



Facultad de Ciencias Económicas y Empresariales

# **An analysis of different types of ecovillages on the basis of the fundamental human needs, TRABAJO FIN DE GRADO**

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## **Resumen**

Debido a la creciente intensidad y gravedad de las consecuencias de la crisis climática, cada vez es más urgente encontrar soluciones integrales a la misma. Las ecoaldeas pueden representar posiblemente parte de la solución, ya que combinan un entorno social y cultural solidario y de alta calidad con un modo de vida de bajo impacto. Sin embargo, la satisfacción de las necesidades determina el nivel de bienestar en una ecoaldea, lo que en última instancia afecta al éxito de la misma. Por lo tanto, este documento pretende analizar diferentes tipos de ecoaldeas en función de la satisfacción de las necesidades humanas básicas. Posteriormente, los científicos o los miembros de las ecoaldeas pueden utilizar los resultados para mejorar el modelo de ecoaldea o para seguir examinando otros factores relacionados con las ecoaldeas. Los resultados obtenidos por la revisión sistemática de la literatura sugieren que todas las necesidades humanas básicas pueden satisfacerse si la visión integral de una ecoaldea se aplica y practica plenamente. Sin embargo, la falta de realización de la visión puede afectar negativamente a la satisfacción de las necesidades.

**Palabras claves:** *ecoaldeas, motivaciones, necesidades humanas, crisis climática, soluciones alternativas*

## **Abstract**

Due to the increasing intensity and severity of the consequences of the climate crisis, it is becoming ever more urgent to find wholistic solutions to it. Ecovillages can possibly represent part of the solution since they combine a supportive and high-quality social and cultural environment with a low-impact way of life. However, the need satisfaction determines the level of well-being in an ecovillage which ultimately affects the success of such. Therefore, this paper aims to analyse different types of ecovillages on the basis of the satisfaction of the basic human needs. Subsequently, scientists or members of ecovillages can use the results to improve the ecovillage model or to further examine other factors related to ecovillages. The results obtained by the systematic literature review suggest that all basic human needs can be satisfied if the wholistic vision of an ecovillage is fully implemented and practiced. However, a lack of realizing the vision can negatively affect the need satisfaction.

**Keywords:** *ecovillages, motivations, human needs, climate crisis, alternative solutions*

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## **List of abbreviations**

Global Ecovillage Network	GEN
Intergovernmental Panel on Climate Change	IPCC
National Aeronautics and Space Administration	NASA
Sustainable Development Goals	SDG
The Permaculture Design Course	PDC
The Ecovillage Design Education	ECE
United Nations	UN
United States of America	USA



## **1 Introduction**

The impact of climate crisis is much more severe than previously assumed. For example, it is estimated that the crisis might cause a variety of economic and social problems due to the loss of productive land, storms, rising seawater levels or desertification (Max-Neef, 2010). Furthermore, according to Intergovernmental Panel on Climate Change (IPCC) published by the United Nation in March 2022 (UN, 2022), these impacts will be happening much sooner than expected.

However, National Aeronautics and Space Administration (NASA) claims that it may not be too late to avoid or limit some of the worst effects of climate change (NASA, 2022). Therefore, fighting against climate crisis has become one of the biggest tasks of our generation. Solutions imply models that incorporate the fact of earth and its resources being finite (Max-Neef, 2010). In this context, ecovillages have been proposed as one of the solutions since they combine a supportive and high-quality social and cultural environment with a low-impact way of life (Ulug et al., 2021).

This research project focuses on the analysis of ecovillages as a possible solution in the climate crisis. Ecovillages are intentional or traditional communities, that are consciously designed through locally owned, participatory processes to regenerate social and natural environments (GEN, 2022e). These independent and alternative systems can serve as testing grounds in which groups of committed people experiment to find solutions for some of the challenges we face globally. By presenting possible alternatives, ecovillages additionally critique the dominant system and society. This critique goes against a culture of individualism that has come to dominate Western, and especially American life, which threatens both community and the environment (Putnam, 2000). Simultaneously, the critique goes against a dominant culture which measures its well-being and quality of life with the economic-growth development on a finite planet (Jackson, 2009). Therefore, ecovillages follow the idea to live of fewer resources to be more sustainable. Living with less can be associated with a decrease of well-being or a sacrifice of covering certain needs (Max-Neef, 2010). This can contribute to conditions which systematically undermine people's ability to meet their needs (Max-Neef, 2010).

Following Max-Neef (2010), humans are motivated by a desire to meet certain fundamental human needs. He further states that the purpose of every political, social, and economic system should be to generate the conditions for people to adequately satisfy their fundamental human needs. Then, no matter how sustainable an ecovillage is, basic human needs must be met. Max-Neef offers a framework to organize thinking and scrutinize our activities, products and services through the lens of nine needs. It is possible to analyse if we can satisfy the same need with a different, more sustainable way (Cruz et al., 2009).

The aim of this paper is to analyse the different approaches to an ecovillage model and to examine the satisfaction of basic human needs within such environment. This topic presents a gap in academic literature (Kunze & Avelino, 2015).

Firstly, we conducted a narrative literature review to cover the background and better understand the phenomena of ecovillages.

Secondly, we conducted a systematic literature review of written academic articles to analyse the connection between the needs and the setting of an ecovillage. The focus for the systematic literature review was set for the United States of America (hereafter, USA), as ecovillages are studied the most there and the average per capita carbon footprint is the highest.

This project aims to contribute to the sustainability literature as well as in the ecovillage literature (Ergas 2010; Joubert & Dregger, 2015; Kirby, 2003) by providing a vision of the needs and their satisfaction within ecovillages. Subsequently, scientists, researchers, policy makers or members of ecovillages can use the results to improve the ecovillage model or to further examine other factors related to ecovillages.

This paper begins with defining the concept and phenomena of ecovillages. After explaining the different approaches of implementing the vision of an ecovillages, we then outline the different aspects of how an ecovillage can influence the climate crisis. In chapter four Max-Neef's model of the basic human needs will be explained and contextualised in relation to sustainability. After a brief explanation of the methodology used, the paper moves to the empirical findings of the systematic literature review to

describe if and how ecovillages cover the basic human needs. Finally, a conclusion is being drawn to summarize the findings and give further research recommendations.

## **2 Objectives and methodology**

### **2.1 Objectives**

The primary objective of this paper is to analyse the different approaches of an ecovillage model and to examine the satisfaction of basic human needs, based on Max-Neef's (2010) framework, within such environment. However, there are several sub-objectives contributing to the core objective which are outlined in the following bullet points.

1. Describe and explain the phenomena of 'ecovillage' and its history
2. Classify and describe different approaches of ecovillages and determine the role and relevance of ecovillages in the ecological crisis
3. Describe the model of basic human needs identified by Max-Neef and examine the use of the model in relation with sustainability
4. Examine how the ideal or vision of an ecovillages meets the basic human needs identified by Max-Neef and understand what the effect of one need satisfaction on another is
5. Explore the reasons why one need might not be satisfied and translate the need satisfaction and its limitations into the different implementation approaches

### **2.2 Methodology**

To be able to analyse the needs and their satisfaction, an inductive focus with a qualitative method was chosen. This has the advantage that we can ask how, what and why. How are the needs met? What is the effect of one need satisfaction on another? Why might a need not be satisfied?

Since the analysis aims to give an overview of the ecovillage model and its different approaches, the methodology ideally covers a broader field of ecovillages. This can be more difficult to achieve if primary data were collected. Additionally, the limitation of

location and time would reduce the amount of different data. Therefore, secondary data was used.

Specifically, we firstly conducted a **narrative literature review** to cover the objectives 1-7. This helped us to build the background information to secondly conduct a **systematic literature review of the written academic articles**, in the US. The second part covers the objectives 8-11.

### *2.2.1 Chapter 3 & 4: Narrative literature review*

A narrative literature review provides a summary of the current literature relevant to a research question or a specific topic (Jahan et al., 2016). In our case, we focused on the topic of ecovillages and used a variety of sources to collect as much data as possible. Main sources were written academic literature like academic articles but also books published. Additionally, we used information from different websites such as ecovillage networks but also ecovillage's own websites.

This broad approach of unordered search and using different kinds of sources helps us to get the most information from the few sources we have.

### *2.2.2 Chapter 5: Systematic literature review of written academic articles*

A systematic literature review is a “systematic, explicit, and reproducible method for identifying, evaluating, and synthesizing the existing body of completed and recorded work produced by researchers, scholars, and practitioners. “(Okoli & Schabram, 2010, p.1). The methodology of a systematic literature review was chosen to be able to set specific filters and precisely include or exclude (as can be seen under the bullet point ‘2. Inclusion, exclusion, and selection criteria’).

The focus was set for the USA, as ecovillages are studied the most there and the average per capita carbon footprint is the highest. To put this in context, the next highest carbon footprint is only half that and is that of a European citizen (Zandt, 2020). This shows that there is a need for action especially in the USA and makes it even more relevant to study ecovillages in that region. However, at this point it is necessary to mention that the focus on the USA resulted in constraints of types of ecovillages that are being analysed. The

data conducted in the systematic literature review did not provide information about the top-down approach and ecovillages rising out of lack.

This systematic review is up to date as of 20 March 2022 and was inspired by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines (Moher, 2011; Page et al., 2021). The systematic review protocol included the following steps: (1) Search strategy; (2) Inclusion, exclusion, and selection criteria, and (3) Data extraction.

1. Search strategy

The Web of Science (WOS) online database was used to conduct the systematic literature review. The keyword 'ecovillages' was introduced to find relevant data for the analysis and resulted into 92 articles. Since the topic of ecovillages generally has not been studied that much, the simple keyword aimed to leave the results as open as possible. If a specification in the keyword such as 'needs' or 'need satisfaction' had additionally been used, there would be no papers left to analyse.

2. Inclusion, exclusion, and selection criteria

The results from the search were filtered in a next step based on three criteria: (1) *Database*: only Web of Science Core Collection was included, (2) *Document type*: only articles were included, (3) *Language*: only papers written in English were included and, (4) *Country/Region*: only the USA has been included.

The search with the described filters matched with 22 papers. As for the exclusion step, articles were removed based on three criteria: (1) *Accessibility*: if the full version of the paper could not be found, it was to be excluded; and (2) *Focus of the paper*: if neither the title, nor the abstract, nor the conclusion spoke about ecovillages, the paper was to be excluded.

Regarding the selection, there were no restrictions made on types of ecovillages or year of publication. Finally, after these three steps 11 articles were left to be analysed.

3. Data extraction

The articles found were analysed in detail. While doing so the different needs and satisfiers mentioned in Max-Neef's (2010) model of basic human needs were used

as a guideline. The keywords from the Table 2 were used to identify directly and indirectly mentioned need satisfactions.

To give an example, if the word 'work' or a synonym of it has been mentioned in the articles, the connection with the needs were made. In this case work can be a satisfier of four different needs: **subsistence**, **participation**, **creation** and **identity**. Therefore, more attention had to be paid to the description of the work as to which of these needs it covers. It is possible that all of them are covered or none of them. Depending on the description of the work.

The focus was on two things. Firstly, motivations were searched for the reason why a person decides to live in an ecovillage. The second element was statements about the way of life in an ecovillage. Thereby, direct statements from ecovillagers were used as well as explanations made by the author(s).

### 3 Ecovillages

#### 3.1 The definition and history ecovillages

Ecovillages were seen as a type of intentional community with a focus on ecological aspects. The definition of intentional communities can be summarized as ‘**a group of people**’, usually at least five individuals, including some not related by blood, marriage, or adoption, ‘who have **chosen to live together** with a common purpose, working cooperatively to create a lifestyle that reflects their **shared core values**’ (Kozeny, 1995, p. 18; Smith, 2002). Ecovillages as a specific type of intentional community, are a relatively new phenomenon. Robert Gilman, formally coined the term in the early 1990s. As the prefix ‘eco’ implies, ecovillages are created with an intent towards sustainable, environmental living.

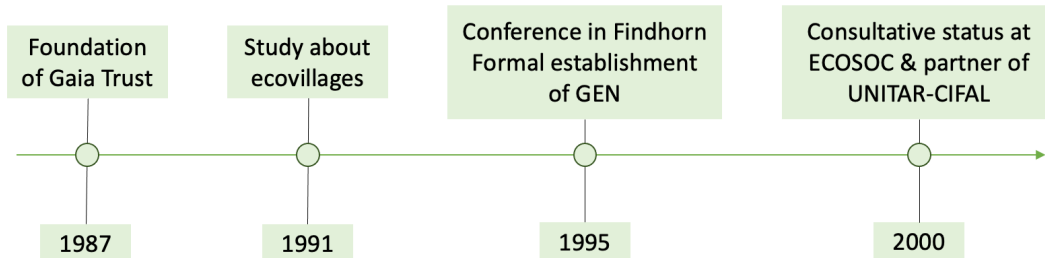
In 2010 the official definition has been expanded from solely ‘**intentional communities**’ to also implementing the term ‘**traditional communities**’ since not just Western intentional communities but also traditional communities such as tribes identified with the term ‘ecovillage’ (Ergas, 2010). Similar to that, academics commonly describe ecovillages as an intentional community with the focus on ecology (Van Schyndel Kasper, 2008).

