



PROJECT SUMMARY

Team: KONA “A”

Project: DOTS

27 November 2021

1 Project basics

Project name: DOTS

Project type: mobile application development

Implementation period: 16 October 2021 – 27 November 2021.

Project members

Name	Role	Organization
Rhianna Spring	Product Owner	KONA Connect
Diodio Callog	Product Owner	KONA Connect
Hande Buyurgan	Team Satellite	Women++
Luisa Contreras	Project Leader	Women++
Chris Gwilliams	Mentor	Aiven
Jennifer Duchetta	Mentor	Accenture
Waijing Teng	Mentor	Microsoft
Milda Norkute	Mentor	Thomson Reuters
Aliya Ibragimova	Mentor	Credit Suisse
Jessica Geiger	Mentor	Microsoft

Team

Name	Role in Project	Email address
Alexandra Bödtker	Full-stack developer	alexboedtker@gmail.com
Tiffany Carruthers	Data architecture	tiff.l.carruthers@gmail.com
Kat Kavaliova	Full-stack developer	katkavdev@gmail.com
Viktoria Mayer	PM	mayerviktoria44@gmail.com
Yulia Mikhaylova	Full-stack developer	ymik0410@gmail.com
Beatrice Neacsu	UX designer	beatrice.neacsu@gmail.com
Sujin Park	PM	sujin.park118@gmail.com

2 Project brief

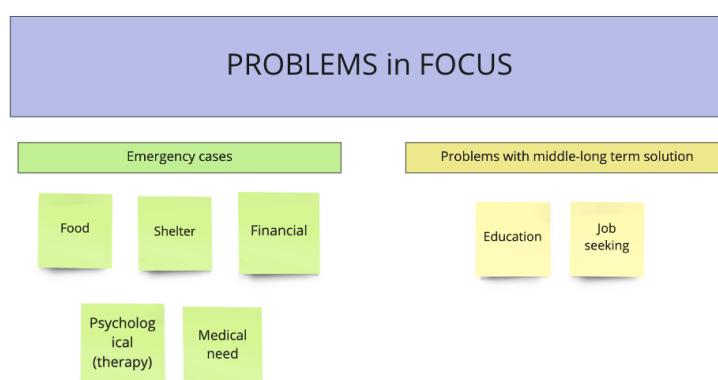
2.1 Problem

The problem outlined at the beginning of the project seemed clear, but during discovery we saw that it was a bit complex. It was important **to link the problems to a target group** and to clarify what the problems of the users are and what the problems of the organizations, including KONA, are. This is how we came to identify the needs and the related objectives, and then to design the solution taking these together.

The problems of potential users of DOTS:

- People are unable to connect to resources that could help them with specific needs. It is easy to get lost in a bureaucratic maze amongst the numerous support institutions. They do not know who to contact.
- Users need rapid help to find a solution to their problem as quickly as possible
- The information available on organisations is not always reliable

Through discovery, we have identified the problem areas that KONA is most frequently contacted about. On this basis, we can talk about the range of problems that should be treated as emergency cases and therefore require immediate assistance. These include **food, shelter, financial problems and health needs**. The other major group is the set of problems that need to be addressed at the mid-term level. Within this group, KONA is mainly contacted **for education and job search issues**.



Problems of organizations:

- aid agencies' have staggering workloads, need to free up time to help more individuals
- cooperation between organisations needs to be improved in order to provide assistance more efficiently.

2.2 Personas

At the beginning of the project, we had little information about the potential users. We needed to further refine the "vulnerable people" to tailor the application to the needs of the users.

In order to do this, we conducted research and had several rounds of discussions with the Product Owner about the potential user base. During the research we collected data on age, language used, illiteracy level. (see ANNEX 1.)

Based on the information collected, the most important characteristics of our persona are:

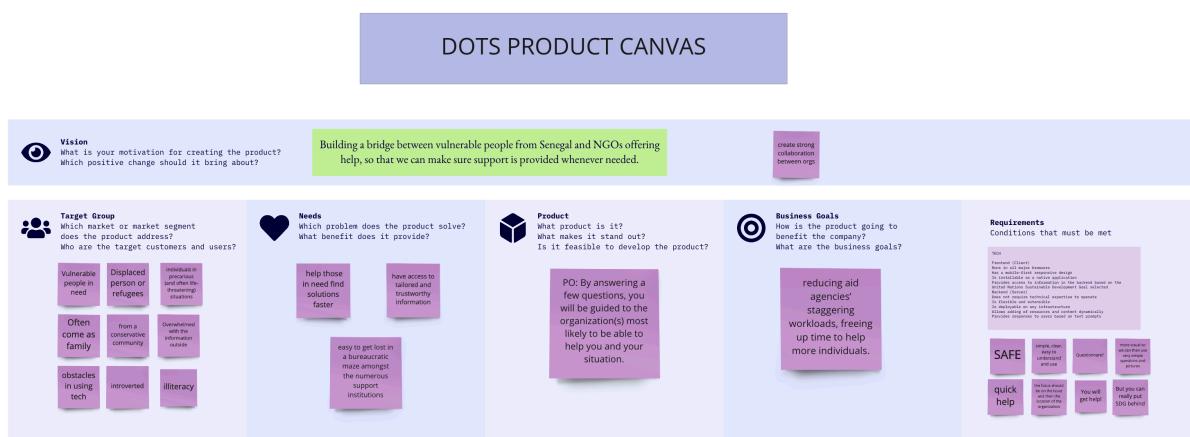
- People in vulnerable situations (refugees, displaced persons, survivors of domestic violence, youth at risk etc.)
- Individuals in precarious (and often life-threatening) situations
- Often come as family
- Come from a conservative community
- Have obstacles in using tech
- Overwhelmed with the information outside
- Typically introverted people
- Often distrust agencies and organisations because of bad experiences
- High percentage of illiteracy

2.3 Vision

As can be seen, the problem and the related goals of the Product Owner are very diverse. Given that the team's goal for this project was to create an MVP, we needed to extract the root problem from this set of problems that we could counter.

Based on a common understanding between the team and the Product Owners, the product vision was formulated as follows:

Building a bridge between vulnerable people from Senegal and NGOs offering help, so that we can make sure support is provided whenever needed

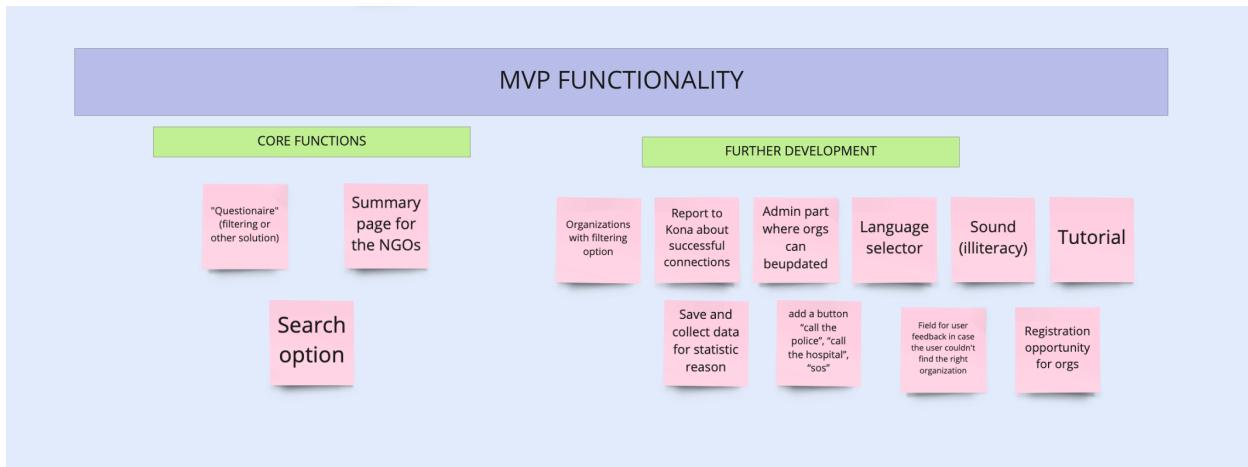


2.4 Solution

Based on the above needs, objectives and the characteristics of the personas, we decided to implement the application in a non-questionnaire format, contrary to the Product Owner's original idea. The reasoning behind this decision is explained in more detail in the UX Design section.

As part of the MVP, we aim to implement the following solutions:

