

CASE STUDY

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A critical examination of a community-led ecovillage initiative: a case of Auroville, India

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Abstract

Human settlements across the world are attempting to address climate change, leading to changing paradigms, parameters, and indicators for defining the path to future sustainability. In this regard, the term ecovillage has been increasingly used as models for sustainable human settlements. While the term is new, the concept is an old one: human development in harmony with nature. However, materially realizing the concept of an ecovillage is not without challenges. These include challenges in scaling up and transferability, negative regional impacts and struggles of functioning within larger capitalistic and growth-oriented systems. This paper presents the case of Auroville, an early attempt to establish an ecovillage in Southern India. We draw primarily from the ethnographic living and working experience of the authors in Auroville as well as published academic literature and newspaper articles. We find that Auroville has proven to be a successful laboratory for providing bottom-up, low cost and context-specific ecological solutions to the challenges of sustainability. However, challenges of economic and social sustainability compound as the town attempts to scale up and grow.

Keywords: Ecovillage, Sustainability, Auroville, Global South, Bottom-up

Introduction

Scientists have repeatedly argued and emphasized for an equilibrium between human development and the basic ecological support systems of the planet (IPCC 2014; United Nations 1987). Human settlements have been important in this regard as places of concentrated human activity (Edward & Matthew E, 2010; Scott and Storper 2015). Settlement planning has responded to this call through visions of the eco-city as a proposal for building the city like a living system with a land use pattern supporting the healthy anatomy of the whole city and enhance its biodiversity, while resonating its functions with sustainability (Barton 2013; Register 1987; Roseland 1997). In planning practice, this means balancing between economic growth, social justice, and environmental well-being (Campbell 1996). However, the

concept of eco-cities remains top-down in its approach with city authorities taking a lead in involving the civil society and citizens to implement the city's environment plan (Joss 2010a, b).

Contrary to the idea of eco-cities, ecovillages are small-scale, bottom-up sites for experimentation around sustainable living. Ecovillages resonate the same core principles of an eco-city but combine the social, ecological, and spiritual aspects of human existence (Gilman 1991). Findhorn Ecovillage in Scotland is one of the oldest and most prominent ecovillages in the world and has collaborations with the United Nations and was named as a best practice community (Lockyer and Veteto 2013).

Another notable example is the Transitions Town movement that started in Totnes, United Kingdom but has now spread all over the world (Hopkins 2008; Smith 2011). The movement focuses upon supporting community-led responses to peak oil and climate change, building resilience and happiness. Additionally, it emphasizes rebuilding local agriculture and food production, localizing energy production along with rediscovering local

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building materials in the context of zero energy building (Hopkins 2008). Ecological districts within the urban fabric are also termed as ecovillages (Wolfram 2017).

Ecovillages are intentional communities characterized by alternative lifestyles, values, economics and governance systems (Joss 2010a, b; Ergas 2010). At the same time ecovillages are located within and interact with growth-oriented capitalistic systems (Price et al. 2020). This dichotomy presents a challenge for ecovillages as they put ideas of sustainability transformation into practice. We explore some of these contradictions through the case study of Auroville, an ecovillage located in southern India. A discussion on the gaps between the ideas of an ecovillage against their lived reality throws light upon the challenges that ecovillages face when they attempt to grow. We begin by elaborating the key characteristics of ecovillages in the “Characteristics of ecovillages” section. We then present our material and methods in the “Methodology” section. Furthermore, we use the key characteristics of an ecovillage as a framework for analysing and discussing Auroville in the “Auroville, an ecovillage in South India” and “Discussion” sections. We conclude with a reflection on the concept of ecovillages.

Characteristics of ecovillages

The concept of an ecovillage is broad and has multiple interpretations. Based on a reading of the existing literature on ecovillages, we summarize some of their key characteristics here:

