

# BRAZILIAN ECOVILLAGES AND IBGE SUSTAINABLE DEVELOPMENT INDICATORS: A COMPARATIVE ANALYSIS

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## 1. Introduction

This article is limited to the study of ecovillages, specifically in the qualitative and quantitative comparison of 11 Indicators of Sustainable Development, called IDS, established by the IBGE (Brazilian Institute of Geography and Statistics). Such indicators have been adapted to the participating ecovillages, in that it takes into account those who have stood out among the initiatives that promote and seek sustainable development.

The study proves worthwhile since, in Brazil, discussions about sustainable development increasingly demand information and robust data in order to find effective ways to exercise less pressure on natural resources and minimize the negative impacts of industrial production and consumption of the current society. This gap has inspired the creation, implementation, validation and publication of IDS-IBGE. Such surveys, consisting of historical series, date back to 2002 and since then there were four publications: in 2004, 2008, 2010 and 2012. For the IBGE, the main purpose of the IDS is to enable the analysis of a set of indicators to express different aspects of sustainable development, objectively and efficiently, presenting data for the average national population. In this study, despite the IDS having been developed for national scale in an essentially highly diverse society, the use of these indicators to the reality of the ecovillage is justified by its robustness, observing the main prerequisites described by Jannuzzi (2001), in addition to being configured as the core set of relevant indicators in Brazil.

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To think about sustainable development and the practices that develop ecovillages, the use of indicators becomes an interesting tool, capable of informing society, and emphasizing the need to generate new and more concrete information. It is important for identifying behaviors and trends, and can make comparisons between countries as well as regions within Brazil, in addition to stating requirements for the formulation, monitoring and evaluation of public policies (IBGE, 2012).

Before the presented context, the following question is posed: What guarantee is there that ecovillages are able to promote sustainable development in a way that integrates with society as a whole? Within this scope, the objective is to understand the sustainable development practices existing in ecovillages and, specifically, to reveal the main challenges faced by these groups in support of their day-to-day.

From a methodological point of view, the comparative method between IDS-IBGE (2012), with the same indicators for ecovillages, were used. The latter were calculated and adapted for this study. The data collection instrument used was a questionnaire, comprised of open and closed questions asked to 52 ecovillages. Of these, responses were received from 32 ecovillages with different degrees of detail. Both the methodology and the results obtained are detailed in the following sections of this article.

The text is divided into three parts. The reason for doing so is to give a greater meaning to the claims set out herein. The parts are as follows: a brief theorizing about ecovillages and sustainable development; the empirical universe of the study; and the findings between the IBGE and ecovillages.

## 2. Relevance of sustainable development and ecovillages

Society has become increasingly more aware of the need for more sustainable and responsible lifestyles in order to deal with the challenges related to human survival on the planet. Examples such as climate crises, use and sharing of natural resources, food, housing, health, transport, consumption and education are already sadly commonplace.

But which initiatives are priorities? How can they be implemented? How can the best solutions to these challenges be known?

It is worth mentioning Sachs (2009) concept of sustainable development which adds to the human perspective the question of the environment. For the author, this type of development can be achieved with the use of traditional systems of resource management, as well as the organization of a participatory process of local needs identification, requiring the presence of facilitators to negotiate with all actors involved. That is, the local authorities and population, with the support of scientists, civil associations, public and private economic agents, characterize the concept of development as a political action.

Those communities which are called ecovillages can be considered spaces of sustainable possibilities. These are communities “intentionally sustainable”, which can be understood as communities that arise from a reaction to the systems of contemporary society. The creators of ecovillage communities meet voluntarily, or intentionally; furthermore, they seek environmentally integrated practices that stimulate use of sustainable resources (ROYSEN, 2013).

Given the principle that there is no human activity without an impact on the economy, environment, society, culture, politics, subjective and symbolic, it follows that one must incorporate the idea of reducing negative impacts and maximizing positive impacts. In these communities, alternative lifestyles are valued over traditional business structures and also over traditional means of production of foods, products, and goods on a large scale as they seek to incorporate ethical, environmental, social, and cultural issues normally considered as “externalities” by classical economic thought, dominant in society.