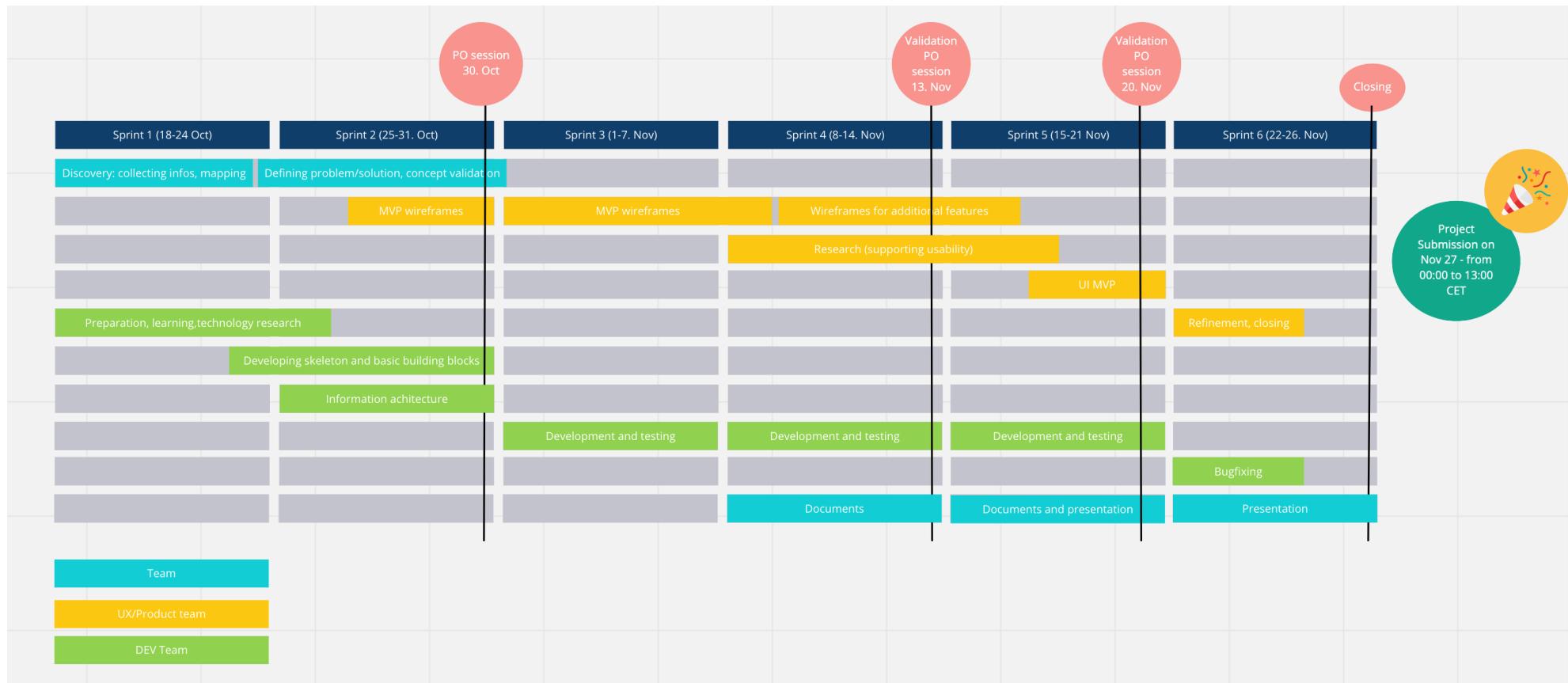
- A complex filtering option for selecting organizations
- Added search option
- Including a summary page for NGOs



3 Project schedule

The project schedule is presented below. We had 6 weeks to complete the project. We planned for 5 weeks from the start, in order to reserve the week before the project was due to close for unexpected tasks.

The team was split into two smaller teams - design and develop. During implementation, we progressed in weekly sprints, defining weekly development packages. In the middle of the project, data analysis took a lot of work, so this is what some of the Dev team did most of the time.



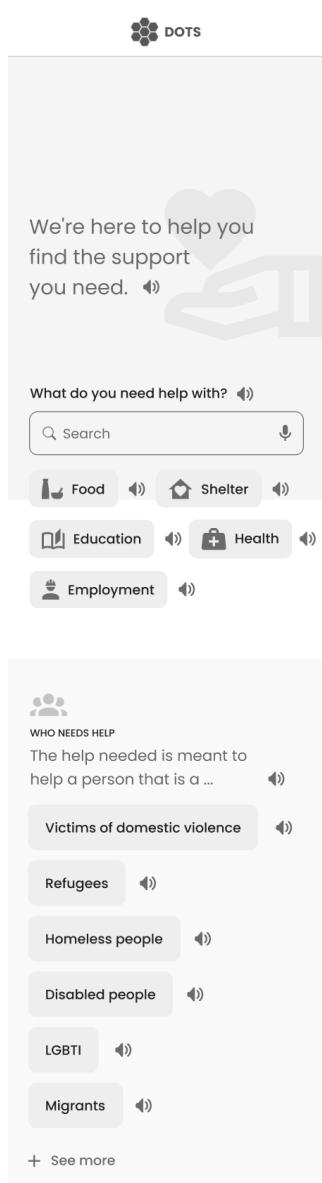
4 UX Design

The design of the wireframes was preceded by research and very careful consideration and prioritization of the problems identified. The table below summarizes the design responses to each of these needs and so how the application will respond to them.

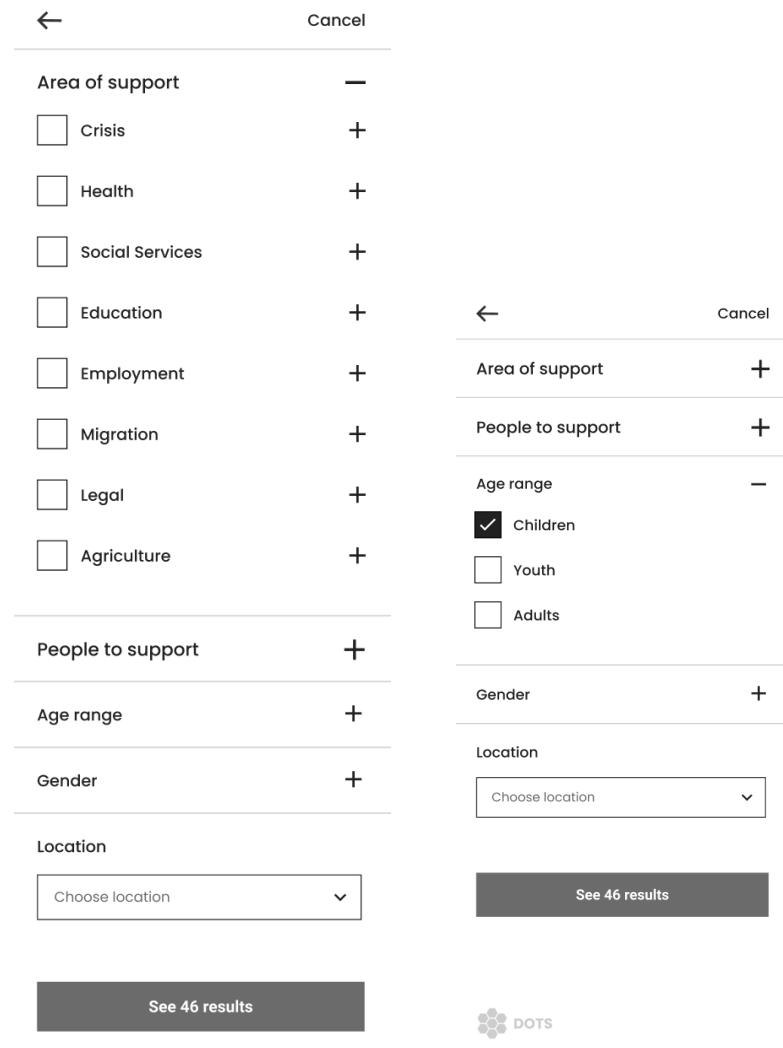
Problem, need to address	Solution in UX
There are many kinds of vulnerable situations to consider	Cross-filtering by need and user group
High illiteracy level	In-app audio support, easy to understand language
Building trust	Filtering instead of questionnaire Using soothing color palette
Unfriendly user context	Quick access to NGO list
Emphasizing the connectivity to the SDGs	SDGs are visible on home screen

4.1 Cross-filtering

In the first part of the design, we tried to follow the original path set by the Product Owners and bring the application to life in the form of a questionnaire. Given the extraordinary amount of data on the NGO and the problems and personas identified, we had to recognise that a questionnaire was not the best solution. In particular we felt that there was a conflict between building trust in users and exploring their problems through a series of questions. The team therefore decided to implement a complex filter to support the search for NGOs.



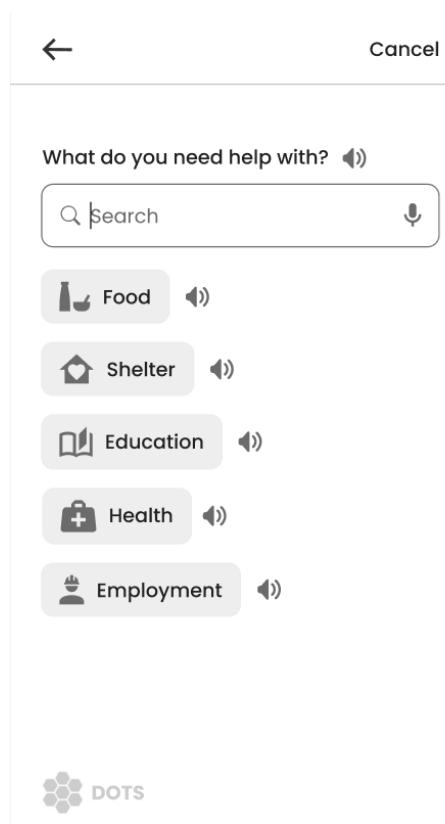
The screenshot shows the Kona Connect app's main interface. At the top, there's a purple header with the Kona Connect logo. Below it is a large white search bar with a magnifying glass icon. To the right of the search bar is a button labeled "See more". Underneath the search bar, there are several sections: "Area of support" with categories like Crisis, Health, Social Services, Education, Employment, Migration, Legal, and Agriculture; "Who needs help" with categories like Victims of domestic violence, Refugees, Homeless people, Disabled people, LGBTI, and Migrants; and a "See more" button at the bottom.



This screenshot shows the search results for the "Area of support" section. It includes a back arrow, a cancel button, and a list of categories with checkboxes: Crisis, Health, Social Services, Education, Employment, Migration, Legal, and Agriculture. To the right, there are additional filters for "People to support", "Age range" (with "Children" checked), "Gender", and "Location". At the bottom, there are two "See 46 results" buttons.

4.2 Home screen

Based on the NGO list we received, we saw that there were many types of problems that these organizations were dealing with. It was therefore a very important question to identify the problems that most frequently affect users. In the stakeholder interviews we were able to identify these problems, so we could highlight and emphasize them. The aim was to make the application more user-friendly and transparent.



4.3 Recognizing NGOs and SDGs

A label has been placed on the top left corner of the NGO card, so that the user can immediately identify the specific target group for which the NGO can help.

By opening the cards, the user can find the most important information about the organization.



