

**M. S. Dodson, D. B. Azevedo, M. Mohiuddin, G. H. Defavari, A. F. S. Abrahão**



**Disponível em**  
**<http://www.desafioonline.com.br/publicações>**  
**Desafio Online, Campo Grande, v. 3, n. 1, Jan./Abr. 2015**



**Natural Environment and Future Generations as Stakeholders, the path for  
Sustainability**

**Marcelo Sans Dodson**

**Doctorate student in Business Administration**

**Argosy University (on-line division)**

**e-mail: marcelododson@gmail.com**

**Denise Barros de Azevedo, PhD**

**Universidade Federal de Mato Grosso do Sul (UFMS) Escola de Negócios e  
Administração (ESAN).**

**e-mail: denise.azevedo@ufms.br**

**Muhammad Mohiuddin, PhD (ABD)**

**Laval University, Quebec, Canada.**

**e-mail: muhammad.mohiuddin.1@ulaval.ca**

**Guilherme Henrique Defavari**

**Environmental Engineer**

**e-mail: guilherme.h.defavari@gmail.com**

**Ana Flávia Siqueira Abrahão**

**Advogada e Economista**

**Universidade Federal de Mato Grosso do Sul (UFMS) Escola de Negócios e  
Administração (ESAN).**

**e-mail: anaflavia.abrahao@hotmail.com**

**Abstract**

This paper aims to contribute toward the discussion on the importance of including the natural environment and future generations as stakeholders. A literature review is conducted on the subject and an analysis of the interactions involving natural environment, organization, and its internal and external stakeholders are performed. Then, it is analysed how these interactions can affect future generations. After that, it is analysed interactions among organizations at local, national, and global levels. A definition of stakeholder having both natural environment and future generations is proposed. The findings indicate that the natural environment as stakeholder can help studies on corporate social responsibility, sustainability, and management.

**Keywords:** Stakeholder analysis, natural environment, sustainability, future generations

**Introduction**

The challenges of the 21st century are forcing both researchers and organizations to re-evaluate current philosophies and managerial concepts. The actual global market complexity are demanding holistic studies seeking to balance the economic, social, and environmental needs in such way that promotes sustainable organizations inside of a sustainable environment. It requires the addition of new measurements (Okoye, Egbunike, & Meduoye, 2013), new managerial methods (Herciu, Ogrean, & Belascu, 2011), and finding the middle ground between economic growth and the exploitation of natural resources (Schlange, 2006).

On this scenario, stakeholder analysis (SA) has been helping all kind of organizations on achieving better results on their projects and activities by identify and manage those individuals or groups that interact with the organization (Delgado-ceballos, Aragón-correa, Ortiz-de-mandojana, & Rueda-manzanares, 2012). Moreover, stakeholder analysis is an useful managerial tool to identify reasons of failures by addressing the impact of the organization's performance on individuals and groups, and vice-versa.

On the other hand, the future generations and the natural environment neither are often included on the majority of the stakeholder analysis nor are they considered as intangible assets. Other reasons may be because their lack of identity (Phillips & Reichart, 2000), stakeholder theory is not a moral theory (Phillips, 2003), or they are the others (adapted from Lanes, 2010). However, the fact of they do not appear on the balance sheet, they are put aside of the analysis. As Allaire-Arrivé (2006) correctly pointed out "an accounting calculation is not an end in and of itself (para. 15)", which may indicate that the future generations and the natural environment go beyond financial statements.

Another issue relies on the use of the term natural resource management in some stakeholder analysis (Grimble (1998); Renard (2004); Romanelli, Massone, and Escalante

(2011); and Mutekanga, Kessler, Leber, and Visser (2013). Despite the fact of its inclusion is a step forward on the inclusion of the natural environment into de SA, the current perspective prioritizes human's interest and needs instead balancing them with the nature's needs. It leads us to ask how can the society guarantee food security, stewardship, and sustainable development without playing under to the nature's laws?

Therefore, this paper intends to examine the potential benefits of including natural environment and future generations as stakeholders in order to develop a more sustainable stakeholder analysis. Also, this paper aims to show the importance to analyse the interactions among different stakeholders at a global level. Initially, it is elaborated a stakeholder definition that includes both natural environment and the future generations. Then, it is investigated the interactions between the natural environment and organization's internal and external stakeholders. After that, it is evaluated how these interactions can affect the future generations. Finally, it is analysed the interactions among organizations at local, national, and global levels.

