

# SUSTAINABLE GROWTH AND DEVELOPMENT: CHALLENGES AND NEEDS OF THE TWENTY-FIRST CENTURY

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**Abstract** — SHEWC - Safety, Health and Environment World Congress has been a success not always in terms of numbers but in terms of quality. Many organizations have engaged the idea along the years and despite the difficulties it resists the time and crisis and that is why this is its 12<sup>th</sup> edition. This edition is the result of many accomplishments of 2 organizations that have been working together putting up a top scientific congress with quality and impact in academic society. 2012 has been a year of challenges globally speaking and the future shows uncertain and promising at the same time. Sustainable growth with responsible actions is the desirable way of development for developed and for the so called emerging countries. SHEWC - Safety, Health and Environment World Congress'2012 has the collaboration of many scientists in the several sphere of knowledge who have embraced the ideal of promoting human kind for the sake of future generations.

*Index Terms* — Health, sustainability, environment, quality of life, safety, scientific research.

## INTRODUCTION

Energy security is a growing concern for rich and emerging nations alike. As the global financial crisis takes hold and awareness of climate change increases, more nations and companies are trying to invest in alternatives. The human population of the planet is estimated to now have passed 6 billion people. This can be seen as a success story, due to improved health care and reduced infant mortality while expanding life spans. However, a common concern is that as the population continues to increase, it will place more strain on the environment, on nations' ability to provide, economies to grow and society to flourish. Natural disasters such as earthquakes, tsunamis, and floods can often come at the least expected time. Others, such as hurricanes and cyclones are increasing in severity and destruction. Typically, the poor are the worst hit for they have the least resources to cope and rebuild. Infectious diseases continue to blight the lives of the poor across the world. An estimated 40 million people are living with HIV/AIDS, with 3 million deaths in 2004. Every year there are 350–500 million cases of malaria, with 1 million fatalities: Africa accounts for 90 percent of malarial deaths and African children account for over 80 percent of malaria victims worldwide. Water problems affect half of humanity; More than 660 million people without sanitation live on less than \$2 a day, and more than 385 million on less than \$1 a day; Access to piped water into the household

averages about 85% for the wealthiest 20% of the population, compared with 25% for the poorest 20%. These numbers and facts posted by UNESCO shows a world scenario with lots of crisis that so far have not been defeated even counting with high technologies. These aspects lead to the assumption of political and economical facts that drive governments and social groups to the discussion and the seeking for solutions.

There are so many questions and so much that scientific community does not know yet! Anyway so far science and technology have contributed for the comprehension of so many aspects of the nature in which life is possible. Some important revealed data that deserves to be analyzed more deeply are: first that there is only one race, the human race; second the entire living beings share the same planet and they all can suffer the impacts of abusive use of natural resources. It is not easy to picture the future once selfishness is still a strong force in human nature, however surviving is also a strong force in human nature and that is one reason why so many actions in every level of life people are producing and implementing solutions for the vast list of issues in Safety, Health and Environment and all the Conferences SHEWC are forums for scientists, researchers and professionals of the several areas of human knowledge.

In this edition of the conference all aspects of environment are discussed not only the use of water and land but also social aspects of engineering; the safety, the economical impact on human development and etc.

People live in the so called “society of knowledge and information” which brings all the benefits however at the same time the bad consequences of its existence. The technological illiteracy, the growth of the human population and the growth of resources used to support life are altering the social and economical environment in unprecedented ways. Environmental changes have serious consequences for life on earth and for future generations.

It is important to examine and look for new ways of improving environment as a whole. It is human beings acting in a way to make at the present a better world for future generations. It is not an easy task nevertheless fundamental for the fostering of development, progress, evolution and surviving.

**Safety, Health and Environment Research Organization** has emerged and maintained with the spirit and the desire to contribute for the formation of a citizen and a world in harmony with the nature.

Its history shows the development and the evolution of an organization formed by scientists and a researcher willing to play the important role in the society that it is inserted

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contributing as professionals and citizens for the welfare of the community.

## SHEWC MISSION

The Safety, Health and Environment Research Organization was born NPABS - "Baixada Santista" (now called Atlantic Forest Coast Region) Environmental Research Nucleus founded on October of 1999, governed by the Statute and for the reasonable laws to the entity type in that it is framed.

