Ecological Commons:
Design for a Civic Circular Economy

MA Design for Cultural Commons
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Abstract

In the past century, contemporary global society has been largely shaped by the capitalist system of neoliberal globalization. The effects of the extractive and exploitative processes within this system have resulted in the degradation of the environment and increasing social inequality. The alarming rate of global warming by these processes has led to the development of the "Circular Economy". This discourse aims to provide methods of how global industrial systems and ecological environments can work in tangent with minimal to no externalities; however, this discourse does not fully address the capitalist power structures that are at the root of these extractive processes.

The Donut Economy proposes an alternative model that incorporates the principles of the Circular Economy with the social power of the Commons to enable long term sustainability. Frameworks of self-governance like Commoning are vital to redress the systematic social issues induced by late capitalism to rebuild the collective agency and civic empowerment. Empowered communities can both autonomously implement ecologically regenerative principles at the local scale , but also push for environmental sustainability from the bottom up for the large scale change that is needed.

Socially oriented design methodologies such as co-design have emerged out of new design specialisms such as service design and in response to the complexity of systems in an increasingly globalized world. Within these systems, design has a pivotal role as a mediator between economic theory and the production of cultural artefacts and systems that represent and reinforce these economic frameworks.

The aim of this paper is to explore how these new design methodologies can be used to catalyze the formation of ecological commons, in which the implementation of ecologically regenerative systems can also create environments for the development of civic empowerment within communities.

A design methodology based upon these aims is then proposed to be later tested and validated through a practice based project.

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1. Introduction

1.1 Neoliberal Globalization, Climate Change, and the Circular Economy

In the current epoch of the anthropocene, marking the geological age in which human activity has been the dominant influence on the planet, the establishment of the political economic practices of neoliberalism has resulted in mass global environmental and social degradation. Extractive industrial processes driven by capitalist growth models encourage excessive consumption in the pursuit of limitless wealth accumulation. The coupling of globalization with the deregulation of international markets has dramatically increased the ability of natural resource extraction and the free-flowing trade of finance, goods and services across national borders. (Julier, 2017) The rise in atmospheric concentrations of nitrous oxide, methane and carbon dioxide since the preindustrial era are recognised as the basis of climate change and global warming. This is linked to the growth of the global population, as well as the increase of economic prosperity as a result of these unsustainable systems. (Edenhofer et al., 2014).

A large number of these processes are damaging to the environment not only in terms of resource extraction, but the externalities that come out of their production, manufacturing, distribution, consumption and disposal methods. In response to this, a number of academics, thought-leaders, and businesses have tried to find methods in which these industrial processes of the modern economy can be altered or redesigned to work in tandem with the ecological environment. This discourse is called the Circular Economy. The Ellen MacArthur Foundation is a major organization that is pushing these ideas forward by working with business, government and academia in order to "build a framework for an economy that is restorative and regenerative by design." (Ellenmacarthurfoundation.org, 2019)

The 2018 IPCC report finds that "limiting global warming to 1.5°C would require "rapid and far-reaching" transitions in land, energy, industry, buildings, transport, and cities. Global net human-caused emissions of carbon dioxide (CO_2) would need to fall by about 45 percent from 2010 levels by 2030". (Ipcc.ch, 2018)

But with Donald Trump withdrawing the US from the Paris Accord, and Brazilian President's Jair Bolsonaro's intention to also withdraw from the accord and open the Amazon rainforest to agribusiness (Watts, 2018), it is clear that ecological sustainability cannot only be solved through the implementation of systems purely through environmental systems. Issues within social and political contexts are inherently tied to and create the foundation for the systems that influence the implementation of the environmental agenda, therefore they must be addressed. (Raworth, 2017)

1.2 Why Civic Empowerment is Needed for Sustainability

The political economic practices of neoliberalism have contributed to the degradation of social capital, civic empowerment, and the societal issues caused by wealth inequality. The main features of neoliberalism consists of the following:

- the deregulation of markets and the provision of market forces, free of state intervention.
- the privatisation of state-owned enterprises.
- the foregrounding of financial interests over others (civic, social, environmental, etc).

