Yêlêma

Sobata’s transition from traditional village to thriving ecovillage in Guinea, West Africa
Contributors:

Adelaide Merle
Jenny Serra
Martina De Rosi
Sarah Keogh

GEDS Design Studio 2019
Executive summary

This is a proposal for transitioning the traditional Guinean village of Sobata into a thriving regenerative ecovillage, a learning hub and source of inspiration for others in Africa and beyond.

Background

Sobata is a traditional village in Guinea, West Africa. The community can grow food only three months of the year, during the rainy season – and the rest of the year is getting drier and drier with climate change. The people of Sobata dream of transforming their community into a thriving ecovillage by helping to restore and regenerate the natural cycles in their bioregion, as well as by increasing their resilience to some of the inevitable effects of global climate change. The GEDS Design Team has been given the unique opportunity to work with the community to develop design proposals to make this dream a reality. And so Yêlêma Project was born. Yêlêma, which means “change” in Malinke (the local language), is a testament to both the community’s desire to see things change for the better in their village, as well as the need to adapt to the large scale changes happening to their environment.

Vision and mission

The vision for Yêlêma is for Sobata to be a resilient and thriving community that inspires and empowers others to unlock their regenerative power. The emphasis on inspiring and empowering others comes from the focus of the project on multi-way learning between Sobata and the surrounding villages in Guinea, other West African ecovillages, and Europe. The corresponding mission of the project is to find ways for the people of Sobata to learn about regenerative practices in order to collaborate and reconnect with natural systems in their bioregion. This process will be kickstarted with the attendance of four Sobata representatives at an Ecovillage Design Education course (EDE) in the Gambia in November 2019 (a major part of this Case Study proposal). This will enable them to develop skills not only in ecological restoration, but also in economic enterprise and social organization to maximise the regenerative potential of the project.

Design proposals for the worldview dimension

One of the main challenges tackled by our design team was how best to bridge and synergise the different worldviews informing the project: the people of Sobata’s worldview, the worldview upheld by Gaia Education, and of course our European worldviews. One of our hopes is to help challenge the old narrative of separation and exploitation of Africa by the Global North, and weave a new story of collaboration, mutual support and two-way learning. The EDE in the Gambia (also attended by 3 Design Team members) will be a key opportunity to put these proposals into practice. Equity is a central value in our project, and to this day, the Global South has contributed very little to climate change while bearing the brunt of it. We hope this project can contribute to increasing equity between the Global South and Global North. We also reflect on how to maximize the impact of the project on the wellbeing of the wider world, through communication strategies using Chapman Brown’s framework of the “Five ecological selves”. And this scale-linking is also two-way: by restoring natural cycles and systems in the wider world, we also improve
individual wellbeing (salutogenic approach). Finally, we reflect on how to integrate art, singing and spiritual practices into the project to nourish mind and body and ensure the project is truly sustainable.

**Design proposals for the ecological dimension**

Our ecological design proposals are based on permaculture principles. We use permaculture zoning to map a possible regenerative landscape in and around Sobata, taking into account water, soil, waste management, food, energy and buildings. Specific design proposals include:

Regenerating the water cycle: this is our first priority, and that on which all other proposal rest.
- Keyline swales lined with vetiver grass
- Retention ponds
- Check dams

Agriculture: increasing food production and making it year-round
- Fruit and nut guilds
- Basin planting
- Forest garden with indigenous Faidherbia Albida tree
- Companion planting of native species (eg three sisters of maize, squash and beans) to increase biodiversity and regenerate ecosystems
- Holistic planned grazing
- Planting of native plants and flowers in village communal areas

Waste management: integrating waste management systems with plants to increase productivity
- Pit composting
- Arborloo (pit latrine)

Energy use:
- Transitioning cooking from wood stoves to rocket stoves and solar cookers.
- Increasing use of solar panels and solar lanterns
- Exploring possibilities of home-made wind turbines

Green architecture (to enhance already sustainable rammed-earth building):
- Extending roof overhang
- Adding aloe vera to slurry for waterproofing
- Adding stone cairns
- Adding dormer windows
- Rainwater harvesting from metal roofs

**Design proposals for the economic dimension**

In the economic dimension, we first look at how Sobata fits into the bigger economic picture of Africa and the world, and in particular who its economic partners are. We then propose designs to increase economic prosperity:
- Ways to address each Sustainable Development Goal (SDG)
- Wellbeing indicators tailored to Sobata, to ensure increased prosperity is measurable
• Designs to help implement each of the project values
• Different forms of capital that the project can contribute to
• Crowdfunding campaign to bring Sobata representatives to the Gambia EDE
• Other proposals for amplifying the project
• Designs for social enterprises in Sobata, in particular an education centre

Design proposals for the social dimension

The social dimension starts with a reflection on our own processes of working as a design team, how we applied the GEDS tools to our own processes and organisation as we developed the case study. We then go on to propose designs for Sobata, focusing on the following elements related to key project values:

• How the project can maximise and embrace diversity
• How to promote equity and social justice
• How to develop a group identity
• How to encourage continuous learning and respectful exchange
• Proposals for more distributed leadership, governance and decision-making
• Integrating Yelema project into Sobata’s daily life:
  o celebrations
  o developing a greater sense of bioregionalism

Next steps

The completion of this design paper is just the start of Sobata’s journey towards regenerative community building that will unfold over the next 25 years. The immediate next steps for the project over the next two years are most relevant here, and can be summarised as follows:

1. Crowdfund to enable Sobata representatives to attend the EDE in November 2019 (which will also be attended by three members of the Design Team)
2. Sobata representatives will attend the EDE in the Gambia, where they will learn key skills to implement the design proposals, and will have the opportunity to network with members of other ecovillages in their bioregion, and connect to key stakeholders such as Sandele Foundation, the Global Ecovillage Network and Gaia Education.
3. The Sobata representatives who attended the EDE will share knowledge and skills they learnt with the community in Sobata
4. The community will select design proposals that can be implemented in the short-term (eg. companion planting, composting, rainwater harvesting) and start to implement them.
5. A permaculture course will be organised in Sobata, led by Sonita Mbah, a female permaculturist from Cameroon.
6. The community will organize into circles of interest to discuss and select the longer-term design solutions that they want to implement, and work on refining the design for each.
7. The community, in collaboration with national and international partners, will seek funding for the longer-term and more expensive design solutions (eg. solar panels, retention ponds, swales)
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Overview: the story of Yélêma

The choice of Sobata for the Design Studio’s Case Study came from Adé’s desire to write a different story about a project she had been working on for a long time:

“Two years ago, I started working as a translator consultant for a new UK mining exploration company, in the Republic of Guinea. I knew nothing about mining, I had never been to Africa, and I didn’t really know what I was going to be doing. But the person I was working with said that was exactly why he wanted me there: because I didn’t have a background, he believed that I would think outside the box.

The mining project was at its very beginning, they had secured a 3 year exploration permit for gold in a remote location in North Eastern Guinea. They used geophysics to map the area and were convinced that there was gold there.

Within the boundaries of their permit area, there is a quiet community of 500 people called Sobata, and the goal was to have them participate in the project, to help them. But it took me a year to realize that the project was actually taking place on their land, very close to their village, in the fields where they grow food.

Initially, my role was to get to know the community over the phone (the few members who speak French), and try and source equipment and contractors across the country for the project. That’s how I met Ibrahima, who became my main point of contact in Sobata. He told me a lot about life over there, about how much they want their situation to change. The visit of a foreign white investor to their community was not very surprising for them, as their village is surrounded by several massive gold mining projects, led by the biggest in the industry. They have been doing artisanal mining for a long time themselves, and as it is a very dangerous job, I thought at the time that our ‘sustainable mining’ project was going to bring more safety for them.

During the first year I learned a lot about mining and how it works, about the corporations and the dynamics around foreign investment in Guinea. I learned about the difference between the mining laws of this country, praised by many as one of the most complete and secure in Africa, and what’s actually happening on the ground.

I learned that it’s difficult to earn trust as a white European, and paradoxically, I found that people are way more approachable. I would have the same type of interaction whether I was talking to someone from the ministry of the environment, or a local farmer in Sobata.

At some point, I found myself feeling more and more uncomfortable about mining and the reality of it. I learned that the impact on the environment is huge, despite the efforts of the big corporations to minimise it. I realized that never mind how ‘fairly’ we were to treat the community of Sobata, they would never see the color of the gold they would help mine, let alone getting some money from it. I’ve also understood that after all the resources are mined, or worst, if the investment stops coming, everything stops. No more jobs, no more help. Mining is definitely not a long-term solution.

After some time, since I was still needed for the translation of documents, and the liaison between English and French with the community, I talked to my client about my discomfort, and surprisingly, he understood and offered me to focus on something else to try and support the community. Since they had mapped the entire area for gold, they also discovered some underground water bearing structures, and he suggested that I looked into drilling for water to support the community. I was very excited and immediately started doing some research, finally feeling ‘at the right place’.
But as I was in the middle of looking at water pumps, aquifer recharge and flow rate, I started to wonder: how is this water going to be used? For what purpose? What are the needs of the community around it? These questions opened the door to holistic thinking. I began to consider the social aspect of what I was trying to do: women spend hours every day collecting water. If they don’t need to anymore, how is their social dynamic going to change? Constant access to water could allow the people of Sobata to farm during the whole year, and not for 3 months only. How do they make this transition? What kind of farming are they doing currently? Is it efficient for them? Is it harming the environment? How are they going to organise themselves with an increase of production? Will they suddenly see more economic opportunities arise? How will these changes affect their belief systems, their way of seeing the world, and the way they interact with others in the world?

I then felt completely overwhelmed by all the questions that were arising from this ‘simple’ action: drilling for water for a small village in Guinea; and I understood that it is not possible to address an issue without looking at it in a holistic way.

While I was doing some research on permaculture, I came across Gaia Education and its Design for Sustainability course. Its whole systems approach to design thinking was exactly what I was looking for in order to offer solutions that would make sense at all levels, not just in my view, or looking at the situation from only one angle. I was hoping that for the Design Studio Case Study I would be able to work on this design project full on for a period of time, because I had been on my own with it for the last 2 years. Martina, Jenny and Sarah expressed interest in the project when I posted about it on our learning platform during the year, and now we are all part of it!

We came up with this idea of supporting four people from Sobata to join an EDE in the Gambia, and to go there ourselves, in order to finally meet these people. We thought it would take the learning, sharing and collaborating journey to the next level!

These last 2 years led me from managing a project with an unaware post-colonialist/well-intentioned mind-set, to collaborating with people from different cultures on finding local solutions to address global issues. We are now on the path towards regeneration, and it’s just the beginning!”
This case study aims to provide a blueprint for the village of Sobata as they embark on the journey from traditional village to regenerative ecovillage. As a design team, we did our best to propose designs that are in line with Sobata’s cultural traditions and values and that enhance the village’s ability to adapt to change (especially climate change) and mitigate its impacts on their land and way of life. However, this is just a blueprint: as the community of Sobata starts to works with this blueprint, undoubtedly many more rich and diverse designs will be proposed for each dimension. This blueprint should be seen as a springboard, an open invitation to dream, imagine and create a more regenerative community by and for the people of Sobata.

The blueprint revolves around several key design proposals. For the worldview dimension, a central theme is how to best bridge the very different worldviews of an African community and a European design team to encourage continuous and profound learning from each other, and replace the old story of separation and exploitation of Africa by the Global North with a story of collaboration and two-way learning. The EDE in the Gambia (attended by four Sobata representatives and three Design Team members) will be a key opportunity to put these proposals into practice. In the worldview dimension, we also reflect on how to promote mind and body wellbeing through the project, as well as how to maximize the impact of the project on the wellbeing of the wider world.

The ecological dimension focuses on permaculture design proposals that we felt most resonated with Sobata and its bioregion. The first focus is on regenerating the water cycle, with proposals including keyline swales, check dams and retention ponds. Secondly, we focus on increasing food production and making it year-round rather than three months a year, with proposals including forest gardens, companion planting of native species, and holistic planned grazing. We propose improvements for waste management (such as arborloos) and energy use (such as solar lanterns and solar cookers). While Sobata’s vernacular architecture is already sustainable, we nonetheless propose small enhancements to further reduce the ecological footprint of buildings.

In the economic dimension, we look at how Sobata fits into the bigger economic picture of Africa and the world, and in particular who its economic partners are. We then propose ways in which the project can address each Sustainable Development Goal. We propose wellbeing indicators tailored to Sobata, designs that help to realise each of the project values, and different forms of capital that the project can nurture. We then focus on specific design proposals in more detail: our crowdfunding campaign to bring Sobata representatives to the Gambia EDE and other proposals for amplifying the project, and designs for social enterprises in Sobata, in particular an education centre.

Design proposals for the social dimension focus on how the project can maximise and embrace diversity, promote equity and social justice, how to develop a group identity, and how to encourage continuous learning and respectful exchange. We also include proposals for more distributed leadership, governance and decision-making. Finally, we propose ways to fully integrate Yelema project into Sobata’s daily life, through celebrations as well as developing a greater sense of bioregionalism. The social dimension is also a place for us to reflect on our own group processes, and how we applied the GEDS tools to our teamwork.

The designs for each dimension are brought together in the strategic framework, with next steps outlined for the project. Because these design proposals were developed before the EDE in the Gambia, and since the EDE enabled extensive discussion and reflection on these proposals, we subsequently wrote an
appendix with the main takeaways from these reflections on the proposed designs. This appendix offers an initial peek into the implementation of the original blueprint, with all the modifications it will bring. We look forward to seeing how these designs evolve into rich and transformative projects as they are taken up by the community of Sobata.
Approach

The setting

Bring together four women with different intercultural European backgrounds and a community’s dream from West Africa and here you have the starting point of our Design Studio adventure. Our team is spread in France (Adé), Spain (Jenny and Sarah) and Italy (Martina), and the community we work with is in Guinea, West Africa. Our collaboration for the duration of the Design Studio is only online.

The project we are working on was proposed by Adé, who joined the GEDS course with the hope of finding solutions for the village (see Overview for more details). For us, working on a real life project in the Global South was both the driving motivation as well as a challenge.

Kick-off Meeting

Our team had already found itself before the Design Studio selection process, so it was already clear to us that we wanted to work together on this project. We decided to divide the desktop research between the four of us: 4 team members for 4 dimensions. It took us no time to find our preferences: Jenny, the science geek, would dive into the big field of the Ecological dimension. Adé, the project lead, would take the responsibility for the Economic dimension to make sure the financial needs of the project could be met also in real life. Sarah agreed to work on the Social dimension, because it might request some French speaking competencies in doing the research in collaboration with Sobata’s community and Martina was happy to work on the worldview dimension and bring her spiritual work from yoga and shiatsu into a concrete context like our design paper.

We agreed on using WhatsApp for immediate communication about meetings and urgent questions, and Google Drive (on the course platform) for all document upload and sharing. We also agreed on regular Skype meetings (twice a week) to keep each other updated on our progress, to share questions and doubts and to stay on track with the deadlines in the progress update file.

On the basis of the progress update excel file, we made a rough timeline that we wanted to follow to have our paper finished one week before the official deadline. We installed a Google calendar to schedule our meetings and keep track of our absences.

We decided it would help us a lot to have an initial meeting to find our shared vision, as a guideline for the individual work in the single dimensions – as a kind of lighthouse that could help us navigate through the fog of too much material. It would allow us to decide which points of the modules to focus on and which ones to leave aside. See the section on Vision for a description of this process. This meeting gave us great sense of connection and shared goals. It also enabled us to know each other better in our ways of thinking, feeling and sharing. We found out that some of us like to express themselves by singing, some by drawing, some by creating mind maps and structuring documents.
Contact with the community of Sobata

None of us has had the opportunity to visit Sobata personally, yet. Adé is in regular contact by phone with a few people from and around the village. Our main source of information is Ibrahima, who owns a phone that allows communication and who knows French. Questions about the current situation in Sobata, the bioregion, their sources of income, the social structure of the village, and the prevailing worldview were collected in the meetings or during our individual work and shared by Adé with Ibrahima on the phone. Adé reported the answers in our meetings. The project already had an Instagram page where Adé regularly posts pictures from Ibrahima of daily life scenes in Sobata.

The local language in Sobata is Malinké. Although the official language in Guinea is French, only people who have attended higher education speak it, so our communication possibilities with the community are limited to the few contacts who speak French.

The Regular Meetings

We decided to alternate facilitation of the meetings, giving everyone in the team the chance to experiment with facilitation and leadership competencies. Not always could all members of the group take part in the meetings, but throughout the process, meetings were held regularly. The rotation of facilitation worked smoothly, giving all of us the possibility to learn from each other. Usually, in each meeting we defined the topic of the next meeting and who would facilitate. We tried to keep a common
structure with an opening circle that would allow us to connect to ourselves, each other and the project topics. In a couple of meetings we had the honor of having Ezio as a visitor and great source of input and reassurance.

What was quite clear early in our working process was that we would have a big focus on water: the restoration of water cycles, and reforestation processes that would allow to bring more water, the source of all life, to the community. Ezio was a huge support in using Google Earth and applying contour lines to the land around Sobata. This gave us, and especially Jenny, who was working on the Ecological dimension, the starting point for developing the relevant topics and design proposals for the Ecological dimension. We quickly found out how important the regular meetings were, because without the practical, concrete inputs in the Ecological dimension, all the other dimensions were kind of floating around without anchoring. By exchanging regularly on what we were each working on, the integration process already started while we were still in the desktop research process.

The skype meetings were also a good place for support when some of us got stuck or frustrated by the overwhelming amount of material to get through and by lack of time due to other life commitments, be it work or private. We found an extremely mindful and supportive environment in our group, and we could carry each other through the difficult moments with understanding and compassion. We also installed a document on Google Drive that could be used in moments of frustration as a form of diary, to help us document our thoughts, understand each other better and give us ideas on how to solve situations in which we felt stuck. We did not really need conflict resolution techniques during our collaboration process. We feel that the teachings and trainings we received during the single dimensions in the GEDS course have given us a very good basis for this.

Compilation of the Final Report

We decided to divide the tasks for putting together the final report between the four of us. Each of us would write the summaries of our own dimension. In addition to this, Adé would write the Overview and part of the Current Situation, Martina would cover the Approach, Jenny would develop the detailed design proposals in the Ecological Dimension and write part of the Current Situation, and Sarah would write the Executive Summary, Introduction, Next Steps chapter, and would be responsible for compiling all the pieces in a skillful way, editing and formatting the report and harmonising style and language. Our aim is to finish the drafting of the paper one week before the official deadline, because Jenny, Adé and Martina will travel to The Gambia to attend the EDE. Our GEDS facilitators suggested that we write an appendix to our design paper after the EDE to integrate our learning experiences in collaboration with representatives from Sobata, so Jenny, Adé and Martina will write that at the end of the EDE, for Sarah to integrate into the report.

Design Studio Report versus Real Life Project

More than once, we found ourselves wondering if what we were elaborating for the design studio report is actually realistic for the existing project. The design studio report considers a time span of 25 years to reach our vision; the real life project has some very urgent needs to address right now, and some aspects of each dimension that should be covered in the design studio are not immediately relevant to the on-the-ground realities of people in Sobata. We tried to find a good balance between these two positions and to integrate the urgent real-life questions into our long-term design studio report. We agreed that the design studio report could be a valuable source of inspiration and starting point not only for the community of Sobata, but also for other communities in Africa who would like to take autonomous steps towards climate resilience.
The real life project points that we decided to focus on are:

- Selection of four participants from Sobata to attend a month-long EDE in The Gambia in October/November 2019
- A crowdfunding campaign to allow the four participants to travel to The Gambia for the EDE.
- Connecting our case study with the networks on the ground – Sandele Foundation, who is organizing the EDE (through Martina), GEN Africa (Adé in contact with Sonita Mbah, who will also be at the EDE)

Martina was already in close contact with Sandele Foundation for the organization of the EDE and had already planned her participation. Adé and Jenny were able to plan to attend as well, but Sarah was not able to take a month off work.

The EDE is a strong motivation for us, knowing that what started as an online project design concept will have a concrete follow-up and further development in real life. For those of us who can attend, it will also be a beautiful way to celebrate the work we have done together and deepen our relationship.
European Design Team connecting with Traditional African Community

One question that accompanied us throughout the whole process was the question of why a European design team should work on a project for a traditional African community. These are some of our motivations:

- We are interested in a **global** transition to sustainability, and not something that is thought and brought just from the Western culture
- We are interested in learning from communities that are still much more in connection and harmony with nature
- We love the idea of sharing what we learn to empower communities in the Global South to respond and adapt to the threats of climate change caused mainly by our culture’s unsustainable lifestyles
- We would like to build bridges between cultures and learn more about each other so that we can soften the conditionings we have of each other
- Finding out what is connecting us across the world
- We are interested in social justice and equity

We all feel called to move towards a global transition to sustainability and regenerative communities, we all feel that our energy is well invested in projects that empower people in those parts of the world that critically feel the effects of climate change, but that have not majorly contributed to it through their lifestyles. It seems we are driven by some idea of balancing, of finding more equity and social justice that will have ripple effects on the rest of the world.
The description of **evolutionary activism** (from the worldview dimension, module 3) closely mirrors what we are feeling towards our project:

“As evolutionary activists, we can step out of (separation) and into the awareness that we are part of the ongoing creation of the universe, that our power is the **Creative Power of the Universe** working through us, and that we have a creative job to do, a really important undertaking to be part of. We are the eyes and ears and hands and feet and heart and mind of the Creative Power of the Universe at work in our world at this time forming the first sustainable self-evolving, wise civilization ever seen on this planet. Every decision we make - including how to spend this precious moment and where to put our precious energy and which precious people to work with and how we are going to be with them - all these decisions are the Big CPU feeling its way about what do to next here, what is possible now."

We are thereby trying to adhere to the principles of evolutionary activism in our project:

- Promoting healthy self-organisation and the conscious evolvability of whole systems
- Using strategic questions and strategic conversations as primary transformational tools
- Engaging diversity and dissonance creatively in service of greater life
- Highlighting, using and promoting the energy of positive possibility
- Consciously seeking and using guidance from evolutionary dynamics
- Considering co-creativity the sacred essence and power of our work
- Seeing evolutionary activism as part of the Great Story of Evolution becoming conscious of itself, and inviting others into that story.

If we bring together diverse ways of living, diverse worldviews, and we trust that we are all an expression of the universal power of creation, if we put our best intention and our talents and gifts toward the creation of a regenerative community, we can also trust that the universe will guide us into a positive change.

**Design Proposal: Modern Knowledge, Intuitive and Traditional Wisdom**

This design paper combines knowledge from the four dimensions of the GEDS, including tools like Google Earth for analyzing bioregions where information is lacking, permaculture zoning, rainwater catchment methods and many other approaches that will be described in more detail in the ecological dimension. It also includes knowledge about economic possibilities and approaches, using digital crowdfunding platforms, research on land-ownership and possibilities of social enterprises. It includes ideas about social structures and collaboration in the village, and worldview approaches based on the idea of interconnectedness that we have explored through pioneers like Joanna Macy and many others. But most importantly, we want to approach the project from a holistic point of view. We would like to complement the mechanistic, scientific approach with intuitive knowledge from our connection with ourselves and our true nature (read more about this in the Worldview dimension). Connecting to ourselves in meditation, giving ourselves time in nature, sharing circles from heart to heart are methods that can help us to open our heart space. In addition to this, a critical added value of this design paper is the traditional knowledge that the people in Sobata have carried with them for generations. The success potential of this project lies in weaving together these different ways of learning and layers of knowledge, to open a space of possibilities. We can hold this space as a design team, with the intention of creating a powerful field for positive change, and can take it to the EDE in the Gambia. What will grow out if it is something we cannot
predict with our minds in this moment. It will grow out of the connection with everything else that is happening in and around all of us.

**Challenges and Critical Points**

We feel it is important to also acknowledge the challenges we have encountered in the design process:

- **Online Collaboration:** not many possibilities to do connecting activities in nature, or connecting on a personal level as a design team, and even less with the community in Sobata
- **European vs. African:** not many possibilities to really exchange and understand each other. Our vision based on the view of the Design Team in Europe (with all the best intentions, but still with European conditioning)
- **Languages:** Malinke and a little French in Sobata, French for Adé and Sarah, English project language (Native: Jenny and Sarah)
- **Reduced diversity in communication with Sobata:** our only contact is male; women’s views are not available to us. The participants in the EDE are also only male (because of language, schooling and identity cards)
Sobata: the current situation

Climate

‘In a country where 26 percent of the population currently experiences chronic malnutrition, increasing climate variability will have important implications for food security and nutrition.’

Sobata is a rural village in the foothills of the Fouta Djallon highlands in North-Eastern Guinea. Lying in the Sudanian bioclimatic region, Sobata has a tropical savanna climate characterized by the yearly seasonal shift from dry-arid to monsoon rain, during June to November, controlled by the seasonal shift in wind direction from northeasterly to southwesterly and the northern shift of the Inter-Tropical Conversion Zone (ITCZ).

African Monsoon. Source: Climate and ocean variability, predictability about African Monsoon (http://www.clivar.org/african-monsoon)

Climate is the description of the long-term weather patterns in a particular area that determines what life can blossom and thrive. Nature by definition is self-sustaining, yet the current agricultural practices and the advancement in foreign mining investments in Guinea are hampering the stability of natural regeneration. Restoring balance and developing a symbiotic relationship with Nature’s closed loop systems is essential to climate change adaptation and mitigation.
Climatic Challenges

Projected climate changes in Guinea include:

- An increase in the annual average temperatures of 1.1°C – 3.0°C by 2060.
- Increased variability of rainfall (changes in frequency and distribution)
- Increase in frequency of heavy rainfall events
- Increased drought risk due to rising temperatures and more variable rainfall
- Desertification
- Water, food and income insecurity
- Increase in sanitation and hygiene health challenges

‘As a significant contributor to national GDP (22 percent) and source of livelihoods, the agricultural sector is key to economic growth in Guinea. However, as 97 percent of cultivation is rain-fed, crops are highly vulnerable to changes in climate.’

