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## Overview of past multilateral Conferences on Science and Technology

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## *Contents*

- 1.** Introduction
- 2.** Global Conferences on Science and Technology within the UN system
  - A.** The United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas (1963)
  - B.** The United Nations World Plan of Action for the Application of Science and Technology to Development (1971)
  - C.** The United Nations Conference on Science and Technology for Development
    - (a)** The Intergovernmental Conference (1979)
    - (b)** ACAST Colloquium on the Application of Science and Technology to Development (1979)
    - (c)** New institutional arrangements for Science and Technology after UNCSTD
  - D.** UNESCO High-level Colloquium on Science and Technology for the Future - A Fresh Look at International Co-operation (1989)
- 3.** Possible lessons for the preparations of the World Science Conference in 1999

## *Bibliography*

## 1. Introduction

Scientific co-operation on a multilateral scale is a development which started only in the 19<sup>th</sup> century on themes which are called today 'global problems', such as meteorology, astronomy, and geophysics. 'International years' for the study of selected scientific problems have been launched, calling for the multilateral co-operation of scientists from different disciplines. For example, the first International Polar Years was organised in 1882 with the active participation of 11 national expeditions and observers from 35 other countries.

Another form of multilateral scientific and technical co-operation was the organisation of international congresses or conferences. The first World Congress of Economists was held in Brussels in 1847, followed by international congresses on agriculture (Brussels 1848), sanitary issues (Paris 1851), meteorological observations on the sea (Brussels 1853), statistics (Brussels 1853), ophthalmology (1857), chemistry (Karlsruhe 1860), geodesy (Berlin 1862), and so forth. International conferences have been and continue to be the most visible form of international scientific co-operation.

The desire to institutionalise some of these *ad hoc* meetings in some sort of permanent platform gave birth to the creation of international organisations. In 1900, on the initiative of the Academy of Science in Göttingen, the International Association of Academies was created which led in 1919 to the creation of the '*Conseil International des Recherches*' and ultimately in 1931 to the establishment of the *International Council of Scientific Unions (ICSU)*.

On the intergovernmental level, the creation of the League of Nations in 1919 created a permanent platform for governments *inter alia* for the discussion of common problems on the field of science: In 1922 the Intellectual Co-operation Organisation, the predecessor of UNESCO, was created, in 1924 the Health Organisation which became the WHO, the Organisation for Communications and Transit which became the ITU etc.etc.

The League of Nations claimed the mandate to coordinate all international activities, including scientific matters, for which international treaties had been signed.

Against this background it is to be understood that the United Nations attempts to assume, like the earlier SDN, the mandate through ECOSOC on the intergovernmental level and through ACC on the inter-secretariat level, to play a coordinating role on all matters regarding science and technology. It is for this reason that the UN took the initiative in launching as early as 1948, i.e. already three years after its creation, the first UN World Conference with a considerable scientific content: The UN Conference on the Conservation and Utilisation of Resources. Other UN World Science and Technology Conferences followed.(1)

## 2. Global Conferences on Science and Technology within the UN System

On three occasions, each time with an interval of eight years, the United Nations system as a whole has made tremendous concerted efforts to focus specifically on science and technology issues (2):

(1) *The United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas (UNCSAT), Geneva, 4.-20. February 1963*

(2) *The United Nations World Plan of Action for the Application of Science and Technology to Development (New York 1971)*

(3) *The United Nations Conference on Science and Technology for Development (UNCSTD),*

Vienna, 20.-31. August 1979

### **A. The United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas (UNCSAT).**

UNCSAT had long been under discussion and was for more than a year in active preparation when it opened in Geneva on 4. February 1963. Other scientific conferences under United Nations auspices had preceded it, notably one on *New Sources of Energy* in 1961, the two which were convened to discuss the *Peaceful Uses of Atomic Energy* in 1955 and 1958, and, as early as 1948, the *United Nations Conference on the Conservation and Utilisation of Resources*“ (3).

The ground for UNCSAT was laid by a survey „*Current Trends in Scientific Research - survey of the main trends of inquiry in the fields of natural science, the dissemination of scientific knowledge and the application of such knowledge to peaceful ends*“ undertaken under the joint auspices of the United Nations and UNESCO in the years 1958 to 1960 by *Pierre Auger*, who had served from 1948 - 1959 as Director of UNESCO’s Department of Natural Sciences.

