

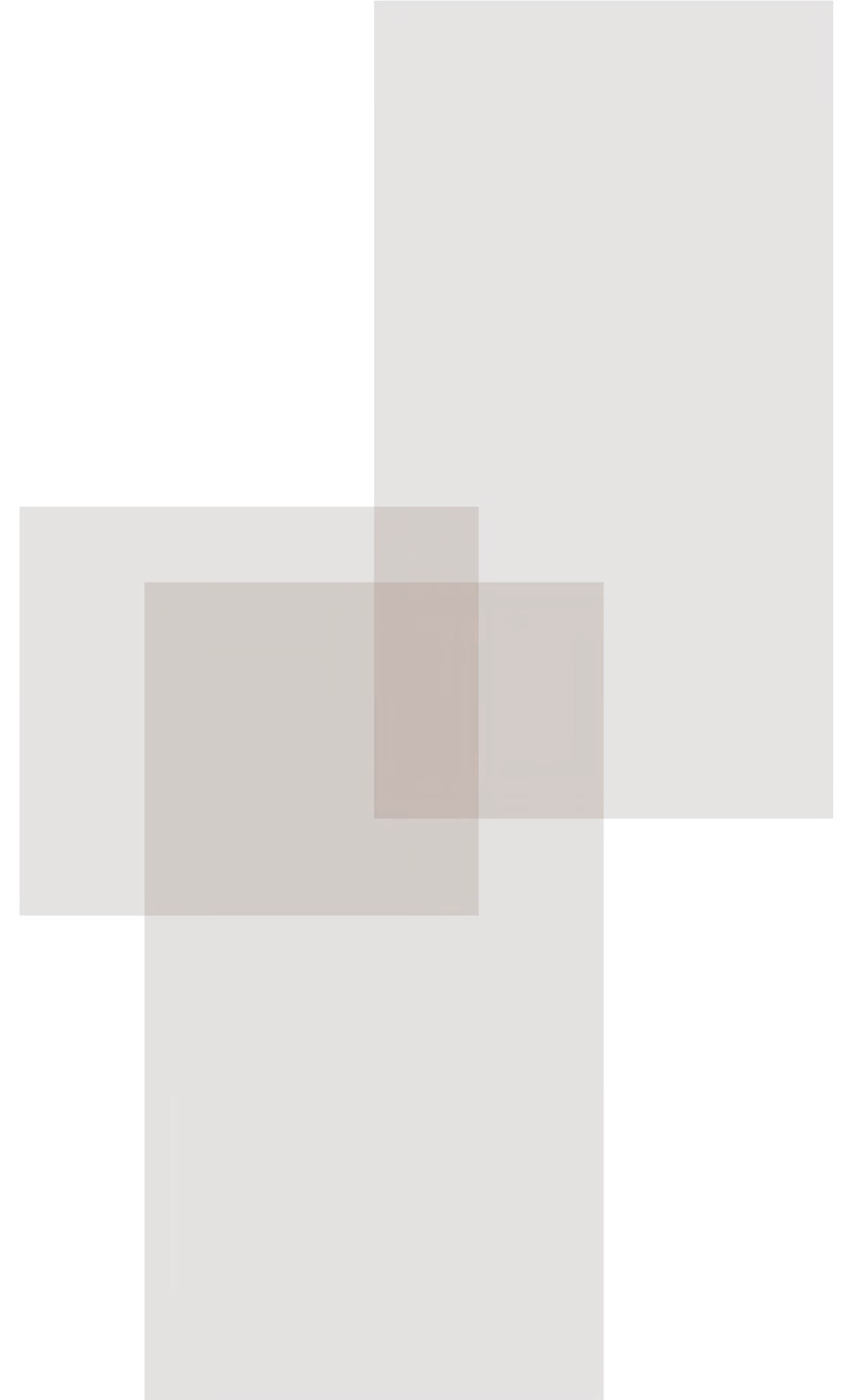
Accessible Mobility Devices for The Gambia

A project based upon available materials and skills designing mobility devices within the socioeconomic and environmental constraints of The Gambia.