The emergence of these communities occurred around the 1960s, during the counterculture movement. Many of the rebellious expressions of this period occurred as opposition movements to the lifestyle proposed by consumerism. In these cases, the response was a form of protest, experimentation and the search for a new direction, by means of connecting more with nature as a way to return to the essence of man, where he had been separated by the distance imposed by technological artificiality, urban and industrial. In this sense, the search for other ways to feed, clothe, heal, and live has raised a number of practices, where innovation was looking for a creative way of living in community, autonomously, while being more integrated to the environment and people. The new lifestyle is built through improvisation and the geographical remoteness of these groups from urban spaces, and thereby united into so-called alternative communities, dedicated to a better world in which its followers believe. (SANTOS Jr, 2006).

Svensson (2002) points out, regarding the idea of permaculture, that ecovillages are arranged from the understanding that things and beings are connected, so that the daily life experienced by them intertwines the social, economic, cultural, spiritual and environmental. In the community aspect, one encounters the relations and exchanges between members, decision-making and conflict management, alternative health practices, significant forms of work, lifelong learning, cultural expression and respect for differences. The economic aspect is already formed by local income generation as a “green” business, consulting, courses and alternative currencies, based on voluntary simplicity. The cultural and spiritual dimension of ecovillages emphasizes the feeling of happiness and sensitivity of belonging of each and all through celebrations and rituals, festivals, artistic expressions, due to the diverse manifestations of spirituality and cultural traditions, holistic vision and personal growth. (ROYSEN, 2013).

In the global context, indicators for sustainable development have been applied. An example is the “Index for a Better Life” (Better Life Index), which includes 11 items related to human welfare such as housing, income, labor, community, education, environment, civic engagement, health, personal satisfaction, security, and balance between private life and work (AKATU, 2014). There are 34 Organization for Economic Cooperation and Development (OECD) member countries. While Brazil is not yet a member, it is on the list of candidate countries. Over time, the idea is to increase the index and include more countries. (OECD *Better Life Index*, 2014).

Among the various indicators related to sustainable development, weaknesses and strengths of some of them are analyzed by several authors such as van Bellen (2004), Siche et al. (2007) Guimaraes and Feichas (2009), since there are difficulties in analyzing the

aspects and metrics that each contains. For the United Nations, sustainable development is multidimensional and for Sachs (2009), sustainable development is a global challenge.

### 3. The empirical aspect of the study

The IDS - IBGE (2012) is composed of 62 indicators in total, covering four dimensions: environmental, social, economic and institutional. As a way of valuing the IDS, and given the absence of other indicators of sustainable development at the national level, we selected 11 indicators that are capable of adapting to the reality of ecovillages. The other indicators were not selected because of the difficulty of obtaining data for the necessary calculations, and also because some are not considered aspects applicable to ecovillage, such as: industrial and macroeconomic aspects, and indicators such as Industrial Consumption of Substances that Destroy the Ozone Layer and The Gini Index of Income Distribution and Trade Balance. The Mineral Consumption per capita Indicator has not been selected, for example, because you need certain variables: production (primary and secondary) processed from major minerals and the imported and exported volumes of goods associated with them, which are difficult to measure and obtain, as they are not adaptable to the daily lives of ecovillagers. Thus, of the 11 indicators selected five include the environmental dimension, four include the social dimension, and two include the economic dimension (Table I).

None of the indicators of the institutional dimension were selected for this research. The indicators Ratification of Global Agreements and Expenses of Research and Development (R&D), for example, are not compatible with the day-to-day ecovillages. On the other hand, this dimension has been addressed in the data collection form applied, without, however, allowing for comparison of the data obtained in this study and the IBGE institutional indicators.

As an alternative to the lack of indicators of the institutional dimension adaptable to ecovillages, a survey was conducted about the decision-making, governance and procurement and distribution of resources practiced within the ecovillage. Also addressed in this instrument, were questions concerning the main barriers and opportunities for communities in ecovillages to be able to apply the concept of sustainable development. There was also a survey on the adherence of groups to the definition of ecovillage, as it is defined in this study.

