

A SYSTEMIC APPROACH TO SUSTAINABILITY - THE INTERCONNECTION OF ITS DIMENSIONS IN ECOVILLAGE PRACTICES

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Introduction

The idea of sustainability has been functioning as a kind of umbrella for the discussion of contemporary socioecological problems. Even so, it is extremely difficult to transform the extant discussions into coherent practices. That is largely due to the fact that, to a considerable extent, the very notion of sustainability has been appropriated by capitalism (DIAS et al., 2017), a system inherently unsustainable insofar as it depends on continuous economic growth to ensure its profit levels.

The inconsistency of the capitalist vision of sustainability is readily apparent in the compartmentalized and unequal way in which it addresses sustainability's various dimensions. In the currently dominant model, sustainability is represented as having economic, social and ecological dimensions which, in theory, are of equal importance and should be approached and worked on in an integrated manner. Actually, however, even in the respective discourse the social dimension is largely ignored (SPANGENBERG; OMAN, 2006; COLANTONIO, 2007; LITTIG; GRIESSLER, 2005; WOODCRAFT, 2012) and ecological concerns, albeit constantly 'evoked', rarely lead to any significant action. What happens in practice is that the economic dimension prevails to the detriment of all the others (MCKENZIE, 2004; LITTIG; GRIESSLER, 2005; MAGEE; SCERRI; JAMES, 2012). It is also worth noting that political and cultural aspects, theoretically 'contained' in the social dimension are usually obfuscated leaving the sustainability debates even poorer.

Against that background, an investigation of actual practical experiences directed at achieving sustainability could provide some valuable insights. Ecovillages are communities that explicitly seek to achieve the sustainability of various aspects of life. The very definition of the term ecovillage according to the Global Ecovillage Network (GLEN) refers to four dimensions of sustainability, adding the 'cultural' dimension to the three mentioned above. This article sets out to make an analysis, based on certain theoretical elements and data obtained from a bibliographic review, as to how the ecovillages treat

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the various dimensions of sustainability in practice. To that end a search was made in the CAPES periodicals database to identify any articles (in English, Spanish or Portuguese) published prior to December 2017 that used the term ‘ecovillage’, ‘*ecovila*’ or ‘*ecoaldeia*’ either in the title or the abstract and to select from among them those with a social, non-technological focus, especially those containing empirical data. Some books were also used for additional support including material written by movement insiders. It must be stated that most of the available studies refer to ecovillages which are a form of intentional community – a group of persons choosing to live together for a common purpose (SARGISSON, 2004) – mostly located in the global north (Vide Dias et al., 2017 for further information).

Ecological aspects of ecovillage sustainability

The ecovillages’ concern for ecological aspects is immediately apparent in their spatial designs (KIRBY, 2003): their layout is usually planned with a view to preserving green spaces, maximizing energy efficiency and optimizing the use of space and materials in general (KASPER, 2008) and those ends are mainly achieved through *sharing* (LITFIN, 2014) land, buildings, resources, equipment, tools etc. and by maintaining low-level consumption patterns (MEIJERING; HUIGEN; VAN HOVEN, 2007). Houses are usually energy efficient (LOCKYER, 2010b) and built using low-impact construction techniques such as those of bioconstruction. Ecovillages also tend to reduce their use of polluting forms of transport (LITFIN, 2014) and minimize waste generation by recycling and treating residues (especially organic waste which is composted to form organic fertilizer). Practically all ecovillages produce some kind of goods locally, especially food and renewable energy (LITFIN, 2014). Food production generally uses agro-ecology, which implies: biodiversity maintenance (through poly-cultures, consortia of crops, use of native seed varieties, agro-forestry systems); economic forms of water use (drip irrigation); and techniques to preserve and enhance soil fertility (organic fertilizers, mulching) avoiding the use of chemical fertilizers and agricultural pesticides.

Based on those practices, ecovillages usually endeavor to become at least partly self-sufficient (LITFIN, 2014; LOCKYER, 2010a), eschewing the capitalist system of production and consumption which they consider to be unsustainable (VETETO; LOCKYER, 2008). Actually nowadays the ecovillages are interested not so much in supplying themselves as in constructing local networks of *interdependence* (LITFIN, 2014) that would make it feasible for them to gain greater control over what they consume. To exemplify, many ecovillages create and foster the implantation of models of community-supported agriculture (CSA) (KIRBY, 2003; LITFIN, 2014; CUNNINGHAM; WEARING, 2013; NEWMAN; NIXON, 2014; LOCKYER, 2010b).