### **Stakeholder analysis**

Organizations have become aware of how far key stakeholders can go to achieve, promote, or protect their stake (Bourne, 2009). The applicability of stakeholder theory relies on the fact that an organization can only survive due its interaction, networking, interdependence, exchanges, and other relationships with its stakeholders (Donaldson & Preston (1995); Kimiagaries al. (2013); Nasi (1995); Wicks et al. (1994); and Onkila (2009) and the generation of an infinite field of acting possibilities for stakeholders (Key, 1999).

Freeman (1984) provided the classic definition of stakeholder in an organization as "any group or individual who can affect or is affected by the achievement of the organizations objectives (pp.46)". Miles (2012) summarized the evolution of the number of stakeholder definitions from 1997 and 2011. The author mentioned that Mitchell et al. (1997) analysed 38 definitions to create criteria for stakeholder identification. In 2008, Laplume et al. (2008) reviewed 179 stakeholder definitions. Littau, Jujagiri, and Adlbrecht (2010) analyzed the evolution of the stakeholder theory in the project management field. These authors found 25 different definitions of stakeholders between 1985 and 2009. In addition, Miles (2012) found 435 different definitions from 493 articles published on different areas in 2011.

However, this paper does not have the objective of analyse multiple variations of the stakeholder definition. Instead, this author defends the idea that a good stakeholder definition

should fit the needs of an organization and keeping the core values defined by Freeman (1984). The participation of the stakeholders in environmental debates has favoured the discussion of new themes locally, nationally and globally. Thus, the environment has progressively achieved more legitimacy among countries. It is important to point out that societal, organizational and individual behaviours represent a critical factor agribusiness development (Azevedo and Pedrozo, 2010).

Despite the fact of the majority of definitions are simple variations of Freedman's stakeholder definition, there are several authors that defend the inclusion of the natural environment in the definition. Starik (1995) mentioned that stakeholder definitions should include the natural environment components such as hydrosphere, lithosphere, atmosphere, ecosystem processes, and non-human life. Zsolnai (2006) proposed that stakeholder definition should consider biological creatures, ecosystems, and even the Earth as a whole. Dodson (2012) suggested that the crop, soil, water, air, and surrounding biota should be considerate in the stakeholders definitions for agricultural systems.

For Frémond (2000), the discussion on sustainable development is aligned to the responsibility towards future generations. Jacobs (1997) stated that the interests of future generations are the way to observe the environment as a stakeholder. Zsolnai (2006) proposed the inclusion of future generations in the stakeholder definition by considering that stakeholders do not need to be presently living beings. Bonn & Fisher (2011) highlighted that organizations' sustainable vision should attend both shareholders and other stakeholders such as employees, clients, local societies, and the environment. And, Maltzman and Shirley (2011) stated "...we could now say that future generations are a stakeholder to all projects" (emphasis added).

Clarkson (1995) distinguishes stakeholders and divides them as either primary or secondary. The primary stakeholders have a meaningful participation in organizations and the later cannot survive without them. These groups are formed by shareholders and investors, employees and businessmen as well as public stakeholders such as the government and the community, which provides infrastructure and the market and laws and rules to be obeyed and taxes and obligations to be paid. There is a high level of interdependence among the corporations and primary stakeholders. When these groups (including consumers and suppliers) become unsatisfied and retracted by the organization's system, the company will be endangered and should start worrying about the situation (Azevedo and Pedrozo, 2010).

Through this perspective, the corporation itself can be defined as a system of primary stakeholders establishing complexity among relations and among groups with different

interests, objectives, expectations and responsibilities. The survival of the organization and its continuity depends on the ability of managers to create enough health, value and satisfactions for these groups that belong to each primary stakeholder, once it is clear that each one is part of the organization's system. Trying to retain the stakeholder's participation certainly results in losses for the corporative system.

The secondary stakeholders are groups which affect or are affected, which influence or are influenced by the organizations, but are not involved in the transactions and are not essential for its survival. However, they have the power to mobilize the public in their favour or in opposition to the corporation's performance. The company does not depend on this group for its survival unless a certain group insinuates generating meaningful danger.

Based on these two groups definitions, table 1 represents the framework of primary and secondary stakeholders which we included the natural environment and future generation as primary stakeholders. They can be considered as primary stakeholders because without the resources extracted from the nature our economic and social systems would fail and it would be difficult to any organization keeps its operations without the replacement of its human capital and its new consumers.

**Table 1:** Configuration of Primary and Secondary Stakeholders.

<b>Stakeholders</b>	
<b>Primary</b>	<b>Secondary</b>
Employees	Government
Investors	Regulators
Community	Interested
Shareholders	Media
Partners	Syndicates
Business	Environmental Groups
Consumers	Political Groups
<b>Natural Environment</b>	Social Groups
<b>Future Generations</b>	
<b>Non-human Species</b>	

Sources: Made by authors, based on: (Wheeler & Sillanpaa (1997); Donald & Preston (1995); and Clarkson (1995).

