

TRIESTE FORUM

Impact of Science and Technology on Society and Economy

Organized by



World Academy of Art & Science

Co-Sponsors



International Centre for
Genetic Engineering and
Biotechnology



The Academy of Sciences
for the Developing World



The Mother's
Service Society



The Risk Institute



Trieste International
Foundation for Progress
and Freedom of Science

On March 4-7, 2013

*Venue: Adriatico Guesthouse,
Abdus Salam International Centre for Theoretical Physics*

CONFERENCE AGENDA

DRAFT AGENDA

MONDAY 4TH MARCH 2013

18:00-19:30 **REGISTRATION**

19:30-21:00 **RECEPTION**

- *Welcome by Ivo Šlaus and Mohamed Hassan*

TUESDAY 5TH MARCH 2013

08:30 - 9:30 **CONFERENCE OPENING REMARKS AND INTRODUCTION**

- *Ivo Šlaus*, President, World Academy of Art & Science
- *Katalin Bogyay*, President, General Conference of UNESCO; Ambassador of Hungary to UNESCO
- *David A. Chikvaidze*, Director, UNOG Library; Chairman, Cultural Activities Committee of UNOG
- *Sandro Scandolo*, Senior Researcher, ICTP
- *Peter McGrath*, Programme Officer, TWAS
- *Mauro Giacca*, Director, ICGEB Trieste Component

9:30 -11:00 **SESSION I: HUMAN CAPITAL**

This theme combines the focus on new economic theory and human capital with the role of entrepreneurship and innovation, placing them in a wider theoretical context. Human Capital is a central unifying theme of the Academy's work and also a central strategy for breaking out of the narrow conceptions and stifling economic policies that prevail now. It also focuses on the catalytic role of the individual in social change, exemplified in economy by the role of entrepreneurs. It also encompasses the issue of human rights and economic rights, including the right to employment.

The Session will address the following questions:

1. What should be the role of human capital in a comprehensive approach to human welfare and well-being?
2. What should be the role of human capital in assuring sustainable development?
3. How to describe and quantify the untapped human capital?
4. How to increase human capital – the role of individual and collective activity, education, health: locally and globally?
5. How should global and local political orders be altered in order to adequately harness and develop the potentials of human capital?
6. How should global and local legal systems be modified in order to more fully tap the potentials of human capital?
7. What should be the broad outlines of a human capital-based development strategy and what essential conditions need to be met to implement such a strategy?

Moderator: Ivo Šlaus

Rapporteur: Alberto Zucconi

Speakers:

- *Andrea Vacchi*, The Search for Dark Matter
- *Anantha Duraiappah*, Inclusive Wealth: Going Beyond GDP
- *Roberto Siagri*, The Role of Innovation in the Evolution of the Enterprises and the Future of Employment
- *Alberto Zucconi*, The Social Construction of the Professional Self
- *Ana Stavljenić-Rukavina*, Aging Society: The Impact on Economy

11:00-11:15 COFFEE BREAK

11:15-13:00 SESSION II: FULL EMPLOYMENT

Like climate change, the employment challenge has become global and requires a wider understanding of the multiple factors affecting job creation and retention, including trade, demography, aging, migration, technological development, tax policies, Internet, global sourcing, production strategies, outsourcing, resource depletion, etc. The notion of regional and global economies raised here has direct relevance to the Euro zone and EU. This session will examine the following issues:

1. Future Trends in Demography and Employment
2. Employment as a Human Right and Public Good
3. The Global Employment Challenge
4. Place of Employment in New Economic Theory
5. Strategies for Full Employment

Moderator: Ian Johnson

Rapporteur: Zbigniew Bochniarz

Speakers:

- *Azita Berar Awad*, The Youth Employment Crisis: A Call for Action
- *Garry Jacobs*, Global Model for Full Employment
- *Mirjana Radović Marković*, Aging Workforce: Employment Opportunities & Obstacles

13:00-14:00 LUNCH

14:00-18:00 SESSION III: PARADIGM SHIFT IN ECONOMICS

The classical, traditional view of economics, in particular, and social science in general ignores critical aspects of contemporary economic reality. This theme explores a wide range of issues related to the boundaries of economy and its interdependence with other aspects of society, the concept of economic value, the role of money and financial markets, and the overall role of economy in human affairs.