One of the basic aspects of such practices is a tendency to re-localization which means fostering local and regional practices, reducing the distances between production and consumption and thereby diminishing the production chains’ ecological footprint³

3. William Rees coined the term ‘ecological footprint’ in 1992 and since then it has become one of the most widely used ecological sustainability indexes.

(LOCKYER, 2010b). That has specific implications for the geographic location of ecovillages: for urban ones it tends to be easier to reduce the use of motorized vehicles (LITFIN, 2014; KASPER, 2008) given the shorter distances and the existence of public transport networks. On the other hand, many ecovillages end up establishing themselves in rural areas for reasons such as lower costs, fewer legal obstacles, especially those associated to zoning and building regulations and impediments such as the prohibition of using natural materials, capturing water, treating water, using alternative forms of energy, installing composting toilets, etc. (KASPER, 2008; ERGAS, 2010, LITFIN, 2014; CHRISTIAN, 2003). Also, in the countryside there is more space available for the practices of growing food crops, treating waste and capturing alternative forms of energy.

Based on that set of practices, the ecovillages tend to present ways of life that are more ecologically sustainable than those of society at large. According to Liffin (2014) their average ecological footprints tend to be lower, ranging from 10 to 50% of the average for their respective countries and considered individually some are even lower than 10% as Boyer, 2016, observed. However, it should be noted that such indexes are always comparative ones so numbers considered to be quite low in central countries of the global system would be high in relation to peripheral countries. Accordingly it is important to go beyond mere indexes of ecological impacts and focus on the 'quality' of the alternative practices being developed by ecovillages and their ramifications in other aspects of life.

Economic aspects of sustainability in ecovillages

Obviously, ecovillages' selective local consumption and production practices also have economic functions insofar as they lead to: the optimization of resource use; lower costs; alternative labor relations and alternative forms of exchanging products and services. In that context, once more, sharing is the key aspect. Ecovillages in general adopt some form of economic communalism (LOCKYER, 2010a), albeit to varying extents. Many of them share ownership of the land and buildings but that is not always possible and some ecovillages have a structure based on landlord and tenant relations (LITFIN, 2014) and so they may eventually reproduce certain classist arrangements that are typical of capitalism. As we have discussed in detail in a previous paper (DIAS et. al., 2017), the question of ownership constitutes an important socioeconomic obstacle making social inclusion in ecovillages more difficult (although there are certain practices that seek to minimize the problem up to a point). In regard to limitations, Kunze (2012) has registered some of the measures that are proving to be effective for handling potential conflicts involving proprietorship in ecovillages such as: the land is owned by Non-Profit Foundation or Institution; individuals can withdraw from a community without suffering economic losses; and each community member is free to choose whether to maintain private ownership or incorporate their property to the community assets. There are even some ecovillages that maintain a more independent proprietorship structure, subdividing the land into plots. In that case, however, the slackening of community bonds leads to what is more like an 'eco-condominium' in which the individual plots are subject to ordinary sale and purchase rules of the market.

Given their tendency to strive for self-sufficiency, the re-localization of processes and the generation of income, ecovillages often develop internal economies that extrapolate the production of goods for their own consumption alone. Some of them even incubate cottage industries and other small business (LITFIN, 2014) dedicated to a variety of activities. Even so, many of their members needs to take outside jobs, for at least part of the year (KASPER, 2008, LITFIN, 2014) and many of them are mainstream jobs (MEIJERING; HUIGEN; VAN HOVEN, 2007). That could be seen as a problem as it channels productive energy to a system that the villages propose to subvert but on the other hand, it could be the expression of a healthy interaction with the exterior (LITFIN, 2014). Generally speaking, ecovillage members endeavor to work with activities that are in alignment with their own ideals (e.g. ecological agriculture, alternative education, renewable energy, ecological construction, Arts, ecotourism, communication and self-management techniques) in spite of their generating lower income levels, as illustrated by a study conducted by Ergas (2010). According to Litfin (2014), in affluent countries many ecovillages live quite comfortably with incomes considered to be below the poverty line but that does not mean there is a scenario of pauperization. Mulder, Costanza and Erickson (2006) observed that in spite of the lower income levels, the perception of quality of life in ecovillages is higher than that of a University city in which it is extremely high. That obviously has to do with the value attributed to certain goods/assets; Litfin (2014) suggests that in ecovillages there is a “sense of sufficiency rooted in meeting real human needs” and that generates a tendency to material simplicity.