⇒ UNCSAT was held ‘under the auspices of the United Nations, in consultation with the United Nations Scientific Advisory Committee, and in co-operation with the United Nations specialised agencies

⇒ The objective of UNCSAT was

- to explore recent advances in the application of science and technology which will benefit the less developed areas,
- to provide an opportunity for an assessment of the impact of such applications on the processes of economic and social development,
- to reveal opportunities for research directed toward producing new scientific and technological advances of special utility to less developed areas,
- to stimulate and promote scientific and technological development in the less developed areas).

⇒ The Conference brought together ‘at governmental and appropriate non-governmental levels those having responsibility for or experience in the planning and execution of programmes of economic development, those with special expertise in scientific and technical applications which might accelerate the development of the less developed countries, and those concerned with the planning and execution of research programmes in branches of science and technology where further advances might be especially useful to the developed countries (4).

⇒ The decision of who was authorised to attend the Geneva conference, was left entirely to the participating governments, and yet, the conference was organised similar to a scientific congress. Governments, international organisations and others were invited to submit papers. UNCSAT was attended by 1.665 participants and 96 governments were represented. 1.839 papers were distributed for discussion at the Conference. Provision was also made for the projection of 250 documentary films and for an exhibition of 6.000 books and periodicals on science and technology (5).

⇒ The conference dealt with the following agenda:

- *Natural resources*

- *Human resources*
- *Agriculture*
- *Industrial development*
- *Transport*
- *Health and nutrition*
- *Social problems of development and urbanisation*
- *Organisation, planning and programming for economic development*
- *Organisation and planning of scientific and technological policies*
- *International co-operation and problems of transfer and adaptation*
- *Training of scientific and technical personnel*
- *Communications* (6)

⇒ UNCSAT was not empowered by the Economic and Social Council (ECOSOC) of the United Nations to make recommendations to Governments or to take decisions regarding policy. It was expected instead that the records of the proceedings at the Conference should ‘reflect any significant weight of opinion expressed in the discussions as summarised by the rapporteurs of the given proceedings’(7). It was the responsibility of ECOSOC to decide what action should be taken within the United Nations to provide a practical follow-up.

### **Assessment of UNCSAT**

The 1963 conference is almost universally regarded as a failure:

*„...It remained rather academic; there was little attention to action-oriented decisions and programs. The Conference did not foresee some of the major problems of technology which would soon emerge as major issues...and the increased awareness of the links between science and development made at the meeting were not translated into practical action. It is also generally acknowledged that the meeting was dominated by diplomats of the developed world not ready to recognise the magnitude of demands that would be made by less developed nations to share in the benefits of industrialisation.“(8)*

UNCSAT had a major flaw: Only about 16 % of the scientists attending the conference were from developing countries. (9)

Whatever the shortcomings of UNCSAT might have been, in all fairness it should be recalled that the conference did indeed pave the way for the acceptance of *science and technology policy* as part of the overall policies of developing countries. Even the OECD, grouping at that time 21 of the Western industrialised countries, has organised only in the same year when UNCSAT assembled in Geneva, i.e. in 1963, its first Conference of Ministers responsible for scientific research and technological development. The OECD Ministers complimented in particular the UN-UNESCO ‘*Auger-Report*’ „as an excellent basis for science policy discussion by governments.“(10)

## **B. The United Nations World Plan of Action for the Application of Science and Technology to Development**

ECOSOC after having reviewed the results of the Geneva conference, decided that it needed further advice on the issues dealt with in Geneva on a quasi permanent basis. Therefore, in 1964 it set up an independent Advisory Committee for the Application of Science and Technology to Development (ACAST). One of ACASTS's main achievements has been to establish a fairly clear philosophy or strategy for the role of science and technology in the development process in order to give the application of science and technology a new and greater impetus in the programs and activities of all appropriate UN bodies, and to promote the effective combination of their efforts in this field.

At one time, there was hope that ECOSOC itself would initiate, on the basis of initiatives of ACAST, the launching of an immediate '*world-wide attack*' on a limited number of especially important problems of research and application. The Advisory Committee suggested that a short list of problems might be drawn to meet the following criteria:

- a.) *a solution would offer unusually great benefits by application in developing countries; and*
- b.) *the state of science and technology is such that a breakthrough may be realised if a massive world-wide attack on the problem is made.*

It was not before 1969 that ECOSOC formally requested that the various United Nations organisations prepare, within the ensuing 18 months, '*detailed statements indicating the extent to which their current or planned activities were designed to intensify or accelerate the accomplishment of the proposed plan.*' After receiving and studying these statements, ACAST should '*define and elaborate in greater detail the content*' of the proposed World Plan of Action. The report of the World Plan of Action was issued at the beginning of 1971, i.e. exactly 8 years after UNCSAT and 8 years before UNCSTD.