Panel 1: The Aim of Economy

Panel 2: Boundaries of Economics

Panel 3: The Role of Financial Markets

Panel 4: The Concept and Measurement of Economic Value

Panel 5: Beyond the Industrial Revolution

Panel 6: Static vs. Evolutionary Economic Theories

Moderators/Rapporteurs: Orio Giarini and Garry Jacobs

Panelists:

- *Gerald Gutenschwager*
- *Orhan Güvenen*
- *Robert Hoffman*
- *Ian Johnson*
- *Graeme Maxton*
- *Walther Zimmerli*

Speakers:

- *Orhan Guvenen*, Mathematical Complexity, Chaos, and the Impact of Information Distortion on Decision Systems in Economics
- *Božidar Matić*, Do Not Forget Investment Potential of the Society

15:45-16:15 COFFEE BREAK

16:15-18:00 SESSION IV: RE-VALUING NATURE

Current theories based on the efficiency of markets overlook the gross inefficiency of economic systems that seek to maximize return to investors by wastefully consuming natural resources or grossly undervaluing and underutilizing human capital. Economic thought and practice need to be reoriented to take into account the real value of natural and human resources to present and future generations and formulate effective public policies designed to optimize the efficiency of the overall social system. This theme re-examines the concept of economic value and its role in promoting sustainable human welfare and well-being and the potential for new and alternative energy sources.

Moderator: Ian Burton

Rapporteur: Anantha Duraiappah

Speakers:

- *Dusan Bakos*, Materials from Renewable Sources - Bioplastics and Bio-composites
- *Emo Chiellini*, Present and Future of Plastics: Socio-economic Aspects from the Global View
- *Stanislav Miertus*, Sustainability of Products and Processes using Renewable Feedstocks: Dream or Challenge
- *Carlo Poloni*, Compromise between Cost and Performances

18:15-19:45 PLENUM OF FELLOWS OF THE WORLD ACADEMY

20:00 DINNER

WEDNESDAY 6TH MARCH 2013

09:00-10:45 SESSION V: THE NETWORK SOCIETY

This theme focuses on Social Capital as a complement to Human Capital. Organization is powerful a determinant of social productivity, human welfare. Organization plays a creative role in social development. The session will examine opportunities to utilize innovative organizational models and delivery systems to accelerate social progress in business, education, scientific research and governance. The session will address the following questions:

1. In what ways does society possess the characteristics of a network in its organization and functioning?
2. How can an understanding of networks be applied to improve the functioning and accelerate the economic development of society?
3. How can the principles of network science be applied to stimulate the development of commerce and industry nationally and globally?
4. How can the network characteristics of society be applied to enhance the development and application of science and technology for social progress?
5. How is the evolution of society as a network altering the relationship between the individual and the collective and the role of the individual in the evolution of the collective?

Moderators/ Rapporteur: Jüri Engelbrecht and Raoul Weiler

Speakers:

- *Zbigniew Bochniarz*, Networking Science and Industrial Clusters
- *Peter Johnston*, Networks: Growth, Equity and Sustainability
- *Antonio Sfiligoj*, Collaborative Entrepreneurship and Emerging New Investment Models
- *Walther Zimmerli*, Thinking & Acting in Networks: Reintroducing the Individual into Social Philosophy

10:45-11:15 COFFEE BREAK

11:15 -13:00 SESSION VI: RECOGNIZING TALENTS & GENIUS EDUCATION FOR 21ST CENTURY

A comprehensive social strategy must give a central place to the role of education and training in preparing youth for productive engagement in a rapidly changing and increasingly complex and sophisticated world. The Internet is set to become the main delivery system for expansion of the global educational system to meet the rapidly expanding needs of developing countries. It also has an essential role to play in vocational training to close the gap between the need and availability of skilled individuals in the workforce. One of the challenges will be to prepare youth for entrepreneurship and self-employment. This theme also addresses the lack of balance between developed and developing countries.

