Environmental Sustainability: Proposals for sustainable practices

Helen Liepkan Maranhão[1] Luís Paulo Sant'ana[2]

[1]Bacharel em Ciências Biológicas, Universidade Federal do Mato Grosso do Sul

[2]Mestrando em Biologia Animal, Universidade Federal dos Vales do Jequitinhonha e Mucuri

luispsant@gmail.com / helen.maranhao@gmail.com

Abstract: The unsustainable use of natural resources is not a current issue and it began since the Agricultural Revolution, which characterizes the change in the relationship between man and nature. Thus, the first major environmental impacts emerged, such as destruction of forests, deviation of watercourses and species's extinction. As a result of this new way of life that went from nomadism to sedentary lifestyles, there was an increase of human productive capacity and the emergence of other crafts that were not directly related to food production. Given that, this paper discusses topics regard to sustainability issues and suggests a few alternatives which people can apply on their daily lives and contribute to the exploitation of the environment in a more sustainable way.

Keywords: Sustainable development; alternative transportation; waste production.

Sustentabilidade Ambiental: Propostas para práticas sustentáveis

Resumo: O uso insustentável dos recursos naturais não é uma questão atual e começou desde a Revolução Agrícola que se caracteriza pela mudança na relação entre o homem e a natureza. Sendo assim, os primeiros grandes impactos ambientais surgiram, tais como destruição de florestas, desvio de cursos de água e extinção de espécies. Como resultado deste novo modo de vida que passou de nômade para o estilo sedentário, houve um aumento da capacidade produtiva humana e o surgimento de outras demandas que não estavam diretamente relacionadas com a produção de alimentos. Mediante isso, este trabalho discute tópicos relacionados com as questões de sustentabilidade e sugere algumas alternativas que as pessoas podem aplicar diariamente e contribuir para a exploração do ambiente de forma mais sustentável.

Palavras chave: Desenvolvimento sustentável; transporte alternativo; produção de resíduos.

Introduction

The Industrial Revolution started in the eighteenth century and was spread through the world from the nineteenth century, aiming to promote economic growth and thus a better quality of life for the population. In fact, the Industrial Revolution brought some social benefits such as comfort, increased life expectancy, the evolution of media, transport and food. However, the means to provide these benefits had devastating consequences, such as excessive consumption of natural resources, pollution of air, water and soil, and also population density and social problems arising from it (NARDINELLI, 1993).

In response to an inefficient industrialization and the coming disasters of its process, mankind began to organize themselves in order to formulate a new development strategy where the environment was considered a fundamental part of the process of society's evolution. In view of the necessity for changes on individuals' lifestyles, the objective of this essay is to discuss the alternatives for citizens in the developed world regarding their practices towards a sustainable development. The main arguments for this work are that citizens in the developed world can reduce the pressure being placed on the state of the environment and contribute to sustainable development by saving energy, saving water, reducing waste, and choosing an alternative transportation which emits less pollutants.

Discussion

Saving Energy

As a response to the pressures on the state of the environment, citizens can change their practices on their daily basis. In the case of saving energy, there are plenty of alternatives such as installing solar panels, which is a much cheaper long-term alternative. However, solar energy is not ideal for a short-term investment, especially if the person lives in a rental house only for a few months.

Aside from solar panels, people are also able to save energy with simple practices, for instance:

- When in the shower, closing the bathtub drain as soon as the water becomes hot, if the person's shower works as a bathtub; leaving the water in the tub will help heating the house and maintaining its humidity (CHANGING TIMES, 1977).
- Installing a hand-wound timer to ring when showering and try to reduce the time until the minimun established (CHANGING TIMES, 1977), since most of the houses still have heated water by energy.
- Cooking food in a pressure cooker can

reduce fuel from hours to minutes (CHANGING TIMES, 1977).