This brief literature review demonstrated that practitioners from different fields have been adapting Freeman's definition based on their needs. These varieties of stakeholder

definitions are adjusted according to practitioners' needs to better understand not only the importance of stakeholders for the organization's achievements but also the particularities inherent of each situation. Based on the fact that sustainable development demands a stakeholder definition that embraces sustainability and future generations, the following stakeholder definition is proposed:

*Stakeholders are human entities (individuals, organizations, and future generations) and any component of the natural environment which needs can affect or be affected by the organizations objectives.*

### **Sustainable development, Sustainability, and the Triple Bottom Line**

*“The average life of species is a 1,000,000 years, which means that we need to plan for another 800,000 years. So while 800,000 years is a stark figure to illustrate what is ahead of us, trying to plan that far ahead is nonsensical. Instead, we need to take one step at a time. I suggest that the size of these steps should be on millennium, i.e., 1,000 years” (Merfield, 2012, “The future of farming” para. 4).*

On his article “*The future of farming*” Merfield (2012) considered that 1,000 years is the period to confirm a sustainable agricultural system. If the humanity wants an agricultural system that can survive for a millennium, it is essential to understand how the environmental system works and how the agriculture is dependent on it. But, why is Merfield's theory for agricultural systems important for the stakeholder analysis?

Agriculture is essential to provide food security, to make the stability of society, to produce the most basic goods for human livelihood, and to ensure the livelihood of society (Moehler & Wilkin, 1996). Agriculture is a global industrial chain system where thousands of companies and millions of people are dependent on. Therefore, thinking about sustainable agricultural systems means to involve every integrant of its chain (natural environment, individuals, and organizations).

Merfield's “1,000 year period” connects the agricultural chain system to all other productive systems into the same timeframe. Consequently, if the agricultural system fails, all other systems will fail due their interactions. Lowe (2011) explained that there will be no future unless the society and its organizations develop systems that allow the nature to run its cycles resulting in fresh air, potable water, health foods, and so one.

Malsow's hierarchy of Needs can explain this domino effect. The first two levels of the pyramid is *physiological needs* and the second level is *security needs*. Abraham Maslow

(1908-1970) stated that “people are motivated to fulfil basic needs before moving on to other”. According to Moran (2009), individuals who are not able to fulfil their lower needs no longer seek higher needs. Walsh (2011) endorsed this view commenting that growth at higher levels in the pyramid would not exist if the society cannot meet its daily survival needs. In this terms, sustainability is only achievable if food security is guaranteed (Meerburg et al., 2009).

Consequently, if the agricultural system fails to provide the society’s needs cited by Moehler & Wilkin (1996), the first two levels of Maslow’s Hierarchy of Needs are not fulfilled, resulting in a lack of motivation to seek for the achievement of other needs, starting the domino effect (see Figure 1). In order to prevent this domino effect, organizations must learn to build a more coherent relationship with the environment.

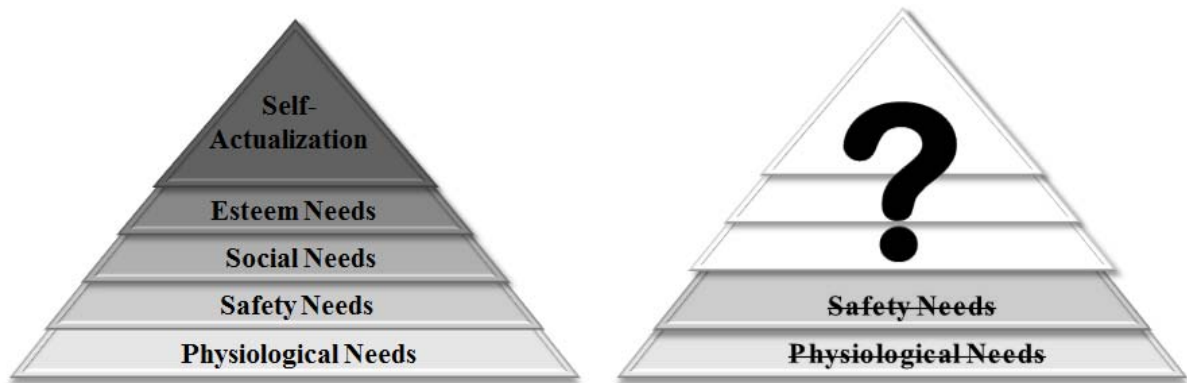


Figure 1: Impact of the food system disruption on Maslow’s pyramid of needs

Garrido (2009) pointed out that the net contribution of a given human organization could be sustainable if the interaction between self-coherence and coherence with the environment is neutral or positive. Full interaction is only possible when its components are analysed as a system (see figure 2), in which the economy, ecological, and social components would be analysed based on the impact on the eco-system and its resources. It means that all organizations should recognize themselves as part of the Nature Life Cycle System. As a result, any resource deployed to generate a product or service should be recycled in order to be used again by the system (Svensson & Wagner, 2011).