- the emphasis on competitiveness and on individual entrepreneurial practices. (Julier, 2017)

Unregulated market economics coupled with colonialism and transnational structures within modern capitalism have disrupted people's ability to organise into communally oriented groups who share a common resource, via the exploitation of that resource and/or community. This has led to the collapse of local cultures, languages and spirituality, the destruction of sustainable practices, and the degradation of the natural environment. (Watkins, 2014)

The accumulation of wealth and power when state-owned enterprises and services become privatised further contributes to income inequality, which is directly correlated with a decrease in social welfare. Rises in mental illness, drug use, lower life expectancy, lower status for women, community breakout, incarceration rates, are among some of the problems that have been linked to higher levels of inequality within a community. The erosion of social capital with the added layer competitiveness and individual entrepreneurship fuels status competition and conspicuous consumption. (Raworth, 2017)

In regards to political participation, it is no longer a collective activity of civic empowerment. Democracy is then undermined by the growth driven market that turns citizens into self-interested consumers and customers, who exploit the state as a means to fulfill their individual interests and values. (Bang, 2005) Democracy is directly influenced as citizens vote based on their individual needs,and communities no longer have the collective empowerment and solidarity needed to fight for environmental legislation. (Raworth, 2017)

This brings into question what tools or methods are able to create environments for both ecological sustainability and civic empowerment?

1.3 Design's Role

Design could play an important role in the creation of these environments because it has a reciprocal relationship with the tangible representation of economic models in society. Culturally acceptable forms that are representative of current economic models materialize through design, then design in turn, evolves with our psychosocial perception of these economic models within new and dynamic space-time perceptions of our world. Design gives form to dominant socio-political and socio-economic norms, while simultaneously establishing meaning and values, reinforcing the dominant paradigm. (Fuad-Luke, 2009)

In addition, due to the development of capitalism since the 1970's, there has been considerable growth of design in the world and an increasing number of specialisms that have responded to changes in economic systems. Initially design was focused on the production of more material objects and environments through specialisms such as interior design, textiles, interior and graphic design. From 2000-2010, design streams that focus on more immaterial, abstract systems such as those that deal with social relationships have emerged. The development of strategy design, service design, design for policy, design for social innovation, and similar design streams coincided with this era of the increasing financialistion of state-owned enterprises, times of austerity and the increasing wealth inequality. (Julier, 2017)

Design now operates on an even more complex scale where economic, ecological, social and institutional dimensions are overlaid onto its process. (Fuad-Luke, 2009) It is omnipresent in our environment, not only restricted to the creation of material objects, but has expanded its scope to encompass larger interconnected

systems. Metaphorically, it becomes a symbol of how we think about and effect change in the world. (Blomberg and Darrah, 2015)

Contemporary design culture plays a comprehensive role in suggesting and/or setting new values and hence, providing an enabling environment for societal change. whoever controls designers, controls to a large degree of the expressions and evolution of the design culture. (Julier, Moor, 2009)

1.4 Research Aim

To explore the role of design in creating ecological commons, which can be defined as the implementation of circular systems through a bottom-up commons framework, and their ability to build civic agency and empowerment within communities.

1.5 Objectives

- To determine methods of how to practically implement alternative economic methodologies and renewable systems in communities.

- To determine what design methods can be used during the implementation of these systems to enable community empowerment and civic agency.

- To explore methods of how to sustain and maintain these systems and create opportunities for larger scale change.

2. Theoretical Framework

The theoretical framework will look at three different areas to provide a general foundation and rationale for the proposed methodology: theoretical models of alternative economics, the Commoning practice and theory, and emerging design methodologies.

