduation project.