The history of this organization began with an idea shared by some researchers of creating a non governmental organization to foment the research mainly in the environment and health areas. That idea started from 1997 when some scientists organized scientific meetings and then finally the NPABS - Baixada Santista Environment Research Nucleus became a reality in October of 1999.

After many years of performance in the Atlantic Forest Coast Region the organization decided to organize and to accomplish a Congress with the objective to enlarge the performance of the Nucleus and to bring for the area what the accomplishments in researches in and for the country. So in 2001 CBPAS'2001 accomplished the first of a series of successful congresses. The theme of the first Congress was "Environment and Quality of Life". This conference promoted a forum for the popularization of researches and the most recent developments in the improvement of the environment and of quality of life [1].

With the enlargement of the activities of the Nucleus the members have decided to transform it, first in Brazilian NBPAS – Brazilian Health and Environment Research Nucleus and because of its international development, NBPAS has become the OPASS –Organization of Research in Safety, Health and Environment and finally SHERO – Safety, Health and Environment Research Organization.

Today SHERO - Safety, Health and Environment Research Organization is an Organization of the Civil Society of Public Interest, non profitable, with juridical personality of private right and uncertain time of duration.

It is a well structured organization with a small and structured team with several collaborators of universities and companies that are determined to make of it a serious and dynamic organization. Its first objective is to develop researches on environment and health, aiming the improvement of the life quality. Those researches contemplate basic and applied scientific aspects, with the integration of several areas of the knowledge. OPASS intends to collaborate in the sense of providing the area of a technical training and of infrastructure for continuous environmental monitoring, in a way to guarantee in a permanent way the maintenance of the quality of life of the populations. O Nucleus tries to act in the areas of Agronomy, Anthropology, Green Areas, Architecture, Hydrographical Basis, Biology, Social sciences, Computation, Maintainable Development, Ecology, Echo tourism, Environmental Education, would Engineer, Phonoaudiology, Environmental Communication, Geology, Environmental Administration, Environmental Marketing, Medicine, Veterinary Medicine, Meteorology,

Oceanography, Dentistry, Pollution, Fishes, Chemistry, Industrial and Urban Residues and of Health, Social Responsibility, Sanitation, Public Health, Remote Sensing, finally in all the areas of the knowledge that can collaborate for the environmental preservation.

## CONGRESSES TIME LINE

As mentioned above the Health and Environment Brazilian Congress - CBPAS, at first CBPA - Environment Brazilian Congress organized appeared as an idea to present to the community Brazilian scientific works developed by researchers in the area of middle-atmosphere in a wider way than if it was doing until then.

This way, on September of 2001 (which theme was **Environment and Quality of Life**) its first edition happened, and counted with the several scientists' participation involved with problems of the environment, mainly of São Paulo State, especially because this was organized and accomplished by the effort of the group of members of OPASS - Safety, Health and Environment Research Organization, in its majority of the Baixada Santista, that has wanted to see this encounter to turn a reality.

In its subsequent edition, that happened on June of 2002 that theme was **The Environment in the Beginning of New Millennium** the contributions of the area of health were in a significant number and increasing considerably and so this led to the addition of the Health in the name of the Congress [2]. We have then, the Health and Environment Brazilian Congress that was accomplished in 2003 and whose theme was "**Environment and Health**", an involving theme that received equally valuable contributions [3]. The number of participants increased, reaching to 200 people, between master degree and under graduation students and scientists, besides the growing participation of works of other States of Brazil and, surprisingly, with works of out of the country also. The same happened in the following congresses as in 2004 (**The challenges of sustainable development**) [4]; 2005 (**Environment and Health in the "Zero Hungry Country"**) [5]; The following congresses were a success such that in order to attend the requirement of many people for 2006 it became the EHCW'2006 - Environment and Health World Congress (**Natural Resources for the Health of Future Generations**) that counts with the contribution of researchers from many countries as well as of many different areas of human knowledge. As it can be seen it is the evolution of hard work of a group committed with the goal of fostering the dissemination and discussion of sciences and technology providing suggestions of actions and policies in environment and health matters [6].

SHEWC'2007 (**Resources and Responsibility**) [7] is the evolution of the last congresses with the addition of Safety as an accomplishment of a dynamic organization such as the Congresses, which every year count with different presenters and new ways to see the world by the perspective of sciences and technology. SHEWC'2008 (**The Global Challenge to promote Responsible Development**) happened in the so considered most beautiful city of Brazil,

Rio de Janeiro counting with very interesting plenary sessions and a variety of very interesting papers [8].