As we have seen, whatever ecovillages cannot or do not wish to produce they usually acquire from local economic networks, often solidarity-orientated ones, that is, self-managed and based on cooperation and socioenvironmental respect. Brombin (2015) suggests that food production practices are particularly favorable for the formation of such networks, either among the residents-members-owners of the property or among a wider range of social actors. This occurs for example in the CSA models, in which the risks of production are shared with farmers and the bonds between producers and consumers are much stronger (LITFIN, 2014), sometimes to the extent that they constitute a veritable subsidizing relationship as Newman and Nixon (2014) observed. In the case of urban ecovillages it is quite common to create collective purchasing groups for food products. Other common alternative economic practices in ecovillages are the exchanges and the use of local/social currencies (LITFIN, 2014). Sometimes local, non-profit community banks are set up as Swilling and Annecke (2006) have reported.

Thus it could be argued that, insofar as they refuse to function on a purely market-orientated basis primarily seeking to reap profits, the economies of ecovillages distance themselves from the logic of the capitalist economy. López and Prada (2015) state that through practicing local production and responsible consumption ecovillages break off with the intermediation of globalized markets and consequently with mercantile fetishizing, and instead, generate commercial experiences that are not based exclusively on the monetization of exchanges, reconstituting the importance of use value over exchange value. On the other hand, those authors underscore the fact that the majority of ecovillages adopt practices and a language that continue to be capitalist as a means to making their

internal economies more dynamic. That seems to be related to the difficulty experienced in generating income on the basis of such alternative economies. Indeed, despite the fact that many alternative practices function very well, the economic factor is still identified as being a strong challenge ecovillages have to face (LITFIN, 2014). Christian (2003) points out that the cost of land and the lack of financing options constitute serious limitations and many communities fail, simply through a lack of proper financial planning. The economic relations inherent to sharing can also generate many conflicts insofar as it contests people's ingrained notions of individual property rights and Litfin (2014) reports that unaddressed financial tensions have led to the dissolution of many communities.

Despite those difficulties it is worth noting that ecovillages have been creating collective ways of relating to money that require that the common good should be take precedence over individual wishes (LOCKYER, 2010a). Mulder, Costanza and Erickson (2006) suggest that members of intentional sustainable communities tend to convert private goods into public ones, which is part of a vision of the common good that is of fundamental importance when thinking in terms of sustainability. According to Litfin (2014), ecovillages have been developing a "new economic culture", a kind of *reformulation* of the basic elements of an economy, namely: consumption, production, property, currency, and the fulfillment of needs. It must be observed, however, that none of the above takes place in isolation given that the economic transactions are merely tools for facilitating social exchanges.

Sociopolitical aspects of sustainability in ecovillages

Ecovillages tend to foster an intensification of social interactions facilitated by the existence of shared spaces (CHITEWERE, 2010; NEWMAN; NIXON, 2014; KIRBY, 2003; KASPER, 2008; LITFIN, 2014) and various forms of social encounters (KASPER, 2008; KIRBY, 2003) such as sharing meals (BROMBIN, 2015; KASPER, 2008) and collective labor applied to activities like food production (NEWMAN; NIXON, 2014; BROMBIN, 2015). Collective cultural practices are also common and help to maintain social cohesion (LITFIN, 2014). Mulder, Costanza and Erickson (2006) observed that the high quality of life ecovillage members refer to is strongly linked to the support stemming from communal living and that can sometimes even be expressed in the form of inter-generational integrations such as that which Kirby (2003) and Litfin (2014) reported in their study. In addition, Litfin observed that in many ecovillages there is a withdrawal from the nuclear family-centered model with the community itself becoming the primary social structure. On the other hand such intense social proximity can also be inconvenient. In a study Kirby (2003) conducted, members of an ecovillage stated that their expectation of a simpler life had not been fulfilled because the facilities of community life had been offset by complications associated to their social obligations. Farkas (2017) suggests that the ecovillage members' perceptions of the high demand on their time was because they had to carry out tasks typical of rural living while at the same time wishing to maintain the kind of urban-intellectual life that was their background and that was a complicated endeavor in view of the particularities of communal living. That scenario underscores the

need to strike a satisfactory balance between community sharing and privacy (LITFIN, 2014); between individual necessities and collective ones.

