

The image features a minimalist, light purple line-art design of lotus leaves. The leaves are arranged in two clusters: one on the left side and one on the right side, both pointing towards the center. The lines are thin and elegant, creating a sense of lightness and grace. The background is a solid, very light lavender color.

padma

Week 2

DEP302 System Design Project

Sustainable Housing

Team Padma

Anagha Aneesh

18U130004

Drishti Das

18U130013

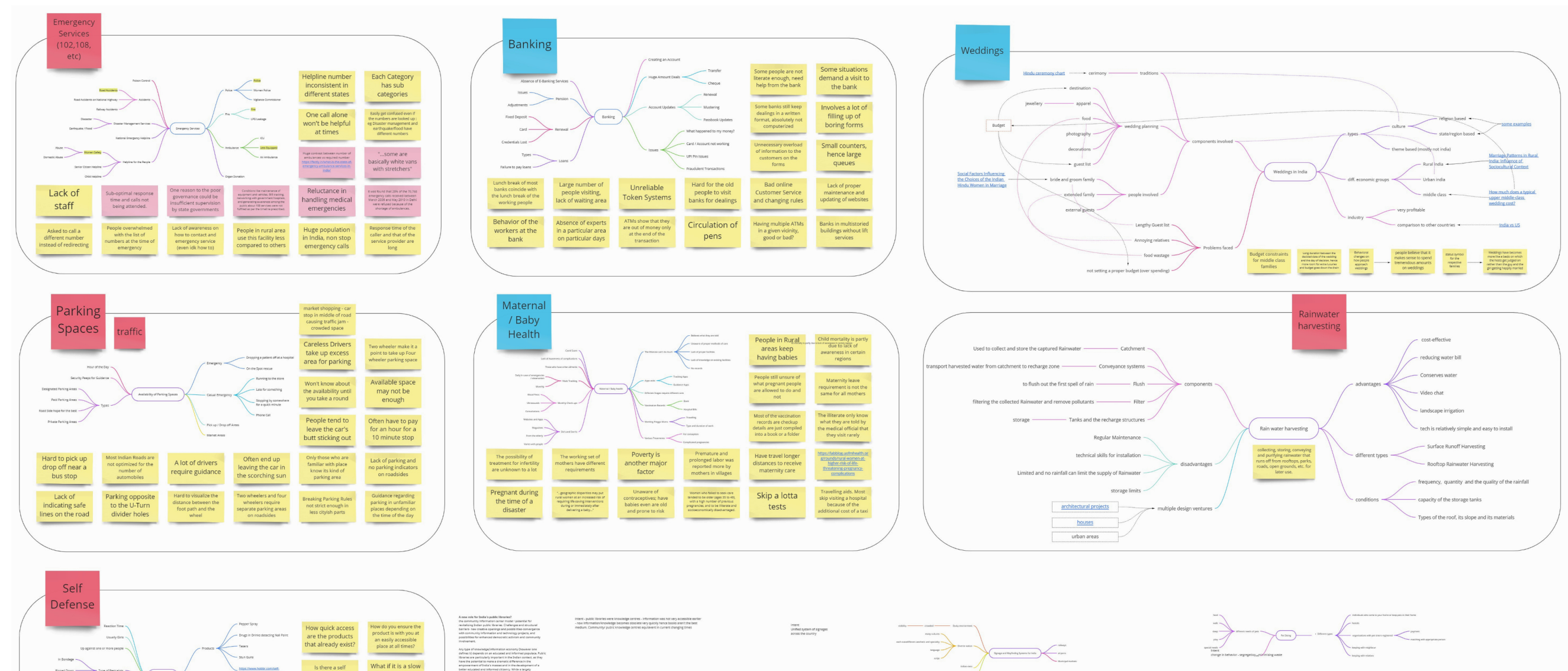
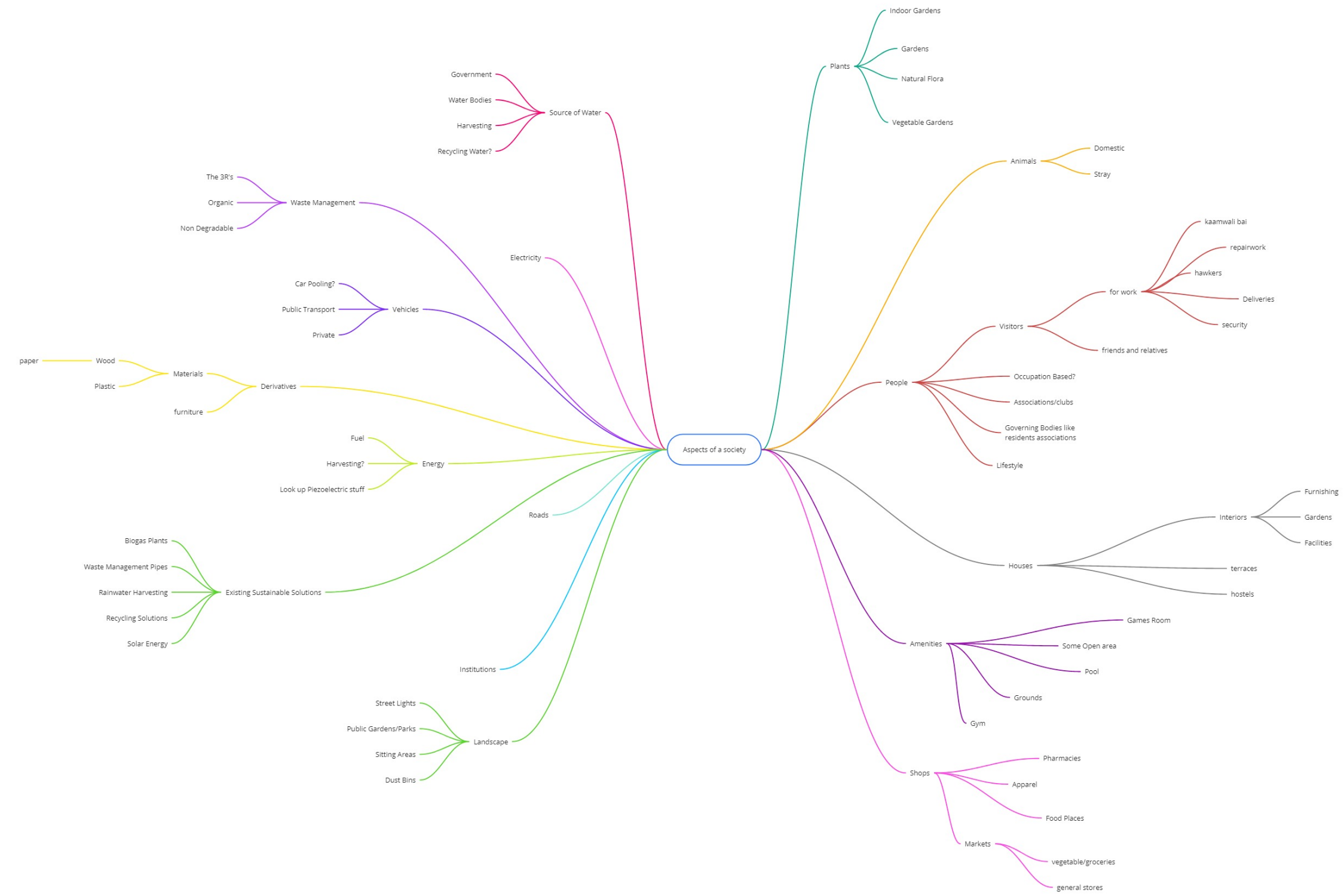
Prita Raut

18U130024



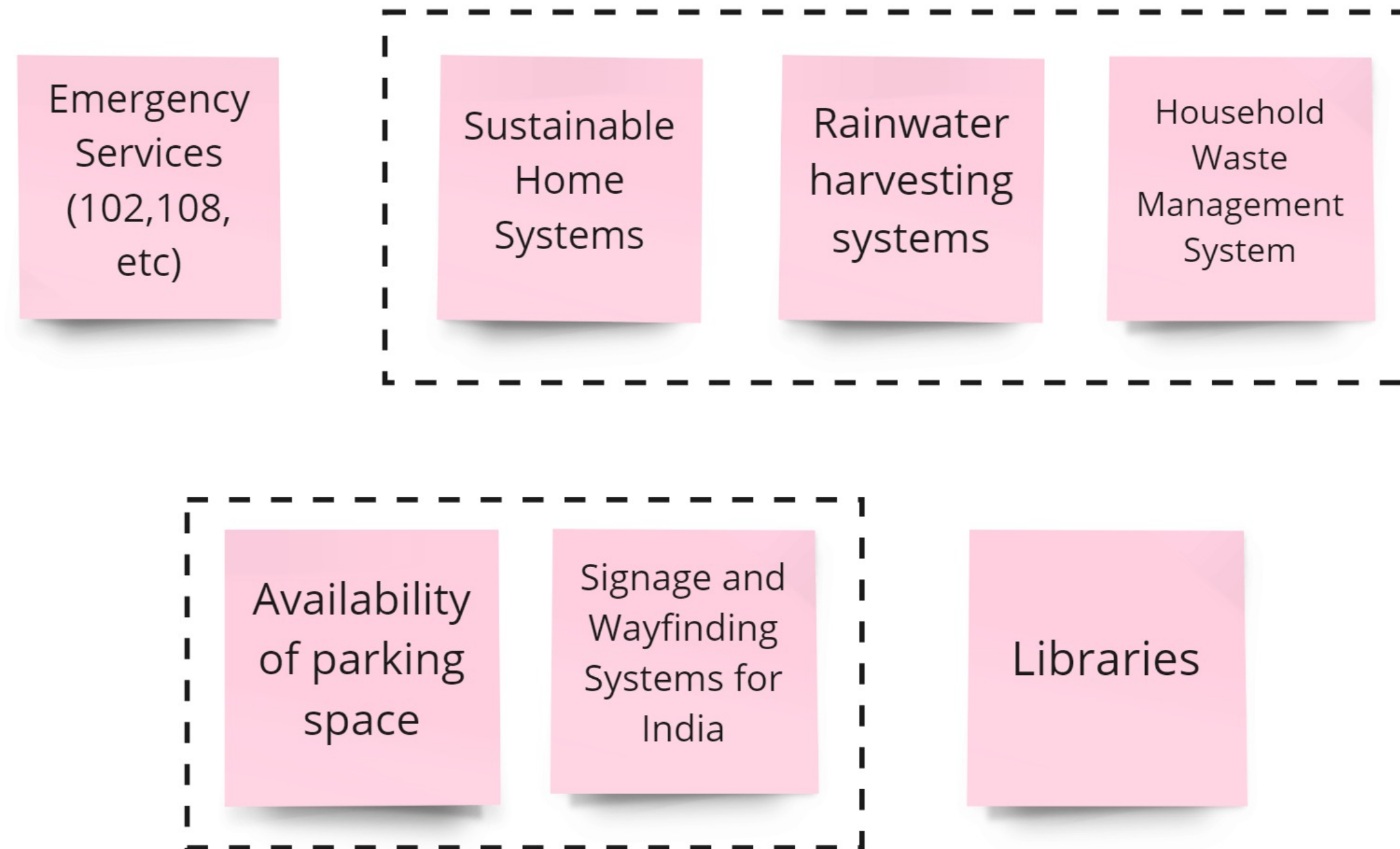
Recap Week One

Finalized our
Topic and did a
surface level
research to
understand it
better



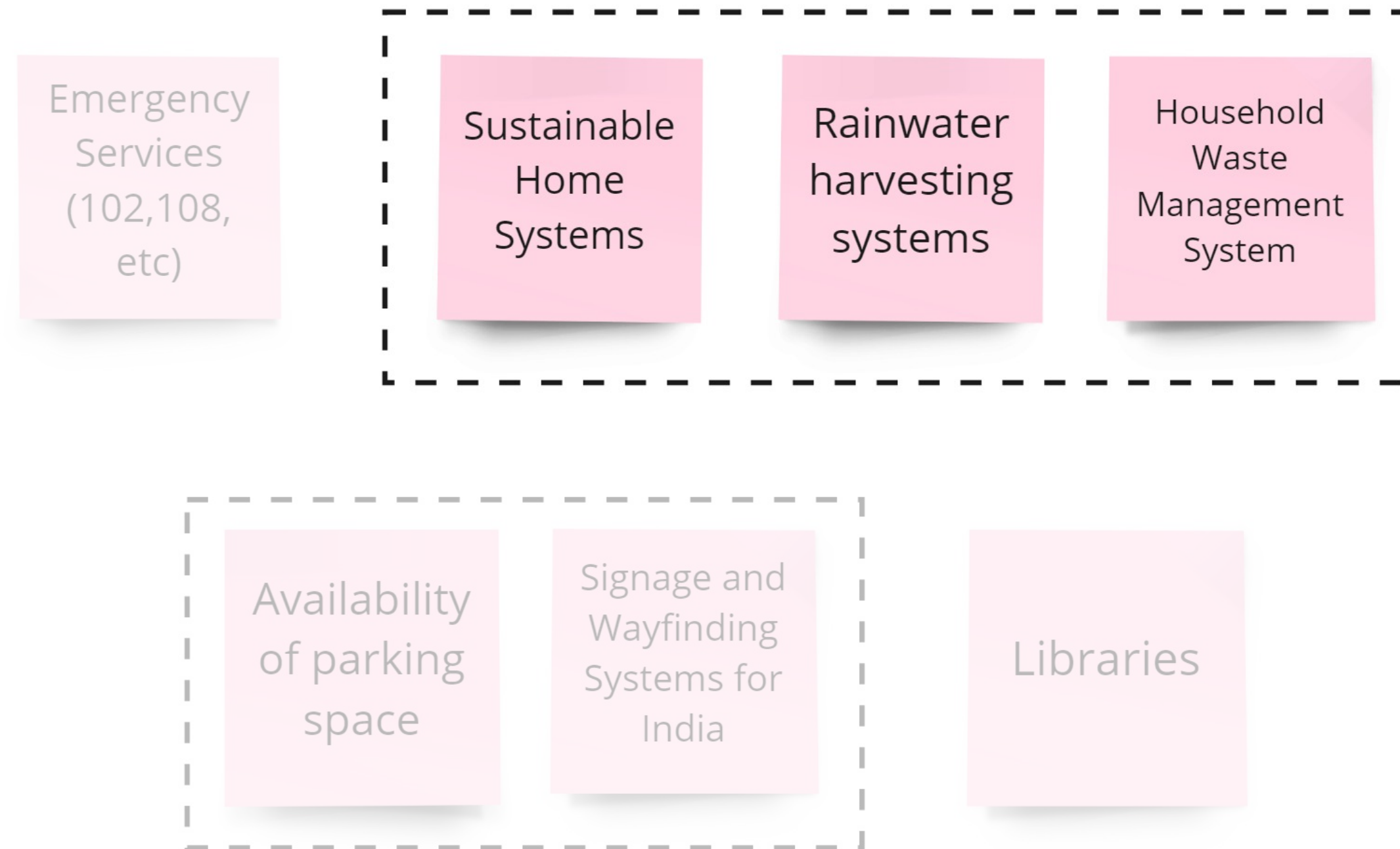
Recap Week One

Finalized our
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Recap Week One

Finalized our Topic and did a surface level research to understand it better







Week 2 at a Glance



Aim: Mapping Interactions and Identifying Problem Areas

Created a Schedule for the week

Mapped typical activities in daily life of an individual
(household level)

Mapped typical activities that happen in a society

Interactions between different parts of the society

Why sustainable practices are not adopted

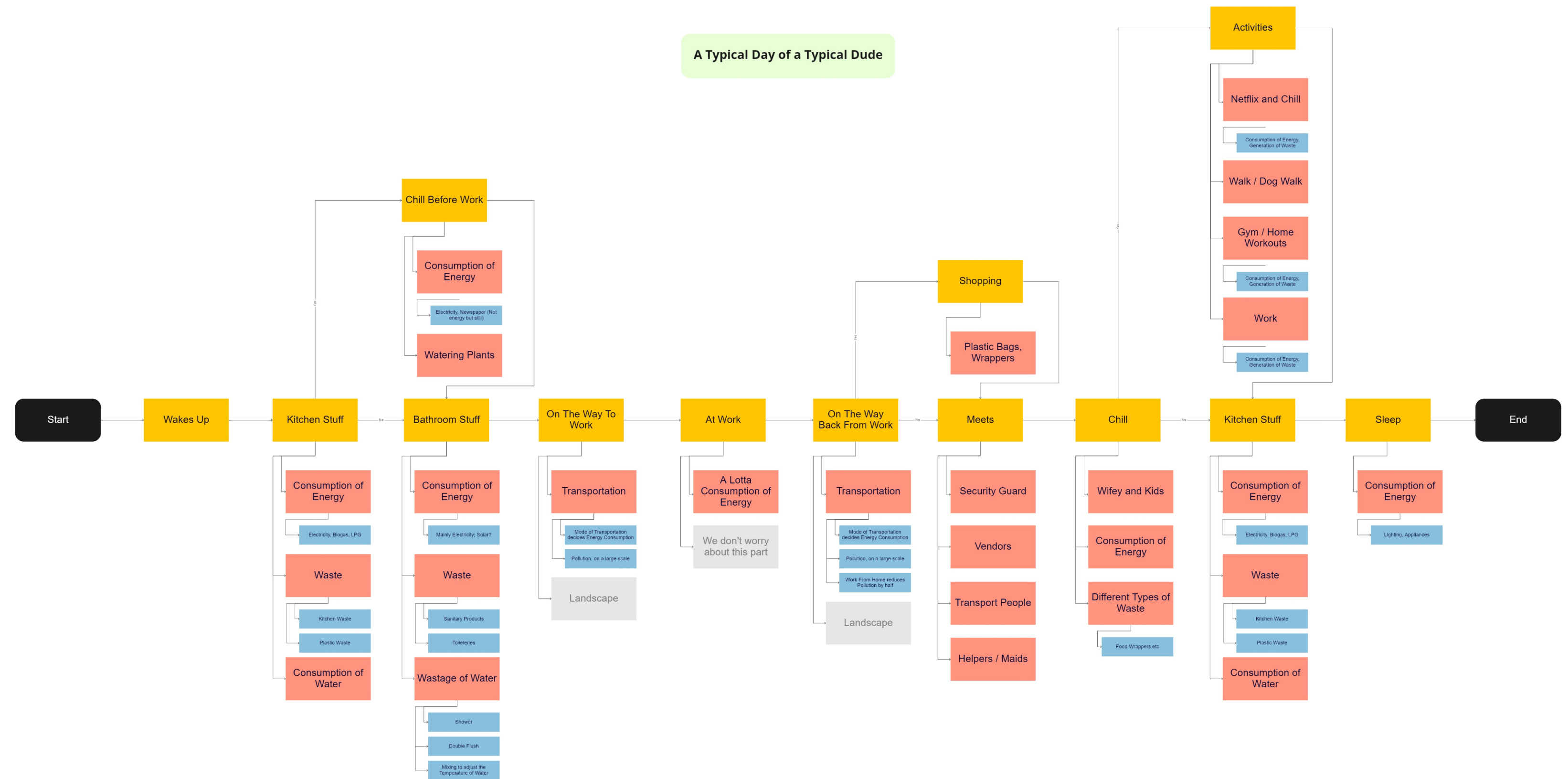
Understanding the cause and effect dynamics