The topography of Sobata is mountainous, adding the additional challenge and risk of flooding and potential landslides. The unpredictable downpours of rain rush down the hillside flooding out crop fields whilst eroding away precious humus-rich topsoil. As soil is eroded, vital nutrients are washed away, and the productivity and health of the soil decreases, directly affecting crop nutrition and yield. Habitability of vegetation, groundwater recharging and carbon sequestration all decrease with soil degradation, compromising the livelihood of the local people.
Sobata’s resources

Sobata is home to 515 people, a community of farmers with a microscopic carbon footprint, yet facing increasing hardships every day. A groundwater-sourced well and a broken pump is their only dwindling source of water. Water is so scarce that farming is only possible during the three rainy months of the year, primarily growing peanuts, corn and rice. The women of the village also gather honey and shea butter that grow naturally in the area. Locals look for work outside the village during the dry season (see Economic dimension).
The village has one small solar panel that feeds one light bulb, with wood being used for cooking (see Ecological Dimension). Homes are vernacular with small garden allotments, typically made from adobe bricks with a wood frame and thatching for the roof. Nonetheless, a few communal buildings do host an aluminium roof.

In addition to water scarcity, Sobata and the surrounding area is threatened by deforestation, soil erosion, and loss of biodiversity, biomass and soil fertility. Mining is of great concern in Guinea along with the challenges of land ownership (see Economic dimension). However, implementing permaculture techniques will demonstrate how working with Nature is far more beneficial to all than scraping her raw of a few minerals benefitting only a few.

Geographically located in the water catchment for three of Africa’s main rivers (The Senegal, The Gambia and The Niger), the ecological breakdown of the bioregion’s water cycle is detrimental to billions. Water is life and the thread that connects us all.
Water

‘Global climates are affected by, and extremely sensitive to, changes in the water cycle patterns, as the cycle allows for the exchange of heat and moisture between land masses and water bodies.’

Water is essential to all life on the planet. Used as a medium for communication that interconnects all living organisms on Earth, water forms the basis of all food chains. The ecological transformation of Sobata towards regenerative sustainability with Nature starts with capturing, slowing, sinking and storing the rainwater from the West African monsoon.
The shifting of the ITCZ into the Northern Hemisphere in June coincides with the onset of the summer monsoon in West Africa. As summer days lengthen and heating increases, land surfaces on the continent get hotter than surrounding oceans. Warm, moist air from the Atlantic Ocean blown onshore by the southwest trade winds, rises to pass over the mountainous topography of Guinea. At higher altitude, the air cools and holds less water vapor, bringing rain.
## Current strengths, weaknesses, opportunities and threats

A general SWOT analysis of Sobata’s current situation can help us identify opportunities and strengths that may help in the project, particularly when working on addressing the weaknesses.

<table>
<thead>
<tr>
<th>Internal</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
<td>Strong desire for change in the community</td>
<td><strong>Weaknesses</strong></td>
</tr>
<tr>
<td></td>
<td>They are already pretty much self-sufficient (growing their own food, selling some at the market)</td>
<td>The water from the well is not easy to access, the pump breaks often, there is no consistent water for crops</td>
</tr>
<tr>
<td></td>
<td>They have a water well in the village</td>
<td>It rains only 3 months of the year, it’s very hot and very dry the rest of the time</td>
</tr>
<tr>
<td></td>
<td>They have developed efficient farming techniques to maximise agricultural output during the rainy season</td>
<td>Sobata is in a very rural area, with difficult access via a very uneven road, 3h drive away from a city</td>
</tr>
<tr>
<td></td>
<td>It rains a lot during 3 months of the year</td>
<td>Communication is complicated as there is not a lot of signal there, and internet credit is expensive</td>
</tr>
<tr>
<td></td>
<td>They gather honey and make their own shea butter that they already sell at the market</td>
<td>Men and women have very different roles in the community, and women have little access to education and decision-making</td>
</tr>
<tr>
<td></td>
<td>They have a school, even if it’s small</td>
<td>Nobody in the community can drive so transport is complicated (they use taxi-motorbikes)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>External</th>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sobata lies in an area where many big rivers of West Africa are born, there is a big potential for water cycle restoration, and potential benefits that could reach way outside Sobata and Guinea</td>
<td>Sobata’s land technically belongs to the state, who can lend it to foreign investors for mining.</td>
</tr>
<tr>
<td></td>
<td>They have a lot of native trees and plant species that can be used for permaculture and agroforestry</td>
<td>Sobata is surrounded by big concessions owned by global mining corporations, in a land known for gold presence</td>
</tr>
<tr>
<td></td>
<td>The GEN Africa Network and the REDES can be of great support for Sobata, in its transition towards an ecovillage.</td>
<td>The government doesn’t support local communities legally</td>
</tr>
<tr>
<td></td>
<td>Maléha is a town very close to Sobata and there is a food market on Sunday where more products could be sold</td>
<td>Sobata’s main language is not recognized nor valued by the state</td>
</tr>
<tr>
<td></td>
<td>There is a growing ecovillage movement in the Sahel region and Sobata could position itself as a reference in how to thrive in these extreme conditions</td>
<td>Even if Guinean law was more supportive, it’s not really applied in the country in rural areas, there is a lot of corruption</td>
</tr>
<tr>
<td></td>
<td>There is an EDE taking place in the Gambia that could allow people from the village to learn about permaculture principles, reforestation processes, water cycle restoration and ecovillages in general</td>
<td>Isolation: at this stage, without the generosity of people through crowdfunding, it would be complicated for the people of the village to get any training</td>
</tr>
<tr>
<td></td>
<td>Africa has a lot of permaculture trainers that can come to Sobata to give training to the village</td>
<td>Climate change is making the situation worse in Sobata every year with the weather becoming hotter and dryer.</td>
</tr>
<tr>
<td></td>
<td>Crowdfunding is globally used for project funding and can be successful on this one</td>
<td></td>
</tr>
</tbody>
</table>

Analyzing this table, we notice how weaknesses can become strengths, and threats become opportunities. As in permaculture, the problem can become the solution. For instance, rain is mentioned in both strengths and weaknesses. This shows the different perspectives that one can take looking at the project,
and the choice to transform a challenge into an opportunity. Despite Sobata’s remoteness and precariousness, we can see there are many opportunities. The network and the EDE suggested by the Design Team can help bring some light in the remaining dark corners, for some creative solutions to shine through. What comes across as the biggest threat is the absence of State support and protection from the big corporations, especially when it comes to land ownership (see Economic Dimension).

**Is Sobata within the nine planetary boundaries?**

In 2009, Johann Rockström, the director of the Stockholm Resilience Center, developed a framework for the ecological impact of the planet, with the help of an international group of researchers. It was revised in 2015, and identifies 9 boundaries as measures of planetary wellbeing. Some boundaries have already been exceeded, while others are still within limits but moving dangerously towards a tipping point.

While it is too complicated to accurately measure the boundaries in Sobata’s bioregion, or how much the village contributes to boundaries at the planetary level, we thought the framework could be an interesting tool to help us assess the situation for the community, in order for the Design Team to offer the most tailored suggestions.

<table>
<thead>
<tr>
<th>Boundaries</th>
<th>Current situation in Sobata</th>
<th>What Sobata and the Design Team can do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate Change</td>
<td>Sobata’s current impact on climate change is very low at the moment. However, they do use generators for electricity in the village, and they spray their crops. At the same time, they are among the first impacted by the global climate emergency, with the weather becoming hotter and drier and rain becoming sporadic.</td>
<td>Restoring the water cycles and biodiversity in the area of the village will help the climate to regenerate at the global level. Sobata is also located in an area that could have great impact if the ecosystem was restored: it is a water catchment area for several African rivers connecting Sobata to other countries in the Sub-Saharan region (Water Tower of Africa)</td>
</tr>
<tr>
<td>Change in biosphere integrity (biodiversity loss and species extinction)</td>
<td>The people of Sobata sometimes hunt for food, but again, their impact on species extinction is minimal Fertilizers and pesticides kill insect populations vital for natural pollination and pest control.</td>
<td>Land restoration and higher crop yield found with permaculture and companion planting, as a form of natural organic fertilizer</td>
</tr>
<tr>
<td>Stratospheric ozone depletion</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Ocean acidification</td>
<td>Any fertilizer run off in Sobata can end up in rivers, which eventually ends up in the Atlantic ocean</td>
<td>N/A</td>
</tr>
<tr>
<td>Biogeochemical flows (phosphorus and nitrogen cycles)</td>
<td>Fertilizers high in excess Nitrogen prevents uptake of other nutrients by plants affecting plant growth and health</td>
<td>Land restoration and a change in agriculture practices (spray) will contribute in the restoration of the ecosystems around Sobata</td>
</tr>
</tbody>
</table>
## Land-system changes

The use of chemical fertilizer on mono crops in Sobata will, in the long run, contribute to carbon depletion in the soil. Replanting trees and restoring natural water sources will allow people of Sobata to act towards a regenerative future.

## Freshwater use

The community has access to freshwater from a well (not deep) in the centre of the village. There is also an old well with water that’s not good for drinking, but it is used for laundry and cleaning. There is currently no water retention system.

Water capture and retention during the rainy season is key, in order to recharge groundwater.

## Atmospheric aerosol loading

The people of Sobata use chemical fertilizers for their crops, and don’t have awareness about the effects of plastic on the natural environment. They will have the opportunity to learn about this during the EDE in November 2019.

Continue to support access to education for the people of Sobata.

## Introduction of novel entities (pollutants, plastics..)

There is currently no efficient waste management protocol in Guinea, especially in rural areas.

Reducing their use of plastic and pollutants, along with learning upcycling techniques, will allow the community of Sobata to generate less waste.

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*Spraying crops in Sobata*
Vision and mission

A vision for Sobata

Team visioning process

It is crucial that each member’s individual sense of purpose can find expression in the larger collective sense of purpose. For this, articulating a common vision that is simple and clear is key to ensuring that individuals have space to reflect their own vision in it, while believing and working towards the common vision.

In our initial visioning meeting, first we took the time to remind ourselves about the characteristics of a vision and how to check its quality. We used the following guidelines:

“Visions are like powerful lighthouses of a desirable future”

- Guides us through the storm and the fog and gives us our direction
- While a lighthouse is seldom the final destination, it helps to get safely into the harbour. Perspectives change on the way – the vision might also need to be adapted during the journey.
- We are not to be stopped by what we may now perceive as insurmountable obstacles

Formulation of a vision:

- Idealistic, creative, poetic, aesthetic, ethical, intuitive, imaginative
- No rational reasoning should restrict the creation of an initial vision
- Draw and describe the best case scenario: win/win/win optimal future state. This creates a collective goal that is desirable to everyone (different stakeholders)
- It motivates through the whole process from vision into reality
- The vision is formulated in a positive way (what we want) and in the present tense
- Long time scale: look 25 years ahead
- Visioning is a participatory, motivational and action-oriented process, shared, a consensus
- A vision helps to identify prioritized and preferred outcomes – it answers the question “What do we want?”
- Visions are untestable in the present (complex and dynamic systems cannot be predicted)

Backcasting: First create the ideal future state, then ask the question how to get there.

Criteria for a successful vision:

1) Clarity: make a complex context simple
2) Coherence: coherent regarding the system’s position
3) Community power: must be able to speak to stakeholders
4) Consistency: action must be consistent with original aims
5) Flexibility: it has to be able to respond to new situations that arise

Out of our present knowledge and awareness, we started a vision dreaming process for Sobata on the basis of the information that we had received from Adé in the Kick-off meeting. We discussed the vision from three different perspectives: the perspective of our Design Studio team (us), the perspective of Gaia Education (our “sponsor”) and possible funders of the project, and the perspective of the people of Sobata (our “clients”). It illuminated the potentially different needs and priorities of the different stakeholders, and alerted us to the importance of integrating these different perspectives into the vision where possible,
and being aware that as new stakeholders become involved (for example during the EDE), the vision may have to change slightly.

The result of the dreaming process was a list of concepts that we individually tried to condense into vision statements. We each wrote a vision statement (depicted below), which we left as is for a few weeks, as they were all in line with each other. We decided to refine them into a single vision statement later in the process.

<table>
<thead>
<tr>
<th>Vision</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vision - Martina</strong></td>
</tr>
<tr>
<td><em>We empower the transition of the traditional Guinean village Sobata into a secure, abundant, thriving, resilient, connected and inspiring ecovillage community.</em></td>
</tr>
<tr>
<td><strong>Vision - Sarah</strong></td>
</tr>
<tr>
<td><em>Sobata is an abundant regenerative ecovillage providing the villagers with secure year-round food, water and sources of income that empower them to be resilient, to thrive, and to be a source of inspiration and learning for other villages.</em></td>
</tr>
<tr>
<td><strong>Vision - Adé:</strong></td>
</tr>
<tr>
<td><em>Sobata is a resilient and thriving community, which inspires and empowers people of Africa to unlock their regenerative power.</em></td>
</tr>
<tr>
<td><strong>Vision - Jenny:</strong></td>
</tr>
<tr>
<td><em>Local, traditional/cultural and ecological participation in the holistic empowerment, towards an adaptive, regenerative, environmentally ethical community.</em></td>
</tr>
</tbody>
</table>

In the second phase, we went through the vision statements and iteratively built the vision word by word to arrive at a statement we all could resonate with, discussing any differences of opinion until we reached a consensus. We were able to integrate differences as additional aspects to think about, rather than seeing them as conflicting or mutually exclusive perspectives. This is the vision:

**Sobata is a resilient and thriving community that inspires and empowers others to unlock their regenerative power.**

The focus on resilience speaks to the community’s desire to adapt to changes in their bioregion caused by climate change and other global phenomena. But they want more than to be resilient: they want to thrive on their land, with an abundance of resources. The focus on inspiring and empowering others refers to the idea that Sobata will act as a model for a regenerative ecovillage in the Sahel, a centre that other villages within and outside Guinea can visit to learn from. Yelema will provide a blueprint that can be emulated by other villages interested in transitioning to a more regenerative way of life.

We then drafted a **backcasting** graph (shown below), starting from the desired state in the future and tracing back step by step up to the present. The vision is meant to be seen in a time span of 25 years. This became our planning tool for the next steps of the project. We go more in detail into how to implement each of these steps in the Next Steps section.
Result of the backcasting process

By considering the milestones of the graph, we can determine what is needed for each step, which solutions from which dimension are relevant and how they are connected with each other. This will naturally lead to an integration process between modules and dimensions and show what we need to focus on (find more about the single steps in the chapters about the various dimensions).

We also asked ourselves what our personal vision is: who or how do we want to be after this journey together? See box on next page for our reflections.

Community visioning process

During the EDE in The Gambia, and in the months after in Sobata, the people of Sobata will have the opportunity to further refine the vision to better reflect their needs and priorities. One proposal for how to structure this process is to use the methodology of Dragon Dreaming®.
Mission
Out of the vision and the backcasting graph, in one of the following meetings, we thought about our mission statement and the values that sustain this project. The mission statement we agreed on reflects the action we need to take to realise our vision:

“Find ways for the people of Sobata to learn about regenerative practices in order to collaborate and reconnect with natural systems in their bioregion.”

The idea of reconnecting with natural systems in the bioregion is a major focus of this Design Studio case study proposal. As we have seen, many of the natural cycles (water, soil) have been disrupted by climate change and other human impacts, and are in need of regeneration. The people of Sobata already live in close cooperation with nature and have a very small ecological footprint, but they lack tools to regenerate ailing natural systems at large scale. The purpose of Yelema is to empower them to acquire these tools and skills to become more resilient, particularly in the face of climate change.

Values
We conducted a brainstorming session to establish what our values should be for the project. We wanted the values to reflect several aspects at once: the way we work together as a team, the way we want our relationship to be with the people of Sobata, and what we see as the most important values permeating the GEDS training and the ecovillage concept. Our core values are the following:

VALUES
- Resilience
- Social justice
- Equity
- Learning and collaboration
- Connection
- Community
- Commitment to change
- Openness

Our personal visions: who or how do we want to be after this journey together?

Jenny: a humble person – I will be better at listening, learning first, I will show gratitude for what I have and put what I learn in this platform into service for people who do not have the same opportunities. I will be a person of action and put money where my mouth is.

Sarah: I will be more connected to other peoples’ dreams in other parts of the world. I will be a better ambassador for our common dream of building a regenerative world together.

Adé: I will go out of the process with a feeling of greater social justice, I am lucky to have possibilities to learn and contribute to the change others are wishing for. I will be more conscious of the power of community and have the confirmation that the ecovillage approach and design process work.

Martina: I will have developed my skills and know better where my strengths are that I can share with the world. I will be richer (enriched) on many levels. I will see the result of the weaving together of different skills, projects and networking. I love it already.
Design proposals for the four dimensions

Worldview dimension

How do we look at the world?
This paper is built on our shared understanding of an interconnected world. We believe that everything we do in one part of the planet has an impact somewhere else on the planet. So, if our Global North society lives an unsustainable life, consuming much more resources than the planet has at its disposal, this will inevitably have an impact on other parts of the world, in particular the Global South, where people still live more in harmony with nature and within its limits. Their resources and possibilities will vanish and their already precarious life situations will become life threatening.

This includes reduced rainy seasons in areas where they are most needed. It means huge amounts of plastic waste and technology waste, both on land and in the waters, in places where the people are not benefitting from the products in the first place. It includes taking resources from the ground in the Global South, leaving depleted soil to the people of the land.

In this sense, we believe the desertification in the Sahel region (the West African countries below the Sahara desert) is a direct consequence of our behavior in the Global North. Deforestation, the burning of huge forest areas, and our enormous carbon footprints are heating up the globe, melting glaciers, making sea levels rise and disrupting rainfall patterns.

Out of this understanding, our design team has decided that working on a project in the Global South from our Global North perspective can have some beneficial effects and work towards redressing the balance of social justice and equity. Using what we have learned over the years thanks to free access to education, freedom to travel and build networks, and access to financial resources, we can empower people in the Global South who do not have the same privileges, to learn and find their own solutions for a more climate resilient and regenerative way of living in their home land.

We found ourselves wondering why we feel so much connection with the Global South, why we want to reverse this trend of destruction, why we are so driven to do something about the injustices. This takes us to an even deeper level of interconnection, or to what Charles Eisenstein and Thích Nhất Hạnh would call “inter-being”. We are not separate beings, we are a part and expression of one big living creation or organism. This deeply felt connection can cause huge pain, when other parts of our web of life are suffering. We can feel the pain of the Earth, we can feel the pain of plants, animals and other fellow human beings. In a way, we cannot not feel what is going on around us. We might not be fully aware, we might not grasp with our mind how this is supposed to work, but we will feel the pain in one way or another. But, obviously, this also means that we will be part of and benefit from any kind of healing and joy that happens around us. This drive to make an impact, the drive to do something that puts things right in the world, is a big need we all have to heal ourselves and lead a good life.

If we take another look at this idea of being an expression of the same living creation, let’s call it an intelligent universal life force, we can also see one more thing. If we imagine that there is only one source for everything that is, and that this source is intelligent and loving, then we are all the same, and we are all intelligent and loving. So why would we want to have systems to divide each other, to separate each other by judgement about good and bad using all kinds of categories to make ourselves smaller or bigger than anyone else? Why would we want to determine our value based on our nationality, religion or skin
colour? If we connect with the idea of this one loving, intelligent life force playing by creating all that is in the universe, then we can see the beauty of diversity and want to make sure to give everything and everyone a safe place in the web of life. A place to feel secure, thrive and develop their best potential of creative expression. By diving into this kind of worldview, we will feel the desire to be a part of nature, understand the rhythms and laws of nature in order to be able to take care of all living beings. This will naturally bring us into a mode of deep compassion towards ourselves and everything that is.

Out of this compassion we can then develop a way of living that will take into account the needs of everybody; it will take into account what the planet needs to thrive, what is needed by the plants, the animals and the humans. Out of this understanding, we can build communities of life that are truly regenerative and healing.

Connecting versus separating

“Instead of trying to create unity through uniformity, create unity and peace through the freedom in diversity” (Swami Veda Bharati, “Human Urge for Peace - What is Right with the World”)
Now the challenge in the human web of life is that even if we are aware and can sometimes get in close touch with our inner connecting source, we still also live in a material world that has given us a mind conditioned from the moment we arrive on this planet (or even before). We come with experiences, learnings, habits collected throughout our childhood and adult life until today. So, this project brings together four White European women with a common European conditioning, but various family backgrounds and life histories. And it brings into the game a West African Black community in Guinea with their traditions, belief systems and conditionings. Understanding each other and communicating are some of the most difficult tasks humankind has been given.

Working together and bridging cultures is one of the greatest ways of surfacing our own conditionings, and having to question them can help us grow a lot. It requests openness on many levels – an open mind and open heart. But it is hard work. Concepts like equity and social justice inside communities might be interpreted completely differently on the basis of religion and other influencing factors like traditions and necessities in the social web. We have grown up in a Christian environment, with Christian values. We have also grown up in Europe with a long tradition of women’s rights, where being a feminist is politically correct. But we are working with a community where the majority of the country is Muslim and where people, as far as we can understand, live with strong patriarchal, traditional family roles and models. Women get less education, speak fewer languages, and have certain jobs they are expected to do. So when we speak about gender equity within the village community, we probably speak from completely different views on what equity and equality means. Our contacts in Sobata are all male, so we do not know female views on the village structure and what is needed. For this paper, we have used the information we have, but we are aware that our view is far from being complete.

This project is inviting us to be compassionate in our work. In situations in which conditionings, values and belief-systems can differ, we can bridge the gaps through deep listening and opening on a heart level, and reminding ourselves again and again that our truth is not the only one and objective truth; that there is no such thing as objective truth in the material world we live in. If we can cultivate an attitude of gratitude towards the diversity of cultures and worldviews, we can learn from each other and find new, connecting solutions.

Global versus Local: Planetary Health

If we speak about our wish to contribute to a healthy world community, a holistic worldview can explain why a design team from the Global North feels called to work on a local project in Africa. The insight that what we do and share in one part of the world has an effect on the whole global world-system, can give us a lot of creative power. We cannot sit in one part of the world and think that what happens on the
other side of the world has nothing to do with us. From this point of view, it is very easy to understand that our design team resonates a lot with the climatic struggles villages in Africa have to face. It is also understandable that to some extent, we feel a responsibility to act, by sharing our privileges. At the same time, we have to be very aware that these healthy urges do not make us knowledgeable about what the people in the village need, what kind of solutions will work for them, which approach will make their village climate resilient, their communities happy and healthy. We need deep knowledge about every single bioregion that would like to heal holistically; the kind of deep knowledge that only people who have lived in the bioregion for many generations possess. So we must combine modern tools and knowledge developed through our studying and our possibilities in the Global North, with the traditional knowledge from the inhabitants of Sobata. Bringing together these two sides of healing power can build climate resilience in the village and surroundings.

Interfering at the level of the bioregion will have effects on a planetary scale, and also on a more individual level. Restoring water cycles and starting reforestation projects, knowing how to take advantage of the rainy season by catching water, using the winds, knowing where the fire comes from, learning about where to let the animals graze, and learning about permaculture, will bring healing to the bioregion, but also to individuals. There will be more water and more food. There will be more economic security that will allow more education and more knowledge. This will bring more creativity. And all of these factors form the basis of individual health and expression.
The importance of spirituality

Speaking about health and healing brings us into the realm of spirituality. The words health and healing have the same root as the word holy. So, does that mean we can say that what is holy to us, is making us heal and whole? What kind of spiritual practices can add to our wellbeing and reinforce the concept of connection and interconnectedness? And how do the people in Sobata celebrate this part of life?

Some African countries are well known to have communities in which people with different religions and beliefs live peacefully together. Some of them even share common prayer spaces in their villages, some of them celebrate the rituals of the different religions together. The most widespread religions in West Africa are Islam, Christianity, and many people are closely connected with animism. Traditional practices that worship the ancestors, festivals that stage dance and mythological figures and generally a deep connection to the invisible world are still very present in daily life. The traditional religions may have different names in different communities, but they have a few key characteristics in common:

- A unique Supreme Being, distant, omniscient, omnipotent creator of the world
- Intermediate divinities or spirits who bridge the gap between God and human
- Ancestral spirits who watch over their descendants
- Magic and other spiritual forces that influence the lives of humans

Also very common is the use of objects – masks, statuettes, charms, amulets and talismans. They are thought to hold magical powers, luck, blessings or even individual souls. These objects are held in veneration because of their power and, if not carefully handled, feared for their volatility. Rituals are performed to keep evil forces away from the family or society wherever charms are kept. Pregnant women often wear charms to protect the unborn child, and hunters use talismans to ward against the spirit of the bush. West African religion moves far beyond simple fetishism or idolatry and into what one might call animism or pantheism: everything, including objects, plants, rocks, weather phenomena, and even human speech, has an intrinsic life force.

We know that the prevailing religion in Sobata is Islam and that the village centre has a mosque for religious practices and celebrations. What we do not know, yet, is how present the traditional beliefs are in the daily life of the people in Sobata and how this influences their connection to the universe, nature and to the complete web of life around them.