Given that context of intensely communal life it is natural that interpersonal conflicts should arise, often from inequality in the distribution of power (SARGISSON, 2004; CHRISTIAN, 2003) or in the degree of dedication to internal tasks (BRINT, 2001), but also from personal disagreements. According to Christian (2003), alongside financial and regulatory obstacles, internal conflicts are the main reason why many international communities fail to last, as Cunha (2010) observed in his paper. Thus, building sustainable communities inevitably involves addressing the question of *how to deal* with such conflicts. To that end, many ecovillages have been adopting or developing various communication and conflict resolution techniques (KASPER, 2008; LIFTIN, 2014). Liftin (2014) considers that the central issue here is communication. Listening and expressing oneself in a socially effective manner helps both to prevent and to settle conflicts but organizational aspects undoubtedly play an important role too. Sargisson (2004) considers that conflict prevention requires the formal instruments of administrative and processual justice systems which, according to Brint (2001), prevent the emergence of factionalism and de-personalizes the issues that arise (BRINT, 2001).

On the other hand, badly planned administrative forms and structures can also generate conflicts which Christian (2003) refers to as “structural conflicts”, that is, problems stemming from the failure to explain organizational questions (legal and financial aspects, decision-making processes) and such problems become a kind of time-bomb with great disruptive power. To avoid them the ecovillages usually develop a set of regulations and policies to address issues such as the physical development of the spaces, involving aspects such as building practices, dwellings design, land use, waste treatment as well as the more personal and social aspects of planning, such as the admission or withdrawal of members. Often such rules and policies are formally set out and explained in community documents usually elaborated by the founder-members but open to modification by extant members of the community in general (KASPER, 2008). Kasper also noted that member-participation in policy elaboration, albeit a costly and arduous process, effectively generates a greater sense of co-ownership and co-responsibility among the members.

Rules governing the admission of new members usually foresee a probationary period as a kind of ‘insurance’ to safeguard the communities (KUNZE, 2012). As Fois and Forino (2014) observed, generally speaking, the more long-established the community is, the longer the process of association; in recently formed communities or those still being formed, new members are more readily accepted. On the other hand the absence of a formal admission process can lead to problems in the medium or long term especially if market forces are the criterion for determining admission (LITFIN, 2014). There are other instruments that seek to ensure that commitment to a vision that embraces ecovillage values is maintained. They include restrictions on the resale of plots of land and the requirement that any new purchasers must be approved by the residents (SWILLING; ANNECKE, 2006). Many ecovillages in which the land belongs to an association forbid the resale of plots. However care should be taken to see that community rules and poli-

cies do not become excessively rigid. Kunze (2012) emphasizes the need for institutional structures to be flexible and responsive to the particular needs of individuals.

Another central element of community self-administration is the decision-making processes (CHRISTIAN, 2003) which in ecovillages are usually participative and involve an endeavor to achieve a consensus (KASPER, 2008). In this context consensus is a negotiation process in which all those involved have an opportunity to express themselves, whereupon an effort is made to adapt the various demands in such a way that all feel they have been considered (SARGISSON, 2004). That does not mean that everyone agrees with everything but that each one feels sufficiently satisfied not to veto the group decision (LITFIN, 2014). Clearly, equality is one of the main ideas subjacent to that process and it is often expressed in the way the chairs are arranged in a circle for community meetings (LITFIN, 2014; KASPER, 2008). However, the consensus method's proper (horizontal) functioning is crucially dependent on shared proprietorship of structures (KUNZE, 2012; CHRISTIAN, 2003). When the structure is of the landlord/tenant type, there is an obvious imbalance of power as Ergas (2010) has observed. Even when land ownership is shared, hierarchies are often established; they might favor longer-standing members, for example (MEIJERING; HUIGEN; VAN HOVEN, 2007; CHRISTIAN, 2003; ESTEVES, 2017), or those who are more active in the community (CHRISTIAN, 2003) or even be gender-based hierarchies (ERGAS, 2010). The formation of hierarchies can eventually lead to massive exoduses of members as Cunningham and Wearing (2013) have reported.