Refugees



UNHCR
The UN Refugee Agency

UNHCR
The UN Refugee Agency

Phone: 221 33 859 7050

Address: FAALO, route du King Fahd Palace (Ex Meridien), 3125 Dakar, Senegal
B.P. 3125, Dakar, Senegal

Refugees



UNHCR
The UN Refugee Agency

UNHCR
The UN Refugee Agency

Address: FAALO, route du King Fahd Palace (Ex Meridien), 3125 Dakar, Senegal
B.P. 3125, Dakar, Senegal

Phone: 221 33 859 7050

Email: senda@unhcr.org

Website: www.unhcr.org

Help with: Financial support, Advice for refugees, Education, Protection and safety for refugees

Help for: Refugees, Asylum seekers, Relocated populations

Description: UNHCR, the UN Refugee Agency, is a global organization dedicated to saving lives, protecting rights and building a better future for refugees, forcibly displaced communities and stateless people.

In line with the Product Owner's request, the SDGs have been placed on the home page of the application, underlining KONA's commitment to these goals.

THE 17 GOALS
The NGOs we're partnering with contribute to the Sustainable Development Goals

**1 NO POVERTY**

**2 ZERO HUNGER**

**3 GOOD HEALTH AND WELL-BEING**

**4 QUALITY EDUCATION**

**5 GENDER EQUALITY**

**6 CLEAN WATER AND SANITATION**

+ See all

About DOTS +

Become our partner +

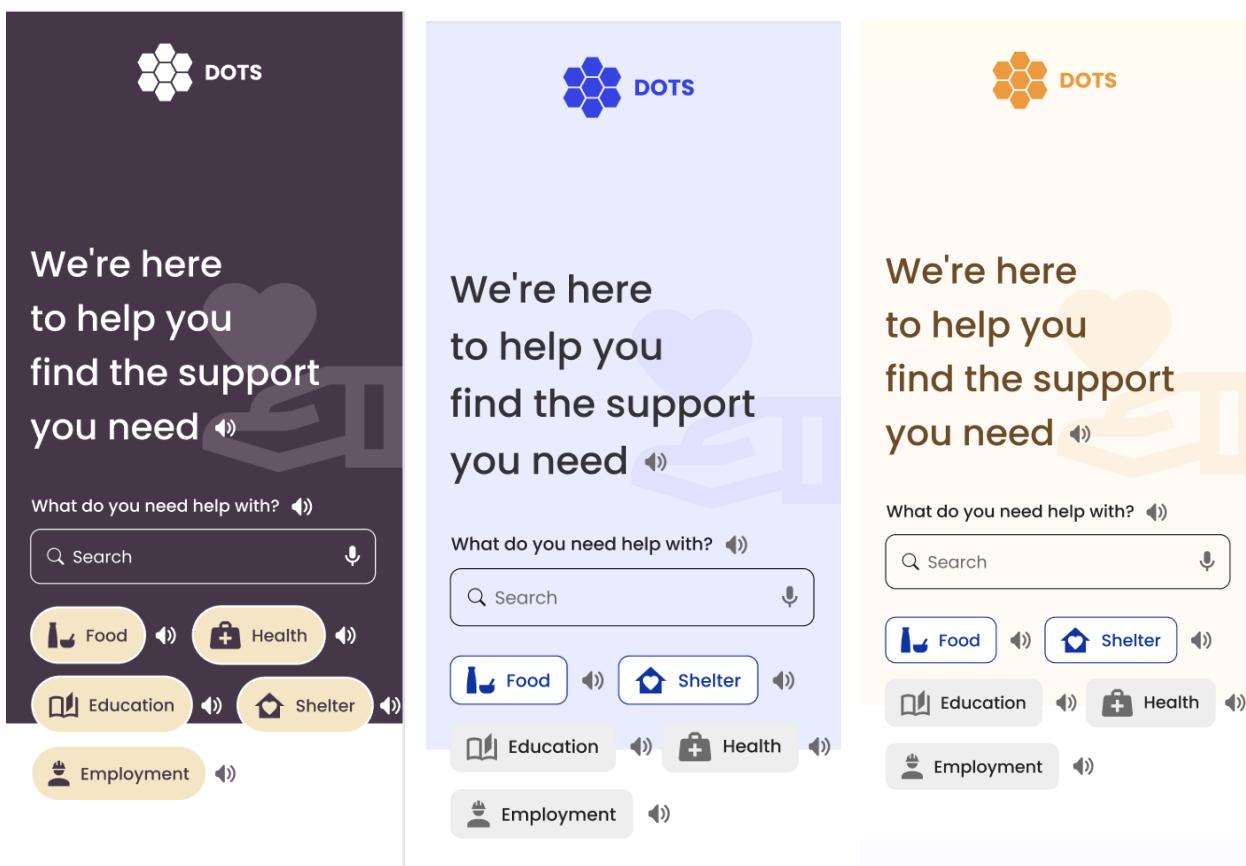
5 UI Design

The UI design was also focused on finding a solution that meets the needs of the target group and takes into account the problems identified. Here, therefore, the information we uncovered about the community - people's introversion, distrust and fears - was crucial. The aim was to create a reassuring interface that exuded safety and credibility.

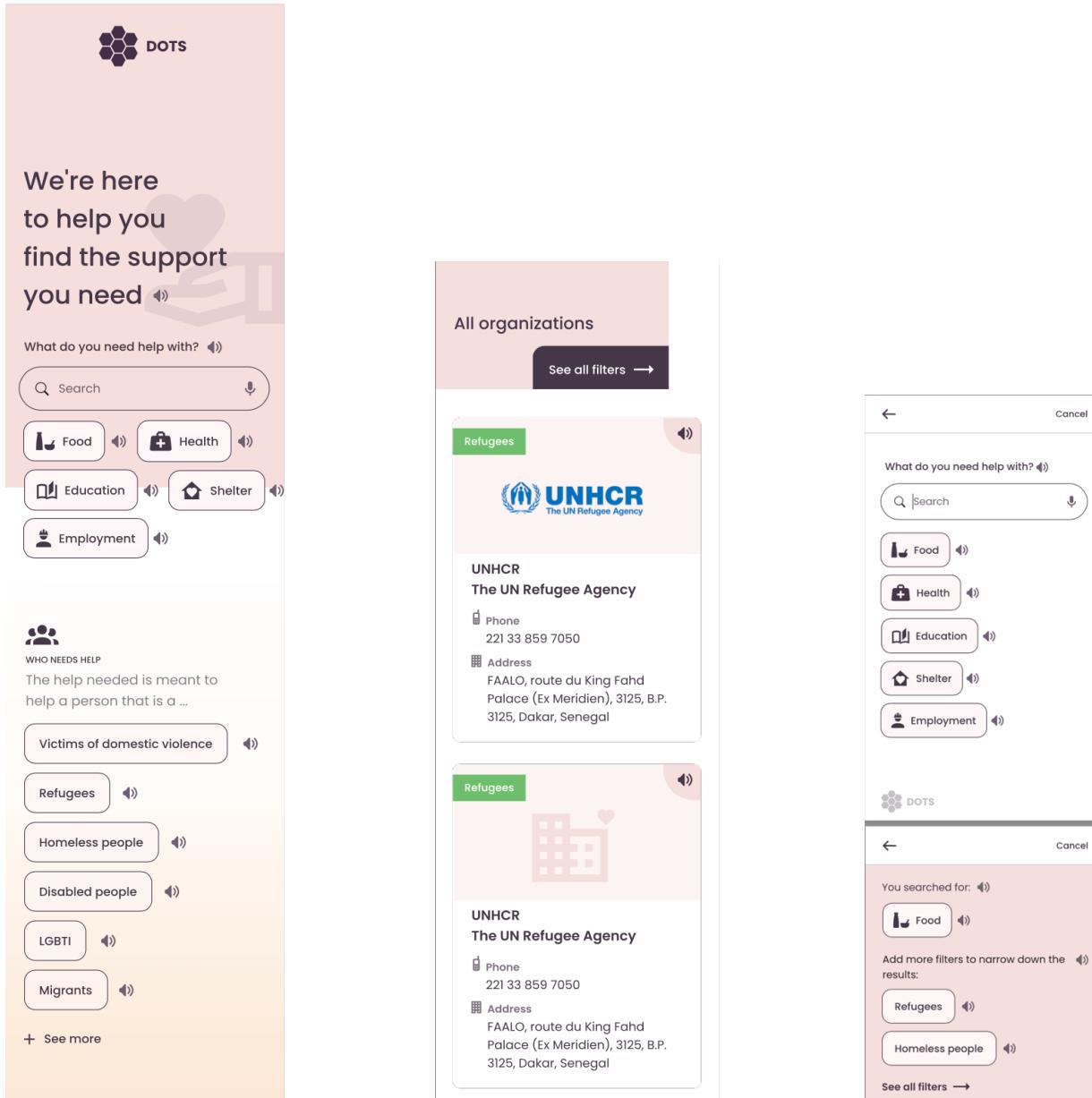
Before creating the UI elements, we researched the colors to be used. We looked at the typical colors of the country or continent and their meanings, and also looked at the appearance of the organizations helping them.

In the end, we decided on a purple-pink combination, trusting that this color combination would be sufficiently discreet and gentle, and would inspire trust and confidence in users.

UI alternatives



Final UI Design¹



The screenshots illustrate the final user interface design for the DOTS app, developed by Kona Connect and Women+.

Home Screen: The top navigation bar features the "DOTS" logo. Below it, a large heart-shaped graphic contains the text: "We're here to help you find the support you need". A search bar asks, "What do you need help with?". Below the search bar are five categories: Food, Health, Education, Shelter, and Employment. A "WHO NEEDS HELP" section lists: Victims of domestic violence, Refugees, Homeless people, Disabled people, LGBTI, and Migrants. A "See more" button is at the bottom.

Organization Detail Screen: Shows the profile of "UNHCR - The UN Refugee Agency". It includes a "Refugees" filter badge, the organization's logo, name, phone number (221 33 859 7050), and address (FAALO, route du King Fahd Palace (Ex Meridien), 3125, B.P. 3125, Dakar, Senegal).

