

Scaling up sustainability – Concepts and Practices of the ecovillage approach

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Abstract

Since the Brundtland definition, practitioners and theoreticians have strived to deal with incoherencies in the concept of sustainability or sustainable development, partly because the concept is defined on a global level and applied through local level initiatives. Explanatorily, describing the three sustainability dimensions (social, economic and ecological), the pillar model of sustainability has become popular. However, several authors indicate that a comprehensive understanding, methods and tools on how the dimensions relate to each other in the pillar model of sustainability are absent. Further, sustainable interventions must express their relations through visible spatial terms and interpret them with help of values and beliefs that can be handed over to future generations (temporal aspect). Many interventions that are expressed in sustainability dimensions often lack these spatial and temporal considerations. As a result, interventions lack case and context specific concerns, objectives, priorities and possibilities, and often seem short term goal oriented. Within tensions between global and local, and spatial-temporal necessity, ecovillage is an emerging approach for shaping a sustainable future at grass root level and an opportunity to deal with the challenge of managing nature conservation in a community with culturally, socially and economically diverse actors. Hence, the overall objective of this article is to identify concepts and practices of eco-village as sustainable ways of living connected to a context. The attempt is to construe integrative understanding to sustainability and to express spatial and temporal aspects analytically. This understanding can be scaled up to strategies and policies. The article uses literature review of various secondary sources, journals, narratives, conference papers on sustainability and ecovillage. The article assumes that it is important to develop the framework analytically prior to empirical research. Findings indicate that to yield sustainable, inclusive and equitable outcomes, it is important to focus on the cultural and regional aspects. This focus can also provide a transition from local to national and global interventions and thereby become a mediator between different levels of sustainability, global and local.

Keywords: -culture, cultural sustainability, ecovillage, sustainability, region.

1. Introduction

The modern world is bound to continuous growth with limited resources, and human actions have led to irreversible impacts on the natural resources and the ecosystem. Besides endangering natural systems, free market and globalized economy changes often lead to breakdowns of traditional communities, especially hampering the relationship of people with their immediate ecosystem and natural resources. Sustainability or sustainable development is frequently seen as a concept to minimize the impact on the natural resources and ecosystem. The word sustainability means the capacity to support, maintain or endure (Kopnina & Shoreman-Ouimet, 2015, p. 3). Sustainability is firmly embedded in the language of development – locally, globally and every level between (Gibson, 2005). On the other hand, ‘Sustainable development is the development that’s meets the needs of the present without compromising the ability of future generations to meet their own needs’ (WCED, 1987, p. 41). Since Brundtland definition, they are synonymously used for environmental protection and development.

Even though sustainable development is firmly embedded in international policy and widely referred in the strategies and plans prepared by developed and developing countries, their implementation has proven difficult and continues to present major challenges for government, industry and the global community (Dalal-Clayton & Sadler, 2014b). This often ends up in lack of commitment to more sustainable practices from authorities because of their difficulties in decision making in backdrop of compromises, and concessions that are continually made in response to the pressures from advocacy groups, affected interests, and other political powers who define sustainability as per their preferences (Dalal-Clayton & Sadler, 2014b; Gibson, 2005; LeLe, 1991). In a myriad of such influenced rules and procedures to frame and steer public policy making, it is difficult to integrate sustainability considerations in various strategies and actions. Those rules and procedures provide criteria on how to evaluate and integrate sustainability considerations, but of little help because those criteria don’t consider context where strategies or actions are implemented. As a result, many sustainability initiatives lose ground of confidence on positive outcomes because of its alienation from context.

The task of facilitating sustainability is often surrogated to local level grass root organizations like ecovillage. In recent years, sustainability is the subject of much theoretical and empirical enquiry, mostly responding to emphasis on taking an integrated approach to implement sustainable development (Dalal-Clayton & Sadler, 2014b). However, new frameworks, criteria and analysing tools are developed to evaluate progress toward sustainability and to reform existing development process. They aim at measuring and assessing sustainability in terms of advocates’ goals or achievements rather than understanding it in contextual background. As a result, even if sustainability is acknowledged on the highest political level, the focus tends to be on resolving issues with short-term focus restraining sustainability in measurable targets.

