



26/06/2020

VISUAL GAME AND MEDIA DESIGN MASTER PROGRAMME
KADK THE ROYAL DANISH ACADEMY OF FINE ARTS
SCHOOLS OF ARCHITECTURE, DESIGN AND CONSERVATION

Master Project

SPRING 2020

ALEXIS EMMANUEL LOZANO ANGULO
Supervisor: **ALESSANDRO CANOSSA**

allo1834@edu.kadk.dk / aellozanao@gmail.com

*A picture is worth
a thousand words;
a game is worth a
thousand pictures*

D. Duke



SUBSYST
SIMULATOR





MILESTONE: 3844

3308.7



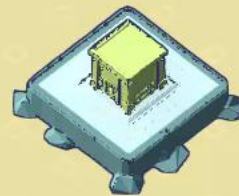
MILESTONE: 5126

3611.0



MILESTONE: 19462

1886.0



RESTART



3310.50



23



570



244.0

CREDITS

5 Project brief



6 Project brief

Target audience

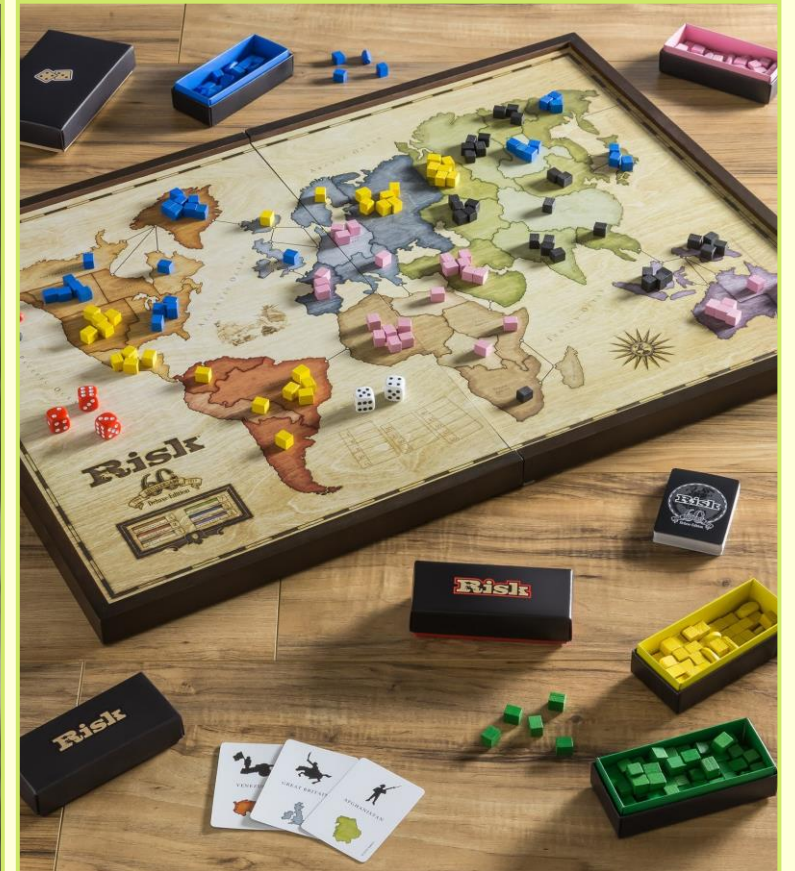
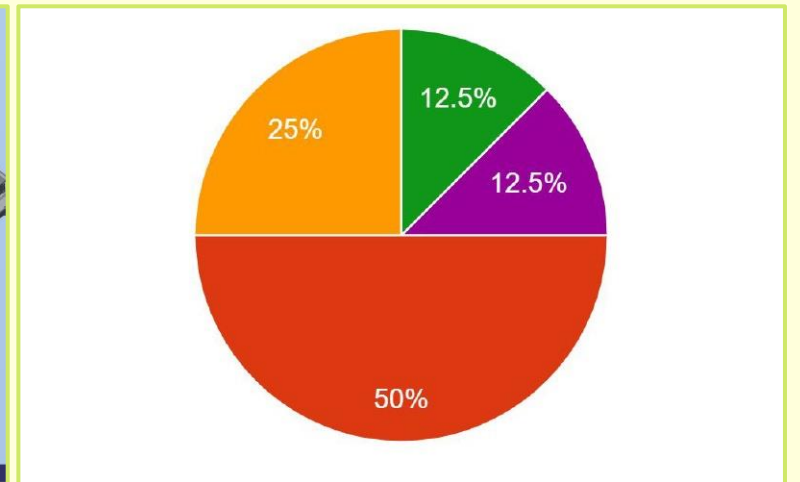
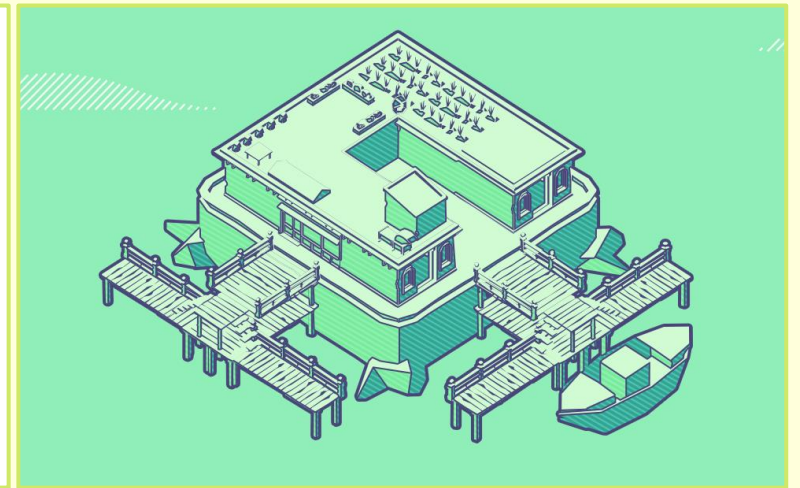
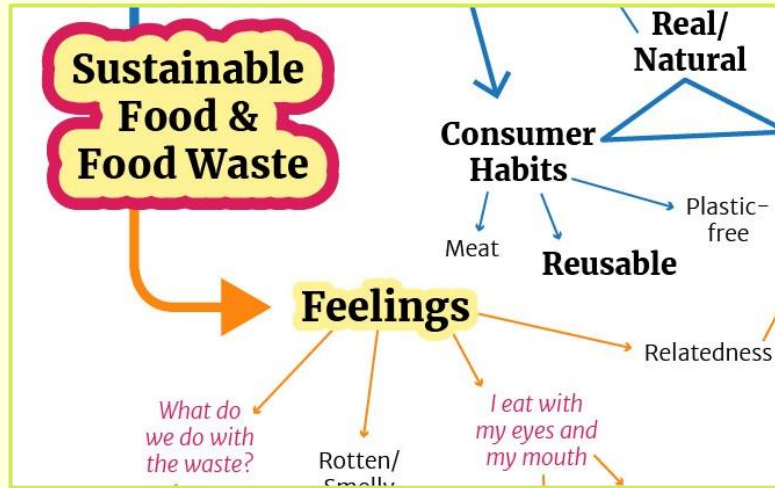


Image sources: From left to right, www.bbc.com, gestagro360.com.br and www.wsgamecompany.com

7 Project brief

My roles



Content

Background



Process



Assessment



BACKGROUND

10



Context



11 Context

UN SDG Goals

11 SUSTAINABLE CITIES
AND COMMUNITIES



12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



13 CLIMATE
ACTION



12 Context

Subject-matter experts



**ELLEN
MACARTHUR
FOUNDATION**



One planet
eat with care



**Food and Agriculture Organization
of the United Nations**

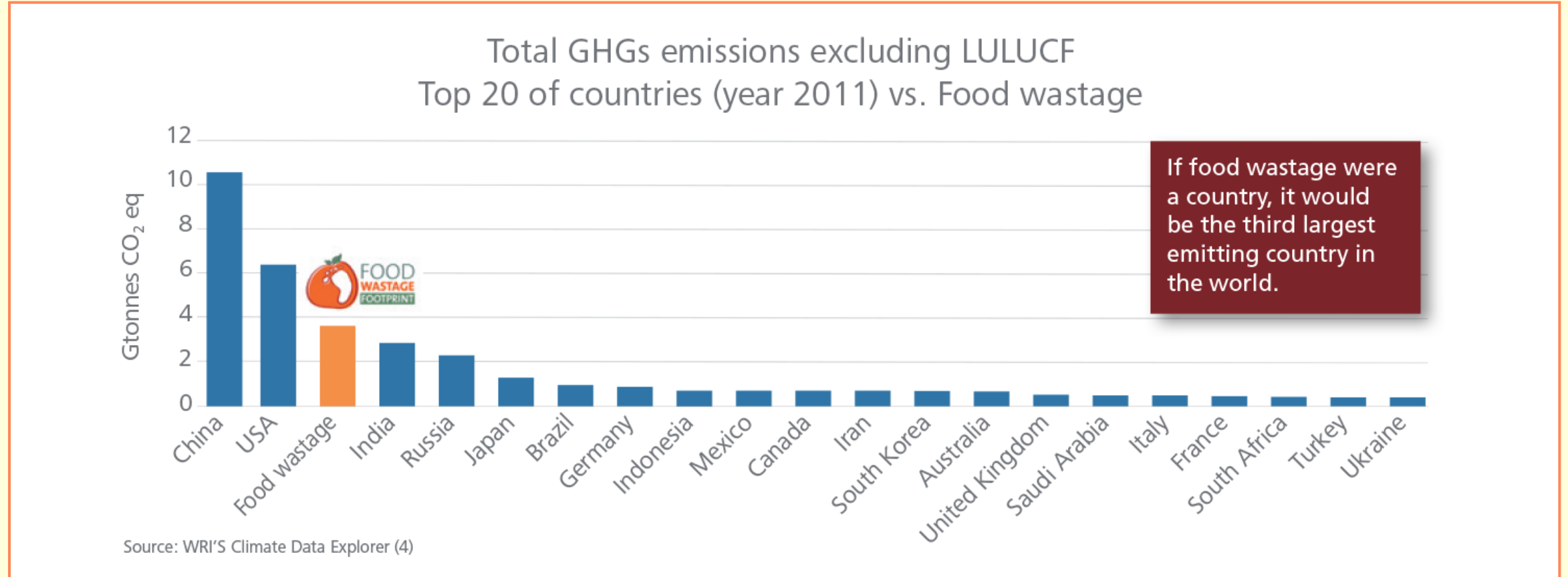
Sustainability

It relates to *finding some sort of steady state so that Earth (...) can support the human population and economic growth without ultimately threatening the health of humans, animals, and plants (Portney, 2013).*



14 Context

Food waste



Source: Food and Agriculture Organization of the United Nations, 2013. Food waste footprint & Climate Change. Published online at [fao.org](http://www.fao.org/3/a-bb144e.pdf). Retrieved from 'http://www.fao.org/3/a-bb144e.pdf' [Online Resource]

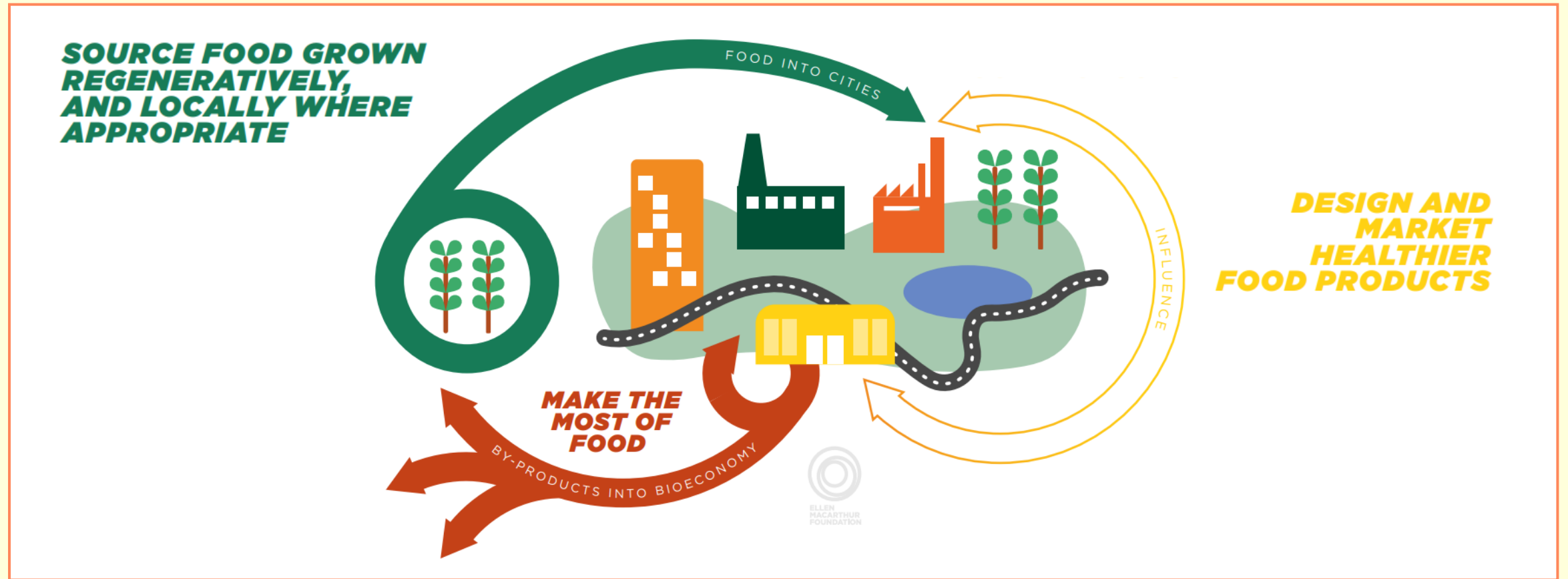
Societal costs



Source: Ellen MacArthur Foundation, 2019. Cities and Circular Economy for Food.