As a design team, we found it useful to share thoughts about our own connection to the life force, and how we celebrate spirituality in our daily lives:

Sarah: The way I connect to the greater creative force is by immersing myself in nature. This doesn’t have to mean going into the wilderness: I live in a city, so getting out of the urban area is not something I can do every day. Rather, immersing myself in nature can be something as simple as going to the park for a walk, lying in the grass, looking at the trees, going to the beach and staring at the ocean, breathing in the sea air. These moments allow me to see the divine around me, but also within me - allow me to recognise that I am part of this beautiful creation. They remind me that we are part of a greater whole, and that preserving this greater whole is the most important task we have on this earth. It gives me energy and drive to work towards regenerating the planet. I feel that this connection to the natural world is something that unites us across cultures and religions: we all feel this divine connection beyond the societal divisions that so easily separate us. I am curious how the people of Sobata conceptualise this connection to nature in their cosmology, and how they integrate it into their spiritual practices.
**Jenny:** “Nature permeates everything, including the human mind and imagination. Hence nature’s truth does not exist as something independent or objective, but is revealed in the very act of human cognition. Nature’s reality is not merely phenomenal, nor is it independent and objective; rather, it is something that comes into being through the very act of human cognition. Nature becomes intelligible to itself through the human mind” (Tarnas, 1991).

Nature is all the innumerable interweaving relationships between all life, to provide comprehension and understanding of the many complex systems that make this diverse ecosystem our home. To understand a universe full of knowledge connects me to a greater power. Crucial to my happiness and sense of self - which in turn helps me contribute happiness to the world - is the peace that transcends through me when exploring, learning or simply being in Nature.

“Science is not only compatible with spirituality; it is a profound source of spirituality.” – Carl Sagan

I receive strength and guidance through the daily practice of yoga; bridging a connection to my inner ecosystem, connecting to my breath, calming the mind, so one can truly listen to what the universe/greater power is sharing with us. My belief in a greater power is also how I personally stay connected to those I have lost.

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**Adé:** For me, spirituality is about connection: when I connect with myself, most of the time through yoga, meditation or physical exercise; and with others, during conversations or healing touch. I also find spirituality in my connection with Nature. It will express itself in a deep respect for other animals and their right to live the life they want, or through an awareness of my consumer behavior. I believe that spirituality can be found at all levels, in the most subtle ways, and that it’s often in these subtle ways that the biggest shifts in beliefs and attitude can happen.

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**Martina:** What spiritual practice means for me is to connect with what might be called our inner wisdom or guidance, which might also be called the universal wisdom or guidance. The best way for me to get into a state of felt connection is my yoga practice and mindful time in nature. It leads me into a state of calmness and trust in life. Then I feel rooted and safe and I can follow my intuition step by step. Another practice that gives me hope and courage is the power of circles. Sitting with people who can just hold space for you to feel what is alive in you with unconditional support and acceptance, is one of the strongest and most healing experiences I have had in my life. In one of these circles it was also said the ancestors and those who are still to be born sit with us and share their wisdom with us. It felt extremely powerful, I felt a big field of support and so I can understand how many indigenous cultures invite their ancestors into their circles when important decisions have to be taken.
We are very curious to learn more during the EDE in The Gambia and exchange experiences with local African participants and specifically with the participants from Sobata about their understanding of spirituality and the importance of these practices for the reinforcement of their resilient communities.

**Exchanging ideas and knowledge: the Gambia EDE**

The aim we have in mind for the EDE is for the four representatives from Sobata to take our design paper and develop what makes sense for them. They will have to bring into the picture their **wisdom and knowledge of their bioregion**. On the basis of their local knowledge, they can go through our proposals for the restoration of the natural water cycles, the reforestation process with native plants and trees, the agroforestry potential, the rainwater catchments with swales, cattle grazing and permaculture solutions in the vegetable gardens (see Ecological dimension for detailed design proposals). They will have to find out which solutions can be implemented immediately without further funding from outside, and how to organize further steps with funding (see Economic dimension). They will have to integrate their knowledge on how work is organized, who in the village can take on which responsibilities and how the benefits of the implementation of solutions can be equally distributed in the village community (Social dimension).

We, as a design team, do not have enough local knowledge to be able to draw realistic scenarios for Sobata in the years to come; we can only propose ideas in our design paper. We are very grateful that we will have the chance to learn and network with the representatives of Sobata, with other engaged village representatives of other African communities, with the highly qualified tutors and facilitators in the EDE, the representatives of GEN, and other organisations that support ecovillage development.

We asked the community in Sobata to select four people representing their village, as diverse as possible. We were hoping to have representatives from different groups like men, women, youth and elders. In Sobata, the village members gathered to discuss our proposal and find out who could attend the EDE and bring back the most valuable points of view and learnings to Sobata.

What they decided, with consensus in the end, is that 4 men will travel. The reason for this decision is that these men have the best knowledge of the French language and they have an ID. This shows us something about the situation in the village. Malinké (the local language) exists in different forms in other parts of West Africa, but in order to network and benefit from the EDE teachings, English or French are needed. Only people with high school education have learned French (Guinea’s official language). And people with high school education also possess an ID, so they can travel from Guinea to The Gambia. This means these community members have a significant privilege, but this also comes with a big responsibility. They will learn more, they will have the chance to work deeply on the project for their village and will have the task of bringing the knowledge back to their village upon their return. Learning facilitation and teaching tools as part of the EDE will enable them to integrate their fellow community members into the project.
The meeting tree in Sobata – this is where important matters are discussed and decisions are made in the village

Communicating our project and creating awareness

To realise our dream of sending four people from Sobata to the EDE in The Gambia, we chose a crowdfunding campaign (see Economic dimension). We had to tackle the question of how to address potential funders, how to reach and touch people who have financial power and make them donate for our cause. We consulted the article “Integral Communications for Sustainability” by Barrett Chapman Brown. It suggests different types of “ecological selves” that will react to different arguments and motivations. We tried to follow Brown’s advice to not hit any no-go topics for all the ecological selves. This process requires acknowledging that again people look at the world through different eyes and that their hearts and minds are touched by different things.
This is the text we composed for presenting our campaign:

Sobata is a traditional village of 500 people, in Guinea/West Africa. They have no running water or electricity, and it rains only 3 months of the year. The people of Sobata dream about becoming a thriving Ecovillage community that can inspire and empower others to unlock their regenerative power.

To make this dream come true, they are looking for support to join an Ecovillage Design Education (EDE) course in The Gambia. The EDE, powered by the NGO Gaia Education and The Global Ecovillage Network (GEN) offers knowledge and tools that the people of Sobata can weave into their traditional way of living.

The course uses permaculture principles that enable the community to learn how to restore water cycles, start a reforestation process and let their bioregion thrive through connecting traditional wisdom with modern knowledge.

The Sobata community has selected 4 people to travel from Guinea to The Gambia to attend the month long EDE starting on the 28th of October. Right after the course, they will take part in the GEN Africa Conference where they can network with other African Ecovillages. The budget needed for this is 7.000 €, which includes transport, course fees and materials, accommodation and food.

Empowering village communities to learn about Ecovillage principles is a clear action to address the climate emergency and cultivate resilience around the world. It is a way to contribute to more equity and social justice. It is a way to protect the beautiful diversity on our planet - culturally, socially, economically and ecologically.

Would you like to help this dream come true? Donate now!
We could not explicitly find any cold button in this text. We reflected on how we would appeal to each type of ecological self:

**Incentive for Eco-Strategists:** depicting an image of Sobata as a successful, inspiring, empowered village, explaining the EDE, citing Gaia Education and GEN as experts, citing modern knowledge and ecological solutions, speaking about knowledge and tools. Citing climate change as a challenge they can help to defeat, speaking about the good life. **What is missing:** scientific data, citing experts with names, speaking about profit and productivity, speaking about concrete results.

Possible image: Nature and technology (update about solar panel, phone and light bulb)

**Incentive for Eco-Radicals:** speaking about a dream that can have an effect on a global level, speaking about equity, social justice, connection, beautiful diversity, citing community involvement by speaking about the selection process, encouraging participation by inviting to donate and support action against the climate crisis and for resilient communities.

We found it hard to write for **Eco-Managers** (evoke duty, honor, country) and **Eco-Warriors** (What’s in it for me, now?). Eco-Guardians are also not directly addressed but for them the fact that we speak about a traditional African village will already evoke pictures of rituals, dance and song. Speaking about a dream will also appeal to them.

We posted regular updates—about the detailed costs that comprise the budget, about past activities that brought a mobile phone for communication and a solar panel for charging the phone and some light in the evening, about our network partners Gaia Education and GEN, about the trip the four participants from Sobata have to undertake to arrive in The Gambia.

Our experience up to the present point is that people in our personal network who we address personally, are more likely to donate than other people we hoped to reach on the crowdfunding platform or in groups and communities that are interested in sustainability topics. We also found out that it is necessary to remind people of the campaign, as people have very busy lives and even though they might be willing to donate, they just don’t take the time or they forget. We are reflecting on our strategy and the choice of crowdfunding platform. To reach people in bigger organisations or companies, or people with more financial power, other strategies might be more efficient.

One interesting result of working on the crowdfunding activity is the opportunity to speak about the project and raise **awareness**. Some of us have had interesting conversations with people in our surroundings. Many people are fascinated about our ideas and the project. The more we speak about the project, the more we find other people engaged in some kind of sustainability activity. So, even if not everyone is giving money, more and more people know about our project. Our network in our home communities is growing.

**World View Practices for further exploration in the EDE in The Gambia**

The program of the EDE has a slot every day for morning practice before breakfast and a slot for singing after breakfast. Martina has been asked to contribute to the morning practice with **yoga**:

“I feel honored to be able to share my yoga practice with the EDE group and I am very curious to see how this global group will respond to the practice. My idea is to create sessions that take into account our connection to all the elements that are in and around us: earth, water, fire, air and space. When the elements are balanced in us, when their energies are in harmony, we are healthy. I also would want to make some space for greeting the sun. The African sun is something special in my eyes, and
in yoga we have practices that express our gratitude for the life force that comes to us through the sun, that see the sun as healer, as wisdom, as the force that makes us and everything shine.”

Singing spiritual world songs is also said to have a strong healing effect. It will be beautiful to see the meeting of different cultures with their different songs coming together in a circle every morning. This will create a strong sense of connection and common purpose.

Having the chance to attend an EDE in Africa opens to the possibility of gathering in circles around a fire, telling stories and making music. The supporting power of a circle can help people to open up without fear of judgement and to share what is alive in them; it can help to look at problematic issues and feel a way to new solutions. It will be exciting to hear stories from around the world, but especially dive into the African stories. By weaving together different cultures, worldviews and life experiences, perhaps a new story of regenerative humankind can be felt.

In general, it will be interesting to find out more about the role and the form spiritual practices have in the life of African communities and, for this case study, especially in the community of Sobata. We are curious to hear more about how the people of Sobata express their spirituality and how they define their relationship to nature and the web of life. Do they communicate and listen to nature? In the GEDS Worldview dimension, we practiced sitting with a tree or a stone and just listen mindfully. This could be an interesting proposal.

We also would like to explore if and how the people of Sobata feel that spirituality is important for a healthy and thriving life. Charles Eisenstein says: “If you knew she (the Earth) could feel, you would stop doing what you are doing. Protecting healthy eco-systems and restoring damaged ones can bring the memory of being healthy and whole, it heals the traumas of the planet and since we are part of the living organism that the Earth is, we are healing our own traumas.” (Live Event, Vienna, October 2019). We are hoping that this design paper can help write the story of inter-being and heal some traumas – in the world and in our hearts.

“Mother I feel you under my feet
Mother I hear your heart beat
Heja heja heja heja heja hejo
Heja heja heja heja heja ho-o-o-o”

~ Song for Mother Earth ~
Permaculture

“Again, it’s all observation… We do not have to invent anything, only understand the game and then participate.” – Bruce Kirk

Permaculture is a tool to guide us in developing a regenerative coexistence with all life around us. Observation is Nature’s facilitator, helping us to understand different perspectives, gaining insight into the different pieces of the system that we are interacting with. Observing the climate in Sobata has shown us the consequences of the breakdown in natural cycles. Our design concept aims to reestablish the circular and renewable flows of energy and materials on the land.


Permaculture is a forward-thinking design system, simulating or directly utilizing the patterns and resilient features observed in natural ecosystems. The twelve principles guide stewards in the development of sustainable and self-sufficient ecosystems.

Permaculture can change our perception of what is considered waste, while holistic management teaches us how to better integrate animals into our design. Composting recycles the water in food scraps and provides precious nutrients to the soil; and if first fed to chickens and/or ducks, the entropy is increased as energy is recycled, and the composting process is sped up. Moreover, chicken manure is 100% organic fertilizer, and aerates the soil, removing the need for tilling.
The natural rhythm of the elements with the land can be understood via a topographic map. Contour lines (yellow) illustrate points of equal elevation, whilst transect lines (red) indicate landscape cross-sections to check the slopes and the viewsheds.

A sector analysis examines the natural energies that move through the design site. With this information, one can anticipate and enact design and zoning decisions that will mediate, mitigate, and improve how those uncontrolled influences can benefit the site.
Restoring the water cycle

Sobata’s transition can become a successful example of how environmental responsibility is socially, economically and ecologically beneficial. Permaculture teaches us to start our design with the observation of water; all the design concepts and techniques described throughout our paper are to ensure a continuous supply of water. However, water is only effective when the other supportive elements of the cycle are healthy and resilient.

By observing the movement of water we learn about the hydrological cycle: the continuous circulation of water within the Earth’s hydrosphere. Every molecule of water eventually moves through the water cycle, and it is this continuous movement of water through the various physical processes that is responsible for replenishing the world’s freshwater whilst simultaneously moderating Earth’s climate.

We must nurture all stages of the hydrological cycle, as any disruption to its fluidity will result in disastrous climatic changes. Water is life and without it nothing can survive. Harvesting Sobata’s mean annual precipitation of 1.000-1.200mm is fundamental to land and life regeneration for the local people. Designing from patterns to details and working with Nature, we can benefit from passive irrigation and recharge the groundwater that feeds the village well. We structure the design to value renewable resources and services in the bioregion, stepping away from cultures of segregation to equality and integration with Nature.

Challenges arise for the infiltration and deep percolation of rainfall in the area, due to the degradation of soils by deforestation, over-grazing and/or pollution from mining. Once we have captured the energy, we must hold or convert it (i.e. increase the entropy).

Irrigation is an effective way of conserving water and mitigating water stress. Beyond capturing and storing water, we must apply self-regulation to limit water waste, recycling grey water. Integrating the
vernacular thatched-roof overhangs along with slight modifications to the apron circling the buildings to harvest rainwater, can feed adjacent herb beds and garden allotments (see Green Building).

Water is the primary factor in the transformation of the design site. With a view to reshape the topography to optimize water retention, we propose to dig keyline swales to stop, slow and sink rainwater. Swales are a permaculture earthwork technique based on digging on contours to catch and reroute water that would otherwise run down the hillside, eroding precious topsoil and forming gullies. Leveled flat, the swale is a form of passive irrigation obeying gravity and spreading water evenly throughout the land. Mulching the swale bed averts water from being lost through evaporation or becoming stagnant. The earth from the swale is mounded on the downhill side to create a berm - a moist, fertile location for growing water-loving plant species whose roots will anchor and secure the berm’s edge and help sink the water into the ground. The continual process of slowing, spreading and sinking the water has the long-term effect of raising the water table.

![Swale Diagram](https://lynehamcommons.wordpress.com/a-short-introduction-to-swales/)

**Source:** An Introduction to swales Images and text by Silas Brown

https://lynehamcommons.wordpress.com/a-short-introduction-to-swales/

We propose to integrate vetiver grass around the swales. Vetiver grass (Chrysopogon zizanioides L.) is a fast-growing, non-invasive perennial tufted plant commonly found in West Africa. A fibrous and very strong root system grows almost straight down playing an important role in groundwater recharge and water conservation. The roots’ tensile strength provides an effective environmentally-friendly alternative to traditional ‘hard’ engineering solutions, preventing erosion and sediment loss. In addition, vetiver grass has been reported to have high tolerance for extreme adverse conditions, including heavy metal toxicity.
A multi purpose permaculture design element, vetiver grass can be used for:

- Erosion control
- Degraded land remediation
- Soil conservation
- Runoff retention
- Remediation of polluted land and water bodies
- Source of supplemental fodder
- Handicrafts
- Biofuel
- Essential oil
- Biological pest control
- Roof thatching
Restoring the soil

The richness of soil

“Soil serves as a medium for plant growth; a sink for heat, water, and chemicals; a filter for water; and a biological medium for the breakdown of wastes. Soil interacts intimately with water, air, and plants and acts as a damper to fluctuations in the environment. Soil mediates many of the ecological processes that control water and air quality and that promote plant growth.”

The degradation of soil has a negative effect on soil productivity. Soil also performs “functions in the regulation of water flow in watersheds, global emissions of greenhouse gases, attenuation of natural and artificial wastes, and regulation of air and water quality” which are also impaired by soil degradation.

“Policies to protect soil resources should protect the soil's capacity to serve several functions simultaneously, including the production of food, fibre and fuel; nutrient and carbon storage; water filtration, purification, and storage; waste storage and degradation; and the maintenance of ecosystem stability and resiliency.” The filtering and purifying of water as well as the nutritious value and productivity of crop yields is determined by the physical, chemical and biological composition of soil. The physical structure, density and texture of the soil profile determine if precipitation runs off or infiltrates soil.

Soil also helps filter toxins from water. “The surfaces of soil particles often are chemically reactive and provide multiple means by which contaminants in water can be adsorbed by soil particles and effectively be removed from the water by chemical processes. Many soil clay particles have a negative charge and will attract any constituents in the water that have a positive charge (e.g., some heavy metals, salts, organic chemicals and pesticides). Another mechanism is the formation of covalent bonds (sharing of electrons) that helps soil retain many organic chemicals, pesticides and some inorganic constituents.”

Biological Filtration is the transformation and/or decomposition of components and pollutants both organic and inorganic, by microorganisms living in the soil. Healthy soil has a thriving population of microbes boosting soil and plant health, a crucial aspect in the soil food web. Mulching with fresh organic matter protects the soil surface from drying and crusting, in addition to providing a source of carbon, which stimulates the activity of micro fauna and microbial biomass.

Chemoautotrophic bacteria are important components of the nitrogen cycle, as they convert atmospheric nitrogen and/or nitrogenous compounds in the soil into various chemical forms that can be assimilated by plants and animals. Nitrogen is needed for cell development, and is thus a crucially important element for all life. Excess nitrogen from fertilizers and pesticides significantly alters the amount of fixed nitrogen in the Earth’s systems, and ultimately ends up in water bodies, harming water quality.
Carbon is another essential building block of life. A component of all plants and animals, carbon is one of the most common elements in the universe and found virtually everywhere. Carbon is recycled continuously between the land surface, atmosphere, and ocean through photosynthesis, respiration, decomposition and combustion. Many plants form symbiotic associations between their roots and specialized fungi, the roots provide the fungi energy in the form of carbon while the fungi provide the plant with often-limiting nutrients such as phosphorus. Soil contains 2500 billion tons of carbon, and together with vegetation, holds 2.7 times more carbon than the atmosphere.

Humans have had a detrimental impact on the carbon cycle. Since forests are natural carbon sinks, deforestation affects wildlife, ecosystems, weather patterns and even the climate by inhibiting the
absorption of large volumes of carbon dioxide, and if the wood is burnt or left to rot, the carbon in the trees is released. Farming, grazing livestock, drilling and mining account for more than half of all deforestation and although plants and agricultural crops also draw in carbon dioxide, forests store up to 100 times more carbon than agricultural fields of the same area. Emissions for agriculture are projected to increase 80% by 2050, unless we evolve how we farm to a more egalitarian, organic and self-sustaining method.

**Biochar**

“This 2,000 year-old practice converts agricultural waste into a soil enhancer that can hold carbon, boost food security, increase soil biodiversity, and discourage deforestation. The process creates a fine-grained, highly porous charcoal that helps soils retain nutrients and water”.16

Biochar is a potent seed of possibility and a solution to mitigating climate change. Produced from the thermal decomposition of biomass through a chemical process called pyrolysis in an oxygen-limited environment. Biochar is a charcoal used to enrich poor quality, depleted soils, locking nutrients into the soil for trees and plants to easily access through their roots, limiting the need for chemical fertilizers. If Biochar is returned to agricultural land it can increase the soil’s carbon content permanently and would establish a carbon sink for atmospheric CO2.

![Diagram of Biochar process](https://www.sciencedirect.com/science/article/pii/S0045653514015008)


The benefits of Biochar are numerous:
- Enhances soil structure
- Increases water and nutrient retention
- Decreases soil acidity
- Improves soil porosity
- Regulates nitrogen leaching
- Improves microbial properties
- Sequesters carbon
- Improves soil fertility
Check dams are another water and soil harvesting technique to counteract erosion, installing sediment traps to slow down the flow of water and capture any eroding soil. Inspired by the beaver, one of Nature's engineers, check dams made from locally sourced wood, twigs, mud, stone and vegetation can be effective in lifting and restoring the water table for the eroded riverbed in Sobata, whilst being completely carbon neutral. Vetiver grass can be used to fortify the check dam.
Regenerative agriculture

“Ultimately, the only wealth that can sustain any community, economy or nation is derived from the photosynthetic process—green plants growing on regenerating soil” – Allan Savory

Plants are the only species able to capture and use light energy to convert water, carbon dioxide, and minerals into oxygen and energy-rich organic compounds. Photosynthesis provides the primary source of food that all species inevitably rely upon. Roots of plants are fundamental for water and nutrient cycling, soil health and stability. Thus, reforestation of plants is integral to a biodiverse and healthy ecosystem.

Climate change is a symptom of human demand exceeding planetary boundaries. Preventing runaway global warming depends on the effective adaptation of agriculture to climate change. Regenerative agriculture, coupled with conservation agriculture techniques and agroforestry, can rebuild soil organic matter, biomass, biodiversity and the hydrological, nitrogen and carbon cycles. Observing Nature teaches us how to become better stewards of the land. Recycling energy in its many forms is vital for planetary and species health. We face the challenge of transitioning from a wasteful linear relationship with Nature, to one that follows the law of return. An intelligent design implements small and slow solutions to repair and build on that which is already growing.

Source: The state food and agriculture, climate change, agriculture and food security, by Jakob Skøt et al [http://www.fao.org/3/a-i6030e.pdf]
Throughout our permaculture design, we are guided by the earth care, people care and fair share principles. For this reason, it is important to consider the energy input needed for the different permaculture techniques and required materials. **Basin planting** is a man powered conservation agriculture technique, where small pockets of soil are hoed and filled with seed and organic fertilizer such as manure. No special equipment is needed; the basins can be dug at any time during the dry season, ready for planting at the beginning of the rainy season.

Source: Field preparation and planting, Planting basins – African conservation Tillage Network
http://www.act-africa.org/image/03FIELD~1.PDF

Integrating two design techniques can create a new edge, valuing the marginal and improving the energy efficiency, cost and time of a design. For example, a basin with a berm arranged on slopes allows water from one basin to overflow to a lower basin, zigzagging along the alignment to elongate the flow path of the water and increase infiltration into the soil. This technique to harvest rainwater requires less energy input.

Source: Leaf Network: Passive water harvesting structures and design
https://leafnetworkaz.org/Passive-Water-Harvesting

Source: Micro-basins, Harvesting water from the landscape, by Brad Landcaster
https://webpages.uidaho.edu/larc380/pages/waterHarvesting.html
The energy efficiency of pit gardening make it a great multi-purpose addition to a permaculture design. Pits are used either for short-term storage or as a mechanism that weaves and winds through the land, ensuring plants always have access to moisture and the farmer to a mulching/composting pile. They consist of a deep hole filled with organic matter chopped during tending and/or harvesting, and act like a sponge storing water, improving soil fertility and providing nutrients to the vegetation planted in the excavated soil encircling the pit.

Pit Composting (source: http://www.harajeevan.org/pit.html)

This idea has also been applied to the ecological composting of excreta; an Arborloo (a type of Pit Latrine) is an eco-toilet that becomes a tree. Portable and reusable, the toilet can be moved throughout the land, improving the soil fertility and convenience for the local people. The construction materials include:

- A concrete circular slab with a squat hole – 50 cm in diameter made from a mixture of cement and river sand
- A concrete/brick ‘ring beam’ – designed to support and raise the slab above ground level and prevent pit collapsing and/or eroding during heavy rains - Vetiver grass will also reinforce pit walls effectively and can also be harvested for fuel, animal feed, compost, crafts, thatch roofing, earth wall construction
- A superstructure or stall made from wooden poles, grass, straw, recycled materials
- Plastic bucket or wooden box can be used for a toilet seat
- Small metal bowl for a washbasin
- Water bottle with cap or open/close valve
Ecological Sanitation, the Arborloo. The simplest toilet which recycles human excreta by growing trees, by Peter Morgan, 2007

After each use, dead leaves, wood shavings, chopped straw and/or ash are added, speeding up the composting and reducing flies and unpleasant smells. Pit latrines transform waste into valuable agricultural resources through simple biological process in which bacteria and other organisms feed on the organic materials discharged, and break them down, destroying any pathogens.

Sanitation and preservation: A9 – ECOSAN Ecological Compost Latrine
(https://wikiwater.fr/a9-ecosan-ecological-compost)
Once full, the structure can be relocated and the composted waste is covered with normal topsoil. Many types of trees can be planted, as well as some vegetables such as banana, papaya, mango, avocado and pumpkin, making the arborloo a simple, low-cost and decentralized system that naturally recycles energy in the waste to produce fruit, vegetables, building material, etc, contributing to the health of natural cycles and sanitation.