As such, a holistic integrative approach to sustainability is needed that incorporates practical implication without losing the sight of theoretical knowledge on sustainable development. The new approach must

allow scaling up practical implications at local level into strategies and policies. This often asks for the place-based interpretations of sustainability that put forward practical solutions into development of theoretical underpinnings for strategy and policy development for a given context (spatial), in the long run (temporal). Hence, this paper attempts to theoretically develop a holistic view of sustainability in the context of ecovillage by identifying and exploring key aspects, approaches, vagueness and dynamics of relationships that can be scaled up to develop theoretical knowledge for a sustained period.

2. Setting the scene: Sustainability, and Ecovillage

Among many initiatives, eco-village is seen as an example for grass-root level sustainability (Waerther, 2014) that has practical implications. Earlier, eco-villages were neglected and considered as nothing more than just some kind of social experiments. But now, it is increasingly advancing in the reduction of human footprint as an example showing the alternative ways of organizing the practical life without exhausting nature (Chitewere, 2006; Karner, 2011). It is conceptualized around keeping the community together with socially harmonious, economically practical, and ecologically sustainable settlement to demonstrate that human beings can live cooperatively with each other and the natural resources. Ecovillage concept might include dimensions: environmental friendliness, economic alternatives, social networks and organizations that aim to achieve self-sufficiency to a greater or lesser extent (Ashlock, 2010) that point towards sustainability.

3. Methods applied

The article starts with the literature review of sustainability concept. The article attempts to analyse sustainable development from three pillar-model of sustainability. Extensive key word search was carried out on the internet, online sources and academic database with the term 'sustainability', 'sustainable development' and 'triple bottom line model of sustainability'. The search is open to scientific disciplines; planning, economic, development policy, environment and design. The search includes 1 PhD research, 11 books, 1 report and 8 scientific articles on sustainability and sustainable development. The analyses also make no difference between sustainability and sustainable development but limits to how the sustainability model has been interpreted and used in general in planning procedures, and the impact it has in terms of spatial and temporal aspects.

The second part of article continues with a literature review of ecovillage. Extensive key word search was carried out on the internet, online sources and in academic databases comprising the term, 'ecovillage'. The searches resulted various narratives and experiences of people who have lived there or have stayed temporarily in ecovillage. The searches are categorized into three groups. The first group is 'vision' that includes 4 online web pages, 2 conference papers, 2 visionary papers, and 32 scientific articles on visions of ecovillage. The second group consists of 11 scientific papers, 2 reports on 'practices' in ecovillage. The third group consists of 30 scientific papers and 2 online pages dedicated to 'research' carried out on ecovillage. The sources are reviewed focusing on the ecovillage concept and

its implications on sustainability. There are also 3 PhD research and 1 scientific paper that focus on the sustainability concept of ecovillage. Based on the information, the historical analysis is carried out on ecovillage concept in terms of theoretical development and implication development of ecovillage. Under the theoretical development, the role of culture (temporal aspect) is highlighted while under implication development, the need of regional aspect (spatial aspect) is highlighted analytically. The information, actions, practices, experiences, narratives and visions of ecovillage is categorized within three dimensions: community organization, resource management and knowledge sharing. These categories characterize and highlight the differences, and similarities, among various literature.

Based on the information gathered from previous searches, the third part includes the literature review on roles of culture. The key words are 'culture', 'role of culture in sustainable development' and 'cultural sustainability'. The article reviews 20 scientific papers on definitions and implications of cultural sustainability in sustainable development and 2 papers on debate on integrating culture in sustainability framework analytically. Based on the analytic review, the article, put the opinion of role of culture in overall ecovillage concept in developing community organization, resource management and knowledge sharing.

