

MUNOBB 2020

General Assembly 2: Economic and Financial (GA2)

Research Report Guide

Topic 2: Science, technology and innovation for achieving sustainable
development



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Introduction

In order to achieve sustainable development, science, technology and innovation plays a very crucial role. Over the last centuries our world has undergone a change: the age of computers has come and it brought problems with it; Science is under pressure. In times when nothing less than the transformation towards sustainable development is at stake, society and politics demand not only secure, but above all applicable knowledge from it. In order to generate such knowledge, science must change its structures and forms of work. A renewed understanding of criticism can provide orientation in this process of change, which science must actively shape.

In a paper published by the United Nations Framework Convention on Climate Change (UNFCCC), technology is framed as a means towards adaptation. The organization states that while there are already mitigation actions being implemented, adapting to climate change is just as important. With the global landscape already altered by the effects of climate change, our planet and communities would be better off with technology that helps the world's population adapt to potentially radical changes in the environment.

Definition of Key Terms

Industrial Ecology: The birth of Industrial Ecology can probably be traced back to the essay "Strategies for Manufacturing" by Frosch and Gallopoulos (1989) in Scientific American, even if the intellectual roots of the still young field of research and action, the various forerunner concepts and early beginnings historically go back much further and systematically into various scientific disciplines. At the very least, the essay had a catalytic effect and inspired activities that were significant for the further development of the field of research and action.

LDC's: Term coined by the United Nations in 1971 for the least developed countries (formerly also known as LLDCs)

ELDC's: Economically less developed countries. Contrary to LDC's they are only economically less developed countries, instead of generally less developed countries. Problems of ELDC's are financial instability through for example corrupt leadership and politics (e.g. Venezuela).

Feed-In Tarriffs: A feed-in tariff (FIT, FiT, standard offer contract, advanced renewable tariff, or renewable energy payments) is a policy mechanism designed to accelerate investment in renewable energy technologies. It achieves this by offering long-term contracts to renewable energy producers, typically based on the cost of generation of each technology.

Background Information

For some time now, it has been a foregone conclusion that the traditional structures and procedures of modern Western industrial societies will have to adapt to the changing demands on their functional and problem-solving abilities are no longer up to scratch. From this diagnosis practically no important social segment is excluded:

- Thus, the economy faces globalized competition, the development of the economy. Electronic forms of business and accelerated scientific and technological change, which will result in cost reductions, increased flexibility, corporate restructuring, the development of e-commerce platforms and an expansion of the knowledge base.
- Furthermore, in view of the increasing differentiation of the societal context, policymakers are increasingly required to have the ability to comprehensively control and this means that participation in negotiation processes in policy networks of state and private actors replaces hierarchical arrangements of sovereign authorities.
- And last but not least, the well-established routines of environmental protection are at issue, since against the background of the still critical ecological problems, the processing of which has often reached its limits with pollutant regulations and end-of-pipe technologies oriented towards individual environmental media. In the focus of interest are now approaches to integrated environmental protection and the concept of sustainability, which links ecological with economic and social development.

Whatever specific responses are needed to the problems encountered in the various identified needs for change are expected, discussed and implemented - there is broad agreement that these need to be innovative solutions. Only those institutions, companies, sectors, research institutions, societies etc., which are capable of generating and adapting innovations, are said to be able to play a relevant role in the medium and long term against the background of turbulent environmental conditions.

In more than 60 countries, including many developing countries, there are already approaches to promote electricity generation from renewable energies. One of the most widespread approaches are so-called feed-in laws, which guarantee the producer of electricity from renewable energy sources in a fixed remuneration for a certain period of time. The share of renewable energies in final energy consumption has increased significantly worldwide over the past decade. In 2009 it was 16.2 %. Renewable energies can be used in many ways: to generate electricity, heat and fuels. The greatest weight is currently attached to electricity generation, which can be explained primarily by the established use of hydropower. Of the "new" renewable energies, a good half are used to generate heat and about half for heating. However, a large part of this is accounted for by the so-called "traditional" use of biomass in developing countries - where over 500 million households still use wood and, in some cases, dung for cooking and heating. Only 6.2% of final energy consumption is accounted for by other renewable energies such as solar energy, wind, water and ocean power and the modern use of biomass and biogenic waste.

Major Organisations Involved

- **UNEP (United Nations Environment Programme):** The United Nations Environment Programme (UNEP) is “the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system, and serves as an authoritative advocate for the global environment.” It also helps with preparedness and response to climate related crisis and conflicts and identify acute environmental risks.
- **UNTIL (United Nations Technology Innovation Labs):** The UN Technology Innovation Labs (UNTILs) are designed to move humanity forward, faster by focusing on the use of innovative technology to solve some of humanity's most pressing needs. Each UNTIL is based on different humanitarian themes that are central to the needs of individual Lab’s specific geolocation which, in turn, are aligned with the UN Mandates in Peace and Security, Human Rights and Sustainable Development.
- **CSTD (United Nations Commission on Science and Technology for Development):** The CSTD is a subsidiary body of the Economic and Social Council (ECOSOC). It holds an annual intergovernmental forum for discussion on timely and pertinent issues affecting science, technology and development.

Relevant UN Resolutions

- A/RES/67/203: <https://www.preventionweb.net/files/resolutions/N1249078.pdf>
- A/RES/66/288: <https://www.preventionweb.net/files/resolutions/N1147610.pdf>
- A/RES/70/1:
https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf
- A/C.2/70/L.59:
https://www.un.org/ga/search/view_doc.asp?symbol=A/C.2/70/L.59&Lang=E

Possible Solutions

A possible solution to the problem could be an organisation under the supervision and funding of the UN that collects technological and scientific innovations for sustainability and sustainable development and buys and uses patents for a common purpose.

Another approach could be UN-funded universities in developing countries conducting research on sustainable development in combination with technology.

One way of solving this issue is establishing an international feed-in-law, rewarding small farmers in LDC's, that are using renewable energies more.