Moderator/Rapporteur: Bob Berg and Emil Constantinescu

Speakers:

- *Jan Dobrowolski*, Life-long Education for Better Quality of Life, Sustainable Society and Economy
- *Morley Lipsett*, Education at the Edge of a Paradigm
- *Decio Ripandelli*, Assisting Developing Countries to Develop their own Scientific and Industrial Capabilities
- *Ullica Segerstrale*, Knowledge is Power: Education for a Dynamic World
- *Alexander Zidansek*, Education and Human Welfare

13:00-14:00 LUNCH

14:00-16:00 SESSION VII: SHARING KNOWLEDGE, INNOVATION & CREATIVITY FOR HUMAN WELFARE

This theme addresses the broad issue of how to make available to industrial applications the existing large amount of scientific knowledge and technical innovations. Particular emphasis will be given to the development of a sustainable human welfare, including the field of health care, which is one of the world's fastest growing industries, accounting for more than ten percent of the economy in most developed nations. The general awareness is increasing on this topic, but the management of S&T needs to develop instruments and a consensus to promote data sharing and economic exploitation in developing countries.

Moderator: Domenico Romeo

Rapporteur: Enrico Tongiorgi

Speakers:

Panel 1. Creativity and innovation as essential factors for economic development

- *Furio Suggi Liverani*, Rethinking the Product in the Light of Sustainability and Consumer Wellness
- *Giuliano Panza*, Preventive Tools for a Disaster Resilient Society
- *Andrea Vacchi*, Bridging the Gap between Technology and Innovation

Panel 2. How can the available knowledge be more effectively disseminated and utilized to effectively address current social problems?

- *Nicola Pangher*, Healthcare at the Bottom of the Pyramid: Innovation Makes a Difference
- *Donatella Verbanac*, Translational Research and the P4 Approach in the Service of Sustainable Health Care
- *Nebojša Nešković*, TESLA Accelerator Installation: Generation of Knowledge and Innovations for Health Care
- *Giorgio Fassina*, Reducing the Burden of Cancer in the Ageing Society

16:00-16:20 COFFEE BREAK

16:20-17:40 CONCLUDING SESSION: A NEW PARADIGM FOR HUMAN DEVELOPMENT

19:00 DINNER

THURSDAY 7TH MARCH 2013

09:00-12:00 VISIT TO TRIESTE CITY

12:30-13:30 LUNCH AT CASTLE DUINO

13:30-15:00 TOUR OF CASTLE DUINO

15:00-18:00 GLOBAL CHALLENGES & OPPORTUNITIES: STRATEGY FOR THE 21ST CENTURY

PREMISES

- Humanity faces multiple challenges relating to international financial instability, rising levels of unemployment, persistent poverty, widening inequality, ecological imbalances, human rights, human welfare, nuclear proliferation, social tensions, unrest and terrorism.
- Considerable effort has been devoted to diagnosis and analysis of each of these challenges.
- The root causes of these challenges are complex, overlapping, interdependent.
- All of these challenges transcend narrow disciplinary boundaries, thus defying solution by partial, sectoral approaches.
- These challenges are global in nature and cannot be fully addressed without coordinated actions by the international community.
- Approaches to resolving the challenges are subject to conflicting claims, priorities and interests.
- Lack of significant progress on addressing them in recent years has raised doubts about the collective capacity of the human community to effectively address them.
- There is presently no consensus as to whether real, effective solutions are possible and what those solutions should be.
- Over the past decade or more, the Academy and many organizations with specialized knowledge and expertise have examined these challenges separately and individually to diagnose causes and propose remedies.
- So far no comprehensive approach has been put forth for addressing the totality of the challenges and their complex interrelationships.
- The Academy now proposes to initiate a collaborative effort among its Fellows and like-minded organizations to identify the core elements of an integrated perspective, comprehensive strategy and detailed policy framework capable of addressing the multiple challenges through a more fundamental paradigm change.

SCOPE

The Trieste workshop is intended as the first step in a series of discussions and research activities designed to frame the first outline of a comprehensive framework. The discussion will include

- Overview of Major Challenges
- Analysis of the major challenges and their root causes
- Identification of governing ideas, principles and values on which comprehensive solutions can be effected
- Formulation of strategies, policies and initiatives
- Framing of the institutional mechanisms and practical steps required for implementation

Workshop Agenda

- Program Introduction – Ivo Šlaus
- WAAS Program Framework – Garry Jacobs
- Economic Challenges – Ian Johnson
- Ecological Challenges
- Analysis of Root Causes – Discussion
- Governing principles for a comprehensive approach – Discussion
- Strategy & Policy framework – Discussion
- Next steps – Discussion

CONCLUSION OF THE CONFERENCE