The alignment of business life cycle with Nature life cycle demands deep knowledge on each environment and their interactions throughout the product/service life cycle. Therefore, the first reason for including the natural environment as stakeholder (NEST) and future generations relies on the fact that any activity of a given organization interacts with the natural environment in a particular level. Consequently, without including this stakeholder, an

organization would have an incomplete view of the subject under analysis that could jeopardize the stability of society due to its harmful acts to the environment.

### **Natural Environment as stakeholder (NEST)**

Starik (1995) published one of the earliest articles arguing on the necessity of including the natural environment as stakeholder (NEST). The author commented that there are several reasons for the inclusion of the natural environment in the stakeholder analysis. First, natural environment is part of the business environment. Second, natural environment not only has political-economic *voice* (emphasis added) but also has ethical, social, emotional, and physical characteristics (Starik, 1995). Third, the inclusion of natural environment as stakeholder “would provide avenues for organizations to perceive their respective external environments more comprehensively or panoramically” (Starik, 1995, p. 215).

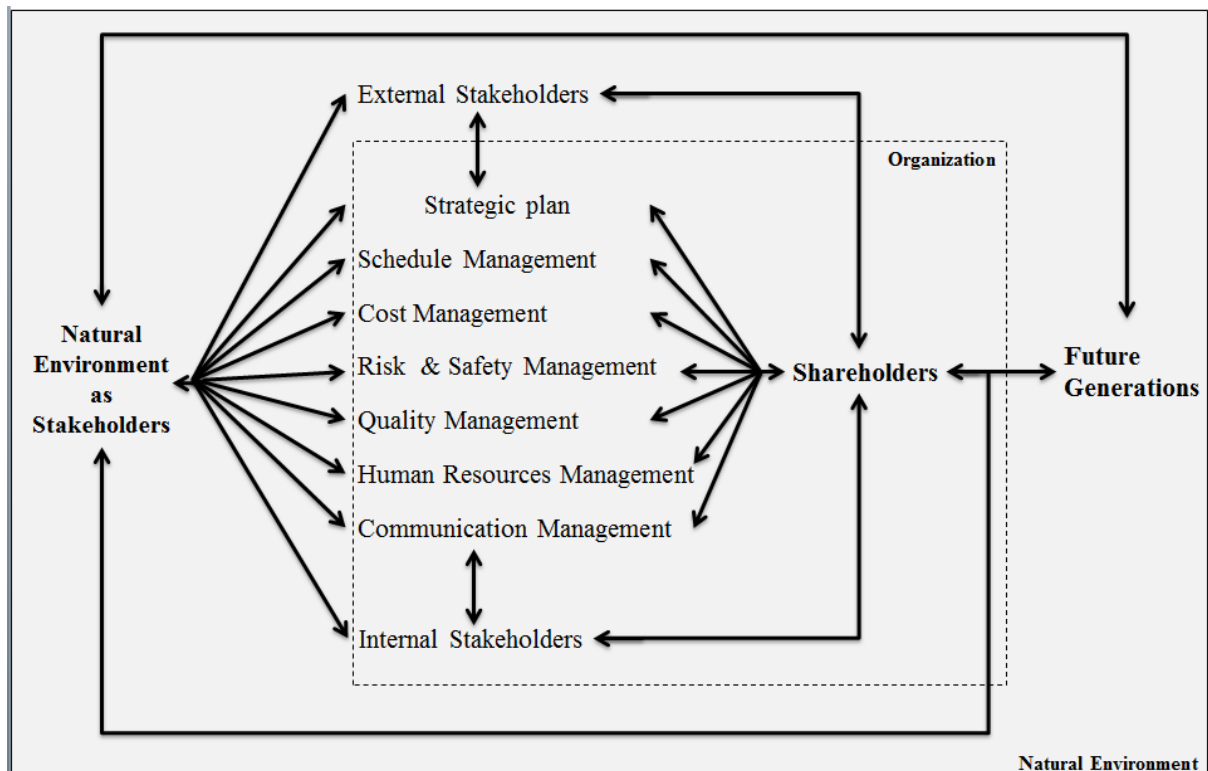
Against his proposal, several theorists presented reasons to maintain the current *status quo* (Phillips & Reichart, 2000; Orts & Strudler, 2002; Laine, 2010; and Gibson, 2012). Phillips & Reichart (2000) used a fairness-based stakeholder analysis to defend the idea that “natural environment is not and cannot be a stakeholder (p.185)”. In the Orts & Strudler’s (2002) opinion, the stakeholder analysis should take in consideration “only actual economic risk-bearing participants in a firm (p.227)” in order to permit a more direct and practical analysis of the business behaviour.