- A) *Alternative lifestyles and values*: Ecovillage can be seen as intentional communities (Ergas 2010) and social movements which have a common stance against unsustainable modes of living and working (Kirby 2003; Snow et al. 2004). Ecovillages advocate for achieving an alternate lifestyle involving a considerable shift in power from globalized values to those internalized in local community autonomy. Therefore many ecovillages aspire to restructure power distribution and foster a spirit of collective and transparent decision-making (Boyer 2015; Cunningham and Wearing 2013). However, it is difficult to convince many people to believe in a common value system since the vision is to establish a world that is not only ecologically sustainable but also personally rewarding in terms of self-sacrifice for a good cause (Anderson 2015).
- B) *Governance*: ecovillages tend to rely on a community-based governance and there is an assumption that the local and regional communities respond more effectively to local environmental problems since these problems pertain to the local context and priorities (Van Bussel et al. 2020). In a community-
- based governance system, activities are organized and carried out through participatory democracy committed to consensual decision-making. However, participatory democracy has its own set of problems. Consensual decision-making is time-consuming, and the degree of participation tends to vary from time to time (Fischer 2017). Participatory processes have also been criticized on the grounds for slowing down the decision-making process and resulting in a weak final agreement which doesn't balance competing interests (Alterman et al. 1984).
- C) *Economic models in an ecovillages*: ecovillages have attempted to combine economic objectives along with the overall well-being of people and have experimented with budgetary solutions appealing to a wider society (Hall 2015). As grassroots initiatives, ecovillages have advocated and practised living in community economies (Roelvink and Gibson-Graham 2009) and have influenced twentieth century economic practices beyond their geographical boundaries (Boyer 2015). Due to the emphasis on sharing in ecovillages, they can be considered to accommodate diverse economies (Gibson-Graham 2008) where human needs are met through relational exchanges and non-monetary practices, highlighting strong social ties (Waerther 2014). In some ecovillages, living expenses are reduced by sharing costly assets and saving cost on building materials by bulk buying and growing food for community consumption and sale (Pickerill 2017). These economic models have their own merit but are perhaps insufficient for the long-term economic sustainability of ecovillages (Price et al. 2020). Eventually, ecovillages might have to rely on external sources to import goods and services which cannot be produced on-site. This contradicts the ecovillage principles of being a self-reliant economy, reduction of its carbon footprint and minimizing resource consumption, thus implying a dependence on the market economy of the region (Bauhardt 2014).
- D) *Self-sufficiency*: fulfilling the community's needs within the available resources is a cornerstone principle for many ecovillages (Gilman 1991). This is often achieved through organic farming, permaculture, renewable energy and co-housing. Such measures are an attempt to offset and mitigate unsustainable development and limit the ecovillage's ecological footprint (Litfin 2009). The initial small scale of the community often allows for this. However, as ecovillages grow in size and complexity, the interconnectedness and inter-dependence to the surrounding space become more apparent (Joss 2010a, b). Examples include drawing resources from central energy

and water systems (Xue 2014). Furthermore, ecovillages might turn out to be desirable places to live, with better quality of life, driving up land and property prices in the region as well as carbon emissions with additional visitors (Mössner and Miller 2015). Furthermore, in their role as catalysts of change in transforming society, ecovillages need to interact with their external surroundings and neighbouring communities, the municipalities, and the state and national level policies (Dawson and Lucas 2006; Kim 2016). This is particularly relevant in the Global South, where the ecovillage development has the potential to drive regional-scale sustainable development.

The characteristics of an ecovillage, however, do not exist in a geographical vacuum. Scholarly understanding of ecovillages as bottom-up efforts to drive sustainability transitions largely draw from the experiences of the Global North (Wagner 2012). Such ecovillage models often challenge the dominant capitalistic paradigm of post-industrial development, overconsumption and growth. Locating ecovillages in the Global South requires an expansion or re-evaluation of their larger socio-economic context as well as their socio-ecological impacts (Dias et al. 2017; Litfin 2009).

To build upon the opportunities and challenges of ecovillages, locating them within the context of the Global South, we present the case of Auroville, an ecovillage located in southern India.

Methodology

We use the initial theoretical framework of ecovillage characteristics as a starting point for developing the case study of Auroville. Here, we draw from academic literature published about Auroville during 1968–2021. We also draw inferences from self-published reports and documents by the Auroville Foundation. Although we cover multiple interconnected aspects of Auroville, the characteristics pertaining to an ecovillage remain the focus of our work. We review the literature sources deductively, drawing on aspects of values, governance, economics and self-reliance, established in the previous section.

