Game idea proposal

1. Game description

Game idea

Our game idea is inspired by the Great Green Wall (GGW) of the Sahara and Sahel Initiative adapted by the African Union. The initiative aims to ultimately stop desertification and land degradation in the Sahel zone by implementing a mosaic of various locally adapted projects. These projects range from sustainable agriculture and agroforestry to reforestation, water management and soil measures such as erosion control. Local communities implement, maintain and innovate those projects as required by the local circumstances.

We incorporate these initiatives, methods and values into a strategic community and economy building game. The player manages and guides a community faced with the drastic consequences of climate change and land degradation. The player will need to implement agricultural techniques that are able to withstand the harsh environment to secure food and a living for the community. In time, they will build a network with other communities to tackle larger projects and reclaim land from the desert.

Story

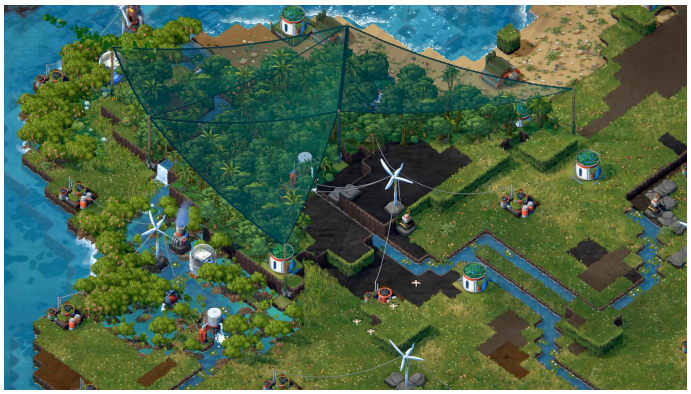
The player finds themselves in a world almost completely destroyed by the effects of climate change. Huge parts of the land are barren and uninhabitable. The soil is unable to grow any plants anymore. Most people already left their homes behind in a desperate search for a chance at a better life somewhere else. But the livable regions get less and less. The player

and a small part of their community live in a vacant region that hasn't been able to sustain itself in years. In an attempt to fight imminent desertification, the player tries to lead their community in their endeavour to reclaim their home once again. Based on their research on the Great Green Wall the player develops a concept to revive the land. And that, in just four years' time.

The wall theme

A green wall acts as a protective barrier between barren land and the land it tries to rescue. With its diversity in trees and plants, the wall serves as a shock absorber, withstanding extreme environmental changes, like erratic rainfall and intense heat. A good starting place for a green wall is near a river or a comparable water source, constructing a first line of defence. With time, the green walls will grow into food forests, providing even more benefits to their community. Besides the harvest, like building materials and food, the green wall also supports temperature moderation. Due to its vast diversity of crops, food forests also help prevent crop failure, making sure the community never goes a season without any harvest at all.