**Table 1: Indicators for sustainable development selected for ecovillages.**

Indicators selected from IBGE		Description of Indicator	Dimension
1	Use of Fertilizers	The indicator expresses the intensity of fertilizer use in cultivated areas of a territory, in a given period.	Environmental
2	Use of pesticides	The indicator expresses the intensity of pesticide use in cultivated areas of a territory, in a given period.	Environmental
3	Land for agrosilvopastoral use	The indicator shows the proportion of land immediately available for agricultural production, livestock, forestry and those that have been degraded by these activities in a given territory.	Environmental
4	Burning and forest fires	The indicator expresses the annual number of fires and forest fires in a given territory.	Environmental
5	Waste disposal	The indicator expresses the ability to give a final allocation to the appropriate garbage collected.	Environmental
6	Diseases related to inadequate sanitation	The indicator represents hospitalizations due to diseases related to inadequate sanitation (DRSAI).	Social
7	Literacy rate	The indicator measures the level of literacy of the population 15 years or older.	Social
8	Adequacy of housing	The indicator expresses the housing conditions by the proportion of households with minimum living conditions.	Social
9	mortality rate due to transportation accidents	The indicator expresses the number of deaths as a result of traffic accidents.	Social
10	Per capita energy consumption	The indicator expresses the annual final energy consumption per capita in a given territory.	Economic
11	Share of renewable sources of energy	The indicator expresses the share of renewable sources in the total internal energy supply.	Economic

Source: IBGE, 2012.

These indicators were applied and calculated for the reality of ecovillages, according to the IBGE calculation methodology for each indicator. For the realization of calculations, the data collection form was used to obtain general and specific information of the ecovillage, which have become the necessary variables. For example, information obtained from the question, “How many permanent residents does the ecovillage have?”, is the total resident population variable. Thus, the indicator “diseases related to inadequate sanitation” uses as variables the number of hospital admissions due to diseases related to inadequate environmental sanitation and the total resident population variable, the result is a ratio between the number of hospital admissions and resident population.

The data collection form used in this study take-home questionnaire type, since it was answered directly by the participants, without the presence of the interviewer, virtually, with open and/or closed questions. It was prepared by the virtual tool Google Docs, which can be accessed and answered by a link, and this was sent to 52 ecovillages, via e-mail, social networking sites and blogs, and even contact via telephone, in some cases. The search tool among those registered on the site GEN (Global Ecovillage Network) has 29 Brazilian Ecovillage, which were all sent the data collection form.

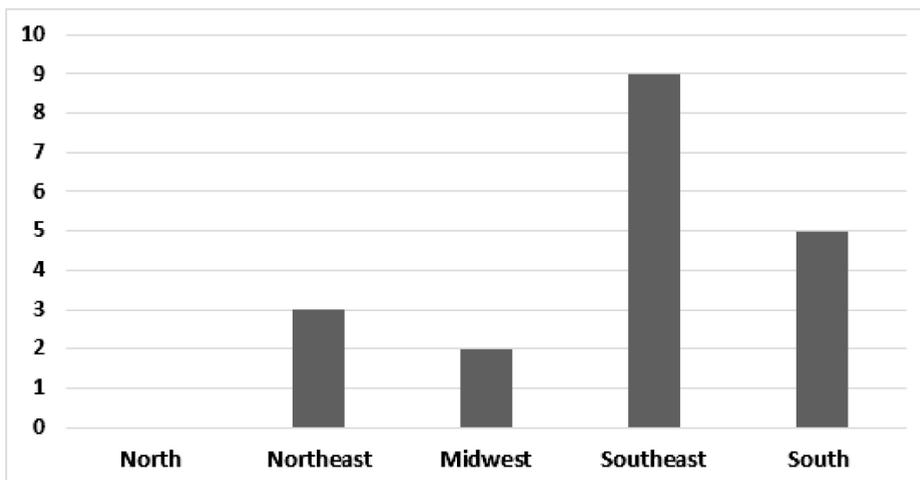
#### 4. Results and discussion

Of the 52 data collection forms sent 32 ecovillage and alternative communities have established some kind of contact, for example, stating that the community was in construction and did not have enough data to effectively answer the sheet; warning that there was no interest in participating in the research, or even responding the questionnaire, thus composing 62% of sent records. The remaining 20 contacts did not perform any form of return, it is not possible to know if the forms really were received, comprising 38% of sent records.