We triangulate the secondary data sources against our ethnographic experience of having lived and worked in Auroville for extended periods of time (2010–2012 and 2013–2014, respectively). We have worked in Auroville as architects and urban planners. During this time, we participated in multiple meetings on Auroville's development as part of our work. We have discussed aspects of Auroville's sustainability with Aurovillians working on diverse aspects, from urban planning to regional

integration. Furthermore, living and working in Auroville brought us in conversation with several individuals from villages surrounding Auroville, employed in Auroville. For writing this case study, we have revisited our lived experience of Auroville through memory, research and work diaries maintained during this period, photographs as well as our previously published research articles (Venkitaraman 2017; Walsky and Joshi 2013). Given our expertise in architecture and planning, we have also presented the translation of the key characteristics of an ecovillage, namely, alternative values, governance and economic systems and self-reliance, in these domains.

We acknowledge certain limitations to our methodology. We rely largely on secondary data to expand upon the challenges and contradictions in an ecovillage. We have attempted to overcome this by drawing from our first-hand experience of having lived in Auroville. Although our lived experiences are almost a decade old, we have attempted to compliment it with recently published articles as well as newspaper reports.

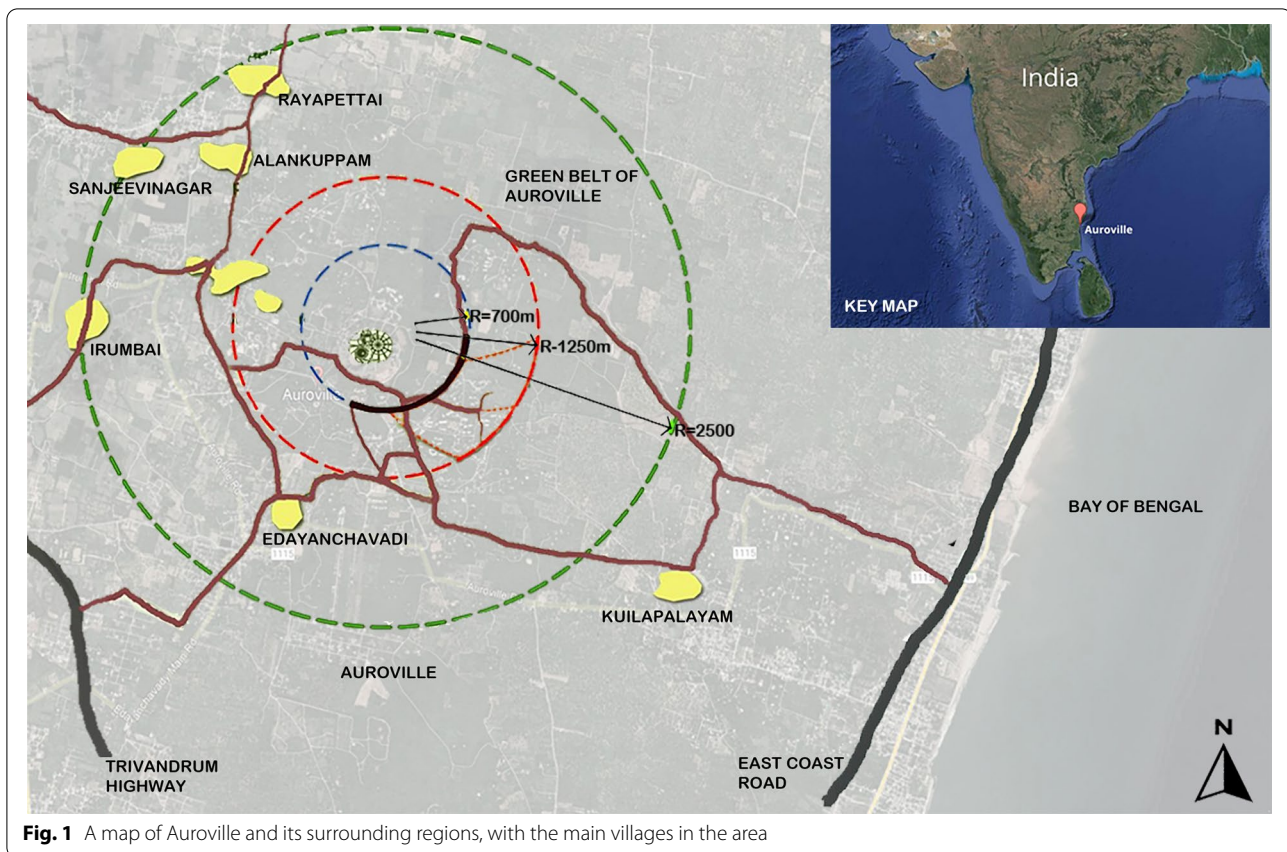
The next section presents Auroville as an ecovillage followed by a critical examination of its regional impact, governance, and economic structure.