Plans ahead

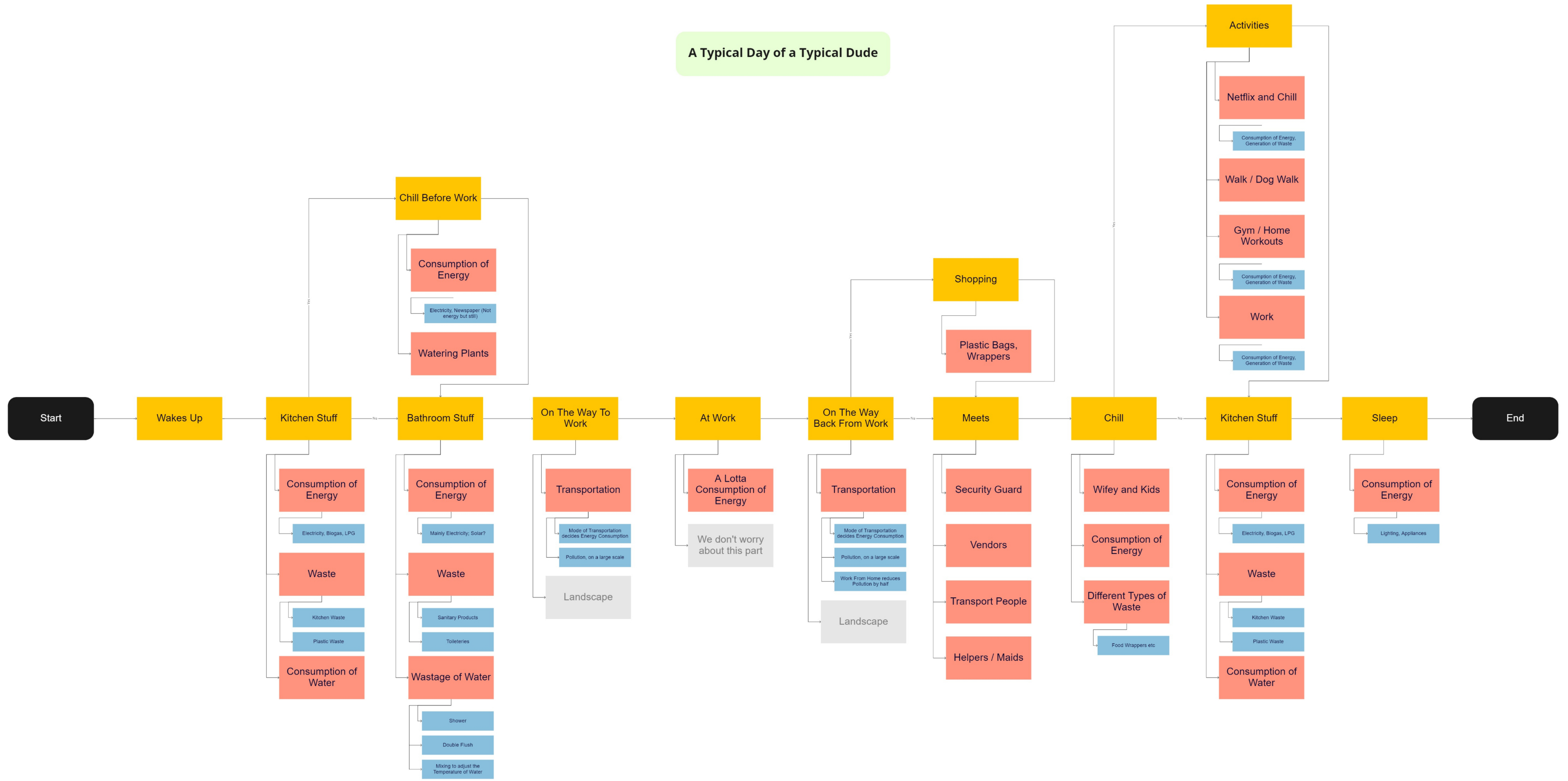
Daily Life

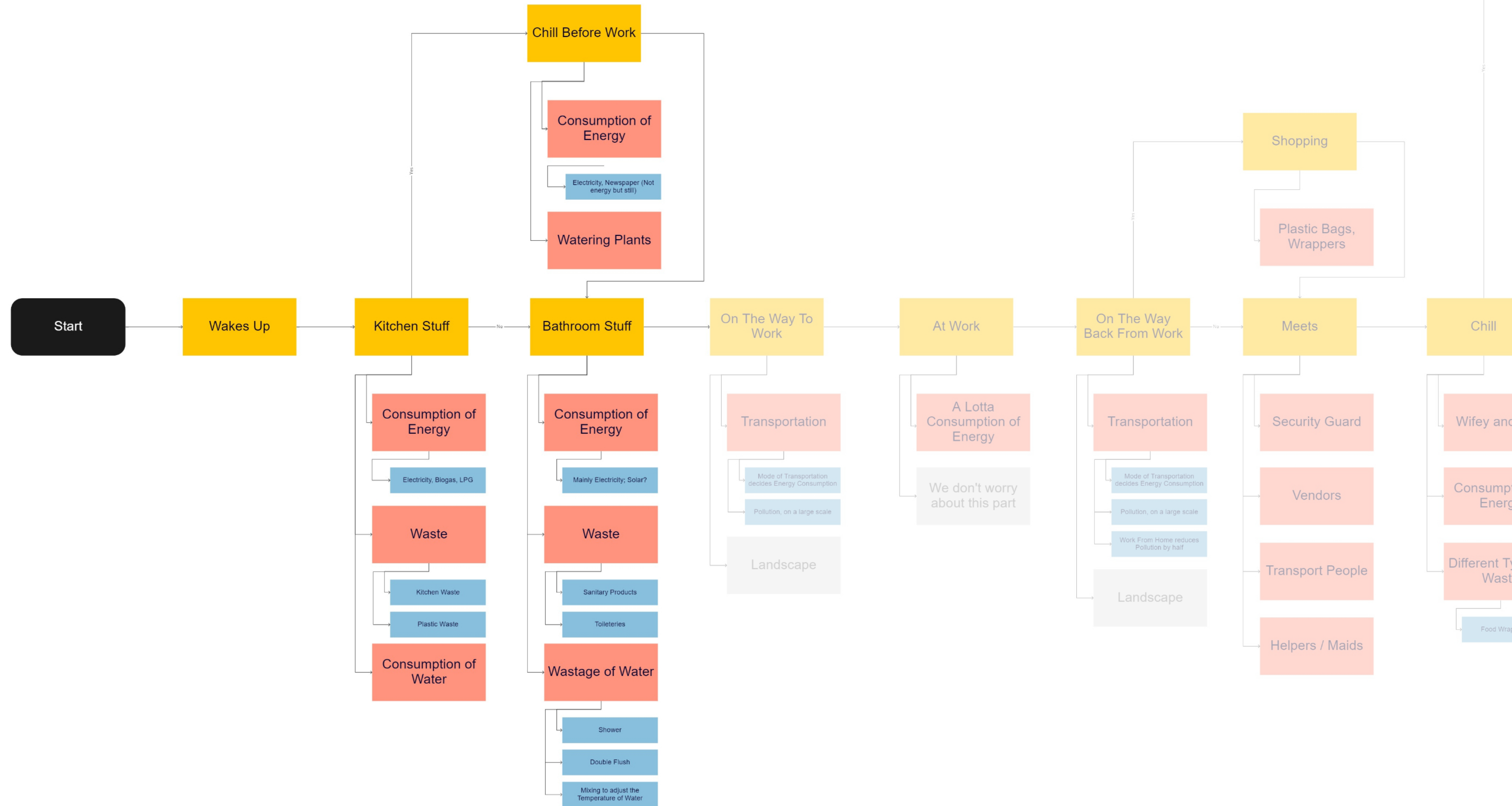
Individual Households

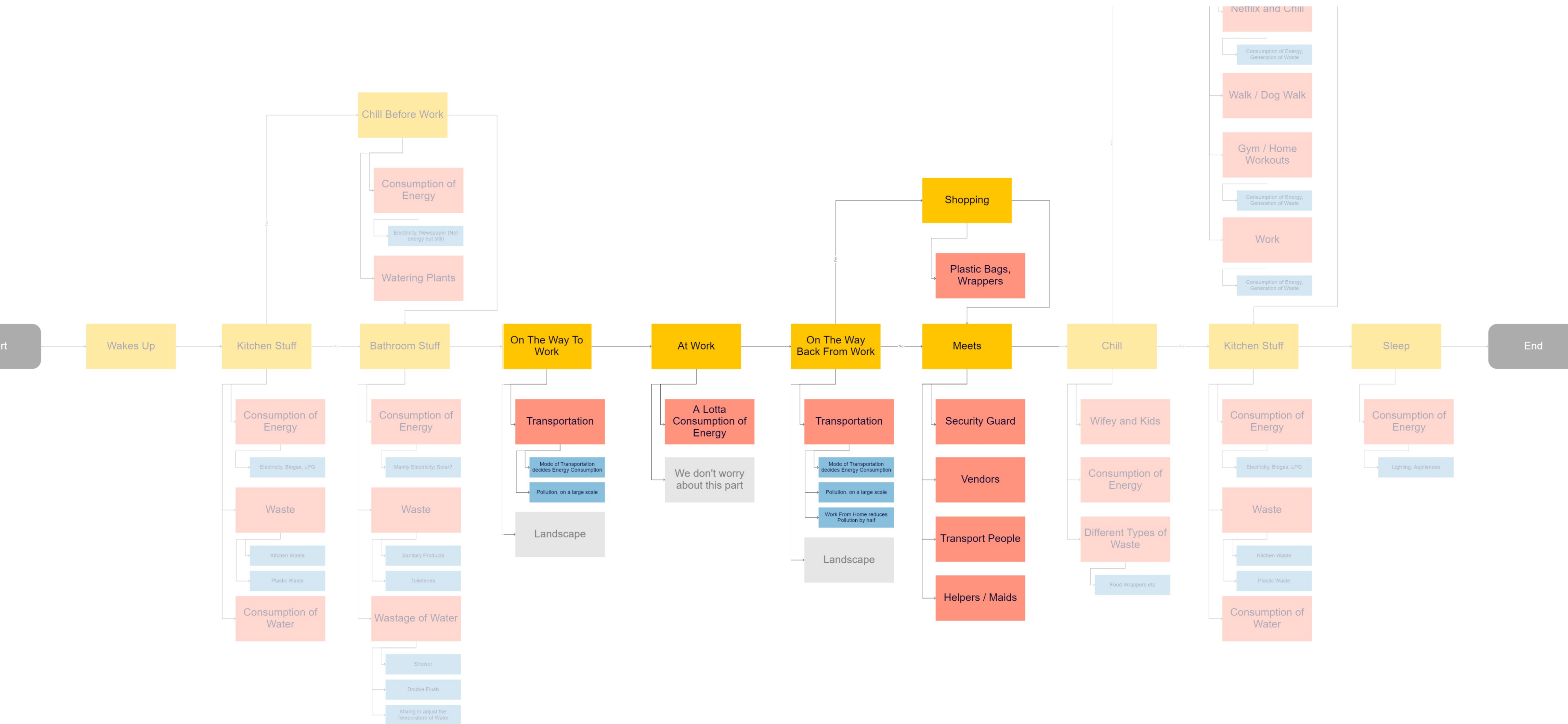
Activities a middle aged individual could perform during a **typical day** from morning to night



A Typical Day of a Typical Dude







rt

End

Wakes Up

Kitchen Stuff

Bathroom Stuff

On The Way To Work

At Work

On The Way Back From Work

Meets

Chill

Kitchen Stuff

Sleep

Consumption of Energy

Electricity, Biogas, LPG

Waste

Kitchen Waste

Plastic Waste

Consumption of Water

Consumption of Energy

Mainly Electricity, Solar?

Waste

Sanitary Products

Toiletries

Wastage of Water

Shower

Double Flush

Mixing to adjust the Temperature of Water

Transportation

Mode of Transportation decides Energy Consumption

Pollution, on a large scale

Landscape

A Lotta Consumption of Energy

We don't worry about this part

Transportation

Mode of Transportation decides Energy Consumption

Pollution, on a large scale

Work From Home reduces Pollution by half

Landscape

Shopping

Plastic Bags, Wrappers

Security Guard

Vendors

Transport People

Helpers / Maids

Wifey and Kids

Consumption of Energy

Different Types of Waste

Food Wrappers etc

Consumption of Energy

Electricity, Biogas, LPG

Waste

Kitchen Waste

Plastic Waste

Consumption of Water

Netflix and Chill

Consumption of Energy, Generation of Waste

Walk / Dog Walk

Gym / Home Workouts

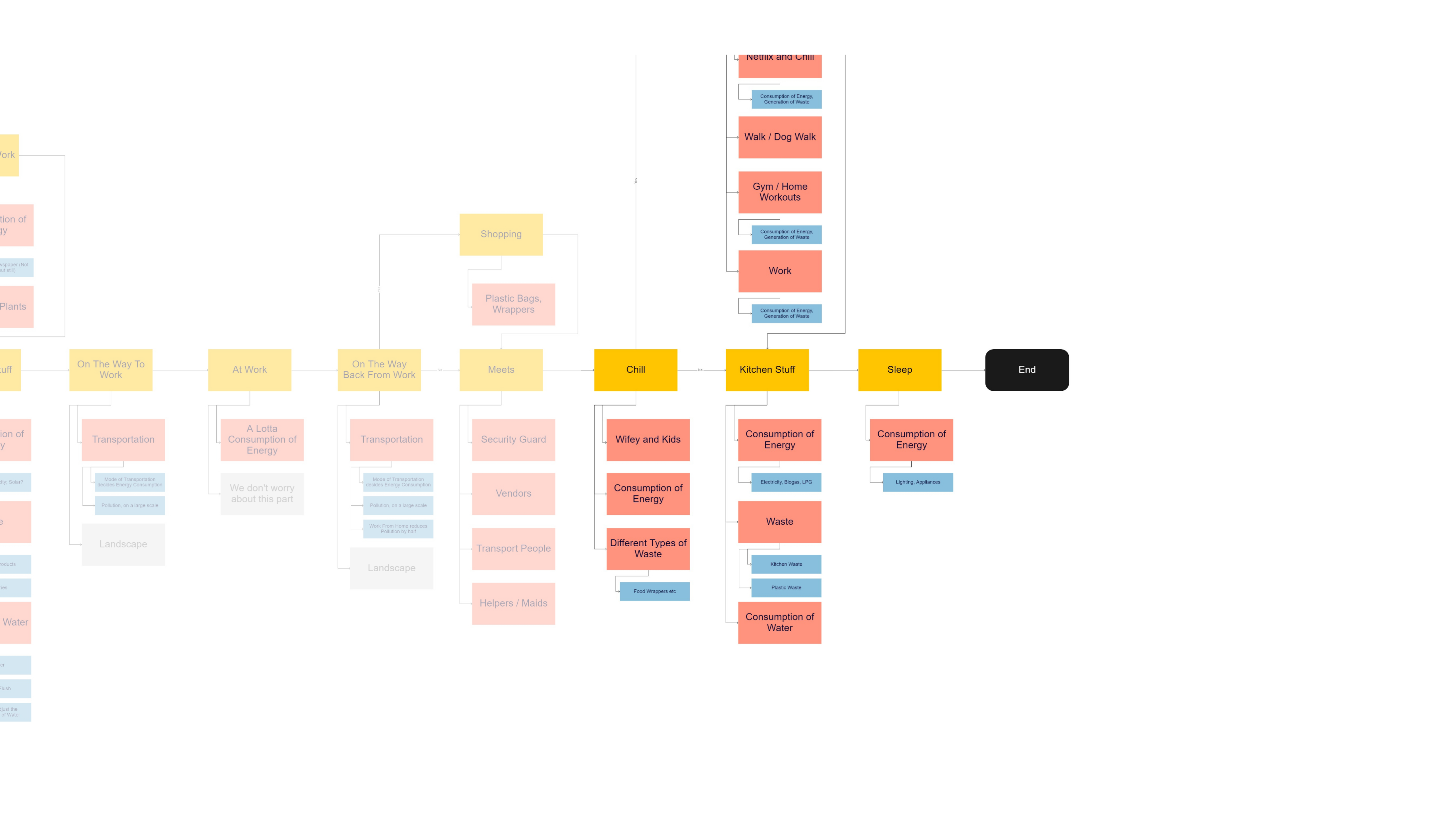
Consumption of Energy, Generation of Waste