2.1 Circular Economics - Principles for regenerative systems

The circular economy is being adopted by many cities all over the world as a way to respond to the dire consequences of over consumption and extraction, have been created by the systems of capitalism driven by growth and globalization. The Ellen Macarthur foundation, defines the circular economy as restorative and regenerative by design." Restorative and regenerative meaning, systems are designed to look at the full life cycle of a resource, and to ensure that the resource stays in use for a longer time, and can be reused, or regenerated without additional other resources. The circular economic discourse is the culmination of a number of school of thoughts including the "Cradle to Cradle" movement and "Industrial Ecology" approach which try to eliminate waste out of the production system , "Biomimicry" which looks to systems in nature as a base model for innovative solutions, "Natural Capitalism" which focuses on natural capital and service flow business models. (Ellenmacarthurfoundation.org, 2019)

OUTLINE OF A CIRCULAR ECONOMY

PRINCIPLE 1

Preserve and enhance natural capital by controlling finite stocks and balancing renewable resource flows
ReSOLVE levers: regenerate, virtualise, exchange

Renewables — Finite materials

Regenerate — Substitute materials — Virtualise — Restore

Renewables flow management — Stock management

PRINCIPLE 2

Optimise resource yields by circulating products, components and materials in use at the highest utility at all times in both technical and biological cycles
ReSOLVE levers: regenerate, share, optimise, loop

Farming/collection[1]

Biochemical feedstock

Regeneration

Biosphere

Biogas

Cascades

Extraction of biochemical feedstock[2]

Consumer — Collection

User — Collection

Parts manufacturer

Product manufacturer

Service provider

Share

Maintain/prolong

Recycle

Refurbish/remanufacture

Reuse/redistribute

PRINCIPLE 3

Foster system effectiveness by revealing and designing out negative externalities
All ReSOLVE levers

Minimise systematic leakage and negative externalities
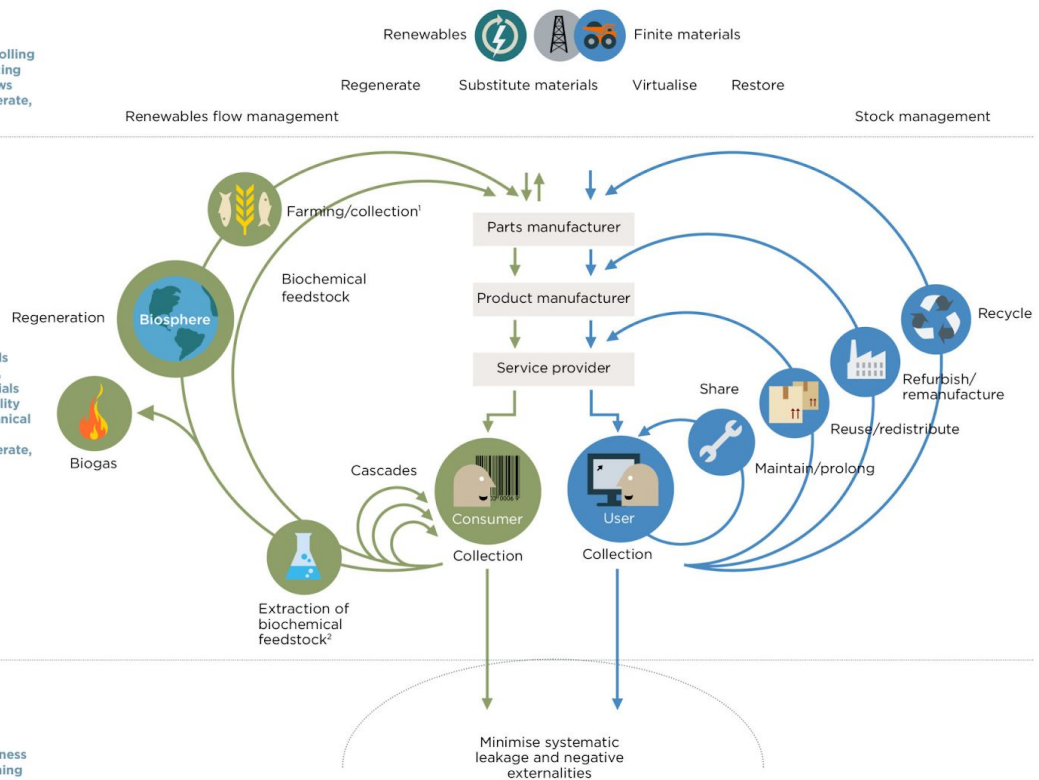
1. Hunting and fishing
2. Can take both post-harvest and post-consumer waste as an input

Source: Ellen MacArthur Foundation, SUN, and McKinsey Center for Business and Environment; Drawing from Braungart & McDonough, Cradle to Cradle (C2C).