Art theme

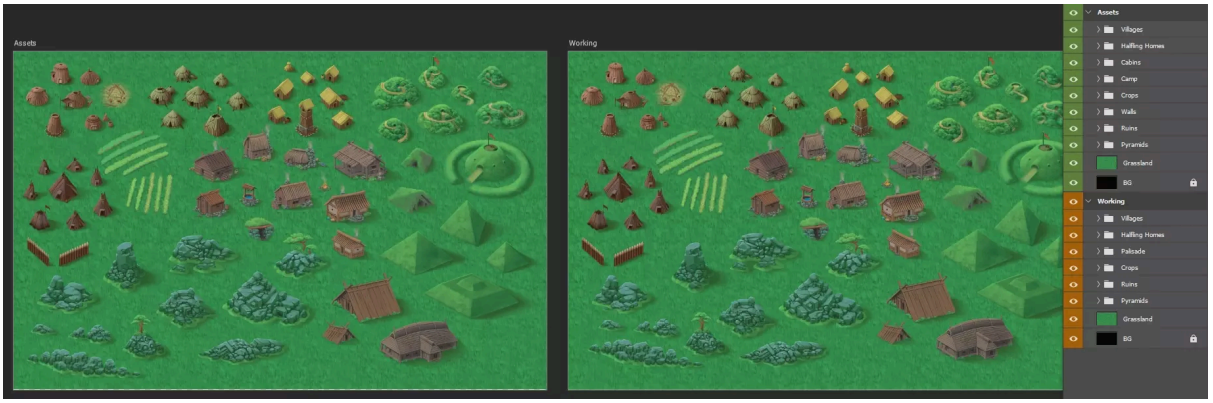


For the art theme we have chosen a 2D style and an isometric view. An isometric view would let users get a better overview of their base and surroundings. It creates some challenges for the assets usage, since isometric view requires specific choice of recognisable sprites that are only seen from one angle. Also, a problem that we will need to consider during development is overlapping, which can happen with an isometric view.

Our game theme would impact our colour pattern resulting in more green dominant colours (the green wall and planted areas) and yellowish secondary colours (desert and sand). We would aim for a more realistic stylised art and less cartoonish style, maybe a little semi-realistic. For the UI we will most likely work with a simple 2D interface.

In case of our asset choice, we are planning to use a mixture of our own drawn assets and free assets available online. The ratio of those will depend on the future development, since we will need some specific assets for different game mechanics.

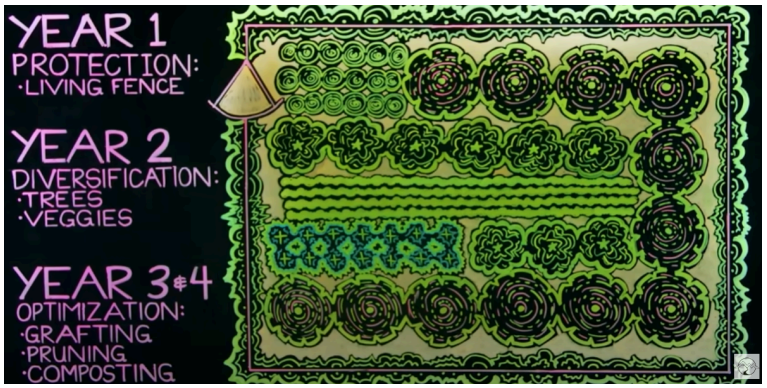
2D style in general would help us to ensure a good performance, like with 3D models, so we could invest less time into optimising the models and more time into the game itself. 2D assets also take less time to create, thus making it easier to make our own sprites for the game.



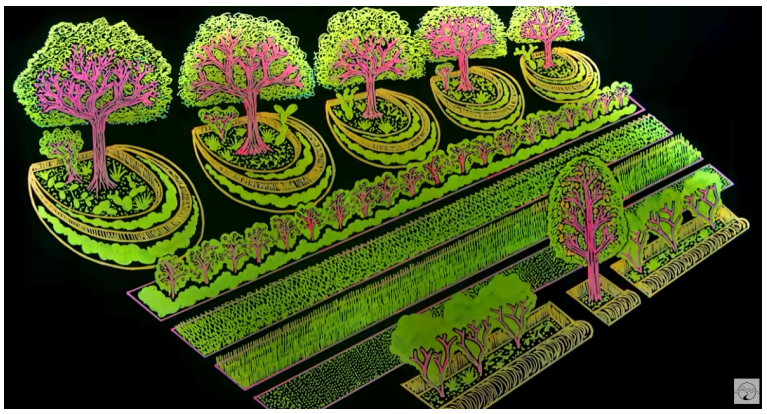
Game mechanics

“The Green Wall” is a turn-based city builder game. Actions in each turn are limited by the amount of workers/community members. Turns are grouped into seasons (Normal Season, Rainy Season, Normal Season, Dry Season, repeat). Players try to cultivate different plants and connect patches of Green Wall to prevent and fight desertification which is readily spreading from the north.