Auroville, an ecovillage in South India

Foundational values

Sri Aurobindo was an Indian philosopher and spiritual leader who believed that “man is a transitional being” and developed the practice of integral yoga with the aim of evolving humans into divine beings (Sen 2018). His spiritual consort, Mirra Alfassa realized his ideas in material form through a “universal township” which would hopefully contribute to “progress of humanity towards its splendid future”. Auroville was founded in 1968 by Mirra Alfassa, as a township near Pondicherry, India. Alfassa envisioned Auroville to be a “site of material and spiritual research for a living embodiment of an actual human unity” (Alfassa 1968). On 28 February 1968, the city was inaugurated with the support of UNESCO and the participation of people from 125 countries who each brought a handful of earth from their homelands to an urn that stands at its centre as a symbolic representation of human unity, the aim of the project. This spiritual foundation has guided the development of the socio-economic structure of Auroville for individual and collective growth (Shinn 1984). To translate these spiritual ideas into a material form, Mirra Alfassa provided simple sketches, a Charter, and guiding principles towards human unity (Sarkar 2015).

Roger Anger, a French architect translated Alfassa's dream into the Auroville City Plan that continues to inform the physical development of Auroville (Kundoo 2009). The Auroville Masterplan 2025 envisions Auroville



to be a circular township (Fig. 1) spread over a 20 sq. km (Auroville Foundation 2001). Initially planned for a population of 50,000 people, today Auroville today has 3305 residents hailing from 60 countries (Auroville Foundation 2021). Since its early days, there has been a divide between the “organicists” and the “constructionists” of Auroville (Kapur 2021). The organicists have a bottom-up vision of low impact and environmentally friendly development whereas the constructionists have a top-down vision of sticking with the original masterplan and realize an urban, dense version of Auroville.

Auroville has served as a laboratory of low-cost and low-impact building construction, transportation, and city planning. Although the term sustainability has not been explicitly used in the Charter, it has been central to the city planning and building development process in Auroville (Walsky and Joshi 2013). Unlike many human settlements that negatively impact their ecology, the foundational project of Auroville was land restoration. The initial residents of Auroville were able to grow back parts of the Tropical Dry Evergreen Forest in and around Auroville using top-soil conservation and rain-water harvesting techniques (Blanchflower 2005). While the ecological restoration has been lauded both locally

and globally, Namakkal (2012) argues that it is seldom acknowledged that the land was bought from local villagers at low prices and local labour was used to plant the forest as well as build the initial city. At the time of writing this paper, the Auroville Foundation still needs to secure 17% of the land in the city area and nearly 50% of the land for the green belt to realize the original masterplan. However, land prices have gone up substantially as have conflicts in acquiring this land for Auroville (Namakkal 2012).

Governance structure

While the Charter of Auroville says that “Auroville belongs to humanity as a whole” (Alfassa 1968), in reality, it is governed by a well-defined set of individuals. Auroville’s first few years, between 1968 and 1973, were guided directly by Mirra Alfassa. After her passing, there was a power struggle between the Sri Aurobindo Society, claiming control over the project, and the community members striving for autonomy (Kapur 2021).

The Government of India founded the Auroville Foundation Act in 1988 providing in the public interest, the acquisition of all assets and undertakings relating to Auroville. These assets were ultimately vested in the

Auroville Foundation which was formed in January 1991 (Auroville. 2015). The Auroville Foundation envisioned a notion of a planned future, resulting in a new masterplan in 1994. This masterplan encouraged participatory planning and recognized that the architectural vision needs to proceed in a democratic manner. This prompted the Auroville community to adopt a more structured form of governance. The Auroville Foundation has other governing institutions under it, namely: The Governing Board which has overall responsibility for Auroville's development, The International Advisory Council, which advises the Governing Board on the management of the township and the Residents' Assembly who organize activities relating to Auroville and formulate the master plan. Furthermore, there are committees and working groups for different aspects of development from waste management to building development.