More recently, Laine (2010) recognized the importance of the natural environment by embedded it in a stakeholder network diagram. The author expected that it could increase the visibility of the natural environment in managerial decisions. However, Laine (2010) affirmed that it does not mean that the natural environment was included in the stakeholder analysis. In his opinion, only humans group and individuals can be consider as stakeholders. Gibson (2012) recommended “discarding general talk of the environment, instead, focusing on the more tangible idea of human sustainability. Doing so will give managers a more definite standard for decisions involving nature and social values (p. 24)”.

In an effort to expand the discussion started in 1995, Driscoll and Starik (2004) published an article where the authors provided a strong basis to include the natural environment as the primary and primordial stakeholder of an organization. First, they analysed the NEST under the attributes proposed by Mitchell et al. (1997) for identify stakeholders (**power** to influence the firm; **legitimacy** of a relationship; and/or **urgency** of a claim). Then, Driscoll and Starik (2004) expanded Mitchell’s et al. (1997) stakeholder identification and salience model by adding **proximity** of entities (physical or ideological).



Figure 2 describes the interactions between the natural environment, organization, and future generation. Considering the fact that all living beings are part of the natural environment, their activities are interconnected and interdependent. As figure 2 shows, natural environment interacts with many operational areas in an organization and the level of interaction is dependent on the activity requirements and other stakeholders' interests. The natural environment interacts with all sections of the company. The outcomes from these interactions affect shareholders' interests either positively or negatively. In the long term, the needs of shareholders will only be fulfilled when organizations satisfy the needs of all other stakeholders.



**Figure 2:** The interactions between natural environment, organization, and future generations.

Considering a coal power plant, its revenues come from its ability to mining, transporting, and processing the coal. At strategic level, the company has to evaluate the coal storage level, plant life cycle, plant maintenance, environmental requirements, etc. the plant schedule and cost management are directly affected by weather variations (rain, thunderstorms, winds, etc.). Risk and safety management evaluates all potential harm throughout the productivity process, which has numerous environmental assessments. On the

quality management section, the quality of the raw material must be constantly monitored. Human resources must address the potential impact of the pollution on the staff performance. Finally, each one of these areas has several internal stakeholders that interact, on daily basis, with the natural environment.

External stakeholders can affect the company's operations by complying over the pollution, heavy metal emissions, and destruction of the landscape. Also, the government can force the adoption of very expensive filters in order to reduce toxic emission. Consumers can make pressure on the company for more sustainably initiatives to minimize the effects of the pollution, which is correlated with diseases that can generate lawsuits against the company.

The 2010, British Petroleum (BP) Gulf oil spill is an example of social, environmental, and economic losses by not considering the NEST. Ohreen (2010) stated that "From a strategic management approach, BP would have to consider the natural environment as a stakeholder and take steps to incorporate environmental components into their goals, strategies, and structures as a way of achieving an overall company approach (par. 5)".

In conclusion, these examples show how the natural environment affects or can be affected by the organization actions. Its inclusion on the stakeholder analysis would minimize the possibility of accidents and environmental contamination, which would result on lawsuits, brand damage, and financial losses. In our view, NEST can protect the shareholders' interests by connecting the scientific part of the business with the managerial department, where managers can develop more efficient plans by knowing the interaction between the organization and the environment. Therefore, the second reason for including NEST relies on the financial outcomes that affect the shareholders' interests.

## **Future Generations**

*"We are deciding the sort of world future generations will inherit. The present outlook is quite bleak. Obsessed with short-term economics, we are systematically neglecting our obligations to consider such issues as resource depletion, environmental damage and social cohesion"* (Lowe, 2011, pp. 87).