In its ninth edition, the SHEWC'2009 (**Safety, Health and Environmental Issues and the Impact on Contemporary World**), already built with a significant number of good quality works coming from several areas of the country and from abroad, showing that it is solidifying as a scientific event of quality and importance [9].

SHEWC'2010 (**Converging towards sustainability**) shows the historical moment in which humanity is emerged, the chaos of challenging safety and environmental issues and the economical problems to overcome in a global dimension. No matter the challenges that tend to grow due to the globalization effects the case is that the organization of such congresses is very important for the scientific community. It constitutes in a space for a forum of discussions, ideas and proposals for the advancement of science to benefit humanity [10].

The last conference SHEWC'2011 has as the theme of the congress "**Socio-Ecological Issues Challenging Human Development**" [11].

The present conference SHEWC'2012 has as the theme of the congress "**Sustainable Growth and Development: Challenges and Needs of the Twenty-First Century**". The SHEWC'2012 aims to provide researchers with up-to-date information in safety, health and environment fields, counting with the presence of experts from across the globe. The ideas, opinions and professionals contributions are showed in lectures, plenary sessions, presentations of papers and workshops. As in every edition there is an opening session with the participation of promoters of the event and several authorities. At the end, in a closing session the main results of the event are presented.

## ORGANIZING SHEWC CONGRESSES

All the editions of SHEWC count with a publication of the collection of presented, peer reviewed and approved full papers by the Scientific Committee in CD-ROM; additionally, a book of abstracts is published containing general information on the Congress and the abstracts of all of the presented works. As well as the Congress Proceedings they are registered at the National Library and they possess ISBN with international validity.

For its technical organization, the Congress count with the experienced specialists' of the most important national and international institutions. Their contributions in the evaluation of the submitted works and in the definition of the scientific program they are of priceless value.

The program of the Congress is built with workshops, an opening session, with the participation of promoters' of the event and authorities, followed by:

- Lectures guests - Brazilian Specialists and foreigners will bring their contributions through presentations, with time to assist the participants' questions;
- Round tables and Panels: The invited specialists' meet to discuss with the audience controversial themes for the area of environment and Health;

- Presentation of works - active Professionals in the market and researchers present the works that were submitted through the Call for Papers and selected by a scientific technical committee formed by specialists of the several areas. Those works present the last researches and reports of experiences.

At the end of the three days of works there is a closing session, when the results of the event are presented.

## PUBLIC OF THE CONGRESS

The public that frequents the Congresses and to whom it is designed are the community's members, the professionals involved with the most several environment and health areas, whose work is to promote the improvement of life quality and those who want to keep themselves informed.

Some of the activities developed by this public are:

- Representatives of governmental or private agencies responsible for the dissemination of information in programs, auditing and environmental enterprises.
- Authors of education material of the environmental areas.
- Producers or distributors of research equipments or laboratories.
- Specialists in services of information for students and educators of environmental and biological areas.
- Research centers supporters and/or centers of trainings that have need of competences in the environmental areas.

One of the peculiarities and that makes it an extremely interesting event is the transdisciplinarity that exists in treating the environmental and health subject where this is discussed and examined in all their aspects. The discussions are not limited to the biological and social, but they are discussed thoroughly and examined by the optics of the juridical sciences, of communication, marketing, engineering, physics, psychology, pharmaceutical and other.

## FROM HEALTH AND ENVIRONMENT BRAZILIAN CONGRESS TO SHEWC'2012

All the Congresses accomplished until this year have been all of excellent quality, receiving from the local community not only academic and social attention, but politics and of the media. A Congress that began modest and that is attracting the many researchers' attention not only of Brazil as well as of abroad counting with several contributions of other countries. For this year due to requests of many members and attendees as well as international entities, Safety, Health and Environment Research Organization and COPEC - Science and Education Research Council is accomplishing the SHEWC'2012 - Safety, Health and Environment World Congress that promises to be one more successful enterprise of quality.

Since the first edition the organizers as well as the participants believe that fostering ideas and debate is the key to coming up with the best possible solutions. That is what makes the congresses so rich and enticing once face to face debates can generate new ideas, new bonds and groups.