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The Gambia

- Population: \approx 2.5 Million
- 53,8% of the countries population lives below the poverty line income of 1503 Gambian Dalasi per Month (22,13 US Dollars)
- More than 50% of the health care is through foereign aid
- Mobility Impairment is the most common dissability



Note: Adapted and modified from: https://www.researchgate.net/figure/Map-of-Africa-and-Europe-showing-the-three-African-MAFE-countries-and-the-six-European_fig1_276901051



Yassin

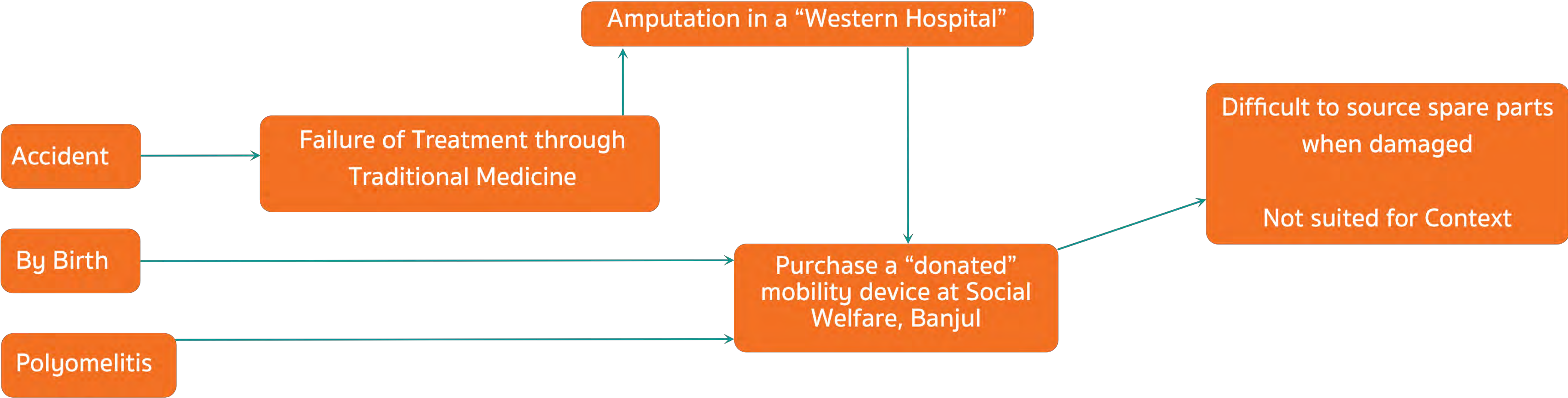
- 26 years old
- Mother of 3
- Malformation of legs by birth
- Main challenge for persons with Mobility Impairment in The Gambia:

The journey from the house door to a form of Public Transportation (TukTuks, Taxi, TownTrip Bus)



Common Path of Mobility Impairment

(Simplified)