Similarly to Merfield's agricultural system timeframe, all organizations should look 1,000 years ahead instead the current short term vision and strategy. Assuming that no organization wants to end its operations, planning for a long term operation implies on the

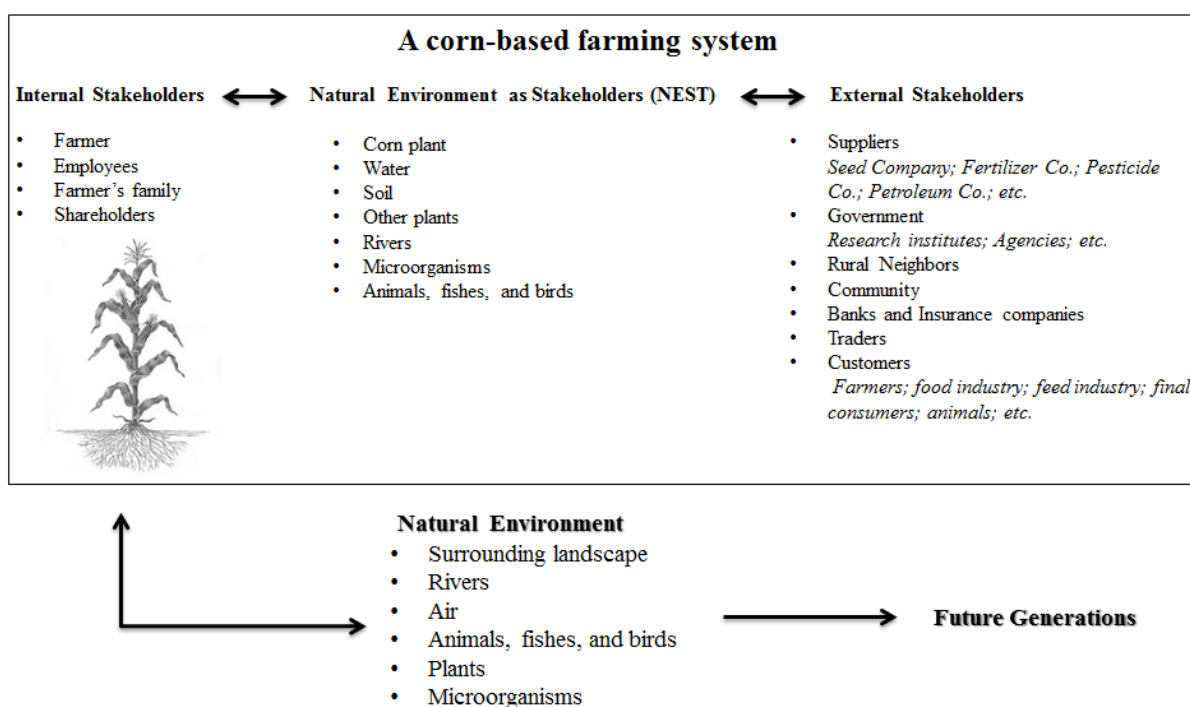
inclusion, in the organization stakeholders analysis, its future employees, future customers, and future shareholders. Alexandru and Spineanu-Georgescu (2011) named this act as protecting the rights of the voiceless; because, future generations have no ability to speak on their own behalf, in order to protect their interests.

The past generation was responsible to create the actual social, political, economic, and environmental structure. The actual generation is responsible to improve the living conditions of human beings through social, political, and economic development for future generations (Mustaq & Azeem, 2012). Consequently, this development should consider the rights and interests of future generations (Alexandru & Spineanu-Georgescu, 2011), which requires friendly environmentally and ecologically actions. The goal is to develop a healthy global society for both present and future generations, which requires the restoration and preservation of the natural environment and the development of technologies and economic systems that provides a decent life for all human beings (Cortese & McDonough, 2001).

This means that the stakeholder analysis should not finish at the edges of the organization interests. In fact, organizations should evaluate how their decisions would affect future generations because satisfying the needs of future generations is the most important component of sustainable development (Said, Osman, Shafiei, Razak, & Rashideh, 2010). Ignore this reality means that organizations are choosing, in the name of short-term gains, to put at risk all development that the humanity has been promoting as well as the ability of other human being to take their share in this world. Müller (2014) describes it as irrational myopic behavior as it jeopardize long-term sustainable development.

Figure 3 shows a Corn-based farming system in which NEST and future generations are part of the stakeholder analysis. Using this figure to illustrate the concepts of “power to influence the firm; *legitimacy* of the relationship; and/or *urgency* of a claim” (Driscoll & Starik (2004, p. 57); citing Mitchell et al. (1997), it is possible to infer the following. (1) It demonstrates the mutual interdependence and exchange relationship between these stakeholders and the farm (firm), showing that both internal and external stakeholders work to meet the NEST needs, otherwise it is impossible to produce anything (*power*). (2) NEST also makes available essential resources to the farm system (*legitimacy*). (3) If the farmer does not attend the crop’s claims over its demands of water, fertility, sanity, and time, the outcome would cause a great distress (*urgency*). In these terms, NEST meets the *power*, *legitimacy*, and *urgency* attributes to prioritize stakeholders.

