

BON VOYAGE

The resilient design against drought for the migration pattern of the people in Samburu, Kenya

Location: Samburu District, Kenya, Africa

Duration: July-September 2017

Type: Academic / Team Work

Designer: Meifang Hu, Zhihong Ke, Sijun Lin, Jiajun Wu, Jiaxin Zhang
From: School of Architecture, South China University of Technology, China

The Samburu county, located in the northeast Kenya, is a semi-desert district with clear divide between rainy seasons and dry seasons. The Samburu people who have lived a nomadic life style are under huge threat of survival because their traditional nomadic pattern of migrating in search of water and pastures are becoming less resistant to severe climate changes.

Because of the labor and tools constraints caused by the low level of local economy and technology, we try to take tiny measures to further improve their resources management of food, grass, soil and water in large scales which will eventually strengthen their resilience to drought. They will not only maintain their nomadic tradition that they have prided themselves on since ancient times, but also enhance their quality of life.



Country / City
University / School
Academic year
Title of the project
Authors

Bon Voyage - The resilient design against drought for the migration pattern of the people in Samburu, Kenya
Zhihong Ke, Jiajun Wu, Jiaxin Zhang, Sijun Lin, Meifang Hu

Guangzhou, China
South China University of Technology
2017-2018





PERFORMATIVE NATURE

Barcelona International Landscape Architecture Biennial

September 2018 **Barcelona**

SCHOOL PRIZE

X International Landscape Architecture Biennial

Máster d'Arquitectura del Paisatge -DUOT - UPC

ETSAB- Escola Tècnica Superior

d'Arquitectura de Barcelona

Avenida Diagonal, 649 piso 5

08028 Barcelona-Spain

TECHNICAL DOSSIER

Title of the project	Bon Voyage - The resilient design against drought for the migration pattern of the people in Samburu, Kenya
Authors	Zhihong Ke, Jiajun Wu, Jiabin Zhang, Sijun Lin, Meifang Hu
Title of the course	Landscape planning and design III
Academic year	2017-2018
Teaching Staff	Guangsi Lin
Department/Section/Program of belonging	Department of Landscape Architecture
University/School	South China University of Technology

Written statement, short description of the project in English, no more than 250 words

The Samburu county, which is located in the northeast Kenya, is a semi-desert district with clear dividing line between rainy seasons and dry seasons. The Samburu people have lived with a nomadic lifestyle which they have traditionally held to be superior compared to the agricultural lifestyle. They migrate with following the water and pasture.

However, the extremely climate changes in recent years is making the district become dryer in dry season. This makes the massive reduction of available water and pasture. Meanwhile, the population explosion is putting heavier survival pressure on both Samburu people and their livestock. As a result, the severe drought occurred in Kenya in the early 2017 have caused millions of people suffer in hydropenia, starvation and death. We raised doubts that the traditional Samburu nomadic strategy and technique cannot resolve the problem.

We choose one of their nomadic areas with a radius of 20 kilometers, which contains habitat in both rainy seasons and dry seasons as our site. In both habitat, we use new strategy of water managing, planting, living quality improvement. In the same time, we addressed the innovations such as new singing well form, new public space in Manyatta, etc.

The goal of this project is to improve the living quality of Samburu people and to help them resist local environmental threats, especially severe drought.

For further information

Máster d'Arquitectura del Paisatge -DUOT - UPC

T: + 34 93 401 64 11 / +34 93 552 0842

Contact via email at: biennial.paisatge@upc.edu

Consult the web page <http://landscape.coac.net/>

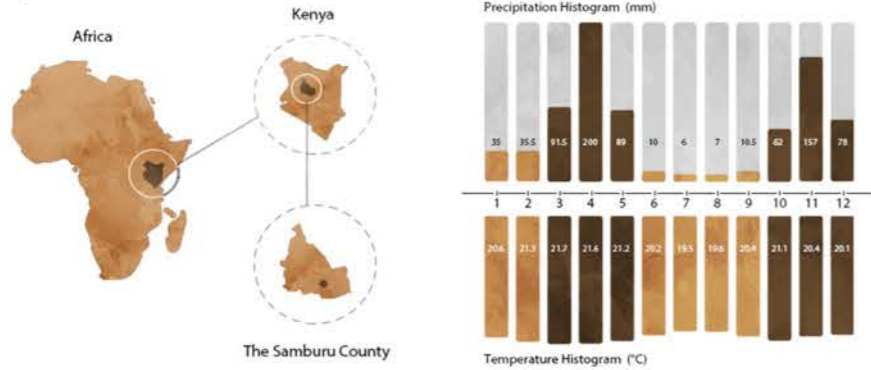
1 SITE ANALYSIS

LOCATION

Samburu County lies within the Arid and Semi-Arid parts of Kenya. It is situated in the northern part of the Great Rift Valley. Samburu area north to highlands mainly rich in precipitation. The site is located in the south of Samburu Wanba area plains.