Work

Consumption of Energy, Generation of Waste

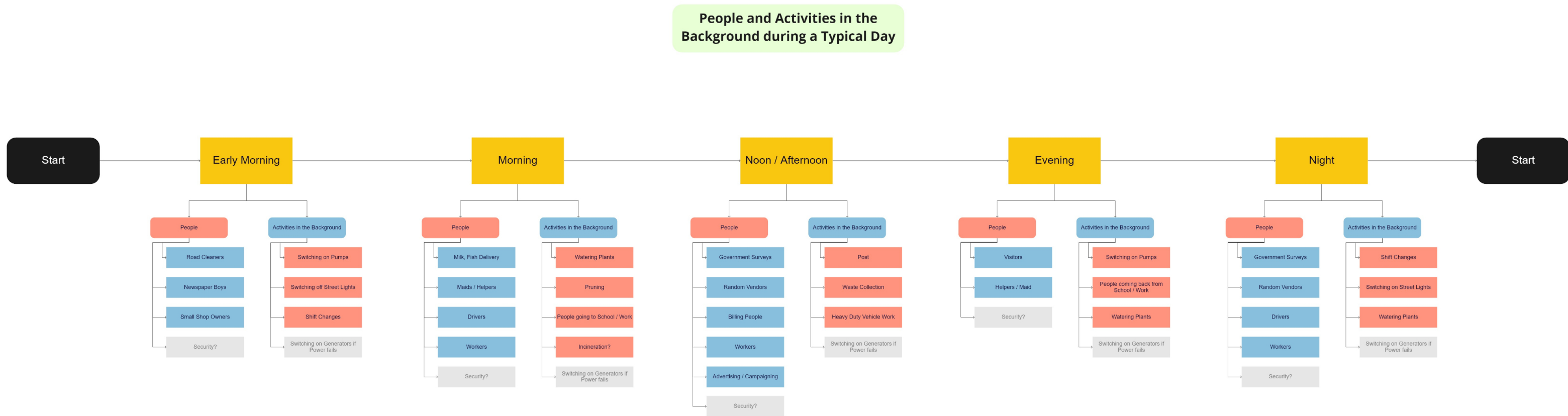
Consumption of Energy

Lighting, Appliances

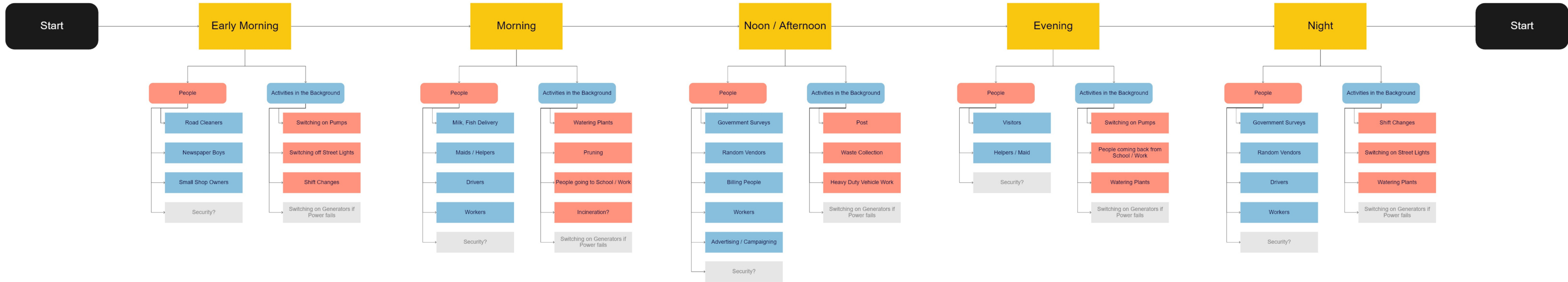


Daily Life Housing Complex

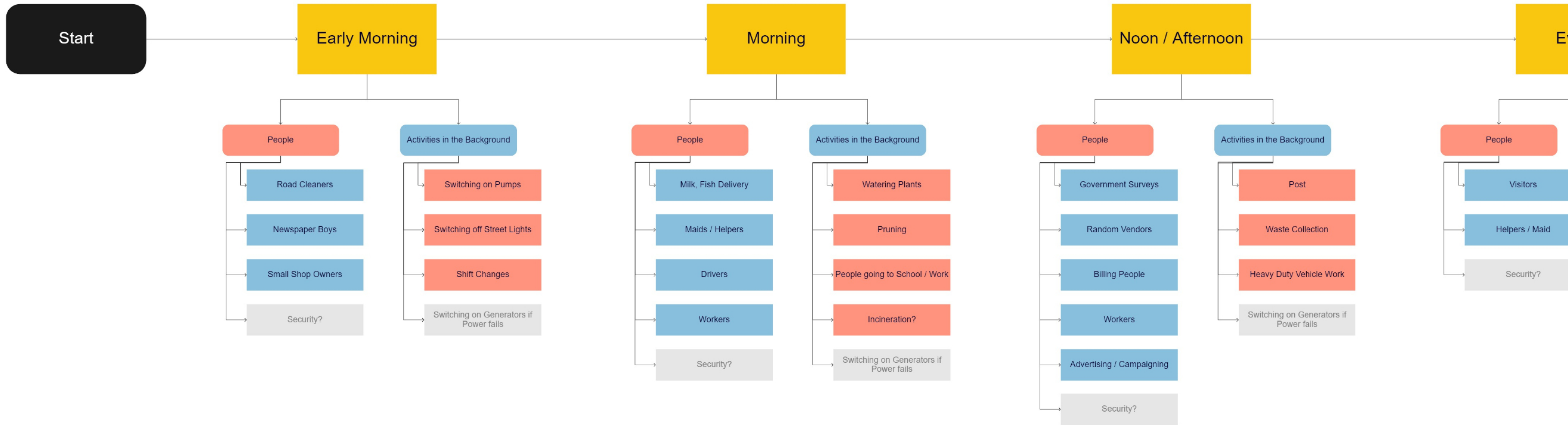
an average person's interactions with the outside world at **a society level** including daily activities that run in the background.



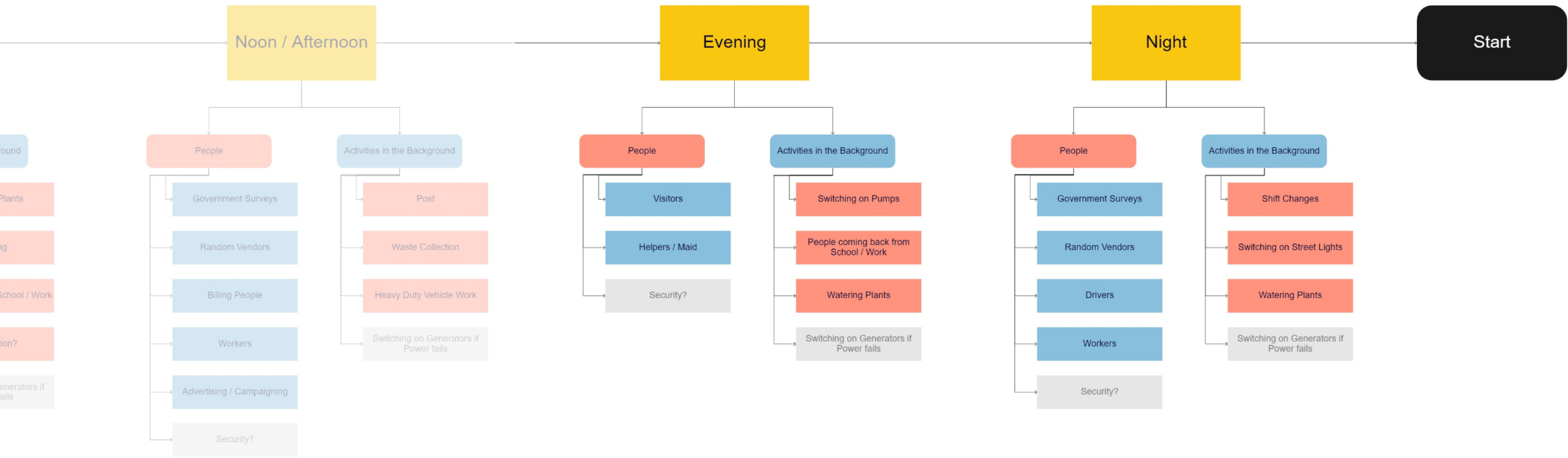
People and Activities in the Background during a Typical Day



People and Activities in the Background during a Typical Day

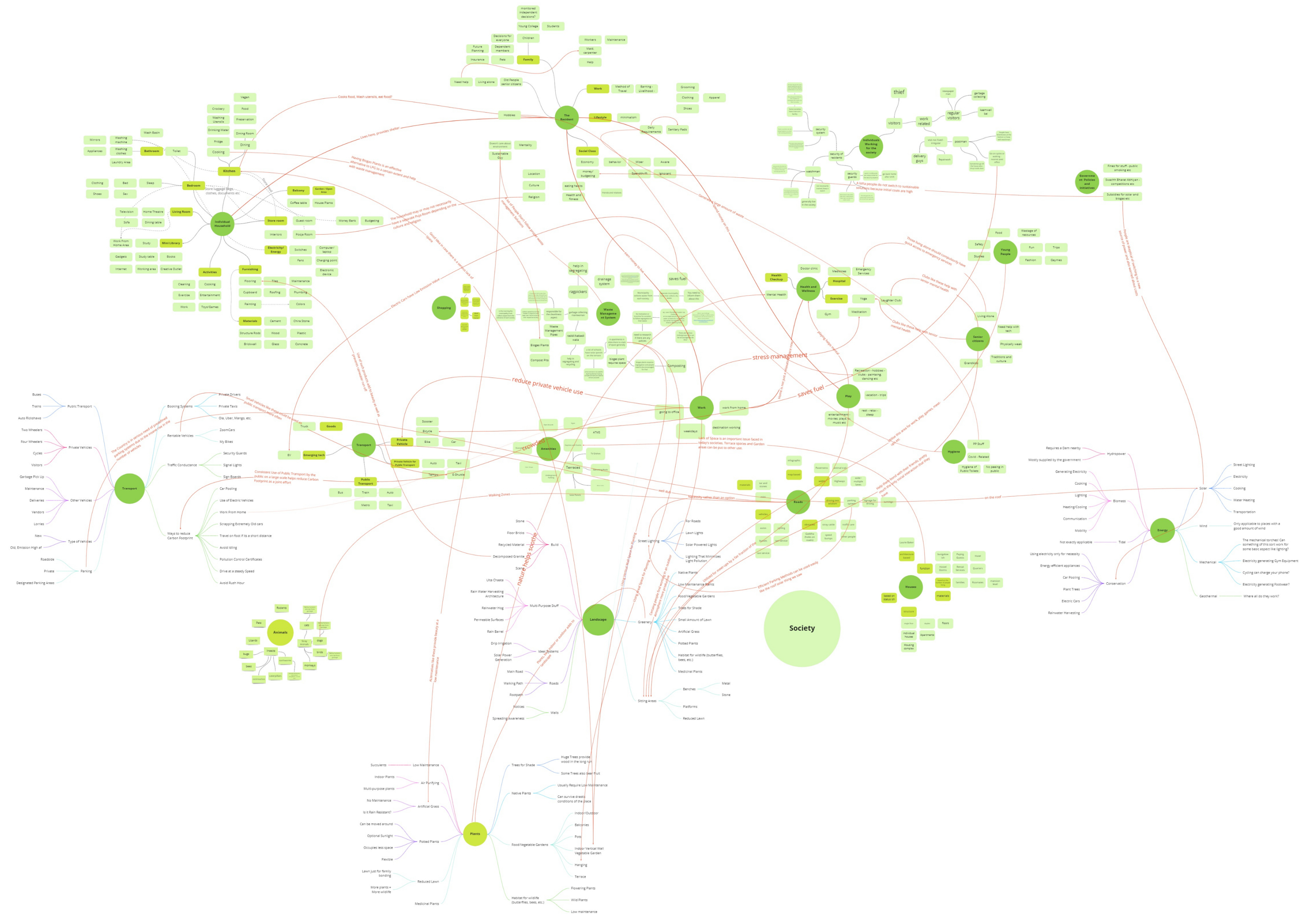


People and Activities in the Background during a Typical Day



Interactions between subsystems in a society

Giga mapping of possible elements taking part in a sustainable society and household





Inferences

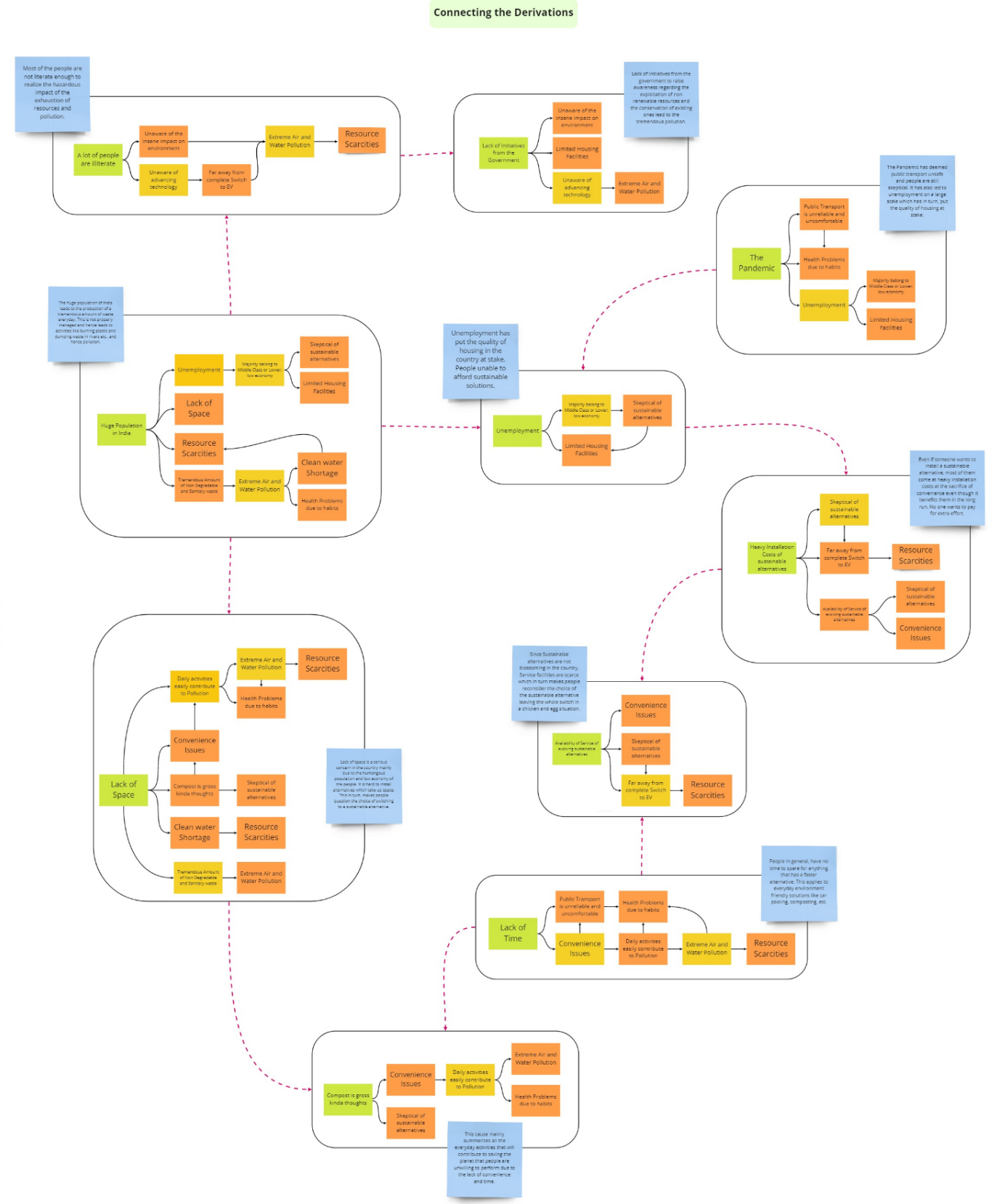
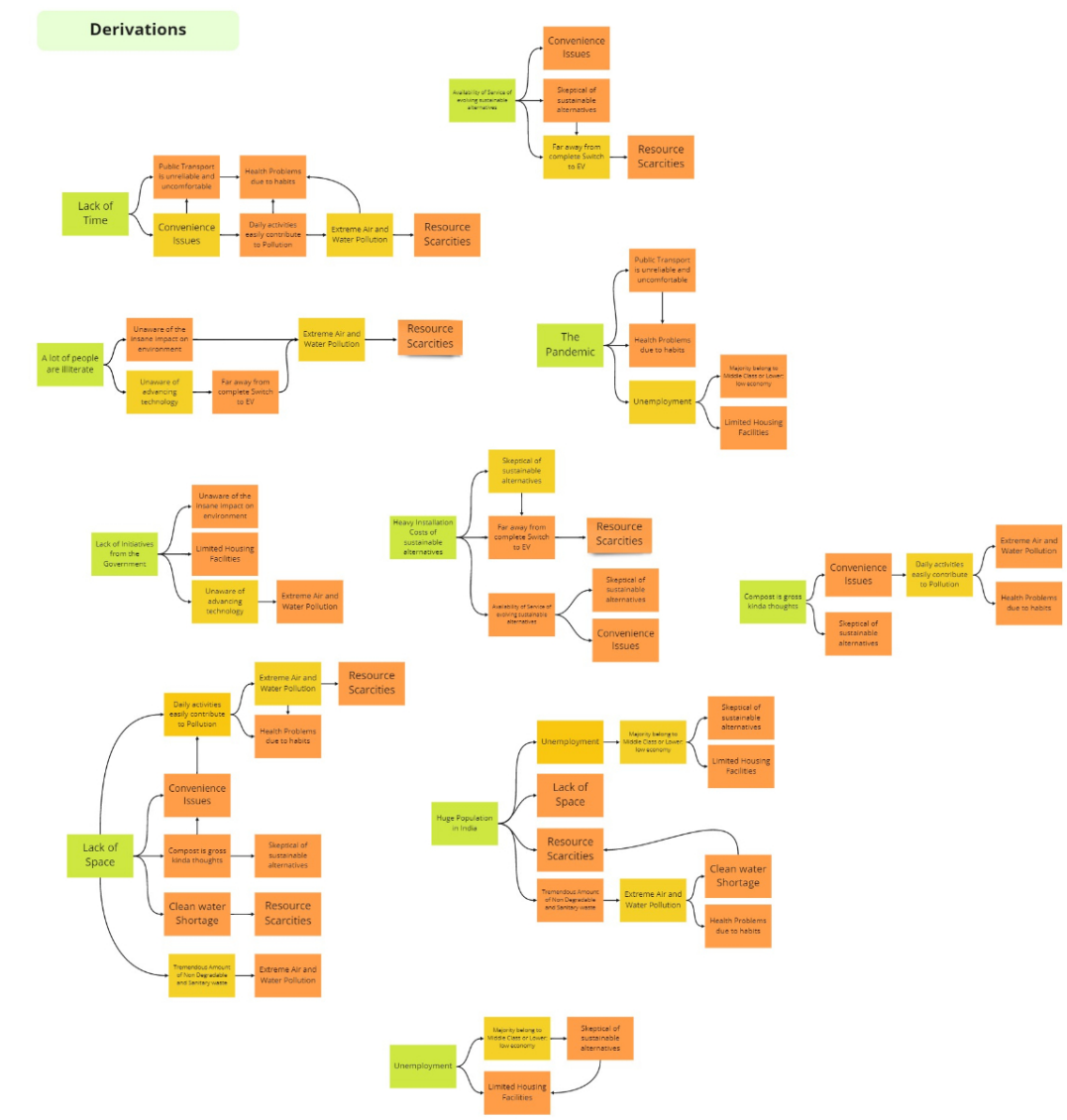
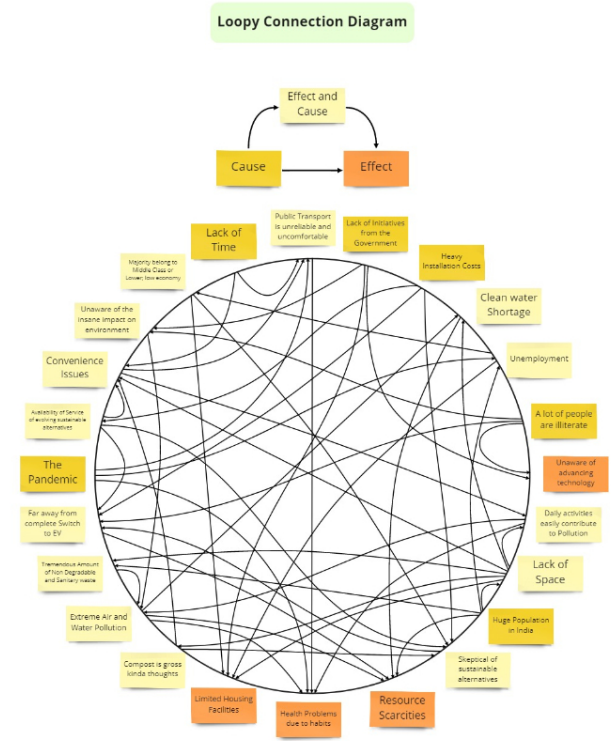
- Not following proper waste management practice
- Work from home - Plants help relieve stress
- Lack of space and multifunctionality
- Hinderance in existing way of using space
- Difficult to implement in existing space
- Dependency
- Lack of Accessibility