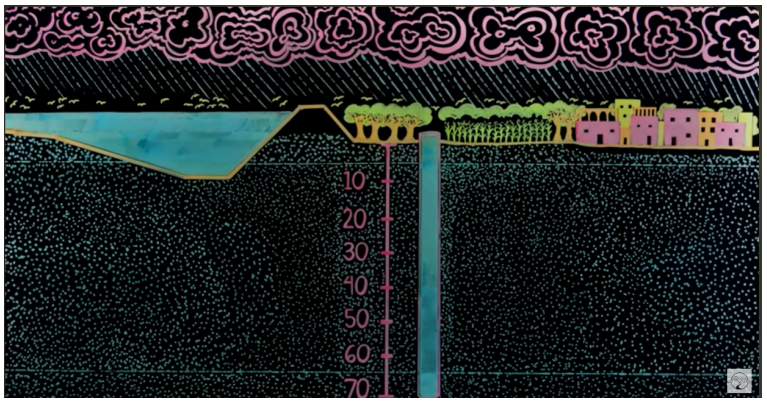
- Agricultulture
    - Planting and harvesting crops in different fashions
    - Mixture of resilient & diverse permaculture and conventional fields
    - Harvested crops provide food to workers
    - The 4 year plan:



- Terraforming
    - Preparing soil for farming and livestock
    - I.e. building green-fenced food forests
    - Digging/building half moons reclaims deteriorated land
    - Food forest:



- Water Management
  - Ground-water level -> wells



  - Chauka-System:
    - Digging structures into land similar to half moons (but bigger)
    - Retain surface water for longer periods
    - Refresh ground water level

  - Water channels:
    - Interconnecting surface water reservoirs to spread water availability
- Community Management
  - Workers need food & clean drinking water
  - Expand with other necessities
- Weather Events
  - Storms: can damage crops etc.
  - Droughts: less rain in rainy season, more water loss in dry season
- Networks & Infrastructure

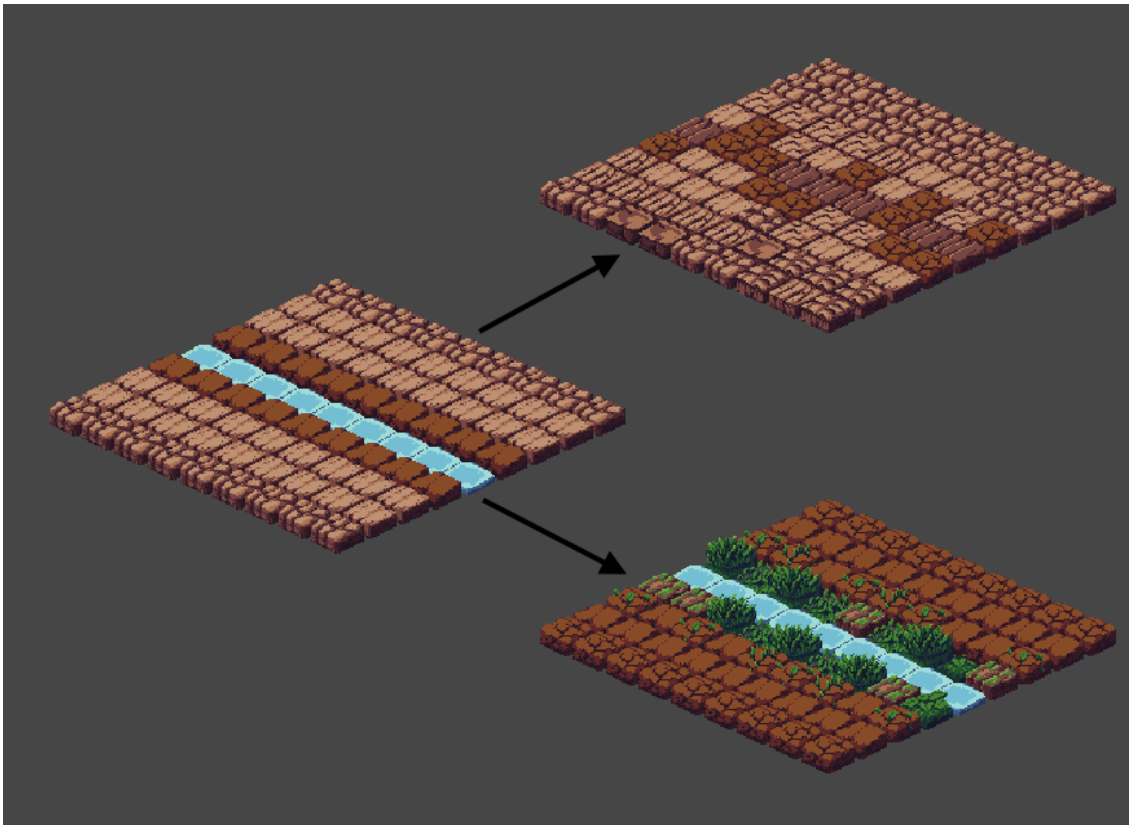
- Connecting to other communities
- Trading

