



nawwar
LIGHTING FOR RURAL COMMUNITIES
BY SHAHD AMR

The Problem

32.5% of Egyptians live below the poverty line without having access to their basic needs like food, clean water, and light or electricity. Lack of access to electricity is one of the biggest troubles facing the world's poor, with over 1.6 billion left in the dark globally feeling unsafe and unprotected which raises the percentage of crime. For their lighting needs they depend on candles, and kerosene lanterns which are harmful and cause fires. Most women are afraid to go out at night in these areas as it is very dark and they feel unprotected. In Egypt the most common areas that unfortunately do not have access to electricity and light are the rural areas.

Existing Nonelectrical Light

These are examples of light used by people in rural and underprivileged areas. since they don't have electricity they depend on other energy sources. Some also make campfires at night for lighting and warmth.



campfires are used to produce light and warmth at night. However it emits a lot of pollutants to the air



kerosene lamps are used as a source of light, but are dangerous because of the risk of fire and number of fumes that the lamps emit.



The solarbottle is a quick solution for lighting indoors. It mainly consists of water and bleach and when it is put in sunlight it reflects the light. The disadvantage of the solar light is that it only works with sunlight therefore it does not work at night or outdoors.

Location

Rural areas specifically south of Egypt suffer most from electricity shortages especially Bani suwayf where there's an entire village with no electricity at all.

Some villages in Sinai where nomads and beduins live also suffer from electricity and light shortages



Environment

The houses are joined to one another in a continuous row. In a typical house the windows consist of a few small round or square openings, permitting scant air or light to enter. The roofs are flat and built of layers of dried date-palm leaves, with palm-wood rafters. Houses usually consist of a narrow passageway, a bedroom, and a courtyard where the toilets are; part of the courtyard may be used as an enclosure for farm animals. Furniture is sparse. Ovens are made of plastered mud and are built into the wall of the courtyard or inside the house. Furniture, running water, bathroom installations, and electricity are rare and additional signs of prosperity.



User Persona



Mansour

Age: 32

Occupation: Farmer

Location: Bani Suef

Status: Married

Class: C

Traits



Bio

Mansour is a farmer who lives in bani Suef. He has a simple lifestyle. He is married and has 4 children. He follows a daily routine of working in the morning, herding sheep. He tries to finish all his work and chores in the morning since at night the activities are limited due to lack of electricity, clean water and light in his village. At night they usually make a campfire for light and warmth and sit around it.