Forest gardens

To mimic the stable, self-maintaining characteristics of a forest ecosystem, one can plant companion species each occupying a distinct niche; mulch-makers, nitrogen-fixers, nutrient accumulators, encircling a fruit tree – otherwise known as fruit guilds. Shade-tolerant shrubs are planted under the large trees, followed by perennial herbs, and finally ground-cover species, avoiding competition with each other for resources. Companion planting is also a natural method of pest control; plants with strongly aromatic leaves generally repel insects and can be interplanted with vegetables. There are plants that provide a beneficial habitat for predators and then there are plants that release chemicals from their roots suppressing or repelling pests. In addition, biodiversity and biomass are increased and the use of chemical fertilizers decreases.

Source: Create Your Own Forest Garden with These 5 Plants, Thursday, March 29, 2012
https://bastyr.edu/news/general-news-home-page/2012/03/create-your-own-forest-garden-these-5-plants

Agroforestry

‘Woodlands in sub-Saharan Africa are of crucial importance to water resource management because all the major river basins in sub-Saharan Africa are either located or have most of their headwaters in the woodlands.’

18
By observing woodlands/forests we learn how to achieve synergy between water, soil, crops and animals to bring about environmental and economic change. Agroforestry is a land use management system where woody perennials (trees, shrubs, palms, bamboos) are planted among agricultural crops and/or animals. A form of companion planting and holistic grazing, agroforestry is beneficial for developing a healthy ecosystem as we farm.

Trees have several important roles. They:

- Moderate the climate; with their deep roots, trees are able to extract water from several meters below the soil surface, allowing them to continue photosynthesizing for months without rainfall
- Sequester carbon
- Facilitate the infiltration, retention and cycling of nutrients and water
- Reduce soil erosion by wind and rain - stabilise the soil via root systems
- Provide various sources to generate income
- Provide habitat for fauna and flora - greater biodiversity
- Provide a source of food for humans and livestock during dry season
- Are an important fuel for cooking and construction
- Act as windbreakers
- ‘Contribute to cultural identity and diversity, cultural landscapes and heritage values, and spiritual services’ (Le Floc’h and Aronson, 2013)\(^{19}\)

Diversifying which plant species are layered into the design increases the resilience of landscapes and ecosystems. Social systems and the nutritional quality of diets are also improved from investing in the natural capital on which rural livelihoods depend. Essential elements for ecosystem restoration, ‘weeds’ and native plants reduce cost, labor and need for imported materials. Integrating our design with native species supports the ecological transition to a mature ecosystem, recycling energy as we design from patterns to details.


Permaculture seeks to collaborate with Nature to solve problems on the landscape, using techniques that are appropriate for the site. Integrating **holistic planned grazing** with the rotation of cropland helps ensure that livestock are in the right place, at the right time, and with the right behavior. Holistic planned
grazing addresses social, environmental, and economic factors simultaneously. It is a flexible process based on the daily growth rate of plants, livestock performance, and/or wildlife needs, allocating recovery periods, preventing excessive soil compacting and recycling animal manure as fertilizer.

**Integrated permaculture design proposal for Sobata**

Zoning is a permaculture design technique that positions elements in the design based on their intensity of use and management: the greater the need or use of the element, the closer it is placed to the home.

![Permaculture Zones of Use](https://permaculturenews.org/2015/12/11/permaculture-zones-of-use-a-primer/)

Within each zone, the availability and flow of water is first addressed, then plants are integrated to increase soil health and stability. Each zone has specific needs that can be resolved by permaculture techniques best suited to the site. The key is to design each element to have more than one purpose. For example, *Jatropha Zeyheri* is a perennial herb with medicinal and nutritional properties that can be used as a biofuel and/or for fencing farm animals to a specific area.

**Zone 1** has large areas of exposed soil that absorbs solar radiation, so heat is retained, warming the soil. The temperature of soil is important; extreme heat will slow growth and also increase moisture loss.

- Planting trees will lower ambient temperatures, protect and shade soil whilst simultaneously providing habitat, increase biodiversity, provide a source of food, fuel and construction materials.
- Pit-latrines increase sanitation methods and introduce valuable nutrients and water that can feed fruit and nut trees.
- Chop and drop technique combined with pit composting increase soil productivity and a source of water
- Housing for chickens and ducks, which aids in natural insect and slug control, the composting of kitchen scraps and soil fertility
- Harvest rainwater for herb bed irrigation
- Integration of native plants and flowers throughout village and communal area
To decipher the natural flow of water through the land, we can observe the contour lines. These tell us that in Zone 2 the bottom fields near the riverbed are prone to flooding. Implementing check dams at various intervals along the riverbed to slow the flow of water and catch any eroding sediment will eventually raise the water table. Introducing this design element also helps reduce loss of crops during heavy rains, as the riverbed is often used for growing rice. Another solution may be to introduce embankments fortified with vetiver grass along the southern flank of the river to help in preventing further erosion. The vetiver grass can be harvested and used as fodder, thatch or for handicrafts.
As water naturally pools at the lowest elevation point, the construction of a retention pond could be a highly beneficial source of water. Again, the vetiver system can be used to reinforce the pond walls as well as a water filtering system. The contour lines also suggest the addition of a second retention pond at a higher elevation, fed by on-contour swales that capture water running down the hillside as a source for passive irrigation. In the case of overflow, a channel built on transect lines connecting the two retention ponds could be realized.

Banana and papaya pits integrated with a variety of fruit and nut guilds in the surrounding fields will increase biodiversity, water conservation and transpiration, as well as nourishing and stabilizing the soil and providing a nutritious and varied diet.

In Zone 3, we can implement agroforestry techniques and grow the main harvest in unison with the indigenous Faidherbia Albida tree, a nitrogen fixing tree with the unique quality of reverse phenology (leaves drop during the wet season providing a valuable source of mulch for crops growing below, rather than during the dry season where they provide shade and fodder for livestock). Companion planting is the most organic form of farming and is highly beneficial to biomass and biodiversity. The most relevant example for Sobata is the three sisters (maize, squash and beans), each element benefitting the other. The community already grows many of these crops (see photos below). On contour swales lined with vetiver grass harvest and store rainwater, and are another source of fodder for livestock.

The development of Zone 4 into a food forest/wilderness area is guided by the most biologically sustainable ecosystem, a natural forest. The strength of a forest lies in the layered composition of biodiversity: a bouquet of trees, shrubs, ground covers, perennial plants and herbs, and deep rooting plants that can tap mineral sources deep in the subsoil, climbers and vines. All contribute to nutrient
cycling, maximise biodiversity in food growing systems and provide the seeds for future growth. In addition, greater biomass provides a large range of different habitats, attracting a variety of local wildlife: insect pollinators, predatory insects, birds and smaller animals. The development of reciprocal relationships between plants, insects, soil and animals adds to the self-sustaining nature of a forest garden, and provides more opportunities to see wildlife. The leaf litter that inevitably falls serves as groundcover, helping to limit the evaporation of water from the soil and providing a supply of nutrients for microorganisms and bacteria in the soil to quickly compost.

Two of the three sisters in Sobata: maize and squash

A guiding principle of permaculture is to learn the lessons of nature and seek to use that knowledge. By better mimicking nature, we create systems in which crops are available throughout much of the year, while the human effort required to maintain the system is minimal, and the whole ecosystem is much more resilient to devastating events such as climate change.

Source: The Forest Garden: Restoration Agriculture In Your Backyard, By ELSPETH HAY • JAN 17, 2019
https://www.capeandislands.org/post/forest-garden-restoration-agriculture-your-backyard#stream/0
Source: Ecological Sanitation, the Arborloo. The simplest toilet which recycles human excreta by growing trees, by Peter Morgan, 2007

Energy

The Energy Return on Energy Invested (EROEI) of any energy gathering system is a measure of that system’s efficiency; in other words, it is a measure of how much energy a source will produce compared to how much energy it extracts.

Nature is a vast and hugely complex recycling system that constantly transforms matter and energy from one form into another. Restoring these natural cycles in our permaculture design results in a very energy efficient system to capture energy and nutrients used to grow natural organisms. Through long-term capture and storage of energy, the natural systems will progressively grow and enhance the site naturally.

Conventional systems are linear energy sinks that leak resources out of the system. The strategy for a regenerative system is to capture incoming ‘wild’ renewable energies such as wind, water and sun flowing through the site and generate energy, as well as encouraging and reusing energy circulating within the system itself. Recycling energy transforms our approach to a more abundant, biodiverse and ecologically stable system. Sharing information on how we can cycle energy creates a pool of knowledge, inviting others to be the positive and practical example needed to effect global change.

A SWOT analysis is a useful framework to identify internal strengths and weaknesses, as well as external opportunities and threats that could have an impact on the viability of a project.
<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
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</thead>
<tbody>
<tr>
<td>● Independent, off grid</td>
<td>● Wood fire cooking, bad for health and environment</td>
</tr>
<tr>
<td>● Minimal energy use/demand</td>
<td>● Small economic income – green energy technology expensive</td>
</tr>
<tr>
<td>● Small carbon footprint</td>
<td>● Minimal light, activities limited to daylight hours</td>
</tr>
<tr>
<td>● Geographically located in energy catchment area</td>
<td>● Rural, 81.2km away from biggest town</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>OPPORTUNITIES</th>
<th>THREATS</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Strong potential for harvesting green energy</td>
<td>● Reliability of energy during monsoon season</td>
</tr>
<tr>
<td>● Green technology prices are dropping</td>
<td>● Electricity doorway to consumerism</td>
</tr>
<tr>
<td>● Increase variety of solar harvesting technology/products</td>
<td>● Foreign investment has greater priority than local people and/or land</td>
</tr>
<tr>
<td>● Recycle energy through ecosystem</td>
<td>● Takes time to set up natural energy cycles, climate change isn’t waiting</td>
</tr>
<tr>
<td>● Community investment behind sustainable lifestyle</td>
<td></td>
</tr>
<tr>
<td>● Job prospects</td>
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</table>

**SWOT analysis of ecological dimension**

Wood is currently the main source of fuel for energy in Sobata, yet wood smoke is a health threat. Smoke is a complex mixture of gases and microscopic particles that can irritate eyes and airways and may cause or aggravate respiratory illnesses and heart disease. Biochar (which has multiple beneficial uses) could also be utilised as a source of heat for cooking.

![Rocket Stove](image)


Alternatively, rocket stoves are an efficient, unique alternative, which minimize smoke production whilst cooking on an open flame. The heat produced from burning wood heats the air causing it to rise out of the top drawing air in through the bottom, creating a consistent movement of air and resulting in clean combustion. It:
• Is easy and fairly cheap to build
• Uses less firewood as a small amount of wood burns hot and for a long time
• Produces enough heat to cook a meal for a family
• Produces very little smoke
• Cooks very fast with very minimal energy loss
• Has a fuel supply that is essentially endless and free - after all wood is carbon neutral, so doesn't contribute to the greenhouse effect and producing a sustainable supply of wood energy will also provide other forest products and environmental stability.

Solar cookers are capable of converting sunlight to heat energy providing a substitute fuel source for cooking. The only requirements are a sunny spot with mirrors or other reflective surfaces such as aluminium foil, to harness and concentrate the ultraviolet rays of the sun onto a specific surface e.g. a dark-colored pot. With peak cooking time from 10am to 2pm, meals are best prepared and on the stove by morning, left to cook over the course of the day. The process is less time consuming and with food cooked slowly, meals are often more flavorful and nutritious. Women tend to prepare all meals whilst looking after the infants, so the lack of open flames makes this unique way of cooking safer and a great learning experience for children.

Recent progress in understanding the benefits that solar cookers provide for people and the environment, along with advancements in material technology, have boosted its efficiency and practicability. The only drawback is the difficulty of use in strong winds, rain and/or cloudy days.

There are three main design styles for the solar cooker:

1) Solar panel cookers
   • Reflective panels to concentrate solar energy
   • Simplest and most affordable type of solar cooker
   • Generates the lowest temperatures

2) Solar Oven (also called box cookers)
   • Reflective panels to concentrate solar energy similar to panel cookers
   • Addition of an insulated box to retain heat
   • Heat up gradually to baking and roasting temperatures

3) Parabolic Solar Stove
   • Generate heat by using curved, reflective panels to concentrate the sun’s heat directly onto the cooking pot
   • Most efficient
   • Reaches high temperatures
   • Even in sub-zero temperatures can cook from just after sunrise until just before sunset
   • More complex to use
Solar energy can be converted to electricity by using photovoltaic solar panels. Solar photovoltaic cells are made of semiconducting materials that when exposed to sunlight cause electrons in the materials’ atoms to be knocked loose. The knocked loose electrons then flow through the material to produce an electric current. Modern technology has equipped solar panels with trackers capable of following the movement of the sun, thus maximizing energy performance.

Solar energy promotes independence, which is especially useful in remote locations because of the excessive cost, unreliability and finite resources provided by the main electrical grid. Sobata already has one solar panel (see photo below) used to light up a hut that has become a hub of activity at night and a place where children can do their homework.

Source: “Solar energy is on the rise, but how does it really work?” by Tibi Puiu, Jan 23 2018
Future projects in Sobata may include larger solar panel systems, but in the immediate future, solar lanterns are an economical, efficient and convenient way to brighten an area. A light of hope, solar lanterns are an environmentally friendly tool to increase safety, extend hours of productivity and reading, and even help protect livestock from predators. While many villages currently cannot afford them, as the market grows, prices should decrease.
Wind

Wind turbines are another free, renewable source of energy, converting kinetic energy in the wind into electricity, which can then be used for pumping water, a generator or as a backup source to solar energy. William Kamkwamba demonstrated that wind turbines can be built from recycled material e.g. bicycle parts, scrap materials and local wood.
Green Building

An area gaining more traction is ‘green’ architecture, which is inextricably linked to the health and the sustainability of natural systems. Architecture is an expression of our culture, shaped by our habitat and the local materials, technique and knowledge passed down through generations. The Encyclopaedia Britannica describes green architecture as a ‘philosophy of architecture that advocates sustainable energy sources, the conservation of energy, the reuse and safety of building materials, and the siting of a building with consideration of its impact on the environment’. 20

As the land heals from human actions integrating and supporting natural cycles, the health and quality of life improve. With economic growth comes a growing need for infrastructure, yet to avoid putting further strain on already fragile finite resources and to be feasible in resource-limited settings, we must capitalise on the sustainability of African vernacular architecture.

The vernacular architecture of Sobata is a wonderful example of sustainable building. Carbon emission-free rammed earth (a mixture of earth, straw and water sometimes formed into mud bricks and dried in the sun) is used to construct the walls of the home. Wood is used to build the frame for the roof that is then layered with straw/thatch - a lightweight, breathable material that is naturally weather resistant and when properly maintained does not absorb a lot of water.

The monsoon season does however cause some challenges to the integrity of the foundation of vernacular structures, but permaculture can guide us to blend the catchment and recycling of incoming natural energy into the vernacular design. Over time the rammed earth walls succumb to prolonged contact with water and the foundation begins to crack. The addition of a stone cairn, built on a slight angle, half a metre up from the bottom of the wall, will improve the stability and longevity of the foundation as well as help deflect water away from the walls. Different types of soil, each with a unique colour that adds to the environmental art behind architecture, can be mixed with water to make slurry for rendering. Mixing in the sap from an Aloe Vera plant provides the added value of waterproofing, not to forget its medicinal and water conserving properties.

By extending the length of the roof overhang, digging an apron/trench directly underneath the drip line and recycling the excavated earth to mold a berm, we can create a mini ecosystem where perennials, seedlings, trees, culinary and medicinal herbs can be planted. Future roof maintenance or new building plans could involve the addition of a dormer window to increase airflow. Putting in these measures better integrates structures with their surroundings, boosts biodiversity and creates a cycle that absorbs, filters and converts the energy from rainfall and grey water, enhancing the entropy and in turn increasing sustainability.

The sharing of new and traditional building techniques with the local people will further support economic growth, while also emphasizing the benefits we gain from aligning our needs and actions with those of Nature.
The mosque, the school and a few houses in Sobata were constructed using cement blocks with metal/aluminium sheets for the roof. Both materials have to be imported from outside the village, adding to the carbon footprint and the cost. Extraction and production is carbon intensive, not to forget the noisy disadvantage of rain hitting a metal roof. Future ‘green’ building plans could include insulation of the metal roofs with thatch, improving both noise and thermal insulation. In addition, rainwater can be harvested from metal roofs and channeled into a tank-based system with a bio-sand filter to purify water.

Source: Roof catchment systems with filter and storage tank, system components and design considerations, by Alaina Hoover (https://slideplayer.com/slide/7101433/)
Taking the design idea one step further and incorporating an angled metal roof to the structures of pit latrines will take advantage of rainwater harvesting for hand washing, greatly improving sanitation. Structures are as varied as the trees that can be planted, demonstrating the versatility and the art of ‘green’ building.

Ecological Sanitation The Arborloo The simplest toilet which recycles human excreta by growing trees, by Peter Morgan, 2007, page 25

Biosand Filter
https://en.wikipedia.org/wiki/Biosand_filter

In conclusion, the future ecological journey of Sobata is full of promise, but it hinges on capturing and recycling energy from the bioregion in all its forms. The EDE in the Gambia is the first step of the journey, stay tuned for more...
Economic dimension

Global Local impact

Although it’s a small community in a rural area, Sobata’s situation is representative of the wider dynamic that exists between the Global North and the Global South. In particular it serves as an example of how actions taken by the North can have consequences for the South. The ecosystem destruction led by mining companies and the non-recognition of land ownership by a profit-orientated government has reduced the village’s possibilities to address the climate emergency - a crisis they are not responsible for, while being among the first impacted by it. Let’s explore who are the main stakeholders related to Sobata and Project Yêlêma.

A word on mining in Guinea

Sobata, just like the whole of Guinea, is at risk of having its land taken by foreign investors interested in mining the area. The village is located in an area with a long history of gold mining. Artisanal mining is still an activity that the people of the village will do on occasions when the financial situation is difficult (mainly during the dry season). It can be a very dangerous and unsafe job and many people, including children, die each year in Guinea and around the globe doing it.

Next to these artisanal diggers, one of the biggest mining corporations in the world (AngloGold Ashanti) has been exploiting the ground for more than 20 years. The argument often used by these companies is that their presence is beneficial for the population because they offer secure and well-paid jobs, and that they are a safer alternative to artisanal mining. The reality in the field is that getting a job in these companies is harder than we think. For decently paid jobs, the commonly used language is often English, and these jobs are mainly set aside for expatriates anyway. For the rest, the company requires specific degrees and qualifications that match their country of origin (from the Global North). Even if there are degrees in engineering, geology and so on in Guinea, people who graduated are often told that their knowledge or experience is not enough. They will then end up in low-paid/difficult jobs within the company, or won’t get hired at all.

Land Ownership

Guinea attracts many foreign investors because of how rich the ground is in gold, diamonds, iron, and mainly bauxite (1st global resource), and the Guinean law is very unclear when it comes to land ownership. When a mine decides to explore somewhere, as long as it is within the boundaries of their mining permit, they can relocate the population. They have no obligation to compensate them in any way, so the local population often ends up in temporary houses, away from the land and the soil they know how to farm, but still close enough to the mines to suffer from their environmental and health impacts.

All this is a result of the government policy favoring foreign mining investors over the safety and care of the population. This maintains the dependency of Guinea on the Global North to survive economically.

The Guinean Currency (GNF)

Another essential aspect of the Guinean economy completely dependent on foreign structures is money. The Guinean franc (GNF), the country’s currency, is printed in the UK by a company called De La Rue. (Zooming out, only 9 countries in Africa actually print their money locally, so it is not just a Guinean issue.)
While the Economic Community of West African States (ECOWAS) has the project of launching a single currency across all of West Africa that would replace the CFA Franc, it would probably be held and printed in France, which does not encourage autonomy or independence of these countries, and tends to maintain post colonialism.

**Stakeholders of Project Yëlêma**

One of the biggest threats to Sobata is the absence of state support and protection from the big corporations, especially when it comes to land ownership. Let’s have a look at the project stakeholders, in order to find out who could be a source of support in all these areas.

### In Guinea

**Community of Sobata**

The people of the village are the first and main stakeholders of Project Yëlêma. Our goal as a Design Team is certainly not to tell them what to do, or how to do things. Our desire is not for them to increase their dependency on the Global North, but rather to support their resilience and help connect with like-minded people in initiatives in Africa.
UNDP United Nations Development Programme
https://www.undp.org
http://www.gn.undp.org
On the ground in about 170 countries and territories, UNDP works to eradicate poverty while protecting the planet. They help countries develop strong policies, skills, partnerships and institutions so they can sustain their progress. Adélaiide already has contacts within UNPD Guinea.

UNIDO - United Nations Industrial Development Organisation
https://www.unido.org
https://www.facebook.com/ONUDIGuinee/
UNIDO is the specialized agency of the United Nations that promotes industrial development for poverty reduction, inclusive globalization and environmental sustainability. Adélaiide is connected to the directors of the Guinea branch of UNIDO. They are interested in our project but it remains too vague for them at this stage. Being part of the UN implies that they have to do extensive due diligence to help or partner with projects.

SNAPE - National Organism for the Management of Water Points
http://www.snapeguinee.org
A public structure that operates under the authority of the Ministry in charge of Water, they are a legal entity with financial autonomy in charge of managing and installing water points in Guinea, with a focus on remote areas. They are very interested in the relationship between water autonomy and agriculture, and how it can transform the life of rural communities. Adélaiide has a close relationship with them and met the directors in person 2 years ago in Paris. We are discussing with them the possibility of writing a MoU with the Global Ecovillage Network in order to develop ecovillage projects in Guinea. They are very interested in coming to the GEN Africa Conference (Gambia-November). We believe that they can be a great support on the ground for the years to come.

NGO Carbone Guinée
https://ongcarboneguinee.org
It is a youth-powered NGO promoting biodiversity and peace protection. They are supporting our project and we believe that they can be a source of inspiration for the youth to get involved concretely in this process of change and transition. They will connect us to the different stakeholders in Guinea

UCD - Union of Communities for Development (NGO)
http://ucd-guinea.com
UCD seeks to give capacities or to empower individuals or groups of people by providing them with the skills that they need to create change in their own communities. UCD also wants to upgrade the cultural education of the people and restore the academic discipline that had disappeared. UCD wants the new generation to get rid of the old mind of depending on the government. Adélaiide is very familiar with the founder of UCD and we believe that he could be a great support of Yëlêma Project. He is very connected in Guinea and speak great English.
**Outside Guinea**

**Gaia Education**

https://gaiaeducation.org

Gaia Education is a Scottish NGO. It provides education on sustainability, regeneration, and promotes local solutions for global challenges, in order to create a resilient future. Since this case study comes from the Design Studio of Gaia Education’s Design for Sustainability course, and that one of our main short-term goals is to allow people from Sobata to join an EDE in the Gambia, we believe it is in Gaia Education’s best interest to actively support our fundraising.

**GEN - Global Ecovillage Network**

https://ecovillage.org

GEN is a powerful network which catalyses connection between people and with Nature, worldwide. They do it through community empowerment and with a focus on maximizing edges. They offer a kaleidoscope of regenerative practices by sharing traditional wisdom and modern knowledge during events and trainings across the globe. Both Sarah and Adélaïde have followed a Training of Trainers with GEN in Damanhur in July 2019, and are on their way to be certified as GEN Ambassadors. We have GEN support for our crowdfunding with their logo, and our goal is to weave the community of Sobata into the GEN Africa Network.

**Elke Cole**

http://elkecole.com

Elke works with Bafut Ecovillage (Cameroon) and OUR Ecovillage (Canada). She is a consultant on green building and community. We are hoping to get some insights from her and connections to useful contacts and her network for the crowdfunding campaign.

**Bafut Ecovillage, Cameroon (Sonita Mbah and Joshua Konkankoh)**

http://betterworld-cameroon.com

Sonita is a facilitator/Trainer/Administrator in Bafut Ecovillage in Cameroon. Sarah and Adélaïde met Sonita in Damanhur in 2019, and we are in close communication since then. She will be facilitating the Economic Dimension of the EDE in The Gambia, and she is committed to helping us with any questions we might have on ecovillages.

**Ghana Permaculture Institute (Paul Yeboah - GEN Ghana)**

https://ghanapermaculturei.wixsite.com/permaculture

This is an organism that promotes permaculture principles though courses and hands-on learning. They have a focus on agroforestry. Their training center can be an inspiration for the community of Sobata, and Paul Yeboah could give us some valuable insights on how to start a forest garden around the village.

**Guédé Chantier Ecovillage (Ousmane Pame) and the REDES (Network for Ecovillage Emergence and Development in the Sahel)**

http://redes-ecovillages.org/eng/
REDES is a community service organization, officially registered in Sénégal in August 2015. Its headquarters are located in the eco-community of Guédé Chantier (7,000 inhabitants, North of Senegal) but the organization is already present in Baol communities (Central region of Senegal), on the Ile à Morphil (or Elephant Island) and in Salahel ecovillage (Southern Mauritania). Adélaïde has spoken to Khaly Mbengue (REDES) about Sobata’s desire to transition towards sustainability a year ago and will be able to go deeper into the discussion during the EDE in The Gambia since Khaly is facilitating the Culture/Worldview Dimension.

**Damanhur Education NGO**

[http://damanhureducation.it](http://damanhureducation.it)

The NGO Damanhur Education aims to create, develop and disseminate, at national and international level, the education on environmental sustainability and divulgation of the culture of respect for the environment and alternative human settlements (ecovillages) as well as global training of any individual, in all age groups. We are connected to Macaco Tamerice, who sits on the board of trustees of the REDES and has been part of Damanhur for a long time. We are hoping to encourage Damanhur Education to support Sobata in its integration into the REDES network.

