

Amsterdam 26.-27. October 2009

Master Classes

1. The Sustainable Economy: A New Model from the Netherlands

Fred Langeweg, Rob Maas. Chair: Klaas van Egmond.

One of the recommendations outlined during this dialogue was the need for a more mandatory approach from governments in addressing the common goals of sustainable development. At current growth rates, the world economy is expected to double by 2030 bringing with it immense implications for resource use, the climate, waste and pollution and the survival of ecosystems. A radical greening of the tax system is required, with definite pathways and schedules for zero emissions on cars and limits to carbon dioxide emissions. Governments must adopt new measures for measuring growth that go beyond GDP and must strengthen their ability to guard common goods.

2. Economic Recovery on the Way to a New Sustainable Economy

Franz Josef Radermacher , Wolfgang Sachs. Chair: Anders Wijkamn

The need for massive investment in interdisciplinary research and education was discussed in this Master Class. Emphasis was placed on the crucial need to introduce a global feed in tariff system to support renewable energies in developing countries. Maximum efforts should be done to stimulate investments in green technologies.

It was stressed that ethics must underpin a climate agreement. Corporate law cannot be based only on the principle of shareholder value. The speakers also stressed the flawed notion that the sum of individual self interest will bring about a common good for all. They debated that the market economy, as well as the principle of competition, will only survive within proper policy frameworks, supporting ecological and social objectives and long term interest.

In the short term all efforts must be concentrated on decoupling growth from resource use, while in the long term preparations must take place for a steady-state economy.

3. The Latest on Climate Change

James Hansen, Mohan Munasinghe, Pier Vellinga. Chair: Crispin Tickell

In the lead up to Copenhagen it must be recognised that any agreement is part of a long and developing process and is not a conclusion in itself. The speakers provided an insight into the future of ice sheets and specified that 200 gigatonnes of ice is lost per year in Greenland and the Arctic. The effects are reversible for ice on rock, however, not for ice sheets.

It was pointed out that by excluding the human effects; the continental drift is the largest emitter of CO₂ as a result of active volcanoes. Pier Vellinga indicated that over the next ten years solar power

will compete economically with oil. It was posed that three key steps are needed to bring about a sustainable future; namely empowerment, innovation and implementation.

Some crucial statistics were shared with the audience including the fact that \$20 billion a year will be required to protect the delta area from 2020 onwards. In addition, a greenhouse gas emission target of 330 ppm is necessary to slow the effects of climate change; we currently stand at 375 ppm.

To bring about effective change we must communicate, educate and engage the public in the whole process, they will then influence the political domain.

4. Peak oil and climate change

Ian Dunlop, Wim Turkenburg. Chair: Paul Hohnen

For political, technical and geographical reasons, it appears a peak in oil production has been reached. A gap will emerge if demand continues to escalate above the peak. Today, new energy resources are not encountered as fast as the production of oil is decreasing. It is estimated that the level of energy demand in 2050 will be around double the demand today.

In order to combat climate change, we should remove CO₂ from the atmosphere by 2060. With nuclear energy; public acceptance and nuclear waste are the biggest challenges.

It was considered during the class that solar energy is not the only solution; nuclear energy is also part of the answer to the peak oil challenge. Solar energy has a large technical potential. Carbon capture storage has potential but is not an easy solution and is too slow. The conclusions were that stranded assets and vested interests in fossil fuels will block progress.

5. The Climate Transition of China

Christine Loh, Zhang Shigang. Chair: Martin Lees

It was discussed and concluded that there is tremendous potential for energy and eco efficiency through technology transfer. China is advancing fast on the issue of sustainability but still faces great challenges in the areas of poverty and inequality and in differences between urban and rural lifestyles. The progress being made in improving energy efficiency in China, in developing new patterns of production and in reorganising the Chinese economy onto a less environmentally-damaging path was presented and discussed.

In the long term, new business models for technology transfer need to be developed. The speakers reiterated the fact that for China, the greatest dilemma is the trade off between ecological and economic development which has internally divided the Chinese Government.

6. Climate Change is Key, but what about Food and Poverty?

Hans Eenhoorn, Daudi Sumba. Chair: Ian Johnson

During this session there was a clear focus on the constraints that planet earth exerts on food security. One of the many questions raised was how to create an ecosystem balance related to food, water and nutrients. It was argued that a transformation of the global agricultural system is required. Africa, in particular needs a sustainable green revolution.