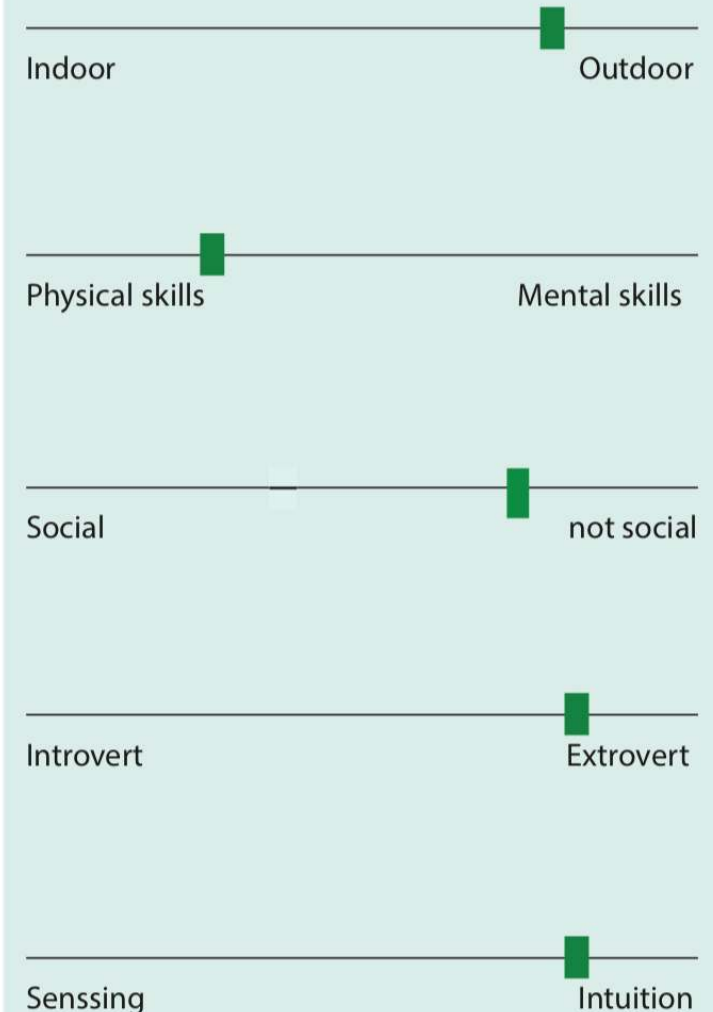
Goals

- Support his family
- Educate his children
- Live in the urban city

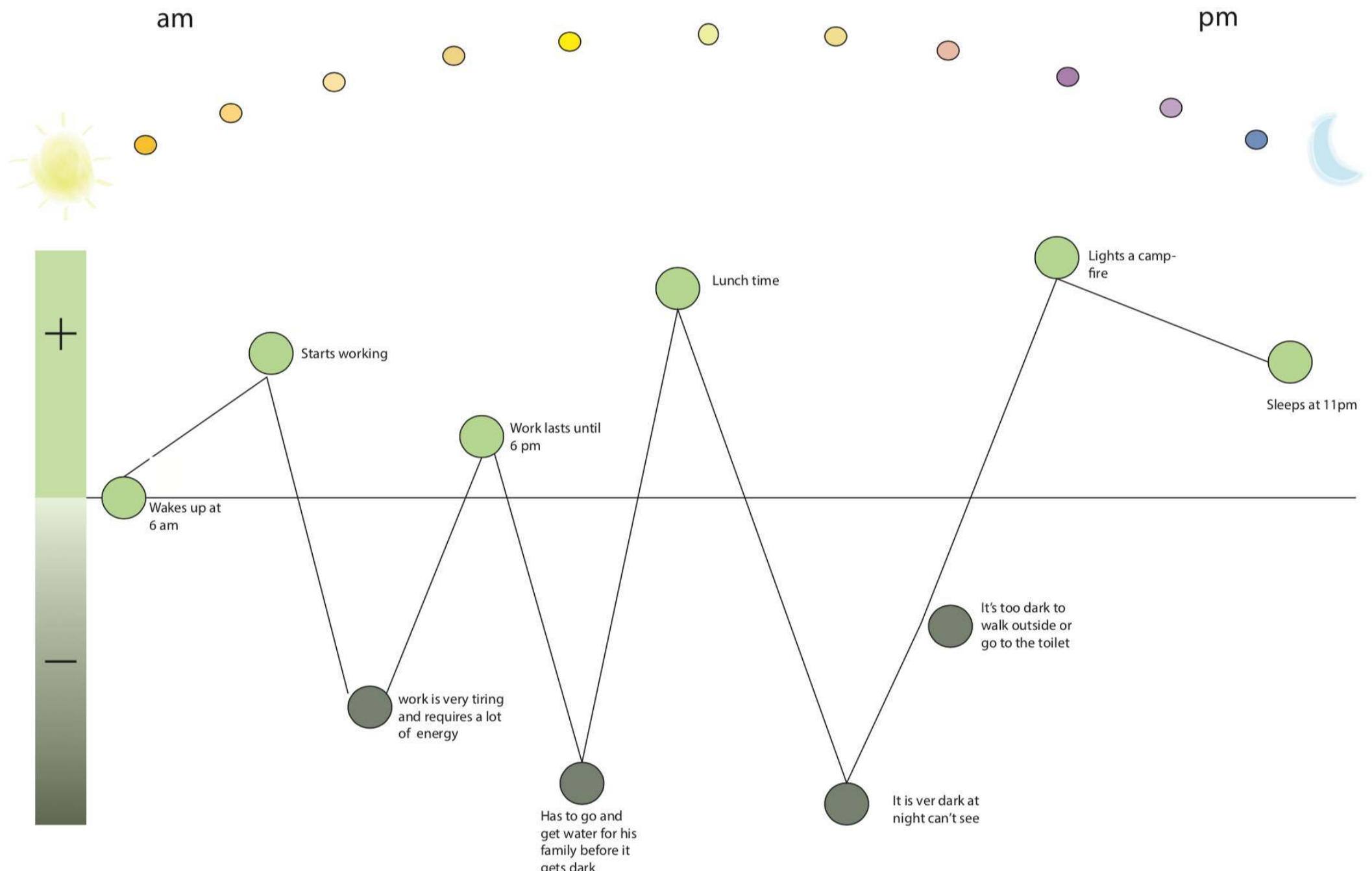
Pain Points

- He feels neglected due to lack of basic needs
- There is no electricity in his village
- He has to walk a long way to get clean water
- There is a long distance between the city, which is the closest electricity connection, and his village.
- Lack of healthcare facilities

Behaviors



Daily Routine



Product Concept

Creating A Safe Environment

A compact and efficient lighting unit powered by solar energy. The light would provide a solution for rural communities in their day to day challenges and would help them walk in their village at night and perform their tasks while feeling safer. It is portable and can be hanged outside or in their homes. The lighting unit would be mass produced and distributed to these rural areas in Egypt that struggle with electricity shortages. The lighting unit charges in the morning and would last up to 8 hours