CLIMATE CONDITIONS

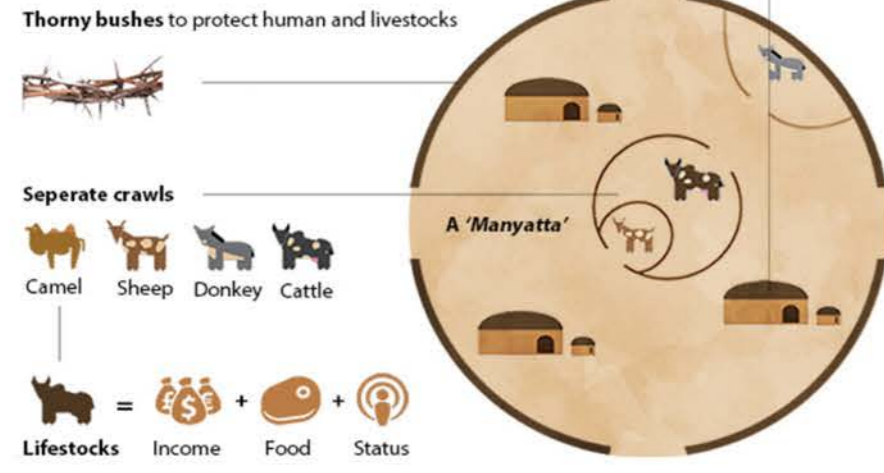
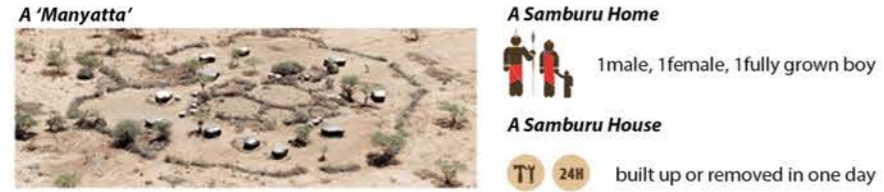
The rainfall in the Wanba area is concentrated in April and November. Dry season duration is long, June-September rainfall is very small. This has led to the perennial drought and water shortage in the region.



2 THE SAMBURU PEOPLE

GENERAL INTRODUCTION

Five to ten families set up an encampment called "Manyatta". The Samburu are nomadic so they might stay in one manyatta for only a month then pack it all up and leave.