Figure 1.1: The Circular Economic Infographic

https://www.ellenmacarthurfoundation.org/circular-economy/infographic

As mentioned before, this current model of the circular economy does not address the social and political issues tied to many of these resource systems. Because this model of the circular economy is established within capitalist systems, it does not address the issues of power distribution, which results in wealth inequality that ultimately loops back to environmental degradation. In this process, design has had a key role in the mediation of these systems on an abstract level, and the creation of tangible systems, services and products that replicate and enable the culture of consumerism and uneven wealth accumulation.

Another issue with this discourse is that it is aimed at governments and corporations at the top-down policy level. Conventional policy systems tend to be legalistic, expensive, expert-driven, bureaucratically inflexible, and politically corruptible, which make them a hostile vehicle for serious bottom-up change. (Bollier, 2015)

2.2 Donut Economics - An Alternative Economic Theory

The Donut Economic model as a theoretical example of a sustainable economic system, incorporates both the environmental sustainability principles outlined in circular economy, while also addressing the social

infrastructures that are interlinked. Seven alternative ways of thinking about the economics are proposed to enable a more holistically sustainable economy: (Raworth, 2017)

1. Changing the measurement of success from economics from the growth of Gross Domestic Product to the "donut model" in which the goal of the economy is to stay within the two boundaries of a social foundation of wellbeing and an ecological ceiling of planetary pressure.
2. Looking at the economy as an embedded system within larger natural and societal networks instead of a self-contained market.
3. Moving away from the theory of the individual "rational economic man" to communities of socially adaptable human beings.
4. Embracing the dynamic complexity of systems instead of assuming mechanical equilibrium of supply and demand.
5. Design the system to be distributive in regards to power and wealth.
6. Design systems that have regeneration built into them from the beginning instead of assuming growth will take care of future externalities.
7. Become agnostic about growth.

In order to tackle inequality at the root, the ownership of wealth must be democratized, because political-economic systems are largely defined by the way property is owned and controlled (Raworth, 2017) It is important to note that in this process, it is not income itself that is redistributed, it is the power to generate income. By circulating power, the wealth that comes from the ownership of land, money creation, enterprise, technology and knowledge is more evenly distributed within the community. The distribution of wealth encourages the generation of local economies consisting of a network of small to medium size players that are interconnected. This model resembles patterns in nature, which comprise of a network of decentralized nodes that are often quite resilient as they contain a number of alternative pathways to navigate if there are issues within a specific part of the system. Currently, bottom-up alternative initiatives that have emerged in business re-design operate alongside larger institutions and corporations. In theory, if this network of small and medium players continues to grow, it may gain the ability to compete with larger corporation. The benefit of bottom-up 'company' structures is that their mindsets are more likely rooted in social benefit, so as more of these types of organizations and companies become established, the value system may begin to shift away from the growth of financial capital, to a value system that is focused on social benefit. (Raworth, 2017)

2.3 Why Commoning? - Bottom Up Framework

Achieving transformational change through typical political institutional routes is now incredibly difficult due to biased gridlock and high jurisprudential barriers. In addition to this, governments themselves are often ineffectual, slow, and experienced as illegitimate . This can result in the inability for the government to propose the functional, human-scale alternatives that can constructively grow citizen initiative, participation, and innovative democracy that has everyday meaning and future impact. (Bollier. 2015) Commoning enables groups to self-organize and have agency over the means of ownership, production, labour and consumption within these economies. (Raworth, 2017)

Elinor Ostrom realized that there were commons out there that were very successful in managing the sustainable stewarding and equitable harvesting of the earth's natural resources, outperforming both the ability of the market and the state. Commoners make use of nature according to genuine need rather than

manufacturer desire and according to what is sustainable respecting social and planetary boundaries. (Raworth, 2017). What she realized was that successful commons all had three things in commons.

1. There is a defined resource.
2. There is a defined community around this resource.
3. There are rules and sanctions set-up to govern the resource that were agreed upon by the community.