Why are Sustainable Practices not adopted

A Connection Circle on why Sustainable Solutions are not becoming popular in India

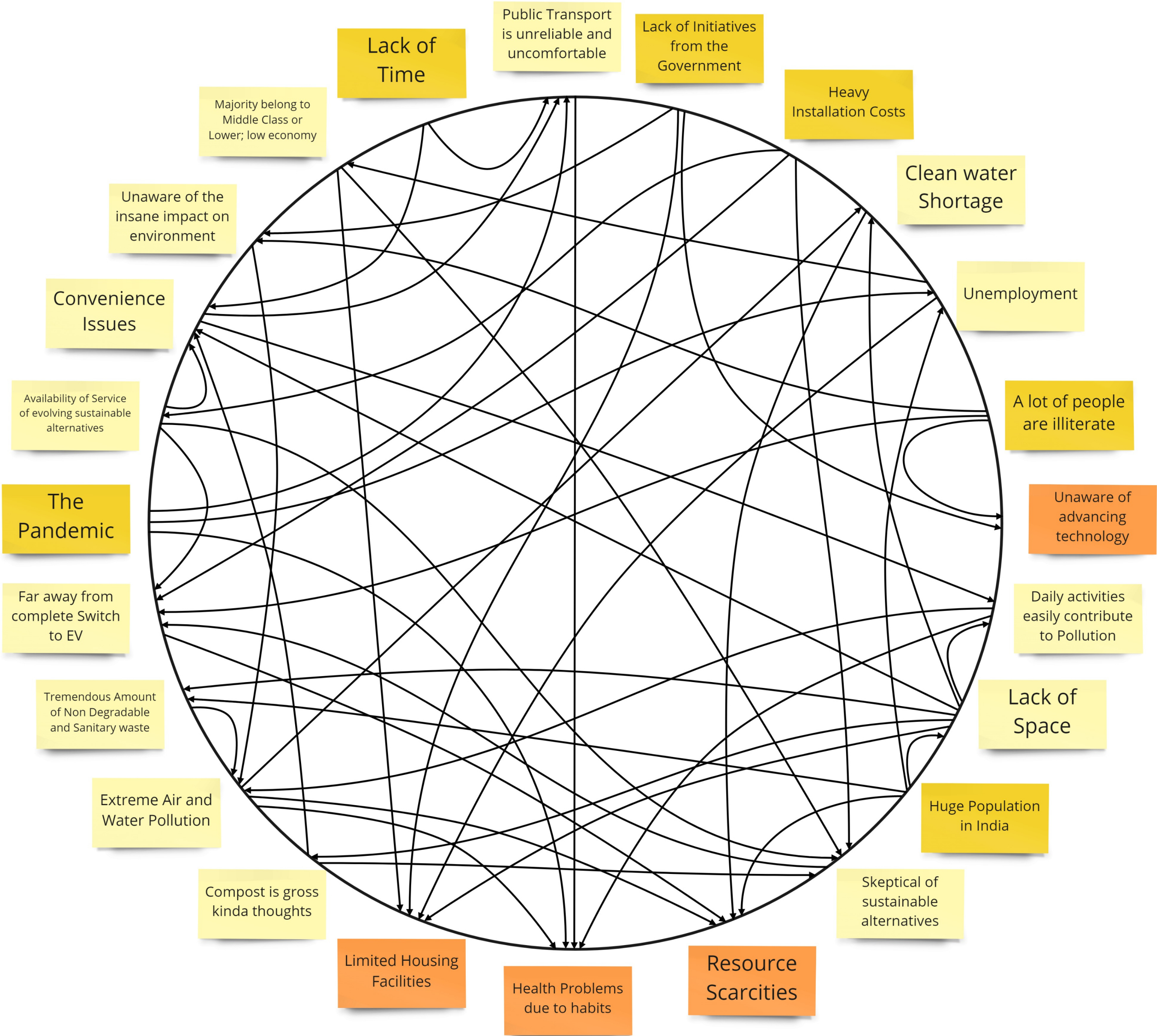
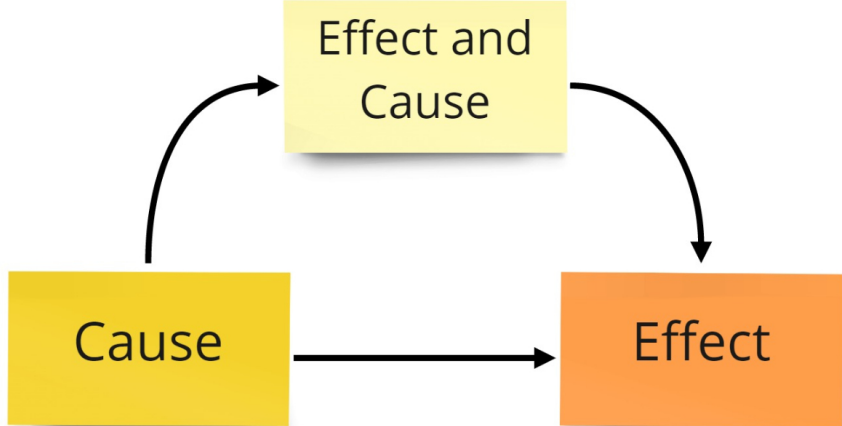
Why are Sustainable Solutions not becoming a thing in India?

Factors		
Convenience Issues	Perceived high costs and effort	A lot of people are still not aware
Lack of Space	Lack of space for sustainable practices	Lack of space for sustainable practices
Lack of Time	High pressure to work	High pressure to work
Availability of Services	Lack of services for sustainable practices	Lack of services for sustainable practices
Health Problems	Health problems due to pollution	Health problems due to pollution
The Pandemic	Health problems due to pollution	Health problems due to pollution
Water Shortages	Water shortages due to pollution	Water shortages due to pollution
Resource Scarcities	Resource scarcities due to pollution	Resource scarcities due to pollution
Convenience Issues	Convenience issues due to pollution	Convenience issues due to pollution
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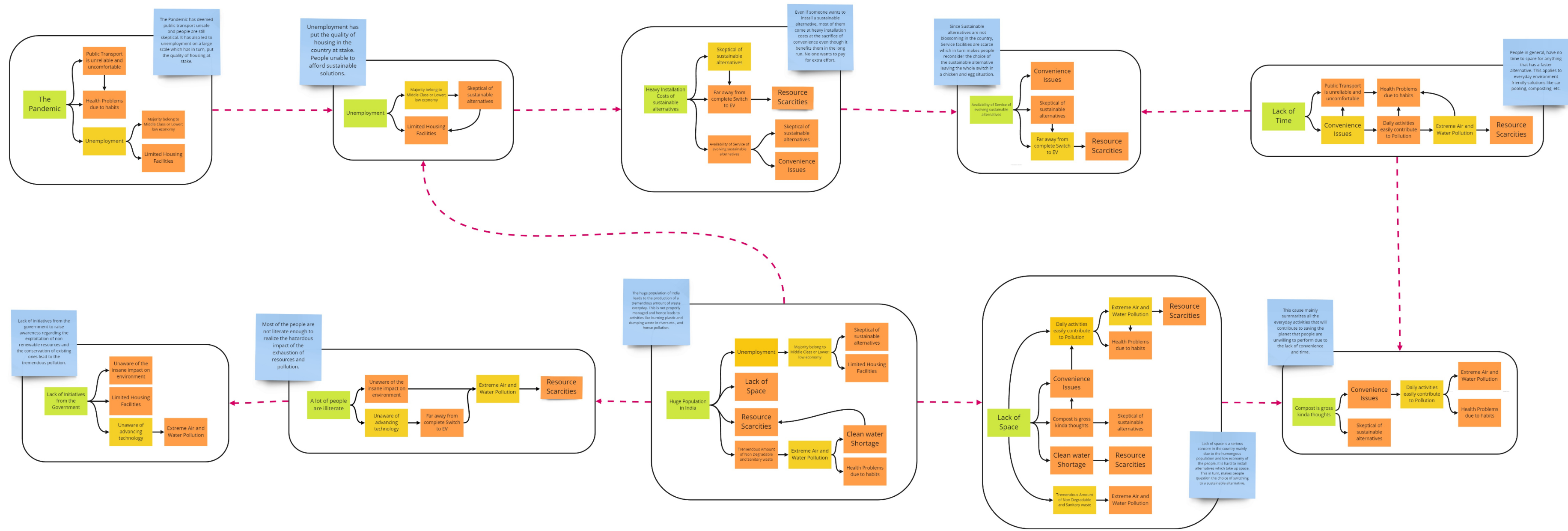
Why are Sustainable practices not adopted