Search Results Screen: Shows a search result for "Food". It displays the "Refugees" filter badge, the organization's logo, name, phone number, and address. Below the result is a note: "Add more filters to narrow down the results" followed by "Refugees" and "Homeless people" filter buttons, and a "See all filters" link.

¹ <https://www.figma.com/file/AKgOqcFCJfssLfQ0Nif665/Dots?node-id=1%3A2>

6 Data architecture

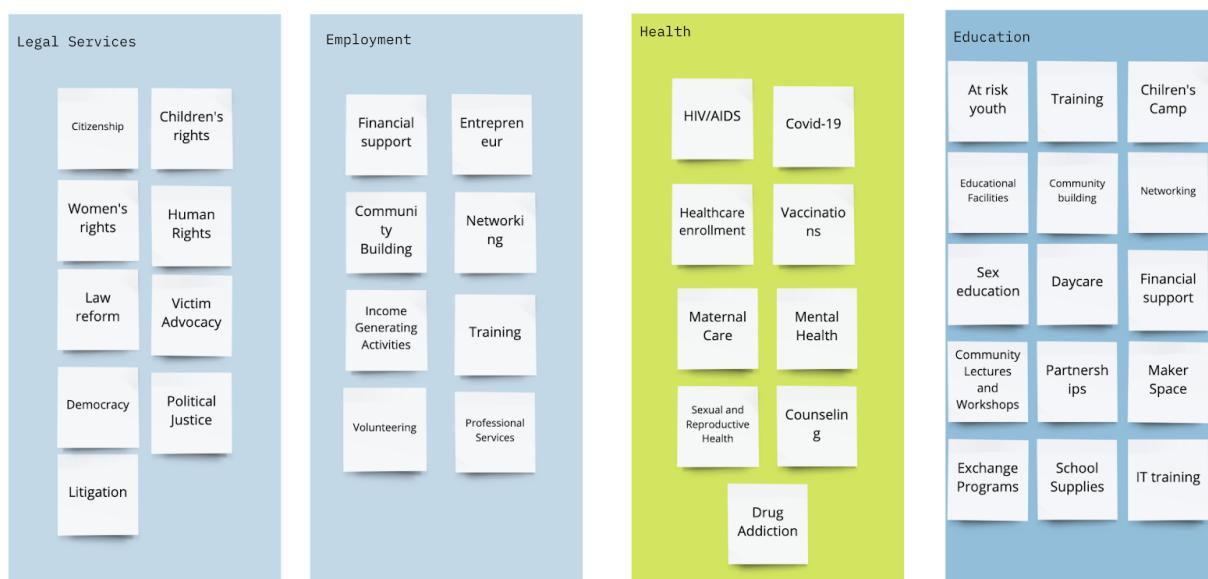
The original data was provided to us by the Product Owner. It was an unstructured Excel File with 8 columns of data that described the organization's objectives. The data was restructured so an organization can have:

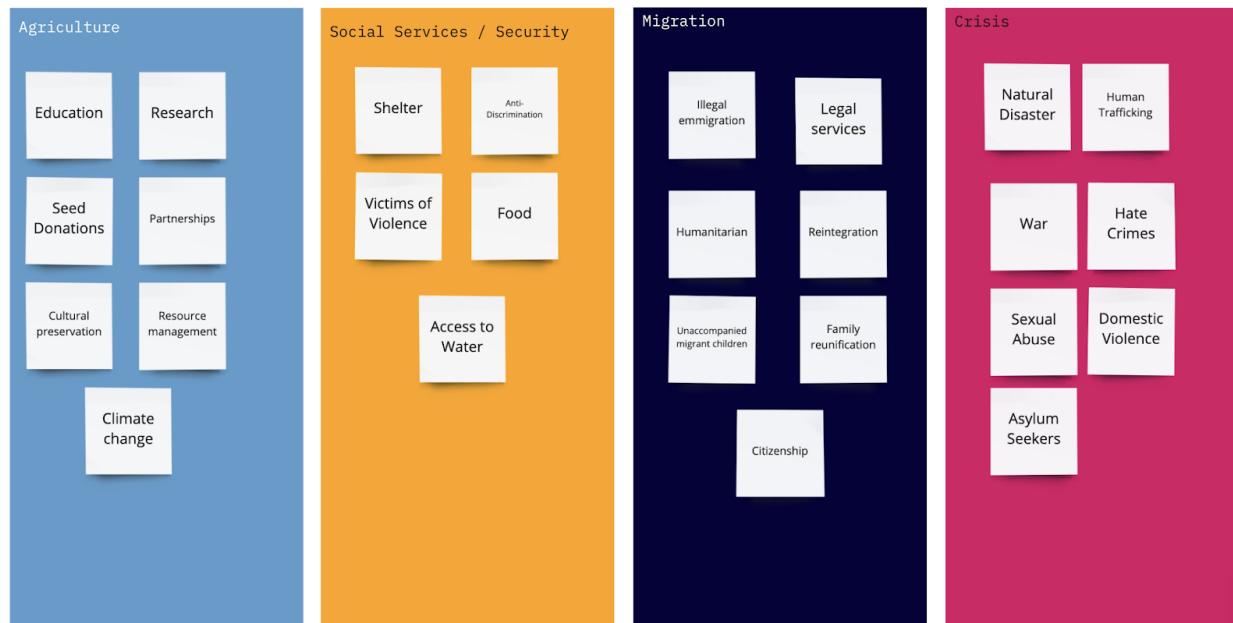
- 1 to many categories
- 0 to many subcategories

This structure allowed the development team to filter on specific organizations in a pragmatic way, while also developing a methodology for Kona to start building a database. The 8 Main categories:

- Education
- Health
- Legal
- Social Services
- Employment
- Agriculture
- Migration
- Crisis

8 types of organization focus groups



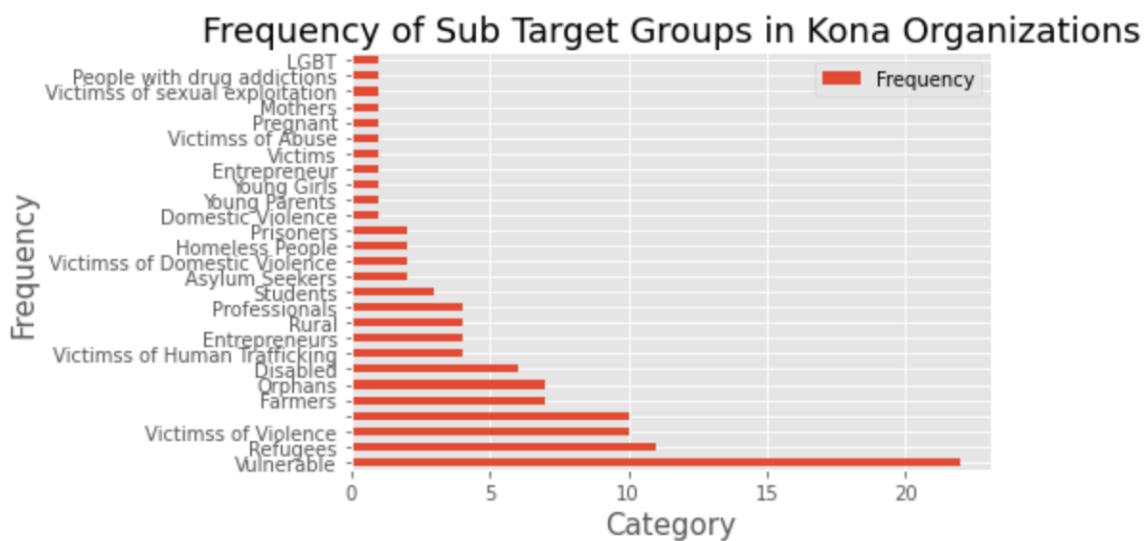
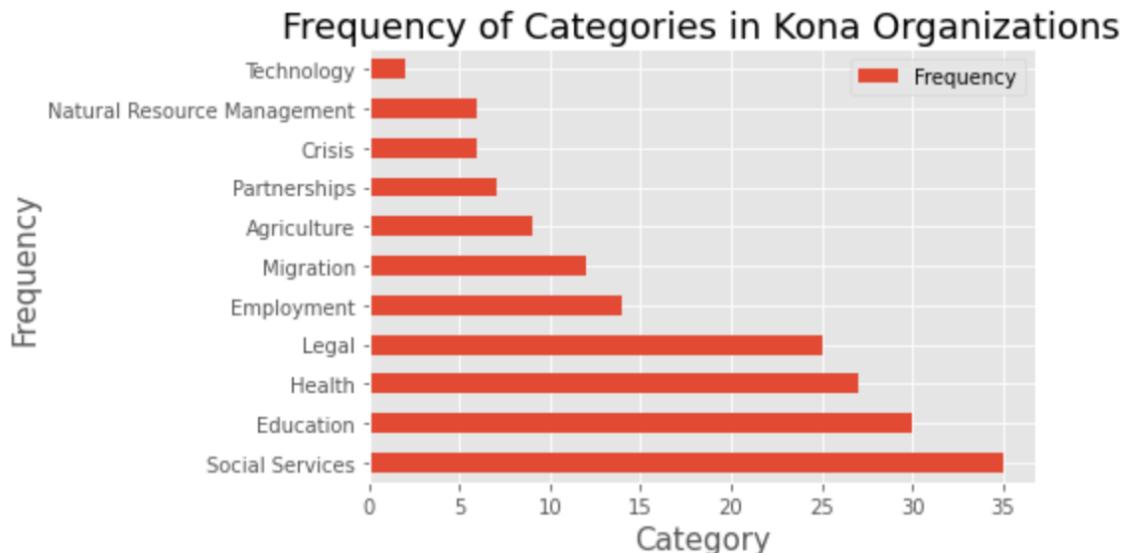


We have found 140 subcategories within the data. It is my recommendation that these subcategories are transformed to fall into similar groups so that the data can be filtered in a more maintainable way. An example of this would be to group synonyms such as "War" and "Armed Conflict" into the same group. By doing this, when a new organization joins Dots, they can simply tag themselves and the organization will become searchable to the user.