She also create a set of what defined as "socio-ecological systems and design principles for common pool resources: (Ostrom and Chang, 2012)

1. Define clear group boundaries to facilitate exclusion
2. The importance of internal rules, ensuring those affected by the rules can participate in changing them.
3. The importance of locally adapted rules
4. Importance of monitoring and enforcement
5. Dispute resolution
6. Interaction between systems of rules

The development of a commons movement changes the power dynamic, replacing external control of and extraction of resources with local attunement to the needs of the people and environment. (Watkins) This allows for flexibility and agility to respond to the variation of needs in different social contexts. This model can "deal with difference and complexity, which [is] based in the microphysics of the everyday encounter rather than sovereign planning," (Dellenbaugh 2015).

It is important to note these design principles may be difficult to define in contemporary contexts such as: urban areas that are culturally diverse and transient, or with networks that are not necessarily localized, for example the "collaborative commons" of global online communities.

2.4 The Practice of Commoning in the Contemporary Context

In the context of contemporary capitalism and the digital revolution, new forms of commons have emerged, particularly those that are connected to shareable immaterial goods. These can include knowledge, information codes, and even affects and forms of social relationships. (Stavrides, 2016)

Commoning in this context is a verb, defined as the continuous production of social practices and rituals that are perpetually being negotiated, reclaimed, reproduced in common. (Baldauf, 2016). Commoning practices in these diverse contexts are always in flux attempting to to build rituals around finding common values shared amongst those participating in the practice. In order for commoning practices to lay the foundation for an emancipated society, there must be a continuous and collective effort to define and redefine what a society considers as its common wealth by actively expanding the network for sharing and collaboration. (Stavrides, 2016)

There are three general qualities that these emerging types of commons must establish:

1. There must be grounds of comparison to differentiate actions and practices to ensure that there is multiplicity in collaboration. Commons institutions should welcome difference and encourage these differences to meet and mingle.
2. They must present tools and opportunities for translating the difference between view, actions, and subjectivities. Translatability provides a basis for negotiation. As commons expand, they are

ever-changing and reinventing themselves and will never fall back on previous patterns or reduce themselves to common denominators. This process allows for people with diverse political, cultural or religious backgrounds to connect with one another.

3. The accumulation of power is highly discouraged during the process of expanding commoning. Institutions of commoning must be able to uphold mechanisms of control that prevent the potential of power accumulation in order to support more commoning. In many cases power is represented through the act of decision making, where all participants of the commoning practice should have equal say in the process. (Stavrides, 2016)

Commoning practices in the contemporary context need to have boundaries and governance structures that allow for flexibility, dynamism and continuous transformation that matches transient nature of cities and digital networks.

2.5 Design Methods for Commonings: Co-design and Related Approaches

With the expansion of design into services and systems, new methodologies of design have been established that deal with in contexts of overlapping and existing political, economic, environmental systems.
The following design approaches share the following commitments which aligns with the principles of for Commoning practices. The commitments are in regard to the inclusion and power, in order to contest hierarchically oriented top-down power structures, require mutual learning between stakeholders and actors This means that co-design is much more democratic and porous - the process itself is political as it involves inclusion at every stage of the process and invokes notions off direct democracy and deep democracy. (Fuad-Luke, 2009)

2.5.1. Co-design

Co-design can be defined a number of ways including collaborative or cooperative design, but in general can be used as a catch all term for design approaches that encourage participation. This approach generally implements a number of soft skill methodologies including (Broadbent, 2003):
- Being iterative, non-linear, interactive
- Being action-based research
- Involving top down and bottom up approaches
- Simulating the real world
- Being useful for complex systems or problems
- Being situation driven, especially by common human situations
- Satisfying pluralistic outcomes
- Being internalized by the system.

2.5.2 Transformation Design - Governance Structures

Transformation design is a form of participatory design where user-centered design principles are applied to large scale systems and services. This approach is about the process of encouragement, shaping and catalysing participants rather than directing and controlling and looks to transforming larger structures from within. In regards to commoning practices, this approach may be useful in terms of helping to facilitate the creation of governance, management, regulatory structures within the Commons.