Surrounding the agricultural system is still the nature that embraces it. Their interactions determine what kind of system the future generations will get. Similar analysis is also feasible for the industrial system as well as the service system. Including NEST and future generations in the stakeholder analysis will support studies towards meeting social demands and economic progress on both short and long term. It requires the participation of professionals that can understand the nature “language” and translate it into a sustainable business program.



**Figure 3:** An example a stakeholder analysis of an agricultural system (Corn-based farming) that includes both NEST and Future Generations.

We believe the debate should involve other scientific areas, especially those areas that have close interaction with the natural environment such as biologists, agronomists, environmental engineers, and geologists. Not only can these professionals understand the nature’s *voice* and translate it into business information but also can they demonstrate the benefits of looking at the nature as a stakeholder in order to develop more sustainable organizational decisions.

Nowadays, the greatest challenge is to meet the needs of current and future generation (Herrmann, 2014). The actual SA model contemplates only the current population which seems to go in the wrong direction of the actual human challenge. Therefore, the third reason for include the NEST relies on attending future generations’ needs. By doing that, organizations would shift their current short-term goals when include on their stakeholder

analysis the impact of their business strategy in terms of pollution, contamination, and resources depredation that the current would threat the future generations to have chances to strive.

### **NEST at Global Level**

So far, it has been analysed the interactions between the natural environment, the organization, and future generations. However, none organization operates alone. There are other entities interacting with the company such as competitors, suppliers, and customers. These entities also interact with others entities creating the global web. Unfortunately, these global interactions among organizations are not linked to the natural environment.

Commoner (1995) explained that human beings live in two worlds. The first one is the natural world (eco-sphere) and the other world is resulted of human creation (techno-sphere) such as homes, factories, farms, and cars. In the Eco-sphere, its components move through closed cyclical processes, on the other hand, in the techno-sphere, it components mostly go by linear processes (Commoner, 1995). As a result, Eco-sphere has minimal waste but techno-sphere produces massive waste (expressed in solid, liquid, gaseous waste). Catton (2007) called the attention to the Eco-sphere carrying capacity or the ability of the natural environment support a given load.

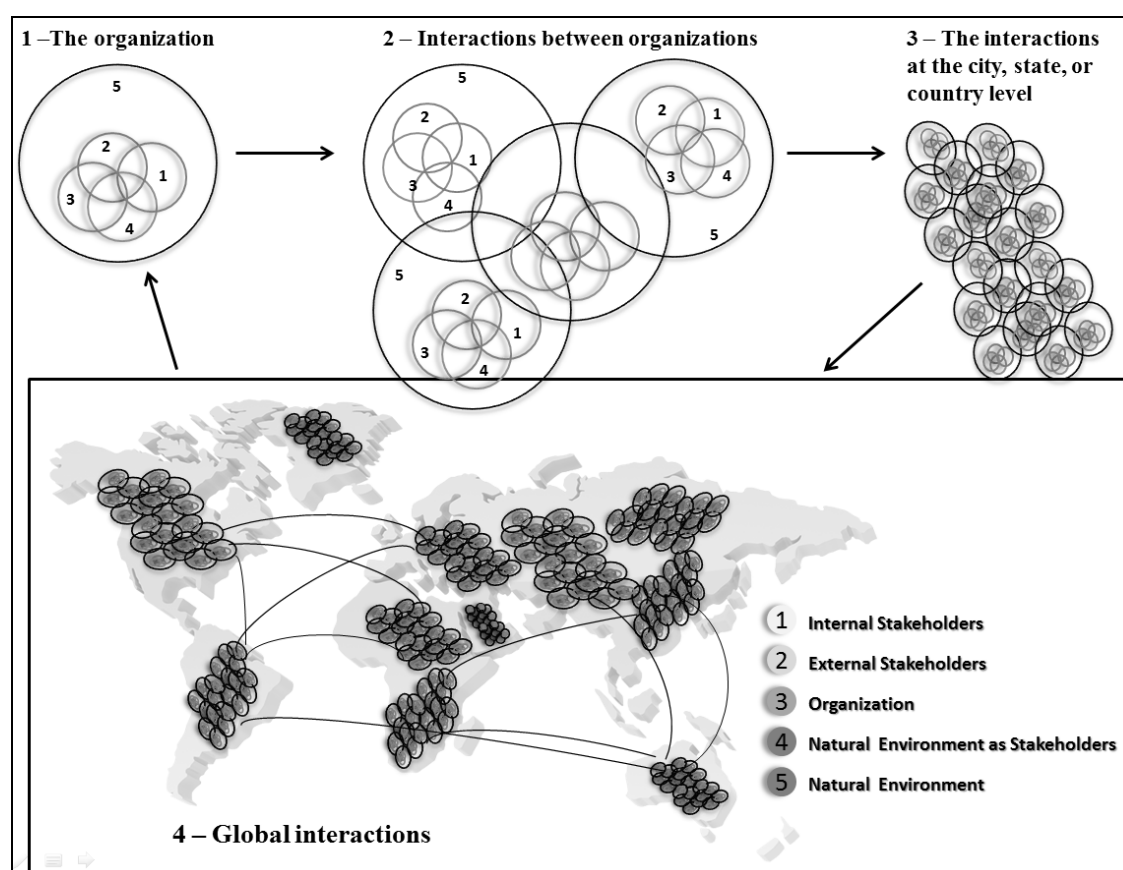
On figure 3, we demonstrated multiple interactions between the natural environment and different organization's sectors. On figure 4, we expanded this analysis into four levels based on the Laine's (2010) study who proposed the natural environment should surround the stakeholder network in order to increase its visibility. It is important to observe that the natural environment is mentioned twice. One is the part of the nature that affects or is affected by the organization activities (NEST). The second is natural environment that goes beyond this interaction.