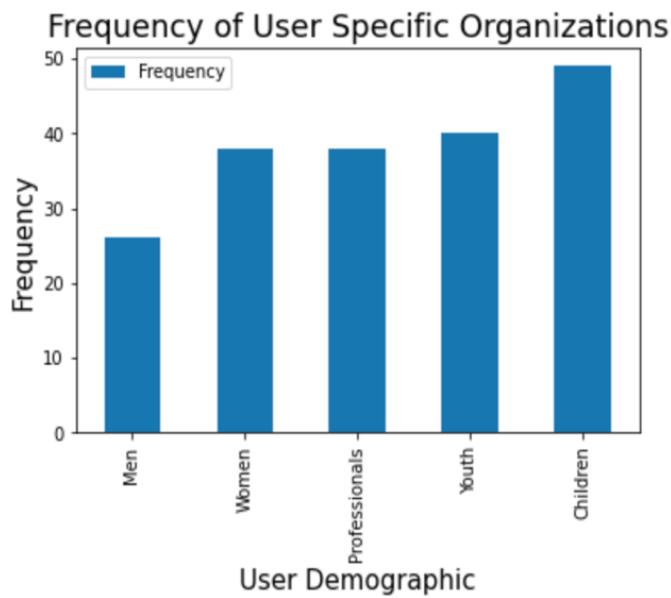
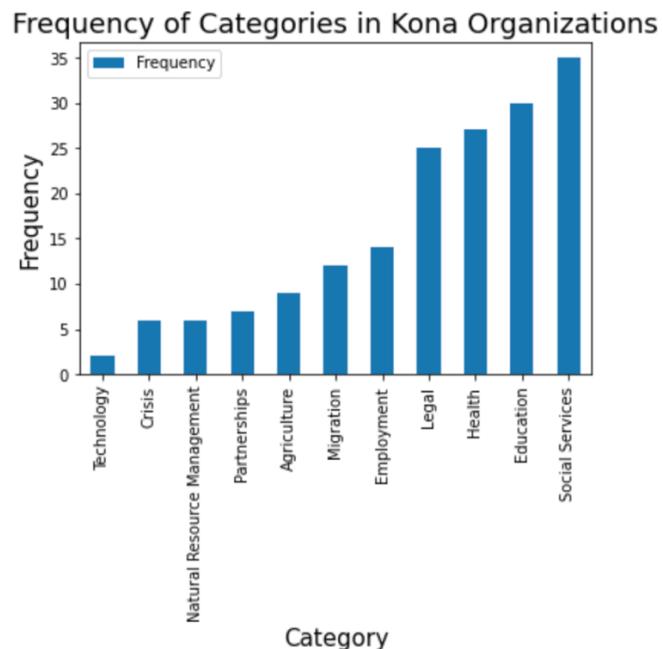
In the future, Kona will be able to have a new organization tag themselves with one or more of these categories, will build an entity-relationship between the organization and category in the database. It is my recommendation to Kona that they modify and add to these categories as needed.

Crisis is a special category that encompasses natural disasters, war, and other catastrophic events that displace entire populations. As a team, we thought this category was important, but did not know how it fit into the app we are building.

Two graphs were created that show what are the most popular topics within the Dots ecosystem. The graphs tell us that the organizations most cater to Social Services, Education, and Health. The people that are supported most frequently are children and youth. Youth is a category that encompasses people in the age ranges of 12-20 that are capable of having some capacity for self-autonomy, while children are dependent on their caretakers for all of their needs.



2. We have made two other charts for „Frequency of categories in KONA Organizations” and „Frequency of User Specific Organizations”, see below.



7 Implementation

7.1 Product & Technical Specifications

The technical and specifications were chosen to keep the application light weight and simple. There is no database, only a JSON file. When a new organization is added, it will be appended to the JSON file. Not having a database allows for one less moving part in the tech-stack, which is why we decided to go this route.

- Ability to run on Google and IOS mobile platforms
- Frontend and backend developed on Expo/React-Native
- Data is stored as JSON
- Audio feature allows people to have multiple ways to use the website. This feature was implemented for accessibility to illiterate users.

7.2 Screens

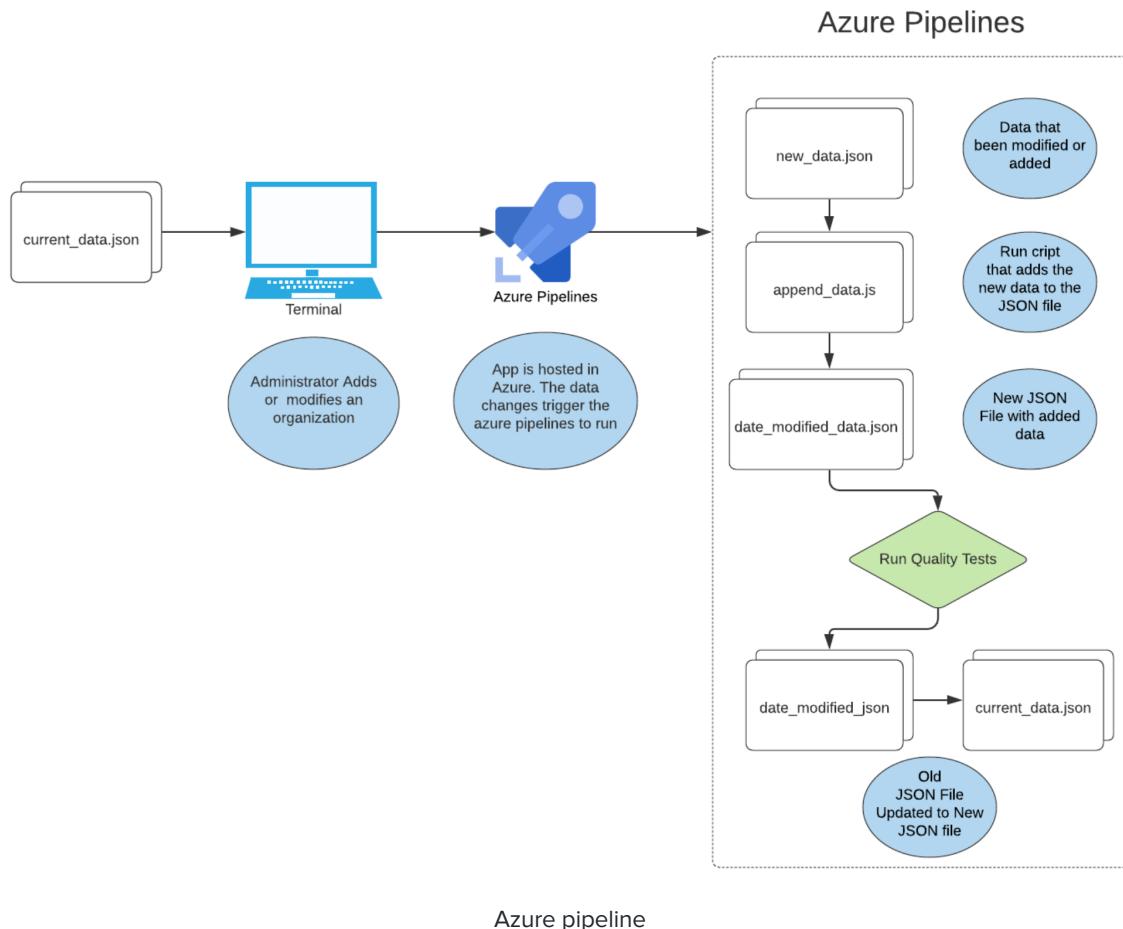
- Organizations can be viewed by category
- Contact details are displayed for each organization
- Display most frequently searched for categories for easy access
- Display United Nations 17 Development Goals (SGD) so that it is apparent that Kona aligned with this shared vision
- Filter organizations by SGD category

8 Further development opportunities

During the development on interviews with the POs and team brainstorming sessions a number of ideas for further development emerged that could not be implemented in the project, but all of them have potential.

We see the following opportunities to further develop the product:

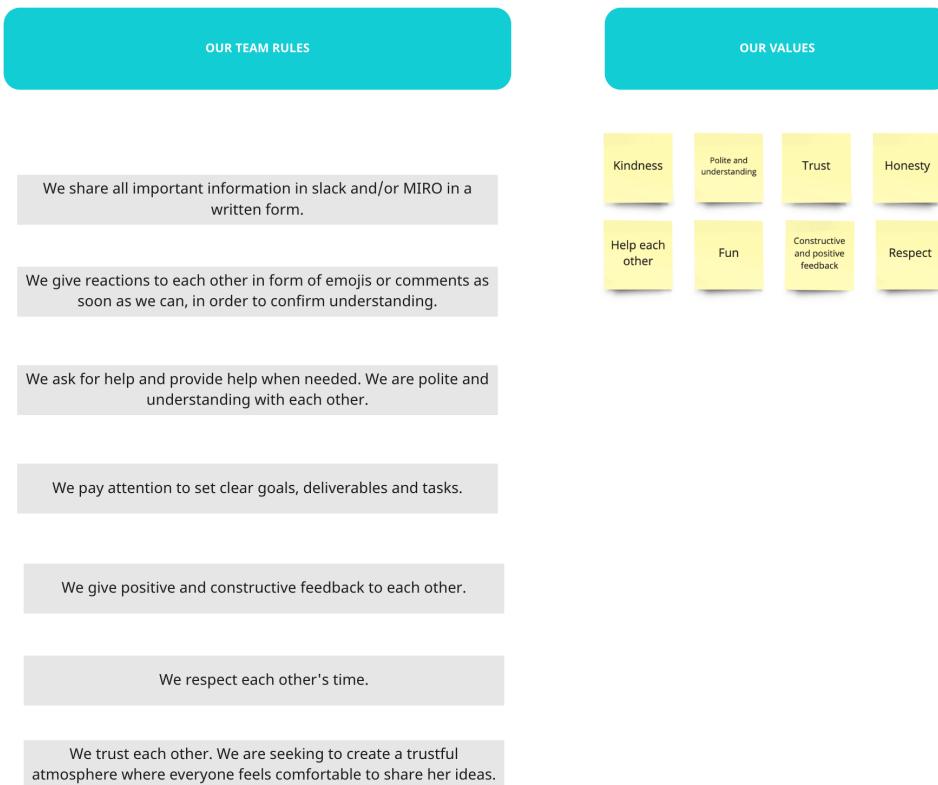
- Sending report to KONA about successful connections
- Admin panel:
 - Modify existing organization details
 - Add new organizations and tag the type of work they perform (Health, Education, etc.)
 - Ability to add new organization categories
 - Log in screen that saves user credentials
- Language selector. Language setting button that can change the language from French to the other primary languages spoken in Senegal.
- Sound (supporting illiteracy)
- Tutorial for new users
- Save and collect data for statistical reasons
- Registration opportunity for organizations
- Button for “call the police”, “call the hospital”, “sos”
- Field for user feedback in case the user couldn't find the right organization
- In order to develop the database, the PO or the organization itself, should tag their objectives in accordance with the categories that exist within the data, this will make the data easier to search and display on to the user.
- The app should delete user history after X amount of time. In the cases of domestic abuse, it could be harmful to the user to save information
- Data will be updated and modified by using an Azure pipeline as referenced in the diagram below



9 Project management, teamwork

9.1 Team rules and roles

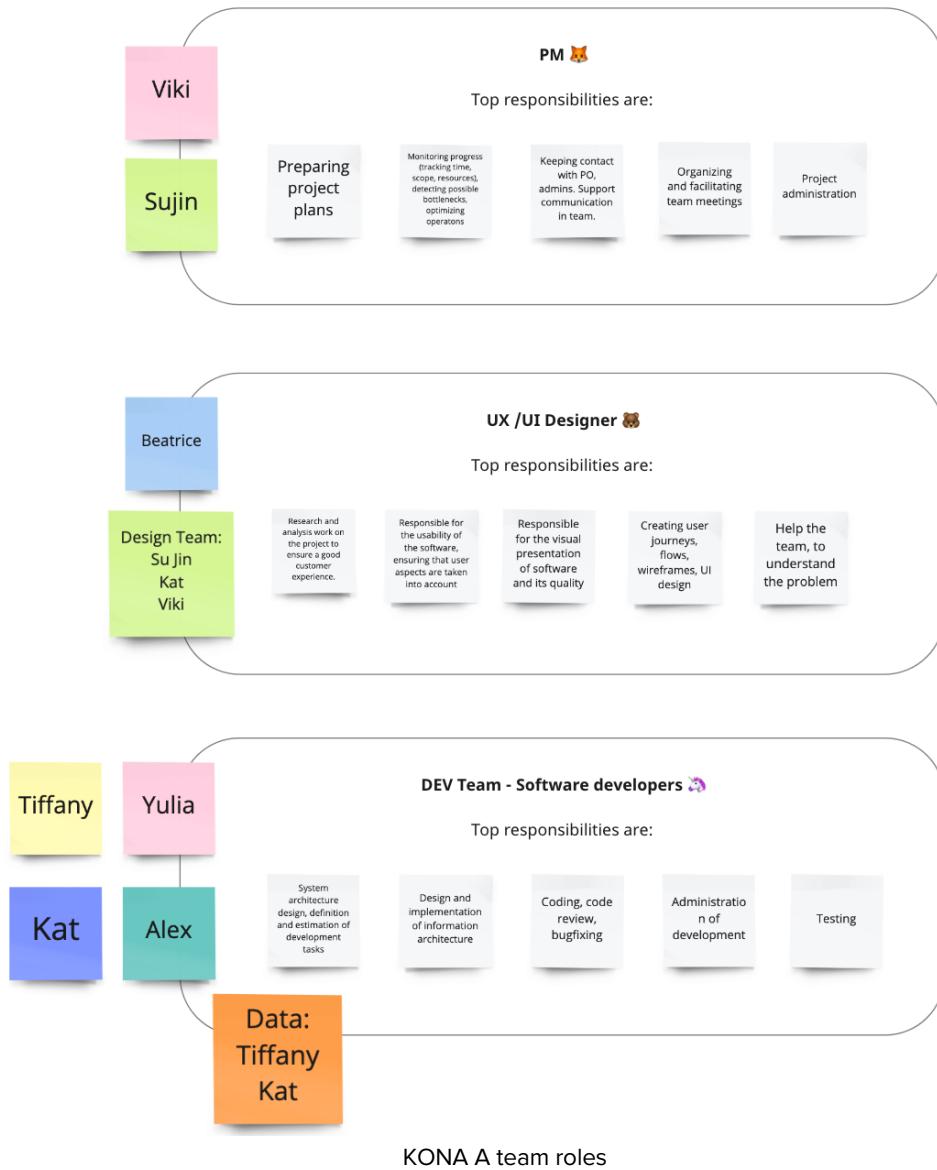
As a first step, in order for team members to get to know each other better, we created a team board for introductions. Setting up the team rules was relatively quick and easy, and it was clear from the start that we had similar basic principles. KONA A members are very supportive and open-minded, which made it easier to overcome many problems.



KONA A team rules and values

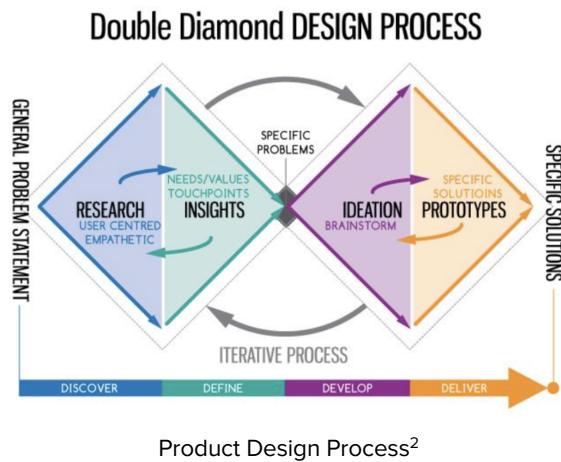
Finding team roles was a bit more difficult. Since we did not know the skills, strengths and experience of the team members and it was not entirely clear what roles would be needed in the project, we started with the preliminary roster. We then adapted these flexibly as the project progressed. Basically, everyone managed to find their place and contribute

effectively to the implementation. In the last weeks, we helped each other along the tasks, regardless of our roles, in order to make better progress.

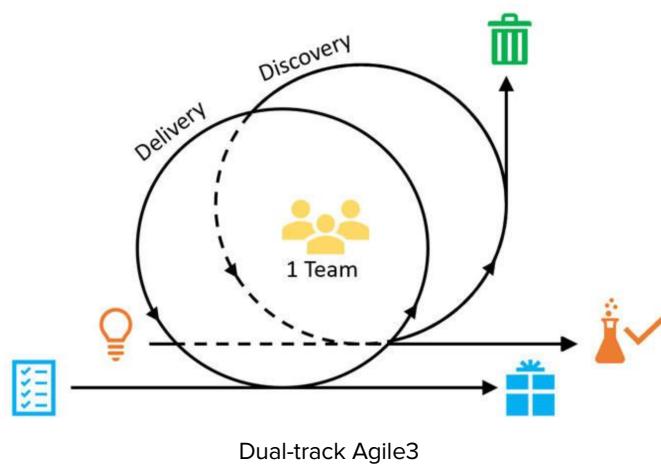


9.2 Agile

During the implementation of the project, we tried to follow the steps of the design process used in product development. The length of each step and the overlap between them varied according to the specific characteristics of the project, but the team worked through each stage of the process.



Due to the extremely short project implementation time, we tried to work with a dual-track agile methodology, with dividing into two small teams to parallelize the tasks. This saved us a lot of time. It is also true that this way of working required a very active team collaboration and communication, which was challenging due to the different weekly work schedules of the team members.



² Source: https://www.medien_ifi.lmu.de/lehre/ss17/id/Day%203%20Approaches%20to%20ID%20.pdf

³ Source: <https://www.projektmagazin.de/artikel/dual-track-agile-parallel-forschen-liefern-praxisbericht>

We used the scrum meeting types in the project - as expected. **Sprint planning meetings** were used to set the sprint goal, define tasks, responsibilities and internal deadlines and schedule additional meetings for the week.

In the first week we held **daily stand-up meetings** every day, but we saw that this was not feasible due to time constraints. So, we switched to asynchronous stand-ups and used a built-in slack app to provide written reports on the day's progress. On Monday and Thursday, we held live online meetings.

How do you feel today?
not bad

What did you do since yesterday?
had the meeting with yulia where we factored the code and discussed how to attach the JSON file

What will you do today?
Today I have a meeting with the whole dev team to exchange our current statuses and if I have time I'll start working on the JSON file.

Anything blocking your progress?
I have an interview tomorrow that I need to prepare for.

 1  1  1 

Example for asynchronous daily stand-up report

We also held **retrospective meetings** every week. We used the web application TeamRetro and the Glad-Sad-Mad method. Also due to the 6-week project implementation time, it was very important to identify blocks in the team's functioning very quickly. These meetings helped us to get to know each other faster and to adapt to each other in an extra short time. In addition, the retrospective meeting was a very important space for celebration, learning and giving feedback to each other and thus helping to enhance team cohesion.



Glad

What went well? What is making you happy?



Sad

What did not go well?
What needs to change?