16 Context

Circular economy for food



Source: Ellen MacArthur Foundation, 2019. Cities and Circular Economy for Food.

Psychological barriers

Distance

Dissonance

Denial **Doom**

Identity

18

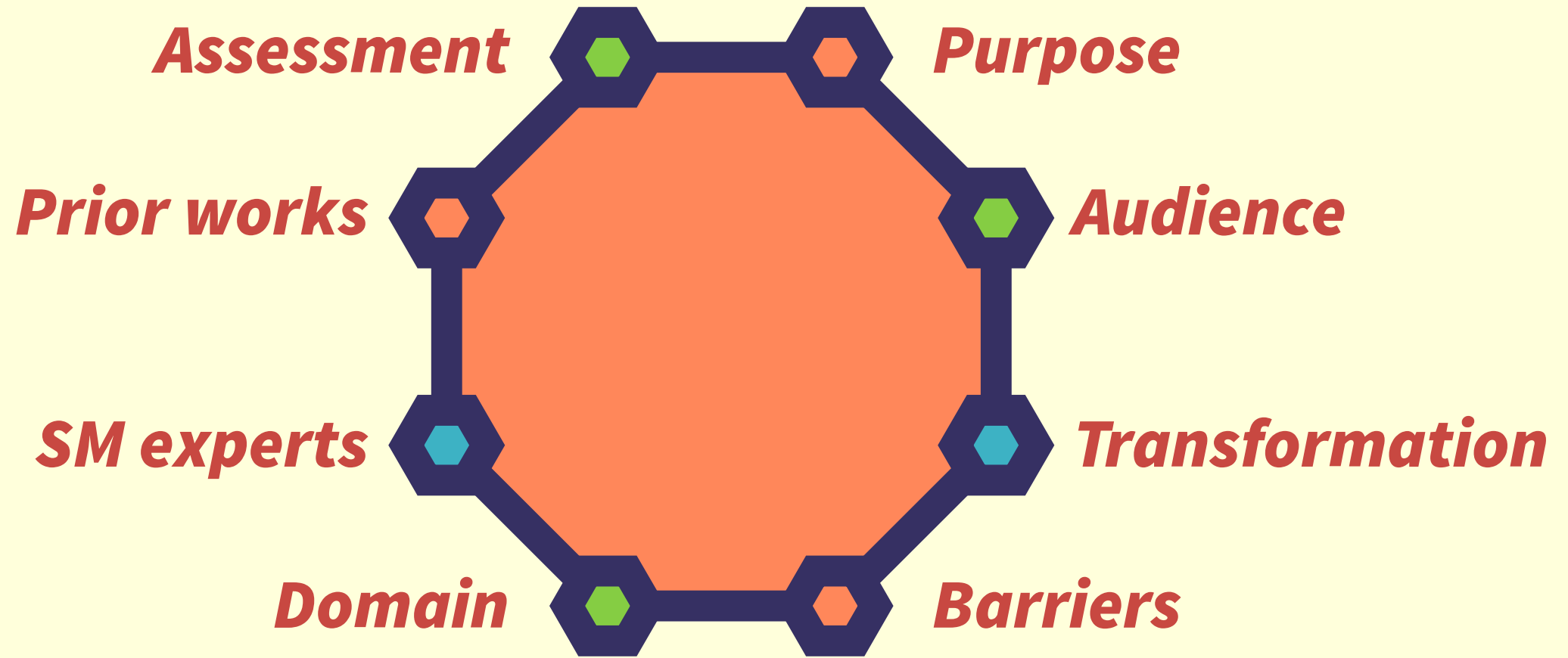
Frameworks & methods



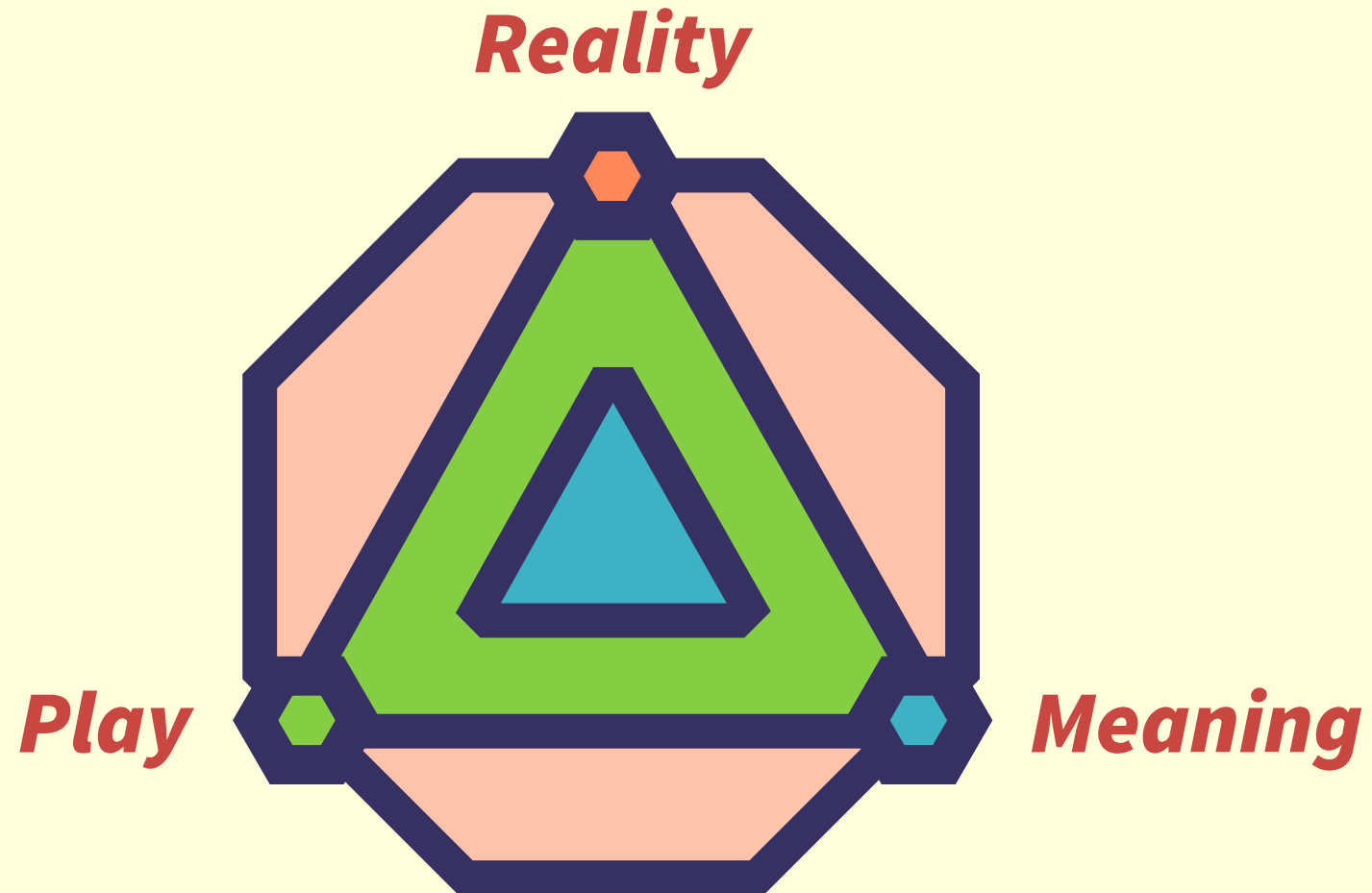
Multi-framework

The research and pre-production stages were developed using the **Transformational Framework** by Sabrina Culyba, as well as the **Triadic Game Design** by Casper Harteveld.