Sargisson (2004) and Christian (2003) observed that difficulties associated to power imbalance in consensus processes are quite common: more confident members or those more politically or socially articulated or more well-informed ones may end up dominating the discussions. It is important to note that such dominance is not necessarily deliberate (CHRISTIAN, 2003) and that individual involvement varies greatly among the members so that some may be content to let the more active group make the decisions (CUNNINGHAM; WEARING, 2013). Christian proposes that not only is power, in the form of skill in influencing others, not necessarily negative but if equitably stimulated may be of benefit to all. As an example, Forster and Wilhelmus (2005) observed that in a certain ecovillage some individuals played a key role as leaders without which the community would have dissolved in times of difficulty. The point is that in ecovillages in general the hierarchies are *functional* whereas the leaderships are *circular* (that is, not fixed). However that may be, to minimize dominance in consensus processes, many communities use strategies associated to the structure of their meetings such as limiting the time or number of times each person is allowed to speak, or using a cards system or the mediation of meetings by an impartial facilitator (SARGISSON, 2004).

In spite of its advantages in terms of social participation, consensus is not a suitable method for all situations (SARGISSON, 2004); one of its inherent limitations is that it only works well on a small scale and is impracticable for large groups (SANGUINETTI, 2012) which tend to develop less centralized forms of decision-making with fewer general meetings and more specialized sub-groups (LITFIN, 2014). According to Kunze (2012), consensus strategies differ according to the size of the community and the degree to which proprietorship is shared. Consensus can, for example, be combined with other methods

such as the majority vote or autonomous decisions of sub-groups. Sometimes even small groups cannot obtain a consensus within a reasonable amount of time, possibly due in part to inadequate use of the consensus tool, and they have to resort to the majority vote (ERGAS, 2010; CUNNINGHAM; WEARING, 2013). The consensus process is inherently costly in terms of time and that can be a problem, especially in the early stages of ecovillages when there are many urgent financial and construction issues that call for quick decisions (CUNNINGHAM; WEARING 2013; CHRISTIAN, 2003). Sargisson (2004) points out that consensus may also be unsuitable for certain communities because of cultural differences. Whenever consensus is inappropriate for any reason there are other participative ways to come to an agreement that use some elements of majority voting such as the super-majority voting method (CHRISTIAN, 2003). Some ecovillages have been trying complex systems like sociocracy, a decentralized kind of governance based on feedback loops within community sub-groups and among them (LITFIN, 2014).

Lastly, it must be observed that it is likely that consensus will be unfeasible in intense conflict situations (SARGISSON, 2004). It is no accident that self-administration, communication and conflict resolution techniques often need to be applied in combination as Kirby (2003) and Litfin (2014) have remarked. As a method, consensus has often proved to be a “rocky road” and the learning curve may be very steep before an equitable form of governance is developed (CUNNINGHAM; WEARING, 2013). When it is poorly applied the result may be what Christian calls a “pseudo-consensus”, one in which a decision is made but without any real critical analysis of alternative points of view. Another possibility is a problem quite the reverse of the one associated to democracy, a “tyranny of the minority” whereby proposals are almost always rejected (LITFIN, 2014). On the other hand, when consensus processes are well managed they can function as a “philosophy of inclusion” that tends to substantially reduce power unbalances (CHRISTIAN, 2003) making strong participation possible and ensuring that the visions of minorities, instead of being overwhelmed by the majority, are actually incorporated to proposals, improving them (LITFIN, 2014). Thus, despite the difficulties involved, consensus, on its own or in combination with other methods, is widely recognized as being an essential tool for the self-administration of ecovillages. Insofar as it fosters decisions that are genuinely participative, consensus legitimizes them and helps to further group bonding (SARGISSON, 2004).

Given all the above, there seems to be a close connection between a community’s propensity for developing participative self-administration and the quality of its social relations. After all, communal living requires strong disposition and many skills. Litfin (2014) reports that ecovillage members identify social relations as being the most challenging but at the same time the most rewarding aspect of community life.