The World Plan consists of two parts:

*Part One* was prepared by the Committee itself:

- I. Priority areas for research
- II. Priority areas for the application of existing knowledge
- III. The building-up of an indigenous scientific and technological capacity
- IV. Implementation of the World Plan of Action
- V. Proposal for a World Plan of Action fund, or account

*Part Two* was prepared on the basis of material submitted by the organisations of the UN system, by NGO's and by a number of individual consultants. It followed more or less the agenda items of the Geneva conference:

- VI. Science and technology policies and institutions
- VII. Science and technology education
- VIII. Natural resources
- IX. Food and agriculture
- X. Industry
- XI. Transport and communications
- XII. Housing, building and urban development
- XIII. Health
- XIV. Population

## XV. Relevance and application of new technologies (11)

The World Plan of Action in spite of the many years of collective efforts by the members of the Advisory Committee, by other members of the scientific community and by the UN system, was finally - similarly to the results of the Geneva conference - not set in motion. Being based to a large extent on expert opinion, it lacked political credibility and governmental support.

The Secretary-General in response to a resolution of the General Assembly of the United Nations (2658 (XXV)) expressed thus the view that, *while the 1963 conference had created an awareness of the importance of science and technology to development, it had not been followed by the expected action*'. He recommended that the newly created Committee on Science and Technology, which unlike ACAST was a *governmental* committee and could thus engage governments, should give serious thought to the question of generating the necessary political will and action and should consider the merits of *another intergovernmental conference* to focus on policies and practical courses of action at the national and international level. This decision meant *de facto* the end of the World Plan of Action and it paved the way for the *United Nations Conference on Science and Technology for Development (UNCSTD)* which took place in 1979 in Vienna.

### C. The United Nations Conference on Science and Technology for Development

The *United Nations Conference on Science and Technology for Development (UNCSTD)* took place in Vienna from 20.-31. August 1979. It was preceded by an International Colloquium on *'Science, Technology and Society - Needs, Challenges and Limitations'* organised under the auspices of ACAST in Vienna from 13.-17. August 1979.

#### (a) The Intergovernmental Conference

The Conference was attended by representatives from 142 States. 1856 delegates, advisors and representatives from UN agencies, other IGO's and NGO's. By the number of participants (not countries) it was thus not much larger than UNCSAT in Geneva 16 years earlier which was attended by 1.665 participants from 96 countries.

One of the conference participants, *Jack N. Behrman* from the University of North Carolina summarised his impressions as follows: *„UNCSTD was really not on science and technology at all, nor on how specific technologies could be selected out of the world pool of science and technology for use by the developing countries, nor on which technologies need to be developed for the use of LDC's. Rather, the conference was oriented to the system within which science and technology are generated and implemented - namely the politics of both developed and developing countries towards R & D institutions and technology transfers, as well as the institutional structure and role of the United Nations and transnational corporations.*

*Consequently, many delegates who were oriented towards specific science and technology applications to developments problems were somewhat frustrated.*“(12)

In a background paper issued by the UNCSTD secretariat for journalists on the eve of the conference when announcing the ACAST Colloquium prior to UNCST it was said *„There will also be a UN-sponsored symposium of scientists, many of whom are still disturbed by the fact that they do not have a sufficiently important role in the Conference itself.*“(13)

One anecdote may illustrate the widely shared opinion of the Science Community towards UNCSTD: After having listened to the first presentation by the UNCSTD Secretary-General, *Jao Frank da Costa* of Brazil of his conference concept to ACAST in 1977, the Dutch

member of the Committee, *Prof. H.B.G.Casimir*, former Board Member of the Philips Company in charge of R&D and President of the Royal Academy of Sciences had this to say: „I should like to predict that if the Conference Secretary-General succeeds in carrying through his conference concept, than the United Nations Conference on Science and Technology for Development will be known in history as a Conference without Science, without Technology and without Development. We should call it simply „*The Conference*“.