21 Frameworks & theory



Model of reality



23 Frameworks & theory

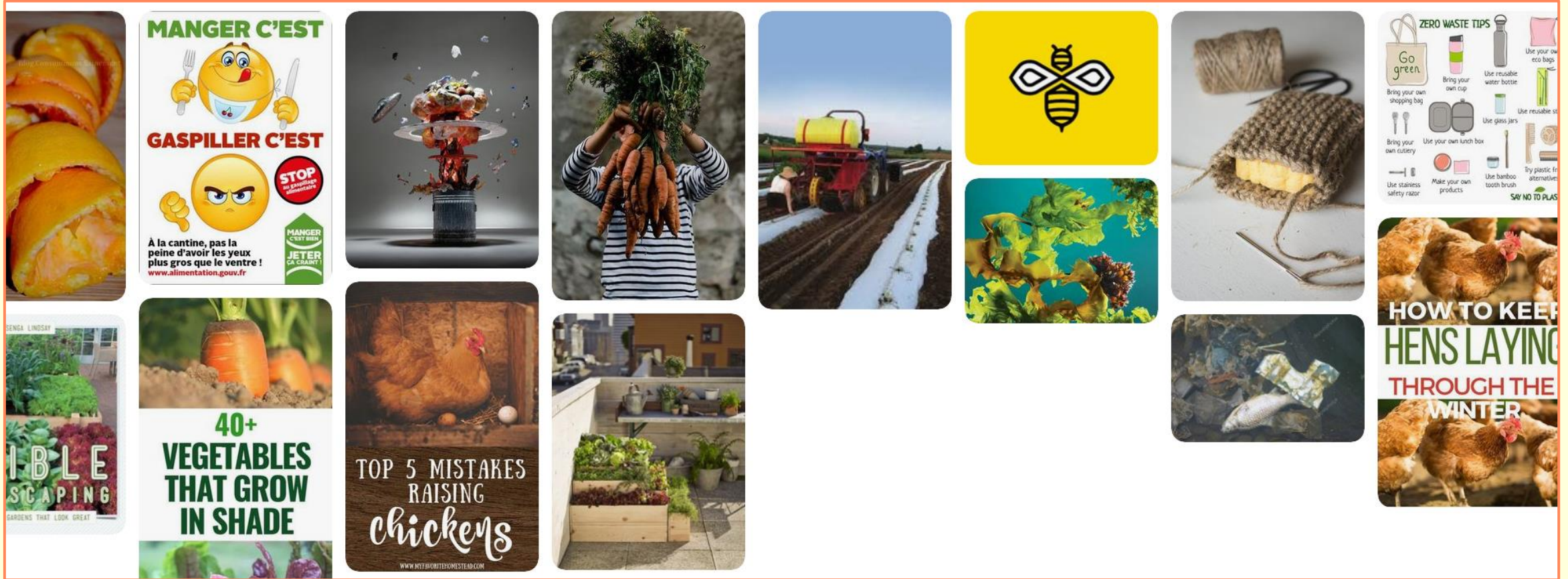
User research



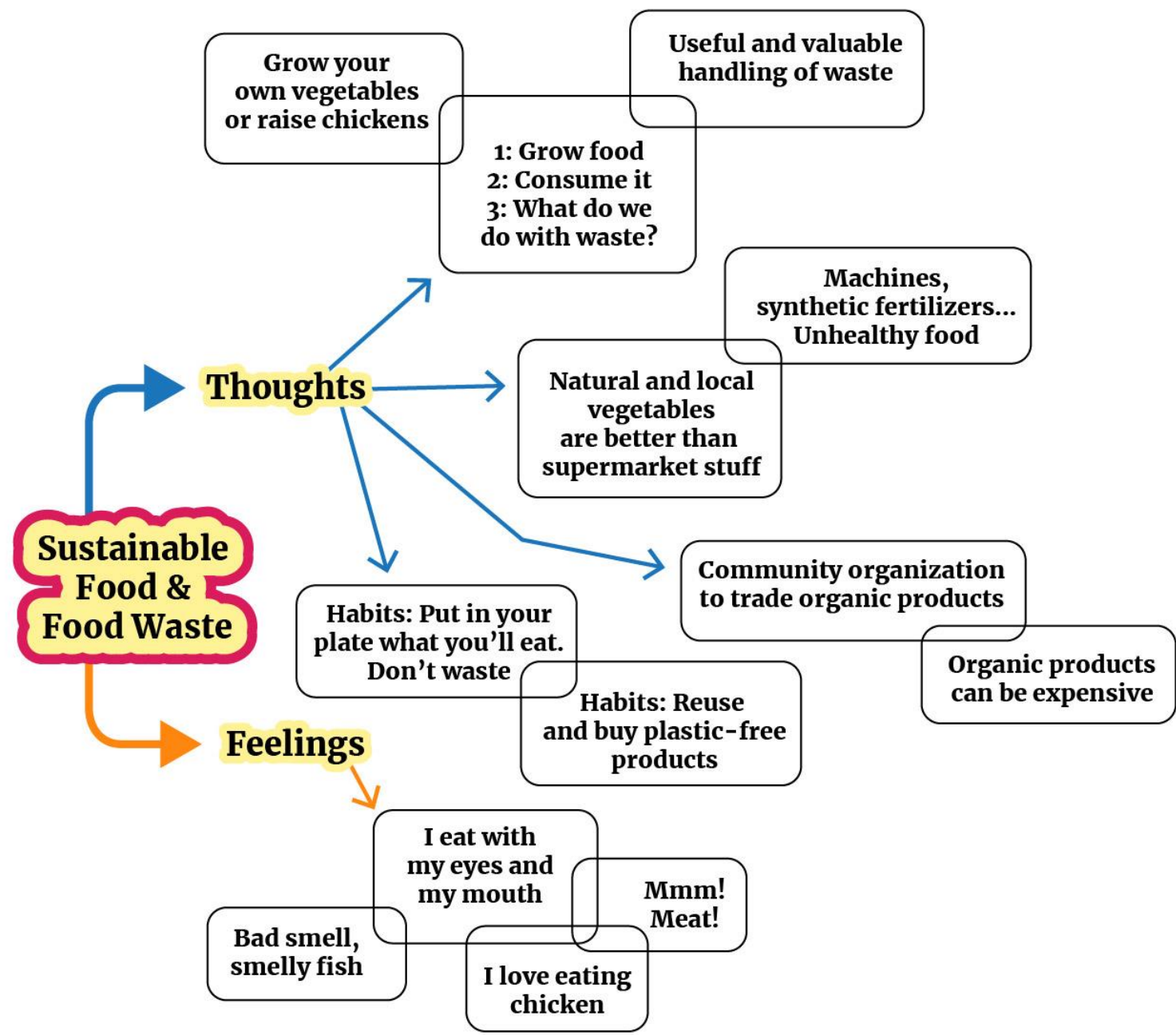
Images collected by interviewees using Pinterest.

24 Frameworks & theory

ZMET Metaphor Elicitation



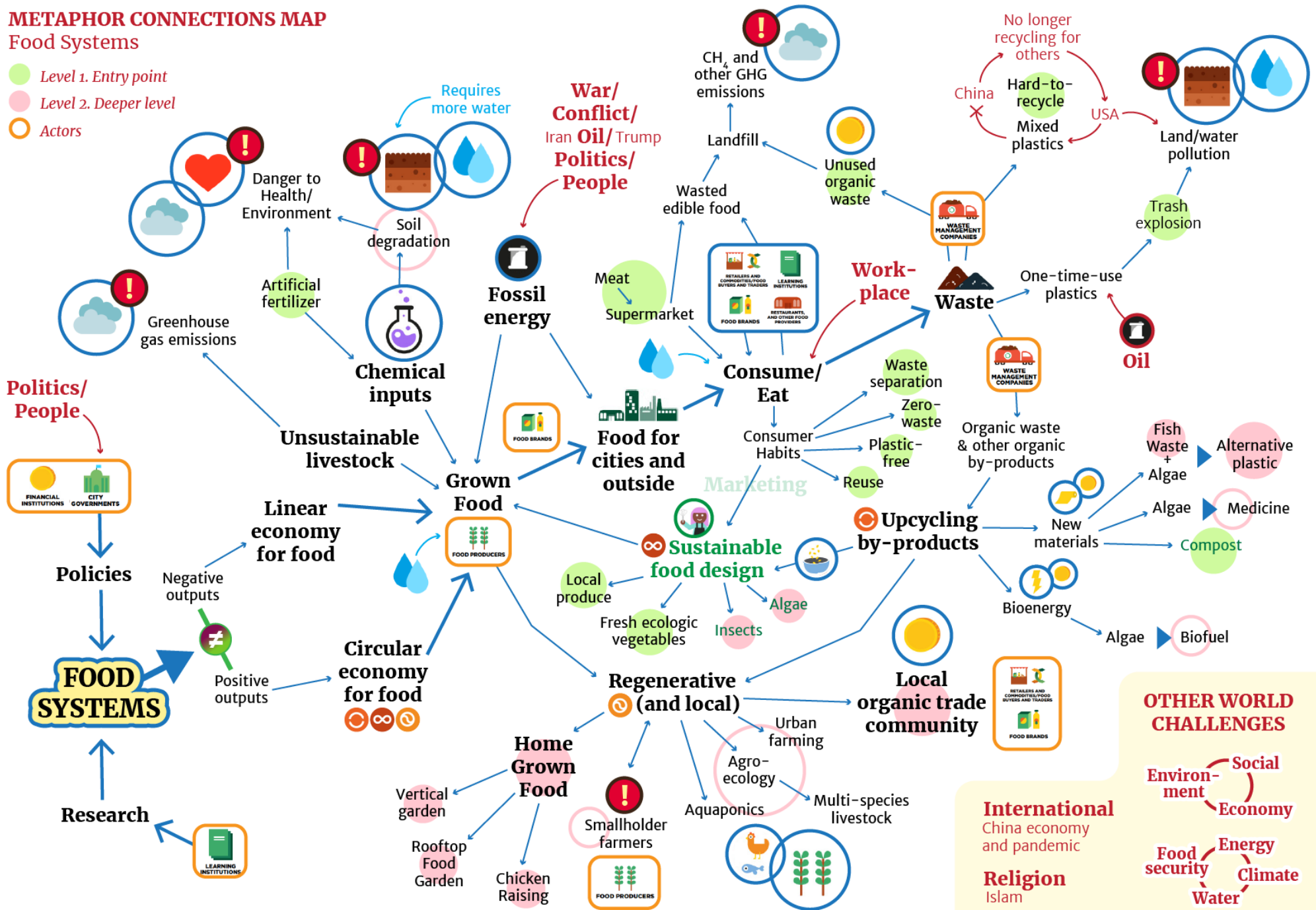
Images collected by interviewees using Pinterest.



METAPHOR CONNECTIONS MAP

Food Systems

- Level 1. Entry point
- Level 2. Deeper level
- Actors



Politics/
People

War/
Conflict/
Iran Oil/ Trump
Politics/
People

Work-
place

Consume/
Eat

Upcycling
by-products

Sustainable
food design

Regenerative
(and local)