The term ecovillage is now defined by the Global Ecovillage Network (GEN) as:

*An ecovillage is an intentional, traditional or urban community that is consciously designed through locally owned participatory processes in all four dimensions of sustainability (social, culture, ecology and economy) to regenerate social and natural environments. (GEN, 2022e).*

Now that we know what an ecovillage is, we will look at its background and history, which is summarised in Figure 1.

Figure 1: History and development of network



The roots of the network of ecovillages can be traced back to Hildur and Ross Jackson from Denmark who founded the non-profit foundation Gaia Trust in 1987. The foundation uses grants and proactive initiatives to support the transition towards a more sustainable and more spiritual future (Gaia, n.d.). In 1991 they funded a study on sustainable communities worldwide called ‘Ecovillages and Sustainable Communities’ (Jackson, 1998). The study by Robert and Diane Gilman was released with the result that although there are many ecovillage projects, no ideal version of them could be found (Jackson, 1998). This inspired Gaia Trust to keep on researching about the topic of ecovillages (Gaia, n.d.). In 1995 the foundation was invited to the conference of ‘Ecovillages and Sustainable Communities for the 21st Century’ in Findhorn which can be seen as the ignition of the ecovillage network. Due to the high interest in this topic, 20 people from different ecovillages decided to formally establish the **Global Ecovillage Network (GEN)**. Initially the objective of these 20 people was to support ecovillages around the world. Prior to that, they did not receive any support nor were they connected with each other (Dregger & Joubert, 2015).

GEN (2020a) supports the ecovillages by building connections between different stakeholders such as policymakers, governments, NGOs, academics, entrepreneurs, activists, community networks and ecologically minded individuals. Within this network information, ideas and technologies are exchanged. With the help of these international connections, they hope to develop strategies for a global transition to resilient communities and cultures (GEN, 2020a). According to GEN, the network is made up of



approximately 10,000 communities and related projects (GEN, 2022a). It is important to notice that because there is no verification procedure, not all entities that by definition are ecovillages are registered in the network, and likewise, those that are registered are not necessarily by definition an ecovillage. This ambiguity, making it hard to estimate the real number of ecovillages worldwide.

In 2000 GEN had obtained consultative status at the United Nations Economic and Social Council (ECOSOC) and became a partner of the UNITAR-CIFAL (United Nations Institute for Training and Research – “Centro Internacional de Formación para Autoridades y Líderes”) initiative, which provides trainings in sustainable development to local governmental officials around the world (GEN, 2022c).

GEN’s work can be divided into consultancy, development, education, research, and advocacy. Even though the network is globally active, the organization of GEN is additionally **subdivided into five smaller regional networks** which can be seen in the Table 1. GEN Europe, GENOA (Oceania & Asia) and GEN North America (GENNA) were the first three autonomous regions created right after the establishment of GEN in 1995. In 2012 at the Ibero-American meeting of ecovillages Colombia CASA Latina, the Council of Sustainable Settlements of Latin America, was created (GEN, 2022d). In the same year, GEN Africa, was born in Sekem Ecovillage, Egypt. GEN Fertile Crescent is another emerging region from the Middle East and is working towards becoming a regional network on its own. NextGEN (the Next Generation of the Global Ecovillage Network) was created on GEN’s 10th anniversary in 2005 to specifically support the next generation coming. Since then, the young generation is represented in each of the regional networks as a separate body (GEN, 2022d).

Table 1: GEN regional networks










Region	Name	Year found	Logo
Latin America	CASA	2012	 <p><b>CASA LATINA</b> GLOBAL ECOVILLAGE NETWORK LATIN AMERICA</p>
North America	GENNA	1996	 <p><b>GENNA</b> GLOBAL ECOVILLAGE NETWORK NORTH AMERICA</p>
Africa	GEN Africa	2012	 <p><b>GEN AFRICA</b> GLOBAL ECOVILLAGE NETWORK</p>
Europe	GEN Europe	1996	 <p><b>GEN EUROPE</b> GLOBAL ECOVILLAGE NETWORK</p>
Oceania & Asia	GENOA	1997	 <p><b>GENOA</b> GLOBAL ECOVILLAGE NETWORK OCEANIA &amp; ASIA</p>
Middle East	GEN Fertile Crescent	In progress	(still in development)
Global (Represented in each region)	NextGEN	2005	 <p><b>NEXTGEN</b> ECOVILLAGE YOUTH NETWORK</p>

Source: based on GEN, 2022d

### 3.2 Different approaches of ecovillages

Even on the website of GEN it is stated that every ecovillage is different, there is **none that is alike another** (GEN, 2022e). On the one side, that opens up the network of communities allowing for many different kinds of communities and projects to be recognised. On the other side, it makes it difficult to actually describe what an ecovillage is. Therefore, the following categorization presented in Figure 2 is used to give an overview and to group the different types and ideas that will be developed in the following chapters.

Figure 2: Different types of implementation approaches

Chapter Number	Icon	Name of Chapter / Type of ecovillage
3.2.1		Direction of implementation: top-down & bottom up
3.2.2		Embedded in capitalistic economy: handling financials and proprietorship
3.2.3		Connection with the region established through products and services
3.2.4		Connection with the nation and government
3.2.5		Design of the decision-making process
3.2.6		Connecting with the past and reaching into the future
3.2.7		Rise out of lack or out of abundance
3.2.8		Spirituality and inner work
3.2.9		Inclusiveness of social groups

### *3.2.1 Direction of implementation of the vision: top-down or bottom up*

The direction of implementation of an ecovillage can be divided into two different approaches: top-down and bottom-up. The difference is, **creating something from scratch (bottom-up) or implementing core aspects of an ecovillage to an already existing system (top-down).**

The more common one is the bottom-up approach which is also how the ecovillage movement started (GEN, 2022a). As typical for an ‘intentional community’, a group of people decides to live together in a community by founding an ecovillage. The founders form the ‘bottom’ or the foundation from which the idea and community can grow ‘up’.

Since the ecovillage movement also serves as an example, many villages or nations are interested in adapting the model (top-down) to already existing communities. For instance, a traditional bureaucratically administered community in Thailand has been converted from top-down into a more sustainable community (Roongtawanreongsri & Boonkaew, 2021). Another top-down approach is GEN-Senegal. The government of Senegal has been inspired by existing ecovillages and is the first country to adapt the idea by implementing a national ecovillage program (Dregger & Joubert, 2015, p.105).

Nevertheless, it is questionable what the long-term effects of this transformation will be. Since these programs are relatively new, they need to be further observed. At the moment there is not enough data and research about top-down approaches, therefore this paper focuses on bottom-up approaches.

### *3.2.2 Embedded in a capitalistic economy: handling financials and proprietorship*

Even though ecovillages generally **want to liberate themselves from the capitalistic economy they are still embedded** in it which results in several dependencies. This issue starts with the founding process. After finding some adequate piece of land to build the village upon, the land usually needs to be financed. The process of buying the land can generally be clustered into firstly collecting money internally from the participants and secondly, if that is not enough, expand the possibilities to the exterior and involve, for example, donors (Davidson, 2018).

Ecovillages often state to have communal **landownership**. However, the degree and reasons behind it vary from the pure vision of a sharing world towards demonstrating against consumerism or greed, and the conflicts arising from them (Tasiguano Suquillo, 2011). Landownership in ecovillages is not necessarily communal but can also be a mixture of privately owned residential lots while still having cooperatively owned commercial properties (CTR, 2019). Owning land usually implies having property taxes which must be covered either by the community as a whole or separately according to the approach chosen. Albert Bates (2016) from ‘The Farm’ in the USA confirms that the burden of paying these **taxes** is a constant point of conflict since the community has hardly any income sources and many newly joining members often have debts from student loans or from a lack of medical insurance.

Besides the property taxes, most ecovillages fail in being fully self-sufficient and thus have **additional expenses** for food, water or electricity (Cohen et al., 2010). To pay the different expenses villagers often work outside of the village to earn some money (Ergas, 2016). This can either mean sharing internally developed knowledge like carpenter skills with the region or a regular job as a cashier for example. The products and services offered are being further explained in the next section of connection with the region. The **income** of such trade is either shared or the villagers have separate incomes. This example shows that ecovillages usually cannot operate freely since they are often still dependent on the broader economy. Some bigger ecovillages try to minimize their dependence to be able to act more freely (Rubin, 2021).

### *3.2.3 Connection with the region established through products and services*

The connection of ecovillages with the region **ranges from very closely to trying to be more independent**. A trend can be noticed, starting before the existence of GEN where many ecovillages formed their own separate systems, escaping the mainstream society, to a nowadays increasingly locally integrated approach (Dias et al., 2017). The **increasing connectivity** can on the one side be seen in-between ecovillages but also regarding GEN and the society (GEN, 2022d). Declan Kennedy, co-founder of GEN, explains that ecovillages must be part of the region to have an influence on it (TGR, 2020). Nevertheless, the degree of connection varies.

Possible connections of trade can be **products** such as art, craftsman or food but also services such as events, festivals, trainings or education courses. Products usually serve as a connection with the region whereas services can reach beyond the regional connection and be offered globally. The connection through products sold by the ecovillage can vary in two directions: either products from the region are sold inside of the ecovillage or products from the ecovillage are sold outside of it. Since the surplus of food can be seasonal or product specific, many ecovillages state to not succeed self-sufficiency and get food from the region to cover their needs (Ergas, 2010).

The **service** of education as a connection point builds one of the fundamentals of GEN. The network offers courses about permaculture (The Permaculture Design Course – PDC) or about ecovillage design (The Ecovillage Design Education – EDE) which can be globally attended by everyone (GEN, 2022b). Some educational initiatives are specifically aimed at the region and deal with local problems like why natural conservation work is important or to combat a specific prejudice (Dregger & Joubert, 2015). Some ecovillages have their own agricultural school or even a medical centre (Shahin & Khater, 2020).

#### *3.2.4 Connection with the nation and government*

As stated in their mission statement ecovillages **perceive to have an impact on the environment and society** (GEN, 2022c). Therefore, the connection with policy makers is of special interest. Thus, some exemplary relations with the nation and its government are going to be outlined in the following.

Ecovillages often **serve as a working example for sustainable solution**. This was also the case in Egypt where the government saw how well the idea of turning desert into fertile land worked at the ecovillage ‘Sekem’. Thus, they decided to implement the strategy into national resettlement projects (Shahin & Khater, 2020). This project was specifically for certain areas combating desertification, whereas GEN-Senegal was the first country to implement a nation-wide ecovillage program in 2014 (Olivier, 2015). The goal is to transform every second village in Senegal into an ecovillage, which would account for 14,000 villages in total (Olivier, 2015). However, this example presents an exception of such scale. Nevertheless, a more typical connection is the one of the O.U.R.

Ecovillage on Vancouver Island which is seen as a beacon of sustainable living and an example to communities across Canada. Everything accomplished in the ecovillage has been included in the proper regulations (CTR, 2019). In cooperation with the Israeli government, ecovillages in Israel are used as a catalyst for environmental consciousness while being a model for liberal Judaism (Cohen et al., 2010).

However, the **relation** with governments is **not always positive**, sometimes it hinders the ecovillages to realise their vision. An exemplary case is the ‘Islas de Rosario’ where the government saw them as a threat to nature resulting in many years of legal fights in court (Pereiro, 2018). This case shows that governments sometimes help ecovillages to spread and implement their ideas but also often slow them down or even stop them to put their vision into practice.

### 3.2.5 *Design of the decision-making process*

As explained in the section above, ecovillages often see themselves as an example for society. Their vision for society is what they – at least try to – implement in their community. GEN describes the role model of decision-making to be **shifting away from being a pyramid to becoming a circle**. The reason is assumed to be that “everyone transforms into a leader which makes them more responsible for the whole circle as well as the decision itself” (Dregger & Joubert, 2015, p.25).

Many ecovillages adapted the approach of seeking **consensus**, at least for certain topics. However, in practice the process of reaching consensus can result in a long process negotiation and adaption since everyone needs to be in favour of the final decision (Kirby, 2003). In some cases, a more simplified process was adapted like a classical **democratic vote** where the majority decides the outcome (Tasiguano Suquillo, 2011).