Following it, the fourth part includes literature review on regional aspect. The keywords for searches include 'region', 'regional development' 'rural regional development' and 'sustainable regional development'. Among many literature, the article reviews 19 scientific papers of regional development, and 2 papers of rural regional development, 4 papers of sustainable regional development analytically.

4. Literature Review

4.1 Three-pillar model of sustainability

Conceptually, sustainable development is viewed as an integrated approach represented through interconnectedness and interdependencies among various development sectors. Sustainable development is referred to a system of compatible relations among social, ecological and economic factors. Methodologically, it is represented in a system view approach of three circles representing ecology, society and economy (Dalal-Clayton & Sadler, 2014a) like the Venn diagram, that represents linkages and doorways to integration among three dimensions. The arrangement of circles is either intersected or segmented. Each circle represents activities in the identified sector based on aims, assumptions and core elements (Dalal-Clayton & Sadler, 2014a). The area where all circles intersect, or overlap indicates sustainability. This conceptual model is very popular in initiatives centred on development of sustainability indicators and reporting. This is mainly because most of data on sustainability related conditions and trends fit smoothly in the usual three pillar categories (Gibson, 2005). As a result, the model facilitates a common point of integration for various organisational preferences.

However, in spite of recognising interconnectedness and interdependent in the model, the effective integration has been difficult. Gibson (2005) points out two explanations: First is that the pillar model is based on conventional three pillars. As such, it is too easy to continue thinking within the old administrative, technological and academic areas and is less suited to encouraging innovation. Secondly, the model tends to focus on categorisation and emphasis on indicators and activities rather than integration. People are trained to be experts in each of the three dimensions and not across all of them. Hence, for an expert, it is always important to identify its constituent components and then separate in categories based on the set of criteria predefined. This leads to the development of strategies and projects separately in each dimension. This tendency obscures what is overlapping or shared among different categories which is problematic for sustainability, essentially about linkages, interconnectedness and interdependencies.

This often ends up with prescribed solutions, which are highly influenced by fundamental beliefs of certain groups (LeLe, 1991) often expressed in some measured sets of targets. Then, it misses out the concerns that are usually expressed by citizens who are intended as the beneficiaries of strategies and project level undertakings. As such, many of the strategies group loose grounds of confidence on feasibility and success of projects undertaken. Epistemologically, this model simply provides broad set of sustainability decision criteria directly from the literature about what sustainability means but methodologically, the model is rigid because there is no tool to interpret it in terms of implementable strategies at local level and show their interdependence. The three dimensions are broad and very abstract while implementing in practice. The approach focuses on the co-existence of the three bottom lines but does not show their interdependence. As a result, even though there is global acceptance on the interdependence, the working framework only provide the approach for co-existence and individual target orientation. Hence, there is incoherence in the concept on how sustainability is understood globally and how it is represented and implemented locally.

This demands a comprehensive understanding and tools for understanding sustainability based on context. Sustainability has a universal aspect, relevant to global scale issues but at the same time must be adaptive to local and regional ones as well irrespective of their place and time. The conceptual model has to facilitate in understanding it as a myriad of systems and subsystems of complex relations among social, ecological and economic factors characterised by conflicts, competes, diversity and variance of differences in a context. The approach has to enable people to connect with various strategies related to their livelihood strategies that promote conservation and optimal utilization of natural resources. In doing so, sustainability has to be understood as an open ended process that help to establish an understanding of the local particulars and what pursuit of sustainability means and entails there (Gibson, 2005). This enables and facilitates the local people to be connected to their livelihood strategies and also facilitate social and economic activities.

In the next section, the article discusses on theoretical and implementation perspective of ecovillage concept as a local level initiative in order to understand the sustainability concept in ecovillage context, at local level and how sustainability can be interpreted in terms of contextual categories.