6 characteristics demonstrated in transformation design processes are as follows:

1. Defining and redefining brief - understand the scope of the issue and defining right problem to tackle with brief
2. Collaborating between disciplines - create a neutral interdisciplinary space
3. Employing participatory design techniques - make the design process more accessible for non-designers
4. Building capacity, not dependency - shape a solution but leaving behind tools , skills and capacity for ongoing change.
5. Design beyond traditional solution - apply design skills in non-traditional territories giving rise to creation of new roles, organizations, systems and policies.
6. Creating fundamental change - aiming high and transforming a national system of companies culture. (Fuad-Luke, 2009)

2.5.3 Slow Design

Slow design contributes to the emergence of the slow movement. It requires stepping outside the existing mental construct of capitalism into other metabolisms not driven by economic imperatives, but instead by focusing on ritual, tradition, experiential, evolved, slows, eco-efficiency, open source and slow technology. Six principles of slow design are as follows:

1. Reveal: Reveals experiences in everyday life that are often missed or forgotten including materials and processes that can be easily overlooked in an artefact's existence or creation.
2. Expand: Consider the real and potential "expressions" of artefacts and environments beyond their perceived functionalities, physical attributes and life-spans.
3. Reflect: Slow design artefacts/environments/experiences induce contemplation and what SlowLab has coined as "reflective consumption"
4. Engage: Processes are open source and collaborative, relying on sharing cooperation and transparency of information so that designs may continue to evolve into the future.
5. Participate: Encourages users to become active participants in the design process, embracing ideas of conviviality and exchange to foster social accountability and enhance communities.
6. Evolve: Recognize richer experiences that can emerge from dynamic maturation of artefacts, environments, and systems over time. Looking beyond the needs and circumstances of the present day, slow designs are (behavioural) change agents. (Fuad-Luke, 2009)

2.6 Design Activism

Activism today can be taken in pluralistic forms but are overall defined as someone belonging to a social, environmental, or political movement that is a "collective challenge by which people with common purpose and solidarity in sustained interactions with elites, opponents and authorities." (Fuad-Luke, 2009) While conventional activist tactics come from a place of resistance or opposition, there are now new forms of citizen activism emerging within political systems in civil society, where the "activist" takes shape within overlapping systems of governance networks, private, public, and voluntary organizations. Design activism sits within this same realm and their skill set looks at activism through a generative light rather than through opposition or resistance. Production of political outcomes in this context come out of heterarchical, communicative, participatory and deliveritory methods of interaction and production.

By working in this in between space design activists have the power to build more agency within the community. Projects can aim to improve public and social goods in places to construct social capital. The change shift in power by relying less on commercial ownership means that it opens up new forms of productivity and social languages that aren't so heavily influenced on profit seeking entities. (Thorpe, 2012)

Designer's can also find and intensify local scale potential, this could be through commoning, and then using this point as a way to hack the larger system at potentially key areas. In this context, the designer becomes purely a negotiator and resource that meets the community's needs not through objects but by developing their skills process and learning capacity. Design activism can look beyond solutions that are for a specific problem, their multitude of tool sets enable them to evaluate wider ranges of trying to bring about change. (Thorpe, 2012)

3. Methodology

The methodology of this paper provides a series of action steps that lie at the intersection of social design methodology and keeping in mind principles of the circular economy. This process is broken down into three main stages: Scoping and context mapping, Community cohesion, and maintenance.

3.1 Scoping and Context Mapping - Defining Parameters

The process of measuring and mapping social networks, becomes in itself, the process of building social capital. People become aware of themselves and their social interactions in a more systematic way, giving them a better understanding of how they are connected with the larger network and how their behaviour influences that network. Awareness of how different people are related in a network also may change the perception of different community members, as visual mapping of these networks can reveal patterns of relationships and exclusion that would otherwise be invisible. (Fuad-Luke, 2009)

- Initial mapping exercises (be wary assumptions)
- Mapping social contexts - organizations, local businesses, schools, government/institutional bodies
- Looking at demographics
- Looking at policy - existing, future, and at different scales
- Looking at existing funding and finance options
- Look to see what physical/natural/waste resources the community has access to
- Develop a site map
- Note existing green initiatives within these networks

3.2 Community Capacity Building and Cohesion - Developing Familiarity

- Plan events around community building - around existing sustainable systems
- Based on mapping exercises, reach out to existing organizations and stakeholders within the community
  - Form initial steering group composed of existing key actors and stakeholders within the community network that are already involved in green initiatives, or have the expertise.
  - Determine what options for what of technically systems can be put in place.
- Initial event/events to disseminate knowledge around circular economic technologies, systems
  - Connect "expertise groups" with residents and everyday community
  - Start to build familiarity with both the organizational groups/initiatives
  - Start to build familiarity around circular economic based discourse.