FOOD
SYSTEMS

OTHER WORLD
CHALLENGES

International
China economy
and pandemic

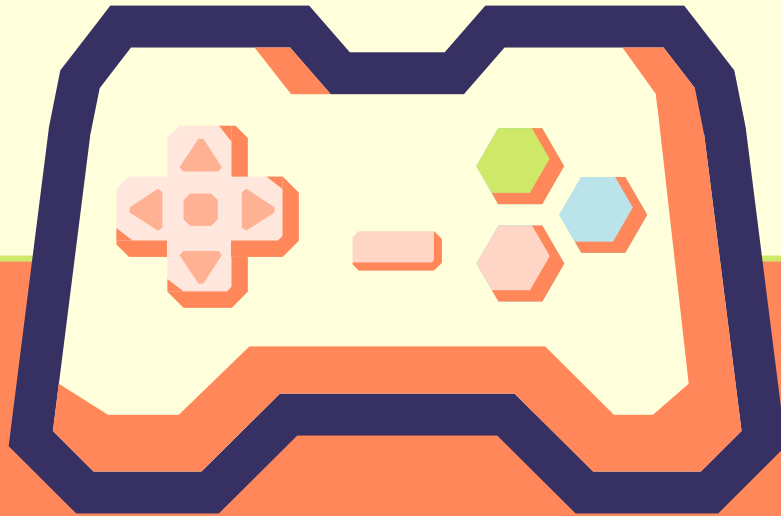
Religion
Islam

Environment
Social
Economy

Food security
Energy
Climate
Water

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Game references



Gameplay rhetoric

Discomfort

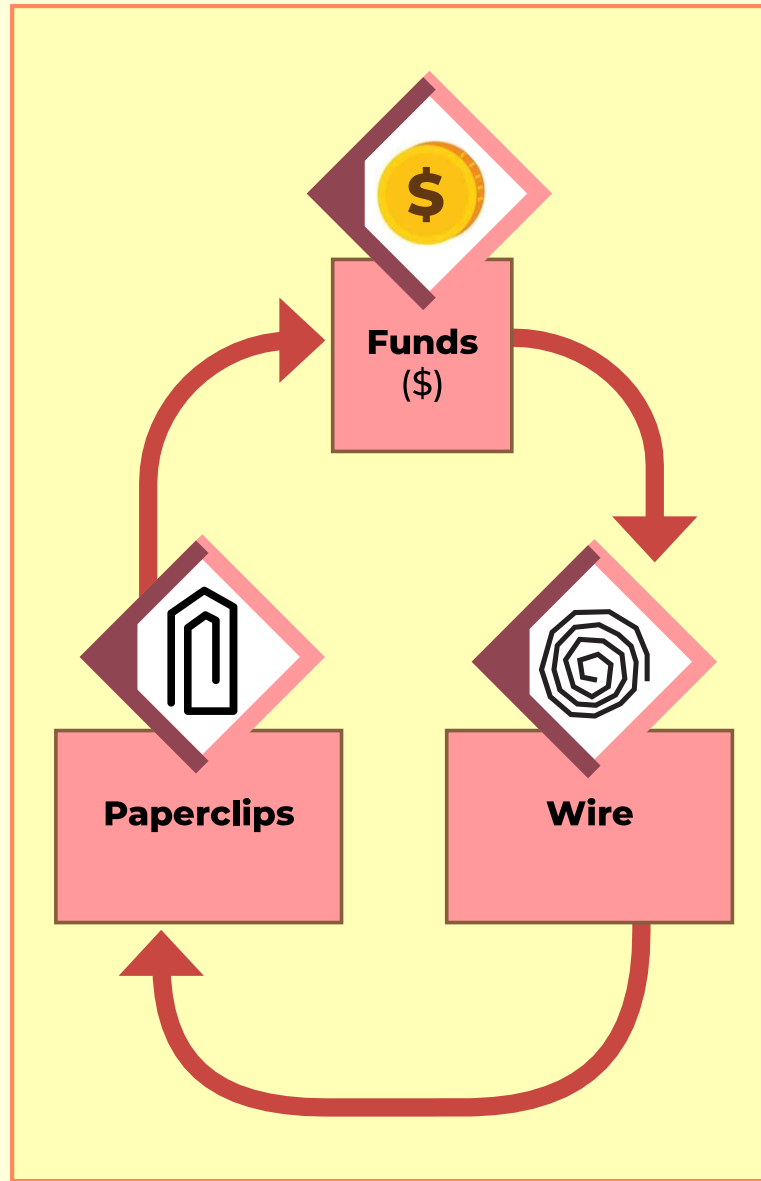
Reflection

Dark patterns

Hidden costs **Grind**



Source: www.commonsense.org



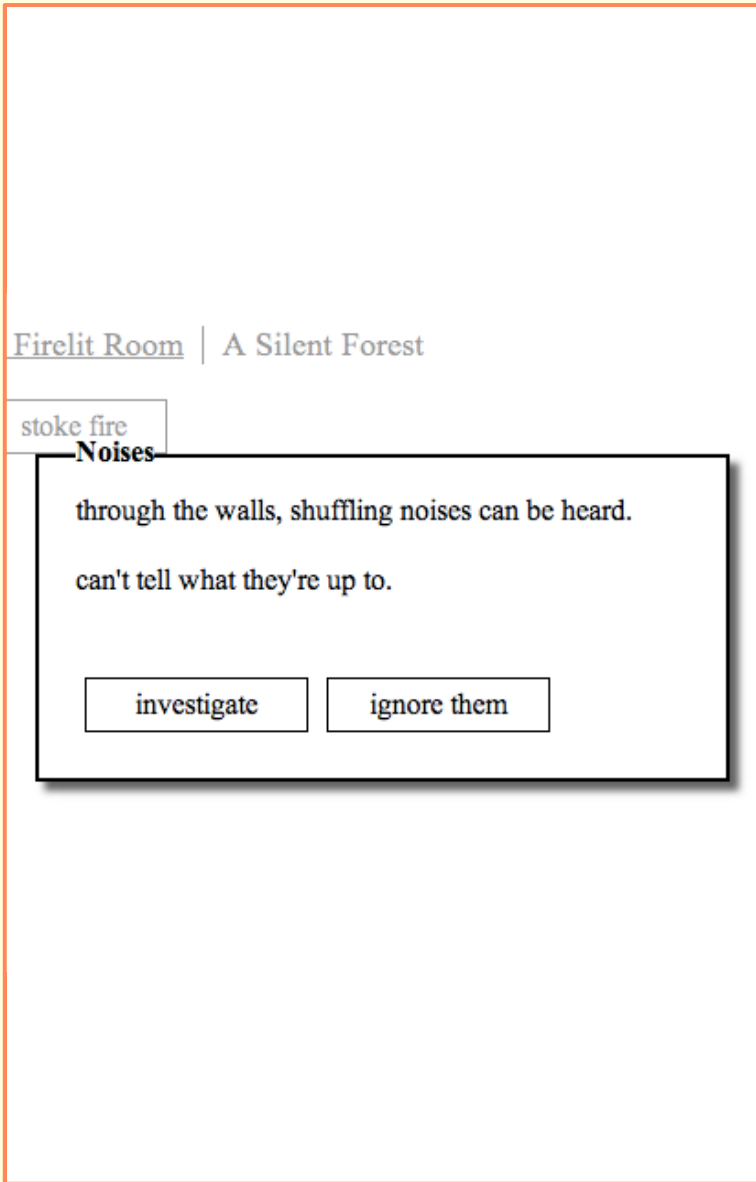
Universal Paperclips economy system



Source: www.gamewatcher.com



Civilization V



A Dark Room



Once Upon a Tile

PROCESS

33

Preproduction





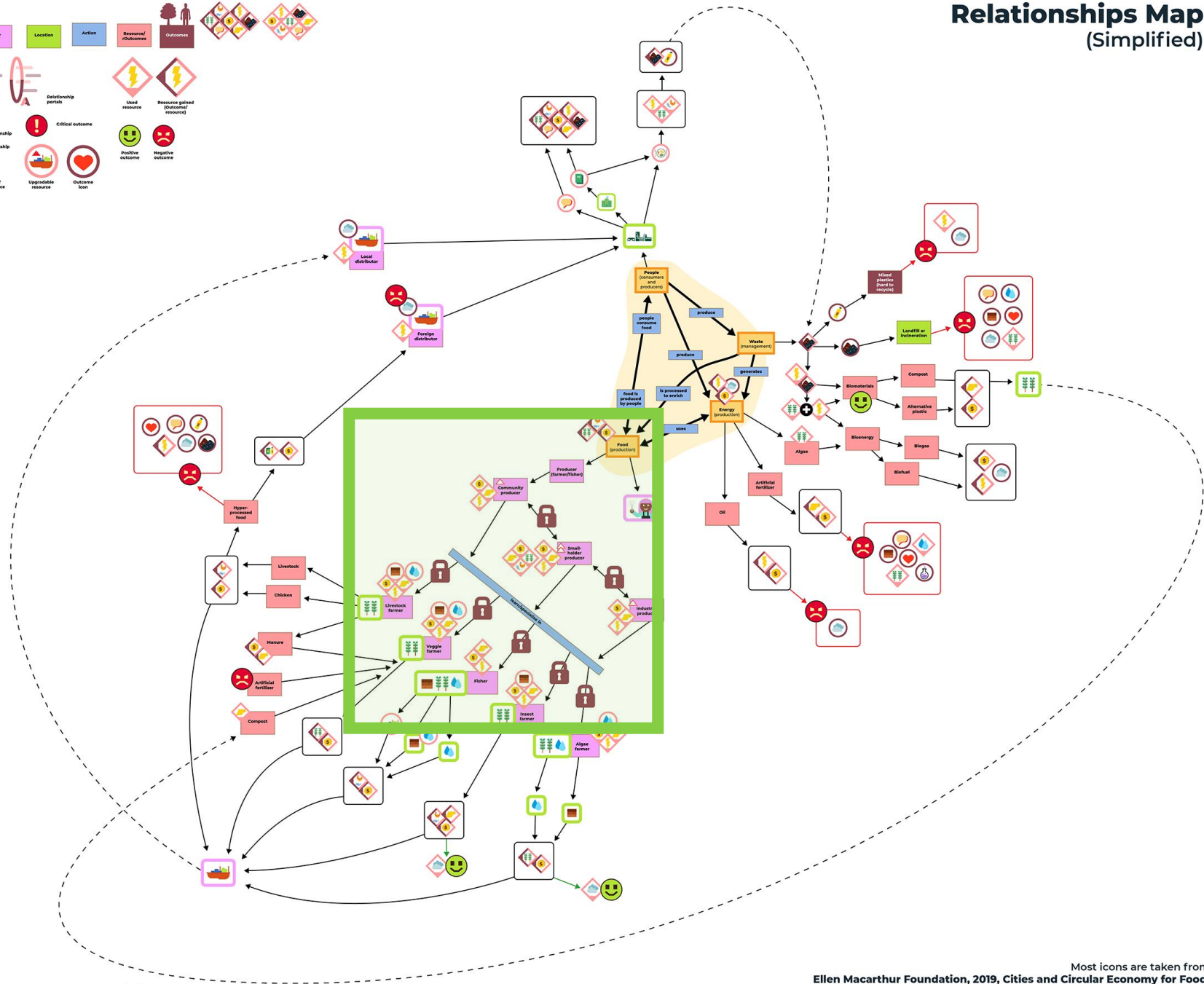
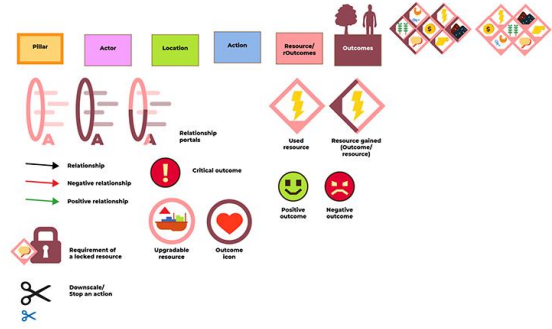
artsandculture.google.com

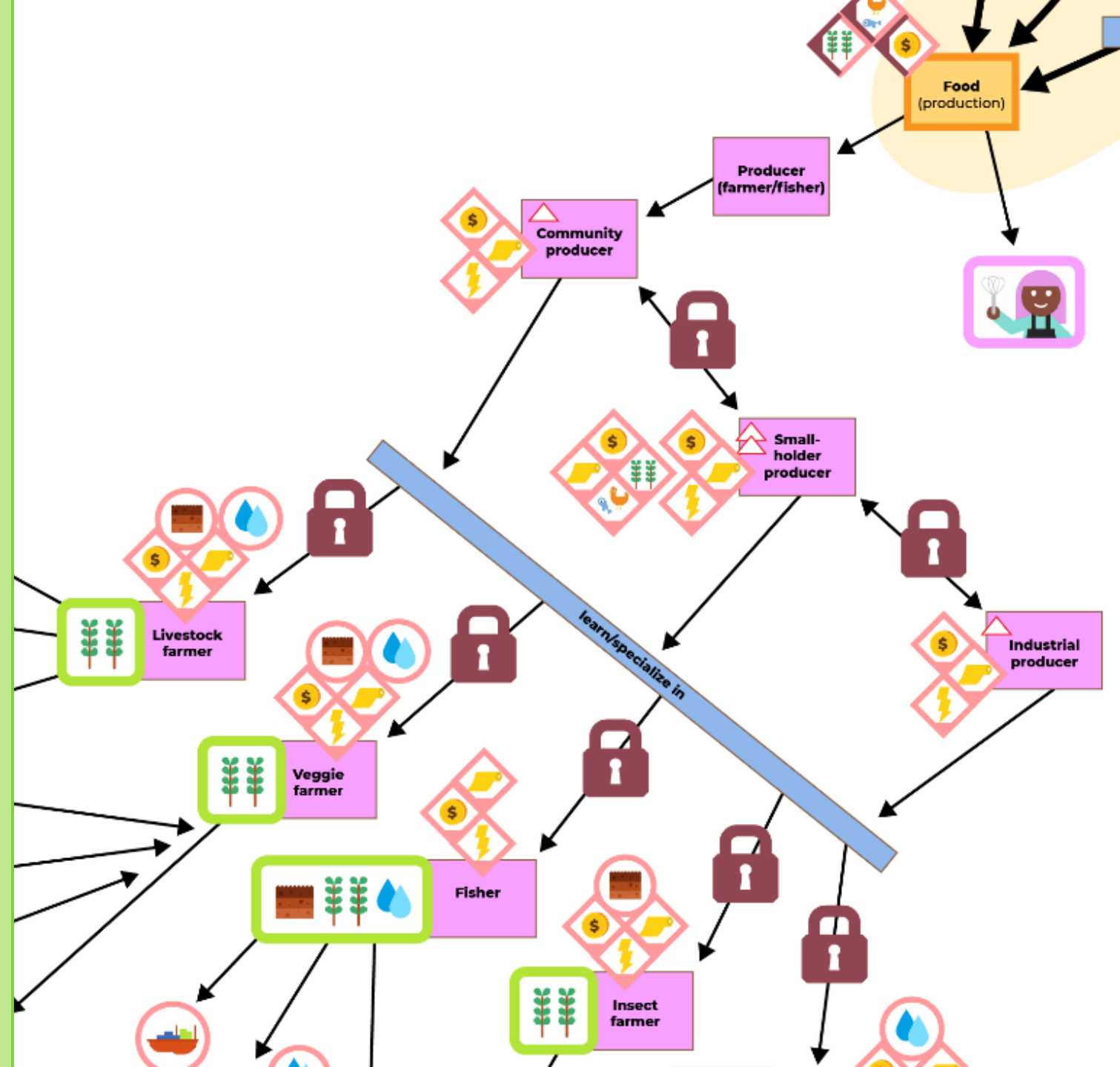


www.scandinaviastandard.com



Relationships Map (Simplified)