4.2 Ecovillage

4.2.1 Defining ecovillage - theoretical perspective

According to Pathiraja (2007) the concept of ecovillage has emerged as a model for sustainable human culture as living experimental laboratories about sustainable development. The concept ecovillage was first introduced in 1991 by Diane and Robert Gilman, and then defined as *'a human scale, full-featured settlement, in which human activities are harmlessly integrated in to the natural world, in a way that is supportive of healthy human development and can be successfully continued into the indefinite future'* (H. Jackson, 1998, p. 2). The idea of indefinite future is also a part of the 'sustainable development concept' as defined by Brundtland commission in 1987. While the term sustainable development has a strong bond to social and economic wellbeing, it also underlines the importance of the nature conservation as an important factor for the wellbeing socially and economically. In coherence with sustainability, ecovillage which is developed as the intentional community¹ is designed to promote cooperative social lifestyle with higher degree of social interaction (Pathiraja, 2007) and low impact to nature (Pathiraja, 2007; Sevier, Henderson, & Naidu, 2008). The ecovillage concept utilizes environmental protection as the way to live a greener life away from the contemporary society² dominated by individualistic and consumer-based living (Sevier et al., 2008).

Early definitions of ecovillage are highly inspired by the eastern philosophy of connecting to nature and society and by western rational thoughts on environment protection. In a way, these concepts reflect way of living based on this spiritual knowledge of communal lifestyle in the natural setup through shared various activities, artistic expression, cultural activities, rituals, celebrations, and sense of community (H. Jackson, 1998). Ecovillage inhabitants come from socio-economic backgrounds of well-educated, middle class individuals and families (Andreas, 2013; Bundale, 2004). In ecovillage practices, there are many people leaving because of dilemmas between trying to improve communities and maintain personal space, or because of the contradiction of being a model of sustainable living but owning and using more resource than necessary (Chitewere, 2006).

By the turn of 21st century, ecovillage is defined as *'private citizens' initiatives in which the communitarian impulse is of central importance, that are seeking to win back some measure of control over community resources, that have strong shared values (...) and that act as centres of research, demonstration and (in most cases) training'* (Dawson, 2009, p. 1). The emphasis is on developing

¹ *'A residential or land based intentional community is a group of people who has chosen to live with or near enough to each other to carry out their shared lifestyle or common purpose together'*(Christian, 2003, p. xvi)

² Many articles have defined traditional society as the society engulfed by globalization and consumerism. However, in general, traditional society refers to indigenous society, which in fact has been continuing for centuries and practicing way of living based on the shared use and conservation of natural resources.

ecovillage as not only the intentional community to live in but use it as training centre for people to learn about sustainable way of living- a greener lifestyle. Defining ecovillage in this way have broaden the spectrum of ecovillage from a community to a social and ecological invention centres (Dawson, 2006). Hence, ecovillage focuses on transferring sustainable practices knowledge not only with generations but also to future generations. This is one of the important characteristics of sustainable development, intergenerational equity in terms of use of resources.

Walker (2005) claims that the 21st century is also about rediscovering what indigenous people have always known: interconnection with people and nature, and each action affects the whole. The introduction of communities from the global south has instigated the need to incorporate the local culture, traditions and indigenous technology as well as promoting self-sufficiency, environmental regeneration and community spirit (Olivier, p. 21). The ecovillage is no longer only an intentional community but a traditional community, which thrives for self-sufficiency, supportive social network and low impact. The Global South efforts focus on 'scaling up' using appropriate sustainable technologies and working with existing underutilized indigenous knowledge to meet basic needs (Olivier). The definition of ecovillages is accordingly *'intentional or traditional communities, consciously designed through participatory process to regenerate their social and natural environments. The social, ecological, economic, and cultural aspects are integrated into a holistic sustainable development model that is adapted to local contexts. Ecovillages are rural or urban settlements with vibrant social structures, vastly diverse, yet united in their actions towards low impact, high quality lifestyles.'* (Joubert, 2016, p. 10)