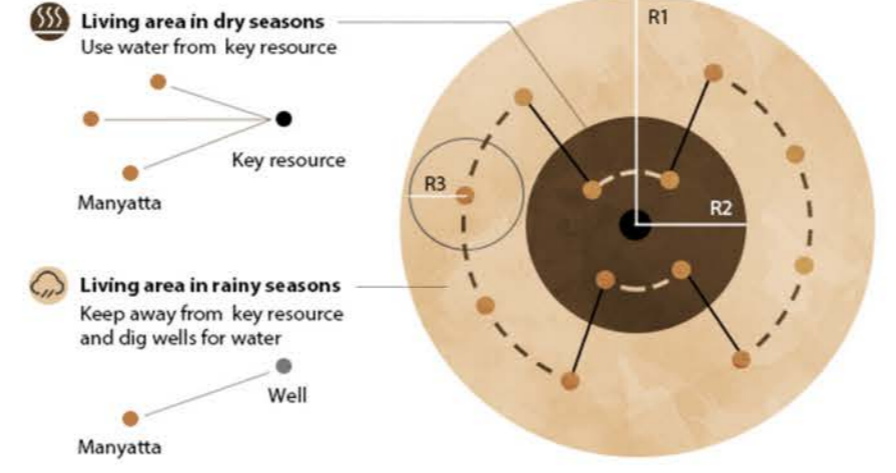
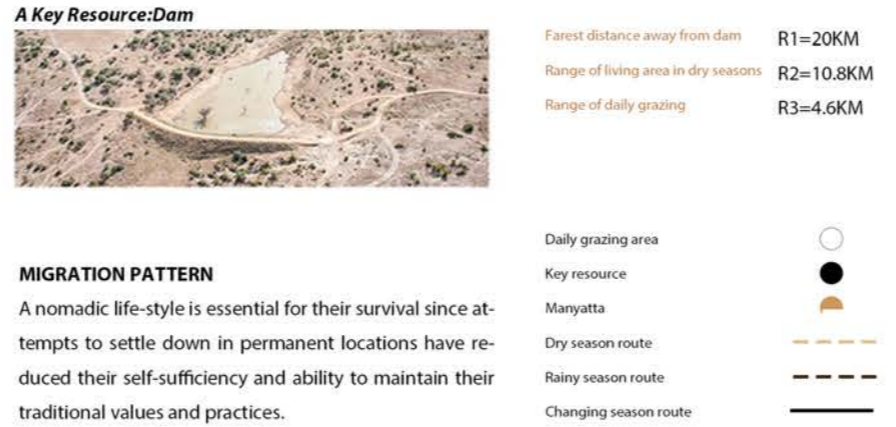
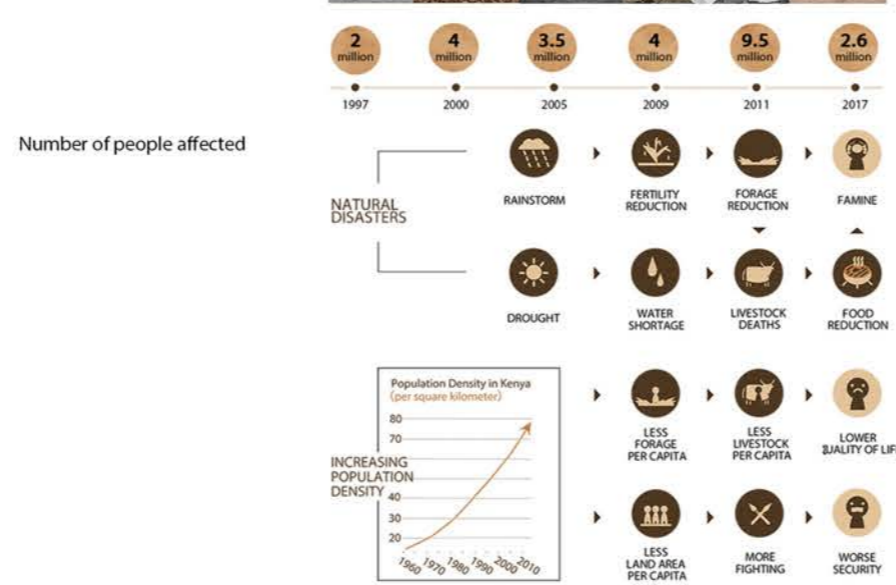


3 PROBLEMS

GENERAL PROBLEMS

Traditionally, Samburu had adapted well to the arid habitat by nomadic pastoralism. However, **population growth, overgrazing, soil erosion and desiccation of their environment** have seriously threatened survival.

DROUGHTS IN RECENT YEARS



4 STRATEGY

MASTER PLAN

The master plan reveals dry and rainy season range of habitation. During rainy seasons, they are away from the key resources grazing to conserve the water in key resource and the grass around. During dry seasons they gather around the key resource and use the water in dams and wells.