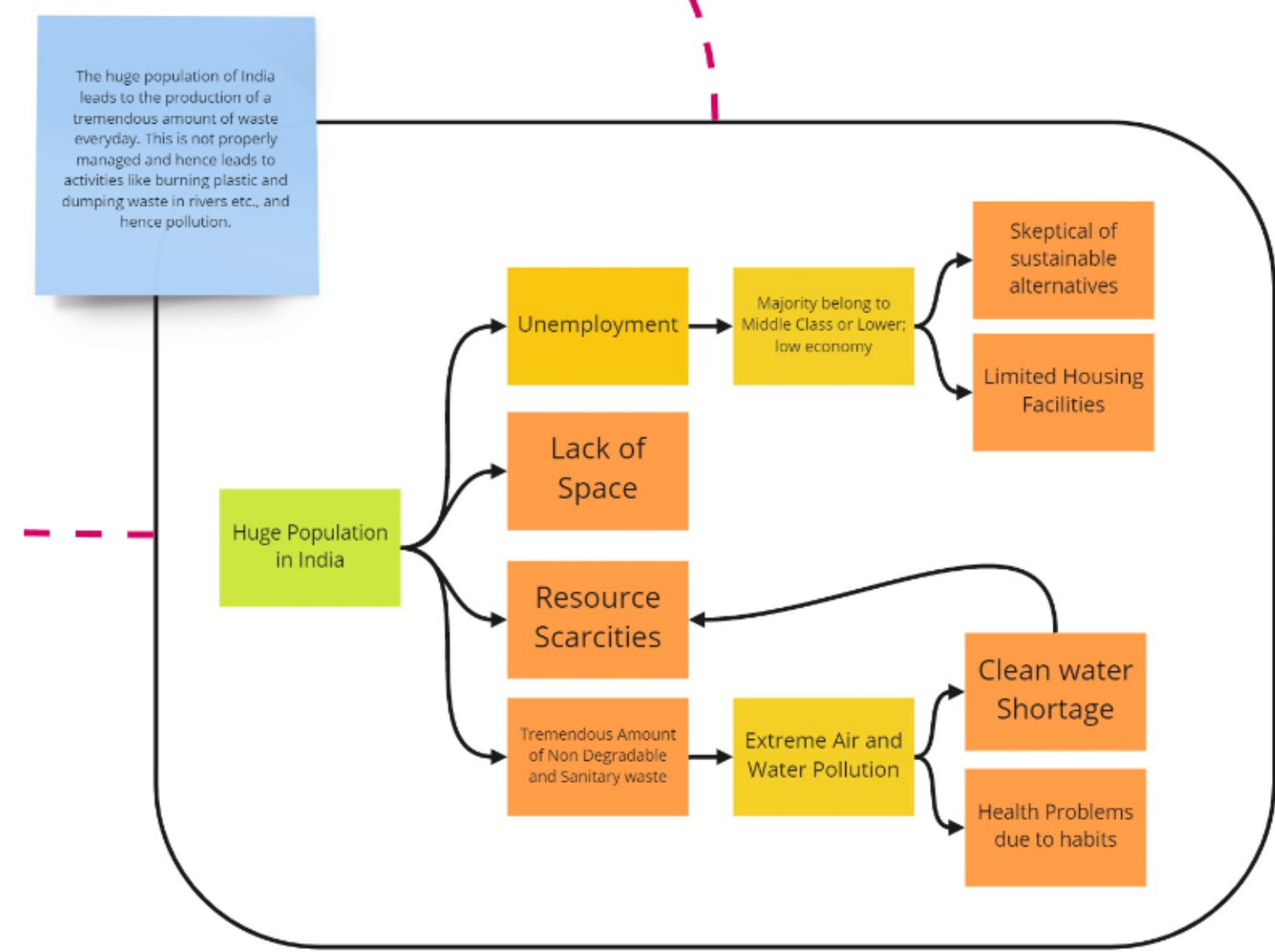
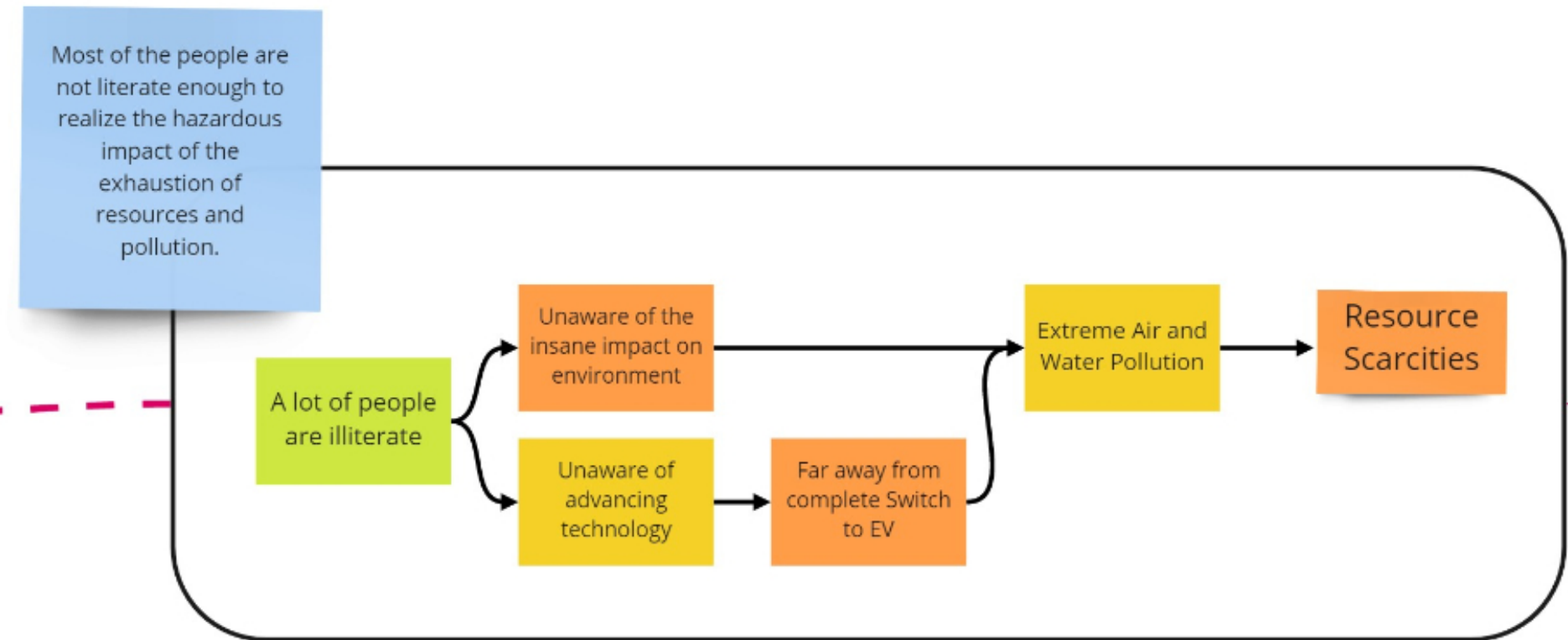
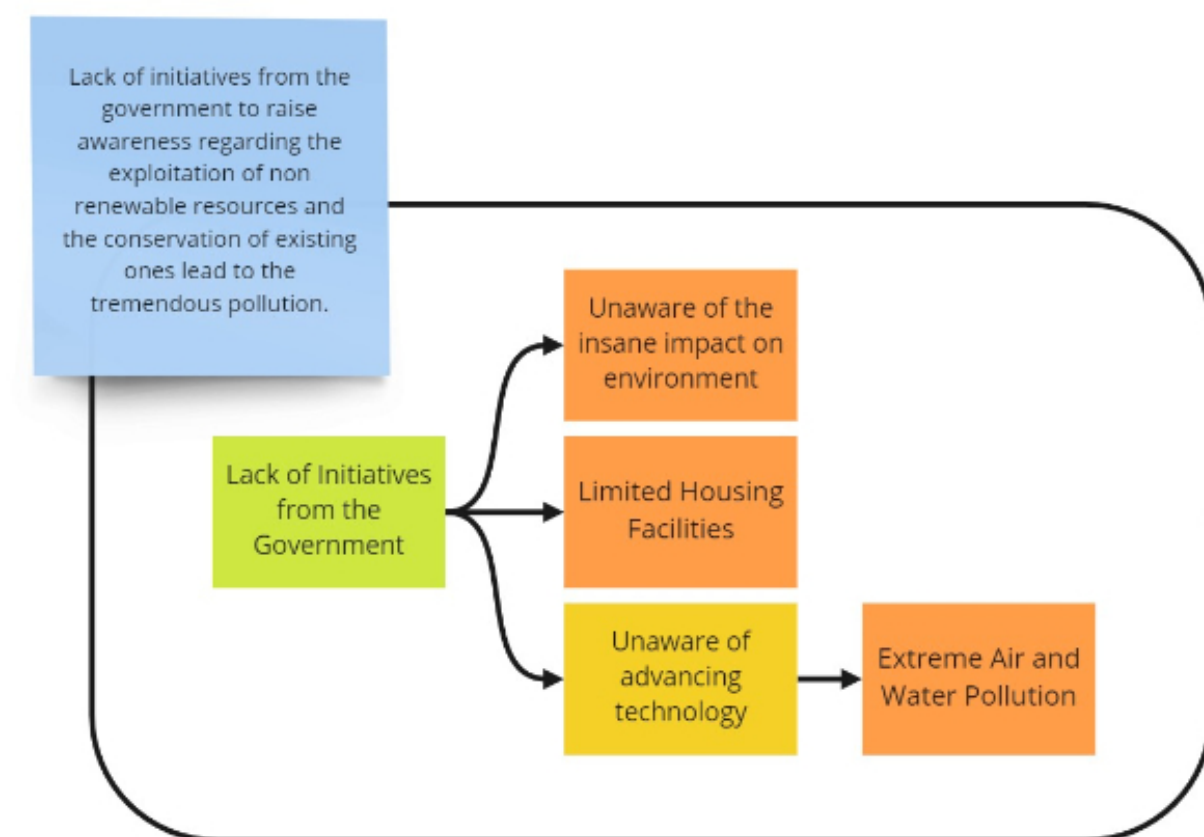
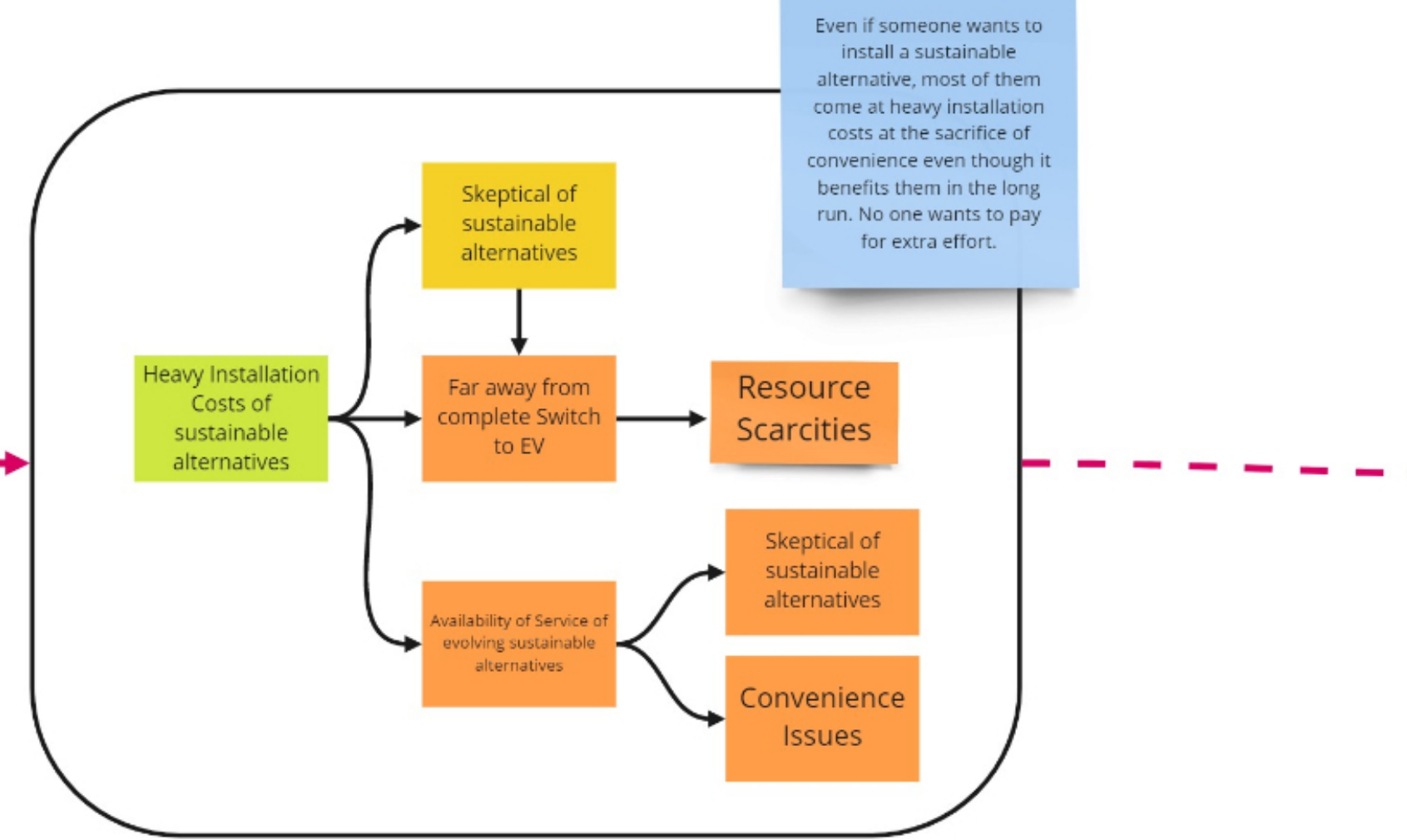
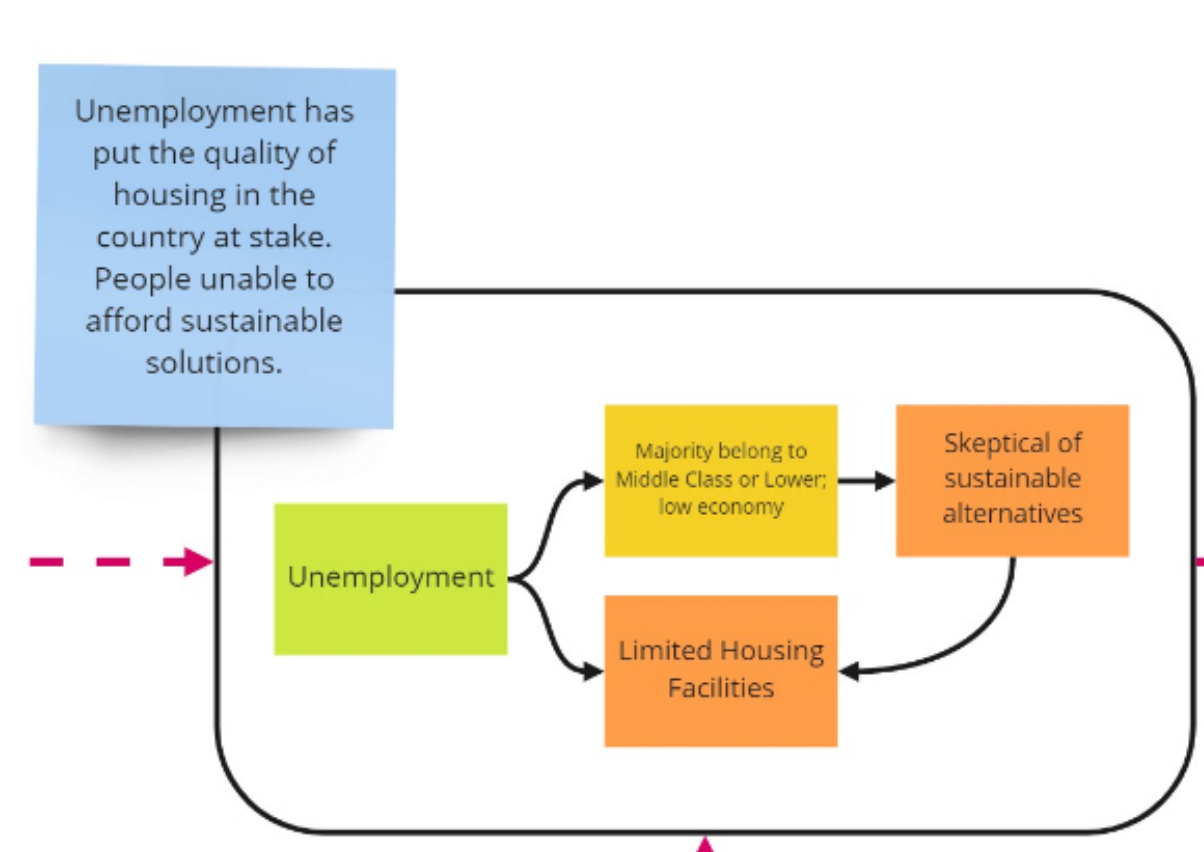
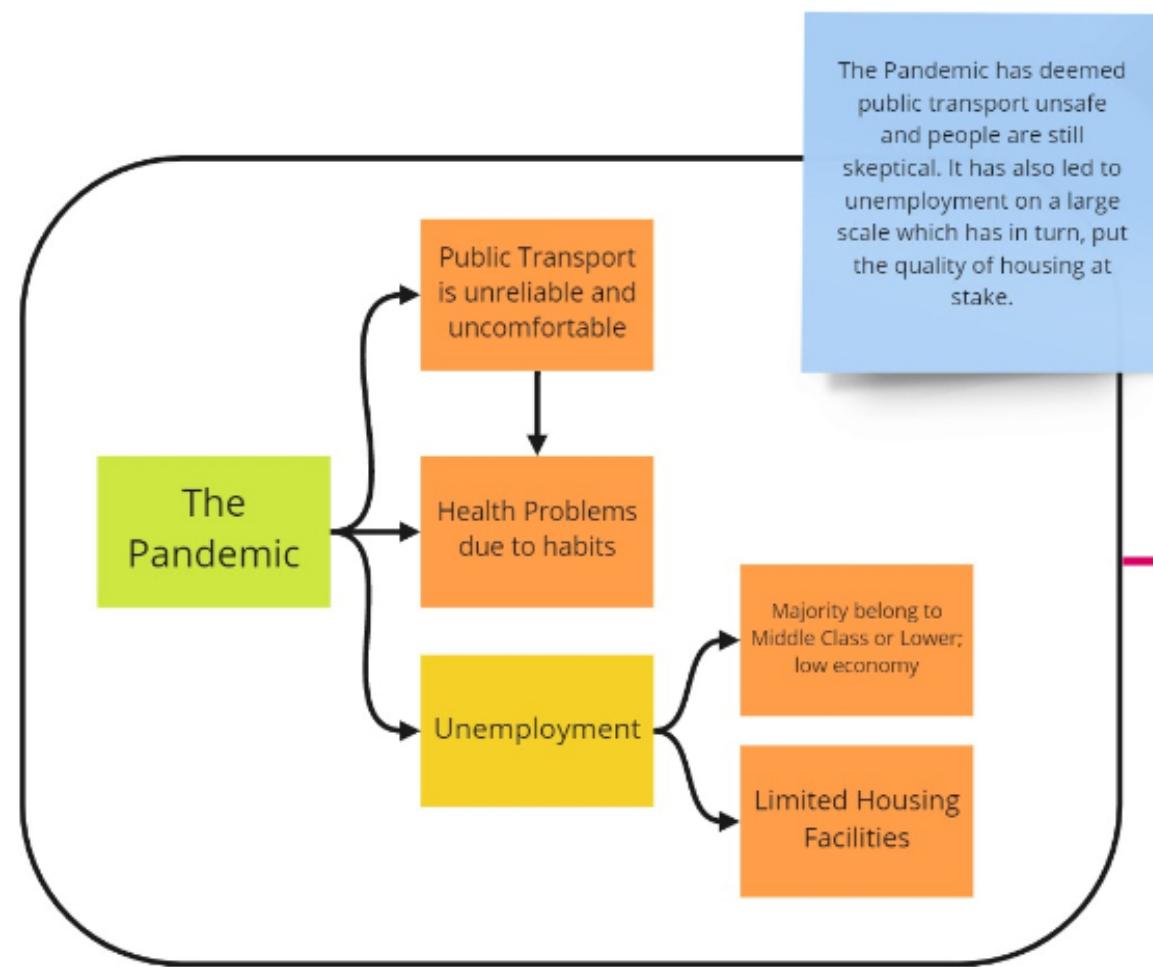
Listed down factors, grouped similar ones and linked the Cause to the Effect

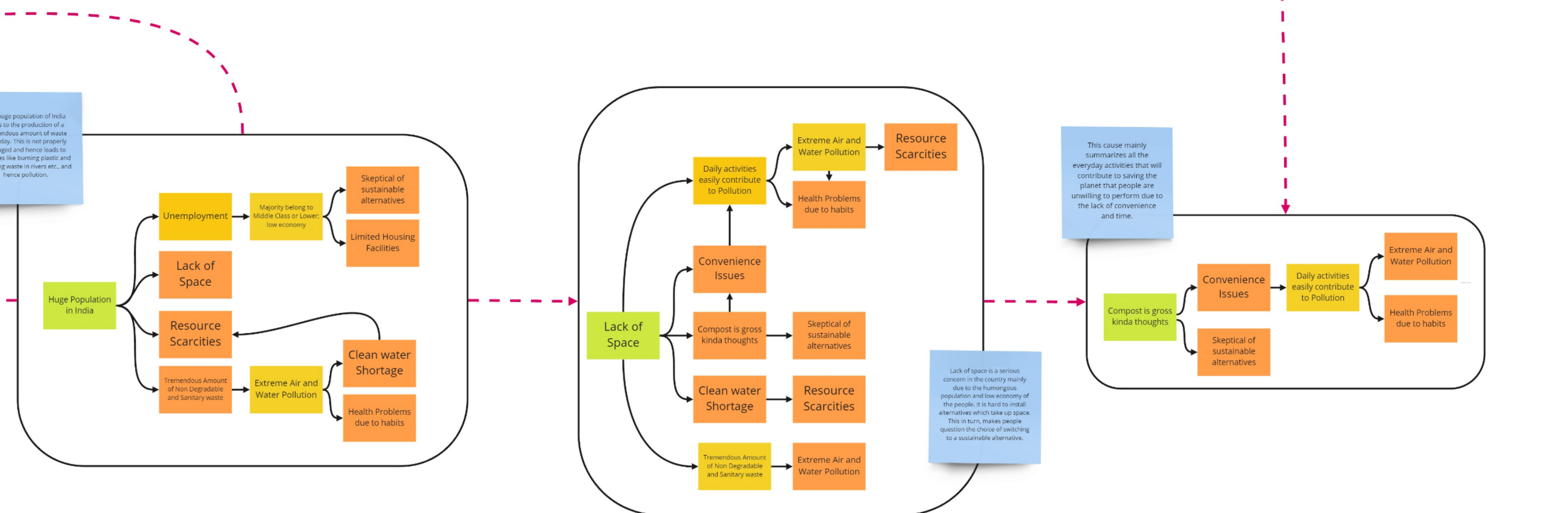
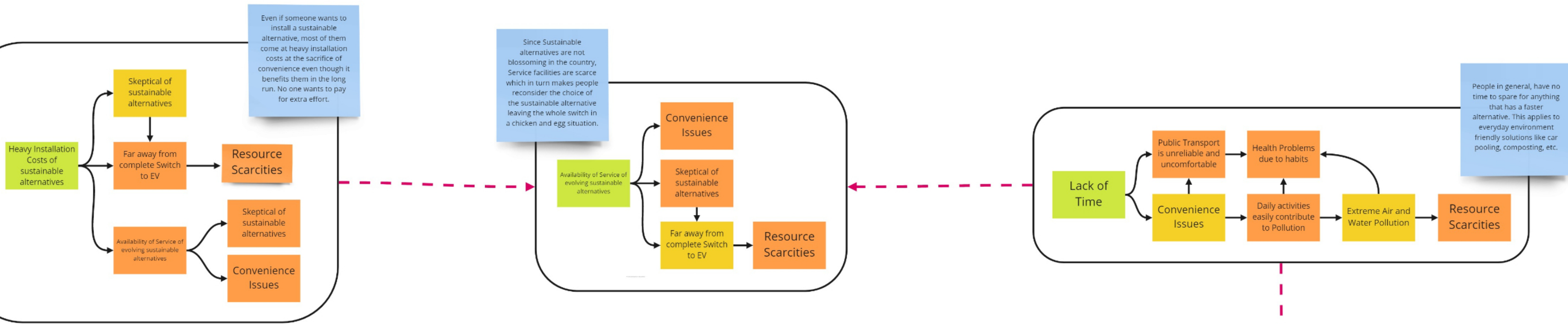