In later cases, ecovillage also sees culture as values and life style of natural resource based civilization (Olivier), living in a close knit with communities interacting intimately with natural world where each action affects the whole system (Walker, 2005). The cultural appreciation makes the ecovillage approach more contextual that often acknowledge diversity. The inclusion of the cultural dimensions to address diversity is a step to scale up ecovillage from a concept or model to an approach recognizing the importance of context. Culture covers the aesthetic approach of traditional and indigenous traditions as arts, music, popular culture, performing arts, customs and heritages which need to be safeguarded for the future generations. For a settlement, its heritage (both tangible and intangible) is its resource and identity. To be successful and sustained, ecovillage must not be only insular, exclusive or sheltered but must interact with and integrate wholeheartedly with the surrounding culture. From the theoretical perspective, one can say that with widening of the cultural aspect and incorporating diversity, ecovillage has attempted to ground up in the real setting where ordinary people live in linkage with broader settings rather than in an isolated and empty landscape for which it is often criticized a lot. This also opens to the need to understand ecovillage from regional aspect. Rather than an isolated community, an ecovillage tends to be a part of overall region defined by their social interactions, use of their natural resources, and economic trade-offs. Looking from the sustainability framework, they are the dimensions of sustainable development that are dynamic in nature but often hold together not only in the community

level but in a broader regional level. Hence, analytically, the addition of cultural aspects means to continue the sustainable traditions in a long run and regional aspects means to broaden up practical implications as strategies for broader levels.

The recent definition is '*an ecovillage is an intentional, traditional or urban community that is consciously designed through locally owned, participatory processes in all 5 dimensions of sustainability (social, culture, ecology, economy and whole systems design) to regenerate their social and natural environments*' (GEN, 2018). First noticeable addition of ecovillage is spatially to add urban communities as well. This aspect of the definition added whole system design, which sees ecovillage as a system and is paired with collaboration and participation to emphasise the transparency at every level.

4.2.2 Historical Development of Ecovillage: implementation perspective

From the implementation aspect, ecovillages have carried out various activities during evolution. The predecessor of the ecovillage goes back to diverse lineages self-reliance and spiritual enquiry in world's religious communities and ashrams or Buddhist monasteries, Gandhian principles of self-reliance, decentralization and spiritual enquiry (Dawson, 2009; Litfin, 2012a, 2012b), and like the *Back to land movement* in 60s and 70s (Mare, 2000). In 1960s and 70s, as a part of the Back-to-Land-Movement, many young American left their homes in the suburbs and cities and moved, often sight unseen, to farmhouses and remote mountaintops with the goal of building their own shelter, growing their own food and living closer to nature (Daloz, 2016). The idea was to develop the intentional communities based on consensus building and collective thinking and vision. The idea was to go back to the nature away from the contemporary society of globalization³ and consumerism⁴ making it secular and disconnected from conventional societies. However, many of those Utopian communities and homesteading were unsuccessful. There were many reasons for its failures: hard life of agriculture, poor infrastructure, poor healthcare, unanimous consent nature of decisions, and exclusion of strong economic base (Mare, 2000). They were far from the contextual reality.

After the establishment of Gaia Trust in 1987 funded by Hildur and Ross Jackson until 1991, there was continuous evolution on the visions of intentional communities that includes topics of ecology and environmentalism, ecofeminism, renewable energy resources, integration of traditional cultures and sustainability (Mare, 2000). When Robert Gilman first introduced the term ecovillage in 1991, it was a comprehensive term that included all the utopian visions, ideas and concepts (Mare, 2000). The year 1993 marked establishment of Global Ecovillage Network (GEN) with the vision of developing a network of sustainable communities and sustainable living (H. Jackson, 1998). Since 1993 to 1995, the

³Globalization – Globalization is a process in which the people and countries of the world are being brought closer and closer together, economically, and culturally, through trade, information technology, travel, cultural exchanges, mass media and mass entertainment.

(http://www.unesco.org/education/tlsf/mods/theme_c/mod18.html?panel=3#top).