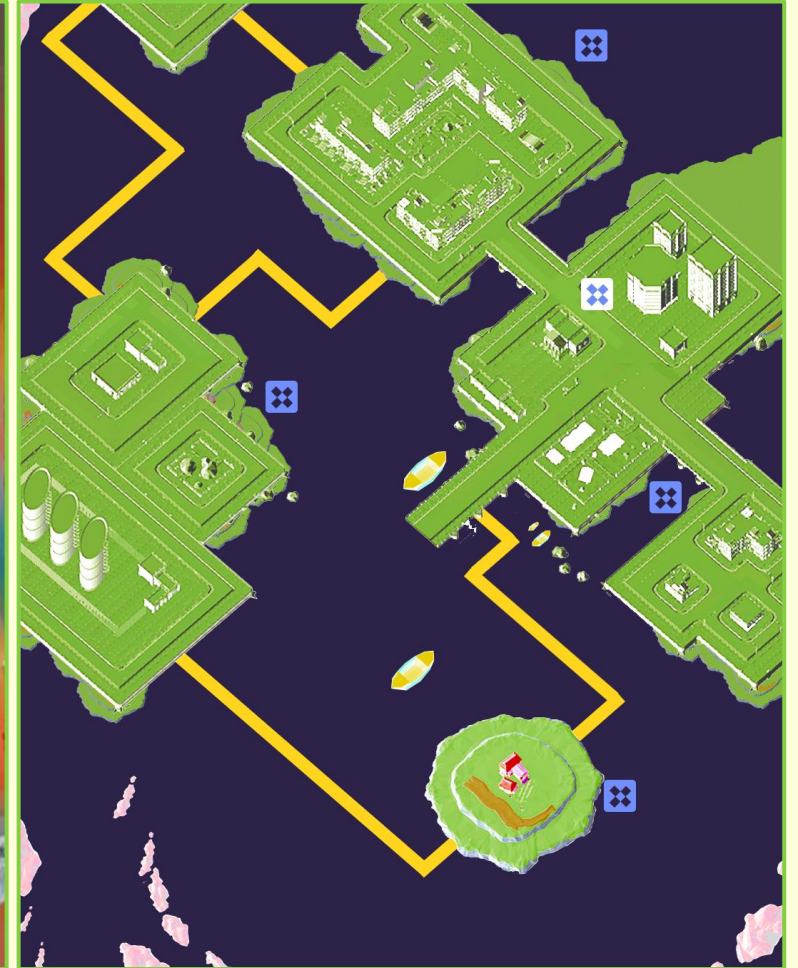
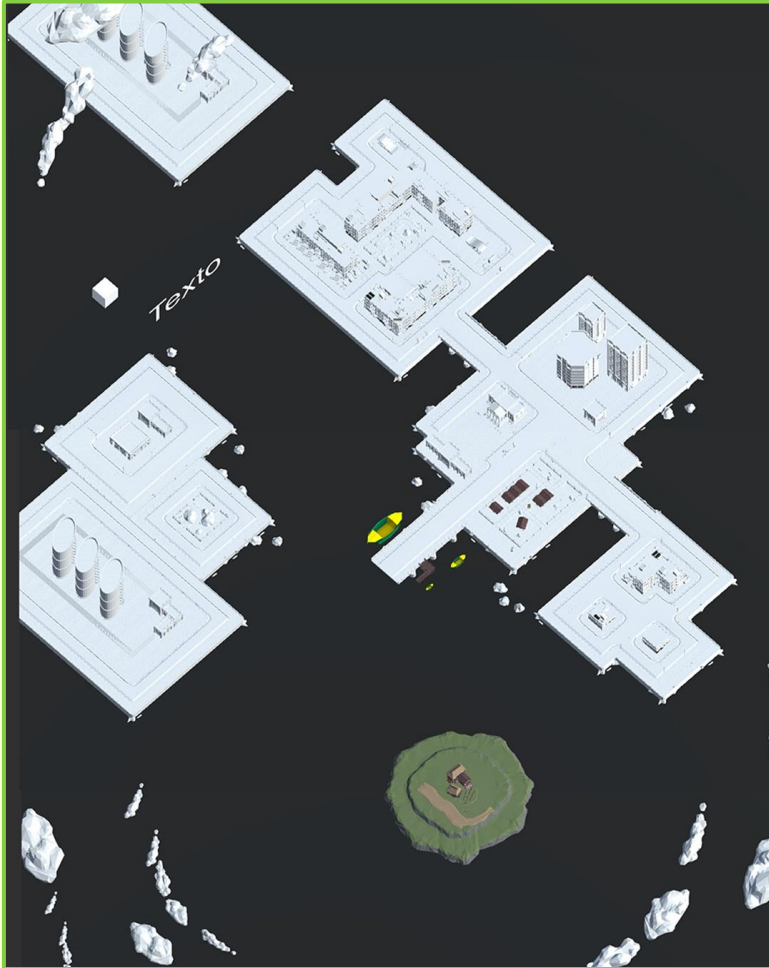
38



Visual & level design

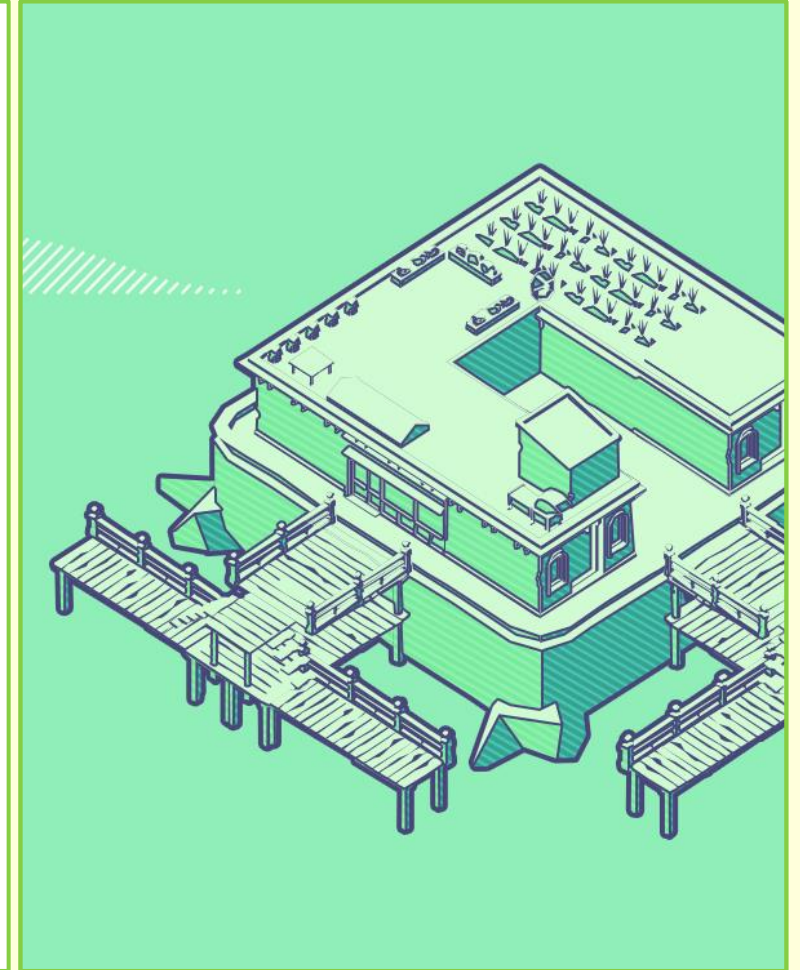
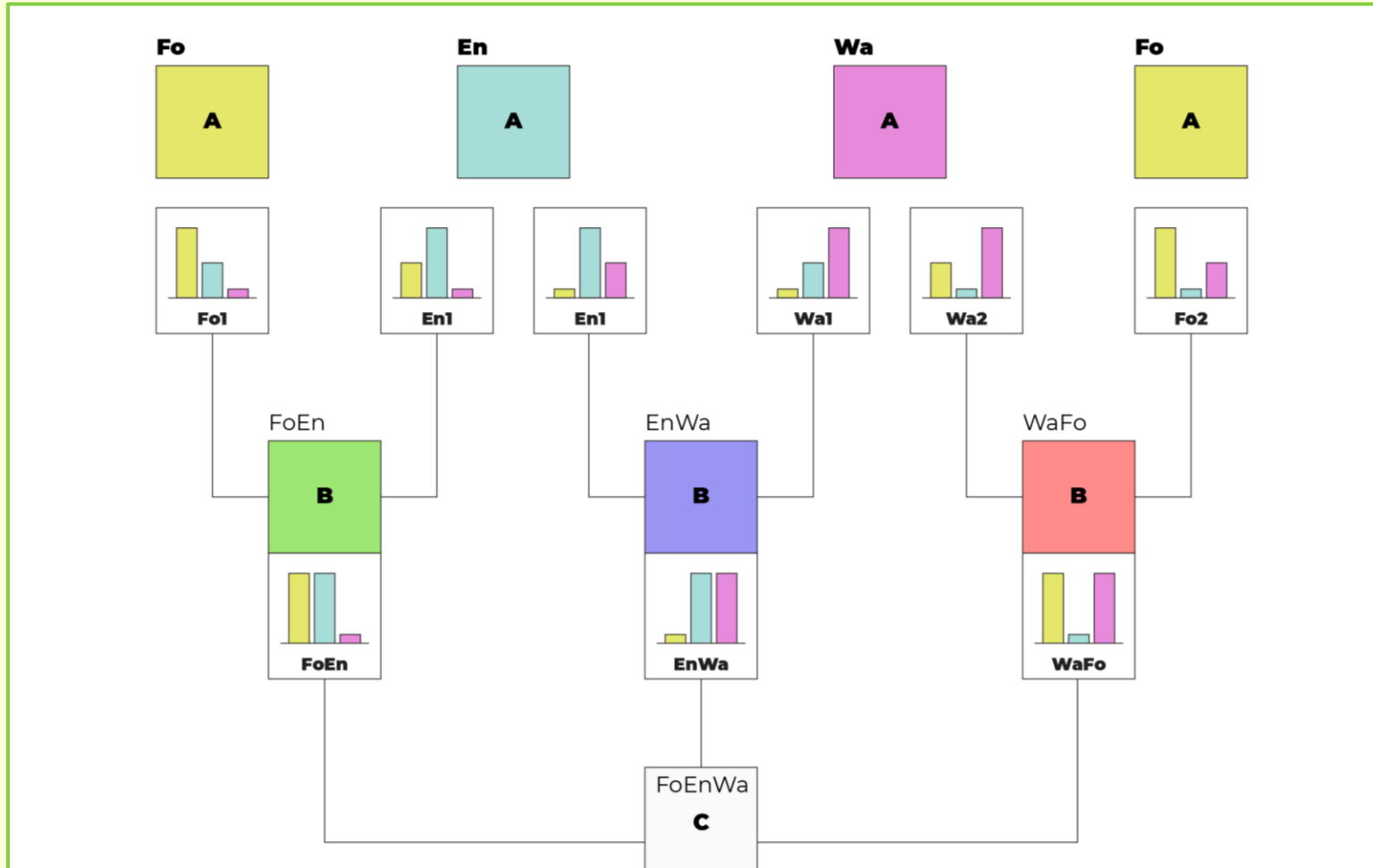


Visual style iterations



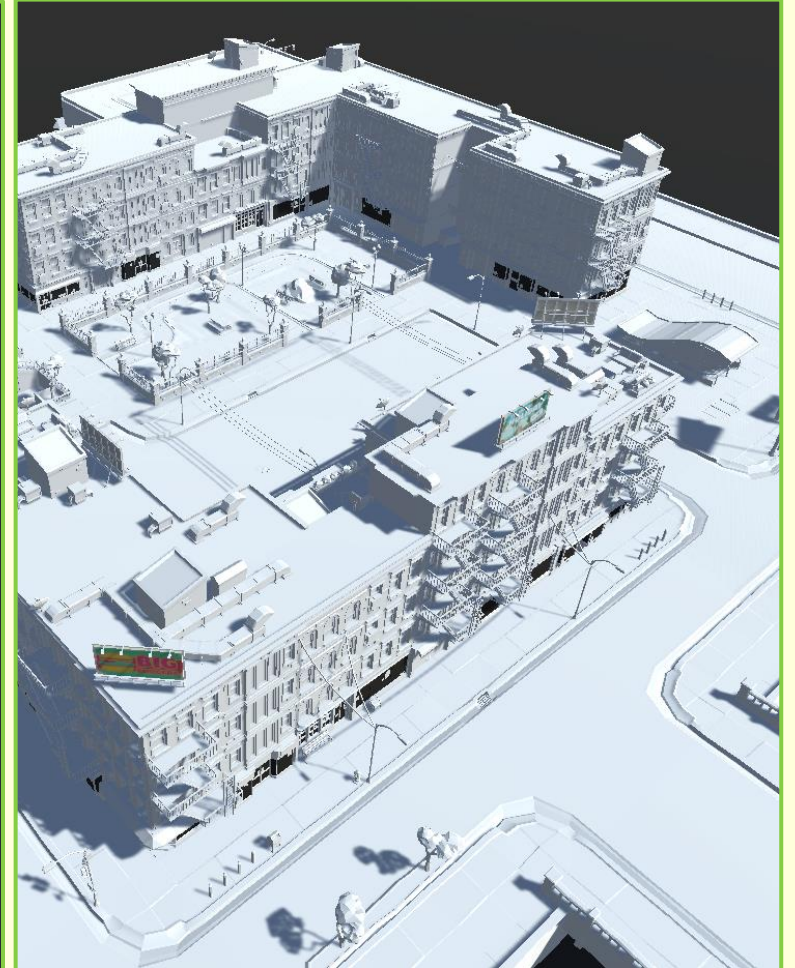
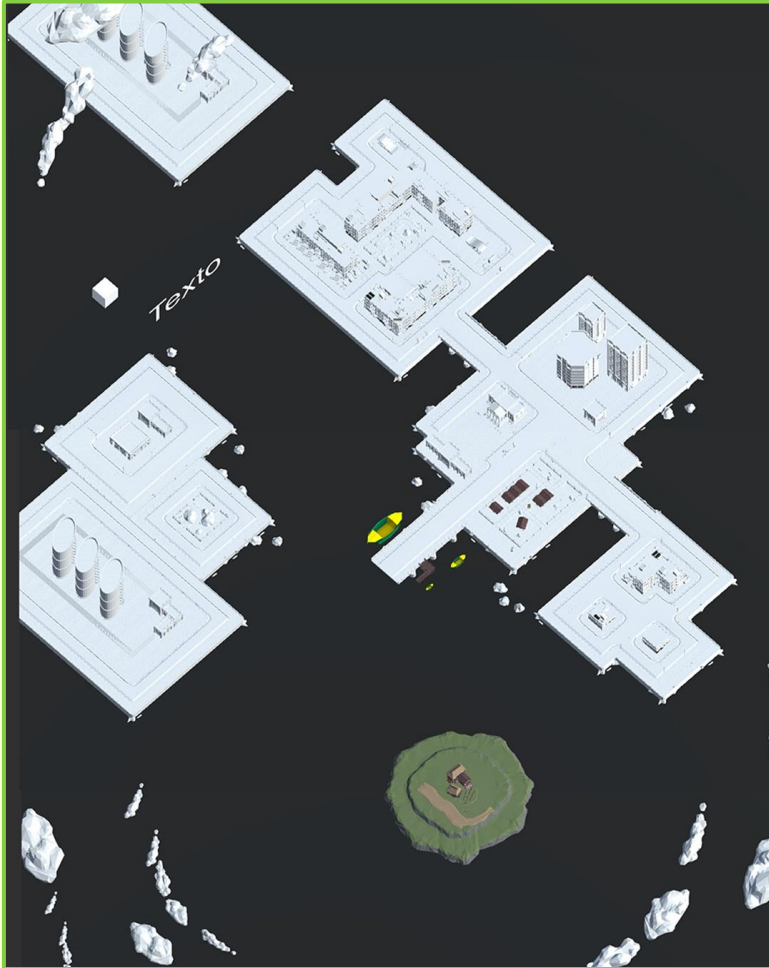
40 Visual & level design