Auroville is an example of the 'bottom-up' approach, in the sense that developments are decided and implemented by the community and the state level and national level governments get involved later (Sarkar 2015). An example of this is seen in the regular meetings held by the Town Development Council of Auroville which also conducted a weeklong workshop in 2019 for the community which covered themes such as place-making, dimensions of water and strategies for liveable cities and community planning (Ministry of Human Resource Development Government of India 2021).

Conflicts often arise between the interpretation of the initial masterplan and the present day realities and aspiration of the residents (Walsky and Joshi 2013). This is often rooted in the initial vision of Auroville as a city of 50,000 versus its current reality of being an ecovillage of around 3000 people. Spatially, this unusual growth pattern has been problematic in Auroville's building and mobility planning (Venkitaraman 2017). At the time of writing this paper, there is a clash between the Residents' Assembly and the Auroville Foundation over the felling of trees for the construction of the Crown Road project inside Auroville (The Hindu 2021). While the Residents' Assembly wants a re-working of the original masterplan considering the ecological damage through tree cutting, the Auroville Foundation wants to move ahead with the original city vision.

Beyond its boundaries, Auroville is surrounded by numerous rural settlements, namely, Kuyilapalayam, Edayanchavadi, Alankuppam, Kottakarai, and Attankarai. The Auroville Village Action Group (AVAG) aims to help the village communities to strive towards sustainability and find plausible solutions to the problems of contemporary rural life. In September 1970, a charter was circulated among the sub-regional villages of Auroville, promising better

employment opportunities and higher living standards with improved health and sanitation facilities (Social Research Centre Auroville 2005). Currently, there are about 13 groups for the development of the Auroville sub-region. However, Jukka (2006) points out that the regional development vision of Auroville is top-down and does not sufficiently engage with the villagers and their aspirations.

Auroville's economic model

Auroville has also strived to move away from money as a foundation of society to a distinctive economic model exchange and sharing (Kapoor 2007). However, Auroville needs money to realize its multiple land and building projects. Auroville also receives various donations and grants. During 2018–2019, Auroville received around Rs. 2396 lakhs (around 4 million USD) under Foreign Contributions Regulation Act (FCRA) and other donations. The Central Government of India supports the Auroville Foundation with annual grants for Auroville's management and for the running costs of the Secretariat of the Foundation, collectively known as Grant-in-Aid. Auroville received a total of Rs. 1463 lakhs (around 2 million USD) as Grant-in-Aid during 2018–2019. The income generated by Auroville during this time was Rs. 687 lakhs (around 91,000 USD) (Ministry of Human Resource Development Government of India 2021).

Presently, the economy of Auroville is based on manufacturing units and services with agriculture being an important sector, and currently, there are about 100 small and medium manufacturing units. The service sector of Auroville comprises of construction and architectural services and research and training in various sectors (Auroville Foundation 2001). In addition to this, tourism is another important source of income generation for Auroville. As per the Annual Report of Auroville Foundation, the donations and income have not been consistent over the years. In this regard, Auroville's growth pattern in terms of the economy has not been linear and it does not mimic the usual growth patterns associated with the development of counterparts, in terms of capitalization, finance, governance, and on key issues such as distribution policies and ownership rights (Thomas and Thomas 2013).

Auroville also benefits from labour from the surrounding villages. The nature of employment provided in Auroville to villages remains largely in low-paying jobs (Namakkal 2012). It can be argued that the fruits of Auroville's development have not been equally shared with the surrounding villages and a feeling of 'us and them' still pervades. Striving for human unity is the



Fig. 2 Compressed earth blocks manufactured by Auroville Earth Institute



Fig. 3 A residence in Auroville constructed using compressed earth blocks

central tenet of Auroville (Shinn 1984), however, it has struggled to do so with its immediate neighbours.

Striving for self-sufficiency

Auroville has strived for self-sufficiency in terms of food production from local farms, energy production from renewable sources like solar and wind sources and waste management.

Many prominent buildings of Auroville have been designed keeping in mind the self-sufficiency principle in Auroville. For example, the Solar Kitchen was designed by architect Suhasini Ayer as a demonstration project to tap the solar energy potential of the region. At present, this building is used for cooking meals thrice a day for over 1000 people. The Solar Kitchen also supports the organic farming sector in Auroville by being the primary purchaser of the locally grown products (Ayer 1997). Another example is the Auroville Earth Institute,

renowned for its Compressed and Stabilized Earth Block (CSEB) technique, which constitute natural and locally found soil as one of its main ingredients (Figs. 2 and 3).