Ideological-cultural aspects of sustainability in ecovillages

The currently dominant models of sustainability systematically neglect its cultural dimension, perhaps because of culture’s inherently intangible nature. However, it does constitute an important background serving as a base for all the other dimensions and

articulating them, because it embraces our values, beliefs, principles and visions of the world. One could say that culture ‘materializes’ itself in our practices – Litfin (2014) considers that socio-material and conscious transformations are inextricably interwoven. That does not mean that large-scale cultural transformation must necessarily occur *first* for concrete actions to be constructed *afterwards*; the relationship between the two is dialectical as extant practices can also forge and diffuse new cultures. Given that context, Kasper (2008) argues that the greatest challenges ecovillages have to face are, in the final analysis, cultural ones and they relate to the dominant world’s prevalent values and beliefs.

Nathan (2012) has suggested that the ecovillage movement is imbued with a strong ethos of critical reflection, questioning the contemporary occidental capitalist culture and especially its patterns of consumerism and individualism (ERGAS, 2010; KIRBY, 2003). The movement’s practice of sharing is clearly associated to such criticism and in Litfin’s (2014) opinion it can be seen as the underlying, basic principle of life in ecovillages. Their agricultural work, in turn, is directly linked to political ideals such as food autonomy (sovereignty), social justice, fostering an economy based on reciprocity, the right to well-being and to freely administer time dedicated to work all of which expresses a complex form of resistance to the dominant culture (BROMBIN, 2015).

In that scenario ecovillages have adopted the ideal of sustainability as their central value addressing it in all its dimensions. While concern with ecological sustainability is ubiquitous, other aspects considered to belong to the ‘social’ sphere can sometimes be even more important motivators for ecovillage members (KIRBY, 2003). Meijering, Huigen and Van Hoven (2007) have observed the existence of an eager quest for a sense of community and other empirical studies have registered the high value attributed to aspects such as cooperation, sharing, trust, reciprocity, social support/care, respect, equality, responsibility, more intimate social lifestyle, democracy and diversity (see, for example, Kirby, 2003; Chitewere, 2010; Meijering, 2012; Sargisson, 2004; Brombin, 2015; Veteto and Lockyer, 2008; Kasper, 2008). Note that the term ‘social’ embraces a series of political-economic issues.

Among the more pragmatic reasons for choosing to live in an ecovillage are: a safe healthy environment, accessible cost, a good atmosphere for children (KASPER, 2008) and the existence of a vigorous internal agriculture (KASPER, 2008). Other motives are of an ethical nature such as “seek a path of right livelihood” (KASPER, 2008) or for meaningful living experiences that offer personal growth and self-fulfillment (KIRBY, 2003). Kasper suggests that in ecovillages in general there is a kind of ‘compulsion’ to act according to the way one understands things, that is, a need for one’s actions to correspond to one’s ideals. Arguably, that is probably why some of them achieve multi-faceted, sometimes radical transformations in their lives. In the final analysis it seems to be a quest for coherence between discourse and practice (BOSSY, 2014) and that is illustrated by expressions commonly used in the language of ecovillagers themselves such as “be the change you seek” (ERGAS, 2010) and “walk the talk”. That posture has important psycho-social consequences, generating a consonance between identity and behavior (KIRBY, 2003) and it seems to be related to the ecovillagers’ quest for social outreach (KASPER, 2008). As reported in a previous article (DIAS et al., 2017), they

usually endeavor to influence society by demonstrating their own model of more sustainable ways of living (ERGAS, 2010; MEIJERING, 2012; BOYER, 2015; BOSSY, 2014; LITFIN, 2014; LOCKYER, 2010a, b).

Thus, in spite of a more explicit emphasis on ecological sustainability, many authors have been suggesting that it alone is insufficient to characterize the ecovillages. Kasper (2008) considers that the social aspect is actually the movement's most important driver while Kirby (2003), Chitewere (2010) and Wagner (2012) argue that what distinguishes ecovillages from other communities is precisely the way they combine ecological concerns with social ones; Kirby also emphasizes the importance of the spiritual factor and Meijering (2012) adds to that the political factor. Accordingly, it seems possible to suggest that a key element of ecovillages is precisely their integrated treatment of sustainability's various dimensions as shown by their widespread adoption of permaculture (LITFIN, 2014), a system that explicitly articulates ethical principles and design principles and is applicable to various areas of life.