Another approach is to **delegate the responsibility** of certain decisions to smaller groups of experts. This approach works especially good in bigger ecovillages with subdivisions. An example is ‘Damanhur’ in Italy, a federation of 26 ‘nucleo’ communities each having a unique specialization like solar energy, seed saving, education or healing (CTR, 2019). Ecovillages typically chose what works best for them which often results in a **mix of different types of decision-making approaches**. Exemplary is the ecovillage ‘Wongsanit Ashram’ which aims to generally find consensus. If that is not achievable,

they vote by majority asking those who disagree if they are **willing to be ‘a loyal minority’**. Otherwise, they try to **find a compromise** by using ‘common sense’ (Boonkaew & Roongtawanreongsri, 2018).

### *3.2.6 Connecting with the past and reaching into the future*

Different alternatives to the dominant model of living are being presented by ecovillages. Many ecovillages are seen as a way to go **‘back to the (human) roots’** like it is preached by Nick, founder of ‘The Sacred Nectar Sanctuary’ in New Hampshire (Jane, 2020). On the other side of reaching back to the past, is the modern, **high-end ecovillage** like ‘ReGen’ which uses a technology integrated software to be more sustainable (ReGen Villages, 2022). The centre piece is food and high yield organic food production. It includes a blockchain enabled app with a regenerative platform underneath where the output of one system is the input of another. Embedded sensors share data to the cloud to make similar climate regions learn from each other (ReGen Villages, 2022).

However, these villages are still in the funding round and have not been realised yet. In between these two extremes there are various mixtures and reasons for choosing this approach. A mixture of connecting to the past but also to the future is the most common way in ecovillages. The focus is on **bringing together ancestral knowledge with modern knowledge and innovative solutions** to get the most out of the information available (Dregger & Joubert, 2015).

Reasons to reach back to our past include that for 99,9% of our evolutionary history, human lived in tribes and therefore connecting with our past presents a hardwires for community and belonging to each other and the natural world (Davidson, 2018). Connecting with the past can also present a way to revitalise the knowledge and skills of old traditions (Pereiro, 2018). However, reaching back in the past is not always seen as something noble or wise. Especially communities in developing countries share a common issue: The colonialization and later Westernisation made many communities believe that the ‘American way of life’ is the ideal. The wisdom from ancestors is seen as something primitive (Nyika, 2001). Some ecovillages in those areas arose as an answer to change the perception of their society to shift away from a dependence on a distant global economy while promoting decentralisation and localisation (Nyika, 2001).



### 3.2.7 *Rise out of lack or out of abundance*

Ecovillages have in common, that they **envision a certain change**. The background history or motivation behind that can be contrasted with the rise out of a situation of lack, out of abundance or a mix of both.

An exemplary version of a rise out of **lack** is Kenya. Ecovillages arose as an answer to **slums and a situation of social disruption**, where all villagers come from difficult circumstances like poverty, hunger, neglect, violence or abuse. They have shabby looking huts, the streets are flooded with swage and garbage while the population feels the daily pressure to accumulate the bare necessities (Fabrin, 2015). Similarly, in Israel the war between Palestinian and Israelis made them want to offer a net of hope through realizing a ‘Vision of a Peace Research Centre’ where Palestinians and Israelis live together peacefully as a **tool for resistance** (Cohen et al., 2010). They want to be a model for sustainability and autonomy to **liberate themselves** from foreign supply systems such as for food, energy or water.

But not all ecovillages arose from negative events, many of them arise out of **abundance** and are more **idealistic**. Thus, some want to show that living more sustainable and therefore often with fewer resources does not necessarily decrease well-being (Jane, 2020). For instance, the ecovillage in Ithaca arose from the wish to stay in a community after a peace walk, they organized through the USA (Kirby, 2003). The focus can also be to guide a peaceful way of activism while rebuilding abandoned villages or be a model for a none-violent system for human, animals and nature (Dirksen, 2011).

### 3.2.8 *Spirituality and inner work*

Since the **(re-)connection** with all living beings is seen as crucial from ecovillages to ultimately be able to **live in harmony**. To reach thus, spirituality and inner work is a commonly mentioned topic.

Often spirituality is seen as an **essential part of their community**. Such example represents the ecovillage ‘Pacha Mama’ in Costa Rica which is a natural sanctuary and a spiritual community with the intention to live a life of reverence, meditation and harmony with nature and the elements (CTR, 2019). Similarly connected with spirituality is ‘Tamera’ in Portugal who claims that our emotions such as anger are not evil or

destructive at their source, only through suppression and judgement can these emotions become dangerous. Therefore, a sustainable peace culture also requires an inner process of healing which at 'Tamera' includes the usage of the morphogenetic field<sup>1</sup> (TGR, 2020). Spirituality can also be a guide for actions which is the case in the 'Wongsanit Ashram' community which is built around Buddhist basic principles combining mental work, physical work and meditation (Boonkaew & Roongtawanreongsri, 2018).

### 3.2.9 *Inclusiveness of social groups*

In a diverse society, different groups can be formed due to certain characteristics and may be excluded or neglected. As a counterdemonstration or proof that a system can work when everyone is included, there are ecovillages specialising in the **inclusion of these otherwise rather neglected groups**. Examples are the ecovillage 'Solheimar' in Iceland which shows how to actively include **disabled** persons in the community and its daily life (TGR, 2020) or Kitezh in Russia offers **foster children** a home and get them integrate into society (Tysiachniouk & Pchelkina, 1999). Especially in African or Asian ecovillages a special support and inclusion for **women** can be observed (Dregger & Joubert, 2015) but is not necessarily limited to those areas as the ecovillage 'Dancing Rabbit' in the USA shows (Rubin, 2021). The topic of accepting '**gay**' people was a learning process at 'Kibbutz Lotan' in Israel (Cohen et al., 2010).

However, these examples show special cases of different ecovillages. There could be no clear evidence found of an ecovillage achieving a wholistic inclusion of different groups at the same time. On the contrary, there are even studies arguing that ecovillages tend to have a lack of diversity and are mostly made up of the **white middle class** (Ergas, 2010).

Another vision that ecovillagers have and try to include in their system, is considering the inclusion of different generations. Thus, for example using the whole community to educate the **youngers** where **retired** feel useful and young **families** feel supported while enhancing a sense of personal sustainability (Kirby, 2003). While this might sound as a

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<sup>1</sup> These are pervasive informational patterns that store the collective physiological, psychological and mental habits of each species (Winiecki, 2022).

good idea, in practice it can result in conflicts for example about different parenting styles (Kirby, 2003). The active shaping of inclusion is not so easy to implement due to different interests in different generations.

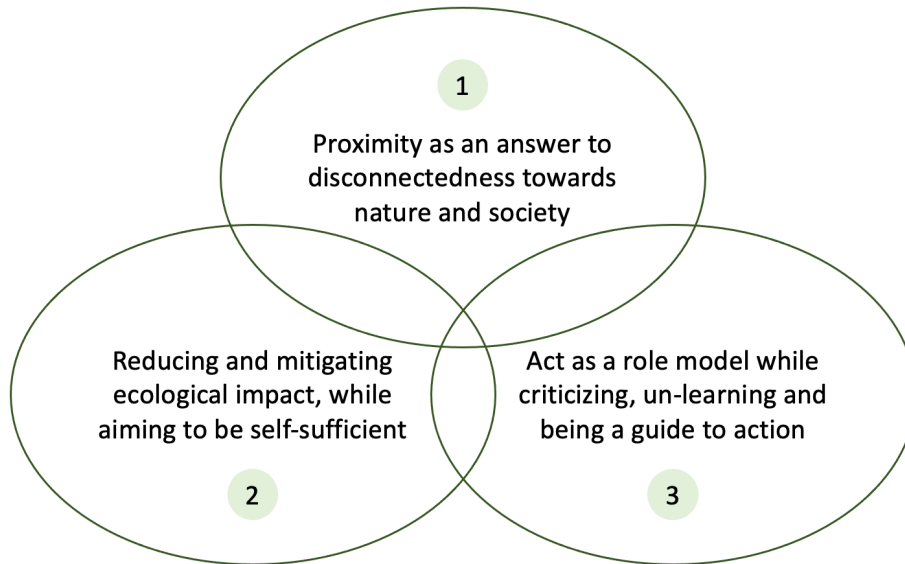
### **3.3 The role and relevance of ecovillages in the ecological crisis**

Although some authors like Alexander (2022) maintain a **sceptical position**, others defend the connection of ecovillages and their relevance in the ecological crisis. For example, Alexander (2022, p.1) criticizes the current state of the art of ecovillages and states that “even if the whole world would adapt the lifestyle of an ecovillage, it would still not be enough”. He criticizes the current state of the art of ecovillages. At the same time, he admits that they can form part of the solution against the climate crisis if we manage to improve their concepts towards a bigger and more radical change (Alexander, 2022).

On a contrary, Albert Bates (2016), founder of the ecovillage ‘The Farm’ in Tennessee, USA, sums up the relevance of ecovillages as a **place for shared hope** for the future and the **willingness to act upon it** to make it happen. In the same vein, Brombin (2015) adds that ecovillages present the **best response to the global ecological crisis** since they promote a deep cultural and systemic shift and realise the interdependence with society and the economy (Almond et al., 2020).

A possible solution to such a problem needs to be address in a wholistic way. To show the connection between the climate crisis and ecovillages, in the following, we present different problems regarding the climate crisis as well as solutions offered by ecovillages. The Figure 3 gives an overview of the text that follows.

Figure 3: The role and relevance of ecovillages in the climate crisis



### 3.3.1 Proximity as an answer to disconnectedness towards nature and society

Ecovillages can be seen as a solution to two interdependent core problems (Kirby, 2003). Firstly, to a perceived **loss of community** and secondly, to an **accelerating damage to the environment**. Both problems may arise from a **lack of connection with humanity and nature**. According to John Croft, International Trainer for Regenerative Communities, our sensitivity is very much connected with our proximity to nature; therefore, he recommends we should not live separate from earth (The Great Relation, 2020).

As a reason why our society feels disconnected while simultaneously not being as aware of the ecological problems is the increasing urbanization, according to Katie McGinty (2022). The problem would derive from the fact that our lives evolve inside of buildings; we live and work inside buildings without a direct connection with nature. Thus, not being constantly confronted with the consequences of the climate crisis. Living in cities isolates us more from nature. More than half of the population lives in cities and by 2050 it is being predicted to be 62% (United Nations, 2018). Ecovillages therefore want to design

and offer an attractive option of living outside of cities or if living in a city, present a ‘greener’ solution to ultimately be closer to nature (Kirby, 2003).

The second key point of existence of ecovillages is the issue of community which implies the perceived loss of community and the feeling of isolation due to a dominant culture of individualism (Van Schyndel Kasper, 2008). According to Macaco Tamerice from ‘Damanhur Community’ in Italy, the purpose of ecovillages is to empower people to unfold their full potential and to interact with the community to ultimately express their ideas (TGR, 2020). Ethan Hirsch-Tauber from the ‘Tamera Community’ in Portugal envisions a new culture where people see and trust each other. He says research is needed to create a new culture which is based on corporations. This corporation, lived by most ecovillages, includes all live: other human beings, animals, nature and the whole plant world (TGR, 2020).

Therefore, to tackle the problem of a perceived disconnection with nature and humanity, a reconnection to nature and social harmony is needed. Both can be offered by ecovillages (Brombin, 2015).

### *3.3.2 Reducing and mitigating ecological impact, while aiming to be self-sufficient*

One of the core problems related to climate change is the **resource usage** which simultaneously presents a focus for ecovillages. The current way of life implies that the available resources on earth are being used up faster than they can be regenerated (Earth Overshoot Day, 2022).

There are two different approaches used by ecovillages to act against climate change: (1) **reducing the negative impact** and (2) **mitigating the impact** by actively restoring of the ecosystem.

A common goal for ecovillages therefore is to minimize its ecological footprint (Kirby, 2003) while producing their own resources needed. The **aim to be self- or auto sufficient** implies producing their own food and energy (Dirksen, 2011; Jane, 2020). The way they produce their energy and food is supposed to be as ecological as possible, which often leads to the use of green energy sources as well as the use of permaculture.