However, it is important to acknowledge that Auroville does not exist as a 100% self-sufficient bubble. For example, food produced in Auroville provides for only 15% of the consumption (Auroville Foundation 2004). An initial attempt to calculate the ecological footprint of Auroville estimates it to be 2.5 Ha, against the average footprint of an Indian of 0.8 Ha (Greenberg 1998). Furthermore, though Auroville has strived for material innovation in architecture, it has not been successful in achieving 25 sq. metres as the limit to individual living space (Walsky and Joshi 2013). This challenges the notion of Auroville continuing to be an ecovillage if it aspires to be a city of 50,000 people and might end up having substantial ecological impact on its surroundings.

Discussion

Urban sustainability transformation in a rapidly urbanizing world runs into the risk of focusing on technological fixes while overlooking the social and ecological impacts of growth. In this light, bottom-up initiatives like ecovillages serve as a laboratory for testing alternative and holistic models of development. Auroville, a 53-year-old ecovillage in southern India, has achieved this to a certain extent. Auroville is a showcase of land regeneration, biodiversity restoration, alternative building technologies as well as experimentations in alternative governance and economic models. In this paper, we have critically examined some achievements and challenges that Auroville has faced in realizing its initial vision of being a “city that the world needs” (Alfassa 1968). Lessons learnt from Auroville help deepen our understanding of ecovillages as sites of fostering alternative development practices. Here we discuss three aspects of this research:

- a) *Alternate lifestyles and values in the context of an ecovillage:* Ecovillages are niches providing space for realizing alternative values and lifestyles. However, ecovillages seldom exist in a vacuum. They are physically situated in existing societies and economies. Although residents in an ecovillage seek to achieve collective identity by creating an alternative society, an ecovillage is embedded within a larger culture and thus, the prevailing ideologies of the dominant society affect the ecovillage (Ergas 2010) as seen in Auroville. This can be noticed between the material and knowledge flows in and out of Auroville. Furthermore, the India of the 1970s when Auroville was born with socialist values is very different from present-day India where material and capitalistic aspirations are on the rise. These are reflected in higher

land prices and living costs in and around Auroville. Amidst the transforming political landscape of India in the 1970s, there were implications which were seen in the character of architectural production. Auroville welcomed and immersed itself into this era of experimentation. These developments form an integral part of the ethos of Auroville. To achieve its initial visions, Auroville depends on multiple external economic sources. In analysing ecovillages, it is important to critically examine the broader context within which they are located and how they influence and, in turn, are influenced by their contexts.

Even though Auroville's architects and urban planners remain committed to their belief that architecture is a primary tool of community-building, decades later, the developments seem to have progressed at a slow pace. The number of permanently settled residents in Auroville has barely reached 2000 currently and the overall urban design remains fragmentary. Despite witnessing a slower rate of progress, it has been able to sustain a culture of innovation and Auroville remains utopian in its aim to create an alternative lifestyle (Scriver and Srivastava 2016).

- b) *Governance, economy, and self-sufficiency in an ecovillage that wants to be an eco-city*: In growth-based societies, ecovillages present the possibility of providing an alternative vision of degrowth (Xue 2014). However, Auroville currently functions as an ecovillage that aspires to be an eco-city as per its initial masterplan. This growth-based model sometimes conflicts with Auroville's vision of being a self-reliant, non-monetary society. Given the urgent need to remain within our planetary limits, ecovillages like Auroville could re-evaluate their initial growth-based visions and explore alternatives for achieving sustainability and well-being. The visions of ecovillages should thus not be set in stone, but rather remain flexible to evolving ideas and practices (Ergas 2010). Similarly, governance structures might need a re-evaluation with changing priorities within the ecovillage as well as a need to be inclusive of regional visions and voices. It would be intriguing to explore on what kind of governance model/leadership is best suited to fulfil the aims of an ecovillage. Auroville seems to follow the elements of sustainability-oriented governance: empowerment, engagement, communication, openness and transparency (Bubna-Litic 2008), yet it is seen that conflicts arise. One solution to this could be greater external engagement with government and continuing to engage the external community about Auroville. Generally, intentional communities are organized by embracing the ideol-

ogy of consensus, but it remains to be seen whether the consensus decision-making model works to its full potential in the context of alternative lifestyles. When individuals seek alternative lifestyles in the current world, there is a shift from globalized values towards local community autonomy, this shift demands a need for processes that allow for a different and more equitable approach to governance (Cunningham and Wearing 2013).