Why are Sustainable practices not adopted

Derived Root Causes and final effects and further linked them









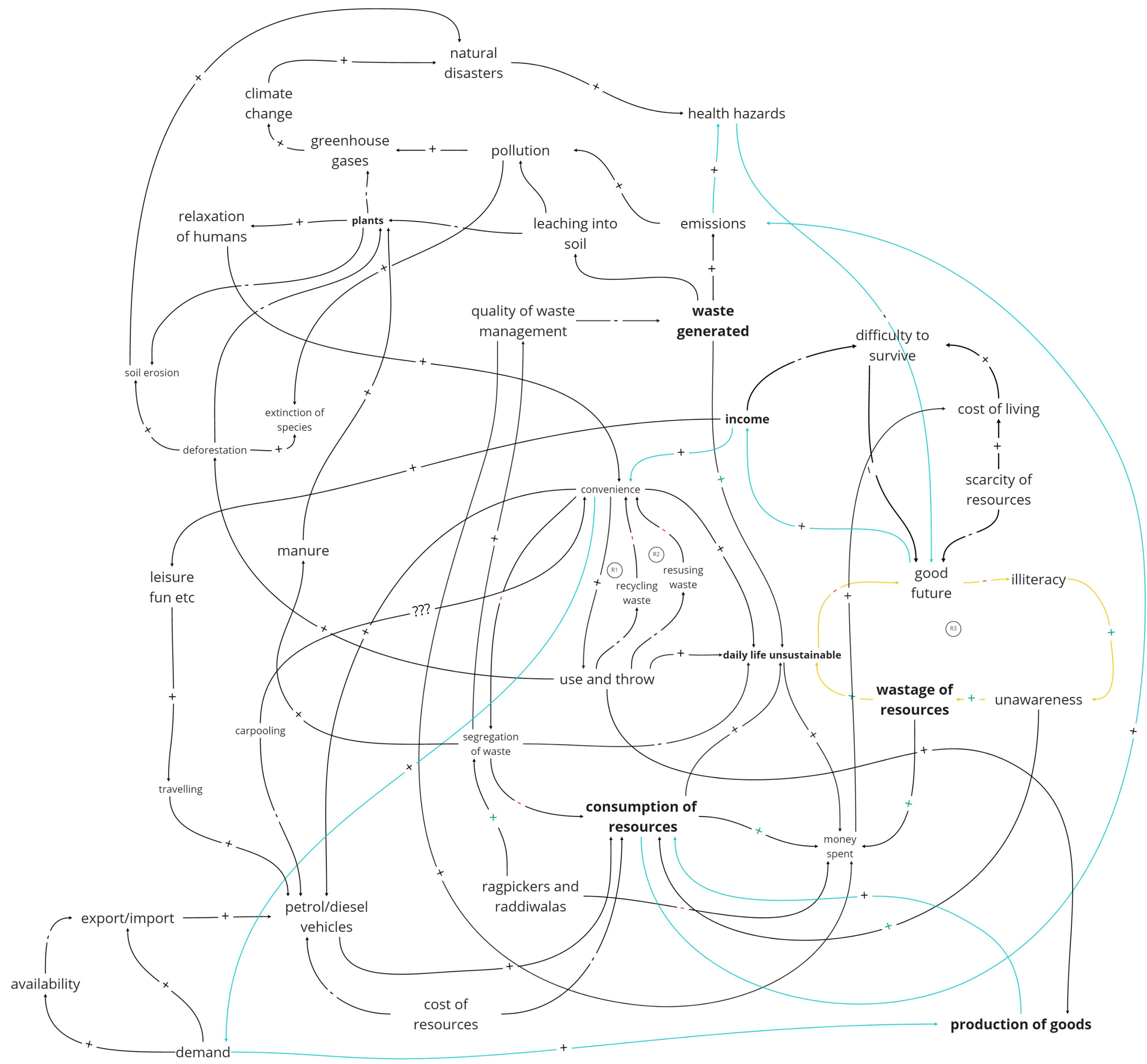
Inferences

- Illiteracy in India
- Lack of Awareness
- Huge Population In India
- Unemployment
- Heavy Installation Costs
- Accessibility of Service
- Lack of Space
- The Pandemic
- Access to Faster Alternatives
- Lack of Convenience and Time

Causal Loop Diagram 2

Reasons causing **daily life** to be unsustainable

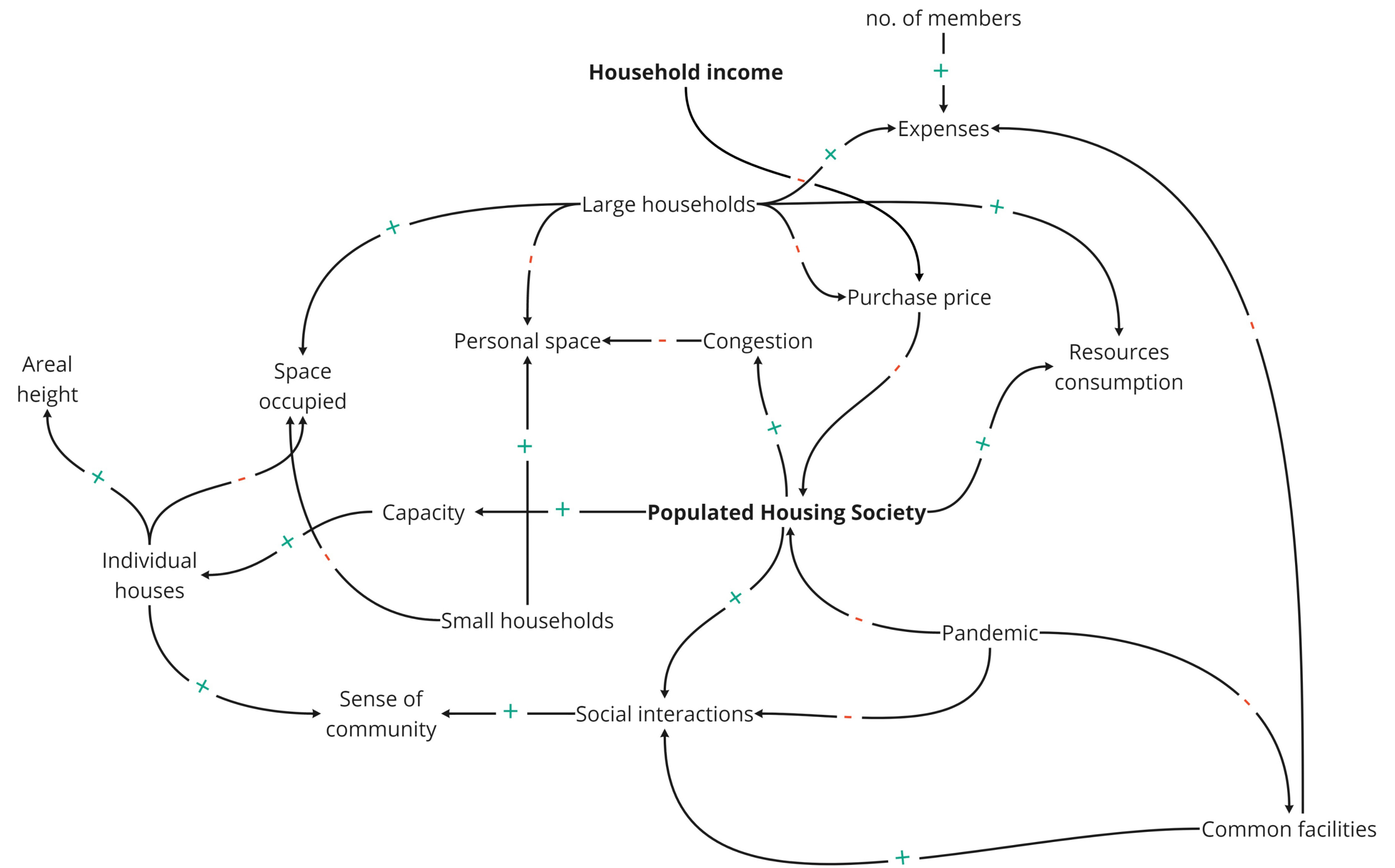
Causal Loop Diagram on why daily life is unsustainable



Causal Loop Diagram on why populated housing society are sought after today (and their downsides)

Causal Loop Diagram 3

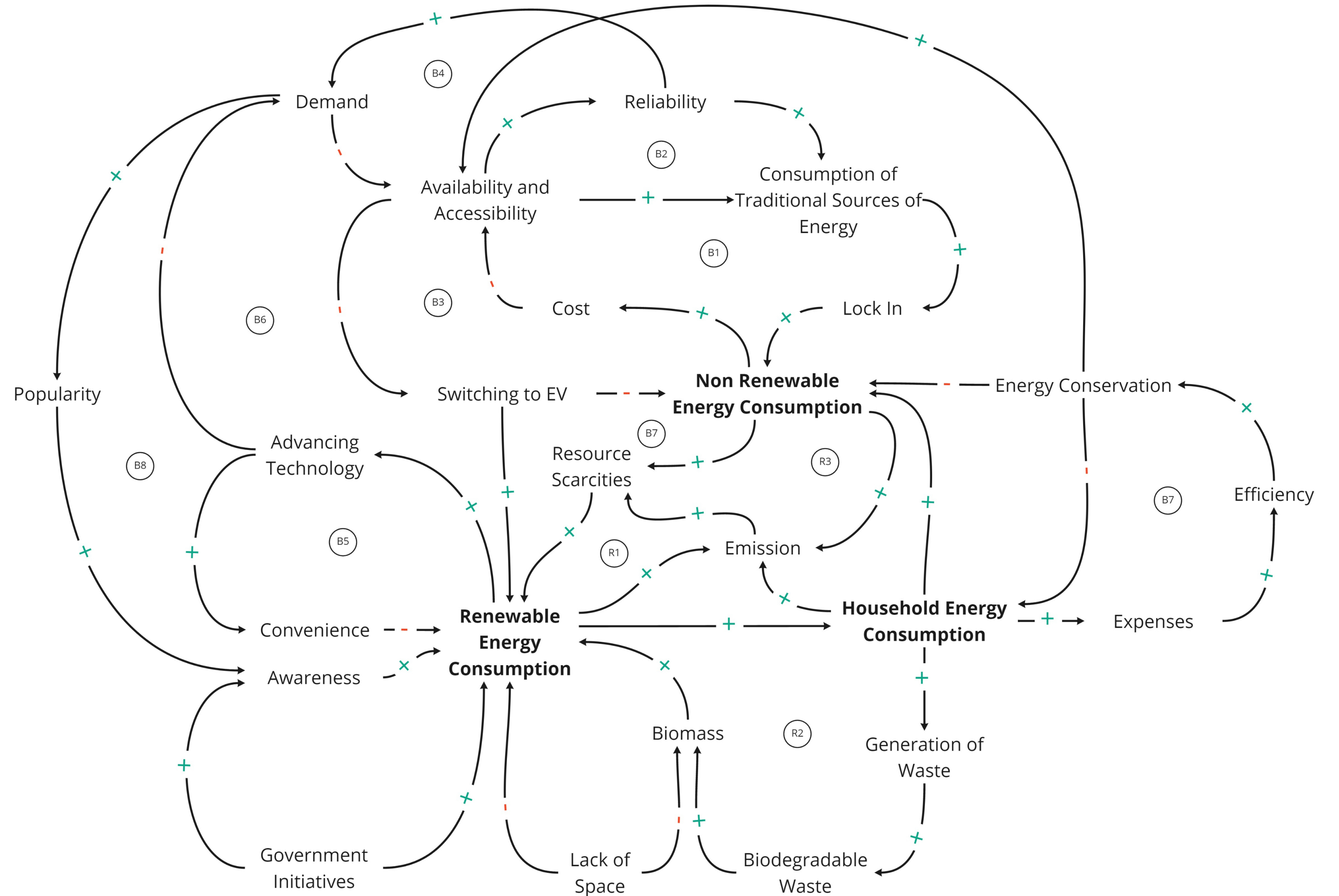
Reasons why **populated housing societies** are more sought after these days and its downsides



Causal Loop Diagram on Household Consumption of Energy

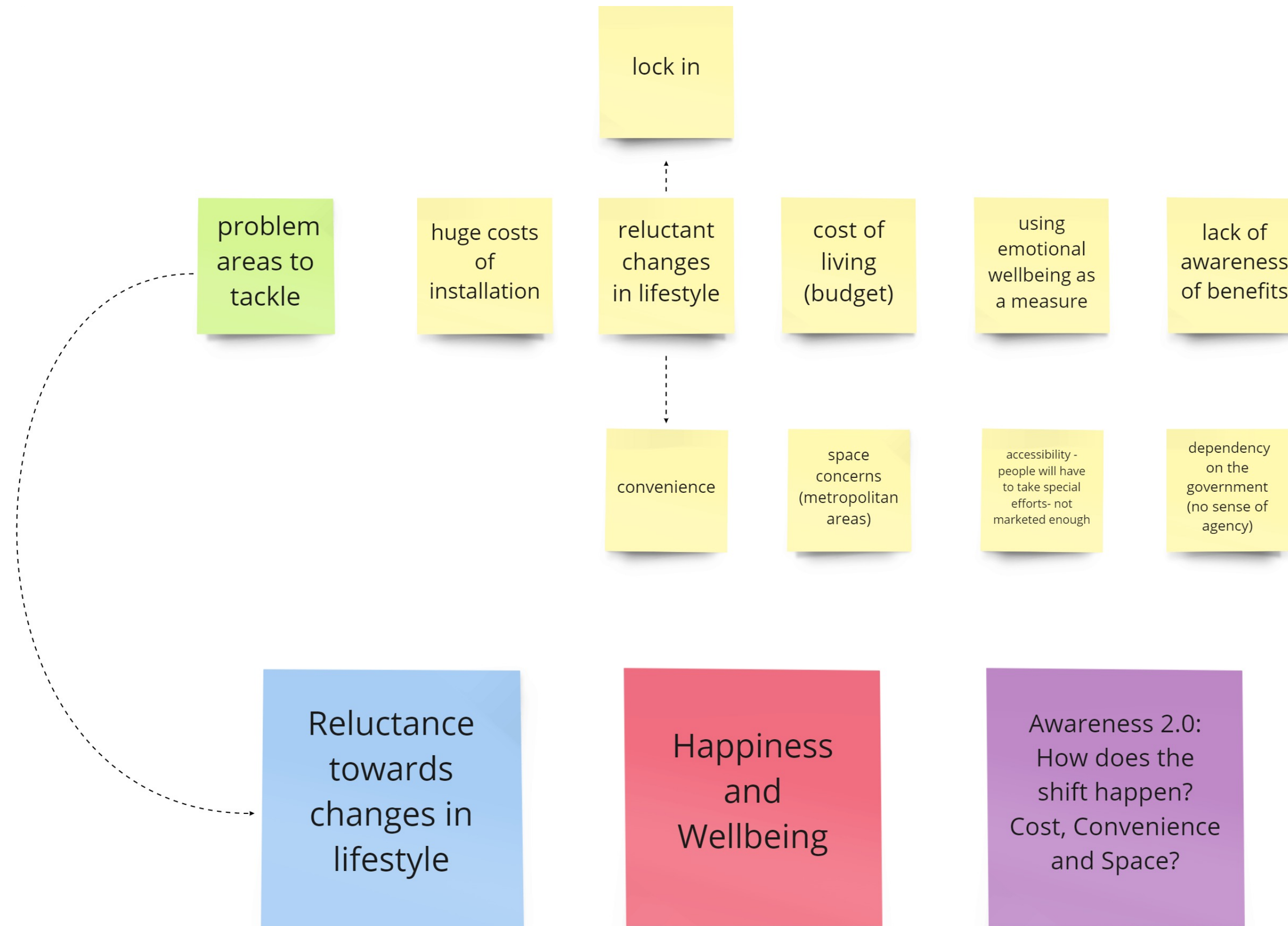
Causal Loop Diagram 4

Factors influencing the **switch from** the Consumption of **Renewable Energy** to the Consumption of **Non Renewable Energy** in a typical **Household**



Figuring out Areas of Focus

We narrowed down possible problem areas to focus on, from the macro-level research that we had done so far.