Regarding these 32 ecovillage and alternative communities, or the 62% of them which made contact, six reported being under construction, and therefore did not have enough data to answer the questions; 19 answered (being only 6 of the ecovillages registered with GEN); and 7 refused to participate in the study (including 2 of the ecovillages registered with GEN). Of these denied responses, there were those that simply did not have any interest in contributing to the research, and others would not answer due to travel or other jobs had by those responsible for sending information.

Thus, Graph I is presented showing the differentiation location of ecovillages by Brazilian regions of the 19 respondents.

**Graph 1: Geographical location of participating ecovillages.**



Regarding the question about whether the group considers itself an ecovillage, some communities participating in the study did not fully identify with the definition of ecovillage offered by Roysen (2013, p. 13): “The Ecovillage unites to create a healthy, intentionally sustainable communities; that is, they are groups of people who have a lifestyle of low environmental impact and whose interpersonal relations are more cooperative and supportive.” Thus, 15 groups answered yes; three answered no; and one group answered “do not know”; consequently, the results presented in this paper extend to alternative communities in general.

#### 4.1 Concerning the IBGE and ecovillages

In this section the results of the 11 IDS indicators calculated for the reality of the ecovillage and alternative communities, based on 19 responses received, are presented in Table 2. Table 2 summarizes the results of the comparisons between the calculated indicators for ecovillages and those of the IDS IBGE (2012), demonstrating that the communities in the study showed a path to sustainable development better than the national average.

**Table 2: Final Table with the results on the performance of the communities being studied in relation to IDS IBGE (2012).**

Indicator	Performance		
	Dimension	IBGE	Ecovilas
Use of fertilizers	Environmental	consumption of 150 kg/ha (2010)	do not use synthetic fertilizers
Use of pesticides	Environmental	3.6 kg/ha of active ingredients (2009)	Not used
Land for agrosilvopastoral use	Environmental	Main use is for pastures; high impact (2006)	Main uses are of low impact
Burning and Forrest Fires	Environmental	60,000 occurrences of heat outbreaks (2011)	1 occurrence
disposal of waste	Environmental	67% of collected waste is properly disposed (2008)	100% of collected waste is properly disposed
Diseases related to inadequate sanitation	Social	325 hospital admissions per 100,000 inhabitants (2010)	None
Literacy rate	Social	90% of the population over 15 years of age is literate (2009)	100% of residents over 15 years old are literate

Adequacy of housing	Social	58% of households are considered adequate (2009)	70% of households are considered adequate
mortality rate due to transportation accidents	Social	2,000,000 accidents per year (2009)	None
Per capita energy consumption	Economic	50 GJ per resident (2010)	between 0.77 and 9.0 GJ
Share of renewable sources of energy	Economic	45% (2010)	-

Of the 11 selected indicators, six of them did not require any calculation, because all the answers were unanimous in claiming the best possible indicator situation. Of these six indicators, three are part of the environmental dimension, and three of the social dimension, respectively: Fertilizer Use; Use of Pesticides; Waste disposal Final; Diseases related to inadequate sanitation; Literacy rate; Death rate from traffic accidents. No ecovillage or alternative community claimed to use synthetic fertilizers or pesticides; and all fit in the situation of proper waste disposal proposed by IBGE, and their waste is maintained in most cases by the community itself (14) and in some cases, by the municipality or by the local utility company (five).

For the three indicators of the social dimension, none of the participating ecovillages and alternative communities claimed to have cases of diseases related to inadequate sanitation. All residents over 15 years old are literate; and there were no occurrences of traffic accidents caused by residents or involving any resident of the ecovillage and alternative communities. In the case of literacy, it was not possible to discriminate if their performance was attributed to the communities themselves or schools of public or private service.