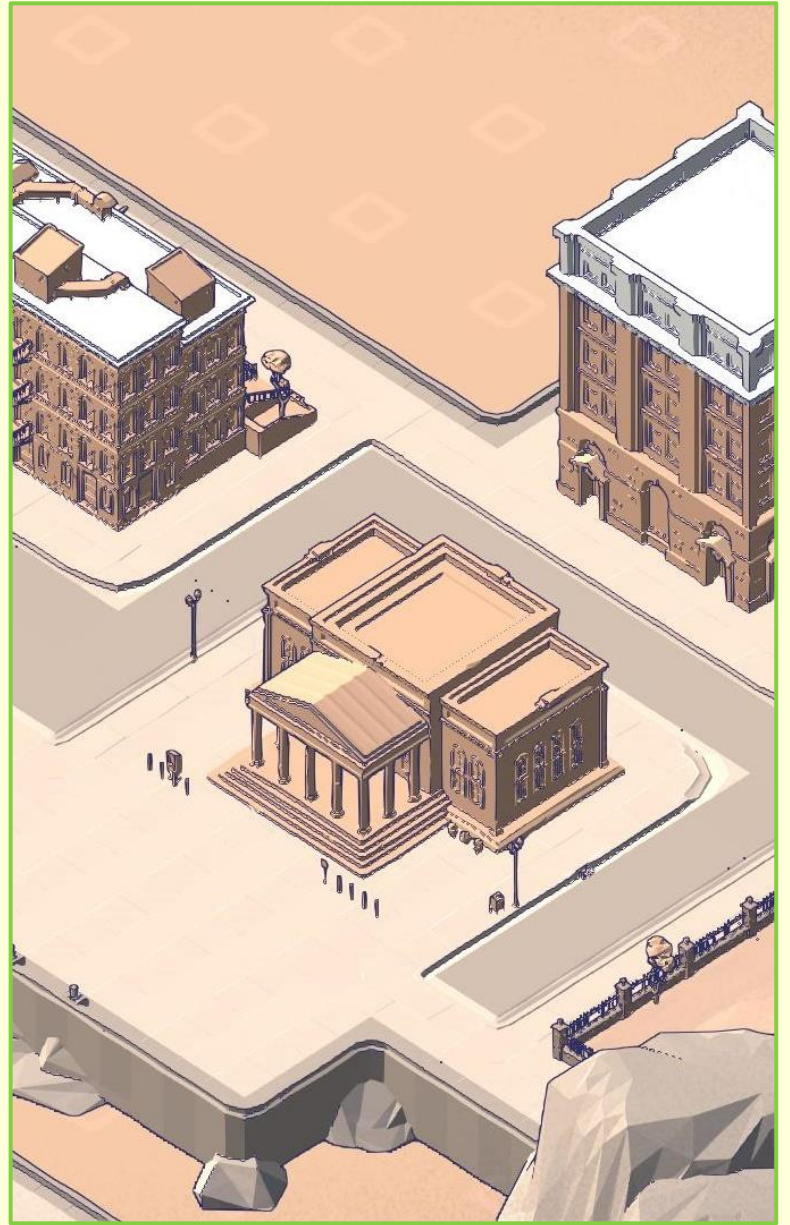
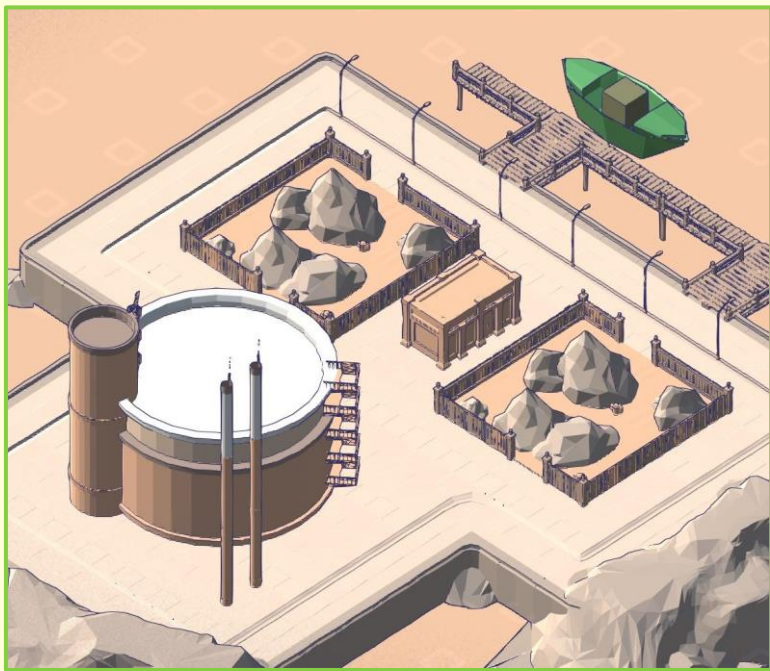
Color system



41 Visual & level design

Level design iterations







MILESTONE: 1139
860.0
LEVEL 7

MILESTONE: 200
150.0
LEVEL 1

MILESTONE: 225
200.0
LEVEL 3

24090.00

100

75

50.0

Deceased cattle ▾

Epidemic spreads ▾

Green call for action ▾

Gtonnes of GHG ▾

Regional hunger ▾

Oil war ▾

Barren farm lands ▾

Energy crisis ▾

Regional energy industry faces the possibility of bankruptcy, dragging other industries with it.

Plastic landfills pile up ▾

Climate change protests ▾

DISTRIBUTE UPCYCLED MATERIALS

OFF ON

WASTE MANAGEMENT

0.0 COLLECT WASTE +

0.0 PRODUCE COMPOST +

0.0 RECYCLE WASTE +

0.0 UPCYCLE WASTE +

UPGRADE



TRADE-OFFS

- \$ 25.00 / CLICK

+ 🔥 25.0 / CLICK

+ 🗑️ 15.0 / CLICK

- ⚡ 10.0 / CLICK

+ 👍 15 / CLICK

Logo & naming

MAINSTAY
RIGS



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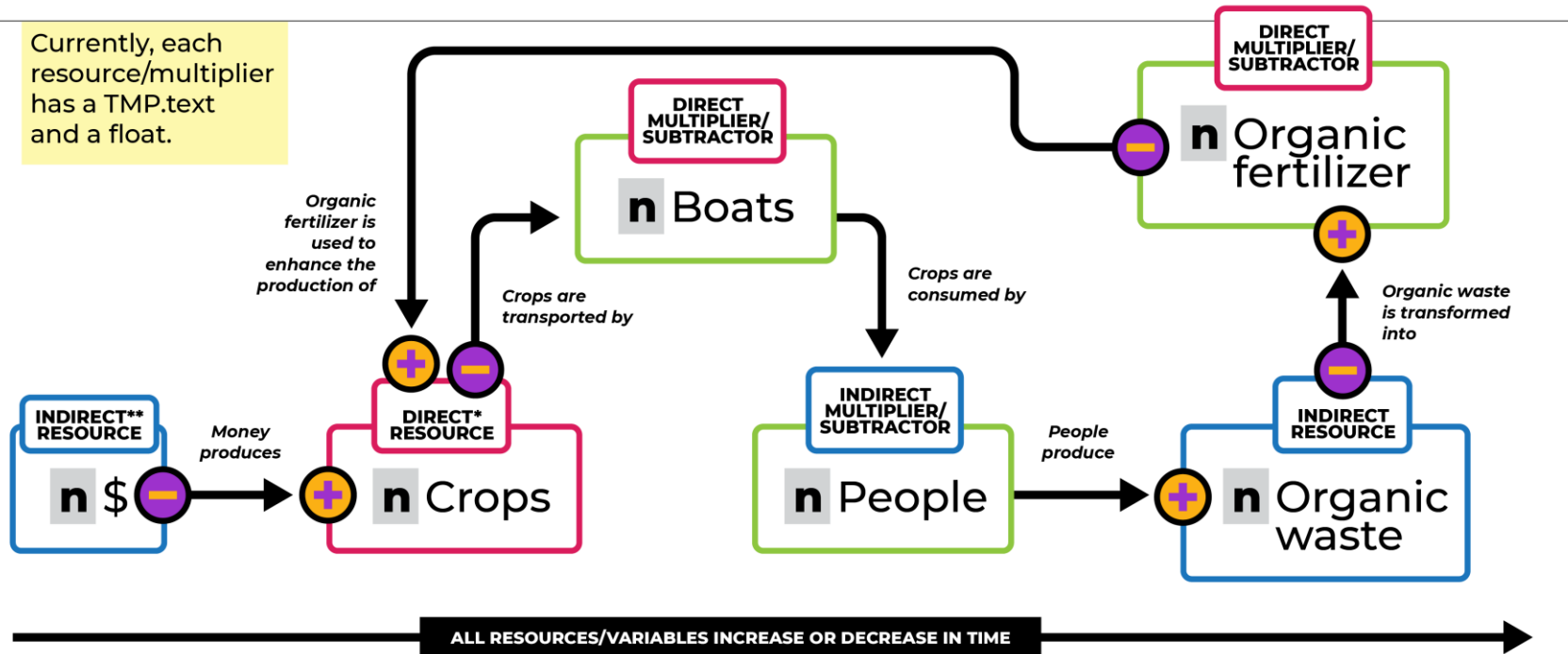
Gameplay design



Programming diagrams

Management system sample

Currently, each resource/multiplier has a TMP.text and a float.



*Direct: The player increases/decreases a resource/variable directly with a click (later it's automated through purchases).

**Indirect: The resource/variable is increased/decreased through another resource/variable.

Cataclysm system



Regional hunger ▼

Oil war ▼

Barren farm lands ▼

Energy crisis ▼

Regional energy industry faces the possibility of bankruptcy, dragging other industries with it.



Balancing strategy

WELCOME TO

MAINSTAY RIGS

A GAME SIMULATOR WHERE YOU MANAGE A REGION'S FOOD, ENERGY AND WASTE SYSTEMS

FILL IN YOUR CUSTOM VALUES FOR THE COST OR BENEFITS OF EACH PRODUCT, OR START THE GAME WITH THE DEFAULT SETTINGS.

IF YOU CHANGE THE VALUES, PLEASE TAKE A SCREENSHOT OF THIS WINDOW AND SHARE IT WITH ME.

START

STARTING RESOURCES

Food	Energy
75.0	75.0
Waste mgmt.	Money
75.0	200.00
Population	Approval
100.0	75.0
Pollution	
50.0	

BASE COST: SMALL SCALE PRODUCTS

Money	Food
20.00	10.0
Pollution	Energy
5.0	15.0
Approval	Waste mgmt.
1.5	15.0

BASE COST: MEDIUM SCALE PRODUCTS

Money	Food
250.00	140.0
Pollution	Energy
100.0	210.0
Approval	Waste mgmt.
12.0	200.0

BASE COST: LARGE SCALE PRODUCTS

Money	Food
3000.00	2400.0
Pollution	Energy
1600.0	2750.0
Approval	Waste mgmt.
95.0	2600.0

DISTRIBUTION COSTS & REWARDS (PER SEC.)