Our goal with engaging all stakeholders is to support the community of Sobata in their desire for change. Even though Guinea is not yet engaged with ecovillages initiatives, some people close to the government (SNAPE) have already expressed interest in partnering with GEN Africa in order to implement Ecovillage Design at a country scale, and Sobata could be an inspiring pilot project for this.

But first, let’s weave the community into the existing network of climate resilient initiatives.

**Connection and Network**

When we brainstormed about the values of Project Yëlêma, connection and social weaving were immediately considered essential for what we were trying to do. A major challenge for Sobata, a close second after the climate issue, is the isolation and lack of support that the community has from the state and from people in general. In a post-colonialist context, where the country’s economy is dependent on foreign investment, the individualist narrative in gaining ground every day.

Whether it is as a Design Team, in our personal lives, or by educating ourselves on ecovillage initiatives in Africa, connection is always a focal point, an anchor, an indicator that “we’re on the right track”. In this section we are going to explore the different levels of connection (to ourselves, to others, and to the environment), and how they influence Project Yëlêma.

**Sustainable Development Goals (SDGs)**

“The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests.”

— Community Service Organization
The SGDs are an interesting framework to map a project in a holistic way. It allows us to check how much our practices and choices can address global issues. Interesting information to look for will be:

- What goals are not (or not comprehensively) addressed?
- Are there specific actions that address multiple goals?
- When a goal is addressed, is it at a local and/or global scale?
- Are there groups of goals that can’t be addressed independently?

### Sustainable Development Goals

<table>
<thead>
<tr>
<th>SGDs</th>
<th>How does Yëlëma project address the goals?</th>
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<tbody>
<tr>
<td>1: No poverty</td>
<td>Increase yield and crop diversity for personal use and to sell</td>
</tr>
<tr>
<td>2: Zero Hunger</td>
<td>Increased diversity in crop planting. Water retention and rainwater harvesting, for irrigation year round</td>
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<tr>
<td>3: Good health and wellbeing</td>
<td>Higher nutritional crops - result from improved soil quality, nutrient cycling by composting, Biochar.</td>
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<tr>
<td>4: Quality Education</td>
<td>EDE in The Gambia Hands-on learning via implementation of permaculture practices in agriculture Baseline Study and Permaculture training to be held in the village in 2020</td>
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<tr>
<td>5: Gender Equality</td>
<td>Reflection on gender equality during the EDE Female permaculture trainer to come to Sobata in 2020</td>
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<tr>
<td>6: Clean Water and Sanitation</td>
<td>Rainwater harvesting - fill groundwater accessed through pump Recycling of greywater Composting toilet (Arborloo)</td>
</tr>
<tr>
<td>7: Affordable and Clean Energy</td>
<td>Solar energy, solar panels sourced in Africa Simple wind turbines Biochar Solar cooker</td>
</tr>
<tr>
<td>Topic</td>
<td>Description</td>
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<td>----------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>8: Decent Work and Economic Growth</td>
<td>Deeper connection between people, spirit and place</td>
</tr>
<tr>
<td></td>
<td>Higher Yields, greater diversity</td>
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<td></td>
<td>No need for artisanal mining because there is more than enough food for year-round consumption, which means more to sell at the market</td>
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<td></td>
<td>Trainings can be held in Sobata to teach people from nearby villages about techniques learnt during the EDE</td>
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<tr>
<td>9: Industry, Innovation and Infrastructure</td>
<td>Permaculture garden</td>
</tr>
<tr>
<td></td>
<td>Storing of yields</td>
</tr>
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<td></td>
<td>Seed, sapling ‘greenhouse’</td>
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<tr>
<td>10: Reduced Inequalities</td>
<td>Self-reliance</td>
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<td></td>
<td>Further education</td>
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<tr>
<td></td>
<td>Land regeneration - reduces effects of climate change and desertification</td>
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<td></td>
<td>Women to be trained during the permaculture course given in Sobata</td>
</tr>
<tr>
<td></td>
<td>Connection to all stakeholders to find support in Sobata’s move towards resilience</td>
</tr>
<tr>
<td>11: Sustainable Cities and Communities</td>
<td>Sobata’s new knowledge and experience will spread through other villages in the surroundings</td>
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<td></td>
<td>Sobata to become a focal point and reference in how to thrive and be resilient in the Sahel Region</td>
</tr>
<tr>
<td>12: Responsible Consumption and Production</td>
<td>Agricultural practices in balance and harmony with what Nature naturally provides</td>
</tr>
<tr>
<td></td>
<td>No need for chemical fertiliser anymore</td>
</tr>
<tr>
<td>13: Climate Action</td>
<td>Rainwater harvesting</td>
</tr>
<tr>
<td></td>
<td>Soil fertility and stability</td>
</tr>
<tr>
<td></td>
<td>Increased biomass/biodiversity</td>
</tr>
<tr>
<td></td>
<td>Consequence beyond borders with the restoration of the water cycle in Sobata’s region</td>
</tr>
<tr>
<td>14: Life Below Water</td>
<td>N/A</td>
</tr>
<tr>
<td>15: Life on Land</td>
<td>Agroforestry, forest garden, permaculture garden</td>
</tr>
<tr>
<td></td>
<td>Increased natural vegetation (zone 5)</td>
</tr>
<tr>
<td>16: Peace, Justice and Strong Institutions</td>
<td>Connection to GENAfrica, Gaia Education, and ecovillage initiatives in Africa in general</td>
</tr>
<tr>
<td></td>
<td>Relevant Guinean structures (SNAPE, UNIDO, PNUD etc) and other stakeholders’ involvement in land restoration to fight climate crisis and protect initiatives to restore ecosystems in Guinea</td>
</tr>
<tr>
<td>17: Partnerships for the Goals</td>
<td>Connection to GEN Africa</td>
</tr>
</tbody>
</table>
When we look at the table, we can see that only goal 14 (life below water) is not directly addressed, since Sobata is inland and there is no lake nearby. In a long-term future, big ponds will be created through water retention and swales, and it will then be appropriate to consider addressing this goal.

We can also notice that some actions that we have implemented have direct positive consequences on several goals, such as:

- Rainwater harvesting: impacts 6 goals directly and more indirectly.
- The EDE in The Gambia will generate some changes in the area of all the 16 goals addressed. This is thanks to the diversity of the curriculum, the length of the course, the fact that 4 people and not one are attending it, and, possibly, the presence of the Design Team during the course, which will trigger some deep conversation about sensitive topics, like gender equality (goal 6) for example.
- We can acknowledge that most goals, if not all, will have an impact on both local and global scales. For instance: restoring the water cycle of Sobata’s bioregion will benefit the community directly, which will then have an impact on the villages nearby, who might get training. And because of its location (the water tower of Africa), Sobata’s regenerated ecosystem might generate a difference in the flow rate and volume of multiple rivers starting there that irrigate the rest of West Africa.

Finally, it is interesting to note that even if some goals can be grouped into ‘ecological’, ‘social’, or ‘economic’, they are all related to each other. This shows that by addressing one goal, we can create a virtuous cycle and start walking the path of regeneration. At the same time, by addressing several goals, the increasing number of connections between these goals strengthens, anchors, and gives flexibility to the initiatives that are put in place. The quality of the weaving is better and deeper.

Wellbeing Indicators

After having made suggestions on specific actions to put in place for Project Yëlëma, we started to wonder how we could measure accurately the impact of these actions of the community of Sobata.

The measurement of wellbeing needs to be tailored to each situation, village or community. Yet there are umbrella topics or values that are universal no matter where you go. The challenge is to find out how these domains are expressed in the context of Sobata.

Growth National Happiness (GNH)

According to the Center for Growth National Happiness in Bhutan, GNH is “a holistic and sustainable approach to development, which balances material and non-material values with the conviction that humans want to search for happiness. The objective of GNH is to achieve a balanced development in all facets of life that are essential for our happiness”.

The people of Bhutan fill out an extensive questionnaire that will help to assess their ‘level of happiness’. Perhaps we could work on the elaboration of one tailored to Sobata (and later maybe Guinea?) during the EDE, which everyone in the village could take. This would then give some insight to the community about which areas to focus on within the following year.
### Bhutan’s 9 domains of Gross National Happiness

![Diagram of Bhutan’s 9 domains of Gross National Happiness]

### Suggestions on how/what to measure in Sobata

<table>
<thead>
<tr>
<th>Living Standards</th>
<th>Amount of food produced</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount of food sold</td>
</tr>
<tr>
<td></td>
<td>Number of people of Sobata who know how to drive a car</td>
</tr>
<tr>
<td></td>
<td>Number of households with compost toilets</td>
</tr>
<tr>
<td></td>
<td>Number of households with running water</td>
</tr>
<tr>
<td>Education</td>
<td>Number of people trained in Sobata by those who attended the EDE</td>
</tr>
<tr>
<td></td>
<td>Number of women in Sobata who are learning to speak French</td>
</tr>
<tr>
<td></td>
<td>Number of women in Sobata who can write and read (Malinké and/or French)</td>
</tr>
<tr>
<td>Health</td>
<td>Number of malaria/AIDS/other disease cases</td>
</tr>
<tr>
<td></td>
<td>Vitamins and minerals levels (Blood work)</td>
</tr>
<tr>
<td></td>
<td>Variety in food production/consumption</td>
</tr>
<tr>
<td>Environment</td>
<td>Quantity of water harvested during the rainy season</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>Community vitality</td>
<td>Variety in jobs</td>
</tr>
<tr>
<td>Time use</td>
<td>How long women spend gathering water</td>
</tr>
<tr>
<td></td>
<td>How long men spend doing housework (children, cooking, cleaning, laundry)</td>
</tr>
<tr>
<td>Psychological Well-being</td>
<td>Age for women/girls to get married</td>
</tr>
<tr>
<td></td>
<td>Number of cases of depression?</td>
</tr>
<tr>
<td>Good governance</td>
<td>How many times/month people gather in the village to discuss important matters</td>
</tr>
<tr>
<td></td>
<td>Whether all groups (women, men, youth, elders) are represented in decision-making structures</td>
</tr>
<tr>
<td></td>
<td>Legal structure to protect the community and the projects they are building</td>
</tr>
<tr>
<td>Cultural resilience &amp; promotion</td>
<td>Learning of the N’ko alphabet (Malinké alphabet)</td>
</tr>
<tr>
<td></td>
<td>Number of stories told about traditions and important cultural events of Sobata</td>
</tr>
<tr>
<td></td>
<td>Number of cultural events/celebrations per year</td>
</tr>
</tbody>
</table>

**Values of Yêlêma**

The choice of the values that best represent Project Yêlêma and the vision of the Design Team around it was already described in the Vision section, but we thought that it would be interesting to try and use them as a concrete tool to generate actions for us and the community to undertake.

For us, it was a way to really check the coherence of the project, and make sure it was aligned in all its aspects, with our vision and mission.

We believe that values are universal, and that they could be one of those indicators that confirms that, no matter where we live, our life conditions or our beliefs, we are all connected and way more similar than we think.
<table>
<thead>
<tr>
<th>Values</th>
<th>Actions for the Design Team to undertake</th>
<th>Actions for the Community to undertake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resilience</td>
<td>Push through the difficulties of time, money, discomfort in order to produce this case study in time and raise enough money for the EDE</td>
<td>Prepare for rainwater harvesting for the next 6 months, before the rainy season</td>
</tr>
<tr>
<td>Social Justice</td>
<td>Connect with state organisms in Guinea that can help protect Sobata from exploitation because of mining projects</td>
<td>Ensure everyone (particularly non-French speakers) has a voice in decision-making on the project</td>
</tr>
<tr>
<td></td>
<td>Be aware of our position as Westerners in proposing changes to Sobata</td>
<td></td>
</tr>
<tr>
<td>Equity</td>
<td>Raise money to provide a permaculture training in Sobata by an African woman (Sonita Mbah), since only men are going to the EDE</td>
<td>Have a conversation about men and women’s roles in the community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Have a conversation about the age of marriage for women, and therefore the difficulty to access education</td>
</tr>
<tr>
<td>Learning &amp; Collaboration</td>
<td>Work together to raise money for people of Sobata to attend an EDE, and have a permaculture training in the village in 2020</td>
<td>Facilitate and share EDE info with village</td>
</tr>
<tr>
<td>Connection</td>
<td>Weave Sobata into the GEN Africa network and the REDES</td>
<td>Connect with nearby villages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop connections with villagers that one does not regularly interact with by undertaking joint projects for Yelema</td>
</tr>
<tr>
<td>Community</td>
<td>Work together as a team to provide the best support possible to the people of Sobata</td>
<td>When seeing first measurable results, invite people from nearby villages to come and see, and offer training</td>
</tr>
<tr>
<td>Commitment for Change</td>
<td>Commitment and dedication in the crowdfunding process</td>
<td>Apply learnt tools and knowledge when being back to the village after the EDE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Switch from a short-term vision to a long-term vision for the village of Sobata</td>
</tr>
<tr>
<td>Openness</td>
<td>Practice non-judgement of cultural practices that are very different from European practices</td>
<td>West is not best. Be open to:</td>
</tr>
<tr>
<td></td>
<td>Be open to interpretations and decisions that the people of Sobata might take that are different from our design proposals</td>
<td>- new learnings and possibilities offered in the ecovillage approach and the EDE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- thinking about equity in the community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- holistic thinking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- find solutions that will serve the community</td>
</tr>
</tbody>
</table>
Eight forms of Regenerative Capital

More than ever on projects like Yêlêma, where the resources at first sight can seem scarce, it is important to focus on all different forms of capital. The perspective that Ethan Roland & Gregory Landua offer allows us to see the richness that a community has to offer, first for themselves, then to others (outside of the community) and to the land. Being able to look at Connections, Ideas, Water or Rituals as a form of currency, just like money, opens up creative paths for the Design Team and the people of Sobata to walk on the way to regeneration.

<table>
<thead>
<tr>
<th>Forms of Capital</th>
<th>Regenerative practices in Sobata</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social capital: the influence, relationships and networks an individual, business or community can draw upon</td>
<td>Cultivate and strengthen relationships with the GEN Africa network and the REDES&lt;br&gt; Create and develop relationships with stakeholders within Guinea that can support Sobata in its transition towards regeneration</td>
</tr>
<tr>
<td>Material capital: the physical resources, infrastructures and technologies</td>
<td>Food, building materials&lt;br&gt; Solar panels, smartphones, internet</td>
</tr>
<tr>
<td>Financial capital: money, currencies, securities and similar financial instruments currently Facilitating the exchange of goods and services</td>
<td>Variety of products and skills to trade</td>
</tr>
<tr>
<td>Living capital: soil, water, biodiversity, human health, the health of other organisms and healthy ecosystems functions</td>
<td>Restore water cycle&lt;br&gt; Carbon sequestration, improving the quality of soil&lt;br&gt; Permaculture/forest garden</td>
</tr>
<tr>
<td>Intellectual capital: ideas, concepts, and knowledge</td>
<td>Values of the project&lt;br&gt; Learnings from EDE</td>
</tr>
<tr>
<td>Experiential capital: actual embodied know-how, built from personal experience</td>
<td>Skills learnt during the EDE, and to be learnt during the permaculture course in 2020&lt;br&gt; Knowledge about bioregion gained by observing the land for generations</td>
</tr>
<tr>
<td>Spiritual capital: an entity’s internal connection and awareness of a greater whole</td>
<td>Connection to the land, awareness of humans’ place and participation in the cycles of nature around them</td>
</tr>
<tr>
<td>Cultural capital: emerging from the “shared internal and external experience of a group of people: Cultural capital is an emergent property of the complex inter-capital exchanges in a community, village, city, bioregion, or nation [...]”</td>
<td>Traditional rites of passage&lt;br&gt; Traditional music and arts</td>
</tr>
</tbody>
</table>
What we can see from this table is that education and network, through Experiential, Social and Intellectual capital, are valuable and present assets in the project. It suggests that economic resilience will be achieved through these existing important channels. This is what we chose to explore with the EDE and the Education Center as a Regenerative Enterprise.

Crowdfunding: Maximizing edges with a participatory process

In order to be able to help the people of Sobata to join the month-long EDE in The Gambia, we decided to raise money via crowdfunding. On the outside, the process might look easy and straightforward. But we soon realized that it is actually a full-time job in itself.

In order to be able to get the crowdfunding going, we needed to find the right platform first. We explored a few:

- Indiegogo https://www.indiegogo.com
- Kickstarter https://www.kickstarter.com
- Ulule https://fr.ulule.com
- GoFundMe https://www.gofundme.com
- CrowdRise https://www.crowdrise.com
- Causes https://www.causes.com
- Mighty Cause https://www.mightycause.com

An important criteria for us was the ability to carry on the campaign as long as we needed, without a 30 or 60 day limit. Another important factor was how easily and quickly the funds could be withdrawn, as the EDE was a bit more than a month away when we started the campaign. It also needed to be a platform that was supporting Euro currency, since we anticipated that most donations would come from our networks. Finally, it needed to be donation-based instead of reward-based since we were not raising money for a social enterprise project (yet!).

As Adélaïde Merle has registered an association in France this year, we initially thought about starting the campaign under its name, and we soon realized that in order to do this, the association needed to get a lot of paperwork done, and since the French administration works pretty slowly, we decided to go with an individual to get the funds. Since Adélaïde is in charge of the Economic Dimension, it was her role to manage the campaign on a daily basis.

In the end, we chose GoFundMe as a platform for our crowdfunding. We wrote the text together as a team during a meeting, after an initial draft by Martina, and it was later translated into French and Italian. Since Adélaïde was posting updates regularly, they were available in two languages each time, so we could reach more people.

https://www.gofundme.com/f/project-yelema

The crowdfunding journey is exciting and very emotionally intense. We are in a position that requires us to let go of the ego, because we are constantly asking for money and support, and asking again when the donation doesn’t come. It is very humbling, and it requires dedication and commitment because it is a constant effort. We needed to keep the momentum going by posting regularly on different social media platforms, sending lots of messages, emails, getting out of our comfort zone by contacting people we sometimes haven’t spoken to in a long time, because every donation is important.
A meaningful insight that we got from the crowdfunding is the importance and power of network and community. When we started looking at the last 20 years of our lives, we kept finding people to reach, to email, and to ask for help. We also realized that issues like education, resilience and regeneration do touch people. At some point, we started receiving donations from people who know people who know people who know us! With no apparent connection to the project at all. That is when we reminded that values and ideas like the ones we are promoting here go beyond our circles of friends or colleagues: they weave us all together in the great blanket of community. This tool is really powerful, as it allows people from all areas, all background, all life realities to come together and look in the same direction: the one that the project offers.

Crowdfunding campaign for Project Yëlêma on GoFundMe

Making it happen! The journey from Sobata to Kartong

Alongside raising the money for the EDE, we had to organise the trip practically. Since Adélaïde was the main person in contact with Sobata and because of the network she developed in Guinea, she was in charge of most of the trip planning.

The main challenge was getting the people of Sobata from their village to the EDE location. We first explored the plane solution, and it turns out that there is no direct flight from Conakry (Guinea) to Banjul (The Gambia). Moreover, nobody in Sobata holds a passport and there was not enough time to consider applying for one.
The car journey from Sobata to Kartong

We then considered a trip by car, and because of Sobata’s location, we found out that the journey was ‘only’ 23 hours, which on the scale of Africa, is nothing really. However, it is still a long trip that can’t be done by one driver, because then they would have to go back home on their own after having driven for two days. So we decided to split the trip in two, with one driver taking the people of Sobata from their village to Kalifourou, a small village on the way, just after the border of Senegal, and a second trip from this village to Kartong, made by someone from Senegal. This was made easier thanks to Martina who knows someone in the tourism industry in Senegal: Pape Lamine. He helped us a lot with finding a driver from Senegal, and he worked out the price for us.

Finding a reliable driver on the Guinean side turned out to be much more complicated. Adélaïde had a contact in Sigui (the main city near Sobata, where it is possible to rent a car) and she asked him if he could find a driver. This person, Dansoko, came back to us with a driver and a price, and since we needed to have the crowdfunding up and running with a price for the trip, we didn’t question it at first.

After further research, especially after getting a price from the Senegal side, we started to investigate in a bit more detail the amount that Dansoko requested. To do that we worked out the fuel consumption of a 4-wheel drive on dirt roads, looked up the price for rental cars in Guinea, alongside with the average salary for drivers in Guinea. All these numbers put together ended up being about half the price we were given, so we decided to start a negotiation. When we came to Dansoko with our revised price and explanations for it, he told us that in Guinea, it is not like in Europe: the driver just chooses the price he wants. After asking him to talk to the driver, we decided to explore other options. Our contacts from Sobata were really concerned about this issue, since they were aware that without a reliable driver, this whole project could not happen.
Ibrahima quickly came to us with a contact he has known for a long time: Moussa Keïta, whose parents are from Sobata. He worked hard so Adélaïde and him could have a conversation on the phone, and we had the opportunity to discuss the price and explain the calculation that we’ve made. Moussa Keïta said that our estimation was more than fair and agreed to do the driving for us. It was a relief for the Design Team and the people of Sobata, especially because the final price of the trip was now much lower, and the amount for everyone to actually get there looked more reachable.

Ibrahima (left) and Moussa Keïta, the driver from Guinea (right)

The remaining concern was about the trip itself, because it is impossible to predict unexpected events. We decided to send some extra money to the driver in Guinea (so it is available in Guinean Francs), and to the driver in Senegal for the same reasons, in case they’re asked for something at the border, if they want to buy food, or if/when they decide to spend the night somewhere.

We are aware that there are probably many other aspects of this journey that we have not anticipated, and we hope that everything will work out well. One way to ensure that will be to stay in constant contact through WhatsApp with Ibrahima and the other participants of the course, alongside the driver from Senegal, in order for the transfer of the people of Sobata between the two cars to go smoothly.

If this trip appears stressful to us, it is even more stressful for the people of Sobata, since they have never left their country. None of them has seen the sea or any other landscape than the one of their regions. They have never travelled so far and from what they told us, never thought they ever would.
This process of finding a driver for them to take on this journey has been very humbling, and has deepened our understanding of how the people of Sobata feel about this project, what their worries are, and their hopes. The issue with the trip to The Gambia was much more complex than just a problem with money, and this brought our attention to other forms of capital that need acknowledgment and celebration.

**Design for generosity**

The Design Team wants to support the people of Sobata in the best way possible. We are aware that they could need some presence online and that it will be something difficult to achieve because they do not have a computer or a reliable internet connection. We therefore decided to help with Project Yêlêma’s presence online. We created:

- An Instagram account: [https://www.instagram.com/yelema.project/](https://www.instagram.com/yelema.project/)
- A Twitter account: [https://twitter.com/ProjectYelema](https://twitter.com/ProjectYelema)

We also decided to create a blog or website after the EDE, to document what we have done over there, the collaboration between the Design Team and the community of Sobata. This will be, for now, our contribution to the project in addition to the Case Study.

**Education for Resilience**

In Sobata, challenges in the path towards regeneration are many. As a Design Team, we asked ourselves what would be the most impactful, efficient, collaborative actions we could suggest and put in place that would support the community in its desire for change and resilience.

Education is one of the most empowering and creative tools that exist to face the climate emergency and reconnect with each other and Nature. Through learning, practicing and teaching, the community of Sobata has the opportunity to become truly resilient and to inspire others to do the same.
**EcoVillage Design Education (EDE) in The Gambia (November 2019)**

The EcoVillage Design Education course, or EDE, provides knowledge and tools on EcoVillage Design in a holistic integrative way, with a hands-on approach and with practices tailored to the place hosting the training.

Doing an EDE in Africa was coherent for us as a design team, as well as for the people of Sobata, as it is African knowledge, taught by Africans, in an African settlement in transition towards an ecovillage. Knowing that the money raised towards this course will strengthen the local economy in West Africa also made sense to us all.

Choosing an EDE against a Training of Trainers or even a Permaculture Design Course (PDC) will allow:

- a wide umbrella of tools and knowledge to be shared and learned by the people of Sobata
- a period of time long enough for the information learnt to sink in, be discussed, reformulated and assimilated
- the opportunity to get out of the country (a first for every person living in Sobata) and get to meet and know people from West Africa and beyond
- make deep lasting connections with people carrying similar initiatives in their own village
- get personal, tailored insights and advice by facilitators from different countries and backgrounds about the project in Sobata
- the chance for the design team to work with the people of Sobata in person

The Gambia is relatively close to Sobata, close enough to be able to drive there in 24h. Since no member of the community holds a passport, flying was not an option, so we needed a location that was accessible by car.

**Permaculture Course + Baseline Study in Sobata (2020)**

During our research on Kartong EcoVillage (which holds the EDE), we learnt that such a course taken by just a few members of the village of Sobata probably won’t be enough to create deep lasting change in the community.

After the decision-making process that Sobata went through to designate who would join the EDE in the Gambia, we wanted to address what we saw as an issue of equity. Because of several reasons described in the Worldview and Social dimensions, only men will be attending the course and we therefore want to make sure that:

- Women in the village get practical training soon
- This training will be given by a woman

Sonita Mbah (Bafut Cameroon) is a certified permaculture trainer and also gives courses on natural building (cookstoves). She is part of GEN Africa and of the NextGEN movement, and as a result, embodies the youth as well.

Khaly Mbengue is also a permaculture trainer from Senegal (Guédé Chantier), and he will be facilitating at the EDE. Last year he offered to come to Sobata to do a Baseline Study whenever we have the funds to make it happen.
After having gained this valuable knowledge, the next step for the village could be to choose to share it via teaching with the nearest villages or people coming from other communities in Africa.