The calculation of the indicator Land for agrosilvopastoral use, one of the environmental dimensions, has a proportion of 13% of land in agrosilvopastoral use for ecovillages and alternative communities, while IBGE presents a proportion of approximately 26% for Brazil in 2006. The communities studied use land for organic gardens, agroforestry and raising a few animals, while the Brazilian main use is planted pasture, followed by natural grazing and temporary and permanent crops (IBGE, 2012).

For the indicator Fires and forest fires, an environmental dimension, there was only one community reported a "criminal arson" on their land, affecting approximately 4.5 hectares. Therefore, the percentage of occurrence of outbreaks among groups is 5%.

Regarding the environmental dimension, in an overview, one can say that: a) concerning the use of synthetic fertilizers, Brazil consumes about 150 kilograms per hectare of planted areas, while the communities studied declared no use synthetic fertilizers; b) Brazil is the largest consumer of pesticides on the world stage, while communities in the study do not use pesticides on their crops; c) concerning the use of land used for agroforestry, the main use in Brazil is by pastures that degrade the soil and compromise the use of resources, while the use of land in the ecovillage and alternative communities is

reserved for organic production and low environmental impact, plus most of the communities learn toward vegetarianism; d) concerning fires and forest fires, Brazil recorded about 60,000 outbreaks in 2011, while in the communities studied only one case was cited and it was considered a “criminal fire”; e) in Brazil, 67% (in 2008) of the waste collected receives proper disposal, without degrading the environment and endangering human health, while in the ecovillage and alternative communities, 100% of the waste generated is properly disposed.

It should be remembered that the application of synthetic fertilizers and pesticides considered in this research refers to the use and direct consumption of these products. Indirectly it is certain that the ecovillage and alternative communities consume such substances, since these groups are not fully self-sustaining in their daily practices, as in the production of their food, obtaining clothing, medicines, toiletries and use of cars powered by conventional fuels which are produced with the use of these products.

Concerning the indicator “Housing Adequacy”, in the social dimension, three communities had 27 households considered inadequate according to the IBGE requirements, representing 30% of households in the communities studied, and one of these was categorized as inadequate because it used the anaerobic bio-digester technique as a means of sanitary sewage disposal, which is not included in the IBGE list; and the other two communities did not satisfy the criteria because they had three residents per bedroom. The other 64 households were considered adequate by according to IBGE requirements, representing 70% of households in the ecovillages and alternative communities studied. This case allows us to discuss the subjectivity of the application of these IBGE indicators for the reality of ecovillages. The anaerobic bio-digester technique could also be understood as a proper sanitation method being employing low impact techniques; however, according to the framework of the IBGE requirements, it was considered inadequate.

Thus, regarding the social dimension, it was observed that in Brazil there are 325 hospital admissions per 100,000 inhabitants due to diseases related to inadequate sanitation, while no case was registered for the communities studied. The literacy rate in Brazil reaches about 90% of the population, while in the ecovillage and alternative communities all residents over 15 years old are literate; in Brazil, approximately 58% of households are considered suitable whereas in ecovillages and alternative communities households reach 70% of the total. In relation to the death rate from traffic accidents, Brazil recorded about 2,000,000 per year (IBGE, 2012), while in the communities under study no case was registered.

For the per capita power consumption indicator, in the economic dimension, only six communities offered data that permitted calculation, with values between 214 kWh and 2,400 kWh for consumption of energy per capita, representing values far below those presented by the IBGE for the Brazilian population (14,700 kWh on average).

For the indicator “share of renewable energy sources”, in the economic dimension, the data were not sufficient to calculate the percentage of the share of renewable energy, since the measurement of this type of energy is hampered when the techniques used are empirical and informal in character. The types of renewable energy utilized by the communities are obtained mainly from wood and solar energy, in addition to a mechanical water wheel for pumping water and bio-digester that produces methane,

in turn providing heating processes. The communities that have provided information regarding energy supplies, three use energy only from renewable sources. Five do not produce energy, using only non-renewable, conventional sources, while the remaining five use both forms of energy.