In terms of mitigating the environmental impact, an example is the often-practised activity of **renaturalisation**. For example, the ecovillage Auroville in India has not only re-established 1,000 acres of protected forest but also succeeded to restore a complex wetland ecology that was full of 50 years of garbage and building rubble (Dregger & Joubert, 2015). The positive impact of ecovillages on the environment has been confirmed by a study conducted by Sherry (2019) showing that ecovillages have substantially lower environmental impact than the average USA resident. Confirming this statement, a study from Litfin (2013) showed that ecovillages use between 10% to 50% less resources than their home-country averages. The studies vary in analysed variables and therefore have different outcomes. One thing they have in common is, that ecovillages usually have a better carbon footprint than average local villages (Cetala & Sanna, 2019; Igalla et al., 2019).

### *3.3.3 Act as a role model while criticizing, un-learning and being a guide to action*

John Croft states that we need to **liberate human creativity** on a scale that has never been done before to find new solutions (TGR, 2020). Part of that liberation is the training for individual thinking and not follow the general path (Jane, 2020). Ecovillages are often seen as an **area of experimentation** to test different solutions (Jane, 2020). They can teach the world to live sustainable since they offer tailor-made programs as solutions to unsustainable gaps (Nelson, 2022). The knowledge gained there can support policy makers (Ulug et al., 2021).

At the same time, **questioning** the dominant system and criticizing the existing social mode (Kirby, 2003) is the first step in the direction of change. When we accept that ‘society is made and imagined’ then we can also believe that it can be ‘remade and re-imagined’ (Harvey, 2001, p.120). With that knowledge we can start to act as ‘conscious architects of our fates’ rather than as ‘helpless puppets’ (Harvey, 2000, p. 159) Harvey, 2001, p.159). As Mugove Walter Nyika, council member of GEN-Africa, says: “The most difficult thing is to un-learn bad habits and thinking patterns.” (Dregger & Joubert, 2015, p.99).

Even though the topic of sustainability is widespread, the actions are not (Dias et al., 2017). Many world citizens might feel overwhelmed by the number of problems, not

knowing where to put their energy and how to act (Casey et al., 2020). Therefore, ecovillages see themselves as a **guide to action** according to Jake Jay-Lewin, member of the NextGEN Youth Ecovillage Movement (TRG, 2020). They promote concrete actions to help combat the feeling of helplessness (Dias et al., 2017).

## 4 Fundamental human needs by Max-Neef and its connection with sustainability

### 4.1 Fundamental human needs

Manfred A. Max-Neef, a Chilean economist of German origin, in his book called Human Scale Development in which he postulates that **human needs are finite, few and classifiable** (Max-Neef, 1991). In contrast to the perhaps more well-known Maslow's Hierarchy of basic human needs, Max-Neef does not arrange the needs in a hierarchical order (McKenna, 2020). According to him, human needs must be understood as a **system** since they are **interrelated and interactive**. There are no hierarchies except for the need of **subsistence**, which is to remain alive (Max-Neef, 2010).

For Max-Neef there are **nine needs which are constant** through all cultures and across historical time periods (McKenna, 2020). The nine needs are summarized in the Table 2 including the need for **(1) subsistence** which covers the need to remain alive and can be satisfied for instance with food, water and shelter. The need **(2) protection** concludes a safe place to live and social security while the need for **(3) affection** received by and given to friends and family but also feel love and give love. Learning and meditating are important to one's life and are represented in the need for **(4) understanding**. The need for **(5) creation** expressed in cooking, designing, or inventing. These two built a balance of input and output, similar to the needs of **(6) identity** and **(7) freedom** which also balance each other out. One needs the sense of belonging and knowing oneself to not feel lost but also needs the freedom to be able to choose how to live one's life. **(8) Participation** implies on how much one takes part in shaping the decisions that affect one's life. **(9) Idleness** or sometimes called **leisure** can be connected with one's free time and peace of mind. (Max-Neef, 2010).

The way to satisfy a need are called 'satisfiers', this is what changes, over time and through culture (McKenna, 2020). Max-Neef organizes these satisfiers in four existential categories: **(1) Being** refers to qualities such as adaptability or sense of humour. **(2) Having** includes things like work, health or literature. **(3) Doing** translates into actions such as planning, working or taking care. **(4) Interacting** is the setting where this satisfier takes place such as the living environment, a social setting or university (Max-Neef, 2010). This classification serves as a cluster of the satisfiers. A satisfier can usually be



translated into these four different categories. For instance, when I have a work (Having) and also working (Doing) and this might result in qualities such as physical and mental health (Being) while happening in my working environment (Interacting).

Table 2: Needs and satisfiers according to Max-Neef

Needs according to existential categories  Needs according to axiological categories	<b>Being (qualities)</b>	<b>Having (things)</b>	<b>Doing (actions)</b>	<b>Interacting (settings)</b>
<b>Subsistence</b>	Physical, emotional and mental health	Food, shelter, work	Work, feed, procreate, clothe, rest/sleep	Living environment, social setting
<b>Protection</b>	Care, adaptability, autonomy	Social security, health systems, rights, family, work	Cooperate, plan, prevent, help, cure, take care of	Living space, social environment, dwelling
<b>Affection</b>	Respect, tolerance, sense of humour, generosity, sensuality	Friendships, family, relationships with nature	Share, take care of, make love, express emotions	Privacy, intimate spaces of togetherness
<b>Understanding</b>	Critical capacity, receptivity, curiosity, intuition	Literature, teachers, educational and communication policies	Analyse, study, meditate, investigate	Schools, families, universities, communities
<b>Participation</b>	Adaptability, receptivity, dedication, sense of humour	Responsibilities, duties, work, rights, privileges	Cooperate, propose, dissent, express opinions	Associations, parties, churches, neighbourhoods
<b>Idleness/Leisure</b>	Imagination, curiosity, tranquillity, spontaneity	Games, parties, spectacles, clubs, peace of mind	Daydream, play, remember, relax, have fun	Landscapes, intimate spaces, places to be alone, free time
<b>Creation</b>	Imagination, boldness, curiosity, inventiveness, autonomy, determination	Skills, work, abilities, method, techniques	Invent, build, design, work, compose, interpret	Spaces for expression, workshops, audiences, cultural groups spaces for expression, temporal freedom
<b>Identity</b>	Sense of belonging, self-esteem, consistency	Symbols, language, religion, values, work, customs, norms, habits, historical memory	Get to know oneself, grow, commit oneself, recognize oneself	Places one belongs to, everyday settings, maturation stages

<b>Freedom</b>	Autonomy, passion, self-esteem, open-mindedness, tolerance	Equal rights	Dissent, choose, run risks, develop awareness, be different from, disobey	Temporal/spatial plasticity (anywhere)
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Source: based on Max-Neef, 1991, p.32; Max-Neef, 2010, p.206

The interconnection of the needs translates into five **types of satisfiers** as shown in the Table 3. The type of satisfier depends on how they relate to the whole needs system (Cruz et al., 2009).

Table 3: Types of satisfiers according to Max-Neef

<b>Type of satisfier:</b>	<b>Description:</b>
<u>Violating or destructive satisfiers</u>	<i>supposedly satisfying a need, but in reality, stops us from meeting other needs</i>
<u>Pseudo-satisfiers</u>	<i>satisfiers which we think will satisfy a need but once implemented they don't satisfy the need</i>
<u>Inhibiting satisfiers</u>	<i>generally oversatisfy a given need, severely limiting the possibility of satisfying other needs</i>
<u>Singular satisfiers</u>	<i>satisfy one need at a time</i>
<u>Synergic satisfiers</u>	<i>satisfy more than one need at a time</i>

Source: based on Max-Neef, 1991, p.31ff

A **violating or destructive satisfiers** only supposedly satisfy a need but stops us from meeting other needs. The need for **affection** can be satisfied by a love relationship but if the very same relationship keeps one from having freedom or creativity is a destructive satisfier. A **pseudo-satisfier** is a satisfier that the person thinks would satisfy the need but once implemented s/he realizes that it does not satisfy it. A common example of that

would be fashion and trends. To satisfy the need for **identity**, one might buy a product to feel a sense of belonging. In reality it does not necessarily give one the feeling belonging. **Inhibiting satisfiers** generally satisfy a given need but in an excessive way which severely limits the possibility of satisfying other needs. Another difference can be made between a satisfier which only satisfies one need (**singular satisfier**) or a satisfier that satisfies more than one need (**synergic satisfier**) (Max-Neef, 2010). A synergic satisfier can be in another context a pseudo or destructive satisfiers once they ‘do not fit into the wider socio-cultural and environmental setting of the community’ (Cruz et al., 2009, p.2029). This means that the ways we satisfy our needs are not necessarily ‘sustainable’ on the medium to long term, by meeting one need incautiously, we could be hindering or jeopardizing our ability to meet the other need(s) (Max-Neef, 2010).

#### **4.2 The needs in connection with sustainability**

Max-Neef's bibliography (1991) explains how he discovered the nine basic needs. He himself says that by observing different cultures, especially in poorer regions such as Latin America or Bangladesh, he recognized a certain commonality (Max-Neef, 2010). The findings and the resulting tool were intended to support the analysis of different lifestyles or cultures. With the nine needs, Max-Neef wanted to **measure the quality of life of different groups to find possibilities for improvement**. He specifically wanted to help less developed countries so that the population can use their best potential by meeting their basic needs (Cruz et al., 2009).

Max-Neef himself pledges for a new model of economy and a cultural system that leads us from an ‘anthropocentric world of greed, competition and accumulation; to a biocentric world of solidarity, cooperation and compassion with all forms of life’ (Max-Neef, 2010, p.210).

The fundamental human needs by Max-Neef have been used in a variety of cases embedded in the topic of sustainability. It can be used to analyse products and services (Jolibert et al., 2011) but also to get a new perspective on the dominant capitalist system (Max-Neef, 2010). According to Max-Neef being sustainable means meeting our needs

within ecological constraints while trying to avoid superficial problem solving (Cruz et al., 2009).

A study conducted by Vita et al. (2019) aimed to find out which needs are the most destructive in terms of the **environmental impact** of commonly used satisfiers. The results showed that half of global carbon emissions are driven by **subsistence** and **protection**. **freedom**, **identity**, **creation** and **leisure** together account for a similar share, while **understanding** and **participation** together account for less than 4% of global emissions. The results suggest that the needs **subsistence** and **protection** need to be further investigated due to their immense impact on the environment (Vita et al., 2019).

The tool from Max-Neef has also been used to not only assess the well-being of human beings but include all living beings such as animals and plants (Jolibert et al., 2011). This marks a shift from a more anthropogenic human need-based approach towards a global and exosystemic one. Jolibert et al. (2011, p. 267) argue that achieving sustainability depends on adapting 'policy and science to the needs of living beings', but also on adopting 'convergent satisfiers' to meet our own needs without compromising the ability to meet the needs of others.

## 5 The fundamental human needs and its satisfaction in ecovillages

In this section we are going to present the fundamental human needs and its satisfaction in ecovillages. Firstly, we start with the ideal or vision of an ecovillage and how it meets the human basic needs; secondly, we summarize the limitations of realizing the visions and the resulting problems regarding the need satisfaction; and lastly, we translate the need satisfaction into the different type of ecovillages. The Table 4 summarize the findings.