 Yulia's multiple filtering 😊

 BN Good collaboration with development

 found solutions quickly to problems that arose

 BN A bit sad that we will stop next week and I don't know what's gonna happen to our work after that 😞

 VI how we can give the knowledge/experience to them

 TC I could have been better commenting

Retrospective insight

9.3 Communication, documentation, task management

The communication was basically done through **channels set up on Slack** - by team, by topic. Asynchronous daily stand-up reports were sent to a dedicated channel to make it easier to track progress as a project manager. Meeting memos were also sent to the team via the slack channel.

An important part of our communication was **the team's Miro board:**
https://miro.com/app/board/o9J_ltdRj_Q=/

Important results and information generated during the implementation were stored here and it was also one of the spaces for personal feedbacks to each other or performing workshops, feedback sessions.

The project documentation was stored in a **google drive folder**. The documentation related to the development was implemented in github.

We used **Trello** to manage and track tasks. We tracked the work of the design and dev teams on a separate dashboard.

10 Lessons learned

Although it would be very difficult to list everything that we have learnt as a team and personally from the project, what hard and soft skills have been polished. We have tried to put them together. It was helpful to have retrospective meetings to see what were the points we needed to improve as a team and what we tried to implement during the project.

- How to work in a full stack team with POs, PMs, UX designers and other developers
- Learnt a lot about the challenges of data organization and extraction
- In terms of tech stack, had never worked with React Native or Expo previously
- working in an agile environment and sprints
- tips on storytelling for pitches
- designing for illiteracy
- working within a fully-remote team
- cool Tools like figma, miro, retro
- how to quickly adjust the team working style: create a fast feedback-loop with sprint review. We learn in each sprint what we can change, make clear action items out of it and adjust it to the next sprint
- importance of appreciation and feedback of each team member: use thankyou-board on miro, ask actively for feedback and about the work of other team members
- working in locally and temporally distributed agile team: combination of asynchronous daily-stand-ups with slack bot and synchron meeting with clear agenda and goals to clear uncertainties and break bottleneck dynamically, provide well and clearly summarized notes of meetings
- prioritizing tasks and focussing on the main goal: set clear deadlines for each tasks to prevent bottleneck, let go small details which holds the project back
- how to make meetings efficient and effective: use the meeting time for the most important topics which should be discussed/cleared as a team. Pre-announce agendas for the meeting so everyone can go prepared in the meeting with some ideas & thoughts and accelerate the communication in this way
- how to work in a dual agile team (dev- and design-team), how to collaborate: present and highlight the progress your team made, communicate which task should be prioritized and set clear deadline together
- every team member makes difference within a project
- the importance of not underestimating clear and sufficient communication and how to resolve miscommunication issues when they arise

- being flexible and adapting to the fast-paced changes and demands of the project, but also knowing when to push back and stand own ground
- how to efficient and effectively divide work across team members
- how data is organised and structured in the backend to make it feasible for implementation.
- how to support a team in heavy time pressure
- working in a multicultural team

All members of the team agree that we have learned a lot in these six weeks.

11 Methods, tools

The following methodologies and tools were used to implement the project.

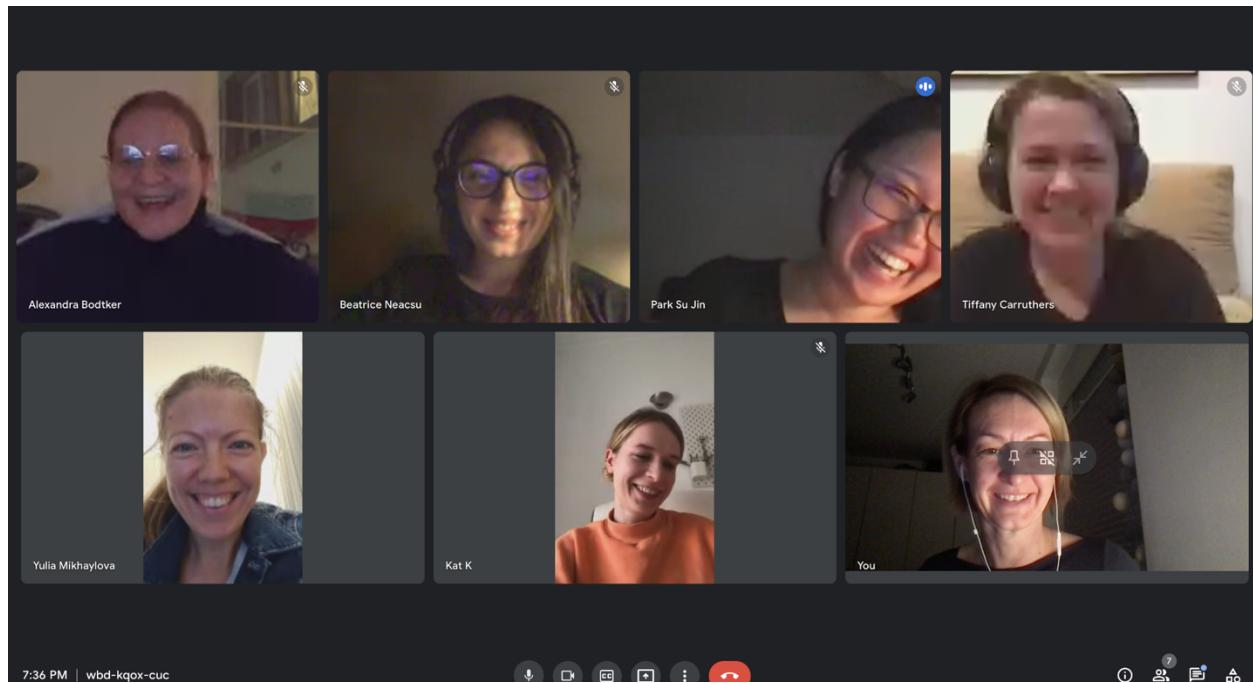
Methods:

- Agile Project Management (dual-track agile, scrum)
- Design Thinking Process
- UX: stakeholder interviews, design review, persona building, journey mapping, prototype feedback and testing

Tools:

- Slack: communication, asynchronous stand-up meetings
- Trello: task management, prioritization
- Figma: wireframe and UI design
- Miro: project visualization
- TeamRetro: retrospective meetings
- Notion: task management

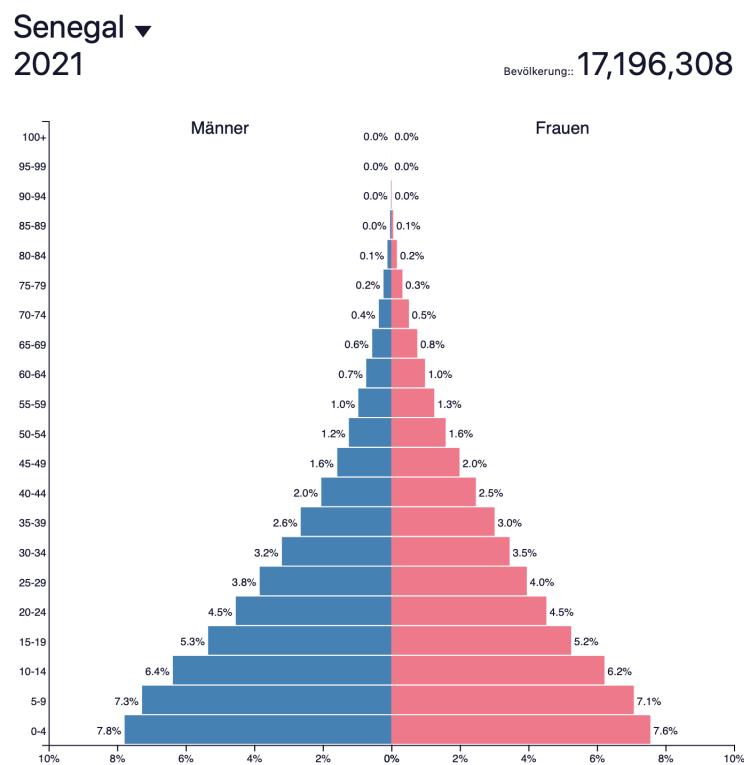
THANK YOU!