How do we speed up, scale up and make the solution actually work? Knowledge creation and sharing are the keys to implementing solutions. The speakers stressed the need to use effective marketing and to educate people about waste management. It must be demonstrated and proven that making the right choice is profitable for all stakeholders. The main message from this Master Class was 'think global, act local'.

Promising solutions to use, reuse and recycle the indispensable and scarce resources in efficient and effective ways were highlighted including the need to bring about behaviour changes, consumption changes, and economic measures such as taxes, effective trading systems and environmental levies. Technical solutions such as organic waste digesters were also discussed.

7. Climate Change and Sea Transport

Koen Overtoom, Tiedo Vellinga, Stephan Wrage. Chair: Freek Ossel

In this workshop it was noted that port authorities have to play a more pro active role. A smart emission trading system for CO₂ in transport is vital. It is also critical to create awareness within the industry.

Recommendations from this class included the need to focus on a continental or regional level and from this standpoint establish cooperation with other continents to reach a global agreement. Ports are responsible for the total logistical chain, they work in tandem with industry, and their responsibility is wider than just the port area. The pricing of carbon was discussed as one part of the logistical chain solutions. Port authorities must look wider than just the port area; they must work together with industry to develop an ambitious long term target for 2050.

8. From Resource Efficiency to Effective Use of Resources

Michael Braungart, Stefan Bringezu, Bill McDonough Chair: Bio Schmidt-Bleek

It was emphasised in this Master Class that we need to increase productivity of the whole supply chain rather than focus on individual problems.

The main challenge for society that emerged from this discussion was how to turn carbon into an asset instead of a liability? Societies must avoid mixing the roles of government and commerce.

Discarded industrial goods must fit into the bio-physical cycles of nature to the highest degree possible. It was recommended that Governments must set global targets for per capita resource

consumption. However, decreasing or increasing current consumption of natural resources depends on national needs and technical opportunities. Statistical estimates were shared with the audience including the indication that by 2050, no more than approximately six to ten yearly tonnes of natural material should be consumed in order to keep human consumption in harmony with nature. Eco innovation must progress in order to minimize the use of natural resources.

9. Biodiversity and Ecosystems Service

Charles Moore, Johan Rockström, Ashkok Khosla. Chair: Hans Alders

In this workshop it was discussed that the current government policies are based on an over optimistic view and belief that nature changes in slow, linear, predictable ways. Conversely, it was agreed that change is fast, abrupt and dramatic and focusing policy only on CO₂ reduction will not solve the diverse range of environmental challenges faced by the world today.

Conclusions and recommendations drawn included the need to strengthen the position of women in society, to analyse the global remedial delivery capacity, to assign a monetary value on ecosystems services, to stimulate investment in biodiversity and to raise awareness.

After Copenhagen it should be recognised that we are moving from climate change to global change. Integral remedial action is required. A synergetic approach to key issues must be formulated, such as climate change, biodiversity, land use and inequality between the rich and poor. There are three key elements to the process: a) institutional reform, b) economic reform and c) social reform.

10. Sustainable Finance, Green Investment and Capitalism

Peter Blom, Alois Flatz, Eberhard von Koerber, Robert Rubinstein. Chair: Otto Scharmer

The speakers in this class outlined the need to foster innovation by generating an environment for new businesses and doing so by first focusing on universities. Different taxation policies, open sources, eco footprinting and finance must also be strengthened. A transformation of the whole banking system from fast to slow money, making the utility function clearer was recommended. The focus must be on how to change and manage greed. Furthermore, promoting leadership through education and mobilisation of consumers is vital to make change happen.

The speakers discussed the strong links between the current environmental crisis and the financial crisis. They pointed to faults in both systems such as the lack of reliable indicators and early warning signals. In particular, the banking crisis was fuelled by fallacious corporate incentive structures leading to greedy short term profit maximisation, pricing that did not reflect the truth and a failure of governments to act in a precautionary manner.

It was concluded that in both the financial and environmental crises, only a systems solution can lead to sustainable future economies. Reverting to traditional strategies and models for finance and growth may bring short term recovery at the cost of further crises in the future. Many initiatives that are emerging were discussed including the need to formulate a new conception of sustainable socio

economic growth which respects the environment and considers the prospects for future generations.