⁴ Consumerism – According to Merriam Webster, consumerism is the theory that an increasing consumption of goods is economically desirable (<https://www.merriam-webster.com/dictionary/consumerism>).

focus was to implement the ecovillage concept by 'actually doing it' (R. Jackson, 2004). GEN was supporting and promoting various Non-Government Organisations (NGOs) that develop various eco-friendly technologies and solutions to reduce the ecological footprint. The strategies were green way of living, knowledge sharing and utilization of human resource.

After 1996, the focus was mostly on building networks across the globe. These networks were used to patent the term, ecovillage and develop common parameters for every ecovillage in the network. The objective was to judge how far it has achieved compared to the 'ideal targets', mainly about the ecological footprint and democratic decision making. At the dawn of 21st century, the network develops the concepts of using ecovillage as the learning and living centres, and demonstration sites of sustainable living in community. Many ecovillages started as the projects funded by Gaia Trust or other organizations or personal initiatives. Many ecovillages either close or fall into debts if the people moving in don't have enough funds to start. Hence, the education is also seen as the real potential for income for economically struggling communities (Mare, 2000) in the form co-ops and saving enterprises (Dawson, 2006). In 2005, a common educational network and curriculum was launched in the hope of sharing knowledge and experience about living in healthy, democratic and ecological community. Now, the ecovillage network is continuously growing and incorporating the traditional communities as well which do have aspiration to sustainable way of living having minimum negative impact to the ecosystem. The final definition focuses on developing the scope to urban areas as well and encourage while system view approach to integrate all four aspects of sustainability through participation and collaboration.

The development of the ecovillage has gone through the years of reiteration and evolution as per its needs and focuses. The ecovillage as a term has started as a utopian concept (often considered as the rebellious, *hippies*, and communists and social dissatisfaction) on community building. It has developed later into demonstration sites and learning centres by *doing it as ecovillagers* (R. Jackson, 2004). The 21st century has seen it developed as a source of knowledge to sustainable living. The mutual learning and sharing on 'an alternative way of living' has put ecovillage as an approach for various national and international projects and identifies it as a process to sustainability. In summary, it has started as a utopian vision of community building (before 1991) - being realized as grass root and decentralized experiment sites through various solutions and technologies (1991-late 90s) - and integrate into sustainability mainstream through knowledge sharing in collaborations (2000s-).

The analysis of the historical development of ecovillage shows that concept and practice have mostly concentrated on developing solutions and practices for community organization, solutions for management of natural resources, and knowledge generation and sharing. These activities are not directly intended as sustainability practices but point to live in communal way with nature. The coordination of these activities leads to sustainable living. The base of ecovillage is based on developing a community organization, based on balancing the relationship between human and nature through

inclusions in various activities, decision making process and ownership. In doing so, ecovillage is also minimizing the consumption of resources by developing eco-friendly technologies, materials and use pattern. Finally, ecovillage is attempting to share those knowledge and practices on building community based on balancing nature and human. These categories are interpretation of sustainability that are workable and understandable at different contexts at local level.

4.3 Findings

The previous section concludes with the need to focus on three aspects (community organisation, resource management, and knowledge generation and sharing) in the ecovillage concept to develop it as an approach or process on developing sustainable initiatives. In doing so, it reveals the issues on notion of region and culture in ecovillage.

4.3.1 Ecovillage and Region

Many definitions of ecovillage lead to its isolated characteristics as ‘world within the world’. However, it is important to recognize that on their own, individual ecovillages are too small to escape the perverse gravitational pull of the global economy. There are many cases of failures where the ecovillages of homesteading have faded out because of financial resources deficiency (Mare, 2000). There is no middle ground between integrating to the global economy or cutting all or most of the links with it. In today’s globalized economy, it is important for ecovillages to identify themselves as belonging and serving something larger than an isolated group , aiming to create alliances, interact and integrate with the surrounding forming greater bioregions (Andreas, 2013; Dawson, 2006)and be relevant to people of surrounding regions as well (Andreas, 2013). Practically, it needs to share, harvest and harness various resources. This requires the interaction between various contexts to form a coalition within a greater region. In fact, the diversity which results in the creation of alliances has emphasised the importance of variance for a related unity, because no two settlements can be identical and sustained. Now, the question remains on how an ecovillage could become a part of broader surrounding region.