- Plan fun, "open-space events" around very accessible to introduce information of existing green initiatives and technologies.
- Taster Workshop festivals (hosted by organizations and experts)
- Site walk - installations - temporary simulations that encourage participation - provides a simulative environments of what ecological systems could look like.
- Provide space for meetings that support the initiatives of interest from within the community.

3.3 Implementation - building solidarity and community within community building social capital - community empowerment

- Set-up more focused meetings that geared towards implementation of specific projects.
- Choose meeting places and times that are at a variety of times and places to ensure that you are trying to be inclusive of as many groups as possible.
  - Multiple modes of access. ex. conference calling and video chatting.
  - Facilitating listening and inclusion tools
  - Invite and involve people in order to get a better representation of the community
- Form more cohesive group
- Collective agreement of design brief including goals/aim + form the design team through voting.
- Ideation and brainstorming - drawing workshops, collage, renders
- Selecting proposals - sharing ideas and voting.
- Implementing, Constructing, Making
  - Planning events, dinners and build days for the community and interested parties to get involved.
  - Plan learning workshops with experts for specialized skills.

3.4 Maintenance and knowledge dissemination - solidarity and network between communities
- Setting up of governance structures
- Using and experiencing - plan more event in spaces where systems are set up.
- Feedback and learning
- Modifying and adapting -iteration
- Effectiveness analysis
- Online platform or network
- Library of resources that is accessible - teaching workshops around how to use and access that.
- Solidarity between communities - plan mix-up events or events that people can share learning and problems.

4. Conclusion

4.1 Future research and testing
The design methodology from this research will be utilized to develop a design process framework for a future commoning practice. This practice will focus on furthering exploring the role of design in implementing ecological commons at a local level within built environments and different cultural contexts.

Through community based projects, the methodology will be further tested, validated, iterated and developed.

4.2 Summary

This research project aimed to create an initial design methodology in order to explore how design can be used to implement ecological sustainability and civic agency from the bottom-up. Looking at the context of environmental degradation, climate change and the emergence of the circular economy from a neoliberal capitalist systems, shed light on the major subjects that need to be addressed together in order to transition to a more environmentally and socially sustainable world. These subject can be broadly broken down three areas: what systems and frameworks are there to tackle environmental degradation, what systems are effective for social sustainability and civic empowerment, and what tools does design have that can catalyze change.

Existing literature and theory in regards to these three areas was then explored to find what their strengths and weaknesses were as well as where these frameworks, tools, and theories intersect and what the relationships between them are. The Circular Economy was used to look at an existing model of how current systems can be adapted for ecological regeneration; however its method of implementation stili fit under the capitalist model which is problematic. The Donut Economy provided an alternative economic perspective that reframed the implementation of the Circular Economy to resolve the issue of power distribution within the system. The idea of the Commons and theory around contemporary commoning practices was then explored as a method of rebuilding social capital and civic empowerment which can lead to solidarity and larger scale change. A number of approaches of design that had come out of recent design specialisms were then explored to create a set of frameworks to base the methodology off of. The role of the designer as an activist was also questioned.

The proposed design methodology sits at the intersection of these theoretical frameworks in which design's role in this shift becomes one that can both enable and facilitate the cultivation of relational social frameworks that enable the implementation of circular economics to provide opportunities for social empowerment and equality outside of the market. New methodologies in emerging practices such as 'collaborative-design' which offer an opportunity for multi-stakeholders and actors to collectively define and contextualise the problem....providing a commitment regarding inclusion and distribution of decision making power.(Fuad-Luke 2009)

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