- Using treated sewage effluents to irrigate green areas can save fertilizer, which uses big amounts of oil and natural gas (CHANGING TIMES, 1977).
- Setting an automatic timer on the water heater, turning on one hour in the morning and another hour in the evening, which can save about $15 monthly (CHANGING TIMES, 1977).
- Quick-washing dishes by hand before putting them in the dishwasher and setting it to wash half the time.
- Install dimmer switches for all incandescent room lights, floor lamps and table lamps, which can save about half of the amount of current use (CHANGING TIMES, 1977).
- Use a gas stove instead of an electric one.
- Be aware of the lights that are turned on in the house with no necessity.
- If everybody is watching the same program on television, they could join together in the living room; or even not having a TV in the bedroom can reduce the energy bill.

Contributing with small attitudes can make a great difference on the state of the environment, which in the case of saving energy the person also reduces the carbon emission. A few communities practice sustainable living and they put these alternatives on their daily lives, combining advanced technology with sustainable building to support a lifestyle which respects the environment. They are called ecovillages (MILLER & BENTLEY, 2012).

Saving water

On average, 255 gallons of water are used by a family of four for their own use (CHANGING TIMES 1981). Toilets use most of the water in houses when flushing, which usually takes four to six gallons when the necessary is only three and a half. It is very simple to install toilets that require less water, with plastic bottles, by cutting its tops and placing stones inside it to create weight, and placing them in the bottom of the tank. This can save about by 30% in the water cost (CHANGING TIMES, 1981). Moreover, leaks are also common when it comes to toilets, wasting from ten to twelve to gallons an hour, adding about $15 monthly (CHANGING TIMES, 1981). When showering, people can save water by turning it off when soaping or installing a shower that automatically reduces the flow, which can save up to $92 a year (CHANGING TIMES, 1981). Another issue is faucets when brushing teeth, shaving or washing dishes. However, an aerator can be added to the faucet, mixing air with water and reducing the flow in half (CHANGING TIMES, 1981). Furthermore,

when outdoor washing the car it is possible to use only soapy water and the hose, for rinsing. When gardening, people can use a trickle system that saves water up to 25% to 50% instead of the regular hose, because it distributes water through very small holes in a tube; or even choosing specific species which do not require much water is an option (CHANGING TIMES, 1981). Practicing most of these alternatives will clearly reduce the amount of consumed water. However, it is needed to ask for a governmental change on the food production system which is the most water-consumer nowadays, because even if people execute all these practices there is no real change in water consumption if the real problem is not fixed.

Reducing waste

Sant'ana (2015) states that economists, environmentalists and population should seek alternative strategies, such as reduce and truly reuse waste, as well as measures that may allow the use of natural resources and economic growth kept on the same track. In other words, finding methods that can avoid the unsustainable use of natural resources is still being a debatable issue, especially when regards to waste production. In this scenario, there are several attitudes that can be applied in order to decrease waste generation, for example, it is possible to reduce waste when shopping, by taking own bags or basket instead of plastic bags; purchasing fresh food instead of pre-packaged or frozen foods; buying in bulk; and choosing concentrated products.

At home, separating recyclable from organic trash and, with the kitchen waste (fruits, vegetables and eggshells), composting can make an excellent fertilizer and provide nutrients to the soil (US EPA, 2012). At work, ordering supplies in bulk and returning damaged materials instead of throwing them away can minimise packaging waste; donating or selling old equipment to schools or thrift stores; recycling office equipment by sending such as photocopier and printer cartridges to a remanufacturing company; when photocopying both sides of paper or using already one-sided printed papers for notes or drafts.

Recycling aluminium, glass and plastic drink containers, at home or anywhere also contributes to reduce waste production, and using e-mail as much as possible avoids paper bills or unnecessary communication via paper. Furthermore, practicing an ethical consumption is always the best regarding social issues, consequently for the environment as well (PAPAOIKONOMOU, 2013). Reducing waste will also diminish the quantity of litter deposited on rivers and oceans, which usually is the final destiny for it, affecting all the marine biodiversity.

Alternative transportation

When public transportation is efficient and has a fair price, it can reduce traffic congestion, air pollution and greenhouse gas emissions (LIVING GREENER, 2014). Cycling is also a free-pollutants and free-noise transportation, which can help people improving their health and fitness and reduce the daily stress of facing traffic and parking (LIVING GREENER, 2014). However, motor vehicles can also be 'eco-friendly' if fuel-efficient, which can reduce in about half its consumption and greenhouse gas emissions (LIVING GREENER, 2014). When travelling, individuals in developed nations are also concerned with their environmental behaviour to reduce personal carbon emissions in the context of sustainable 'mobility styles' (BARR & PRILLWITZ, 2012), which can mobilize others around and help with the environment's health especially in high tourist season. With 'greener' transportation, citizens reduce not only the greenhouse gas emissions, yet also the Ecological Footprint of the area as well.