Table 4: Summary of findings

No.	Need	Short description	Satisfaction of needs due to living in an ecovillage	Problems and limitations
1	Subsistence	food, water, shelter, physical/emotional/mental health	<ul style="list-style-type: none"> <li>- intent to be full-featured</li> <li>- providing food: through permaculture, organic production</li> <li>- providing houses: different designs</li> <li>- ecological living: way of live to provide for everyone</li> <li>- being able to provide for one-self, not being dependant</li> </ul>	<ul style="list-style-type: none"> <li>- food bought from outside</li> <li>- embedded in capitalist economy</li> <li>- have to pay morgage/rent</li> <li>- have jobs outside of the village</li> </ul>
2	Protection	safe place to live, social security, care, rights	<ul style="list-style-type: none"> <li>- safe for children</li> <li>- help for young families</li> <li>- caring for each other</li> <li>- joining reason due to health reasons</li> <li>- rules/norms/guidelines/mission statement to protect the community</li> <li>- recruitment process to protect mission</li> <li>- protecte nature</li> </ul>	<ul style="list-style-type: none"> <li>- constant public attention</li> <li>- visitors on site can feel intriguing</li> </ul>
3	Affection	friends, love (with human & nature), express emotions, privacy, intimate spaces of togetherness	<ul style="list-style-type: none"> <li>- community issue as the main joining reason</li> <li>- affection with human but also animals and plants</li> <li>- being able to express emotions</li> </ul>	<ul style="list-style-type: none"> <li>- dependance on system: interferes with vision to be non-hierarchical</li> <li>- being together vs. needing some time on their own</li> </ul>
4	Understanding	learning (about human und nature), meditating, understand who I am and where I belong	<ul style="list-style-type: none"> <li>- learning about alternatives</li> <li>- learning to live in a community (learning about interaction)</li> <li>- learning about ecology: permaculture way of live (+couses)</li> <li>- learn abouthow to provide for one-self, not being dependant</li> <li>- learning about one self and their connection with the world</li> <li>- meditating</li> <li>- attend different workshops</li> <li>- educate others about that knowledge</li> </ul>	<ul style="list-style-type: none"> <li>- not easy to unlearn old patterns</li> <li>- stuck on capitalistic bigger system</li> </ul>

5	Participation	being part of decisions that affect our life, (responsibilities: community work), rights	<ul style="list-style-type: none"> <li>- responsibilities in the community</li> <li>- community work to sustain the village or increase the feeling of community</li> <li>- decision-making process: consensus or majority</li> <li>- greater sense of ownership even when disagree with decision (more satisfied: opportunity voice concerns)</li> <li>- rules remain open to adjustment</li> <li>- commitment to vision resulted in genuine satisfaction in work</li> </ul>	<ul style="list-style-type: none"> <li>- varying degree of participation and commitment</li> <li>- having a job/responsibilities outside of the ecovillage limits the time/effort for participation in the ecovillage</li> </ul>
6	Idleness/ Leisure	free time, relaxing (community get-togethers: work parties), peace of mind, imagination), place to be alone	<ul style="list-style-type: none"> <li>- parties and events to connect in the community</li> <li>- peace of mind due to living in harmony</li> <li>- active conflict resolution</li> </ul>	<ul style="list-style-type: none"> <li>- being together vs. needing some time on their own</li> <li>- acting as an example: visitors can be limiting privacy</li> <li>- introverts forcing themselves to not isolate</li> <li>- constantly question sustainability of every action: danger of over-thinking</li> </ul>
7	Creation	cooking, designing, inventing, realising the vision, work	<ul style="list-style-type: none"> <li>- putting in practice the vision</li> <li>- community work (covers the need of subsistence): building the village, providing the village with food (gardening, farming, cooking, cleaning)</li> <li>- initiators of change</li> <li>- offer different workshops</li> </ul>	<ul style="list-style-type: none"> <li>- limitations due to system dependency (capitalism)</li> </ul>
8	Identity	sense of belonging, knowing oneself, identification (with community and vision: who am I and who are the other) - values, norms, habits	<ul style="list-style-type: none"> <li>- identifying oneself with the community and the world</li> <li>- differentiating with the rest / outside world</li> <li>- showing the identity due to living there and being an example</li> <li>- shared world view</li> <li>- sustainable practices as an identity</li> </ul>	<ul style="list-style-type: none"> <li>- trying to fit in and be part the group (can lead to the suppression of one's personal identity)</li> <li>- varying degree of participation and commitment</li> </ul>
9	Freedom	being able to choose how we live our life (disobey, rebel against dominant), equal rights	<ul style="list-style-type: none"> <li>- chose to live in an ecovillage</li> <li>- rebel/criticize the dominant culture/system</li> <li>- disobeying some laws to fulfil the vision</li> <li>- initiators of change</li> </ul>	<ul style="list-style-type: none"> <li>-disobeying within ecovillage (rules/norms)</li> <li>- freedom to chose limited due to living within an individualistic capitalist system</li> </ul>

## 5.1 Needs fulfilled by realizing the vision

In the following we will use the words mission and vision repeatedly. This refers to the underlying idea of how the residents envision the ideal form of their ecovillage. It includes the community's vision of the ecovillage, which is usually summarized in a mission statement, a rule book or in guidelines (Dregger & Joubert, 2015).

We shall now analyse the needs in detail, having in mind that needs form an interconnected system. It follows a deeper look into how each need is being satisfied.

### 5.1.1 Subsistence

The need of **subsistence** is about physical, emotional and mental health, which according to Max-Neef can be satisfied for instance through food, shelter and work.

Covering the need of **subsistence** is one of the core visions of an ecovillages. The goal is to be self-sufficient while providing food, shelter and work for the villagers:

*Ecovillages are intended to be full-featured — providing food, manufacturing, leisure, social opportunities, and commerce — the goal of which is the harmless integration of human activities into the environment in a way that supports healthy human development in physical, emotional, mental, and spiritual ways, and is able to continue into the indefinite future. (Van Schyndel Kasper, 2008, p.13)*

The reason to move to an ecovillage was to support the holistic vision. One villager stated that “sustainability means maintaining or improving environmental or communal health” which is being lived in an ecovillage (Ergas, 2010, p.40). However, exceptions can be seen as one ecovillager stated joining the ecovillage represented a financially viable option since housing prices were cheaper there (Van Schyndel Kasper, 2008). This suggests in that case the need of **subsistence** is one of the core reasons to move to an ecovillage.

It has been perceived by ecovillagers that this basic need of **subsistence** is not being fulfilled by living outside of an ecovillage. The design of human settlements has been criticized as being destructive in terms of resource usage while giving one the feeling of isolation (Kirby, 2003). In fact, this was one of the reasons for moving into an ecovillage since it presents an answer to isolation and resource destruction. Ecovillages are actively designed to be more than just the physical development of space, but also addressing personal and social aspects.

In terms of providing food, ecovillages aim to be self-sufficient. They produce their own organic food and often apply permaculture principles while doing so (Ergas, 2016; Rubin,

2019; Vicdan & Hong, 2016). Maintaining the village, such as the housing and doing farming tasks results in work for the villagers. This is further going to be explained in the section of **participation** and **creation**.

### 5.1.2 Protection

The need of **protection** can translate into a safe place to live, social security, as well as caring or being cared for. To satisfy that need of **protection** ecovillages establish guidelines, rules, and norms. These are documented, for example, in the form of a mission statement which can give guidance through certain rules. It protects the individual and community by covering their rights (Lockyer, 2017; Van Schyndel Kasper, 2008).

The vision of an ecovillage to be both an alternative and to influence society can lead public attention resulting in visitors or new members (Rubin, 2021). Therefore, a form of **protection** regarding visitors is having separate visitor programs allowing visitors only at certain times, for instance only during a few month in summer (Rubin, 2021). New members must face barriers of entry such as specific recruiting programs. Both initiatives suggest protecting personal spheres and the integrity of vision and mission (Rubin, 2021, p.443f).

The need for **protection** as a joining reason was mentioned by ecovillagers in search of a “safer environment, and a good atmosphere for children” (Van Schyndel Kasper, 2008, p.14). Villagers described ecovillages as such safe place where “retired feel useful and young families feel supported, while children benefit from the presence of adult role models and surrogate grandparents” (Kirby, 2003, p.330). Additionally, the caring part of **protection** was expressed by ecovillagers as a ‘longing for community’ and a desire to ‘find people to care about and who care about them’. A specific case of search for care was caused by a villager having a health condition (Van Schyndel Kasper, 2008, p.14). To care for each other and for nature brings us to the next need of **affection**.

### 5.1.3 Affection

**Affection** can be satisfied by the proximity to other people such as family, friends and social settings but also by a proximity to nature.



Ecovillages are seen as a platform of broader interaction on social settings. They are more than just the physical development of space - like it is covered in the **subsistence** section-, they additionally address personal and social aspects (Van Schyndel Kasper, 2008). It was stated that the design itself connects people with nature, each other, and themselves (Hong & Vicdan, 2016). There are various forms of social interaction, some formal and some informal, which for ecovillagers play an important role in an ecovillage community (Mulder et al., 2006; Van Schyndel Kasper, 2008). With formal interactions ecovillagers referred to the meeting culture and with informal connections they referred to the proximity to other villagers. Some introverts stated to have struggles with establishing a firm connection with other like-minded outside of the ecovillage. However, joining the ecovillage made them generate a sense of trust and reciprocity (Kirby, 2003).

The basic need for **affection** also includes closeness to and interaction with nature.

The vision of ecovillages to protect nature and to live in harmony with it offers a satisfaction of this need. Therefore, the principles of permaculture can be summarized as a need satisfaction for **affection** since it translates into a caring for earth, caring for people while setting limits to consumption and redistribute the surplus (Ergas, 2016):

*Permaculture is our relationship to water, sun, buildings, food, health and ourselves, in convergence with common sense, indigenous wisdom, and appropriate technology for greater food yields, for natural systems that are less work to maintain and that restore local environments. (Rubin, 2019, p.10)*

*The maintenance of open spaces is motivated by the desire to preserve habitat, reinstate native plant and animal species, detoxify land, create wildlife corridors, provide areas for food and energy production, protect the integrity of the ecosystem, and maintain the land's aesthetic value. (Van Schyndel Kasper, 2008, p.17)*

#### 5.1.4 *Understanding*

The above stated proximity to nature and humans suggests implying a setting of constant learning with and about such. The creation of an alternative system, which is the intention of an ecovillage, implies critical questioning and curiosity to discover new things. This suggests representing a satisfier for **understanding**.

A typical joining reason found in the literature was to learn about oneself and nature, as well as learning about being part of a community (Rubin, 2021). Thereby, old thinking patterns had to be redefined and new ideas had to be learned (Hong & Vicdan, 2016; Kirby, 2003). For instance, to be able to connect with other community members (also related with the needs of **affection**, **identity** and **protection**) ecovillagers had to try to redefine their sense of connection while challenge their own preconceptions and prejudices (Kirby, 2003). This represents a type of learning and understanding. It implements an **understanding** as how I see myself as part of the whole system. Some ecovillagers for instance know the watershed and bioregions they belong to (Van Schyndel Kasper, 2008). The understanding of who I am and where I belong to is going to further explored in the section of **identity**.

However, the need satisfaction through learning and teaching others is implemented in ecovillages by including classes, workshops, apprenticeships, internships, and conferences on various topics (Van Schyndel Kasper, 2008). These offers are being attended either from visitors or ecovillagers themselves. Thereby, ecovillagers' 'world view' and ideas are being disseminated through their educational mission (Rubin, 2019). The internal usage of teaching often serves to understand how the community works. They use formal workshops for the complex egalitarian governance structure or informal ones for private emotional circles (Rubin, 2021). The sessions together appear to enable mutual understanding and to gain a better understanding of oneself (Ergas, 2016).

#### 5.1.5 *Participation*

The need of **participation** can be covered when an individual feels like he is part of the decisions that affect his/her life. This can translate, for example, into participation in one's rights and responsibilities.

The analysis showed that ecovillages offer their members periodic opportunities to question existing norms and rules while such remain open to adjustment (Van Schyndel Kasper, 2008). This is being institutionalized by the decision-making process generally aiming for consensus. Thanks to this strategy, ecovillagers feel a sense of ownership. Even when they disagreed with the final decisions, they felt more satisfied with the outcome having had the opportunity to voice their concerns (Hong & Vicdan, 2016; Lockyer, 2017; Rubin, 2019; Van Schyndel Kasper, 2008).

Usually, the decisions that affect all ecovillagers involved a process of **participation**. Such example can be observed by an exemplary entry process of new members (Rubin, 2021) in which they must fill out a questionnaire with different topics. In a next step, the whole community needs to appraise it for the new member to join (Rubin, 2021). With this process, the community seeks to measure the commitment of a possible member. This is due to the reason that commitment plays an important role in how successful the integration of the individual will be. As community life brings a variety of responsibilities like community work through gardening or cooking for community dinners but also attending the community meetings for consensus decision-making (Ergas, 2016; Vicdan & Hong, 2016). Members who are committed to the ecovillage vision and participated actively in such appeared to ‘derive genuine satisfaction from these shared efforts’ (Van Schyndel Kasper, 2008, p.19).

#### *5.1.6 Idleness / Leisure*

The need **idleness**, sometimes called **leisure**, can be satisfied by parties and get-togethers, but also with relaxing and free time, or a place to be alone and have peace of mind. It has been stated by an ecovillager that moving there has freed up time since some things are naturally taken care of. It allowed her/him to put some of her/his lifestyle concerns like minimizing consumption and reducing fossil fuel usage in the background because they are accomplished as a matter of course by living in the ecovillage (Rubin, 2019, p.13).

As mentioned before living in a community comes with responsibilities such as work. To make these tasks more fun ecovillages organize work parties to work together (Ergas, 2016). These kinds of parties simultaneously satisfy the need of **leisure** but also the need for **subsistence**. Examples include feeding and building the village, such as removing

rocks from a field that was to become a berry field (Kirby, 2003, p.326), constructing a community playground (Van Schyndel Kasper, 2008, p.19) or a ‘cob-stamping party’ to mix the cob to use it as natural building material for a house (Rubin, 2021, p.454).