Proposed path



2 Collaborative Design Sessions

1st With Leaders of Local Disability Organisations

2nd with Womans Initiative The Gambia

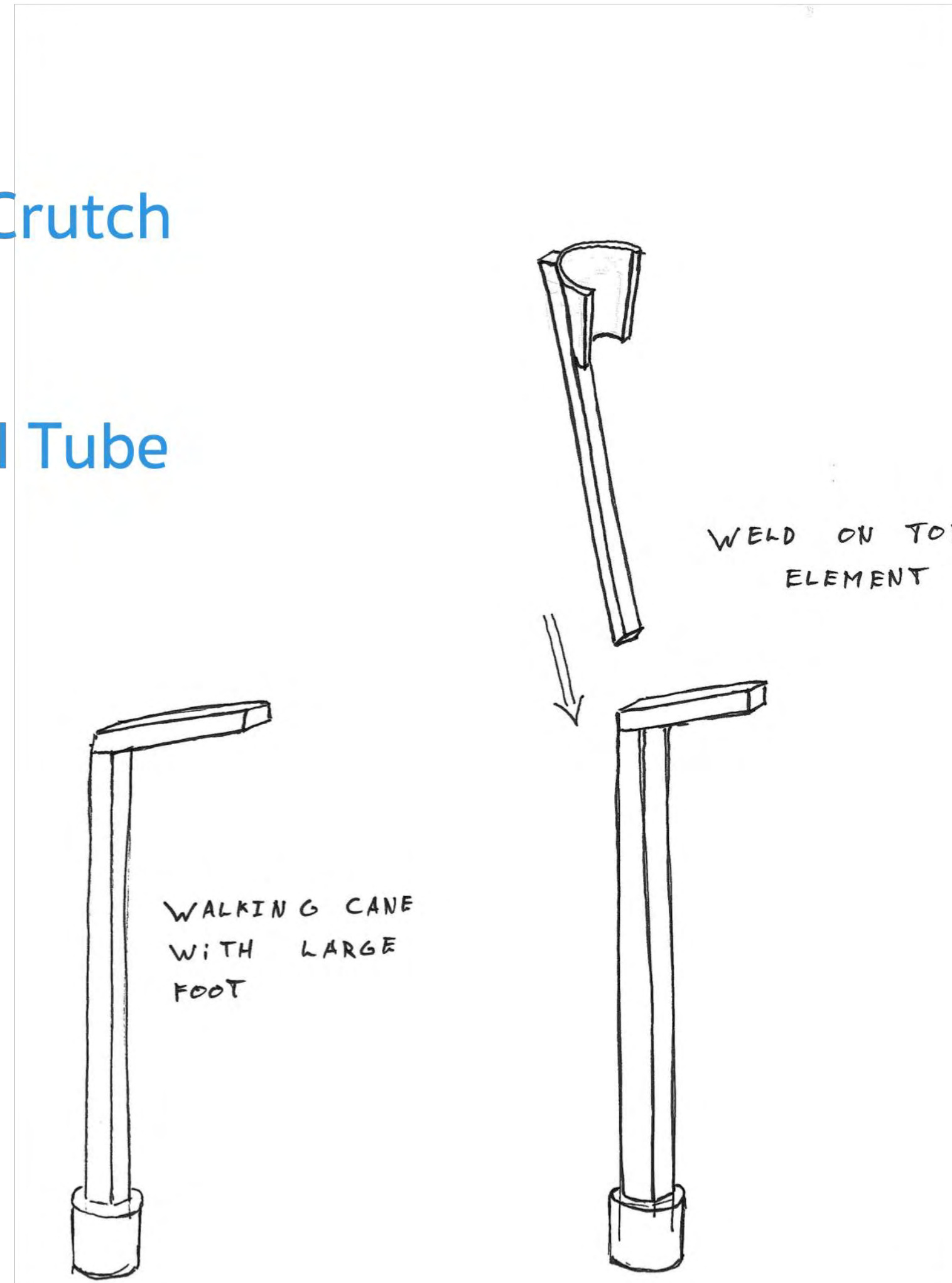
“How to manufacture simple mobility devices locally”



The Concept

Modular Walking Cane / Crutch

- Made from Square Metal Tube
- Recycled PET bottles
- Recycled Car Tyre



Materials and Handle

- Square Metal Tube + Welding is the most common Skill + Material combination
- PET bottles are heatformed to create the Handle



Foot Design


- Inspired by the flexibility of the human ankle, and the camel's foot spreading out to manage sand
- Two rubber stripes cut from car tyre