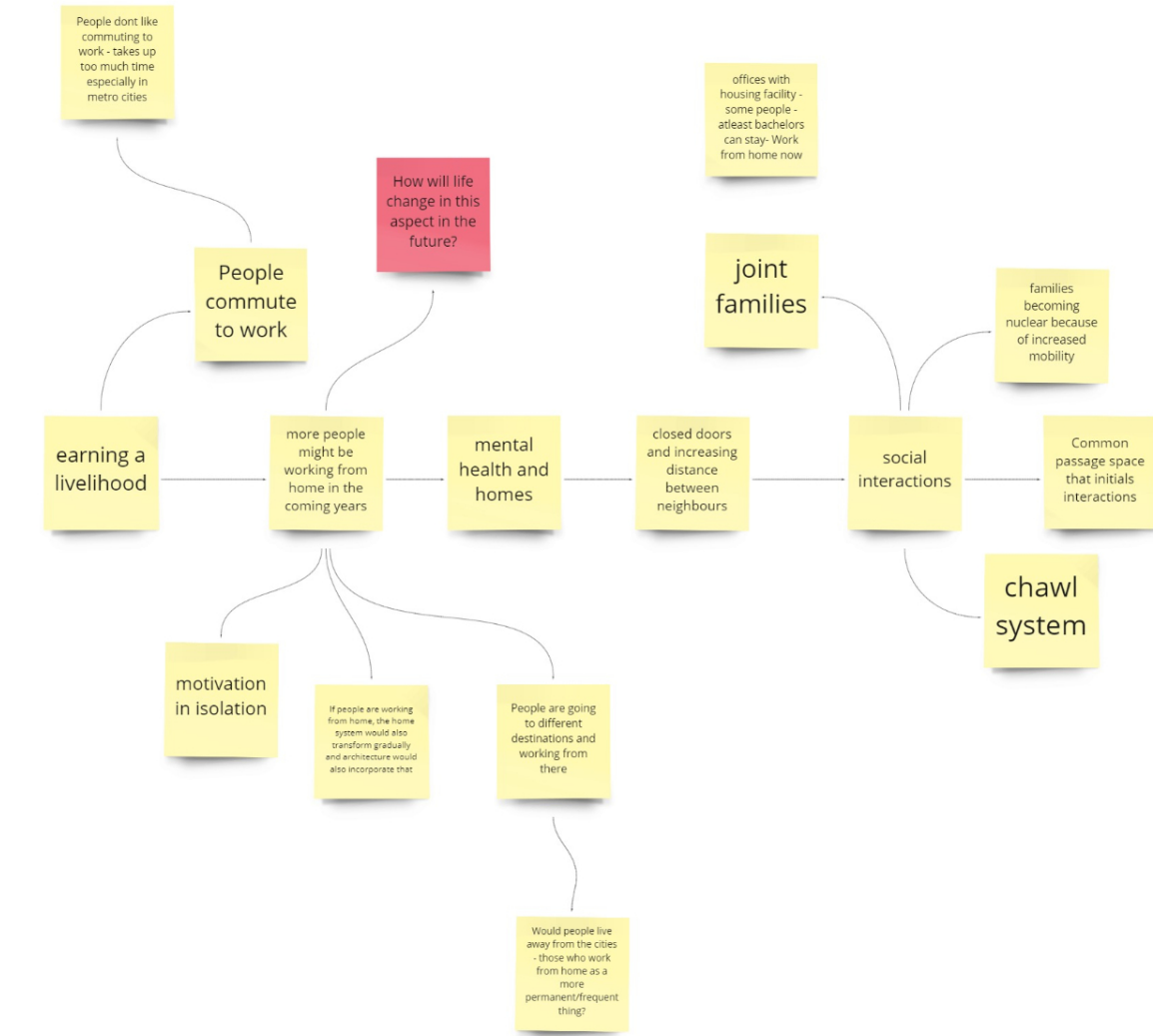
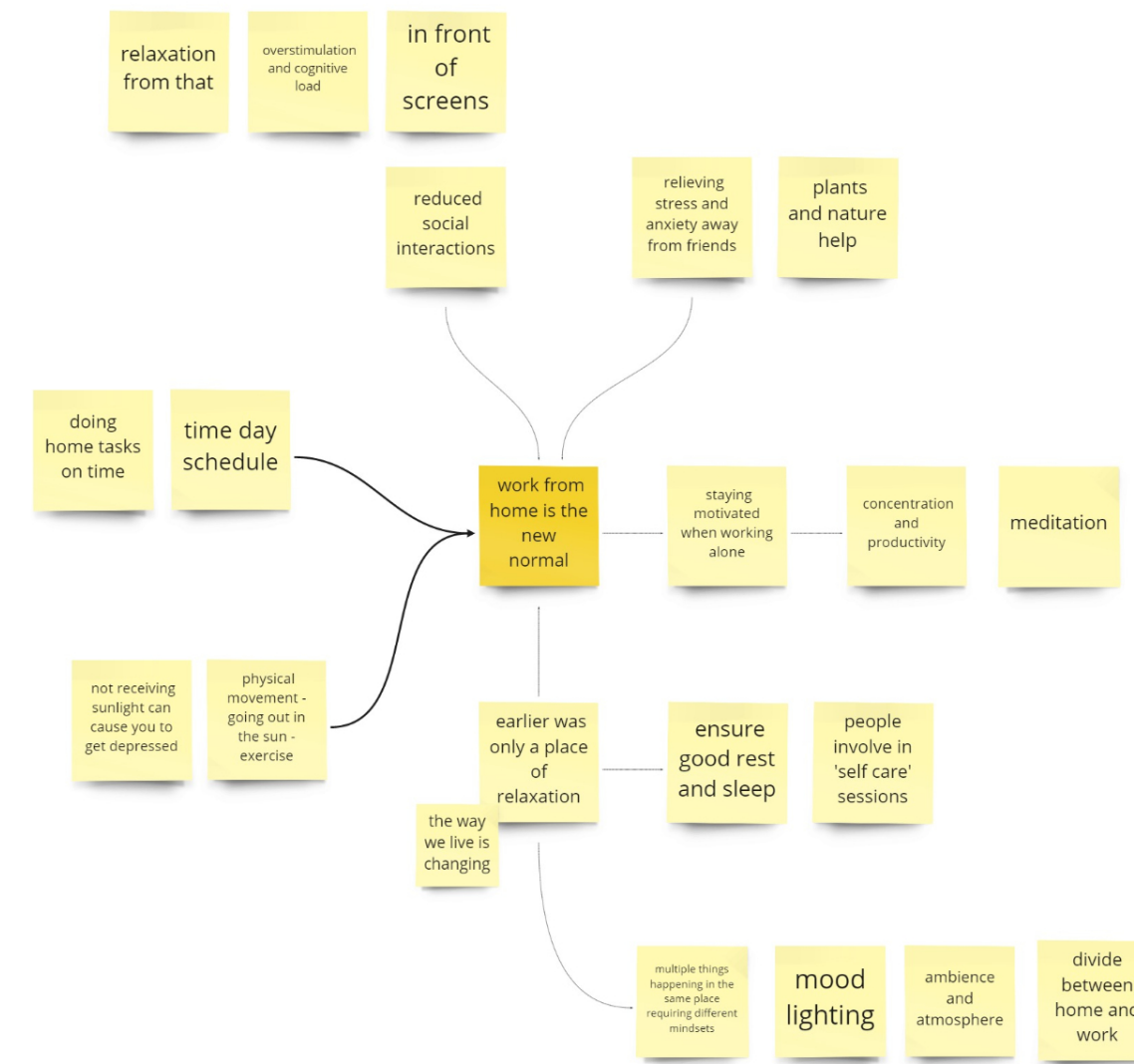


Happiness and Wellbeing

Ensuring Social Sustainability, Happiness and Wellbeing along with Environmental Sustainability.

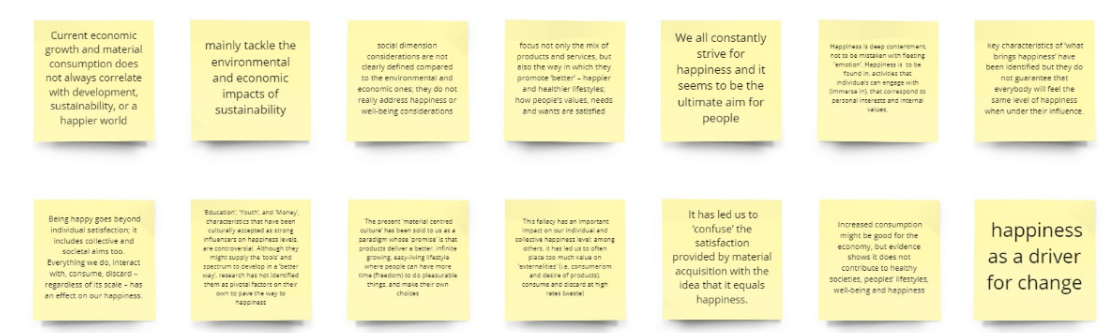


Happiness and Wellbeing



A Design Framework to Build Sustainable Societies Using Happiness as a Leverage

Paper



Happiness and Wellbeing

Ensuring **Social Sustainability, Happiness and Wellbeing** along with **Environmental Sustainability.**

[A Design Framework to Build Sustainable Societies: Using Happiness as Leverage](#)

Paper

Current economic growth and material consumption does not always correlate with development, sustainability, or a happier world

mainly tackle the environmental and economic impacts of sustainability

social dimension considerations are not clearly defined compared to the environmental and economic ones; they do not really address happiness or well-being considerations

focus not only the mix of products and services, but also the way in which they promote 'better' - happier and healthier lifestyles; how people's values, needs and wants are satisfied

We all constantly strive for happiness and it seems to be the ultimate aim for people

Happiness is deep contentment, not to be mistaken with 'feeling 'emotional'. Happiness that individuals can engage with (immerse in) that correspond to personal interests and internal values.

key characteristics of 'what brings happiness' have been identified but they do not guarantee that everybody will feel the same level of happiness when under their influence.

Being happy goes beyond individual satisfaction; it includes collective and societal aims too. Everything we do, interact with, consume, discard - regardless of its scale - has an effect on our happiness.

'Education', 'Youth', and 'Money', characteristics that have been culturally accepted as strong influencers on happiness levels are controversial. Although they might supply the tools and spectrum to develop in a 'better way', research has not identified them as pivotal factors on their own to pave the way to happiness

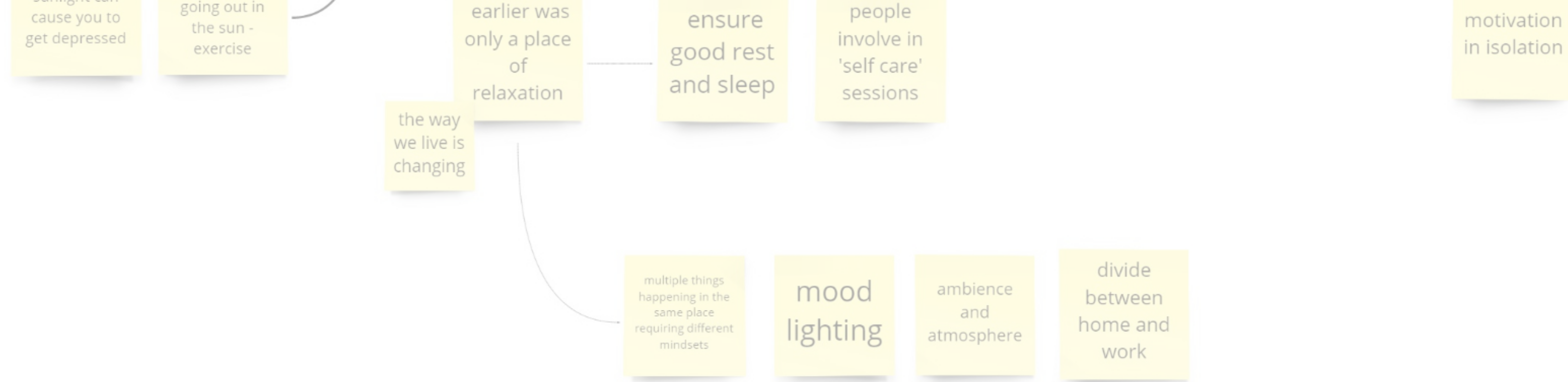
The present 'material centred culture' has been sold to us as a paradigm whose promise is that products deliver a better, infinite growing, easy-living lifestyle where people can have more time (freedom) to do pleasurable things, and make their own choices

This fallacy has an important impact on our individual and collective happiness level; among others, it has led us to often place too much value on 'externalized' (i.e. consumerism and desire of products) consume and discard at high rates (waste)

It has led us to 'confuse' the satisfaction provided by material acquisition with the idea that it equals happiness.

Increased consumption might be good for the economy, but evidence shows it does not contribute to healthy societies, peoples' lifestyles, well-being and happiness

happiness as a driver for change

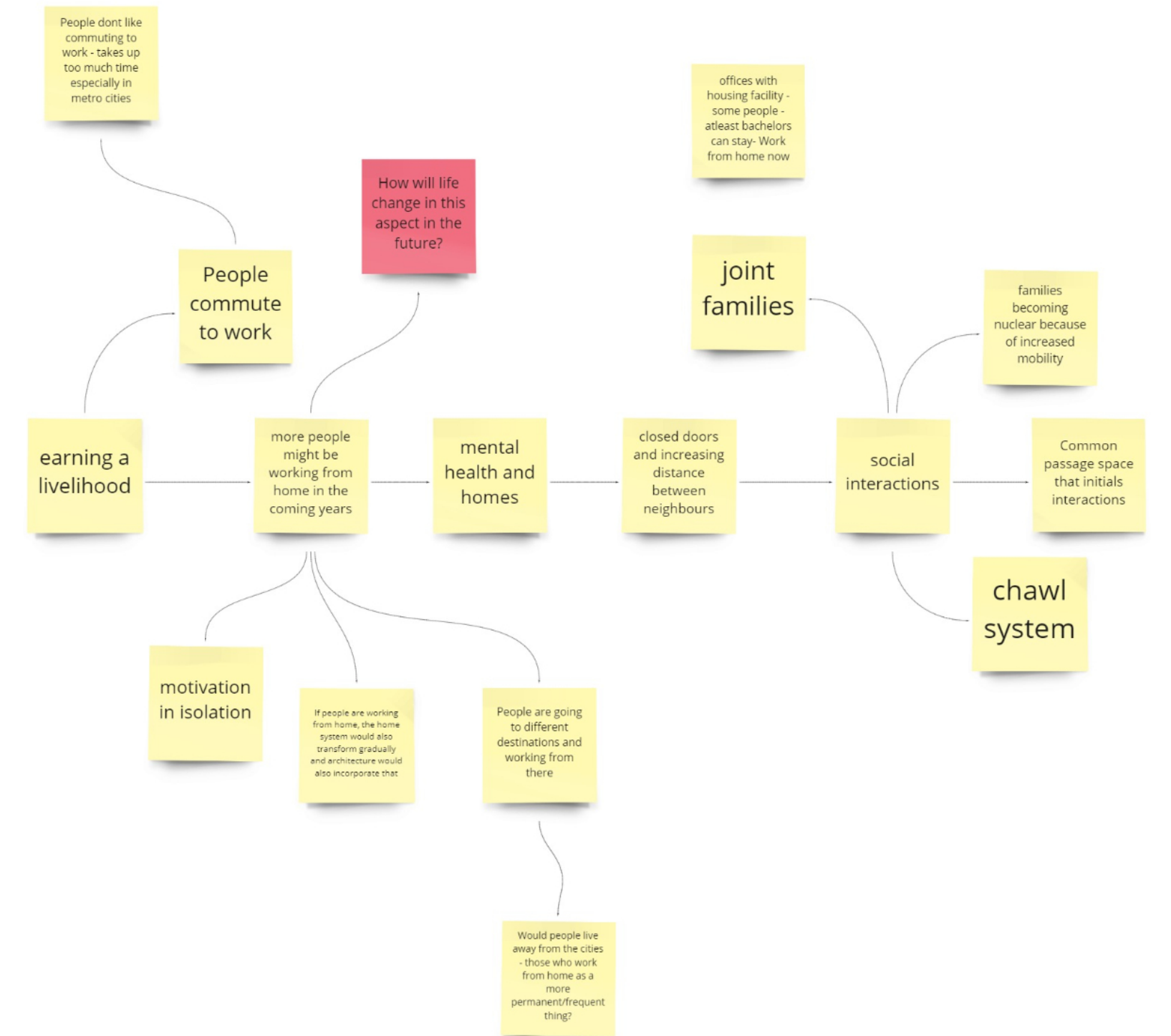
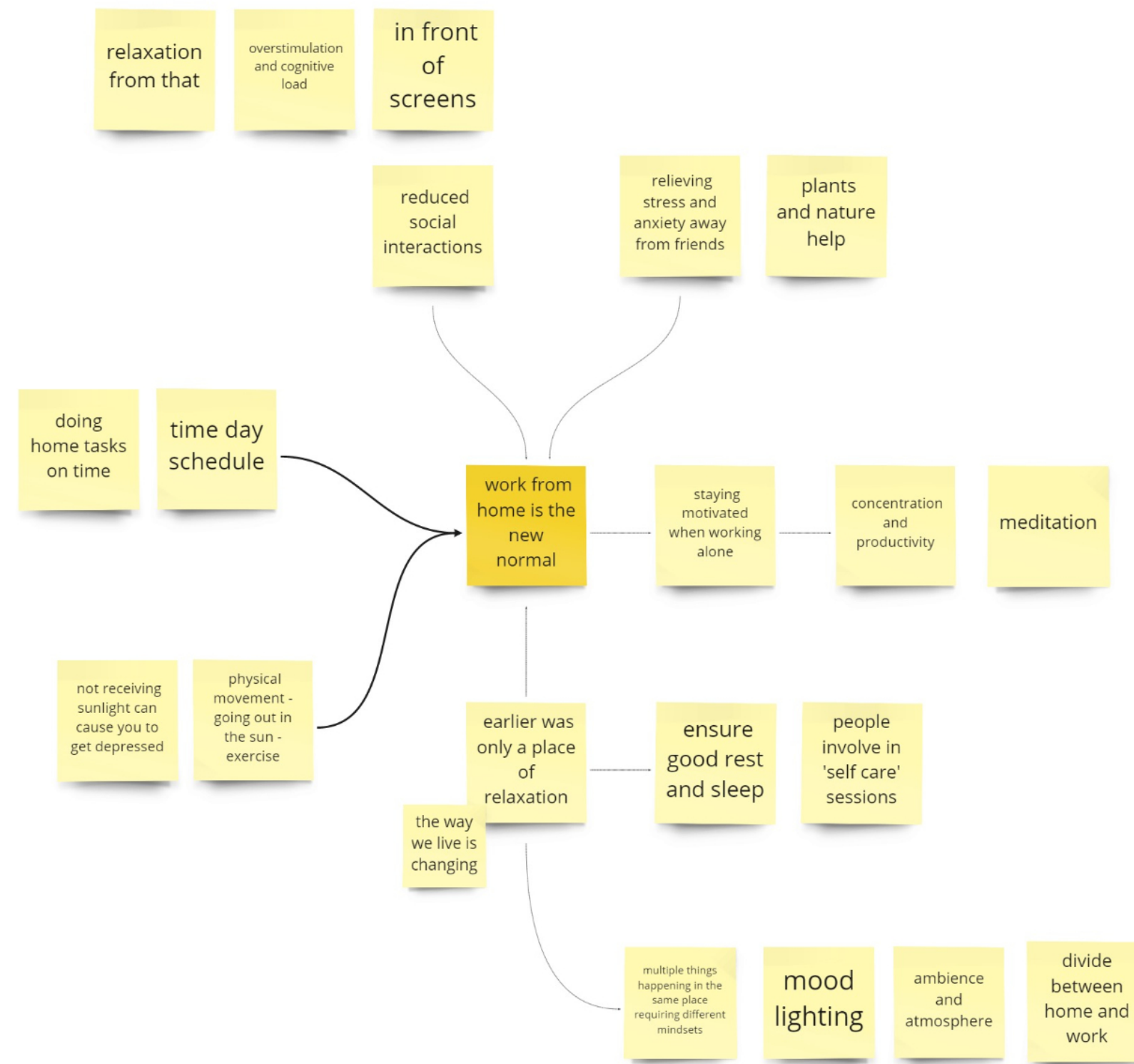


different people

Happiness and Wellbeing

Ensuring Social Sustainability, Happiness and Wellbeing along with Environmental Sustainability.