According to the United Nations Development Programme (UNDP, 1998), 20% of the population that lives in the richest countries are responsible for 86% of the total outlays of private consumption, whereas the 20% most poorest are responsible for only 1.3%. With these information it is clear that significant changes must occur in the current model of production and consumption in developed countries.

For instance, the overall assessment made by the Brundtland Commission (WCED, 1987) concluded that the international economy might accelerate global growth, respecting at the same time the environmental restrictions, and stressed the need to modify the international economic relations, to reduce imbalances, inequalities and the high level of dependence between countries. For the Brundtland Commission (WCED, 1987), the primary objectives for development policy based on the concept of sustainable development are:

- reactivate growth;
- changing the quality of growth;
- meet essential needs in the fields of employment, food, energy, water and sanitation;
- maintain a sustainable population number;
- conserving and enhancing the resource base;
- Re-conduct technology and mitigate risks; and
- Integrating environment and economics in decision-making.

Conclusion

Society cannot take the risk of testing how far the planet can withstand this model of development, due to the consequences which can be irreversible. It is necessary to expand the perception of the complexity of the systems governing the nature and socio-economic structures, and reflect on the current relationship between humans and the environment around them. Thus, it is possible to act consciously promoting a new model of development by reducing pollution and increasing the quality of life for all.

Reference List

BARR S. & PRILLWITZ J. (2012). 'Green travellers? Exploring the spatial context of sustainable mobility styles', *Applied Geography,* vol. 32, pp. 798-809, viewed 25 April 2014, via Griffith Univesity library.

CHANGING TIMES. (1977). Kiplinger Washington Editors, Inc. Vol. 31, No. 12, 48p.

CHANGING TIMES. (1981). Kiplinger Washington Editors, Inc. Vol. 35, No. 7, 64p.

LIVING GREENER. (2014). 'Motor Transport', *Australian Government,* viewed 25 April 2014, <http://www.livinggreener.gov.au/travel/fuel-efficient-motor-transport/motor-transport>, <http://www.livinggreener.gov.au/travel/car-alternatives/cycling>, <http://www.livinggreener.gov.au/travel/car-alternatives/public-transport>.

MILLER, E & BENTLEY, K. (2012). 'Leading a Sustainable Lifestyle in a 'Non-Sustainable World': Reflections from Australian Ecovillage and Suburban Residents', J*ournal of Education for Sustainable Development,* vol. 6, no. 2, pp. 137–147, viewed 26 April 2014, via Griffith University library.

NARDINELLI, C. (1993). "Industrial Revolution and the Standard of Living." *The Concise Encyclopedia of Economics*. Library of Economics and Liberty. 29 March 2016. <http://www.econlib.org/library/Enc1/IndustrialRevolutionandtheStandardofLiving.html>.

PAPAOIKONOMOU, E. (2013). 'Sustainable lifestyles in an urban context: towards a holistic understanding of ethical consumer behaviours. Empirical evidence from Catalonia, Spain', *International Journal of Consumer Studies,* vol. 37, pp.181–188, viewed 25 April 2014, via Griffith University library.

SANT'ANA, L.P. (2015). "Hazardous Waste Management in Japan: A report", Unisanta BioScience, 4(4), IV

UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP). (1998). 'Human Development Report'. Oxford University Press, New York, 228p, viewed 26 April 2014, <http://hdr.undp.org/sites/default/files/reports/259/hdr_1998_en_complete_nostats.pdf>.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (U.S. EPA). (2012). 'Green Building: Reducing Waste', viewed 27 April 2014, <http://www.epa.gov/greenhomes/ReduceWaste.htm>.

WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT (WCED) - United Nations. (1987). 'Our Common Future', viewed 07 May 2014, <http://conspect.nl/pdf/Our_Common_Future-Brundtland_Report_1987.pdf>.