4.3.2 Ecovillage and Culture

When the concept of ecovillage was first introduced, culture had a symbolic dimension as the circulatory system of the four elements: earth, water, fire and air in human and in nature on all levels with Ecology, Infrastructure, Social structure and Culture/Spirituality respectively (H. Jackson, 1998). Overall, the sustainability concept is considered as culture of the anti-globalization (R. Jackson, 2004). Here, sustainable culture means to have new values, knowledge, beliefs, and most importantly ideologies that underpin the cultivation of mind and spirit encompassing environment centred actions and practices. In short, the ecovillage is conceived as the appropriate scaled community to bring forth the new or transforming culture, where all the actions and practices are eco-centric. Appreciating culture provides the tool to connect those sustainable practices. It provides a meaningful interpretation for the people using it in that setting and making the room of iterations. Any sustainable projects should be relevant to the communities concerned. Hence it is important for an ecovillage approach to incorporate culture.

5. Results and Discussion

Any initiatives and practices should transcend across space (region) and time (inter generation). From the theoretical perspective, it is understandable that ecovillage concept as an approach to sustainable development should incorporate bioregion and culture aspects to transcend across space and time. The section also opens up further topics on making the practices more human-nature centric in developing those initiatives into strategies and policies. The challenge here is to develop the ecovillage approach as the sustainable strategies embedded in human lifestyle. In order to do so, the following section urges the need to incorporate culture and bioregion aspect in ecovillage approach to be scaled up from local level actions to strategies. Practically, the article assumes that the best way that incorporates these aspects is through the already existing working categories; community organisation, resource management, and knowledge sharing. The following section attempts to see how these categories can be scaled up to bioregion context and how the culture can be incorporated in those categories for continuity and innovation.

5.1 Integrating ecovillage to broader region - a spatial aspect

From the planning perspective, scaling up ecovillage approach from local initiatives or actions to connect with regions shall help to achieve the sustainable development, connecting local development to global goals. According to Horlings, Battaglini, and Dessein (2016), regions can be either the space as the result of outcomes of social relations or geographically bounded administrative areas. In either case it has to do with regional identities. By regional identities, it means the distinctiveness of places for which they are known. Conceptually, this means to connect diverse people with different interests and aims by finding the means to involve them in local development with common aims. Methodologically, the overall region can be understood as a system where individuals relate, value and connect their actions and practices to sustainable development by achieving social equity inter/intra generation in terms of use, management and stewardship of resources.

It is important to understand that nature influences the practices of use and consumption of resources in regions. Hence, connecting ecovillage to the region as a planning process can be viewed as developing a concept where different subsystems of resource management, community organization and knowledge transfer interact in a balance manner to bring intra/intergenerational equity, a main point of sustainable development. Methodologically, this means to viewing the region (in which ecovillage is part) as a system where subsystems of resource management, community organisation and knowledge sharing interact. From the implementation perspective, this also means to interpret resource management to cover region, organisation of different communities and sharing knowledge across different communities spatially, in terms of interconnectedness, relationship, and linkages.

Connecting ecovillage to the regional aspect will give sustainability in its spatial interpretation. Here, the region represents the context of alliances of different areas based on diverse practices, interactions and dynamics through interconnectedness and linkages. Conceptually, it has to do with the relationship

between environment and culture which gives identities to the space (Horlings et al., 2016). The regional identities are expressed as the process that are performed, limited, symbolized and institutionalized through practices, discourses and power relations that are not inevitably bound to a specific scale, but may be networked in both time (intergenerational transfer) and space. As such, this article urges that it is important to understand how practices and dynamics take place in the selected region. The ecovillage approach can provide the regional identity in term of sustainable practices in community organisation, resource management and knowledge sharing. As such the role of culture comes into forth to provide regional identities to a region.