Some get-togethers are more focused on simultaneously satisfying the need for **affection** than the need for **subsistence**. The community comes together to strengthen its bonds like at formal arrangements such as communal meals like ‘Guys Baking Pies’ celebration or spontaneous acts of sharing (Kirby, 2003, p.330 & p.326). Other examples involving community fun are live music, movies, dancing, or skits (Van Schyndel Kasper, 2008).

The aspect of peace of mind has been mentioned to be achieved in ecovillages in two different ways: Living in harmony within the community due to active conflict resolution while living in harmony with the believes, in terms of self-fulfilment and self-actualization (Hong & Vicdan, 2016; Kirby, 2003; Van Schyndel Kasper, 2008).

#### 5.1.7 Creation

The need of **creation** can be satisfied by inventing, designing, and building something. An ecovillage as a project firstly needs to be invented and designed and secondly realized or build. This already presents a satisfaction of the need **creation**. Ecovillagers found to call it ‘self-fulfilment’ when they initially imagined ecovillages from individualistic motives, and the communities materialized as such (Hong & Vicdan, 2016, p.131).

One could say the root idea of realizing an ecovillage project results in the satisfaction of **creation** since they can be defined as “a purpose-driven existence, one that is oriented around the design of socio-cultural patterns aimed at sustainable balance between ecosystems and social systems” (Lockyer, 2017, p.539). Besides the initial design, also the maintenance of these ecovillages can be part of the satisfaction of **creation**. Examples have been mentioned above like farming or building. Similar to the parties and get togethers mentioned above, the need for **creation** can be a synergistic satisfier for the need of **subsistence** or present to be a way of artistic creativity:

*Ecovillages consist of community members working collaboratively to beautify the property or build useful and decorative additions. It is the main work site where artistic creativity and ecological design are combined with utility to create a variety of domestic ecotools. There are expansive vegetable and herb gardens on either*

*side of the driveway and fruit trees sprinkled throughout the village. (Ergas, 2010, p.38)*

A member stated her joining reason was that she feels like ecovillages present a platform of invention and **creation** which she couldn't find outside of it (Rubin, 2019, p.11). Another ecovillager confirmed that her satisfaction for the need of **creation** has been enhanced due to the increase of activism from locally to national networking (Rubin, 2019).

Additionally, activism can present a satisfier for **creation**. Activism, in turn, can be either more active or more passive. Active activism means trying to change institutional structures. By 'being a model', they work slowly with bureaucratic institutions to change laws and codes, car and consumer culture, and traditional neighbourhood layouts (Ergas, 2010, p.50). Passive activism is described as creating an alternative and thereby disseminating the idea of ecovillages. A more passively form of activism, ecovillagers mention to create sustainable solutions such as 'nonelectric, wooden fruit driers' that used 'solar heat and air, icosahedral huts, or sustainable sunflower wheels' (Ergas, 2010, p.39). Other examples are members who made their own clothes or raised chickens, geese, and rabbits for personal consumption and gleaned and canned their own fruit (Ergas, 2010).

#### *5.1.8 Identity*

The need for **identity** can be satisfied through a sense of belonging. This sense of belonging was found to be created through various ways. Firstly, community members identified with the mission or vision of an ecovillage. Secondly, some developed a sense of belonging after moving there and thirdly, the identity was institutionalized by rules, guidelines and norms.

The need for **identity** often presented a joining reason. Ecovillagers mentioned they didn't identify themselves with the average society but did so with the ecovillage community (Lockyer, 2017). Within the community they felt to cultivate corporative cultural values which translated into common behaviours. It was stated that villagers perceive shared goals as inhibiting or facilitating the realization of their goals (Ergas, 2010, p.36). Often personal goals would be interconnected with movement goals which ultimately would

construct a collective identity (Ergas, 2010). The collective identity has been seen as a fluid and relational interplay with individual identities and the aggregate of individuals (Rubin, 2021). This was directly connected with the need of **understanding** (the world and each other) and the need of **affection** which can be covered by sharing an identity.

The construction was explained as many individual viewpoints and worldviews converging to form a shared boundary for the collective identity of the group (Rubin, 2021). The core of an ecovillage of living in a sustainable way presents a satisfier of the need **identity** itself. Since sustainable practices were found to be primarily driven by identity (Vicdan & Hong, 2016). In this way self-fulfilment as stated in the previous needs can presents a satisfier of **identity** as well.

#### *5.1.9 Freedom*

The need of **freedom** can be satisfied when one is able to choose how to live their life. Also disobeying and rebelling are forms of satisfaction of the need of **freedom**. Joining an ecovillage and living there can therefore satisfy the need since the core is to show an alternative while critiquing the status-quo. There could have been no evidence found that someone is being forced to live there.

Freely choosing a different live than the dominant model was justified with ‘escaping the craziness of consumer society’ while seeking ‘a path of right livelihood’ (Van Schyndel Kasper, 2008, p.14). **Freedom** as an option to escape was mentioned more often. Examples range from the individual who wants to ‘escape from the present life and the fragmentation of modern life’ or communally ‘escape the capitalist system, increasing consumerism, and alienation’ (Hong & Vicdan, 2016, p.125f). Similar to that was the statement of a ‘collective desire to break with individualized, growth-based models of wealth accumulation’ (Lockyer, 2017, p.525).

This escape was not presented as a deterioration but an increase of the quality of life. It was perceived that the sustainability increased which was not possible in that amount outside the ecovillage (Hong & Vicdan, 2016). Other named reasons for this choice of disobey to the system are the dissatisfaction with the status quo and villagers felt “moved by the implications on social and environmental levels to seek change” (Kirby, 2003, p.325). Criticizing the dominant system or norms without being surrounded by like-

minded people can cause alienation and a lack of belonging (Ergas, 2016). The ecovillage community therefore presented at the same time a place of belonging (simultaneously a satisfier for need of **identity**).

Apparently, this need of wanting to disobey continued after deciding to join and lasted during the course of living in an ecovillage (Ergas, 2010). Examples were described where ecovillagers ‘kind of followed the rules but kind of did what they wanted’ (Rubin, 2021). They stated it would depend on the commitment to this particular rule like for instance using unaccepted forms of transport like a car whereas walking and biking are the only forms of transportation accepted (Rubin, 2019, p.15). Other examples would be going to the nearby grocery-store with a restaurant attached; this behaviour although when it is not strictly prohibited but it is seen as some form of disobedience (Rubin, 2021, p.453).

#### *5.1.10 Conclusion of needs fulfilment*

The core need of an ecovillage is the **subsistence** since the way ecovillages satisfy it affects the other needs. Through criticism of the dominant system the need of **freedom** is met. The proximity to people and nature provides an environment of constant learning with and about such, satisfying the needs for **affection** and **understanding**. Identifying and positioning oneself in the group and nature covers the need for **identity**. Official statements, such as guidelines, rules or norms, define the group’s belonging and its mission. This at the same time serves the need of **protection** since it helps to protect the group from outside logics. If the way of implementation is debatable and members can constantly contribute, this forms a pillar of the need of **participation**. Additionally, the need of **creation** solidifies with the implementation of the mission. Finally, living together in harmony with people and nature results in peace of mind, satisfying the need for **leisure** or **idleness**.

## **5.2 Limitations of fulfilling the vision and its resulting problems**

As mentioned above, the results indicate that all needs can theoretically be met. Our analysis indicates that the realization of the idea and vision of an ecovillage can thus bring a high quality of life despite the reduced use of resources. Nevertheless, limitations to the

implementation of this ideal version were found also in the revision, which translated into limitations of need satisfaction. The examples and explanations given below are merely the most relevant obstacles or limitations to the satisfaction of needs named in the literature. It must always be kept in mind that needs can be met in a wide variety of ways. Only if a need is only satisfied with one satisfier, the non-realisation of this becomes an actual problem.

### *5.2.1 Payments, income and transport*

The physical foundation of an ecovillage is the land it is built on. This represented a first issue since ecovillages usually must pay for it. The founder bought the land which results in them having to pay a mortgage. To be able to do so they often ask residents for rent (Ergas, 2010; Ergas, 2016; Van Schyndel Kasper). This issue is not just limiting the satisfaction of the need **subsistence**, but residents also felt it interferes with their vision of being non-hierarchical. Since a hierarchical order was perceived to ultimately translated into a lack of intimacy and hinders the satisfaction of **affection** (Ergas, 2010).

This kind of hierarchy was additionally affecting the decision-making process since the owner had the last say about financial matters (Ergas, 2010). Thus, it constituted an obstacle to the realisation of a consensus process which can be limiting for the need satisfaction of **participation**.

The need to earn money (for example to pay the rent mentioned above) interferes with the not-fulfilled vision of having plenty of work opportunities on site. The result is that many residents have jobs outside the ecovillage (Van Schyndel Kasper, 2008). It was stated that the fact of being regularly outside of the community limits their participation in the village. This additionally had a negative effect on the feeling of intimacy and the satisfaction for **affection** (Ergas, 2010).

Working offsite could even result into tensions within the community. Residents not only struggled to fulfil their duties as they were busy in their jobs outside the ecovillage but also struggled to attend the meetings where decisions were made (Vicdan & Hong, 2016). Participating in the decisions that affect your life is a way to satisfy the need of **participation**. Thus, not attending these meetings hinders its satisfaction.



Having to work in the city was stated to result in another problem which presents a problem in realizing the vision of being sustainable. Ecovillagers stated to often must use a car since the city is too far to walk or bike and there is no public transport. “Transportation can be tricky. So much driving is in contradiction with our philosophy, we don't want to be part of the pollution problem.” (Van Schyndel Kasper, 2008, p.20). Not realizing the vision considering transportation results in hindering the needs of **creation** and **identity**.

### *5.2.2 Food as the basis of subsistence*

Another connection point of the villagers with the exterior was food. Even though they plant, farm and harvest their own food, it was often not enough for being self-sufficient (Rubin, 2019). They ‘must purchase some foods from grocery stores’ (Ergas, 2016, p.1207). Although their goal is to get most of their food locally, they continue to have much of it shipped from far away (Van Schyndel Kasper, 2008). Not being able to provide food can limit the satisfaction of **subsistence**. However, by getting food from outside, residents were able to cover that. Nevertheless, it hinders realizing the vision.

Ecovillagers described the reason for not being able to fulfil the need of **subsistence** does not originate internally in the community but blame external factors. They live in the ecovillage but simultaneously in a larger society. Thus, local laws, economy, and prevailing ideologies within the dominant society affect ecovillagers, and vice versa (Ergas, 2010). The need of **freedom** was satisfied by choosing not to be part of such system. Not being able to succeed independence from it, however, limits the satisfaction of the need of **freedom**. To increase the satisfaction of the need of **freedom**, ecovillagers stated to aim to limit that dependence on the wider society (Ergas, 2010).

### *5.2.3 Community as a problem*

The community itself and one’s connection with it can represent a problem for some needs to be satisfied. Since ecovillages strive to maximize the satisfaction of the need **participation** by reaching consensus, it can also result into an excess of discussion without getting to any results (Van Schyndel Kasper, 2008). This possibility of constant changing the guidelines and even the vision can negatively affect the need for **protection**. Living in a community additionally represents the dilemma of wanting to be part of it to

realize for example the satisfaction of the need of **affection** and **identity**. At the same time, one tries to limit the amount of being in community. It is the result of the simultaneous search for satisfaction of the need of **freedom** and **leisure** which is easier to be achieved when being alone (Rubin, 2010). This push-and-pull connection with the ecovillage community can additionally be translated into the connection with the rest of the world. As mentioned before, ecovillages often want to be an example for the world which includes letting the world observe the ecovillage (Rubin, 2021). It can translate into regular visitors physically being in the ecovillage which again can negatively affect the need satisfaction for **protection**, **freedom** and **idleness**.

#### *5.2.4 Conclusion to the limitation of fulfilling the vision*

Not realising the vision can primarily hinder the satisfaction of the need **creation** but also other needs as well. The none-fulfilment of the vision additionally can result into not being able to have a peace of mind. This suggests to negatively affect the need of **idleness**. At the same time when the vision of an ecovillage represents the only source of identity, not fulfilling such, simultaneously hinders the satisfaction **identity**. The key issue seems to be the need for **subsistence** and its insufficient fulfilment through the non-realisation of the ecovillage vision. Ecovillages regularly showed to not be able to satisfy such.

### **5.3 Connection of the need satisfaction with the different approaches of ecovillages**

Now the need satisfaction will be translated into the different types or approaches of ecovillages that we categorized above.

#### *5.3.1 Direction of implementation: top-down & bottom-up*

The direction of implementation was divided into top-down or bottom-up approaches. Since the analysis only covered bottom-up approaches, **no comparison could be made**.