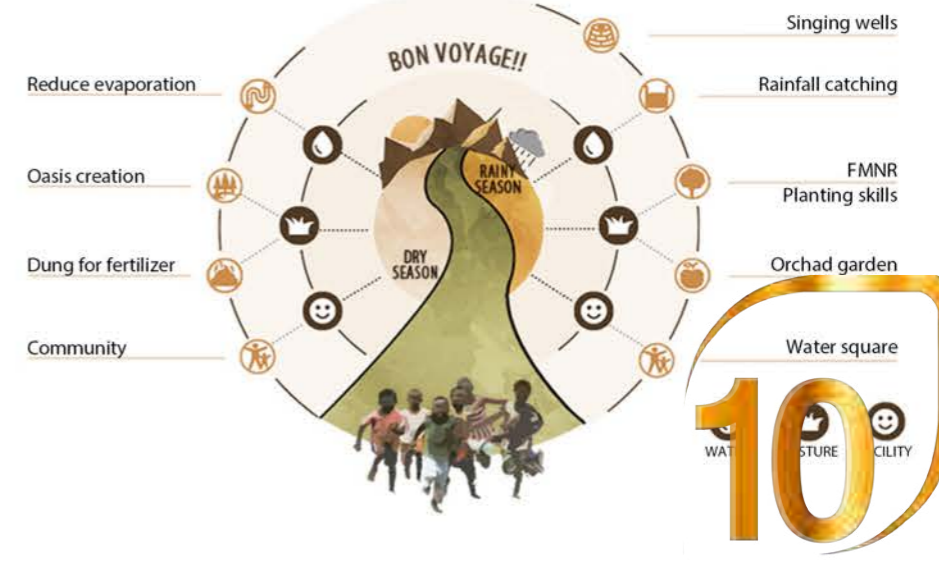
GENERAL STRATEGY

- Help them become more resilient to drought during their iterative journey.
1. Can be **FAST** and **EASILY** built without advanced modern techniques.
 2. Use **LOCAL** materials and plants to become rational.
 3. **RESPECT** local nomadic traditions to guarantee social identity.

STRATEGY BEFORE-AFTER



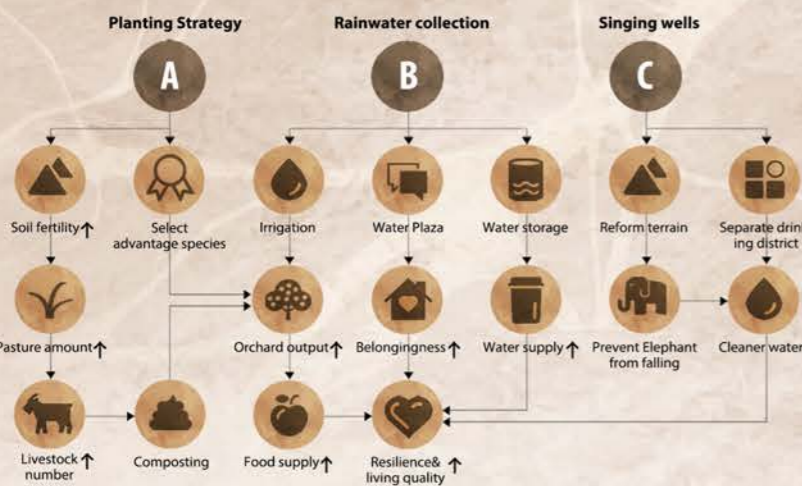
STRATEGY PATTERN



Improved Manyatta and Singing well



Overall Strategy



MULTIFUNCTION

1. *Agave sisalana*
2. *Hyphaene thebaica*
3. *Acacia elatior*
4. *Adenium obesum*
5. *Agave sisalana*
6. *Commiphora schimperi*
7. *Acacia tortilis*
8. *Euphorbia sp.*
9. *Kedrostis gijef*
10. *Aloe secundiflora*
11. *Kedrostis sp.*
12. *Croton megalocarpus*
13. *Delonix elata*
14. *Acacia nubica*
15. *Cordia sinensis*
16. *Hildebrandtia sepalosa*
17. *Sanserveria intermedia*
18. *Cissus quadrangularis*
19. *Myrothamnus flabellifolius*