Level one is the organization boundary (techno-sphere) that has direct and indirect interaction with the natural environment (eco-sphere). As the organization boundary expands, it interacts with other organizations boundaries (level two). On level three, these interactions grow to city, state, and nation dimension. It indicates domino effect of different productive areas. The level four illustrate the global web of interactions which demonstrate that the decisions made at the organization impact on the global system.

United Nation Environment Program (UNEP) provides the example of the interaction among these levels. In 2009, UNEP (2009) stated "national efforts to control the

pollutants - such as black carbon or soot, low level ozone or smog, methane and nitrogen compounds - could simultaneously generate health and economic savings as well, and address other environmental concerns (p 6)”.

Using the figure 4 to interpret UNEP’s statement, nations (level 3) - *recognized as stakeholders*- should evaluate the pollution originate by organizations (levels 1 and 2) - *recognized as stakeholders*- in order to generate health (for human beings - *recognized as stakeholders*) and other environmental concerns – *it is not recognized as stakeholders*). It makes clear that excluding NEST from the stakeholder analysis does not exclude the necessity to evaluate its needs. Therefore, including NEST makes the analysis much more inclusive and complete.



**Figure 4:** Individual and global interactions

The BP oil spill in the Gulf case provides a good example of how the global interaction among organizations occur. Internally, all sectors suffered by the managerial decision of wrongly weighted the environment components of the business. People died, production schedule failed, billions of dollars in material and environmental losses, and many other problems that affected internal stakeholders. Externally, organizations that did not have any direct contact with BP faced financial losses (i.e., fishing farms, restaurants,

cities along the shore, real estate companies, and etc.). In order to fix the problem, BP had to work with govern (Federal and State level), counties, cities, non-for profit organizations, and local communities.

In conclusion, the fact of NEST is not included on the current stakeholder analysis does not means that NEST does not play a decisive role. The focus should be on what kind of contributions NEST can bring on studies of corporate social responsibility, sustainability, future generations, risk mitigation, organizational culture, and operational and financial performance.

### **Conclusion**

The purpose of this paper was to contribute with the discussion on the importance of including the natural environment and future generations as stakeholders. A definition of stakeholder, considering both natural environment and future generations, was proposed. Also, it was analysed the interactions between natural environment, the organization, and future generations. Then, it was briefly analysed the interactions among organizations at global level.

Three major reasons for including the natural environment as stakeholder (NEST) were presented. First, any decision in an organization has some level of interaction with the natural environment. Second, the future generation's needs depend on the actual generation ability to create a more sustainable economic system where the environment is preserved. Third, these interactions can affect positively or negatively the shareholders' interests. Finally, the inclusion NEST and future generations in the stakeholder would bring several benefits for the society as a hole by considering components that may affect the lives of many stakeholders and shareholders throughout the global web. This paper aimed to contribute to better understanding and the need of taking into consideration of the NEST in stakeholder analysis for sustainable development.

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