## PLACE OF CONGRESS

One of the world's biggest metropolises, São Paulo looms large over South America. While the city lacks the natural beauty of Rio, Sampa – as it's affectionately called by locals – has much going for it. This is, after all, the cultural capital of Brazil, with a dizzying array of attractions including first-rate museums, nightly concerts, experimental theater and dance. The nightclubs, bars and restaurants are among the best on the continent. Paulistanos (inhabitants of the city) believe in working hard and playing harder, and despite constantly complaining about street violence, clogged highways and pollution, most wouldn't dream of living anywhere else.

Though founded in 1554 by Jesuits, São Paulo remained a colonial backwater for much of its history. It wasn't until the late 19th century that it began to emerge from the shadows, and the 20th century brought an explosion of immigrants from all over the world to work on the railroads, in the factories and in the fields. By the 1950s São Paulo took the lead as the country's industrial and commercial center. The result of the flood of immigrants is clear: the city of 17 million (metropolitan) is Brazil most culturally diverse destination. For the wanderer, a stroll through Sampa's neighborhoods is a window into the shops and restaurants of the world [12].

The city is located on the hilly plateau of the southeastern Brazilian Highlands with an average elevation around 800m. However, it is situated at just 70 km away from the Atlantic Ocean. The city is geographically situated in the central part of Sao Paulo's metropolitan area, which is the largest metropolitan area in the nation and has an area of around 8,051 km<sup>2</sup> (3,108.5 sq mi).

Founded by Jesuit missionaries, Manuel da Nobrega and Jose de Anchieta on January 25 1554, the city of Sao Paulo remained a small local backwater venue for almost three centuries. However, Sao Paolo served as a base for slave-trading groups known as Bandeirantes. These Bandeirantes followed Jesuits to enslave Indians for cane plantation work. The Bandeirantes explored many mines of precious metals and stones as well as the unknown land of today's western Brazil. Several monuments in honor of their contribution to the city can be found in Sao Paulo.

The addition of new settlements in this vast and fertile plateau eventually made Sao Paulo a state. In 1711, Sao Paulo officially got the status of a city. During the 18th century, the city continued to be the center of all types of activities. The abolition of slavery in 1888 carried out some changes in the social life but the 19th century brought huge changes in the economic developments of the city. Instead of cane plantation, the coffee culture started in the middle of the 19th century which was responsible for the flourishing economic prosperity.

Sao Paulo started to transform from a commercial village into a large and powerful city. Several public gardens, European fabric stores, bookstores and restaurants were established in the city. In 1914, the state of Sao Paulo was

home to about 2 million immigrants. However, at the beginning of the 20th century, the decrease in coffee prices in the international market affected the city's coffee based economy, which led local farmers to invest their money in industrial developments.

The boom in the industrial sector of the city attracted a large number of Europeans, Japanese, Syrian, Lebanese and a huge number of migrants from the poorest regions in Brazil.

The service industry also flourished in the late 20th century and city became home to a large number of local and international banking offices, law firms, multinational companies and consumer services.

Sao Paulo is one of the richest cities in the world and ranks as the leading commercial and industrial centre of South America. In 2005, the Gross domestic product (GDP) of the city was US\$ 156,280,780,941.00. According to data of IBGE, this GDP was equivalent to approximately 12.26% of the Brazilian GDP and 36% of all production of goods and services of the State of Sao Paulo. Also, the per capita income for the city was R\$ 24,083 in 2005.

The financial districts of the city are situated on the surroundings of Avenida Paulista and in the Centro Velho (Old Centre). Some other important business districts are located in the boroughs of Pinheiros and Santo Amaro, including the large artery Faria Lima. Some significant and highly specialized regions like Bom Retiro and Bras (wholesale garment districts), Consolacao (lighting equipment), Rua Santa Ifigenia (electrical and electronic parts), Rua Teodoro Sampaio (furniture and musical equipment), the posh Rua Oscar Freire (designer and label stores), Avenida Europa (luxurious automobiles) and a crowded Rua Vinte Cinco de Marco are situated in and around the city.

Due to the changes in world's economy, the economic profile of Sao Paulo is going through a deep transformation. The economy is gradually diverting from strongly industrialized base to service and technology-oriented activities. The industries consuming huge manpower have been replaced by a large number of high-technology industries and service providers of many flavors. The city is experiencing a boom in many sectors, particularly shopping malls, entertainment, construction, business-oriented tourism and other service based industries.