2. Technical achievement

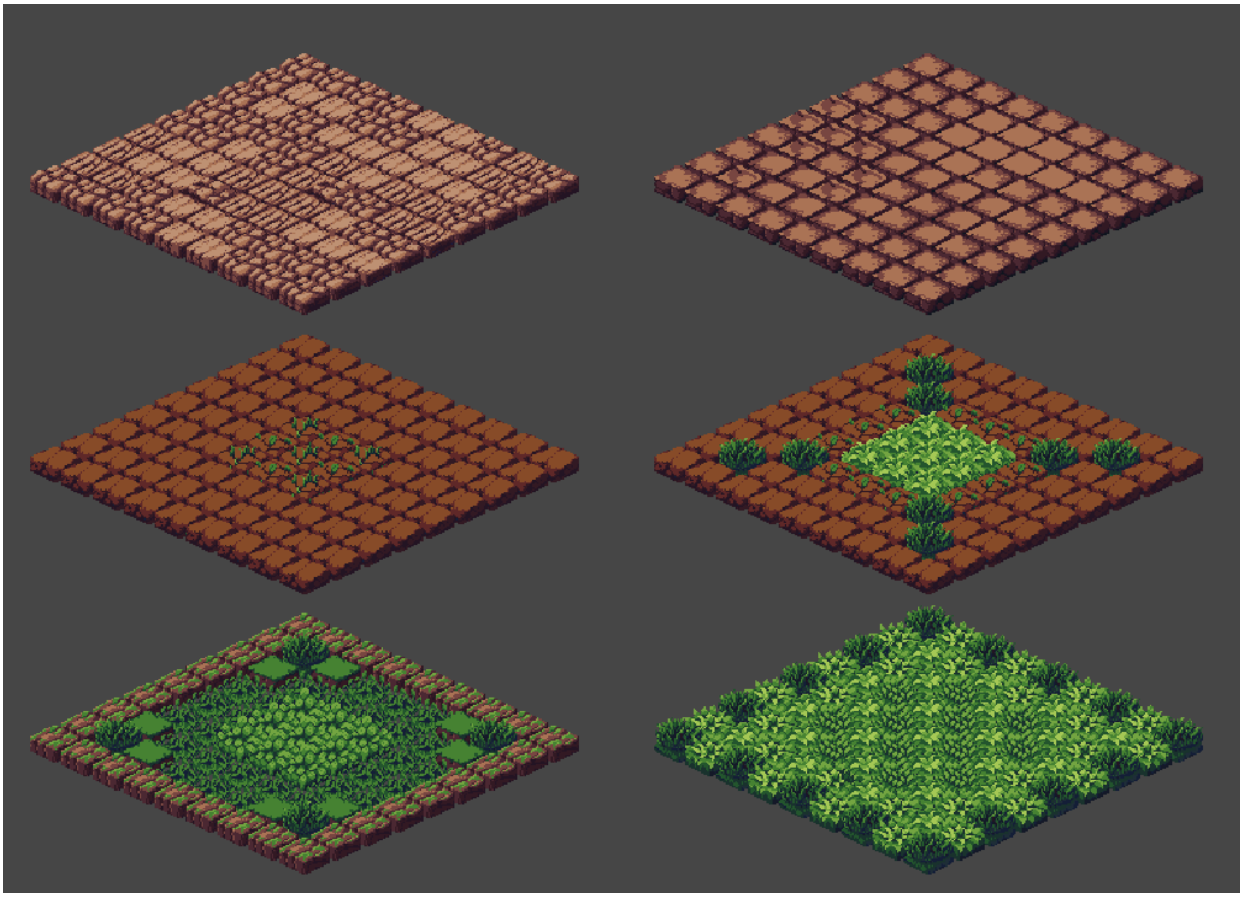
Environmental Simulation

Since our game is greatly inspired by the Great Green Wall of Africa project, it primarily deals with terraforming and agriculture. Players take on tasks such as preparing the soil for cultivation, reclaiming the degraded land, establishing food forests, and replenishing groundwater supplies. Both thematically and in gameplay mechanics, environmental effects play a great role in our game. As the players engage in the turn-based gameplay, as they cultivate the land and build and improve facilities, a step(turn)-based simulation of environment will be running in the background to simulate the effects of the water availability in different parts of the map, growth and spread of the plants and effects of weather on cultivated lands, settlements, water supplies.