Regarding the economic dimension, it has been observed that the per capita consumption of energy in Brazil reaches values of the order of 50 GJ per capita, while in the ecovillage and alternative communities values did not exceed 9 GJ per capita. Regarding the last indicator, "share of renewable energy sources", it was not possible to establish a comparison due to lack of consistent data for the required calculation. However, it was evident that the communities sought to implement new forms of energy production.

From this analysis it can be observed that the communities studied, compared with the population, have better performances in all the IDS discussed and presented, except the indicator "share of renewable sources of energy", which could not be calculated due to lack accurate data on the response forms. It is worth noting, however, that the results are based on the assumption that all responses received by the records are accurate and consistent.

It has been recorded that to calculate some indicators, there was a lack of clear data and concise answers, which could have contributed more effectively to the research in question. This lack of conciseness of the information seems to reflect a gap between the implementation of environmental technologies applied in the communities in question, and the scientific discipline of numbering, explaining and modeling the knowledge that is established between the various fields in society. Even if certain numerical records do not occur with regularity and consistency in the ecovillage and alternative communities, it can be said that they have practices and activities that achieve positive results in their search for sustainable development, showing that their actions are integrated, as stated by Svensson (2002).

#### 4.2 Reports and discoveries: the ecovillage

In the data collection form, a question about the construction techniques used in the communities studied was asked. All communities use some kind of low environmental impact technique such as bioconstruction and use of ecological bricks, reused materials (tires, rubber, bottles, pallets etc.) and certified wood. Some communities also reported using conventional construction techniques (47%), but there is a concern, and consequently a search, for low-impact techniques in all communities.

In questioning about community governance, 48% hold meetings in which all members participate, giving their opinions, and making decisions together. A decision-making process in which a group or person chosen by the community performs the decision-making (26%) was also highlighted. In addition, other forms of governance were cited, such as the use of collaborative management, and consideration of the opinions of the more experienced residents.

Regarding the collection of financial resources of the communities, it was observed that most offer services such as courses, events and tourism activities in the community, conducting environmental projects and sale of products grown and produced in the

community (48%). Also many of the community raised funds through voluntary contributions from residents, or even from monthly fees (21%). Some communities use private funding to complement what is collected from their services offered (26%), and another part of funding comes from donations from people who believe in the projects that the community realizes. Income is also generated from visitors (5%).

In most cases, the funds raised are used for the benefit of the community to maintain daily activities, pay bills, and cover the expenses of courses and other experiences, as well as investments in projects carried out or that which they wish to carry out in the community such as beginning renewable energy production, for example (47%). Resources are also distributed among the residents: in some cases only when there are surplus after community expenses are covered (11%) and others (26%) are divided among the residents in various ways, such as according to the involvement and merit of each member. In addition, other forms (16%) were cited such as the repayment for the initial investment for the land purchased to the people who contributed.

The last question concerned the main challenges to maintain sustainability in the community. Responses were classified into three different dimensions that encompassed the dimensioned discussed: the economic dimension (42%); the social / cultural dimension (42%); and the social / environmental dimension (16%). The following are some responses used for the classification of these dimensions through the mention of some verbatim excerpts collected on the questionnaires:

#### **Economic Dimension:**

1) "Creating an economically viable project. We are still seeking support, but in a fragmented way, with several fronts, often without the necessary cohesion for complete sustainability."

2) "Access. Very bad road. It is not maintained by the city. Prevents the reception of groups with passenger cars."

#### **Socio-cultural dimension:**

1) "In our case, I believe it to be the lack of more interested people, so we can better distribute assignments and run more projects."

2) "The Brazilians should think of the collective and take responsibility!"

3) "Organization of people, work and exchanges."

#### **Socio-Environmental dimension:**

1) "Studying the best way to find the best solutions to so much garbage, so much crap we eat, do everything possible to improve our planet, we have a lot of waste and we do things on automatic, stop and reflect what we are doing to the planet, I think that's the hardest thing."