12 ANNEX

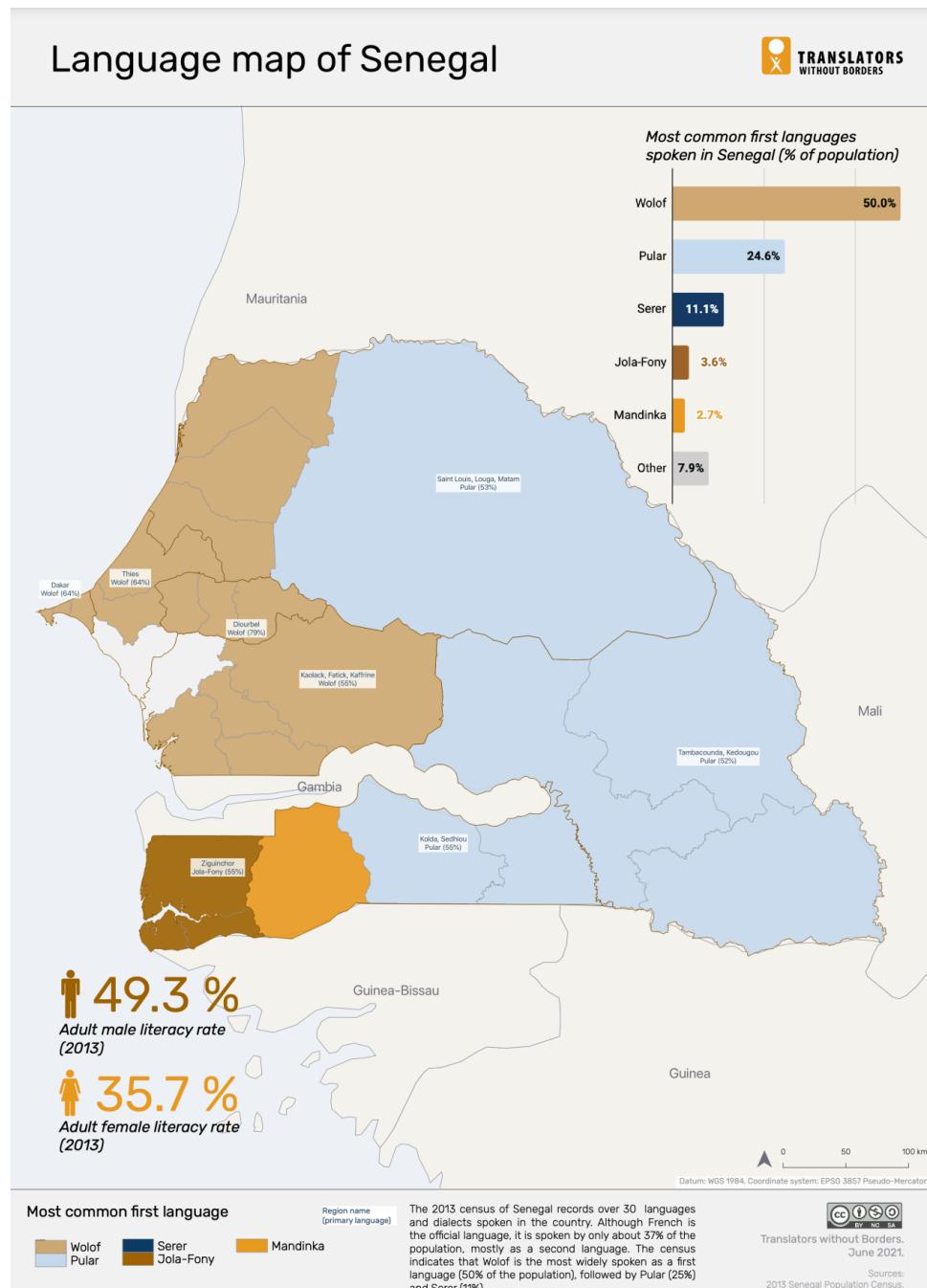
12.1 RESEARCH TO SUPPORT PERSONA IDENTIFICATION

Age Breakdown in Senegal 2021



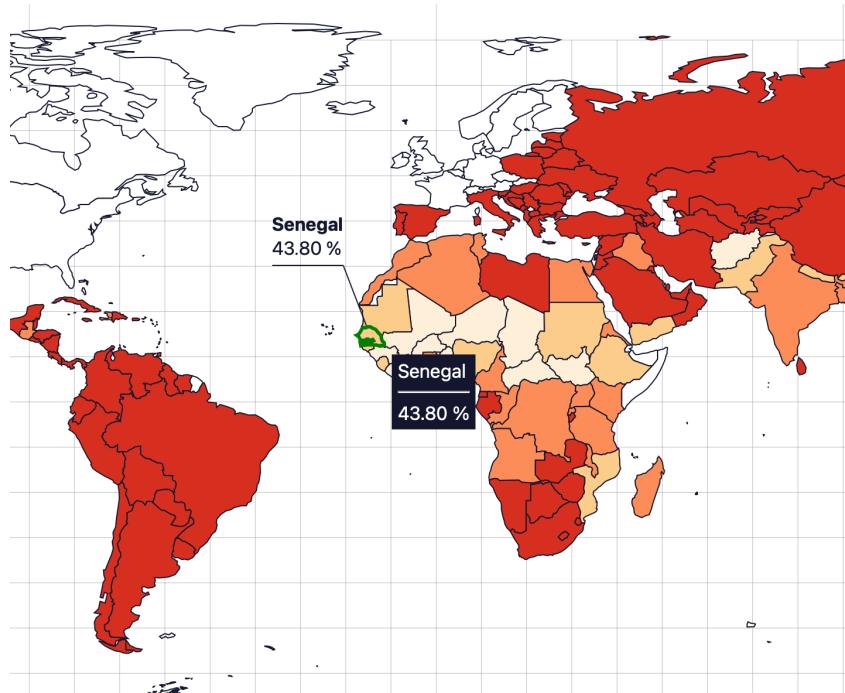
Source: <https://www.populationpyramid.net/de/senegal/2021/>

Language map of Senegal



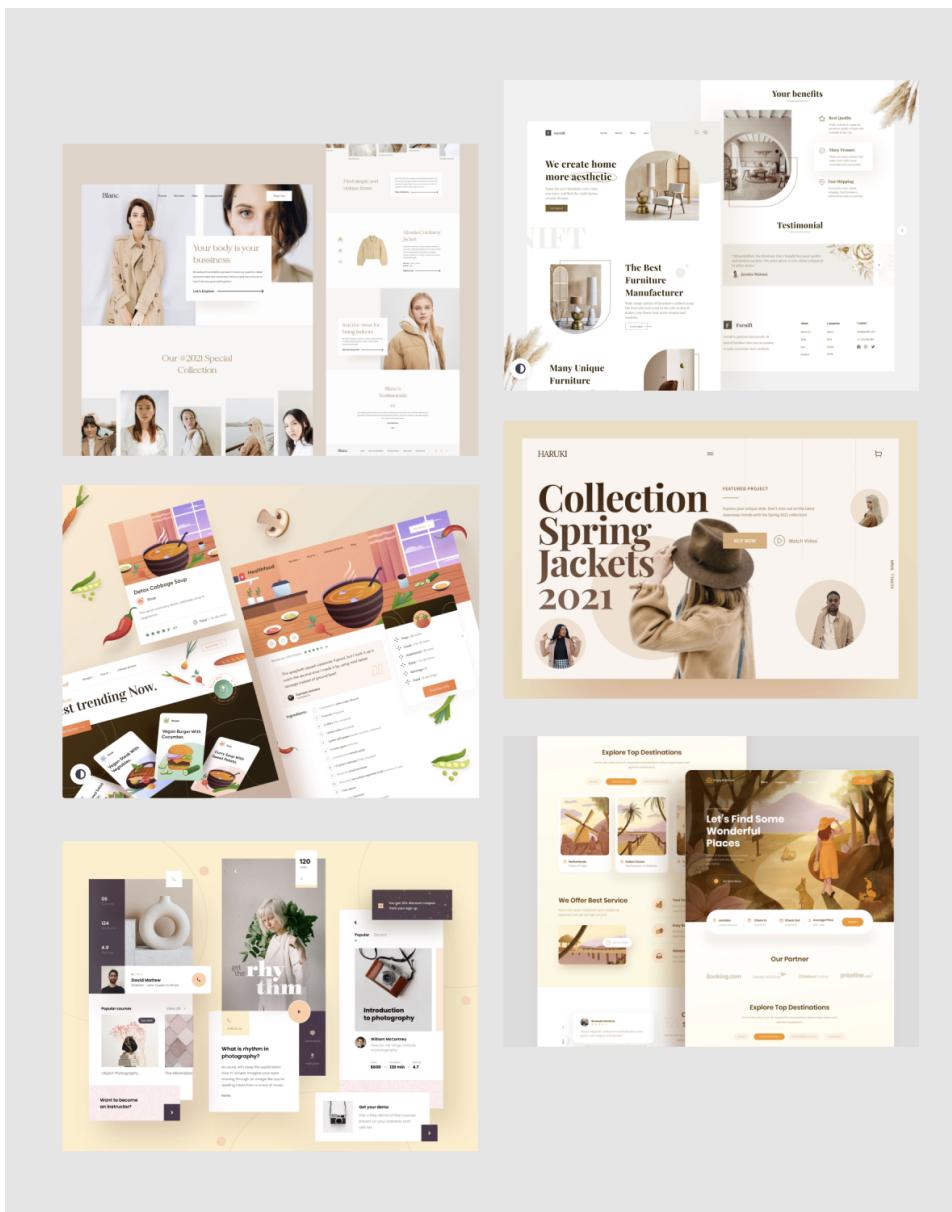
Source: <https://translatorswithoutborders.org/wp-content/uploads/2021/08/Senegal-Language-Map.pdf>

Literacy rate in Senegal



Source: <https://www.populationpyramid.net/hnp/literacy-rate-adult-female-of-females-ages-15-and-above/2015/senegal/>

12.2UI DESIGN - MOOD BOARDS



12.3 RESEARCH ON COLORS

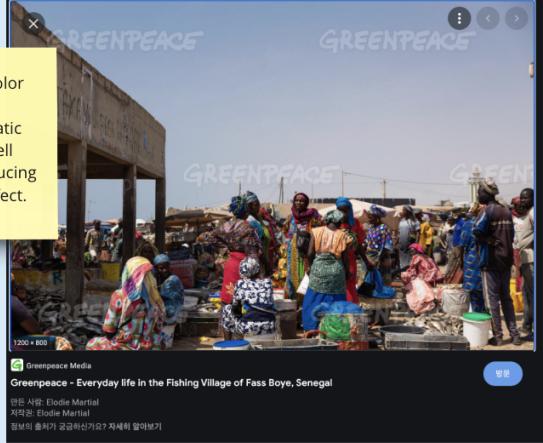
From the colors described in the link here I found this two fitting for our purpose

Blue: love, harmony, togetherness and peace

Maroon: healing, plus the colour of Mother Earth.

In terms of color shades:
Monochromatic colors go well together, producing a soothing effect.

Some pictures to get a feeling which colors are represented:
In general I found the Senegalese wear more colorful clothes



<https://applecolors.com/search/?name=shelter&page=1>

<https://www.supercolor.com/blog/the-meaning-of-the-color-blue/>

The color blue represents both the sky and the sea and is associated with open spaces, freedom, intuition, imagination, inspiration, and sensitivity. Blue also represents meanings of depth, trust, loyalty, sincerity, wisdom, confidence, stability, faith, and intelligence.



African Humanitarian Orgs logos



TANZANIAN CHILDREN'S FUND



100 miles and more



INTERNATIONAL COLOR SYMBOLISM