#### *5.3.2 Embedded in capitalistic economy: handling finances and proprietorship*

Regarding finances and proprietorship, the issue mentioned was that a more hierarchical structure can negatively affect the need for **affection** and **participation**. Therefore, approaches for **less hierarchical structures**, such as common ownership or shared income, suggest being better suited for need **satisfaction**.

### *5.3.3 Connection with the region established through products and services*

The connection with the region was mentioned to be necessary to cover the need for **subsistence** but at the same time can limit the satisfaction of the need for **freedom**. This suggests there is no clear answer to how the needs can be better satisfied. One must look into detail for a specific situation presented and decide for a **balance between connection** with the region while **aiming to stay as independent** as possible for an optimal need satisfaction.

### *5.3.4 Connection with the nation and government*

The connection with the nation and government has been mentioned to be a limitation to fulfil the vision since some laws and rules might restrict ecovillages. However, living in an ecovillage presents a way of rebelling against the dominant system and therefore provides as a satisfier for **freedom**. At the same time, wanting to be an example results in constantly being an object of observation. This can negatively affect the need for **leisure, protection** and **freedom**. Thus, in this case, depending on the specific situation, it is necessary to see how a balance can be achieved. It looks as if one of the two satisfiers has to be restricted or reduced: either lower observation (thus more need satisfaction of **leisure, protection** and **freedom**) and also be less active an accessory and rebel (lower satisfaction of **freedom**); or high observation rate and be more of an example. It would have to be **weighed up** what **influences** in what quantity, which satisfier has more or less influence and whether there are other satisfiers for these needs.

### *5.3.5 Design of the decision-making process*

The decision-making process was mentioned to satisfy the need for **participation, affection** and **creation** when there is the opportunity for everyone to speak up and be included. This suggests that a decision-making process that **generally seeks consensus** or **fairly implements** all members in any other way, satisfies the needs better than hierarchical processes. However, when processes are changed towards less inclusive decision-making processes, also the need satisfaction for **participation, affection** and **creation** can be hindered.

### *5.3.6 Connecting with the past and reaching into the future*

No direct association has been found with the issue of reaching into the past and into the future. However, the process of designing the vision of an ecovillage and implementing it is very much connected with the decision-making process. The **more inclusive**, the better the needs for **participation** but also **affection** and **creation** are met.

### *5.3.7 Rise out of lack or out of abundance*

The **analysis did not cover** ecovillages that arose out of a lack, only such arising out of abundance. However, members mentioned this background on a personal level. Some mentioned to join the ecovillage out of a lack such as a financial lack (need for **subsistence**) or a lack of connection towards other humans or nature (need for **affection**). Both needs were better covered in the ecovillage than before joining. Nevertheless, it **does not depend on a different approach** of ecovillage.

### *5.3.8 Spirituality and inner work*

It has not been directly mentioned if the needs are better satisfied in ecovillages focusing on spirituality and inner work or without such focus. However, ecovillagers describe **the permaculture module** to translate into a way of living and some type of spirituality. Considering such, permaculture or spirituality can present a satisfier for the needs of **leisure, identification, understanding, creation**, but also **affection** if you practice it with others. This suggests, spirituality and inner work is **rather helpful** for the **need satisfaction** than hindering.

### *5.3.9 Inclusiveness of social groups*

Including all kinds of social groups helps them to satisfy their need of **participation** but also **creation** and **affection**. Also, introverts mentioned to better satisfy their need for **identity** since they feel more connected with the group. This suggests, a higher need satisfaction can be reached when **including all kinds of social groups and characteristics**.

## 6 Conclusions

This paper aimed to analyse the different approaches of an ecovillage model and to examine the satisfaction of basic human needs within such environment. For this purpose, we have conducted a qualitative study of a narrative literature review and a systematic literature review focusing on the literature from the USA while using Max-Neef's basic human needs framework.

We found that ecovillages present a **phenomenon** that is constantly developing. This translates into different definitions and different types of ecovillages. The **different definitions**, however, can be summarized to a common denominator: Ecovillages are intentional or traditional communities with a focus on ecology. That means that a group of people comes together with a common purpose, generally related to ecology. Nevertheless, we found that ecovillages among them are very different. To better understand the commonalities and differences, we have classified and described nine **different approaches**. We found that the founding reason of ecovillages can be differentiated into 1) **top-down** or **bottom-up** approaches but also be created through 2) **rising out of lack** or **abundance**. An ecovillage's mission or focus is either 3) **related to the past** or the **future**, has a 4) focus on **spirituality** and/or on 5) integrating specific **social groups**. The connection with the 6) **region** and 7) **governments** represents the degree of interconnection with the society outside of the ecovillage. Finally, the mission and connection with society can additionally influence the 8) **decision-making process** and the way an ecovillage handles 9) **finances** and **proprietorship**. The different approaches are not always clearly definable and are rather fluid. It does not have to be specifically one or the other, you often find a mix of several tendencies.

A key objective of this work was to question the **role and relevance** ecovillages have on the **climate crisis**. Living in an ecovillage means living in proximity to nature and humans which might result in more **awareness** towards the ecological problems. This awareness than can translate into the aim of improving the ecological impact. Simultaneously, living in community can create the **feeling of togetherness and a 'can-do-spirit'**. The ecovillage model, therefore, can present a role model for society and specifically governments and other policy makers by offering a **testing ground** for ideas aiming at fighting the climate crisis.

We found that ecovillages are constantly evolving and trying to organise themselves by creating **networks around the globe**. Together they can further disseminate the vision they have for fighting the climate change. This is due to the fact that the networks create a bigger body of shared knowledge which ecovillages can access and learn from.

When we have analysed the needs, we have seen that according to Max-Neef, there are nine fundamental needs that define our behaviour. However, different satisfiers can satisfy the same need and also affect other needs. The findings of our analysis suggests **that all 9 needs could, at least theoretically, be covered in an ecovillage** if the ideal or vision of ecovillages is fully implemented and put into practice. There are different ways or different satisfiers how a need can be met. However, when a satisfier fulfils many needs at the same time, it is called a **synergic satisfier**. An ecovillage model can therefore be a synergic satisfier because it satisfies many needs at the same time. As an ecovillage aims to provide shelter and food to its residents, the need of **subsistence** can therefore be covered. Living together and learning from each other satisfies the need for **affection** and **understanding**. This simultaneously presents a satisfier for **identity** and **protection** while offering the satisfaction for **freedom** by actively choosing to live in an ecovillage. As ecovillages are usually part of (re-)shaping the ecovillage, it presents a satisfier for **creation** and **participation**. Living together in harmony with people and nature results in peace of mind, satisfying the need for **leisure** or **idleness**.

Nevertheless, we found that in practice there are **limitations to realising such vision**. This, then can translate into **some needs not being satisfied**. The most evident affect is that not realizing the vision can hinder peace of mind and therefore negatively affect the need for **leisure** or **idleness**. Being **embedded in a capitalistic society** resulted in hierarchical orders and the need to cover costs such as rent and mortgage. This in turn made ecovillages **look for income outside of the village** making them be less active in the village. This can present a problem since it can negatively affect the need for **participation** and **creation**.

Additionally, no ecovillage was found that could fully cover the need for food, resulting in a lack of satisfaction of the need of **subsistence**. This in turn presented a reason to be more connected to the region and to have money to buy food and drink. Furthermore, the connection with governments and society was driven by the **mission to be an example**

which resulted in the fact that ecovillages are constantly observed and therefore were less able to satisfy the need for **freedom** and **leisure**. The number of different effects and interconnections showed how the non-fulfilment of the vision created a negative ripple effect. The complexity of such might possibly go even further than what we presented. However, the results give us a first overview of the topic and only serve as a stimulus for the research that we believe should follow this study.

Having translated the need satisfaction and constraints we found into a model that best covers basic human needs, we would like to make four recommendations.

First, we found that a **less hierarchical approach** could satisfy the needs the best. Generally seeking consensus or fairly implanting everyone is beneficial for the need satisfaction. Therefore, we recommend ecovillages to implement a structure that minimizes or eliminates hierarchies. This refers to both, the **decision-making process** but also the **handling of finances and proprietorship**.

Second, as ecovillages aim to be a role model, they must be in dialogue with **policy makers, governments or the region**. However, this may have a negative impact on need satisfaction. We recommend **weighting up** the amount of **influence** an ecovillage has on the government or the policy making process and how much it might negatively affect the ecovillage.

Third, regarding the connection with the region through products and services, the results suggest ecovillages should **aim at staying as independent as possible for optimal need satisfaction**.

Fourth, the focus of **spirituality** appeared to be rather **helpful** than limiting for the need satisfaction. We therefore recommend ecovillages to rather implement the topic of spirituality.

Overall, this work contributes to understand which approach of ecovillage model can cover the human basic needs the best. The results can help the network, as well as existing, and also possible new founders and members of ecovillages, to decide which approach to take for their ecovillage. The idea is that the better the basic human needs are met, the more successful an ecovillage might be. Since ecovillages also want to be seen as testing

grounds or role models, scientists and policy makers can learn from the results of this work and use them in their search for workable solutions to the climate crisis.

Nevertheless, the study presents some **limitations**. Firstly, one key objective of this paper was to compare the different approaches of ecovillages, however, neither could we compare the need satisfaction of the top-down or bottom-up approach, nor the approach of rising out of lack or rising out of abundance. Both types of approaches were not included in the written academical articles we used. Secondly, even if the methodology of a systematic literature review served the purpose of focusing on a specific region, it also represents a geographical limitation. The results then cannot be generalised to other regions. Additionally, it is important to keep in mind that the **authors understanding** of how a need can be covered and how they interrelate, affect the findings very much. The study can thus become subject of a subjective perspective. Therefore, **more research should be conducted** to analyse further interconnections. Specifically, further analyses from other authors should be carried out to cross-check the results and make sure that the results are truly objective. Thirdly, the analysed texts did not have much content about the needs and their satisfaction and sometimes it was difficult to draw conclusions. Moreover, we have seen that the **needs, satisfiers and problems are interconnected** and affect each other. The interconnections we presented were based on the statements mentioned in the literature we found. However, there could be much more needs, satisfiers and problems which are not mentioned.

Therefore, we recommend different topics for further research. In summary, it can be seen that this analysis is a first step into the topic of meeting needs in the context of ecovillages, but there are many more topics to be analysed in connection with it.

Firstly, further research could focus on 1) the **needs according to the four existential categories** (being, having, doing and interacting) but also 2) the different **types of satisfiers** (violating or destructive satisfiers, pseudo-satisfiers, inhibiting satisfiers, singular satisfiers, synergic satisfiers) classified by Max-Neef and analyse ecovillages based on these classifications.

Secondly, we recommend to further analyse how the fulfilment of the basic needs can be supported. Since we have seen that the problem of not being able to satisfy some basic



needs results from the non-fulfilment of the ecovillage's vision and thus from the non-fulfilment of the need for subsistence. The question therefore arises as to **how the satisfaction of specifically the basic need of subsistence can be supported** in ecovillages and **what external forces can contribute to this**. It stands to reason that, for example, governments or other interest groups could support ecovillages in this. The question, then, is how an ecovillage can **provide both shelter and food for its residents without relying on financial resources**. Is it possible that governments help ecovillages to finance the land they live? Is it an option to give them additional help in developing strategies to cover water and food needs? What would be the effects of such aid programs? We strongly suggest further research on that topic. Future research could confirm the results of this paper and be complemented by empirical work.

Thirdly, we noticed the results might have a **close connection with theories such as self-fulfilment** (Gewirth, 2009; Wineburg, 1987) **and self-realisation** (Berofsky, 1995; Dewey, 1893). Therefore, it might be interesting to connect the findings with self-fulfilment and self-realisation theories and analyse the connections.

Fourthly, it could be interesting to **interview ecovillagers** if they agree with the finding. The aim is to find out what **image** they have **of themselves**. Do they identify with some of the approaches we classified? Do they agree with the role we defined for ecovillages? Other interesting research questions might arise that would help us to deepen our understanding of ecovillages.

