1. INTRODUCTION

In the last two decades, the global economy has experienced substantial improvements in economic and social welfare, and poverty reduction. These developments, however, have resulted in increased pressure on natural resources and contributed to environmental degradation. As a result, a sense of urgency has been raised at the global level, proposing the implementation of sustainability practices and policies to better guide humanity’s future and to better assess how this planet’s natural capital is being managed and impacted by policy makers, companies and the civil society. Along these lines, the 2012 Rio de Janeiro Global Summit reaffirmed the need for a global transition from a brown economy to a low-carbon Green economy that places a premium on a sustainable and balanced economic growth, social inclusiveness and environmental integrity and security.

This special issue, through the compilation of six papers, covers a wide spectrum of research in the area of sustainability. This special is based on selected papers presented at the 2011 LIGE (Legal & Institutional Implications of the Green Economy) Conference held in Manaus, Brazil. Several areas of sustainability are discussed in these papers promoting the further discussion of factors driving sustainability efforts across the globe. The six papers cover topics such as: the sustainable use of biodiversity as a driving force for regional development, climate change and its impact on Brazil’s Amazon forest, green innovations & patents, the role of payments for environmental services in the promotion of sustainable development, the impact of the Kyoto Protocol on Brazil’s sustainability policies and efforts, and the role of institutional and markets failures in promoting biodiversity losses. We thank the reviewers for their comments and efforts in making this special issue possible. We also give our special thanks to the IJSEDS staff for their help in making this special issue possible.
2. SUMMARY OF THIS VOLUME’S CONTRIBUTIONS

In the first paper, Philip M. Fearnside presents the implications of global climate change to Brazil’s Amazon region forests and ecosystems. The author outlines that the Amazon region is under threat of seeing some of its ecosystems disappear as a result of more frequent and prolonged droughts. As a result of more fires, the region would face a reduction in its biodiversity. In addition, the forest would give way to savannas and lower biomass woody vegetation, leading to losses in the value of Brazil's environmental services. The author argues for a more active role for Brazilian policy makers in global forums in addressing global warming and to also place a premium in efforts to reduce its own carbon emissions.

In the second paper, Alexandre Rivas, James Kahn, Carlos Freitas, Lawrence Hurd and Gregory Cooper stress the importance of payments for environmental services as a way to secure the establishment of sustainable strategies in Brazil’s Amazon region. The authors assess the implementation of a payment program for environmental services in the community of Barcelos in the state of Amazonas, Brazil. The authors’ main findings stress that payment for environmental services has the potential to become an important tool for environmental preservation in the Amazon region, and a powerful tool for the socio-economic development of communities in Brazil’s Amazon region.

In the third paper, Mauricio Serra, Jose Vergolino and Artur Coelho address the role of biotechnology developments and innovations in promoting economic development in Brazil’s Amazon region. The region’s enormous potential in the global biotechnology industry is highlighted in the paper and presents their rationale for this biotechnology potential to become an important driver to induce the economic growth and development of Brazil’s Amazon region. The authors address the main challenges and opportunities permeating biotechnology developments in the Amazon region. The authors also mention the low emphasis on R&D and innovation, patents and intellectual property protection as hindrances to the further development of a dynamic biotech industry in the Amazon region.

In the fourth paper, Renato Bonadiman stresses the importance of introducing measures such as REDD+ (Reducing Emission from Deforestation and Forest Degradation) to promote the conservation and the sustainable management of Amazon’s region forest resources as well the recognition of the financial value of carbon stocks. The authors digress over the promises and challenges in introducing and implementing REDD+ strategies in the Brazilian market.

In the fifth paper, Araken Lima, Patricia dos Reis, Julio Castelo Branco, Rodrigo Danieli, Cybele Osawa, Eduardo Winter and Douglas Santos discuss the development of green patents and their impact on the transition from a brown to a green economy. The authors analyze how countries such as South Korea and the U.S. are handling the examination process of green patent filing, and how these countries have implemented procedures to accelerate the “green patents” application process. They suggest that Brazil needs to follow a similar strategy.

In the sixth paper, Dan Biller and Ernesto Sanchez-Triana address the role of institutions and market failures, particularly the failure to recognize the value of biodiversity, as key drivers of biodiversity losses. The authors showcase the example of the Sundarbans region of India using an integrative development model to propose policy suggestions to assist in enabling biodiversity conservation and the sustainable use in the Sundarbans region.

The papers cover different topics but point out that multiple strategies are needed to help our future by considering multiple strategies to encourage sustainability in many of our endeavors.
Elias G. Carayannis is a professor of Science, Technology, Innovation, and Entrepreneurship. He is the co-Founder and co-Director of the Global and Entrepreneurial Finance Research Institute (GEFRI) and Director of Research on Science, Technology, Innovation, and Entrepreneurship in the European Union Research Center (EURC) at The George Washington University School of Business. Dr. Carayannis’ teaching and research activities focus on the areas of strategic government – university and industry R&D partnerships, technology road-mapping, technology transfer and commercialization, international science and technology policy, technological entrepreneurship, and regional economic development. Dr. Carayannis has several publications in both academics and practitioners, US and European journals such as IEEE Transactions in Engineering Management (IEEE TEM), Research Policy, Journal of R&D Management, Journal of Engineering and Technology Management, International Journal of Technology Management, Technovation, Journal of Technology Transfer, Engineering Management Journal, Journal of Growth and Change, The Review of Regional Studies, International Journal of Global Energy Issues, International Journal of Environment and Pollution, Le Progres Technique, and the Focus on Change Management. He has also published eleven books to date on science, technology, innovation, and entrepreneurship with CRC Press, Praeger/Greenwood Press, Palgrave/MacMillan Press, and Edward Elgar, plus several more under contract. He is Editor-in-Chief of The Book Series on Science, Technology, Innovation and Entrepreneurship (Edward Elgar), The Book Series on Technology, Innovation and Knowledge Management (Springer), the International Journal of the Knowledge Economy (Springer), and the International Journal of Social Ecology and Sustainable Development (IGI Global). He is also Associate Editor of the International Journal of Innovation and Regional Development and on the Editorial Board of the IEEE TEM and the International Journal of Nuclear Knowledge Management, as well as he is on the Board of Directors for the International Association for the Management of Technology (IAMOT). He has consulted for several technology driven government, private, and large organizations, as well as small organizations such as the World Bank, the European Commission, the Inter-American Development Bank, the US Agency for International Development, the National Science Foundation Small Business Innovation Research Program, the National Institute of Standards and Technology Advanced Technology Program, the National Coalition for Advanced Manufacturing (NACFAM), the USN CNO Office, Sandia National Laboratories’ New Technological Ventures Initiative, the General Electric Corporate Training & Development Center, Cowen & Co, First Albany International, Entreprises Importfab, and others. He is fluent in English, French, German, and Greek and has a working knowledge of Spanish. He is citizen of the United States of America and the European Union.