**Social Enterprise**

Trying to picture what kind of social enterprise the community of Sobata could have in order to be economically viable, socially inspiring, and environmentally restorative was a challenge. This reflection implied thinking ‘long term’, and after a few trials, we realized that it was too complicated for the people of Sobata to picture at this stage. They are still in survival mode, with no money, no jobs, no secure food production and access to water. So in order to suggest something that makes sense, we started looking at other ecovillage initiatives in Africa, one of them being Bafut Cameroon. Since we have good relationships with two of their members, Sonita Mbah and Joshua Ngwa Konkonkoh, we were able to get some insight from them, and we combined this with the knowledge and experience we all have of other ecovillages in Europe (Damanhur, Tamera, Findhorn etc).

We came up with three possible options of social enterprise for the community of Sobata:

- **A food cooperative**: When the food production of Sobata is going to increase, there will be more to sell, more to transform, more to store etc. These jobs could benefit from a legal entity to securely employ people. Having a legal structure would allow the community to sell a bit further from the local market, more regionally or nationally (and internationally if they choose to).

- **An Education Center**: In the learning process, an essential step after hearing the information and applying it (making it our own), is sharing and teaching it. This is an essential step to complete the learning cycle so other people can start their own learning journey. A great mistake that the global north is still making, is to consider that we need to teach people in the global south how to ‘develop’, how to ‘do things right’, almost... how to live. However, the reality is that this community has a lot to teach us and to share with us. They are completely self-sufficient, and they are developing resilience to be able to live in very challenging environmental conditions. Yet despite that, they do not despair, and they are asking for support in their desire for change. Creating an Education Center in Sobata would allow many people facing the same challenges to receive precious (life-saving) knowledge and tools so they can go home and start the process of transitioning towards regeneration in their own village.

- **A consultancy company specialized in climate resilience**: This option seems like a more long-term enterprise to us, as it requires extensive experience of regenerative practices around water cycle and land restoration, which cannot be acquired in 5 years. We imagine that in 10 years or more, this company could be created to support and give advice to people and communities across the world about what to do and put in place to achieve climate resilience. This will become more and more important since natural disasters will likely happen more and more in the years to come.

In addition to these large-scale enterprises, we would also like to encourage small-scale entrepreneurship, with one example being soap-making: this can both provide some income to the people of Sobata, as well as promote hygiene and health in the village and surrounding areas.
Education Center

Since access to ‘education for resilience’ is a red thread in the Economic Dimension, we decided to focus on the Education Center as a social enterprise. Following models like Bafut Cameroon, the village of Sobata could hold courses where they would:

- Teach about water resilience in sub-Saharan regions (reduce weather dependency, increase rainwater harvesting, irrigation, restore water cycles)
- Train in permaculture/forest gardens to achieve food security
- Hold an Ecovillage Design Education (EDE) course

**SMART Objectives**

In order to be sure that our objectives for the Education Center are wise choices, we decided to have them go through the SMART model.

<table>
<thead>
<tr>
<th>SMART</th>
<th>Teach about water resilience in sub-Saharan region</th>
<th>Hold trainings in permaculture to achieve food security</th>
<th>Hold an Ecovillage Design Education course (EDE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific</td>
<td>Provide hands-on courses on the importance of the water cycle, how to capture and store water in semi-arid bioregions, building swales, rainwater harvesting, mulching, etc. Introduce the importance of diversity and natural farming methods such as companion planting to restore ecosystems</td>
<td>Provide specific teaching on permaculture practices, what species to plant and where, work on a permaculture layout of villages and their bioregion. Inform about the connection between all dimensions in the permaculture design</td>
<td>Hold a month long EDE requires having 30 people staying for 30 days in Sobata, + 4 facilitators to teach 4 dimensions of sustainability. It means preparing a curriculum adapted to the bioregion and the challenges associated to it. It means producing enough food to provide 3 meals a day for 30 people for 30 days. It means harvesting enough water for 30 people to shower every day for 30 days, drink sufficiently, and to prepare the course’s food.</td>
</tr>
<tr>
<td>Measurable</td>
<td>15 people come to Sobata for 2 weeks</td>
<td>15 people come to Sobata for 1 week</td>
<td>30 people come to Sobata for a month</td>
</tr>
<tr>
<td>Acceptable</td>
<td>Start with local communities before going international</td>
<td>Start with a small number of people (5), with locals near Sobata</td>
<td>Other ecovillage initiatives in Africa have successfully held EDEs before</td>
</tr>
<tr>
<td>Realistic</td>
<td>Other forms of payment: Villages can swap farming methods, techniques, food for educational purposes</td>
<td>Other forms of payment: Villages can swap farming methods, techniques, food for educational purposes</td>
<td>It took around 2/3 years for the village of Kartong (The Gambia) to organise and hold their first EDE after someone went to Europe to join one.</td>
</tr>
<tr>
<td>Time-Bound</td>
<td>Starting in 2021</td>
<td>Starting in 2021</td>
<td>In 2025</td>
</tr>
</tbody>
</table>
**Triple Layer Business Model Canvas**

In order to better encapsulate the purpose of the Education Center and the benefits on all levels (social, economic, ecological), we decided to do a business model using the triple layer model canvas. The below canvas was subsequently elaborated on during the EDE, and an updated version is included in the Appendix.

---

**Economic**

**Partners:** Funders, Gaia Education, GEN and GEN Africa, REDES, PNUD

**Activities:** training, teaching, learning

**Resources:** EDE education, permaculture done in Sobata, support from ecovillages in Africa, direct experience on the ground

**Value proposition:** holistic approach to climate emergency (with a focus on the Sahel region), increase of yield, food production, crop diversity, through permaculture, bringing back water and life in arid regions

**Customer relationship:** certification for people taking courses. Flexibility: online courses and on site courses

**Channels:** website, social media platforms (Instagram, Facebook etc), Sobata community in Guinea, GEN Africa conferences and events

**Customer segments:** ecovillage initiatives in Africa with similar climate issues. Villages in Africa who want to have a more resilient agriculture. International students interested in regenerative practices

**Costs:** marketing (website, branding, course materials, social media etc). Lodging (building lodges, maintenance), cooking for courses. Tools for hands-on training. Solar panels for electricity access. Building of compost toilets. Building of solar showers, building of a kitchen, building of stoves

**Revenue:** course fees + online materials. Donations

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**Business model canvas**

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**Partners:** Funders, Gaia Education, GEN and GEN Africa, REDES, PNUD

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Environmental Life Cycle

**Supplies and Outsourcing:** internet for marketing and online communication. Tools and raw materials for building training center and lodges. Solar panels for electricity and showers. Materials for compost toilet. Materials for cooking. Food for eating

**Production:** course material, teaching, preparing courses, building. Paper for course material, tools for hands-on courses, solar panels for electricity

**Functional value:** lifelong knowledge; positive impact on whole villages; inspiration of others to start the journey towards regeneration. Soils quality improved; water cycles restored; crop yields improved, diversity of food production increased.

**End-of-life:** courses lasting 1 to 4 weeks, then lifelong knowledge

**Distribution:** internet; locally (trainings in the village)

**Use phase:** Impact for the rest of the life of people who take courses. Use of electricity (internet) for online courses.

**Environmental impacts:** carbon footprint from conventional electricity used by people taking online courses. Fuel spent to drive to training site, potential flights to Guinea.

**Environmental benefits:** concrete applicable tools and knowledge to step into the path of regeneration.

Social Stakeholder

**Local communities:** The local community gives the trainings, builds the training centre and facilities, cooks for the courses. The money from course fees goes directly to them.

**Governance:** NGO registered in Guinea - autonomy, independence

**Employees:** jobs for the community - financial security

**Social Value:** sharing with West Africans of knowledge, skills and tools to become climate resilient, to achieve food security and step out of poverty

**Societal culture:** culture of sharing, learning, teaching, collaboration; culture of inspiration and empowerment; culture of change and resilience. Local solutions for global challenges

**Scale of outreach:** one training center offering on-site practical training - an online presence with a website and social media + online courses

**End-user:** empowered, skilled, rich in connection, knowledge and tools.

**Social impact:** time away from family and work for people who take the course

**Social Benefits:** financial security for the community; connection by sharing/teaching/learning with students and other ecovillage initiatives. Resilience through education.
**How to Start?**

*Challenges*

For the community, having an Education Center up and running comes with some challenges: the main own being the financial needs.

- Giving hands-on courses implies being able to host people for a week or more in Sobata. The community would have to build a training center with rooms for people to sleep, showers and compost toilets. They would need to work in a kitchen facility that could feed 15 people or more 3 times a day for a week or more.
- Solar panels will also be necessary for the village to have electricity available, and for hot showers.

*Opportunities*

- The connections that we have made with other NGOs in Guinea will help the people of Sobata to set up their legal entity.
- Hosting people of Maleha and other close villages for short day trainings would be a good way to get started, explore what works and determine what participants appreciate.
- After connecting to the GEN and GEN Africa Network, the people of Sobata will have greater access to contacts for funding, and it is also an area where the Design Team can contribute, whether it is in finding organisms that can donate, or in assisting with the writing of documents.

*Collaborators*

The stakeholders of the Education Center will be the same as the project itself, for the most part. We can add to these the building companies, and different materials suppliers (for example solar panels). The government of Guinea will be more closely involved, as the project will become a legal structure, and will potentially ask for financial support.
Social dimension

The analysis of the social dimension has to take into consideration the reality that there are in fact two project teams involved, which have had to operate fairly separately throughout the design process: our GEDS Design Team (the four of us), and the Yelema Project Team (which currently encompasses the whole village of Sobata). While both teams are working towards the same outcome, our timelines are different, and our processes have had to be somewhat separate from one another, by virtue of distance and difficulty of communication (limited internet in Sobata, as well as the language barrier). The need to be aware of the simultaneous desires and processes of each of these teams led us to decide to write separately about our team design process first. The rest of the social dimension focuses on proposals for Yelema Project.

Our design team process

As described in the Approach, we discussed what process we wanted to follow to complete the project, and had no trouble agreeing: we would each be in charge of researching and writing one dimension, and we each naturally felt drawn to a different dimension based on our strengths. We would have team meetings 1-2 times per week, in which we would discuss our respective research and give each other input. At each meeting, we set an agenda/discussion topic for the next meeting. The topic could be process-related, or thematic (across dimensions), or specific to content in a particular dimension.

We generally rotated facilitation for each team meeting, to ensure everyone had an equal voice. It also allowed us each to develop our facilitation skills in a supportive environment, and learn from each other about different facilitation tools and styles. For example, early on Martina introduced an exercise to centre ourselves through breathing before starting each meeting, which we continued to use throughout the duration of the design studio.

The design team looking somewhat confused during a Skype meeting – this was not usual!
Our meetings were all straightforward discussions with an agenda. We have, however, integrated different modalities of connecting and communicating, for example breathing exercises, beautiful singing from Jenny, and rounds where we each take turns saying how we’re feeling. We felt that having to have virtual (rather than in-person) meetings did limit the possibilities for how we could interact with each other. For example, we would have liked to integrate collaborative drawing or mind-mapping, or yoga practice.

We were quite effective at taking it in turns to talk, not interrupting each other, and suspending judgement. Because there were only four of us in our Design Team, we made decisions by consensus. If there was any difference of opinion, we discussed the issue until we reached an agreement. We have not had any conflicts in our team.

As we gave each other feedback on each of our dimensions, each of us complementing others’ knowledge and expertise on a particular topic and suggesting fresh perspectives from which to look at an issue, the greater group wisdom really started to shine through.

Roger Schwarz’s group effectiveness triangle of process/task/relationship (depicted below) provides a useful illustration of our group dynamic. Having a facilitator/timekeeper focused on the process of the meeting helped guide everyone’s contributions, and enabled the other three people to be focused more on the content (task/results) and be fully present. However, we made sure to cover all three aspects of the triangle during our meetings:

- Task/results: We spent the major chunk of time in our meetings on tasks/results, namely discussing findings of our desk research for each dimension.
- Process: We spent a good amount of time discussing process: how we will achieve our goals, who will do what, how we will contribute to each other’s work.
- Relationships: Knowing the importance of nurturing our relationship with each other, and its centrality to the success of a project, we decided to purposefully dedicate more time to this aspect, to understand how we were each feeling about the work, our role in the group, worries and concerns about the project, and our level of stress from this or other aspects of our lives. We had at least one session dedicated solely to discussing relationships. Part of the discussion around relationship also centred on our uncertainties about how our team was interacting with the Sobata team, whether that relationship was equal, what power dynamic was there, and how we could best create a supportive relationship that truly served the people of Sobata, and not just the Design Studio aims.
We tried to follow the three stages of the creative process as we elaborated our case study design:

- **Germination:** the main challenge here was choosing what to include and exclude as we refined our vision for the project. We spent a lot of time on visioning to achieve a clear and common vision between us (see Vision section). We then went through each of our dimensions individually, pulling out all the topics or aspects that we thought were relevant to the project and should be included in the case study. We then presented this “proposal for what to include” in each dimension to the other team members over the course of two meetings.

- **Assimilation:** during this phase, we let the project grow within us and become one with us organically, following its own rhythms. During this phase, we each went through periods where we had more or less time to devote to the project, and each of us found our own rhythm and process for how to get the desk research done. We also started to assimilate the project into our beings, and let it become a bigger part of our daily lives. For example, the crowdfunding started to permeate many aspects of our lives. Some of us started reading Guinean news.

- **Completion:** This is the phase we struggled most with. While we knew the importance of having a deadline and not getting lost in details, it was hard to enforce this deadline upon ourselves because of our desire to write a comprehensive proposal. The last couple of weeks felt somewhat rushed, but we made sure to not give in to stress and to celebrate milestones and completion. The EDE will provide a valuable opportunity for some of us to celebrate completion, both amongst ourselves and with the four representatives of Sobata.

**SWOT analysis of social dimension**

A SWOT analysis of the social dimension can help to pinpoint areas that can serve as models of good practice, as well as areas that need more investment. The areas we identified as in need of attention are the power structures in the village, which do not always adequately represent women. However, the community has a well-developed decision-making structure that can be capitalised on to integrate more egalitarian decision-making processes (although the district administration may be reluctant to support change on this level). Sobata’s remoteness could be considered a threat to the success of the project, but fortunately they are fast becoming connected to a global network through the EDE, and their school can be used as a venue for ongoing learning on ecovillage design.

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
</tr>
</thead>
</table>
| - Close knit community  
- Shared broad vision  
- Embedded in bioregion  
- Strong story-telling tradition  
- Regard for eldership | - Power structure privileges largely men  
- Women do not participate much in political life  
- Much of the childrearing and housekeeping is done by women, limiting their ability to be involved in activities outside the house/compound |

<table>
<thead>
<tr>
<th>OPPORTUNITIES</th>
<th>THREATS</th>
</tr>
</thead>
</table>
| - Existing participatory decision-making structure could be capitalised on to make it more inclusive  
- They have a school – could include more bioregional awareness in curriculum  
- EDE will give Sobata community an opportunity to learn other ways of leading, facilitating and making decisions that may not be common in Guinea. | - No health facility (closest one 7km away, but very basic)  
- Remoteness, isolation from other villages (more difficult to exchange ideas and skills)  
- Mayor of the district has considerable power, may limit Sobata’s ability to make decisions about their power structures or leadership |
Embracing diversity

“Embrace diversity as life’s treasure of abundance, vitality and resilience.” (GEDS social dimension)

Diversity is the key to innovation and resilience, and everyone has a unique gift to contribute to a community. With this valuing of diversity comes the recognition of interdependence and interconnectedness: all individual contributions are valued, and sum up to something much bigger than the whole, as in systems theory. Just like with a living organism, the tasks accomplished by the organism go way beyond the sum of what each organ could accomplish. If all organs were the same, the organism would die immediately; diversity is the key to life. Mindell’s group field theory holds that the “group field” created by a group is more than the sum of individual contributions, each with his/her gifts. It is critical to the success of the project that people be allowed to specialise in their chosen field and focus on their gifts, while still being encouraged to participate in wider decision-making processes outside of their field of expertise.

Sobata is diverse in terms of age, and elders are highly respected, with a Council of Elders involved in decision-making. It has a broadly equal distribution of men and women, although roles are rigidly defined between the genders:

Women:
- take care of all the food buying, prep and cooking, laundry and cleaning.
- are responsible for raising children
- are in charge of peanuts fields, grow rice (men do so as well)
- make shea butter and sell it at the market
- are in charge of selling food at the market in general (on sundays in the nearest town Maléha)
- are in charge of fencing the gardens, so they gather wood and transport it.
Men:
- are in charge of growing corn, which is the main source of food for the year
- also grow rice (along with women)
- sometimes help the women get the peanut roots out in their field when they can’t do it
- hunt and harvest honey
- in charge of building houses, repairing, etc.
- look after animals.

As expected with a traditional remote rural Africa village, Sobata is not diverse in terms of religion or ethnicity. The main religion is Islam. We are unsure about the level of diversity in social status or other characteristics like ability/disability. These will be important matters to bring to light as project groups are formed: these groups should be as inclusive as possible of everyone who has an interest in being part, regardless of background or individual characteristics.
Our contact in Sobata is consulting with a variety of people in the village about the project, including elders, youth and women. We originally had hoped to have a diverse group of people attend the EDE in the Gambia, aiming for at least one woman and one young person. But this did not end up being possible, as both young people and women were concerned about the language barrier (they don’t speak French) and the need to rely exclusively on Ibrahima for communication in Guinea. So in the end, only French-speakers went - and these are all men who have attended at least high school and so are already in a more privileged position (see picture below).

Given this initial inequity in who is learning, it will be important to put processes in place immediately after the EDE for knowledge transfer from those who attended the EDE to others in Sobata, particularly women and youth. Dedicated workshops exclusively with these groups should be conducted upon return from the EDE, to enable women and youth to have a voice, learn and ask questions without feeling intimidated.
Equity and social justice

Equity and social justice are central values in this project, and a prime motivation for each of us for wanting to be involved. We hope that the project will contribute to increasing equity and mutual appreciation between the people of Sobata, and between them and Europeans, by bringing people together in the EDE and learning from each other.

We are told that the power dynamic between genders is relatively flat and equal, with rigid and well-defined roles for men and women. These roles are not seen as superior or inferior to each other, they are equally valued. However, given that our only contact is Ibrahima, we only have the men’s view on this. It is impossible to know if the women feel the same, or if they would like to challenge these traditional gender roles. We would like to encourage female role models as a way to increase gender equity, and we are hoping to organize a permaculture design course led by Sonita Mbah, a female permaculturist and ecovillage designer from Cameroon (see Economic dimension).

Each member of the community, as well as having different skills, also comes with different educational backgrounds and opportunities to earn income. To a certain extent, this will be taken into account in the type of work that each person feels called to do. However, there may be members who see themselves as contributing more than others to ecovillage development. While it is important to ensure that everyone can and is contributing to their full potential, and to have systems of accountability in place, there may be perceived differences in output related to differences in ability. This can create resentment, and potentially inequity if resources are hoarded by those who produce more. While Sobata appears to be a
fairly egalitarian community, as resources increase throughout project implementation, solidarity should be promoted as a core value in the community, following the principle that all are entitled to have their basic needs met.

In order to increase awareness about rank and role and avoid abuses of power, we will consciously maximise diversity in the design of the teams in charge of each aspect of the project in Sobata.

- Teams should have a diversity of members of different backgrounds (age, gender, social rank, skillset), and the leader of each team should not always be the one who wields most power in everyday life. For example, we should encourage women and younger members to be team leads.

- After teams are formed, we can suggest a team-building exercise, in which we look at what is in everyone’s invisible knapsack, and we try to put ourselves in other people’s shoes and imagine what barriers they may face in being heard, respected, etc.

- Make sure that everyone has a voice, consult everyone, empower people to speak up about injustice. Sobata can become a model of social justice for other villages.

- Power and privilege: Be aware that those who speak French might wield more power due to being able to acquire knowledge from outside (e.g. EDE). Make provisions for immediate transfer of knowledge to those who do not speak French after the EDE. Finally, we as the GDS design team need to be aware of our position as Westerners in proposing these changes. This requires humility, and ensuring that we factor in lots of room for changes to proposals as the people of Sobata start to work on the designs.

This project can help Sobata avoid the story of separation and competition for scarce resources that has been plaguing the Global North for centuries. The project promotes a story of interbeing, cooperation and sharing of resources. In the Global North, security around food and shelter is often guaranteed through hoarding, whereas in the new story (and many parts of the Global South have been living the new story for centuries) it is guaranteed through sharing. In some traditional societies, a person’s wealth is not determined by how much s/he has, but by how much s/he gives away.

**Encouraging respectful exchange**

In the implementation of the project in Sobata, there may be lots of conflicting desires, and it will be important to encourage respectful exchange, active listening, and suspending judgement to stay open to a greater group wisdom. Towards the beginning of the project, we propose to have a workshop on non-violent communication and/or conflict transformation.

Members will be encouraged to make room for proposals from everyone. Due to low literacy levels, proposals will be verbal, and one literate note-taker will record the outcome in a document. We will explore novel ways of gathering input on proposals, such as through painting, singing or acting, to offer alternative formats to those who are not used to providing input in a formal way (for example women, members with no formal education, or other groups on the margins of society).

For project team meetings, it might also be good to rotate facilitation, so that established power dynamics in the village do not get entrenched. It could be an opportunity for others to learn facilitation skills. We could suggest having a roster of facilitators (anyone who wants to, with an eye to diverse representation across gender, age, power) and one of the people who went to the EDE could run a workshop on facilitation skills.
The Yelema project members as a group will be encouraged to develop a Community Agreement comprising a set of ground rules for meetings to be held in the village. Here are some suggestions of ground rules (taken from Beatrice Briggs):

- Use a facilitator
- Everyone participate
- Speak only for yourself (use “I” statements)
- No interrupting, one speaker at a time
- Seek a solution
- Begin and end on time
- Have an agenda, stick to it
- Listen with respect, no personal attacks
- Silence = assent (if you don’t say anything, it means you agree)
- Alternate men and women speakers
- No-one can speak twice on a subject until everyone who wants to speak has spoken for the first time
- Be open to receiving constructive feedback

Different formats for group meetings that are a bit more experimental and visual might suit non-literate communities better. To encourage people traditionally on the margins to participate in a less intimidating environment than a large group, we will suggest doing a World Café, where tables might correspond to the circles of leadership of the sociocratic model (these circles will be project/activity-based). For brainstorming sessions, mind-maps (using drawings rather than words) may help to better visualise everyone’s ideas and stimulate further idea generation.

**Leadership and power dynamics**

“The key to solving tough problems is to work with both power and love.” - Adam Kahane

Our interdependence makes it inevitable that the new world we create be egalitarian. Dominance of one over another, rigid pyramid hierarchies, oppression, cannot be accommodated in the system of deep interconnectedness that we live in, where life operates through networks and not pyramids. Distributed leadership is therefore important to making this vision a reality.

**Power as a creative force**

In thinking about power, we often think of the repressive, degenerative kind of power, the kind linked to the story of separation, of scarcity and competition in a hostile environment. But power can also be creative and generative, and can underpin the new story of interbeing. Creative power is not a property we own, but a process that we open up to, inherent in all of life. Power does not have to be gained at the expense of someone else, it is not a discrete and finite piece of wealth that can only belong to a few people at a time. It is a fluid process that can inhabit all of us at once, that can be distributed infinitely between everyone. Paul Tillich defines power as “the drive of everything living to realize itself, with increasing intensity and extensity”; in other words it is the creative force that makes things happen. Power, if shared, can be multiplicative.
We can all be leaders in our own domains, and inhabit our creative generative power in a way that is empowering and life-affirming for the whole group, expressing our power not in opposition to and competition with each other, but in a way that is supportive. In the same way that each individual brings unique contributions and gifts that, according to systems theory, create a whole greater and more complex than the sum of its parts; so each person’s particular power is unique, complementary and reinforcing, and generates a group force far greater than the power that each individual could have wielded separately. Our inherent creative power awakens when we allow our natural gifts to express themselves. In these circumstances, each person’s power can find maturity and full expression in a group setting, exponentially nurturing each other. This allows each person to be truly empowered, even if not “in power” in the traditional sense of the word.

People will be encouraged to step into their creative power. This will entail opening up to the wisdom of the group, pooling knowledge and creativity, being open to different ways of doing suggested by others, and not fearing losing power. In order to encourage this deep valuing of everyone’s contributions and power, at the start of the project we will propose a workshop focused on appreciating others, where each participant is asked to identify where they see others’ gifts and strengths. This can turn into a beautiful celebration and affirmation of each person’s unique gifts, while helping to place people in the parts of the project where they have most value.

**Privilege and power**

There may be variations in our awareness of belonging to certain groups compared to others. We may be more aware of belonging to target groups than to agent groups. We are more aware of those identities that continuously trigger feelings of oppression, and less aware of those identities that privilege us in society. Being more aware of our sometimes-overlooked identities as part of agent groups is critical to allowing us to identify what is in our invisible knapsack.

Who wields power in Sobata, and who tends to have less power? The project will seek to respect the organization of the village in the proposed activities (how decisions are made, who needs to be consulted), while trying to not replicate corrosive power dynamics that compromise equity.

At the start of the project, we will propose that every team do a workshop focused on “what’s in your invisible knapsack?” (facilitated by someone from Sobata), to bring to light issues of power, privilege, social identity and status, which might not necessarily be recognized in everyday life.