We will be aiming for the core parts of the simulation for our desired target such as soil conservation/preparation and water supplies and will add more complexity on top of it as we work on the development. However, we will also experiment with the level of realism in our simulations. While we want to make a game that draws inspiration from real techniques, we also want to create an engaging and fun experience for players. Therefore, we are open to adjusting the certain aspects of the simulation to enhance the gameplay. Surely the players wouldn't want to wait for years to see their plants grow.



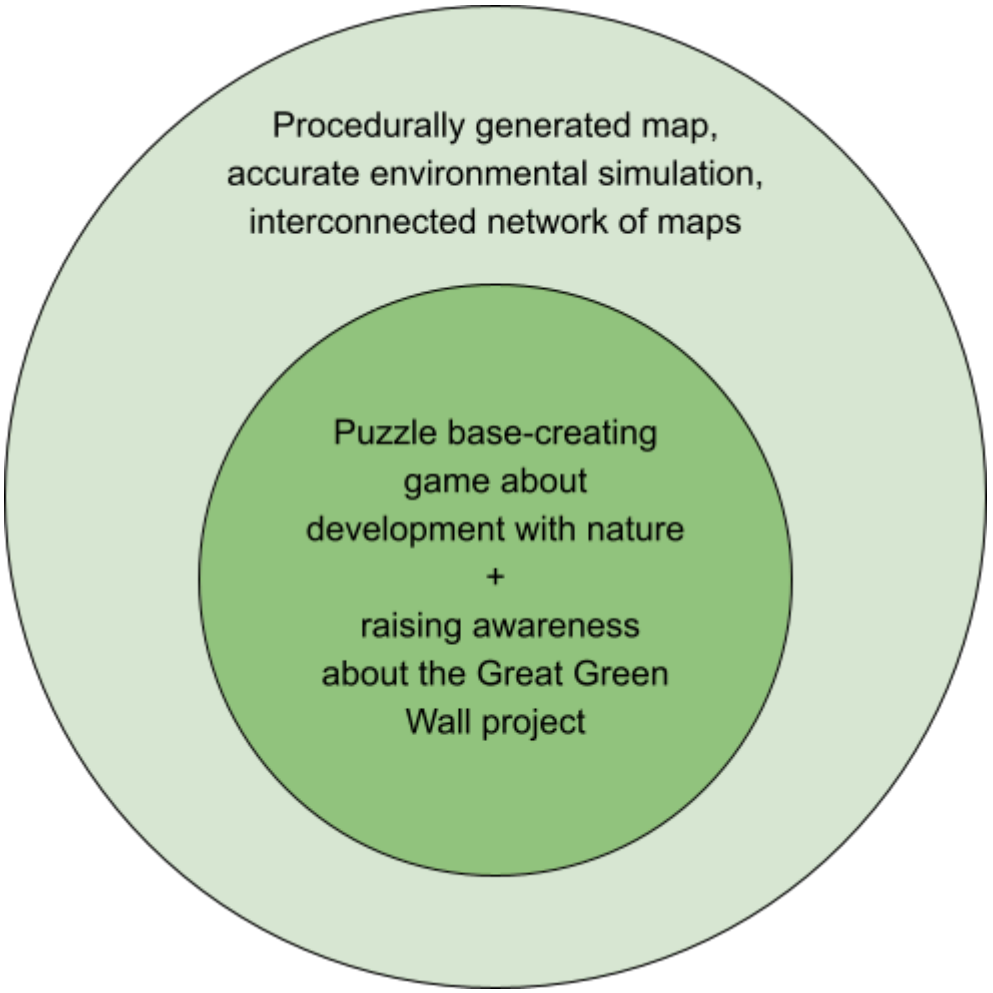
Environment, the soil and the plants can change over time due to events or current conditions and affect their surrounding areas



