Mathematical Advances Towards Sustainable Environmental Systems

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'Mathematical Advances Towards Sustainable Environmental Systems', published by Springer International, linked with Earth Sciences is a particularly interesting multidisciplinary volume, which attempted to embrace the fastest moving areas pertinent to sustainable management of Earth systems. The volume presented an optimized subjective domain with different subjective perspectives in order that both qualitative and quantitative approaches complement each other to promote and expand research techniques, subjective areas and grouped progress across sustainability. As such the volume truly lives up to its objective of being of interest and relevance to multiple sectors of international communities at the individual community, research and policy level. The chapters of the volume are designed to be complementary to ensure a synergistic effect for knowledge expansion in sustainability. As well as quantitative subjective coverage, social research was also carried out within chapters of the volume in order to encourage true community involvement in the advancement of knowledge. Although there are of course other leading volumes on modelling or on social approaches of sustainability, in my opinion MATSES stands out as the strongest approach taken to advance the systems approach both within and between social and scientific systems to date. As a whole the volume is formidable which does not subtract from the individual contributions, which are particularly well written by international leading experts. Context is given by experts at opposite ends of the subjective spectrum covered within the book. Further to presenting a summary of the entire volume, the final chapter underlines the dynamic management of common resources required in sustainability through contrasting scientific and social case study approaches. The marriage of qualitative and quantitative approaches to achieve a rich harmony is also explained in the final paragraphs of the book. Each subjective area of the book is expanding and being supplemented as the team behind the book itself, expands and goes forward into conference and Journal formats in 2018, before the next edition of the volume. Showcases of the current edition of the volume and it's potential are being held in advance throughout 2017. The focused and eloquently written chapters of this volume give hope for the integrated management of Earth's systems, with involvement of all people. The hope, which the book gives, ensures an exciting read, which will stand the test of time through variable formats into the future.

'Mathematical Advances Towards Sustainable Environmental Systems' (or MATSES) is the first volume in a series, which focuses on how we can protect our environment and enhance environmental sustainability when faced with changes and pressures imposed by our expansive needs. The volume unites multiple subject areas within sustainability, enabling the techniques and philosophy in the chapters to be applied to research areas in environmental science, plant sciences, energy, biodiversity and conservation. The chapters from expert contributors cover topics such as mathematical modelling tools used to monitor diversity of plant species, and the stability of ecosystem services such as biogeochemical cycling. Empirical research presented here also brings together mathematical developments in the important fields of robotics including kinematics, dynamics, path planning, control, vision and swarmanoids.

Throughout this book readers will also discover about rainfall-runoff modelling which will give them a better idea of the effects of climate change on the sustainability of water resources at the watershed scale. Modelling approaches will be examined to maximise readers insights into the global problem of the energy transition, i.e. the switch to an energy production system using renewable resources only. Collective and discrete insights are made to assist with synergy which should progress well beyond this book. Insight is given to assist policy formations development and implementations. The book has a strong multidisciplinary nature at its core, and will appeal to both generalist readers and specialists in information technology, mathematics, biology, physics, chemistry and environmental sciences.

The book is written for every level of understanding and

sector (communities, industries, local, regional and national governance, charitable (including international units and organisations such as the United Nations/United Nations Development Program, etc)). Amazing insights in individual subject areas, direct application within communities as well as great reading of collective vision.

In addition to the 27 leading authors across 10 different countries (including the United Kingdom, Belgium, Italy, Iran, Iraq, Egypt, India, China, Canada, and Ecuador, the editorial team is built of 5 leading members firmly uniting Eastern and Western ideologies in the name of knowledge advancement and sustainability for both natural and socioeconomic systems. We are also supported by a wide review team including some in Universities across Japan, Switzerland, Spain, Germany, Morocco and Greece). We benefit from the assistance of organizational units (including members of the Food and Agricultural Organization, United Nations Development Program and United Nations Environment Program, Convention for Biological Diversity and others on a regional basis).

The coordination of a sustainability effort represents a lifelong journey for all of us. It is hoped that this volume will represent a marker in the journey of the advancement of mathematics and individual research areas which will be followed by conference activities, journal platforms, and further editions of the volume as well as the use of increasingly diverse formats to enable our knowledge and ability to manage systems collectively to expand.

We invite you all to contact the coordinating editor to assist with advances in individual subject areas or for sustainability management as a whole. We hope to increasingly engage not only with academic advances but also to incorporate community members.

This presentation acts as a showcase for Mathematical Advances Towards Sustainable Environmental Systems, with the conference series planned to commence in 2018 in key locations pending research and developmental demands.

MATSES presents 14 chapters, which are key areas in the development of sustainability efforts with respect to interdisciplinary and individual subjective areas advancements. There are additional subjective areas we should consider, do contact the coordinating editor should you wish to contribute.

All teams involved in our collective effort are progressing with research with great advancements seen to follow in the coming year. These include advances in anthropology, ethnobotany, history, chemistry and biology, as well as in energy, robotic and technological areas. Terrestrial geographic approaches as well as oceanic and atmospheric areas will be seen to benefit and expand as the series evolves. Whatever your position or subject, do contact the coordinating editor if you have an interest in any of the chapter areas or wish to contribute to future ones. Keep your eyes open for calls of research for attendance of the conference series in 2018.

Each area feeds into our Environmental Management of Earth Systems. The feedback (and feedforward) of each individual area enables us to expand our knowledge base and provide a rational basis of sustainability, which helps to link all communities with protection and enhancement of the Earth's bounty into the future.