Happiness and Wellbeing



A Design Framework to Build Sustainable Societies Using Happiness as Leverage

Paper

Current economic growth and material consumption does not always correlate with development,

mainly tackle the environmental and economic impacts of

social dimension considerations are not clearly defined compared to the environmental and economic ones they do not

focus not only the mix of products and services, but also the way in which they promote better, happier and healthier lifestyles

We all constantly strive for happiness and it seems to be the

Happiness is deep connections that is to be measured with 'having' instead of 'being' to be found in activities that individuals can engage in themselves that compare to

key characteristics of what brings happiness have been identified but they do not guarantee that everybody will feel the

different people

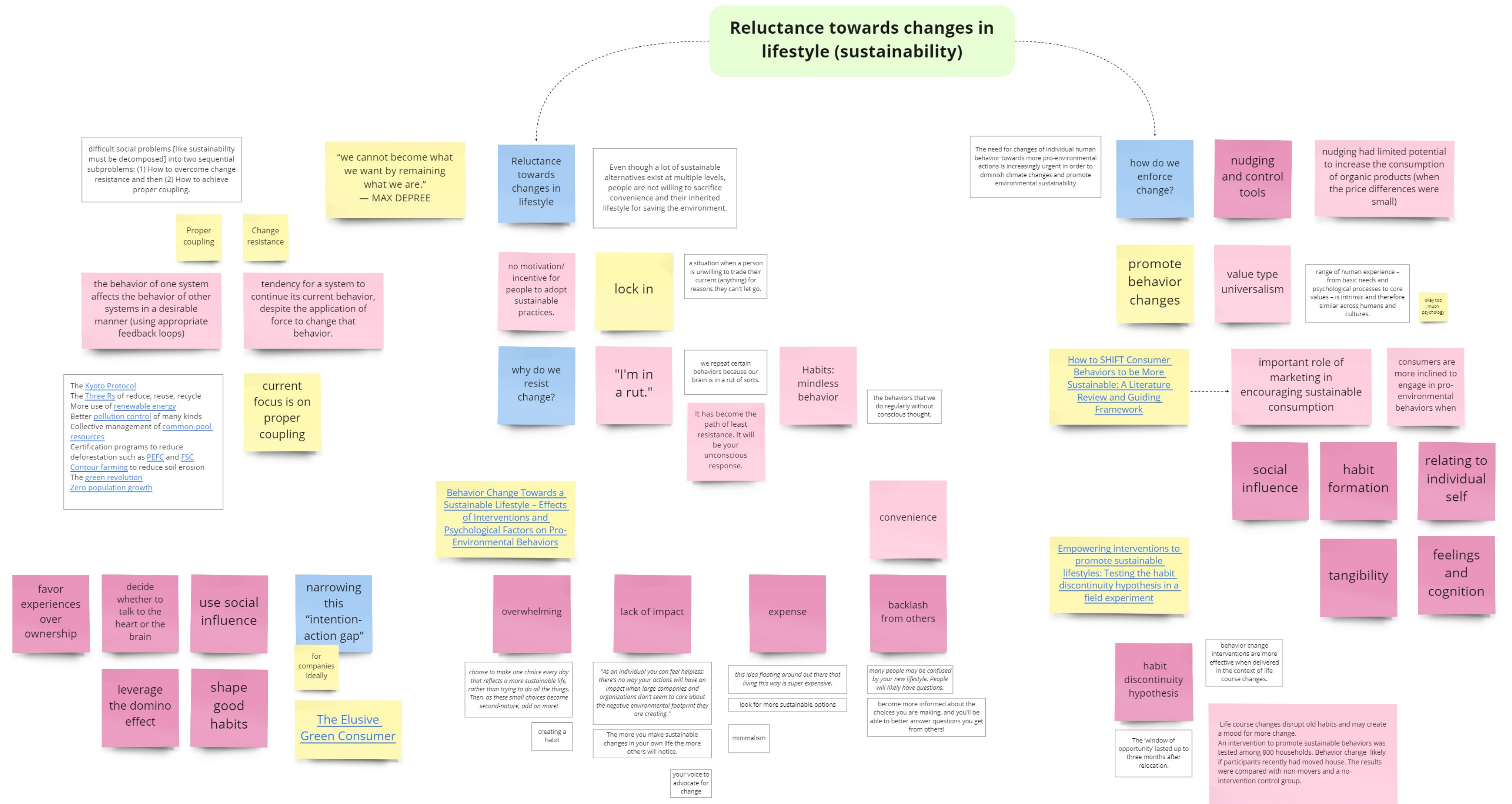
school/college students

study room

play

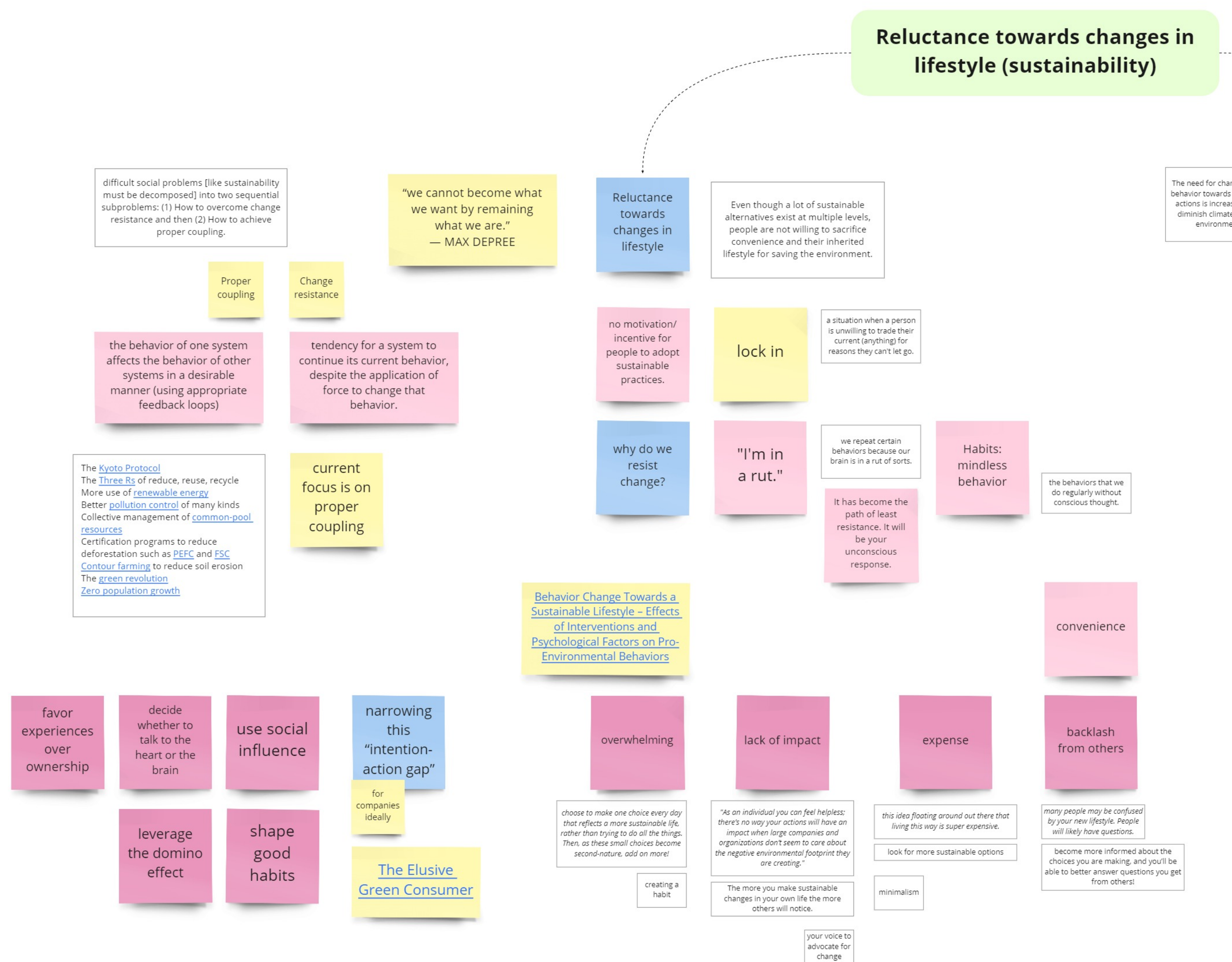
Reluctance towards changes in lifestyle

Why do we, as people resist change, specifically towards sustainability and what are the various attempts of enforcing it to the public.



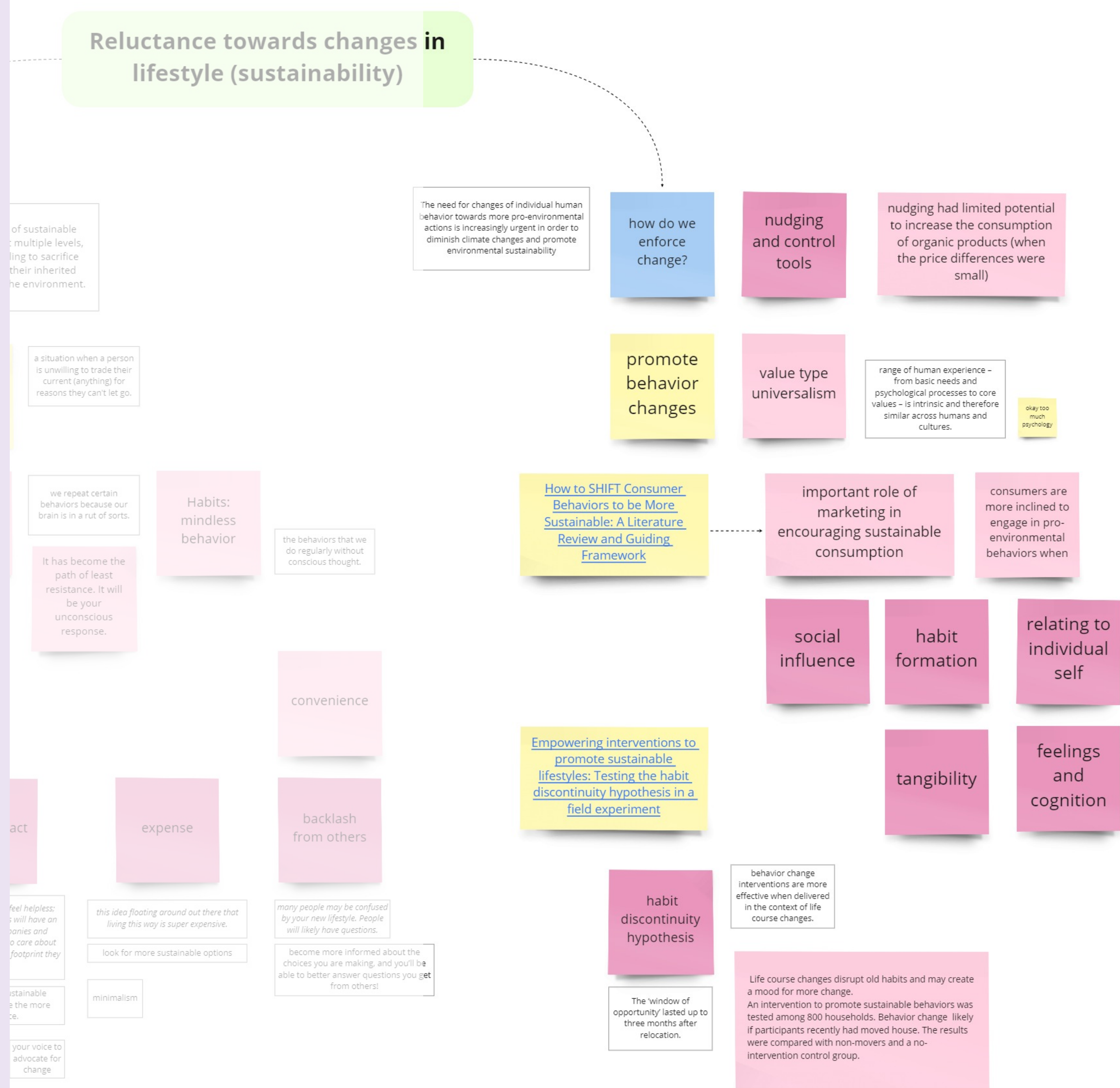
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Reluctance towards changes in lifestyle

Why do we, as people resist change, specifically towards sustainability and what are the various attempts of enforcing it to the public.



Awareness 2.0

Do it the right way!

How does the transition happen?
 What exactly should people be aware of?
 Cost, Convenience and Space?

Factors hindering the Shift

Common Customer Reaction when it comes to switching to a new alternative



Common Concerns

Common to all Alternatives



Main Concerns in case of each alternative

What do they not know but don't try to know? What are they not told about?



How can this be tackled?

What are the Companies and Government doing wrong?



Or, Customizability of Alternatives?

Have to figure out more in this case



Awareness 2.0

Do it the right way!

How does the transition happen?
What exactly should people be aware of?
Cost, Convenience and Space?

new alternative

- Let everyone shift first and then I'll think about it
- "Is It Worth the Trouble?"
- Doubts over performance ability
- Service Facilities and Replacements
- Who do I contact for the shift?
- How does it fit in with my chores and lifestyle?
- A biogas plant is big and green and does not go with the rest of the house
- I'd rather take my car to work than wait for a crowded bus in the sun
- How do I get something big installed all the way up in my apartment?

Common Concerns

Common to all Alternatives

- Space
- Cost breakdown for a particular Household
- Installation Cost
- The benefits for the individual rather than the planet
- Durability in the Long Run
- Balance between Alternative and existing method
- Maintenance
- Further expenditure in the long run

How can this be tackled?

Awareness 2.0

Do it the right way!

How does the transition happen?
What exactly should people be aware of?
 Cost, Convenience and Space?

Sacrifice of Space and Convenience
 so space for sacrifice in any typical household
 be made for initiative of this sort
 the alternative functions as something else as well?
 Panels on my Terrace takes up terrace space where I can play
 big and green and does not go with the rest of the house
 my car to work than wait for a crowded bus in the sun

Main Concerns in case of each alternative

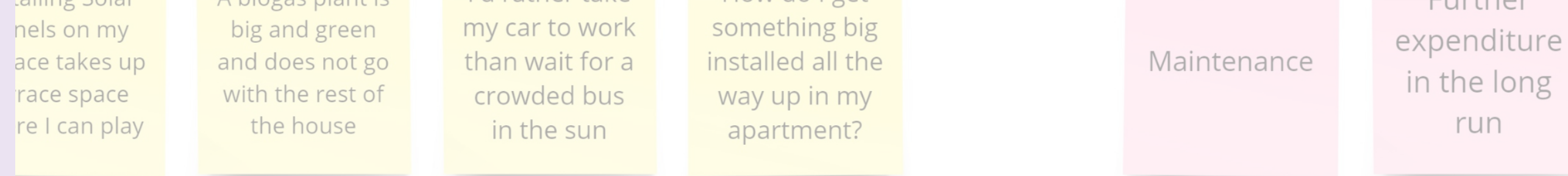
What do they not know but don't try to know? What are they not told about?

Solar Energy	Space	Power Backup	Non Sunny Days	Sales and Service	Cost breakdown for a particular Household	Balance between Solar and Electricity	Further expenditure in the long run	The benefits for the individual rather than the planet	Labor Details	Durability in the Long Run	Maintenance
Waste Management	Space	Coming into contact with waste after one discard is gross	Compost is useless to an apartment owner without plants	Availability at home during a pickup	Delay in the collection of waste	Installation Cost	The benefits for the individual rather than the planet	Maintenance			
Sustainable Materials	Effectiveness	Aesthetics	Variety	Durability in the Long Run	Adaptability with climatic conditions	Installation Cost	Maintenance				
Cooking	Time Taken for heating	Space for Installation	Durability in the Long Run	Odor of sorts	Systems used in the production of biogas are not efficient	Balance between Alternative and LPG	The benefits for the individual rather than the planet	Maintenance			
EV	Charging Stations	Efficiency of charging at home	What happens when you run out mid-journey?	Durability in the Long Run	The benefits for the individual rather than the planet	Maintenance	Further expenditure in the long run				

Awareness 2.0

Do it the right way!

How does the transition happen?
What exactly should people be aware of?
Cost, Convenience and Space?



How can this be tackled?

What are the Companies and Government doing wrong?



Our Customizability of Alternatives?

Have to figure out more in this case





Next Steps

Redefining our problem area of focus.

Connecting them to housing and societies.

Primary Research

Understanding how various activities are carried out.

Mapping further interactions.

Identifying possibilities of Intervention.



thank you