If the project goes to plan and eventually brings increased wealth to Sobata, we have also been thinking about the longer-term impact of this increased wealth on power structures in the village. When wealth arrives somewhere, it is common that it does not get distributed equally, especially at first. The community will have to be very cognizant of how surpluses of food, energy or other resources are distributed throughout the village, so that the gains from the project do not end up increasing already existing power differentials, and instead contribute to increasing equity in resource allocation. Our hope is that implementing ecological technologies as a community will demonstrate the power of doing things together in making communities strong, healthy and wealthy: one person can go alone for a little while and become rich, but this will not last in the long run as they need others’ support to maintain a healthy and happy life.
Developing group identity and cohesion

Although Sobata is already a formed entity, it is important to make sure that it is not just a collection of individuals living in the same village, but rather a group with shared goals. For the project participants, common ground will be established by talking through and building a shared vision and mission, and building a collective identity (through activities detailed below). Values that help build common ground are respect for each other, non-judgement, celebration of diversity, openness to innovation and change, and respect for traditions and local culture.

Tuckman’s theory of the 5 stages of group development (forming, storming, norming, performing and adjourning) highlights pitfalls of each stage that may have to be addressed. While the norming, performing and adjourning stages are beyond scope of this project, it is useful to reflect on potential pitfalls of the forming and storming stages and how to address them:

The **Forming stage** is often threatened by unclear objectives, uncommitted members, low morale, hidden feelings and poor listening. So we will:

- have a clear vision and mission that everyone contributed to create
- make sure everyone feels that they have a clear role in implementing a part of the project (could be a garden, a social enterprise, swales, etc)
- create spaces for healthy debate - perhaps a weekly session under the tree, where everyone has a chance to be heard without judgement or interruption?

The **Storming stage** can suffer from struggles for status, lack of cohesion, conflicts and confrontations. So we will suggest that the community:

- implement sociocratic circles to give value to every activity/team and team member
- have weekly meetings that bring everyone together, establish plans/priorities for the next week

In order to develop a collective identity, we will include song and dance as community building tools. One possible project is for participants to brainstorm about what they see as their collective identity in Sobata - what makes Sobata unique? Then they could make a big art piece (which could be a painting, a collage, or a sculpture) illustrating this collective identity. We will also suggest some collaborative games to build enthusiasm for the project and cohesion among villagers. Here are some possible games, which should be adapted to suit the cultural context.
GAMES

**To build common ground:**

**Who’s at the Table** (8-100+ people, 15-30 minutes): Split into groups of 3-5 people (pick a number depending on how many people are present and how much time you have - smaller groups for less time). The goal is for each group to find one thing they have in common, and one thing they are all different on. Then if you have time, the groups can take turns announcing to the whole assembly what they discovered.

**To build trust:**

**Blindfold Walk:** Split participants into pairs, and ask one member of each pair to put on a blindfold. Then have the sighted person lead the blind person on a walk. This simple exercise can also be used to lead into a facilitated conversation about trust and communication.

**To foster collaboration:**

**Life Raft:** Place a sheet of paper on the floor: that is the raft. Everyone “swims” around the raft until the leader shouts “SHARK!” and everyone has to get onto the raft before you have counted to five. After each “shark attack” half of the sheet of paper is removed. The group has to find ways of surviving as a group. (You can get up to 15 people on a piece of letter size paper.)

**Walk Together, Walk Apart:** Two people demo first, standing back-to-back in front of the group. They start to walk away from each other, and the rest of the group calls out things they think are different between the two people. When they are far apart, ask the group to call out things that are the same about them, and each time the pair takes a step closer together, until they are back near each other again. Discussion follows on similarities and how they naturally bring us together, differences separate, and so on.

**Lead the dance:** each person takes it in turns to lead moves to music, and everyone follows

**3-Person Machines** (12-45 people, 20-45 minutes): Form groups of 3. Each group designs and acts out a machine, such as a sewing machine, washing machine, pencil sharpener, etc., for the whole group to guess. (Note, i’ve wondered whether this might also work using living organisms instead of machines?)

**Systems Game** (12-50 people, 10-15 minutes): Leader explains directions. Tell each person to select, in their minds, two other people in the circle. Then direct them to stay equidistant from both people. Debrief ask: “What did you experience?”

**Secret Agent** (12-50 people, 10-15 minutes): Leader explains directions. Tell each person to select, in their minds, one person who is out to get them (their personal enemy), but not to let on who it is. Then tell each person to select one person who is their bodyguard, their personal ally, and again not to say who it is. Then tell everyone to walk around while doing their best to keep their ally between them and their enemy at all times. The chaotic patterns that result usually lead to lots of fun. Another variation on this is to ask each person to select their personal “moon” and “sun” and then create an eclipse by keeping their moon between them and their sun.

**Lion Tamer:** Group in a circle, with three initial “lion tamers” in the middle. The lion tamers try to get others in the outer circle to laugh. Outer circle people can’t look away. They can smile, but if they laugh then they join the lion tamers in the middle. Keep going until time is up or until all the lions have been tamed.

**Shopping fruit basket:** Have everyone sitting down in a circle. Pick a category such as fruit, books, animals. Have someone walks around inside the circle and begins “shopping” for items in that category (naming them out loud). Everyone else picks an item in their head in that category (if the category is fruit: they might come up with oranges or durian or bananas). If someone’s choice has been called then they stand up behind the person and follow them around. The person continues calling out items until they are done. Then they declare “check-out” and everyone tries to find a seat to sit in. The person left standing then walks around the circle....
Individual versus collective

We used integral theory's four quadrants to help think about the different aspects needed to build a strong community and group field. These are not questions that can be answered immediately, but rather questions that the people of Sobata (and any outside facilitators) are invited to use to guide their discussions on how to develop a strong community spirit.

<table>
<thead>
<tr>
<th>Individual interior (People’s interior experiences)</th>
<th>Get to know yourself (inner skills)</th>
<th>IT - Individual exterior (behaviour)</th>
<th>Get to know others (outer skills)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Trust:</strong> how high is our trust towards each other, but also towards the outside world? How do we view foreigners? Other Africans? Europeans? How can we best collaborate for everyone’s benefit? <strong>Ongoing learning and motivation:</strong> how motivated are participants to learn new ways of doing things? What is our attitude to innovation? <strong>Creative attitude:</strong> what role does creativity play in our lives? How receptive are we to new ideas from within the village and outside? How do new ideas get proposed and taken up?</td>
<td></td>
<td><strong>Efficient compassionate communication:</strong> how are conflicts resolved? <strong>Cooperative attitude:</strong> how do we view collective interest versus individualism? (Europe is a predominantly individualist society. How is Guinean society and Sobata?) What is the culture around sharing resources and skills?</td>
</tr>
<tr>
<td>WE - Collective interior (culture, collective consciousness)</td>
<td>Get to know yourself in the group <strong>Group processes, values, beliefs, assumptions, fears:</strong> what are the values of Sobata as a whole? What are the collective fears? Assumptions about interventions from the West? Assumptions about ecovillages and permaculture? What issues/values/beliefs polarise us? <strong>Power/privilege, eldership:</strong> how do we avoid power abuses? How do we foster empowerment, promote space for all voices? Which voices are heard less?</td>
<td>ITS - Collective exterior (systems, behaviour of society as an entity)</td>
<td>Get to know your group (structures and agreements) <strong>Decision-making method:</strong> what is the method used in Sobata? <strong>Accountability:</strong> what mechanisms can we put in place to maintain accountability for the different pieces of the project?</td>
</tr>
</tbody>
</table>

Community Governance

Currently, Sobata has 515 inhabitants (according to the 2017 census). The village is a chef-lieu of the district, which is divided into 30 “carres” (squares) led by square chiefs (chefs de carre), all male. The government of the district is composed of the following:
- bureau de district (7-9 members)
- bureau de femmes (women’s bureau)
- bureau de jeunes (youth bureau)
- bureau de conseillers (counsellors bureau) elected in a citizens assembly: 5 members (3 for education, 2 for health)
- bureau of elders (sages): 9 members
- 3 matrones (community aunts who perform various roles)
- cour de mediation (mediation court) supported by village chief and elders and the counsellors

While this constitutes the main leadership of the village, our project will encourage distributed leadership. Many people will have the opportunity to lead on various activities and teams. People who are not necessarily in positions of power in the village will be encouraged to lead certain activities.

The leader’s role will be to:
- Propose ways to achieve the group vision
- Create an open and inviting group culture where everyone’s opinions are valued
- Create a working atmosphere that caters to both individual and collective needs (leader should be attentive to both types of needs)
- Attentively observe group dynamics
- Encourage participation and motivate people
- Improve communication
- Generate trust
- Bring out latent conflicts and act as mediator when necessary, help find the cause and make suggestions to solve them
- Welcome criticism
- Stay attentive to personal situations
- Recognise the different elements of the group culture (norms, assumptions, power/rank issues) and be aware of how they influence group attitudes and behaviour

We will encourage the community to ensure that elders continue to play a key role in the project. We will also explore whether the leadership and facilitation skills developed during the EDE can be taught in the Sobata school, to build capacity among the younger generation (35% of the population is under 25).

**Decision-making**

The current decision-making structure in Sobata involves the chief gathering the members of the ‘office’ (people who make important decisions). Everyone talks at the same time, gives their opinion, makes suggestions, until they reach a consensus. Women are not involved, the reasoning being that they need to look after the children and/or are too busy with their other tasks.

We want to propose a form of decision-making that allows women to participate as well. It might be better for this to happen in a different forum from the men, as women may not feel comfortable sharing their opinions when men are there, if they are not used to it. It needs to be a form of decision-making where people make decisions about what they feel most technically qualified (not everyone is an expert at everything), but need consent from the rest. For example, in planning the contouring, swales, and other ecological activities, it will be important to gather perspectives of a variety of people. We propose to
explore using consent-based decision-making, so that everyone has a chance to air their concerns and have them addressed before consenting.

We envision a sociocratic structure in which various teams are focused on different aspects of the project, with some links between the different circles to ensure integration of the different components, and a consent-based decision-making process. We propose that one of the circles of expertise be focused on Women’s Affairs.

We will plan to actively address the 3 gaps:

- **Capacity gap:** some people will attend the EDE in the Gambia, and there should then be a series of workshops in Sobata in the next few weeks after the EDE, to share the skills acquired at the EDE. Allowing more people to be knowledgeable about more issues will enable decision-making to be more participatory.

- **Incentive gap:** There is little incentive to participate in governance if one does not feel that it will affect their lives. However, Sobata is small enough that this project has the potential to affect everyone’s lives. To increase ownership of the project by the widest possible group, we will use distributed leadership.

- **Power gap:** It will be important to delegate some leadership to young people and to women (who might traditionally have less power in Sobata)

**Conflict resolution**

Conflicts will be addressed as and when they arise, involving the parties in conflict and a mediator, who could be an elder or other independent third party. A possible tool to use for conflict transformation is the integral theory 4-quadrant matrix, where the underlying causes of conflict could be mapped according to their source/nature.

As ways of encouraging trust and truthfulness, we will also suggest working with the Way of Council, or the ZEGG Forum if it is culturally appropriate and acceptable.

**Encouraging continuous learning and skills-sharing**

We will strive for Sobata to become a model for a “learning organisation” (the most developed phase of the Organizational Journey Chart): an interdependent network of individuals with a focus on interpersonal skills, creative sharing, self-reflection (and constant reflection about how to improve the project), layered mentoring, empowering others to lead.

Mentoring will be an important part of the project, especially once people come back from the EDE. Perhaps there can be some formal mentorship relationships established between more experienced people and the youth. We will also explore the possibility of teaching some of the ecovillage design skills from the EDE in the Sobata school.
There should be a weekly forum where people can share what they think is going well with the project, what could be improved, etc. Such meetings should touch on the three elements of group effectiveness (Roger Schwarz’s triangle below). This triangle could bring to light tensions, since many skills needed to complete this project will be acquired outside of Sobata. In terms of relationships, this introduces an element of privilege for some members and potential exclusion of others, and may put some members in a position of greater power, greater opportunities for leadership, etc. It will be important to spend time during the project talking about these unequal relationships and people’s feelings about it. The process aspect will also be prominent, since this is a new process for everyone in Sobata, using some tools and skills that are new to their culture, and with involvement from foreigners. This may raise various feelings about ownership over the process, and it will be important to discuss ways for people to own the process of learning and implementation. These tensions, and how they interact with the tasks at hand, will have to be discussed regularly.
Community Celebrations

Celebrations are group identity activities, and are an important glue for the community. Especially in times of change, when worldviews are shifting or being challenged, celebrations can bring people together around a new worldview. We will integrate numerous community celebrations of important milestones in the project, for example finishing the swales, inaugurating the prayer space, celebrating the completion of the permaculture garden, etc. We will integrate these into the celebrations that already exist in Sobata.

Art and music have great potential to unite people and encourage cross-cultural learning and pollination. It will be important to incorporate as many of these activities as possible in community celebrations, but also in everyday meetings. As a way to blend together art, creativity, community celebrations and bioregionalism, we will propose that the community jointly draws a huge seasonal wheel, with different concentric circles representing the seasons, the food grown, community holidays and other celebrations (birthdays, weddings, etc), and project milestones. Below is an example of an outline for such a seasonal wheel. The community would slowly fill it in.

Example of an outline for a seasonal wheel
**Yelema: embracing and celebrating change**

Our focus on restoring natural cycles and landscapes honours all life and all native species, as well as human life. The project’s name, Yelema, means “change” in Malinke, and the people of Sobata chose this name because they seek change in the way things are in their village, particularly with regard to drought and water scarcity. Change has from the start been a central element in our project, and the project’s name can act as a reminder, when change feels challenging to certain participants, that change is a necessary part of improving conditions in Sobata, and is an inherent part of life.

While our project is focused on change on the ecological and economic level, rather than on the social and worldview level, the interactions that the project will facilitate with European outsiders with different worldviews will inevitably challenge some of the traditions practiced in Sobata, even if not directly. For example, female genital mutilation (FGM) is important in Sobata (98% of women underwent it, even though it is forbidden in Guinea). The procedures are performed by three female elders called matrones. The tension between respecting local traditions versus people’s right to not be harmed reflects the familiar tension arising from different worldviews colliding. Historically, Europeans have imposed many harmful worldviews on Africans during colonization and post-colonial exploitation, and it is not appropriate for this project to challenge FGM at this time.

**Sobata in the bioregion**

*Interaction with the bioregion*

“Efforts to restore the health, resilience and diversity of local and regional ecosystems will eventually contribute to regeneration and healing at the planetary scale.” (GEDS manual)

This project will apply scale-linking design to affect and connect with regenerative networks at various levels:

**At the local level:** Jonathan Dawson’s metaphor of yogurt culture for how sustainable village culture can spread to the surrounding region like a health-generating virus, is apt for our project. We hope that Sobata’s transition will inspire others villages in the bioregion. There is a network of villages under one district mayor, so these formal links will help to spread the ideas initially to the surrounding villages. The people of Sobata also have trade relations with surrounding villages, which will further facilitate ideas exchange.

**On a broader ecological level:** we are raising money to send people from Sobata to the EDE in the Gambia, so that they can learn from expertise in a similar bioregion to their own. The project will affect the surrounding bioregion by restoring water cycles, which has the potential to affect the whole of the West African region, since water cycles are all interconnected (see Ecological Dimension). Because of this, it is essential to involve other villages in the bioregion, because if land continues to be degraded in the surrounding area, water cycles will not be able to fully recover regardless of the efforts by the people of Sobata. Linking this project to the surrounding bioregion is therefore crucial to its success. By restoring natural cycles (water, energy) and native plants in and around Sobata, the project will enhance the vitality of the bioregion, and increase its resilience to climate change.

The project will also strengthen the resilience of the people by enabling them to grow crops for longer periods of time, and a greater variety of foods through forest gardens and permaculture projects, providing them with a more steady source of food as well as potentially income all year round. The vitality of the bioregion is dependent upon the vitality of the people in it. Individual health and planetary health are inextricably interlinked (see Worldview dimension).
At the global level: This project is connecting Gaia Education with Sobata, and facilitating the sharing of knowledge at various scales. It will be important to link to other communities in the bioregion and globally. The hope is that through the Gambia EDE, Sobata will be connected with GEN and thereby the global movement. We are thinking of starting a blog chronicling the regenerative projects being undertaken as part of Yelema and the steps involved in each of them, so that other villages in Africa can follow it, get inspiration, and have a blueprint/manual for starting something similar, while learning from the challenges and successes of Sobata (see Economic dimension).

We are also doing vertical scale-linking (as well as horizontal), by involving and learning from the elders in the village about traditional ways of living in harmony with the natural cycles. We are connecting with future generations through creating thriving landscapes that will be able to support future generations sustainably and regeneratively, as well through training young people in ecovillage design tools.

Bioregional sensitivity

Reinhabitation means developing a bioregional identity and awareness of the uniqueness of the place in which we live. People in Sobata are already much more connected to their bioregion than we are in the Global North. The community’s description of their view of the ecological bioregion (see image) gives some insight into how they relate to their environment. They see it as a “purely mountainous” “arboreal savanna”, with a “sudanian climate” and very little rain due to climate change and the advancement of the desert. They are therefore well aware of the effect of global environmental changes on their bioregion. We can empower them to respond to these changes by increasing knowledge around watersheds and native plants, for example.

Description of the bioregion of Sobata

As Berg and Dassman put it, “bioregion refers both to a geographical terrain and a terrain of consciousness”. Bioregionalism is at least partly nurtured through the collective imagination, the feeling of belonging to a place, of being part and parcel of that place, rather than separate from it. Sobata has an oral history that situates it culturally in its bioregion (see image). To increase bioregional sensitivity, the
project will encourage art and theatre pieces related to the bioregion and humans’ place in it. This will help to anchor Sobata in their bioregion culturally as well as ecologically. Telling stories about landscapes and wildlife (as a way to revitalize spirit and expanding the notion of community) is one of Mitchell Thomashow’s pieces of advice for increasing bioregional sensitivity.

An oral history of Sobata. Translation below.

This is the translation:

“Sobata: one of the three ancient villages of Bidika, from a surprising and terrible tragedy of our old ancestors and inhabitants of Kabalan, the noble city of those from Sibie (Mali). These are our ancestors: Tamba, Gnoume and Sambou. According to tradition, the previous occupants of Sobata were the Bambaras, some of whose signs of existence still persist. Moreover, the stories say that the word Sobata originates in the name of a domain of Bambara: Soba was at the time the favorite wife of their deans. In fact, the name of the true founder of the village of Sobata is still unknown. Some even believe that the great-grandfather of the ancestor M’Bamam Damou was the real founder.
Sobata, during very long periods of occupation, was demolished and depopulated following the war attacks and arbitrary looting of the Middle Ages. Reconstruction of Sobata: M'Bamam Damou, the daring and illustrious man descendant of Manou Djombo, after his return from Fonta, with courage and perseverance came to rebuild the village of Sobata, our present city, at the end of the 18th century.”

Network map of local, regional and global collaboration

Sobata will be self-reliant as much as possible, but connected to other villages around through trade relations. Eventually, people from other villages may come to Sobata to attend workshops on sustainable and regenerative practices, or Sobatans may give workshops in surrounding villages.

The blog will provide a way for the learnings of Sobata and Yelema to be shared with other villages in the bioregion and beyond.

Below is a map of the network of actors and stakeholders who may influence or interact with the project. The vast majority of stakeholders identified are probable supporters of the project (as part of the local network, funders, sponsors or partners). We only identified two potential opposers: the mining companies (who have something to lose if Sobata transitions away from needing them as a source of revenue) and, to a more uncertain extent, the World Bank and IMF (who tend to support projects that perpetuate African dependency on the Global North). It is apparent that the network is already fairly interconnected, and is not just a main hub-and-spoke network. The goal will be to build interconnection between actors and decentralize power so that the network can be multi-hub.

In a bioregional economy, inhabitants would maintain rather than use up the natural world, and adapt to (rather than exploit) their environment. We would also seek to establish a stable means of exchange and production, rather than one dependent on continual growth. For this reason, subsistence crops will be prioritised over cash crops, even if they seem lucrative, because these are then dependent on continued growth to bring the same amount of real wealth (to keep up with inflation and pay back debt).

There is no Transition initiative in Guinea at this time, and there are no transition towns or hubs in West Africa. Although it is not a primary goal of this project to create a transition town initiative (we want to focus on the primary vision), once the project has taken off and the blog is running, we will look into the possibility of making it part of the Transition Network, since (depending on progress and outcomes) Sobata could be a very good fit. We have included the Transition Network as a potential partner in the network map.
Conclusions and next steps

Summary of design proposals
The table below summarises our design proposals for each dimension.

<table>
<thead>
<tr>
<th>Worldview dimension</th>
<th>Ecological dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>• How best to bridge and synergise the different worldviews informing the project</td>
<td>• Regenerate the water cycle: keyline swales lined with vetiver grass, retention ponds, check dams</td>
</tr>
<tr>
<td>• How to help increase equity and social justice (within Sobata and between Global North and South)</td>
<td>• Agriculture: fruit and nut guilds, basin planting, forest gardens, companion planting of native species, holistic planned grazing, planting in communal areas</td>
</tr>
<tr>
<td>• Promote two-way learning (EDE)</td>
<td>• Waste management: Pit composting, Arborloo</td>
</tr>
<tr>
<td>• Communicate the project</td>
<td>• Energy use: rocket stoves and solar cookers; solar panels and solar lanterns; home-made wind turbines</td>
</tr>
<tr>
<td>• Increase wellbeing through ecological regeneration (salutogenic approach)</td>
<td>• Green architecture: Extending roof overhang; adding aloe vera to slurry for waterproofing; stone cairns; dormer windows; rainwater harvesting from metal roofs</td>
</tr>
<tr>
<td>• Integrate art, music and spiritual practices</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social dimension</th>
<th>Economic dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>• How to embody GEDS tools and learning in our own design team processes</td>
<td>• Identify economic partners and stakeholders</td>
</tr>
<tr>
<td>• How the project can maximise and embrace diversity</td>
<td>• How to address each Sustainable Development Goal (SDG)</td>
</tr>
<tr>
<td>• How to promote equity and social justice</td>
<td>• Develop wellbeing indicators tailored to Sobata, to ensure increased prosperity is measurable</td>
</tr>
<tr>
<td>• How to develop a group identity</td>
<td>• Propose designs to realise each project value</td>
</tr>
<tr>
<td>• How to encourage continuous learning and respectful exchange</td>
<td>• Identify different forms of capital that the project can contribute to</td>
</tr>
<tr>
<td>• Proposals for more distributed leadership, governance and decision-making</td>
<td>• Crowdfunding campaign to bring Sobata representatives to the Gambia EDE</td>
</tr>
<tr>
<td>• Integrating Yelema project into Sobata’s daily life: celebrations, promoting bioregionalism</td>
<td>• Other proposals for amplifying the project</td>
</tr>
<tr>
<td></td>
<td>• Designs for social enterprises in Sobata, in particular an education centre</td>
</tr>
</tbody>
</table>

The arrows show that each dimension’s designs inform other dimensions. For example, the Worldview dimension’s proposal to take a salutogenic approach emphasises the need to restore ecosystems in order to increase individual wellbeing, since health at the planetary, bioregional and individual level are all interrelated. The Ecological dimension proposes just that: designs for ecosystem restoration. The skills and tools needed to implement this restoration are still largely missing in Sobata, and the Economic
dimension proposes ways to enable the people of Sobata to gain these skills, by travelling to the Gambia to attend an EDE. The Economic dimension also proposes designs to ensure the long-term economic sustainability of the project, by making Sobata a learning and inspiration hub through the creation of an education centre. In order to implement these projects, a solid social structure for decision-making and respectful exchange needs to be in place, and this is what the Social dimension proposes in its designs for governance and team building. The Social dimension also proposes to integrate art and celebration into project activities, which is key to nourishing the mind and fostering connectedness, an aspect central to the Worldview dimension.

This is just one example of how the designs are circular, linking each dimension and depending on each other for success. There are many more synergies between the different dimensions, in this direction and other directions.

**Backcasting process**

These design proposals now need to be implemented in a certain order. The steps from the backcasting process (below) can be used for planning purposes.
This table shows a proposed timeline for the steps described in the backcasting figure.

<table>
<thead>
<tr>
<th>Backcasting Steps</th>
<th>What?</th>
<th>When?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vision: Sobata is a resilient and thriving community</td>
<td>Other communities can feel the effect of the bioregion restoration in Sobata and would like to learn the same for their villages and surroundings. By replicating the example of Sobata, healing ecosystems is possible on a larger scale. Climate resilience, creativity and knowledge are increased in West Africa, creating more equal, just, healthy and happy communities.</td>
<td>2044</td>
</tr>
<tr>
<td>Inspire and empower others</td>
<td>Through the example of Sobata as a resilient and thriving community, through a training centre &amp; social enterprises</td>
<td>2025-2040</td>
</tr>
<tr>
<td>See results of implementation/celebrate results</td>
<td>Invite other communities for presentations and celebrations in the village and surrounding bioregion</td>
<td>2025-2040</td>
</tr>
</tbody>
</table>
| Implement solutions in Sobata                          | - Building swales with vetiver grass  
- Building retention ponds  
- Planting trees  
- Agroforestry  
- Installation of solar energy solutions  
- Jatropha plant for protecting land from animals | 2021-2025 |
| Funding for implementation                             | - Crowdfunding  
- Other organisations  
- Micro-loans  
- Perhaps income from increased food sales at the markets following implementation of first wave of solutions | 2020-2021 |
| Select solutions for implementation for Sobata          | - Design swales  
- Look at retention ponds  
- Rainwater harvesting from roofs  
- Solar panels/batteries  
- Solar lanterns  
- Rocket stoves  
- Increasing biodiversity in permaculture gardens  
- Check dams in the river  
- Access to water in the village – wells  
- Document each step with videos uploaded to youtube  
- Calculate resources and funding needed; research possibilities of funding through foundations, crowdfunding, etc. | 2020-2021 |
| Additional trainings for Sobata                         | Permaculture training with Sonita Mbah: continue the process they have already started on their own.                                                                                                  | 2020      |
Every step allows us to ask the questions: What is needed for this step? What has to be taken into account? How much time do we have/is needed? Which dimensions will be mostly involved? What kind of information, skills and resources are needed?