## **Bibliography**

- Alexander, S. (2022). *If everyone lived in an 'ecovillage', the Earth would still be in trouble*. The Conversation. Retrieved 11 February 2022, from <https://theconversation.com/if-everyone-lived-in-an-ecovillage-the-earth-would-still-be-in-trouble-43905>
- Almond, R. E., Grooten, M., & Peterson, T. (2020). *Living Planet Report 2020-Bending the curve of biodiversity loss*. World Wildlife Fund.
- Berofsky, B. (1995). Liberation from self: A theory of personal autonomy.
- Boonkaew, R., & Roongtawanreongsri, S. (2018). Ecovillage in Thailand. *Human Behavior, Development and Society*, 19, 50-63.
- Brombin, A. (2015). Faces of sustainability in Italian ecovillages: Food as 'contact zone'. *International Journal of Consumer Studies*, 39(5), 468-477.
- Casey, K., Lichrou, M., & O'Malley, L. (2020). Prefiguring sustainable living: An ecovillage story. *Journal of Marketing Management*, 36(17-18), 1658-1679. ISO 690
- Cohen, J., Pearlmutter, D., & Schwartz, M. (2010). Lifestyle and energy consumption: a comparison of four collective communities in transition. *Energy Efficiency*, 3(1), 19-31.
- Conscious Thought Revolution (CTR). (2019). *11 eco-villages across the world*. Youtube.com. Retrieved 10 March 2022, from <https://www.youtube.com/watch?v=lkoj48IIUnM>.
- Cruz, I., Stahel, A., & Max-Neef, M. (2009). Towards a systemic development approach: Building on the Human-Scale Development paradigm. *Ecological economics*, 68(7), 2021-2030.
- Davidson, B. (2018). *Sirius: Growth in Community through the Power of Spirit*. Sirius Community, Inc.
- Dewey, J. (1893). Self-realization as the moral ideal. *The Philosophical Review*, 2(6), 652-664.

- Dias, M. A., Loureiro, C. F. B., Chevitarese, L., & SOUZA, C. D. M. E. (2017). The meaning and relevance of ecovillages for the construction of sustainable societal alternatives. *Ambiente & Sociedade*, 20, 79-96.
- Dirksen, K. (2011). *Medieval Spanish ghost town becomes self-sufficient ecovillage*. Youtube.com. Retrieved 11 March 2022, from <https://www.youtube.com/watch?v=91pBFyLWix4&list=WL&index=27>.
- Dregger, L. & Joubert, K. (2015). *Ecovillage: 1001 ways to heal the planet*. Triarchy Press.
- Ergas, C. (2010). A model of sustainable living: Collective identity in an urban ecovillage. *Organization & environment*, 23(1), 32-54.
- Ergas, C., & Clement, M. T. (2016). Ecovillages, restitution, and the political-economic opportunity structure: An urban case study in mitigating the metabolic rift. *Critical Sociology*, 42(7-8), 1195-1211.
- Earth Overshoot Day. (2022). *Earth Overshoot Day 2021 Home - #MoveTheDate*. Earth Overshoot Day. Retrieved 15 March 2022, from <https://www.overshootday.org>.
- Fabrin, A. U. (2015). Exploring one approach to food sovereignty: A case study of a Kenyan community-based organization.
- Gaia. *GAIA TRUST WORKS FOR A SUSTAINABLE FUTURE*. Gaia.org. Retrieved 10 March 2022, from <https://gaia.org>.
- GEN. (2022a). *About GEN - The Global Ecovillage Network (GEN) bridges countries, cultures, and communities!*. Global Ecovillage Network. Retrieved 13 February 2022, from <https://ecovillage.org/about/about-gen/>.
- GEN. (2022b). *Ecovillage Education - GEN Ecovillage Trainings on Sustainability and Resiliency*. Global Ecovillage Network. Retrieved 20 March 2022, from <https://ecovillage.org/our-work/education/>.
- GEN. (2022c). *Our Work - GEN's Strategies & Activities to Increase Sustainability*. Global Ecovillage Network. Retrieved 14 March 2022, from <https://ecovillage.org/our-work/>.

- GEN. (2022d). *Region Pages Archive - Global Ecovillage Network*. Global Ecovillage Network. Retrieved 13 February 2022, from <https://ecovillage.org/regions/>.
- GEN. (2022e). *What is an Ecovillage - Discover Innovative Eco Communities*. Global Ecovillage Network. Retrieved 13 February 2022, from <https://ecovillage.org/projects/what-is-an-ecovillage/>.
- Gewirth, A. (2009). Self-fulfillment. In *Self-Fulfillment*. Princeton University Press.
- Harvey, D., & Harvey, F. D. (2000). *Spaces of hope* (Vol. 7). Univ of California Press.
- Harvey, D. (2001). A map of the world that does not include Utopia is not even worth glancing at. *Between Law and Culture: Relocating Legal Studies*, 95.
- Hong, S., & Vicdan, H. (2016). Re-imagining the utopian: Transformation of a sustainable lifestyle in ecovillages. *Journal of Business Research*, 69(1), 120-136.
- Igalla, M., Edelenbos, J., & van Meerkerk, I. (2020). What explains the performance of community-based initiatives? Testing the impact of leadership, social capital, organizational capacity, and government support. *Public Management Review*, 22(4), 602-632.
- IPCC. (2022). *IPCC Sixth Assessment Report*. Ipcc.ch. Retrieved 4 March 2022, from <https://www.ipcc.ch/report/ar6/wg2/>.
- Jackson, H. (1998, September). What is an Ecovillage. In *Gaia Trust Education Seminar* (Vol. 204). sn.
- Jackson, T. (2009). *Prosperity Without Growth. Economics for a Finite Planet*. London (Earthscan) 2009.
- Jahan, N., Naveed, S., Zeshan, M., & Tahir, M. A. (2016). How to conduct a systematic review: a narrative literature review. *Cureus*, 8(11).
- Jane, M. (2020). *ECOVILLAGE IN PROGRESS. An Intentional Community in New Hampshire*. Youtube.com. Retrieved 11 March 2022, from [https://www.youtube.com/watch?v=Vazei\\_iLOBE&list=WL&index=28](https://www.youtube.com/watch?v=Vazei_iLOBE&list=WL&index=28).
- Jolibert, C., Max-Neef, M., Rauschmayer, F., & Paavola, J. (2011). Should we care about the needs of non-humans? Needs assessment: A tool for environmental conflict

resolution and sustainable organization of living beings. *Environmental Policy and Governance*, 21(4), 259-269.

Kirby, A. (2003). Redefining social and environmental relations at the ecovillage at Ithaca: *A case study. Journal of Environmental psychology*, 23(3), 323-332.

Kozeny, G. (1995). Intentional communities: Lifestyles based on ideals. In Fellowship for Intentional Communities (Ed.), *Communities directory: A guide to cooperative living* (pp. 18-24). Rutledge, MO: Fellowship for Intentional Community.

Kunze, I., & Avelino, F. (2015). *Social innovation and the global ecovillage network* (Doctoral dissertation).

Litfin, K. (2013). *Ecovillages: Lessons for Sustainable Community* (1st ed.). Polity Press.

Lockyer, J. (2017). Community, commons, and degrowth at Dancing Rabbit Ecovillage. *Journal of Political Ecology*, 24(1), 519-542.

Nyika, M. (2014). *My Story, in Contribution to Our Story of Hope (Zimbabwe)*. Permaculture Research Institute. Retrieved 10 March 2022, from <https://www.permaculturenews.org/2014/01/10/story-contribution-story-hope-zimbabwe/>.

Max-Neef, M. A. (1991). *Human scale development - conception, application and further reflections*. New York and London: The Apex Press, 1991. ISBN 0-945257-35-X

Max-Neef, M. A. (2010). The world on a collision course and the need for a new economy. *Ambio*, 39(3), 200-210.

McGinty, K. (2022). *Smart solutions to decarbonize buildings*. Ted.com. Retrieved 10 March 2022, from [https://www.ted.com/talks/katie\\_mcginty\\_smart\\_solutions\\_to\\_decarbonize\\_buildings](https://www.ted.com/talks/katie_mcginty_smart_solutions_to_decarbonize_buildings).

McKenna, S. P., & Heaney, A. (2020). The contribution of need fulfilment to quality of life: A reflection on the relation between the needs-based model of quality of life and Max Neef's theory of Human Scale Development. *Archives of Psychology*, 4(2).

- Moher, D., Altman, D. G., Liberati, A., & Tetzlaff, J. (2011). PRISMA statement. *Epidemiology*, 22(1), 128.
- Mulder, K., Costanza, R., & Erickson, J. (2006). The contribution of built, human, social and natural capital to quality of life in intentional and unintentional communities. *Ecological economics*, 59(1), 13-23.
- NASA. (2022). *Is it too late to prevent climate change? – Climate Change: Vital Signs of the Planet*. Climate Change: Vital Signs of the Planet. Retrieved 21 February 2022, from <https://climate.nasa.gov/faq/16/is-it-too-late-to-prevent-climate-change/>
- Nelson, A. (2022). *In defence of ecovillages: the communities that can teach the world to live sustainably*. The Conversation. Retrieved 11 February 2022, from <https://theconversation.com/in-defence-of-ecovillages-the-communities-that-can-teach-the-world-to-live-sustainably-44967>.
- Nyika, M. W. (2001). Permaculture at school. *Spore*.
- Okoli, C., & Schabram, K. (2010). A guide to conducting a systematic literature review of information systems research.
- Olivier, T. (2015). The Senegalese Ecovillage Network: The Past, Present and Future.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., ... & Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *International Journal of Surgery*, 88, 105906.
- Pereiro, X. (2018). Primer Encuentro de Turismo Comunitario y Desarrollo Sostenible del Caribe, Portobelo (Panamá). *PASOS Revista de Turismo y Patrimonio Cultural*, 16(2), 523-527.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon and schuster.
- ReGen Villages. (2022). *RegenVillages. Technology integrated VillageOS™ software, for the future of living in resilient neighborhoods*. Regenvillages.com. Retrieved 13 March 2022, from <https://www.regenvillages.com/#>.

- Roongtawanreongsri, S., & Boonkaew, R. (2021). Adopting the ecovillage concept to shape a traditional bureaucratic village into a more sustainable community in Thailand. *Community Development*, 1-19.
- Rubin, Z. (2019). Ecovillagers' assessment of sustainability: Differing perceptions of technology as a differing account of modernism. *Sustainability*, 11(21), 6167.
- Rubin, Z. (2021). "We Do This at Dancing Rabbit": Recruitment and Collective Identity Processes in the Ecovillage. *Journal of Contemporary Ethnography*, 50(4), 443-465.
- Shahin, R. R., & Khater, H. A. (2020). Quality and quantity of soil organic matter as affected by the period of organic farming in Sekem farm, Egypt. *Eurasian Journal of Soil Science*, 9(3), 275-281.
- Sherry, J. (2019). The impact of community sustainability: A life cycle assessment of three ecovillages. *Journal of cleaner production*, 237, 117830.
- Smith, W. L. (2002). Intentional communities 1990-2000: A portrait. *Michigan Sociological Review*, 16, 107-131.
- Tasiguano Suquillo, A. L. (2011). *Transformaciones y desafíos del gobierno comunitario Kitu Kara, estudio de casos: Comuna Cocotog, Lumbisi y la Tola Chica* (Doctoral dissertation, Universidad de las Regiones Autónomas de la Costa Caribe Nicaraguense (URACCAN).).
- The Great Relation (TGR). (2020). *Gemeinschaften der Hoffnung - Die Ökodörfer Europas entdecken | FULL Documentary*. Youtube.com. Retrieved 10 March 2022, from <https://www.youtube.com/watch?v=b9hbPFAzF0Y>.
- Tysiachniouk, M., & Pchelkina, S. (1999). Social aspects of sustainability: Kitezh case study. *Interdisciplinary Environmental Review*, 1(2), 27-37.
- Ulug, C., Trell, E. M., & Hurlings, L. (2021). Ecovillage foodscapes: zooming in and out of sustainable food practices. *Agriculture and Human Values*, 38(4), 1041-1059.
- United Nations. (2018). *Proportion of population in cities worldwide up to 2050 | Statista*. Statista. Retrieved 15 March 2022, from

<https://www.statista.com/statistics/264651/proportion-of-population-in-cities-worldwide/>.

Van Schyndel Kasper, D. (2008). Redefining community in the ecovillage. *Human Ecology Review*, 12-24.

Vicdan, H., & Hong, S. (2018). Enrollment of space into the network of sustainability. *Marketing Theory*, 18(2), 169-187.

Vita, G., Hertwich, E. G., Stadler, K., & Wood, R. (2019). Connecting global emissions to fundamental human needs and their satisfaction. *Environmental Research Letters*, 14(1), 014002.

Wineburg, S. S. (1987). The self-fulfillment of the self-fulfilling prophecy. *Educational Researcher*, 16(9), 28-37.

Winiiecki, M. (2022). *Healing Biotopes Plan – a strategy for global peace*. [www.tamera.org](http://www.tamera.org). Retrieved 14 March 2022, from <https://www.tamera.org/healing-biotopes-plan/>.

Zandt, F. (2021). *Humanity's Uneven CO<sub>2</sub> Footprint* [Digital image]. Retrieved March 10, 2022, from <https://www.statista.com/chart/26416/average-co2-emissions-per-capita-in-selected-regions/>