2) "That everyone take responsibility for what we generate in the universe."

It is possible to see that most communities declared facing challenges in economic and social/cultural dimensions. This can be seen as a natural process, since people who attend the ecovillage and alternative communities come from environmental movements. They are looking for different practices, other than the conventional, of construction, in relation to food, with less waste, and also different practices of power generation, which are classic examples of those who want to relate differently to the environment; as was discussed in relation to the historical emergence of these groups that sought closer and respect for nature (SANTOS Jr, 2006).

The social/cultural dimension emphasizes the difficulty of others adhere to these movements and take responsibility for their everyday actions. That is, they work for the improvement of sustainable dynamics of society and even join these communities with commitment and involvement, which often results in alienation, combined with the maintenance of the comfort zone and status quo of society in general to the knowledge of what is being exercised, learned, advanced and practiced in the ecovillages and alternative communities. The challenges of the economic dimension relate to the financial revenues of the communities, as well as its financial management, appearing with more strength in the younger communities, but also enduring in some older communities.

As mentioned earlier, these communities seek to connect aspects that concern their daily lives. This occurs not only in the technical and environmental concerns that are being upgraded, but the community aspect, which sets out the relationships and exchanges among members, decision-making and conflict management, alternative health practices, significant forms of work, lifelong learning, cultural expression and respect for differences (SVENSSON, 2002).

It is important to note how far the application of the ecovillage and alternative communities are from society in general, which puts them in a position of separation. Geographically, ecovillages are already working away from urban centers, as well as from the proposals of life that make up the styles practiced in cities (Santos Jr, 2006). Thus, ecovillages have shown great performance in relation to sustainability, without having had society come into contact with their activities, and they can increasingly incorporate other habits in their daily lives, replicating in their own lives the knowledge and sustainable attitudes that ecovillagers develop.

## 5. Final considerations

Within the problem and the proposed goals, ecovillages and alternative communities had conditions different from the collective way of life when compared to the Brazilian population according to the IDS IBGE (2012). The economic political and sociocultural organization of an ecovillage is established within a field of forces involved in the logic of current human relationships. Nevertheless, do not despise the communities for its characteristics, essence and perspectives, they have practices and actions that are designed to develop sustainably. However, there is, by the insertion of ecovillagers' itself, a departure from society in general, both geographical and conceptual.

The appeal of the ecovillage constitutes a political cause of certain alternativity, but that does not make a significant field of economic and socio-cultural influence by an isolated movement in itself, with little exchange of experience. In this context, it lends itself to Sachs' (2008) idea that it is not only an alternative or oppositional influence, the movement is political: the collective choices affect the role of the State, of the local government and stems from the very concept of development. Apparently, ecovillages do not seem to have the intention of taking this role.

The challenges of an ecovillage are closely related to the preservation of sustainable development in their day to day. They are implied in the confrontations of the economic and socio-cultural dimensions. On the other hand, the environmental dimension is stronger. Consequently, it is believed that ecovillagers support the environmental movement, which started at the time of counterculture.

It is worth noting that the collected results show that ecovillages outperform those described by IBGE, due to the comparative analysis of the indicators. Given the diversity and heterogeneity of the population, this result should be explored in more detail in future work, as well as any possibility of breakdown of the IDS IBGE to deepen the use of these indicators in special contexts. In the systematization of data, it is evident that the challenges to be overcome and improved are in the social and economic demands, present in the daily routine of these groups.

There is no denying that the challenges ecovillages have chosen to face are important for the understanding that life in these communities is not only made of tunings and adjustments. These communities are in a constant search for better habits and practices that over time generate results and actions amenable to incorporation into society in general, but are not without negative impacts and nor are they immune to the use of consumer products and substances harmful to the environment.

Note that the comparison made here corroborates the idea that ecovillages have some responses to the environmental and social problems caused by overcrowding and the industrial modes of production. From the environmental and economic point of view, it can be said that they remain in constant search for practices that result in the self-sufficiency of their groups.