Manufacturing Manual

Measuring Patient

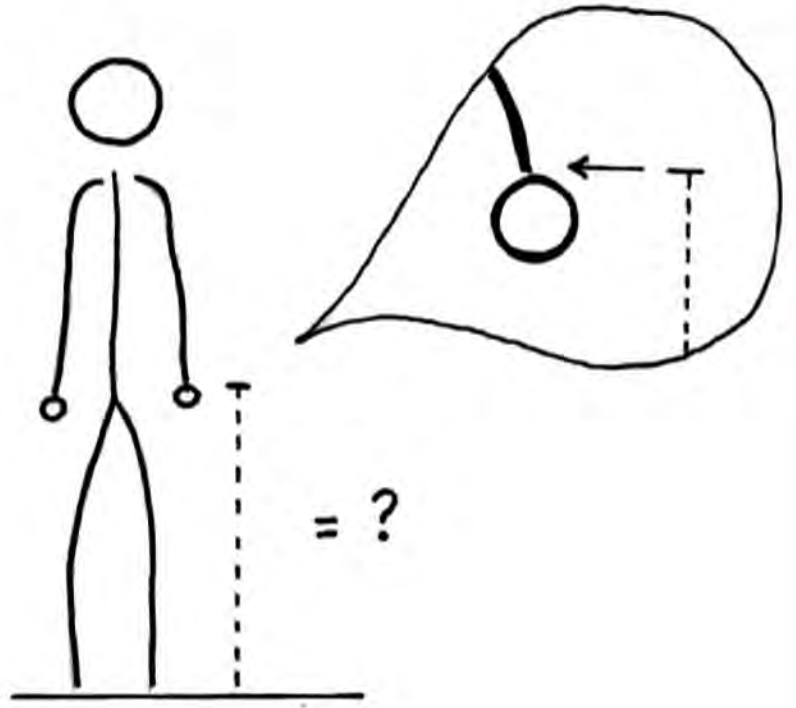
Tools



1.

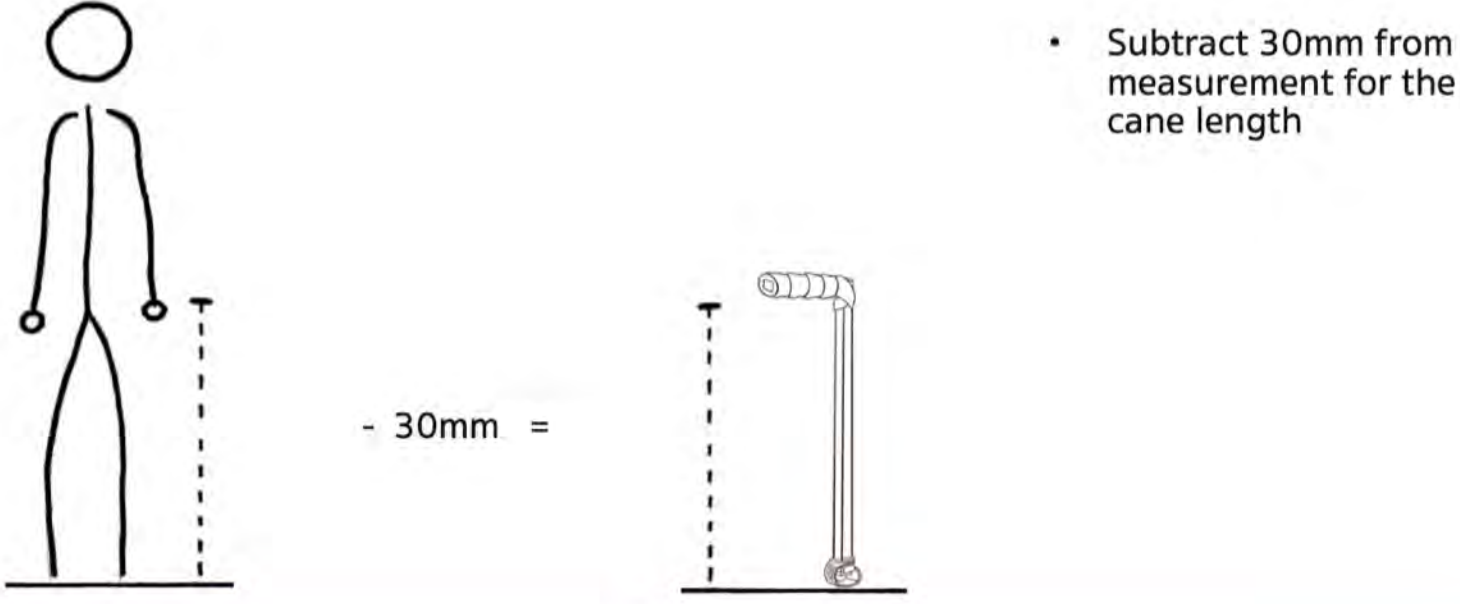
The patient should stand upright with arms relaxed. They should wear their everyday walking shoes.