The interdependence of the dimensions of sustainability in ecovillages

Despite our analytical posture in this article, separating the aspects related to each dimension of sustainability, we hope that it has become clear that they are all closely interconnected and indeed often interdependent or even overlapping. To exemplify, many 'ecological' practices are also clearly 'economic' ones too; we could even designate them as ecological-economic practices. Litfin (2014) observed that the development of any one dimension of sustainability in an ecovillage usually has consequences for the others: for example, an ecological focus serves as the basis for social life; the spiritual focus leads to the development of ecological, economic and social practices; the endeavor to overcome poverty creates an increase on the community's health and ecosystems. Burke and Arjona (2013) also observed an ecovillage in the Global South and found that a focus on economic aspects developed group labor skills and fostered solidarity.

We suggest then that ecovillages are putting into practice a 'systemic' approach to sustainability; one that is integrated and multi-dimensional. That is apparent in the fact that each of their practices usually has ecological, sociopolitical, economic and cultural functions, all at the same time. Composting organic waste for example not only avoids having to send it off to landfills but creates organic fertilizer to enrich the soil and produce food products in an agro-ecological manner thereby avoiding additional costs with chemical fertilizers and other artificial products; reducing consumption and reusing and recycling practices cut down on resource use and diminish the need to generate income; the development of local economic networks fosters ecologically and socially responsible forms of production, social proximity and solidarity and non-predatory economic practices; sharing land, buildings and activities reduces resource consumption and the cost of living and also creates a sense of collectivity. Lockyer (2010a) goes one further, suggesting that the ecovillages' economic experiments not only lead to ecological sustainability but also have important social effects insofar as they generate familiarity, creating opportunities to develop social trust and predictability. Each one of those practices has cultural

implications and so the boundaries separating the various dimensions of sustainability tend to become blurred. What is at stake is a quest to achieve the intrinsic coherence that is implicit in the very concept of sustainability and that presupposes that greater attention will be devoted to the intersections of sustainability's dimensions than to the limits demarcating them.

It seems reasonable to affirm that on the basis of that systemic vision the ecovillages' practices, to some extent, subvert certain aspects of capitalist logic as for example: in the restoration of natural cycles; the re-signification of labor; the recovery of a sense of collectivity based on sharing and the endeavor to achieve horizontal relations; the re-assessment of human necessities leading villagers to pursue a simpler life; the development of non-exploiting economic relations including alternative forms of production and consumption and of relating to money; and the minimalizing of the antagonism between town and country by enhancing the value attributed to things local and rural. López and Prada (2015) consider that the 're-peasant-forming' process fostered by the ecovillages is in itself anti-capitalist to a certain extent while Ergas and Clement (2016) suggest that it is a process of "repairing metabolic processes in which capitalism has created rifts".

It would seem that a certain anti-capitalist quality constitutes a direct consequence of the systemic approach to sustainability. After all, it is not feasible to construe the problem of ecological degradation without taking social degradation into account and the relations of both to the extant economic model and its associated cultural values. One cannot reflect on consumption without thinking about production or labor without considering power relations and economic exploitation, or the whole set of those aspects without taking into account the current prevalence of hyper-individualism, for example; all of them are inter-dependent dimensions of society. In that perspective, the so-called 'ecological problems' are actually not strictly ecological at all insofar as their causes are clearly social and, more specifically, political-economic given that the political institutions have been captured by the capitalist economy.

Actually, in ecovillages, ecological sustainability seems to be viewed as a horizon to head towards or as a process in which each community advances according to its possibilities, whereas the so-called 'social' sustainability (embracing political, economic and cultural aspects) involves significantly greater difficulties (LITFIN, 2014; KIRBY, 2003). Such difficulties can even make the continuity of communities unfeasible especially when they concern internal conflicts and financial issues, and they quite often do so. As Litfin (2014) emphasizes, "no community has ever collapsed because it lacked composting toilets, but many have failed when human relationships fractured". (p. 20). Boyer (2016) observed for example, how active investment in social communication and conflict-resolution skills were a critical factor in enabling the maintenance of low consumption levels in a certain ecovillage. Masdar City, in the United Arab Emirates, is another interesting example of the dependence to which ecological issues are subject. In spite of adopting the best practices in ecological sustainability (not generating waste, using only electric vehicles and maintaining carbon neutrality), it failed in many other aspects because of ignoring people's social needs (WOODCRAFT et al., 2012).