If the city of Sao Paulo were a country, the economy of the city would be bigger than many countries in the world. In 2005, the tax collection of the city was about R\$ 90 billion and the amount of R\$ 15 billion was spent on the budget of the city. This wealthiest city is a host for around 1,500 bank branches and over 70 big shopping malls and also 63% of all the international companies with business in Brazil are headquartered in the city.

The making of motor vehicles is one of the main businesses in the city. Other large industries include producing textiles, chemicals, machinery and a wide variety of consumer items such as clothing, appliances and tires. The city is a home to a large number of advertising and broadcasting companies. Also, large number of firms that

process coffee, cotton, sugar, and other crops are located in the city.

The stock exchange of the city is known as The Sao Paulo Stock Exchange (BM&F Bovespa) and it is an official stock and bond exchange of Brazil. The BM&F Bovespa is ranked as the largest stock exchange in Latin America and third largest in the world.

Despite many obstacles, the city of Sao Paulo never lost its importance and retained its position of the most important commercial center of Latin America. Today, Sao Paulo city is a hub for all types of activities in Brazil [13].

## SHEWC'2012 CONGRESS

As mentioned before SHEWC'2012 - Safety, Health and Environment World Congress is being promoted by SHERO - Safety, Health and Environment Research Organization and organized by COPEC - Science and Education Research Council. Two organizations that understand the importance of the accomplishment of an event of this importance to the country and for the citizen, not only as a way of popularization and invigoration of the science and the technology. Its success proves that more and more companies and organizations, profitable or non profitable they fall back upon the accomplishment of partner-cultural events, betting in the benefits of this tool for the execution of their strategic objectives, promotional or of technical-scientific popularization. The official languages of the Congress are English, Portuguese and Spanish.

This year SHEWC host I the FAAP - Armando Alvares Penteado Foundation. Founded in 1947 by Count Armando Alvares Penteado as an entity designed to meet and develop the arts, FAAP expanded its range of courses and is now considered a major academic teaching institutions in the country. Headquartered in Higienópolis, one of the most noble and traditional neighborhoods of Sao Paulo, and has as mission the obligation to provide an education which will enable its students a full education as human beings. In his more than 60 years of existence, has made great personalities who have contributed and contribute to our nation's history. They are artists, politicians, entrepreneurs, executives and intellectuals who have a common history and make FAAP a core influencer.

After SHEWC'2012, SHEWC'2013 is the next step in the evolution of such dynamic congress that has been a success since its first edition at national level. The present edition also counts with the collaboration of a large number of papers from many parts of the globe; Countries like USA, Canada, Mexico, Spain, Portugal and others have sent their contributions.

## FINAL COMMENTS

The fact is that Health and Environment are intimately related and that fundamental research is more relevant and needed than ever before. Nevertheless the biggest challenge is the promotion of development and sustainability with responsibility. It is the further step of science and technology of 21st Century.

So SHEWC'2012 comes to promote not only a deep reflection about the environment and its consequences on health but also how to bring new ideas for the increment of the professionals' of the new millennium, which main characteristic is the awareness and the responsibility in the practice of their profession.

This event as all the previous ones seek essentially to debate and to discuss the environmental subjects in a wide way, realistic and based in methodologies and techniques strictly scientific, as well as to suggest solutions and alternatives for environmental problems.

It is important to point out the efforts of the organizers and the participants facing the difficulties of planning, developing and finance the congress that is scientific and of very good quality. Very good quality papers and the participation of many different attendees result in a congress with very interesting discussions and the presentation of many projects that come to impact the academic community in the respective fields of expertise. No doubt that richness of the congress is in its diversity of topics and of course the contributions from the authors. It is always a different layout of dynamic in the presentations and in the interactions that overcome the expectations.

All participants appreciate the opportunity to interact with the authors, from many parts of the globe. The variety of papers shows the kaleidoscope of articles focusing the same issues Safety, Health and Environment.

The discussions resulted by the presentations are of great importance for the success of a scientific congress as it is and as important as the exchange of information and partnerships that this kind of event promotes.

Still the closing session is considered by the participants of great importance too once they can make a balance of their participation and also provide feed back to the organizers for the improvement of next editions.

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