- Measure the height from the ground to the wrist of the patient.
- Notate the measurement

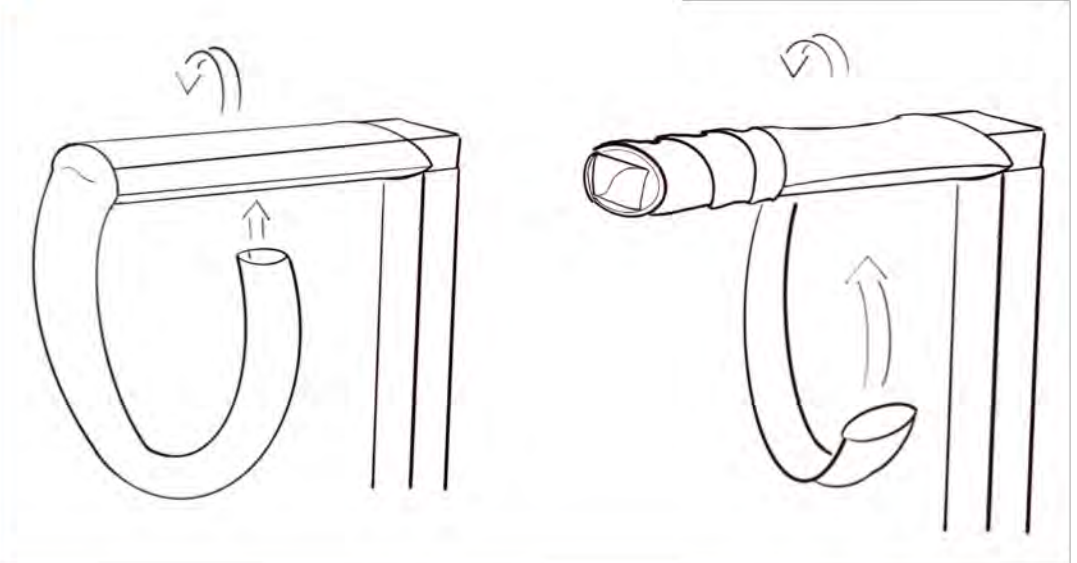


2.

- Subtract 30mm from measurement for the cane length

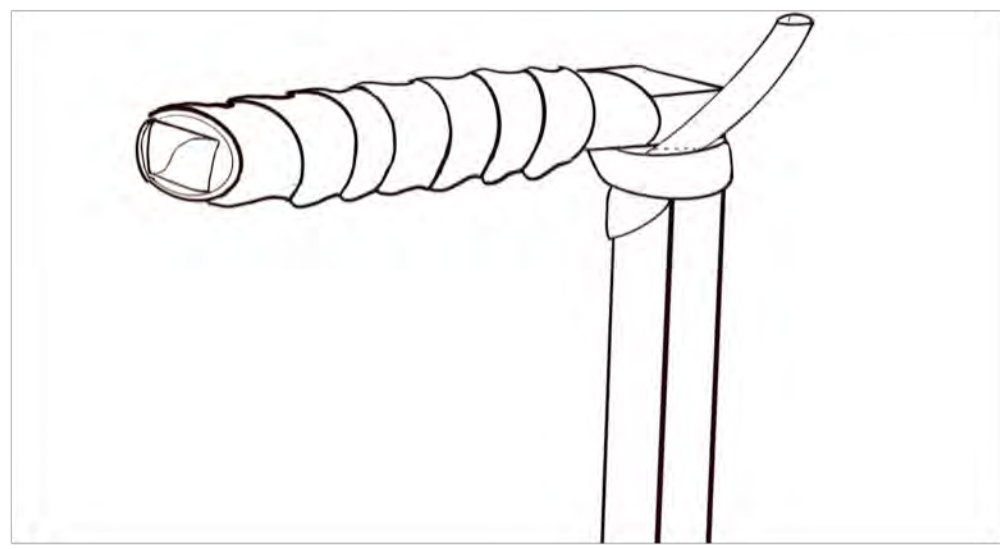


3.



- Make a tight fold of the bike tyre tube
- Wrap tightly around the handle

4.



- Wrap until the end of the handle
- Wrap around the cane leg as shown
- Tuck the lose end under as shown

• Sketched to accomodate for Illiteracy



Art and Costs



- Art integrated to the Mobility Device could help create greater societal acceptance for PwDs

Costs for 1 Crutch:

- Materials ≈ 4,7 USD
- Labour ≈ 4,2 USD
- Total ≈ 8,9 USD

(dependant on negotiation skills)

Note: Bead Art by Bintou Jalow



Updates and Progress

- Replaced PET with wrapping from bicycle tyre tube

2 Manufacturing Trainings planned:

- 1st in Banjul at the National Rehabilitation Centre
- 2nd in Basse, 400km up the river at the other end of the country



Ideal Impact