Procedural Generation

Our initial aim is to manually create a few levels which would be enough for a short playthrough and provide a complete experience. However, as one of our high targets we also aim to add procedurally generated levels and challenges into the game. This procedural generation process does not need to be limited to the terrain and the environment of the level and we can expand this idea to the mission/objective generation as well as adding procedurally generated events (weather events, social/logistical events involving the supplies and settlements etc.) throughout the levels.

3. Big idea bullseye



4. Development schedule

Functional minimum

- One map
- Basic resources: food, water, workers
- Basic facilities: 2 or 3 crop fields, water wells
- Basic turn structure: action points dependent on worker amount, recalculating resources at end of round
- 2 soil types: degraded & arable

Low target

- Seasons to improve turn variety (Normal, Dry, Rainy)
- Basic soil change system: arable soil will degrade during dry season if not protected by certain plants, half-moons will turn soil arable during rainy season
- Differentiation between conventional and permaculture fields (plant resilience to seasons)
- Half-moons as a buildable structure for land reclamation

Desired target

- Basic surface water system: water will be retained in natural “pits”, and half moons, and will either dry up over time or sink into groundwater
- Easy ground water system
- Crops need different level of water, they can die if they are not cared for
- More crops,with properties related to game mechanics
- Weather events: Storms, Droughts, Sandstorms… which make it harder for the player to reclaim land, or even directly degrade land occasionally

High target

- Procedural level generation
- Saving and loading games
- Visual improvements: i.e. some animals roaming around in green areas
- Audio improvements: larger sound and music variety

Extras

- Interconnected cities / regions with specialisations
- In-game “Making-Of” section with additional information about the Great Green Wall project
- Multiplayer Mode

5. Tasks and timeline

	Interrim Demo			Alpha Release			Playtesting		Final Release	
	CW 19	CW 20	CW 21	CW 22	CW 23	CW 24	CW 25	CW 26	CW 27	CW 28
Functional Minimum										
Basic Art Assets										
Building First Map										
Unity Setup										
Resources & Turn System										
Placing "Buildings"										
UI & Main Menu										
Sounds & Music 1										
Low Target										
Soil Change System										
Season System & Effects										
Art Assests: Seasons, Crops, new Soil										
Additional Crops										
Community Buildings										
Sounds & Music 2										
Desired Target										
Ground Water System										
Surface Water System										
Water Stats for existing Crops										
Art Assets: Water, Weather, new Crops										
Tutorial										
Weather Events										
High Targets & Finalization										
Procedural Level Generation										
Saving & Loading										
Audio Improvements										
Visual Improvements										
Feedback integration										
Bugfixing										

6. Assessment

Our game enables players of all ages to immerse into a fictitious world fully affected by the consequences of climate change. Extreme weather phenomena made most of the soil unusable, forcing people to leave behind barren lands. “The Green Wall” teaches players how to survive and regain the land, stopping desertification based on real-life concepts already successfully employed in the Sahel region. Players are not only able to develop their own civilization from scratch but will also learn about the Great Green Wall of the Sahara and Sahel Initiative.