5.2 Integrating culture in ecovillage approach - a temporal aspect

Making community relevant projects means to recognise the diversity of values, perceptions and attitudes. Ultimately, this needs participation in order to perform development activities aimed at sustaining the cultures of diaspora, indigenous, and minority groups and achieve social acceptance (Bekerman & Kopelowitz, 2008). Community organization wise, culture emphasises the values and beliefs of communal way of living. Also, apart from having a communal lifestyle, many societies already have values and beliefs that have actually shaped their lifestyle based on their use of natural resources for the survival (Abbas, Nafisi, & Nafisi, 2016; Bidder, Kibat, & Fatt, 2016). As such, culture can play an instrumental role to achieve environmental sustainability through people's knowledge on resource conservation and management by developing the community organization based on conservation initiatives. Such community organisation seeks for the balance between human/community and nature through democratic way of decision making process in stewardship, management and conservation of surrounding ecological resource. This is often termed as eco-cultural resilience (Soini & Birkeland, 2014). Hence, the technology and process that we innovate, if in accordance with the people's values and way of living, can add on to their existing knowledge and even shared with future generations. In cases, the culture can also act as the resource for economic growth and local and regional development such as in the form of tourism (Bidder et al., 2016; Fatimah, 2015).

From the conceptual perspective, culture should be used as the mediating instrument, to connect to sustainable development by balancing the community organization, personal development and ecological concern. Here, culture holds all other dimensions of sustainability together and provides interpretation to interdependencies in terms of community organisation, resource management and knowledge sharing. The peaceful coexistence, interdependencies of dynamic relations is described as sustainable. The knowledge on human-nature relationship and sustainability can be expressed through notion of cultural capital (Throsby, 1995) in tangible spatial forms: (artworks, building sites and objects and endowed in some way with cultural significance) and intangible form (like music, literature, food) that are received from former generations and passed on to succeeding ones (temporal consideration - inter-generational equity) which can further be broadened to regional identities.

7 Conclusion

The recent trends suggest that ecovillage and other initiatives like eco-tourism, and has encouraged community, personal and regional development along with ecological concerns. It is important for sustainable development to know how the actions and practices are to be carried out in the given contexts rather than what goals are achieved in terms of individual dimensions. The challenge is to hold together the dynamics of relationship between three dimensions. As from the ecovillage approach, those dimensions are hold together and interpreted in terms of workable three interdependent categories: Community organization, resource management and knowledge sharing. However, the ecovillage literature also reveals the need to explore the culture and regional aspect in ecovillage approach that will also contribute in sustainability debate on global vs local.

The ecovillage approach, as a sustainable initiative, calls for an integration or synthesis of spatially different knowledge for more community-based management or place-based development that includes individual to form the greater region. In that context, culture further hand over sustainable practices that are mediated through narratives, rules and procedures to future generations (temporal aspect). The knowledge on sustainability is expressed holistically in spatial terms through the cultural components where the sustainability knowledge is expressed as narratives, values, and beliefs. In this interpretation, sustainable living and development are embodied in cultural and moral values and practices of societies (past and present) (Tiwari, 2007). This opens the need to consider regional aspect where these values, beliefs and narratives are expressed as relationships in space (spatial consideration). The regional aspect can function as a tool of mediation between local initiatives and national, respectively global policy making and initiatives. Prior scholarship has widely ignored the strategic role of regional contribution as mediator between local and global interests. Regions can e.g. act as knowledge brokers and facilitators between local and national/global stakeholders. However, the nexus between regional, local and national/ global issues has to be explored more detailed, methodologically as well as strategically. This requires from the local stakeholders' initiatives to formulate claims and suggestions that correspond with regional and national policies and decision-making emphasising the roles of culture. National stakeholders such as academic institution is on the other side called-upon to contribute to a stakeholder inclusion process.

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