Base Money	Energy
2.00	1.5
Food	Pollution
1.0	0.5
Approval	Waste mgmt.
0.5	1.5
Population	Food MULTP.
1.0	1.2
Energy MULTP.	Waste MULTP.
3.0	6.0

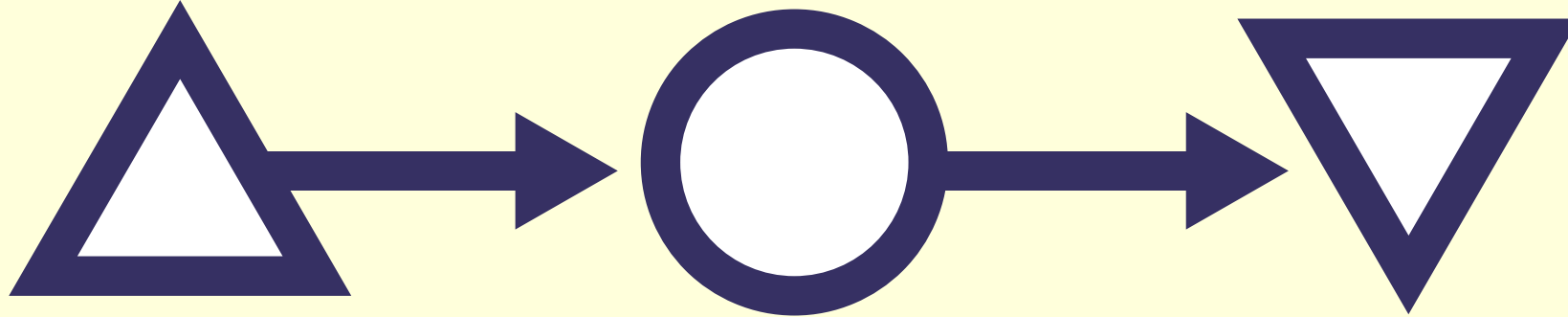
UPGRADE BASE COSTS

Small UPG.	Medium UPG.
90.0	250.0
Large UPG.	Larger UPG.
3500.0	6500.0

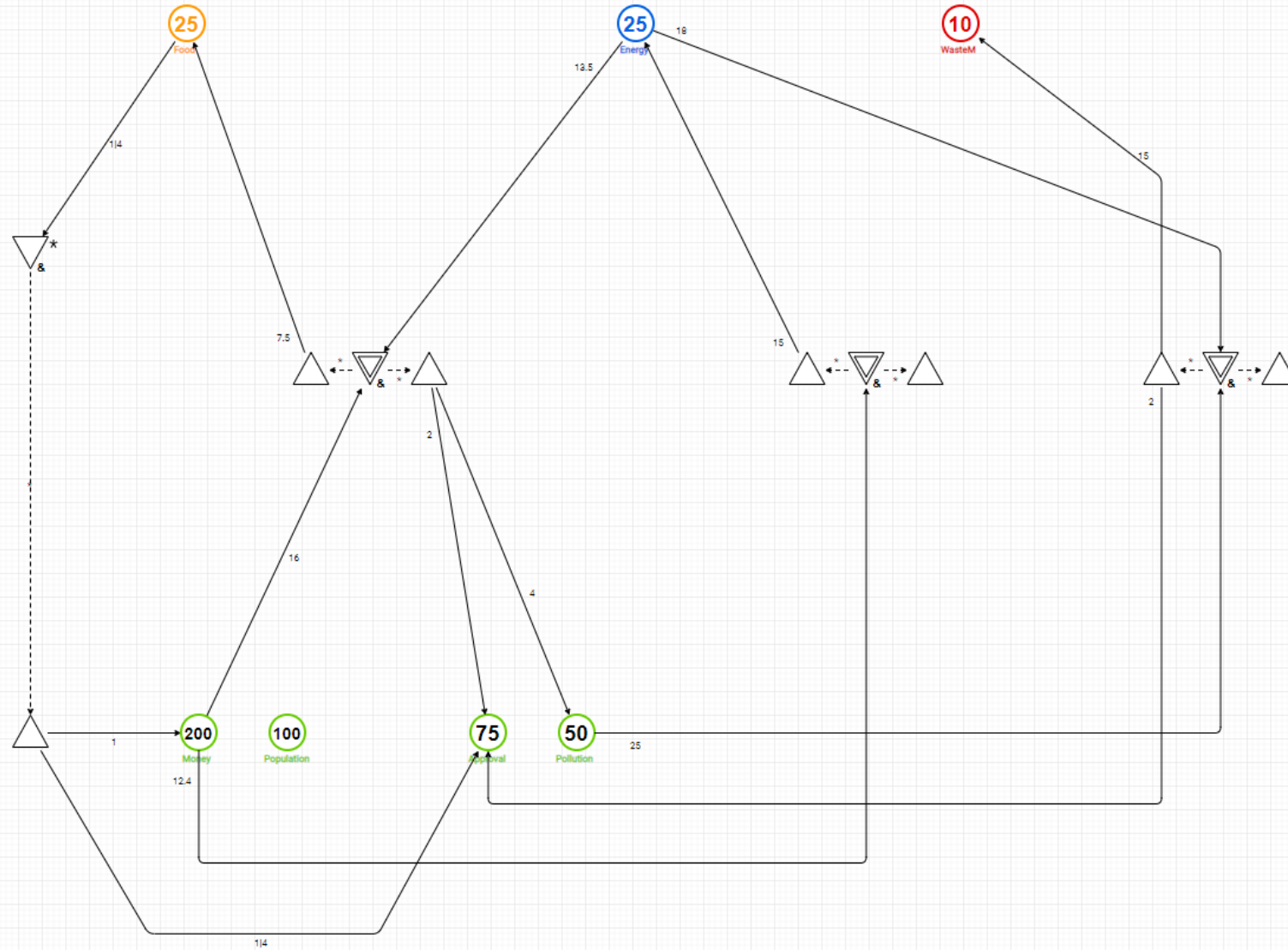
APPLY CHANGES

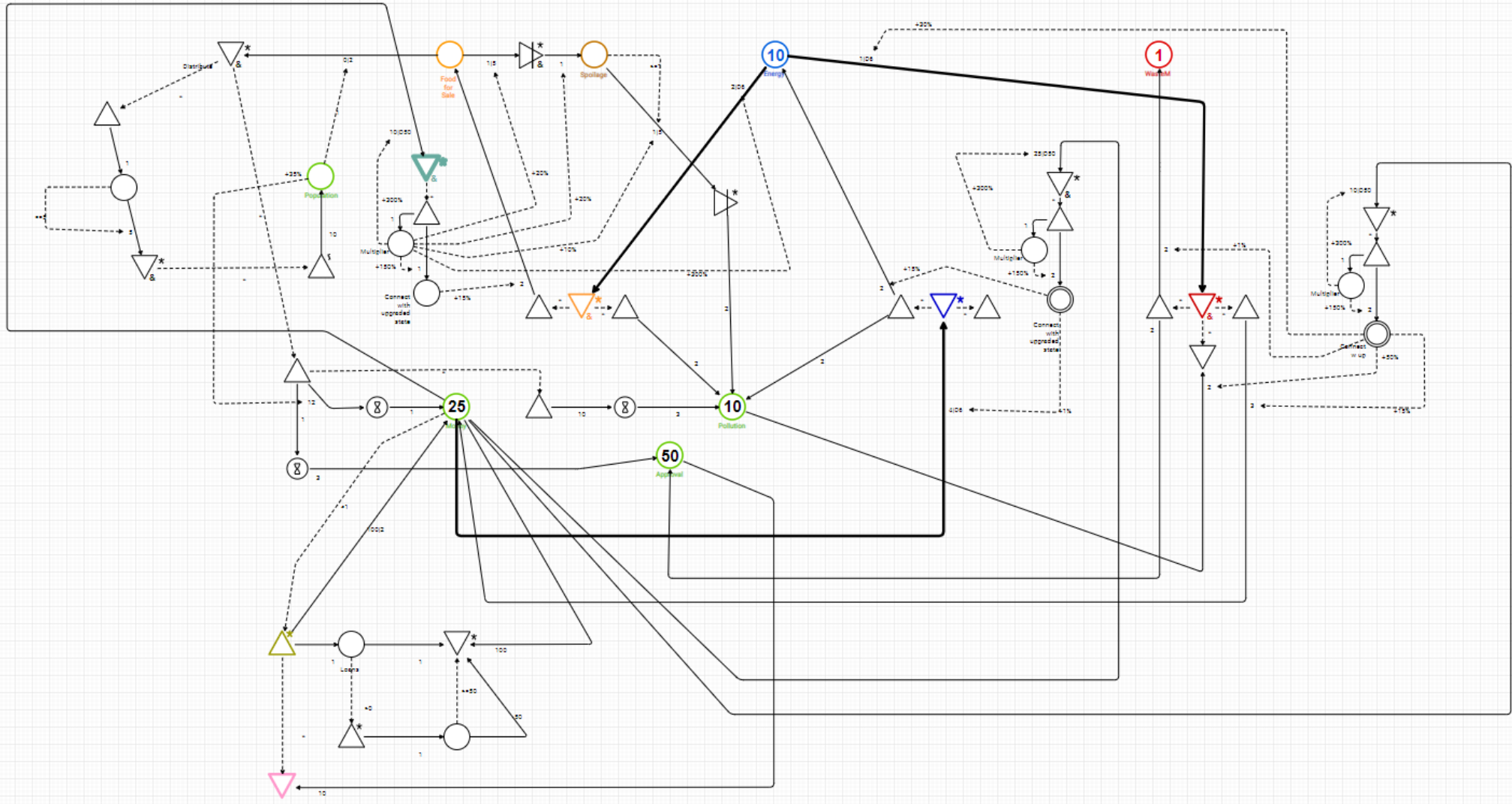
\$ 200.00	👤 100	👍 75	🗑️ 50.0
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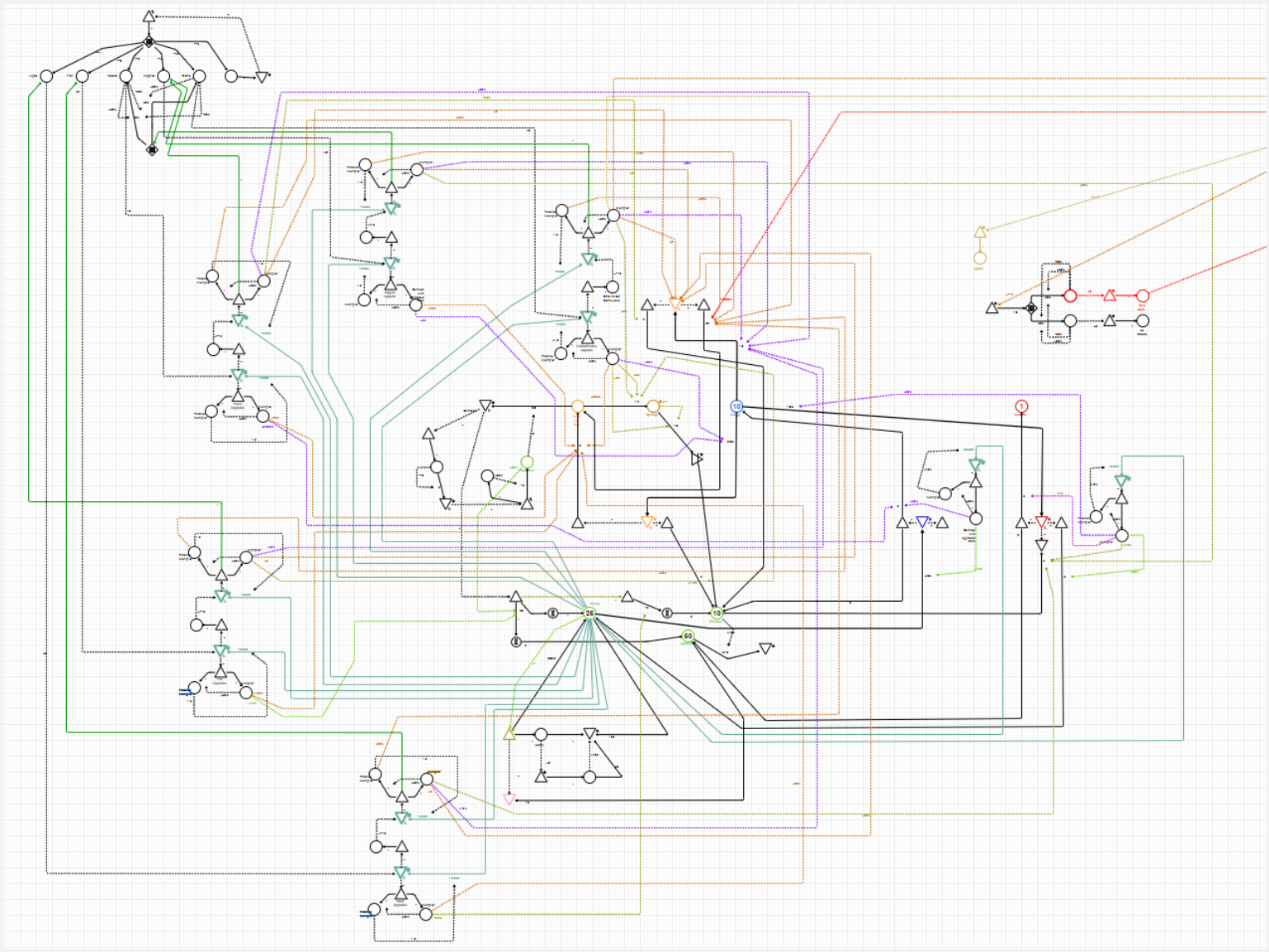
Machinations