Unlike UNCSAT in 1963, UNCSTD in 1979 was not meant to be a World Science and Technology Conference. It was a political conference which can in hindsight only be understood if one remembers the heated North-South dialogue aiming to generate a „New International Economic Order (NIEO)“.

The Conference Secretary-General made it clear from the outset that „*the preparations for the Conference is an essentially governmental and intergovernmental process. This has a number of consequences:*

....

- *We must avoid bypassing governments ‘from below’ through unauthorised ‘direct appeals to the masses or direct contacts with local entities etc.’*
- *We must avoid bypassing governments ‘from above’:*
  - *‘great international organisations’,*
  - *‘extra-national organisations’,*
  - *unappealable judgements of wise men and magicians’,*
  - *international bureaucracies’“(14).*

As a logical consequence of this concept and in line with the famous ‘*ascending process*’ of UNCSTD all participating states were asked to prepare ‘National Papers’, subsequently two rounds of Regional meetings took place in addition to the 5 sessions of the Preparatory Committee of the Conference. All-in-all delegates preparing UNCSTD have spent 80 session days in regional meetings, 69 days in sessions of the Preparatory committee and 12 days at the Vienna Conference itself.

In addition to these UN meetings there have been numerous professional scientific and technological meetings aiming to aid in the application of science and technology to development. Among these professional groups which have met and discussed position papers were: ICSU, the Pugwash Group on Science and World Affairs, AAAS, and in many countries national scientific associations and other groups focusing on industrial technology and appropriate technology.

The scientific journals covered UNCSTD well. Particularly effective proved to be a Swedish sponsored Newsletter „*The Lund Letter on Science, Technology and the Future*“ and a special UNCSTD-NGO-Newsletter *Retort*. The various events organised by the UN Office for Science and Technology aiming to facilitate the contributions of the World Science Community towards UNCSTD were covered by a special Newsletter sponsored by Pergamon Press ‘*Application of Science and Technology to Development*’.

Out of the ‘*ascending process*’ emerged the following substantive conference agenda:

- ◆ Science and technology for development:
  - a) Choice and transfer of technology for development;
  - b) Elimination of obstacles to the better utilisation of knowledge and capabilities in science and technology for the development of all countries, particularly for their use in developing countries;
  - c) Methods of integrating science and technology in economic and social development;

d) New Science and technology for overcoming obstacles to development.

◆ Institutional arrangements and new forms of international co-operation in the application of science and technology:

a) Building up and expansion of institutional systems in developing countries for science and technology;

b) Research and development in the industrialised countries in regard to problems of importance to developing countries;

c) Mechanisms for the exchange of scientific and technological information and experience significant to development;

d) strengthening of international co-operation among all countries and design of concrete new forms of international co-operation in the fields of science and technology for development;

e) promotion of co-operation among developing countries and role of developed countries in such co-operation.

◆ Utilisation of the existing United Nations system and other international organisations.

◆ Science and technology and the future.

On 31 August 1979, at the last day of UNCSTD, delegates from 142 States adopted by consensus a programme of action and gave it the name of the city that had been the host to the Conference.

The *Vienna Programme of Action on Science and Technology for Development (VPA)* was adopted by the General Conference of the United Nations on 19. December 1979 (GA resolution 34/218).

The VPA followed by and large the UNCSTD agenda:

## **I. Strengthening the Science and Technology capacities of the developing countries**

### *A. National level*

1. Scope and dimensions of science and technology policy

2. Major elements of science and policy for developing countries

3. Measures and mechanisms for strengthening the scientific and technological capacities of developing countries

### *B. Subregional, regional and interregional levels*

1. Scope and dimensions of scientific and technological co-operation policy

2. Major elements of science and technology co-operation policies

3. Measures and mechanisms for strengthening the scientific and technological capacities of developing countries at subregional, regional and interregional levels

### *C. International level*

1. Role of developed countries in the process of strengthening the scientific and technological capacities of developing countries

2. Role of international organisations

## **II. Restructuring the Existing Pattern of International Scientific and Technological Relations**

- A. Acquisition and transfer of technology
- B. Restructuring of the international scientific and technological information system relevant to the requirements of the development countries
- C. Promotion of international scientific and technological co-operation for development
- D. Institutional arrangements to implement the structural transformations to be effected in international scientific and technological co-operation

### **III. Strengthening the Role of the United Nations System in the Field of Science and Technology and the Provision of increased Financial Resources**

- A. Policy formulation and guidelines
- B. Technology transfer and assessment
- C. