



Environmental Leadership Programme on Sustainable and Resilient Infrastructure (1st Edition)

November 30th – December 8th, 2021

Venue: Virtual via Zoom

Group Project

Description Group Project

To exchange and share knowledge and experiences among participants, and therefore to acquire a deeper understanding on sustainable and resilient infrastructure, you are invited to participate in a group project during this program. Participants will be divided into groups based on their preferences indicated in the pre-course survey, with each group working on a different infrastructural sector. The group composition and background information for each of the sectors can be found below. Groups can work on their project in dedicated time slots on Day 3 and 6 and all projects will be presented by the groups in the closing session on Day 7.

Background Group Project Task

In this group project, you are asked to put yourself in the shoes of the Head of Infrastructure of the imaginary East African country “Happylandia”. Happylandia is a typical East African country with a mountainous landscape, consisting of many plateaus and valleys, with moderate temperatures that allow for agriculture, but nevertheless a dry climate. As Head of Infrastructure of Happylandia, you are tasked with developing a national infrastructure plan for a specific sector that will support the country's development priorities. This plan should include the following aspects:

- 1) A description of the infrastructure for the specified sector (transport, water, housing/buildings and digital) needed to support the national goals;
- 2) How do you plan to finance the infrastructure plan;
- 3) Key stakeholders to be involved, such as ministries, industry, international development partners, citizens/civil groups etc.;

- 4) Key sustainability considerations (aligned with international and national development goals) to be integrated into the planning of sectoral infrastructure;
- 5) What tools and approaches will you use to enhance the sustainability and resilience of the infrastructure investment (e.g, Strategic Environmental Assessment (SEA) / Environmental Impact Assessment (EIA), etc.);
- 6) Mitigation measures that can be used to reduce and mitigate the environmental and social impacts of various infrastructure systems and projects;
- 7) What data is most relevant and is it available;
- 8) Institutional arrangements - which institution will take the lead? What other stakeholders will be involved? Is there a potential for regional integration;
- 9) Relevant regional strategies, initiatives and cooperation frameworks.

Sectors

Each group is asked to develop this infrastructure plan for a specific sector (transport, water, buildings/housing or digital). The composition of the groups and the assigned sectors can be found below. To have some background for developing Happylandia's national infrastructure plan for your assigned sector, some hypothetical numbers and facts on each sector can be found below.

1. Transport (Group 1 and 2)

Background

- ❖ Happylandia is planning to increase its investments in transport infrastructure significantly over the next years (to up to 1 billion USD)
- ❖ The quality of Happylandia's road corridors has improved steadily over the past years
- ❖ So far, the citizens of Happylandia mainly rely on public transport, especially in the cities, car ownership is comparably low (only around 5%)
- ❖ There are ideas to start electrifying the public buses
- ❖ There is no railway system yet, but plans to develop one by 2027

Challenges

- ❖ While the quality of Happylandia's roads has improved over the past years, there are still significant stretches of unpaved roads
- ❖ Wildlife conservation considerations in constructing new transport infrastructure
- ❖ Frequent damage to transport infrastructure due to flooding and landslides

2. Water (Group 3)

Background

- ❖ Happylandia has a lot of water sources, such as rivers, wetlands and deep lakes
- ❖ Many of Happylandia's citizens (60%) have access to improved water and sanitation, but there is a high rural-urban divide
- ❖ Progress with regard to Happylandia's water infrastructure has been slowing down over the past years, mostly due to operational inefficiencies
- ❖ Happylandia is currently piloting a wetland rehabilitation project to leverage the potential of nature-based solutions for tackling water scarcity and flooding problems

Challenges

- ❖ Increased water demand and pressure on water quality due to urbanization and agriculture
- ❖ Increased variability in rainfall due to climate change, resulting in periods of water scarcity and flooding
- ❖ Preserving ecosystems and livelihoods when building new grey water infrastructure such as dams

3. Buildings and Housing (Group 4)

Background

- ❖ Growing housing demand in Happylandia's cities due to urbanization and population growth will require a lot of investment into the construction of new housing (about 2 billion USD over the next five years)
- ❖ The upgrading of informal settlements has been a priority for Happylandia's government over the past years, with upgrading programmes currently in place in three of Happylandia's major cities

Challenges

- ❖ Housing deficits due to urbanization and a lack of urban planning
- ❖ Housing affordability has remained a challenge in Happylandia due to the high prices of housing and expensive housing finance
- ❖ Need to increase resilience of Happylandia's housing infrastructure, especially in low-income settlements placed in flood-prone urban areas

4. Digital Infrastructure (Group 5)

Background

- ❖ Access to internet services is still limited and expensive in Happylandia, but has increased sharply over the past years (from 20 to 30% of the citizens having access),
- ❖ Very high investments (up to 3 billion USD) would be needed to update Happylandia's digital infrastructure, but this also promises benefits in terms of development by e.g. leading to job creation
- ❖ Climate data, such as satellite imagery, could be very helpful for finding solutions to the challenge of climate change in Happylandia, but requires great processing power and thus an massive upgrade of Happylandia's digital infrastructure

Challenges

- ❖ There is a number of investors interested in investing in the upscaling of digital technologies in Happylandia, but they have been held back due to considerations about the lack of an appropriate enabling environment
- ❖ Large „digital divide“ in Happylandia, with great differences in access between e.g. the urban and rural population and men and women
- ❖ Investments need to be planned carefully since digital infrastructure can also be associated with increased demand for rare earth minerals and might require complementary hard infrastructure for e.g. power generation

Final Presentation

On Day 7 of the course, you will be asked to present the national infrastructure plan that you developed with your group for your assigned sector. This presentation should last between 15 and 20 minutes. After your presentation, there will be about 5 minutes for questions and reviews from the public. Your presentation should cover the following aspects:

- ❖ One slide introducing your group members
- ❖ A brief sectoral analysis, including the context and challenges that your proposal is addressing
- ❖ Key aspects of your sectoral infrastructure plan, drawing on aspects 1) – 9)
- ❖ Key recommendations to policy makers in Happylandia