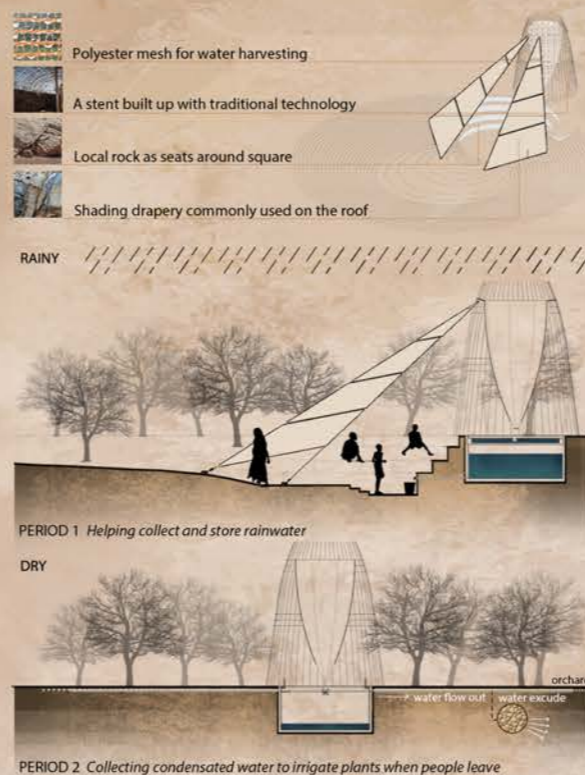
- Fence
- Wood
- Medicine
- Food

Planting Strategy

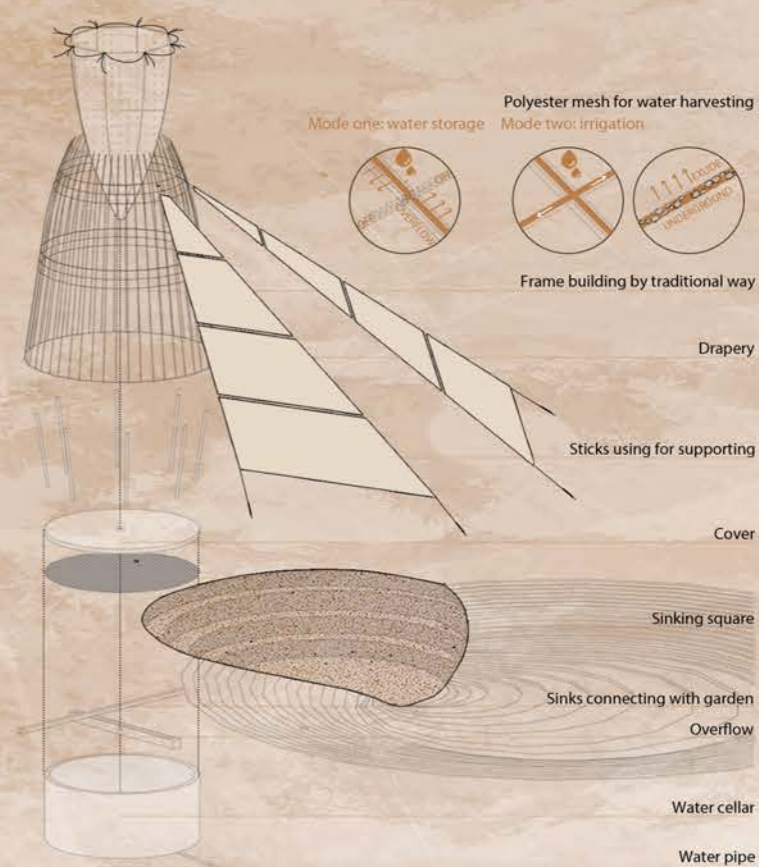
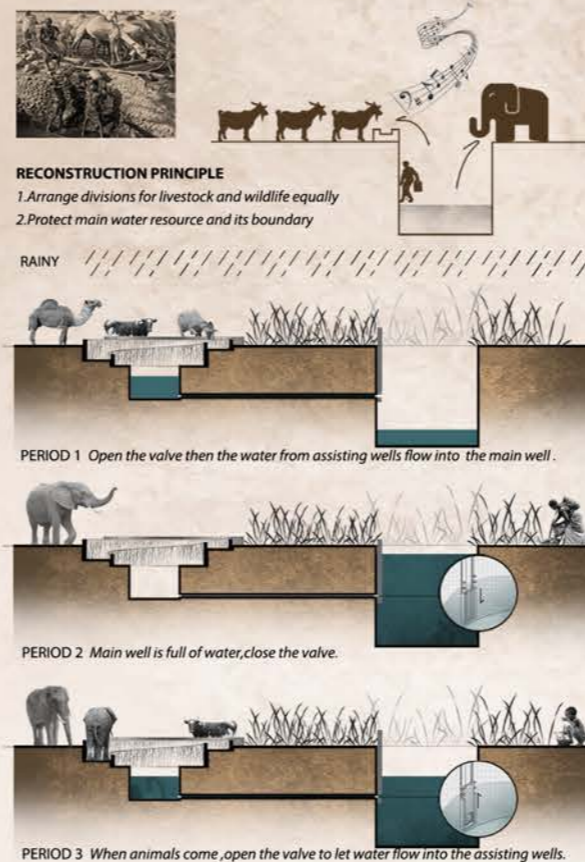