At the time of writing, we are working concretely on the first three steps. We are composing this design proposal with the hope that it may both inspire the community members of Sobata and be a useful guide for other communities interested in transitioning towards more climate resilience. As previously mentioned, “Yelema” means change in Malinké, and what we need to adapt to change, for better or worse, is resilience. With our design paper, we would like to trace possible ways towards a more secure situation for the bioregion of Sobata.

The ecovillage approach builds on the belief that ecovillages can be a form of resilient communities that can face the challenges that our world will have to deal with in the coming years and generations. The topic of the 2019 Global Ecovillage Network Africa conference will be ecovillages as climate resilient solutions and the EDE in the Gambia is building on the same topic. We are hoping that the EDE will prepare the ground for the village of Sobata to become a part of the African and international GEN network, learn about other projects and resources in West Africa and the rest of the world and work on solutions that can be implemented in Sobata in the years to come.

**Strategic framework**

Based on this backcasting process, we are able to map the various steps needed to achieve the vision, mission, values and goals through a strategic framework. For each objective or goal that needs to be achieved, we identified critical success factors that would enable us to say this goal was achieved. We then determined which tasks needed to be completed to reach these success factors. For each set of tasks, key performance indicators were defined to help measure task completion.
Conclusion and post-script

Our hope is that this strategic framework, along with the backcasting timeline, can be used as a guide by the people of Sobata to start planning for the fine-tuning and subsequent implementation of the detailed design proposals. Three members of the Design Team were lucky to be able to discuss these design proposals directly with the representative of Sobata at the Gambia EDE. This resulted in rich ideas and reflections, which are beyond the scope of this Design Paper to report, but that we have attempted to summarise in an appendix written at the end of the EDE, after this design case study was completed. We invite you to read these reflections as a sneak preview into what is yet to come!

The four Sobata representatives with two members of the Design Team at the EDE in the Gambia
Online project work vs. being in community together

Looking back now after the EDE, we can see how different it is to be able to be together in a community setting. Not only were we able to speak and exchange questions and opinions with the participants from Sobata, but we were invited to grow together into a community context with all the other participants as well. We were invited to weave our project story and our personal stories into a bigger group context. The facilitators of the EDE took us through practices that would allow us to understand our hopes and fears and expectations. They would allow us to share our life stories and open up spaces for compassion and connection between different people, nationalities and walks of life. It would let us see each other in interaction in a group, we could see how each of us would take their space and role in the bigger community context.

This kind of growing into a community gave the project work another basis, too. We could speak with the participants from Sobata from a space of personal understanding. It became much easier to investigate different possible solutions, understand what the participants of Sobata would really like to do once they go back home and what makes sense from their traditional knowledge of their bioregion.

The benefit of the EDE was the personal connection that was developed with Bakari, N’Faly, Sidiki and Ibrahima. Over the month their culture, traditions and individual personalities shined through, bringing joy to all the other participants, highlighting that communication goes deeper than words. Leadership qualities were abundant in all four men, with ownership of the design project (aka the action plan for when they get back to the village) growing during the course. Each dimension highlighted the richness in Sobata, with the understanding of the different leverage points rooted in the deep family and community connections, often reflecting the text that we were learning. One example that demonstrates the strength and respect in the Sobata community is that the voices of the youth, the women and then the men are heard when making a community decision. Learning about the important and highly valued role of women and girls in the village was rewarding, as was learning from the respectful and traditional approach in which the participants will share the EDE learnings with the community.

What was difficult was that we all came into the EDE also with our personal processes and personal learning fields, so the specific work on the Sobata project did not get as much time and depth as if we were working on the project in Sobata itself.

The benefit of the setting was the realization from all of us that we had ideas about ourselves and others that changed throughout the EDE. The participants of Sobata realized that they are already living many regenerative practices and are very much connected to their natural systems. For us from Europe, this was a big learning field as well, realizing that we have had the important role of enabling the participants of Sobata to come to the EDE, but then also seeing how they slowly over the weeks took ownership of the content, the models, the approaches. We realized that we can learn so much from their way of living and thinking.
Language was still a challenge. The four participants from Sobata speak French, but don’t understand English – there were two other participants from the upper part of Senegal who were in the same situation – so translation was constantly needed between English and French – both in the community setting and in the project setting. Adé very often ended up in the translator role and was a voice for the other people who wanted to communicate with the Sobata crew.

The fact that the course was offered more or less in two languages brought a few issues to light relative to the content of the course in general. The two translators had long conversations with Adé around why and how this or that word was used in the curriculum. We realized that many English words that are commonly used by Gaia Education and the GEN Network don’t have a straightforward translation into French, and as a result, some of the translated material kept the words in English. This doesn’t come as a massive problem in the Global North where English is widely taught, but in some African countries where there is no knowledge of English, using the original words in a text assuming that they are widely known enough for people to understand, will simply not work.

It got us to start questioning the blending of languages with English which is happening more and more. “Franglish” talking is extremely common in France, widely used in the areas of management and media, to the point that this kind of language blending knowledge is now required if you want to work in this field. In this scenario, French-speaking Africans (who are already speaking French as a second language) are completely left out.

Education programmes have a responsibility to ensure that people feel included and are able to understand the whole content.

The welcoming ritual

After weeks and months preparation, we (Adé, Jenny and Martina) were finally able to meet the four participants from Sobata personally. They arrived a couple of days late, because of challenges during the trip from Sobata to Kartong. Their car broke down, they were stopped at the borders, first from Guinea into Senegal and then from Senegal into the Gambia. They had to stay overnight because the border closed. When they finally arrived on the second day in the evening, we were sitting in a circle by a fire listening to stories. Adé especially was overwhelmed and happy that they had finally made it.

The four participants from Sobata are: Bakari Camara, N’Faly Camara, Ibrahima Camara and Sidiki Camara.

The next day in the morning, the four men were officially welcomed into the EDE family with a ritual; they received a coloured folder and a notebook made of recycled material, a handmade scarf as a welcome present and a wooden name tag. They walked into the seminar space through a tunnel built by all other participants – accompanied by a song we had learned the day before.

“I know that one day, I’ll be free, deep down in my soul
I say deep, deep, I say down, down,
I say deep down in my soul
Deep down in my soul, I’m free down
deep, deep in my soul. “
In a sharing at the end of the first week, for at least one of the Sobata participants, the highlight of the week had been this warm welcome into the group. It was the first time for them travelling outside Guinea, they were tired and worried on their way with all the delays, but finding a group of people so open and happy to see them, touched them deeply and helped them a lot to open up. Ibrahima also shared that he had noticed there to be no difference between how blacks and whites were treated.

**Cosmic walk and gratefulness for the people on our path**

Joanna Macy gives many experiential exercises to connect with ourselves and our place in the universe. We were invited to travel through time and space on a cosmic walk starting with the birth of the Earth, travelling through materialization of rocks, the first plants and the first living beings up to the arrival of humankind. What we learned on the journey is that there have already been moments of big climatic change, destruction and extinction in the development of life on Earth. Another thing that became very clear is that the history of humans is only a very small, very recent part of the whole story of life. A third thing that became evident was that things have been happening more and more quickly since humankind has been involved in the creation of Earth’s reality.

This exercise allows us to feel humble and understand that we are certainly not the centre of creation, but just a small part of it, and that certain things that happen in the atmosphere and in the development of life do not lie in our hands to control. On the other side, it shows that we have creative power like everything that expresses itself through the universal life force and that we can be grateful for the gift of life in this important moment of time in the evolution of the Earth and all life that lives on it.

A second exercise we were invited to share was walking in the room and speeding up our rhythm. Faster and faster we walked around the room. The faster we walked, the more difficult it was to stay in connection with what is around us – the environment, other people. We are just focused on where we want to go and will do anything to get there as quickly as possible. We were then invited to slow down, to become aware of the other people around us, to start entering in contact by greeting them with our eyes and getting an idea where they are headed, reflecting also on the current relationship humans have with Nature and how slowing down, observing and connecting with her will enrich our lives. We then received the order to stop and find the person nearest to us. We were asked to look the other person in the eyes and become aware of his/her presence in front of us. We were invited to become aware that this person, like many others in the room and on the Earth, is alive in exactly the same time as us, that they are on the same path, that they are facing the same challenges and joys. We were invited to feel grateful for all the fellow beings that are alive right now together with us and trusting that everybody is doing the best they can in service of life. This exercise creates a big sense of belonging and community. We humans who are on Earth now, share the same times and a common mission. We are invited to support each other, feel compassion, find out how we want to create our world together. It is a very connecting exercise that works very well independently of nationality and culture.

This created a field in which we all felt a big commitment to hold hands, work together, support each other. From Europe all the way to Sobata, we sit in the same boat, we have the same importance and possibility to do something valuable for our world.
Ibrahima also realized that in this EDE setting no one is less appreciated than the other, there is no difference in value between Black and White. This is a very good basis for working together on global challenges and seeing that we all are connected in the web of life in this delicate moment on Earth.

Expectations for the EDE

We had the chance to think about our fears, hopes and expectations for the EDE. The most concrete hopes for the EDE for the four participants from Guinea are connected with knowledge in the field of agriculture. They hope to learn how to better work with natural systems to meet community needs whilst regenerating the health of the land at the same time. To achieve this, they were very keen to learn about composting and mulching to improve the soil. They also hope to learn new things to share and spread in Sobata and throughout the nearby villages.

The mandala of five dimensions

We looked at the mandala of the five dimensions: cultural, ecological, economic, social and whole systems design. We were all invited to reflect on our home communities and feel where we have our assets and potentials and where we see needs.

Bakari shared that he feels that their traditional culture is a strong asset – it is still intact. As an example, he told us that no one in Sobata is ashamed of being black. No one will use bleaching cream on their skins to make them look fairer, they use only self-produced shea butter for their skincare. Wedding ceremonies are still celebrated in the ancestral way – with drums, dancing and music. Bakari also expressed his dream for Sobata: to keep and protect the forest, for the important traditional knowledge on medicinal plants, herbs, trees, etc, to be shared and passed down generations, as well as the construction of a health/learning center.

Wealth and Health

A big realization we had while discussing and spending time with people from Africa is our and their concept of wealth. What seems to be a limiting belief in African communities is that they are not wealthy, that Africa is poor. This puts people in the position of not feeling powerful in creating life as they would wish it to be, they feel very much dependent on resources coming from outside. European people are seen as rich and are considered possible sources of help. This creates dependency.

In the project work groups we tried to question this limiting belief and spoke about the wealth that Africa has. In Africa, and this is true for Sobata too, the people have access to land, they can work it and produce their own food in abundance. In Europe it is much more difficult to have your own land. None of us in the Design Team from Europe own their land in Europe. So from that point of view a shift happened. The participants from Sobata felt empowered by realizing what potential lies in their land and the surrounding forests.

Another insight strengthened during the EDE was the idea of health. First they had the idea that a Western style health center would be important to have in Sobata, but then throughout the sessions on traditional
medicinal plants, the participants from Sobata realized how much important and powerful knowledge they have in holistic, traditional, natural healing methods. So the dream of a Health Center has now been transformed into a place where traditional healing methods can be applied, shared and taught to the community of Sobata and other surrounding communities. This will make it much easier for the people to get health treatment and have herbs and medicine available. It can also become a safe place for women to deliver their babies.

The story of Sobata and the role of the participants in their village

About 200 years ago, the village was founded by people from Mali, lead by Bakari’s and N’Faly’s great-grandfather Danboun Camara. Before they arrived, a woman called Soba was living at the foot of the mountains, surrounded by forests and rivers and worked her land there. At some point she left the land, and then the migrants from Mali came and wanted to settle. The village did not have a name then, but the people living there explained to Danboun: “Soba ta léyandi” which means this land was Soba’s land. So after that the village received the name Sobata.

Bakari has a very influential role in the village. His mother is the leader of the women’s group in the village and she is the midwife of the village. She has a lot of knowledge that she has passed on to Bakari. He was allowed to accompany his mother when she visited her clients and learned a lot. School was difficult for him, at some point money was missing, but he learned a lot from his father. He is one of the few who can read and write the Malinke alphabet. His dad left a letter in N’ko (the way of writing Malinke – a kind of alphabet). Today Bakari is the principal of the school of Sobata and together with Sidiki he is thinking about redesigning the school, making it accessible to both girls and boys and people who don’t have access to money to pay school fees.

N’Faly does not live in Sobata at the moment, he lives and works in Siguiri in an Orange Shop. He travels home to the village every weekend though and it seems he is Bakari’s “counsellor”, advising him and also giving space to the younger ones to express their ideas. He understands most French, has studied the longest. He gets the bigger picture and makes sure all the sides of a thing are considered.

Ibrahima is the entertainer of the group – and he is the one who is keeping contact with the people from outside. His parents were critical about Western school style – so he went to school later than anyone else. He found a book and started teaching himself French. Now he is trying to learn English on his own.

Sidiki is the youngest and does not speak up so much. But when he does speak, he has important points and a deep understanding. He struggled at school and the way it was taught, but then he decided to become a teacher. The government initially managed the school, then there was a shortage of teachers – and the village started the school on their own. Bakari and Sidiki have ideas about how to make the school system more accessible to both girls and boys independently from their parents’ income.

Community economy

During the EDE, we were introduced to very concrete economic models that are tailored to the African paradigm. One of them spoke directly to the Sobata group: the community bank. Bakari and N’Faly shared with us that they don’t trust the conventional banking system. They find that the interest rates are too
high, and that the service is not reliable. From our understanding, it seems that they are afraid of making quite a bit of money because they don’t have a structure to hold it that they can trust. A community bank is at the service of, and run by, the people who created it. It has a very low or no interest rate. For the Sobatans, it will allow them to work on their community projects independently, away from the pressure of conventional structures that don’t understand their specific situations. Once this system is up and running, they will consider creating and implementing an alternative currency.

It was interesting to witness their thought process in regards to money and economy. They went from being convinced that they need paper money coming from outside of the community, to realizing that they already have a trading system that’s been working well for them for a long time. With the difficulties arising from making a living out of farming, and the increasing number of people moving to the city to work, the Sobatans have started to look at their traditional way of trading as inferior to the trading of Guinean francs. They are now going back home with a different perspective and new ideas on how to bring back their traditional trading system into their community. For example, they noticed that many people in the village can’t afford to pay for the school fees with Guinean francs (GNF), so they came up with the idea to allow them to pay with goods instead, so their children will be able to attend school.

**Decision making process in the village**

They gather around the tree (“Arbre à Palabres” that can be translated as “tree for talks”); the elders and the village chief bring up the topic; the groups of women, men, youth bring their feedback and concerns. The elders will come up with a proposal and the groups have a voice in giving feedback about the proposed decision. Mostly consensus is found – those who might have doubts will go with what the majority of the people think is the best solution. It is a model that is very close to sociocracy.

**Talents and special interests**

Each of the participants has found their area of strength that they want to share together in creating a permaculture garden.

- Bakari: Soil/Compost, Biomass, Biochar, Mulching
- Sidiki: Trees, Seedlings, Seeds and connection between trees and the soil.
- N’Faly: Water management.
- Ibrahima: Understanding of the bigger climate change perspective (what has happened to the land) – creating awareness.

They wish to work together including the youth of the village, so that they can learn, share and become an example for other people in the community and the communities around them.
Some final reflections from each of us...

Jenny: The key element that I have learnt from my time with the Sobata crew was their deep love for their community and the land. As western ideals creep further into African towns and villages, coupled with a changing climate – many have stopped and lost the African traditions and generational knowledge.

I feel the power and importance of Nature was re-awakened during the course for the Sobatan participants as the richness of their culture and traditions were reflected against those of Europe and other African nations. The knowledge shared during the Ecological dimension clarified that all we need to regenerate our lands is provided by Nature. This is also true for regenerating our community as better stewardship of the land can better provide for all that require. This was highlighted for me during the last week when Bakari shared his worldview with the group. He talked about African pride and potential, emphasizing the need to move forward without following Western approaches but instead coming back to their roots.

Martina: For me it was interesting to find my place in the EDE setting and Project Design Work. Before the idea of bringing the Sobata group and our Design Studio Project to the EDE, I had already committed to another project group working on an Ecovillage development project in Casamance, Southern Senegal. So in fact I was not joining the sessions for project work with the Sobata group. I was a bit sad about it, I would have wanted to explore much more with the participants from Sobata, but what I got was to get to know them as general EDE participants with their life stories, with their thoughts in the sharing circles, through the spaces they took in the EDE community as a whole. I very much appreciated meeting them, I enjoyed hearing their view on the world a lot. These weeks have enriched me incredibly. What makes me very hopeful for the world is to see how the African participants took ownership of their projects and realized more and more how much wealth and potential is just around them where they are. Again it confirms my questioning of the definition of the rich Global North and the poor Global South. After these weeks this is even less true for me than before.

Adé: Meeting the Sobatans at last, after talking to some of them for more than 2 years over the phone, was a very beautiful moment for me. We have worked very hard to raise the money so they could join us at the EDE, and I feel elated that we succeeded! As a French speaker, I had the opportunity to spend a lot of time with them, during group work or just during free time, and I’ve learnt so much. Even though my personal view on African issues has completely transformed over the last 2 years, I still came to the EDE with the belief that the people of Sobata are ‘poor’, have nothing in their village, and that they need help. And it seemed that they were somehow very much in this mindset as well, telling us that they need money from outside to be able to do what they want to do. And as we were going through the EDE, especially during the Economic Week with Sonita Mbah, we all learnt that they are the rich people. That they have so many resources available to them to flourish and thrive. They have a deep connection to Nature that we have lost in Europe, and being able to witness them realizing all this for themselves was a very emotional moment. There is nothing like seeing people reconnecting with their own transformative power, and I have the impression that it’s what happened during the EDE. At a personal level, I had the chance to do quite a bit of translation during the course, and as much as it was challenging, it added so much richness and depth to my experience, as well as humility, seeing how vulnerable people can feel when they rely completely on someone else to get the content of the course and truly benefit from the EDE experience.
## Backcasting table before and after the EDE in Gambia

<table>
<thead>
<tr>
<th>Backcasting Steps</th>
<th>What?</th>
<th>After the EDE</th>
<th>When?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vision:</strong> Sobata is a resilient and thriving community that inspires and empowers others to unlock their regenerative power</td>
<td>Other communities can feel the effect of the bioregion restoration in Sobata and would like to learn the same for their villages and surroundings. By replicating the example of Sobata, healing ecosystems is possible on a larger scale. Climate resilience, creativity and knowledge are increased in West Africa, creating more equal, just, healthy and happy communities.</td>
<td></td>
<td>2044</td>
</tr>
</tbody>
</table>
| **Inspire and empower others**                         | Through the example of Sobata as a resilient and thriving community, through a training centre & social enterprises                                                                                                                                 | Sharing of machines with other communities (being specialists)  
Sharing knowledge in the learning center  
Sharing knowledge in the health center  
School system  
Through outreach also in Siguiri                                                                                                                                                           | 2025-2040 |
| **See results of implementation/celebrate results**    | Invite other communities for presentations and celebrations in the village and surrounding bioregion  
- Results of tree planting  
- Swales are built  
- Retention Ponds are built  
- Increased biodiversity  
- Increased level of groundwater | Invite other communities for presentations and celebrations in the village and surrounding bioregion  
- Results of tree planting  
- Swales are built  
- Rainwater Catchment Ponds are built  
- Biodiversity and level of ground water  
- Wells | 2025-2040 |
| **Implement solutions in Sobata**                      | Building swales with vetiver grass  
Building retention ponds  
Planting trees  
Agroforestry  
Installation of solar energy solutions  
Jatropha plant for protecting land from animals | Building a learning center  
Building the health center  
Implement swale solutions that might come from the permaculture training  
Installation of solar energy solutions  
Food processing machines for shea butter, corn and millet | 2021-2025 |
| **Funding for implementation**                         | Crowdfunding  
Other organisations  
Micro-loans  
Perhaps income from increased food sales at the markets following | The aim is that funds will already come from the community itself | 2020-2021 |
### Implementation of First Wave of Solutions

**Select solutions for implementation for Sobata**

- Design swales
- Look at retention ponds
- Rainwater harvesting from roofs
- Solar panels/batteries
- Solar lanterns
- Rocket stoves
- Increasing biodiversity in permaculture gardens
- Check dams in the river
- Access to water in the village – wells
- Document each step with videos uploaded to youtube
- Calculate resources and funding needed; research possibilities of funding through foundations, crowdfunding, etc.

**Solar panels/batteries**
- Small solar lamps
- Fridge to store processed food.
- Access to water in the village – additional well with solar pump.
- Increasing diversity of plants in the permaculture gardens (create biomass for good rich soil)
- Document the steps with videos that can be streamed on Youtube (also for outreach eg. at the GEN Conference)
- Change school system – make school accessible for both genders and independently of buying power
- Find alternative ways to money system (exchange)
- Food processing machines for shea butter, corn and millet
- Follow up business plan (see appendix) – relationships, value propositions, key costs.

**Additional trainings for Sobata**

Permaculture training with Sonita Mbah: continue the process they have already started on their own.

Permaculture training with female African trainer: deepen understanding and apply it to their bioregion

**Funding for trainings**

Crowdfunding

**Bringing knowledge home and start implementing first solutions**

- Mulching/Composting
- Arborloos in different areas around the village and the fields
- Preparation of native tree planting: collecting seed pods and start tree nursery
- Infrastructure – rainwater harvestings systems from the roofs straight down on the trees
- Look at greywater filtering
- Companion planting (maize, beans and squash)
- Start looking at agroforestry and holistic

Talk to chief, elders and then community
Brainstorming and feedback between the 4 participants and planning what to teach (Ibrahima: Climate Change and impact on Sobata, Bakary: Soil fertility, N’Faly: Water management
Sidiki: Tree planting
Pick shared field (managed by the 4 participants) and implement permaculture garden with youth of village
Looking for sanitation solutions (toilets)
Sharing of knowledge around traditional medicine (Bakary) and look into possibilities for a health center in the village
Look into community banking possibilities

**2020-2021**
<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management (including grazing)</td>
<td>Sediment barriers in the river</td>
<td>October/November 2019</td>
</tr>
<tr>
<td></td>
<td>Improve the existing retention ponds</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Keep in touch with Khaly Mbenge and the REDES network</td>
<td></td>
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<tr>
<td></td>
<td>Translation of the case study into French to share it with the village</td>
<td></td>
</tr>
<tr>
<td>EDE – Learning and Sharing</td>
<td>- Learning about Ecovillage Approach</td>
<td></td>
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<tr>
<td></td>
<td>- Studying the design proposals</td>
<td></td>
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<tr>
<td></td>
<td>- Select solutions that can be implemented</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Sharing traditional/bioregional knowledge</td>
<td></td>
</tr>
<tr>
<td>Funding for EDE and GEN Africa conference</td>
<td>Crowdfunding for 4 participants from Sobata</td>
<td>September/October 2019</td>
</tr>
<tr>
<td>Gathering information/dreaming/creating Design Studio paper</td>
<td>Researching/Composing GEDS case study report</td>
<td>July – October 2019 (Now!)</td>
</tr>
</tbody>
</table>
### Key Partners
- Traditional Leaders of the village
- Imams of Sobata and nearby villages
- Design team (Jenny, Martina, Sarah, Adé)
- GEN Africa
- NextGEN Africa
- REDES
- Students Association and school teachers

### Key Activities
- Seed bank
- Edible forest
- Water harvesting
- Collaborative permaculture field
- Traditional health center
- Tree Nursery
- Trainings/Courses
- Compost toilets

### Value Proposition
- Food sovereignty
- Better access to health care
- Strengthening of culture and traditions
- Hygiene & sanitation
- Food diversity
- Grow food all year round
- Better life conditions
- Employment

### Customer Relationship
Personal relationship with all listed customer segments:
- Personal meetings
- Community meetings

### Customer Segments
- Youth
- Leaders
- Women
- Elders
- Students Association and school teachers

### Key Resources
- Field, Forest
- Village population
- Seeds & seed storing building
- Buildings for health and training center
- Tools for water harvesting

### Cost Structure
- Digging tools, Seeds, Toilets
- Building materials and transportation of the materials for health center and training center
- Equipment for health center
- Equipment for trainings/courses
- Fridge to store processed food and solar pump/panels to power it

### Revenue Streams
- Shea butter, Honey, Frufu
- Traditional soap
- Baobab, mango, papaya juice,
- Moringa (powder, tea...)
- Kinkeliba (healing tea) and other natural remedies

### Seeds and seedlings
- Vegetables

### Social Impact/Cost
- Impact: Better nutrition/quality of food
- Better access to health care (geographically and financially)
- Better hygiene, Better access to water
- Development of knowledge within the community
- Autonomy, independence, Connection with nature
- Cost: People who don’t agree (conflicts, slowing down of the process...)

### Environmental Impact/Cost
- Impact: Increase in soil health and fertility
- Greater diversity in surrounding forest
- Added value to natural resources – reconnection with Nature
- Protection and increase of biodiversity and biomass (plants and animals)
- Recharging of ground water
- Cost: Time
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