- c) *Ecovillages in the Global South*: Situating ecovillages in the Global South requires a nuanced examination of the social, economic, and environmental aspects of sustainability that the ecovillage aims to achieve (Dias et al. 2017; Litfin 2009). In the case of Auroville, Auroville has helped bring back ecologically restorative practices in forestry, agriculture, and architecture in the region. However, the average Aurovillian has a higher standard of living than the neighbouring villagers. This in-turn influences the material consumption practices within the community. The lessons in sustainable living, in ecovillages located in the Global South, need not be unidirectional (from the ecovillage to the surrounding society). Rather, the ecovillage also stands to lean from the existing models of low-impact living.

Ecovillages in the Global South such as Auroville face similar problems related to Governance as seen in some other ecovillages in the developed world such as The Aldinga Arts Village in South Australia (Bubna-Litic 2008) and in Sweden (Bardici 2014). However, despite the issues related to consensus in Governance, the ecovillages are noted for their sustainable innovations.

Auroville's sustainable measures have been endorsed by the Government of India as well. The Auroville Master Plan for 2000–2025 has been dedicated to creating an environmentally sustainable urban settlement which integrates the neighbourhood rural areas. The surrounding Green Belt, intended to be a fertile zone is presently being used for applied research in various sectors such as water management, food production, and soil conservation. The results promise a replicable model which could be used in urban and rural areas alike (Kapoor 2007).

To address the expansion and re-evaluation of the larger socio-economic context of Auroville and its socio-ecological impacts, as enunciated by Dias et al. (2017) and Kutting and Lipschutz (2009), a proposal for a sustainable regional plan was prepared in 2012 jointly by Government of India, ADEME (French Environment and Energy Management Agency), INTACH (Indian National Trust for Art and Cultural Heritage) and PondyCAN (An NGO which works to preserve

and enhance the natural, social, cultural and spiritual environment of Pondicherry). The report was prepared and aimed to be a way forward for unique and diverse communities to grow together as a single entity and to develop a holistic model for future development in this region. This report takes into consideration the surrounding villages and districts around Auroville: Puducherry, Viluppuram and Cuddalore (ADEME, INTACH, PodyCAN,, and Government of India 2012).

Conclusion

The concept of eco-cities in urban planning is defined as utopias, hard to achieve standards of human settlements. Ecovillages emerge as small-scale realization of the ideas of an eco-city. Over the years, the alternative practices of Auroville have served as an educational platform for researchers, students, and the civil society alike. However, realizing alternative ecological lifestyles, governance and economic system and self-sufficiency struggle with challenges and contradictions as the ecovillage interact with a larger growth-oriented capitalistic system. Although ecovillages are sites of experimentation, they are seldom insular space. Regional impacts of and on ecovillage are important in analysing their developmental trajectories. Finally, the vision of ecovillages needs to evolve as the ecovillage as well as surroundings grow and change. Experiments in ecovillages like Auroville remind us that alternative visions of human settlements come with opportunities and challenges and are a work-in-progress in achieving a more sustainable future. There is further potential to understand the consensus-based approach and the governance models in an ecovillage in a better manner.

It can be deduced from the findings that ecovillages as catalysts of urban sustainability have a lot of potentials and challenges. The potential is in terms of devising an alternate lifestyle based on an alternative style of governance while the challenges include the local ecological impact and the difficulty in consensus about certain things. There is a future possibility to explore other conditions which facilitate the mainstream translation of ecovillage practices and how future ecovillages can progress to the next level (Kim 2016; Norbeck 1999).

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Code availability

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Availability of data and materials

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Declarations

Consent to participate

Consent to participate is not applicable to this article as no participants were involved.

Ethics approval and consent to participate

Ethics approval is not applicable to this article since the study is based on secondary data.

Competing interests

The authors have no competing interests to declare that are relevant to the content of this article.

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