So, although ecological issues remain central as the guiding ideal they do not seem to be solely determinant as to whether an ecovillages or any other kind of project directed at achieving sustainability manages to last. While on the one hand ecological sustainability is the basis for social sustainability, insofar as nature is the material basis for our existence, on the other hand, considering that ecological issues are necessarily viewed in a human perspective and reflect human problems, it can be concluded that in the final analysis the debate on sustainability is a social one and therefore it is in fact social sustainability that is the very 'foundation' for ecological sustainability in the sense that ecological practices are necessarily 'mediated' by complex social relationships. Because they are projects that favor or even require radical changes in people's way of life the ecovillages are capable of putting into practice a systemic perspective that integrates the various issues involved so that they provide important insights regarding the possibilities and limitations associated to the quest for sustainability within the sphere of capitalism.

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Original Article

A SYSTEMIC APPROACH TO SUSTAINABILITY - THE INTERCONNECTION OF ITS DIMENSIONS IN ECOVILLAGE PRACTICES

Abstract: It is often very difficult to align sustainability-related discourse with practices, partly due to the compartmentalized treatment of sustainability's dimensions. Building on existing literature, this paper seeks to analyze the way those dimensions are worked out in the practices of ecovillages, a kind of community explicitly oriented towards sustainability. We observe that ecovillages view sustainability in a systemic perspective, adopting a multidimensional and integrated approach. That is apparent in the fact that their practices simultaneously present functions in various dimensions revealing the latter's interdependency. The so-called 'social sustainability' (including political, economic and cultural aspects) involves far more significant difficulties than 'ecological sustainability' and it may even render the continuity of such communities unfeasible. The experience of ecovillages suggests that social sustainability constitutes the very foundation of ecological sustainability, insofar as ecological practices are necessarily mediated by complex social relationships.

Keywords: Sustainability, Ecovillage, Sustainable communities

Resumo: Existem consideráveis dificuldades em alinhar discursos e ações relativos à sustentabilidade, o que se deve em parte ao tratamento compartimentalizado de suas dimensões. O objetivo deste ensaio é analisar, a partir da literatura existente, de que forma essas dimensões são trabalhadas nas práticas das ecovilas, um tipo de comunidade explicitamente orientado para a sustentabilidade. Observamos que as ecovilas vêm adotando uma perspectiva sistêmica da sustentabilidade, isto é, multidimensional e integrada – o que se evidencia no fato de que suas práticas apresentam simultaneamente funções em diversas dimensões, que se mostram interdependentes. A chamada “sustentabilidade social” (incluindo-se aspectos políticos, econômicos e culturais) envolve desafios muito mais significativos que a chamada “sustentabilidade ecológica”, comumente inviabilizando a continuidade dessas comunidades. A experiência das ecovilas sugere que a sustentabilidade social constitui a própria *fundação* da sustentabilidade ecológica, no sentido de que as práticas ecológicas são necessariamente *mediadas* por complexas relações sociais.

Palavras-chave: Sustentabilidade, Ecovila, Comunidades sustentáveis

Resumen: Hay considerables dificultades para alinear discursos e acciones relativos a la sostenibilidad, en parte debido al tratamiento compartimentado de sus dimensiones. El objetivo de este ensayo es analizar, a partir de la literatura existente, de qué forma esas

dimensiones son trabajadas en las prácticas de las ecoaldeas, un tipo de comunidad explícitamente orientado a la sostenibilidad. Las ecoaldeas vienen adoptando una perspectiva sistémica (multidimensional e integrada) de la sostenibilidad – lo que se evidencia, por ejemplo, en que sus prácticas presentan simultáneamente funciones en diversas dimensiones interdependientes. La llamada “sostenibilidad social” (incluyendo aspectos políticos, económicos y culturales) involucra dificultades mucho más significativas que la llamada “sostenibilidad ecológica”, y puede mismo inviabilizar la continuidad de esas comunidades. La experiencia de las ecoaldeas sugiere que la sostenibilidad social es la fundación misma de la sostenibilidad ecológica, en el sentido de que las prácticas ecológicas son necesariamente mediadas por complejas relaciones sociales.

Palabras clave: Sostenibilidad, Ecoaldea, Comunidades sostenibles