Their practices are made empirically and handmade, unlike corporate modes of development found in technological societies and organizations. This aspect reveals the inherent subjectivity of the use of indicators and models for depicting the reality of life in an ecovillage, as noted in the case of the "Adequate housing" indicator, showing that a deeper adaptation of these indicators for the communities studied is necessary; furthermore, the development other indicators that address other issues would be interesting.

There remain other means of producing knowledge, such that the reality of ecovillages can be more effectively verified, including future scenarios of certification practices, for example. However, it should be noted that the isolation of knowledge and experiences of the ecovillages, due to an absence of mutual communication, only promotes the ignorance of the general population to their practices. Therefore, the ecovillage and alternative communities, still do not influence, in an impactful way, the socio-cultural and environmental dimensions of conventional society.

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# BRAZILIAN ECOVILLAGES AND IBGE SUSTAINABLE DEVELOPMENT INDICATORS: A COMPARATIVE ANALYSIS

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**Abstract:** Ecovillages have been highlighted among the initiatives that promote sustainable development in the contemporary world. However, little is known about their effectiveness in the economic, social, environmental, and institutional contexts, in relation to society in general. This study compared, quali-quantitatively, 11 IBGE (Brazilian Institute of Geography and Statistics) Sustainable Development Indicators (SDIs) in the country with the respective data for the participating ecovillages. Of these indicators, five were related to the environmental dimension; four others to the social dimension; and two to the economic dimension. Questionnaires were used with 52 ecovillages, with open and closed questions, resulting in 32 responses with different degrees of detail. The results suggest that ecovillages outperform those described by IBGE, for the population as a whole, in all indicators that were analyzed. However, there are still challenges to be overcome, such as the difficulty of these groups in dealing with social and economic aspects.

**Key words:** intentional communities; alternative communities; IDS-IBGE.

**Resumo:** As ecovilas tem se destacado dentre as iniciativas que promovem o desenvolvimento sustentável no mundo contemporâneo. No entanto, pouco se sabe sobre a sua efetividade nos contextos econômico, social, ambiental e institucional, em relação à sociedade em geral. O presente estudo comparou quali-quantitativamente 11 Indicadores de Desenvolvimento Sustentável (IDS) do IBGE no país com os respectivos dados obtidos para as ecovilas participantes. Desses indicadores, cinco foram relacionados à dimensão ambiental; outros quatro para a dimensão social e dois para a dimensão econômica. Foram utilizadas fichas de coleta, com questões abertas e fechadas, para 52 ecovilas, com 32 respostas com diferentes graus de detalhamento. Os resultados sugerem que as ecovilas apresentam um desempenho superior aos descritos pelo IBGE, para a população brasileira como um todo, em todos os indicadores analisados. Porém, ainda há desafios a serem superados, como a dificuldade desses grupos em lidar com aspectos sociais e econômicos.

**Palavras-chave:** Comunidades intencionais; Comunidades alternativas; IDS-IBGE.

**Resumen:** Las ecoaldeas han destacado entre las iniciativas que promueven lo desarrollo sostenible en el mundo contemporáneo. Sin embargo, poco se sabe acerca de su efectividad en los contextos económicos, sociales, ambientales e institucionales, en relación a la sociedad en general. El presente estudio compara, en aspectos cualitativos y cuantitativos, los 11 Indicadores de Desarrollo Sostenible del IBGE con los datos respectivos para las ecoaldeas participantes. De ellos, cinco estaban relacionados con las preocupaciones ambientales; otros cuatro con la dimensión social y dos con la dimensión económica. Se utilizaron formularios, con preguntas abiertas y cerradas a 52 ecoaldeas, con 32 respuestas en distintos grados de detalle. Los resultados sugieren que las ecoaldeas superan a los descritos por IBGE, para la población como un todo, en todos los indicadores analizados. Sin embargo, todavía hay retos que superar, como la dificultad de estos grupos en el tratamiento de los aspectos sociales y económicos.

**Palabras Clave:** Comunidades intencionales; Comunidades alternativas; IDS-IBGE.

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