Catchment Unit

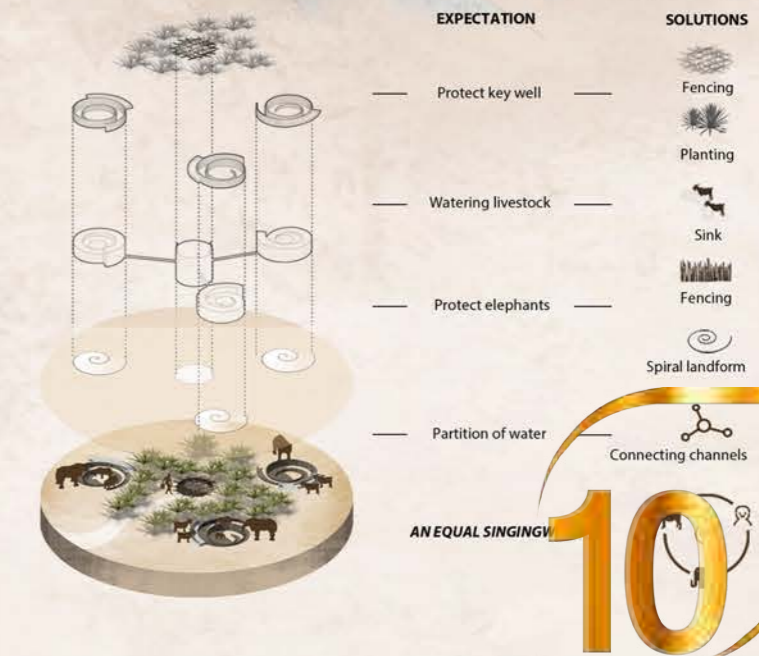
In the past, due to the lack of water storage device, women have to walk far for water. So we hope to set up an unit, which can not only collect and store rainfall in rainy season, but also collect



Singing Wells



The singing well is a distinctive activity of Samburu people when grazing. Each family sing their unique songs to attract their own pivestocks to gather around the well and drink. However wildlife animals also appear, damaging the well.



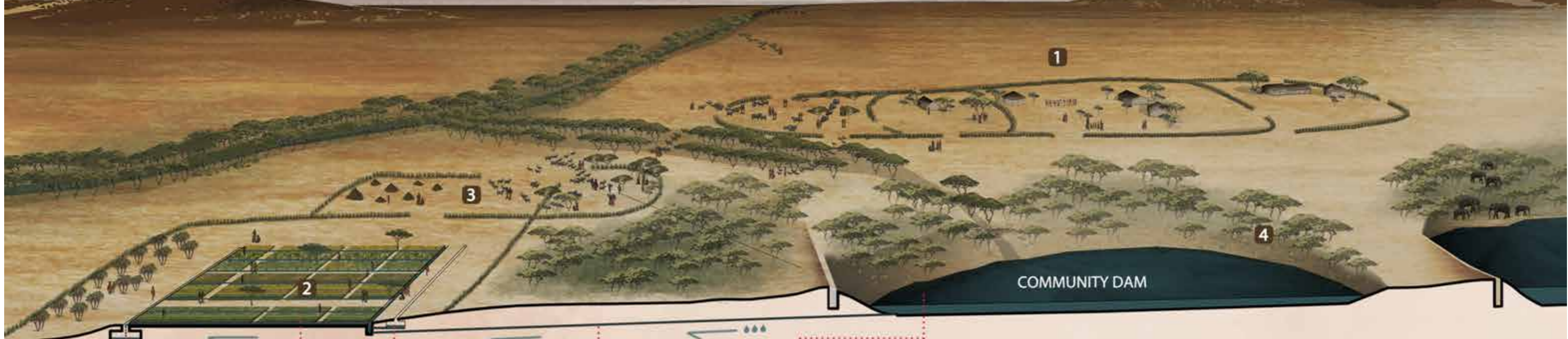
6 DESIGN FOR DRY SEASONS



Overall Strategy

In dry seasons, we focus on building a new community based on the existing small village to provide various services and use livestock manure to help Samburu people to develop simple agriculture to provide stable food supply.

1 A New Community with Infrastructures



CATCHMENT 2

Collect spare water and rainfall in wet seasons to use in dry seasons.

DITCH

For irrigation

CATCHMENT 1

Prevent farmland from inundating by rainfall in wet seasons and collect water for dry seasons.

PIPE

Use underground pipe to transport the water to reduce water evaporation.

WATER SOURCE

Use when the water in catchment have run out.

2 Agriculture

Use both water from the dam and rainfall collected in rainy seasons to irrigate and provide a more stable food supply than their previous traditional nomadic lifestyle.



3 Composting

Using manure produced by large amount of live- stocks to make fertilizer for farmlands is a good way to recycle such valuable waste.



4 Oasis Cultivating

water soil evaporation