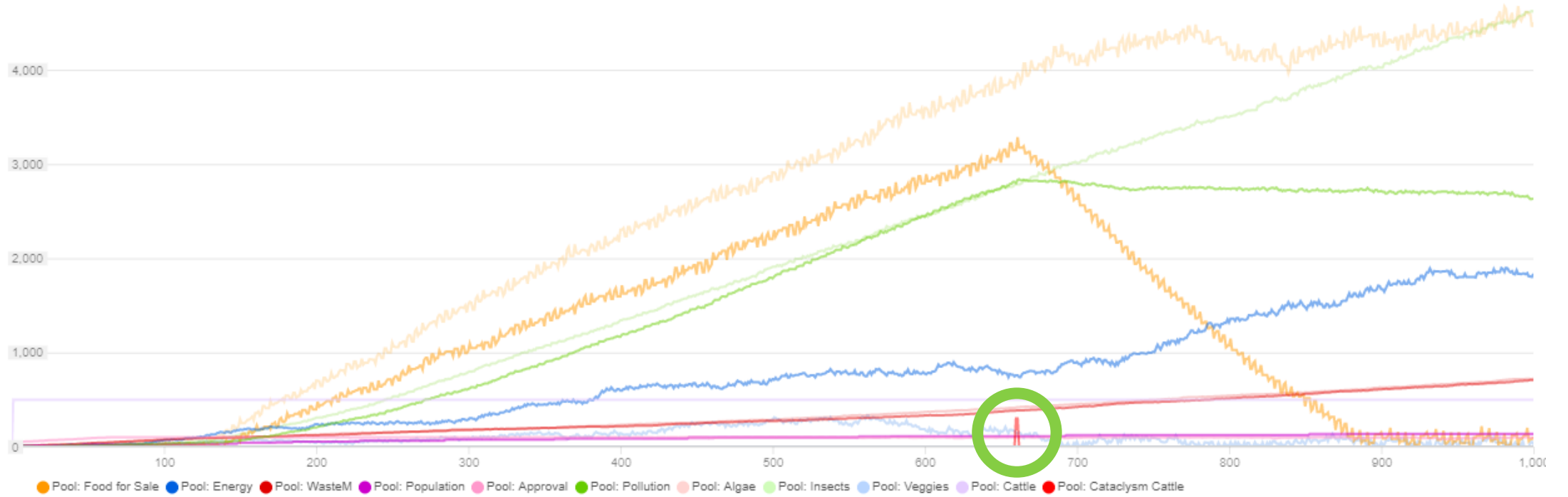
People consume food automatically







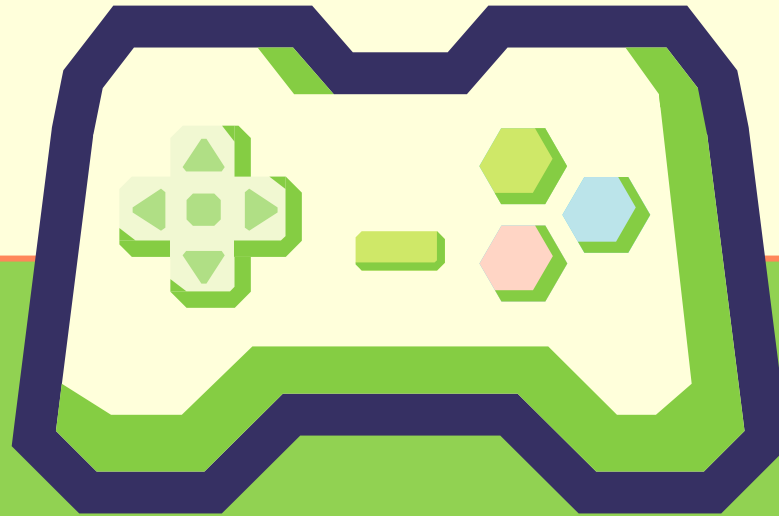
Execution chart for '20200511_MainstayRigs_11_Balancing', at 5/12/2020 1:12:41 PM



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SUBSYST Simulator





SUBSYNT

SIMULATOR

START

SKIP TUTORIAL



MILESTONE: 150

21.0



MILESTONE: 200

0.6



MILESTONE: 100

71.8



ENERGY

PRODUCE
(SMALLSCALE)

2
SMALLSCALE
OIL REACTORS +

AUTOMATION:
INACTIVE

0
INDUSTRIAL
OIL REACTORS +

 UPGRADE



POLLUTED ENVIRONMENT

Pollution has reached unhealthy levels.

People are getting unhappy.

Public approval gradually goes down.

OH, NO!



333.56



34



629



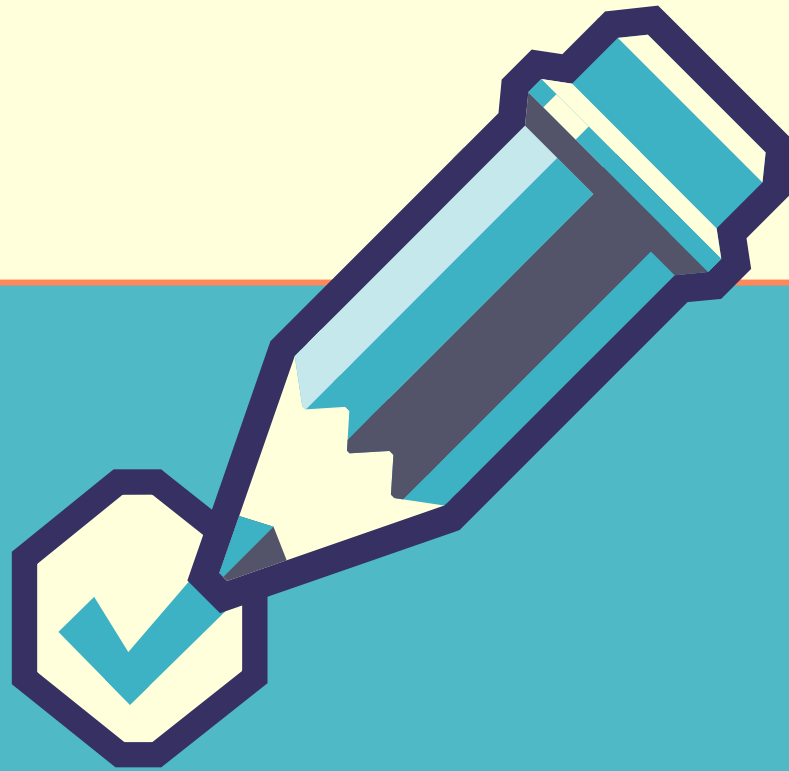
645.5

CREDITS

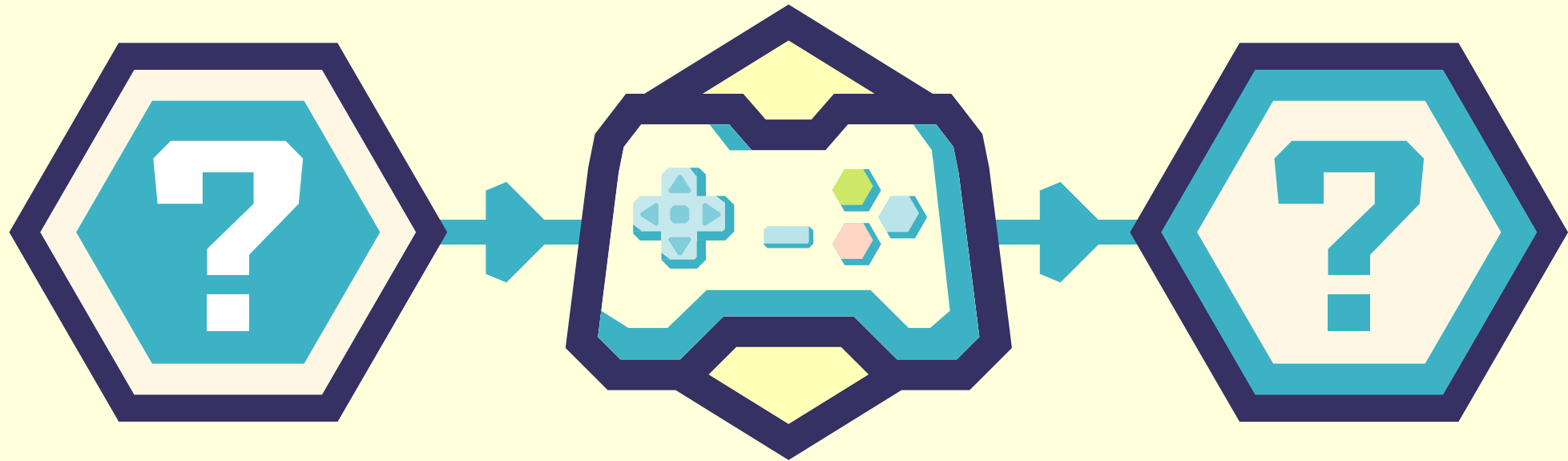
ASSESSMENT

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Questionnaires



Procedure



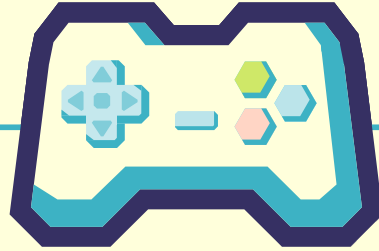


Scope

- *8 participants, 21-30 years old*
- *Transformational potential:
Notions of food systems*

Improvement point





Results (average)

11 questions

2.45 improvement points

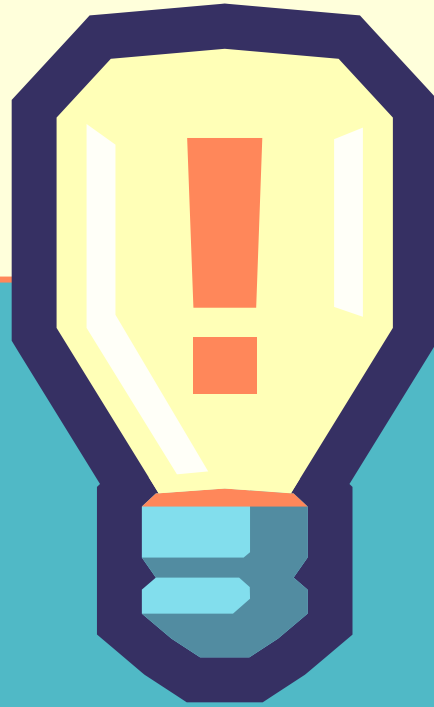
30.6% improvement

67 Questionnaires

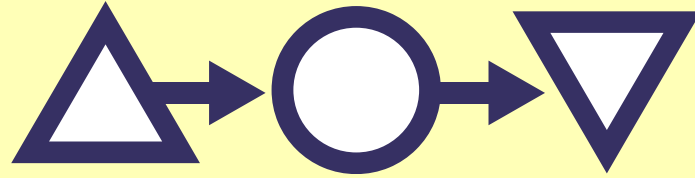


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Conclusion & learnings



69 Conclusion & learnings



Thank you for your attention



Alexis Emmanuel Lozano Angulo
aelozanoa@gmail.com

Thank you for your attention



Alexis Emmanuel Lozano Angulo
aelozanoa@gmail.com

65 Questionnaires

Sustainability	Food, energy & waste	Sustainable food production
5 questions	4 questions	2 questions
+1.8 <i>improvement points</i>	+4.5 <i>improvement points</i>	0 <i>improvement points</i>
22.5% <i>increase</i>	56.25% <i>increase</i>	0% <i>increase</i>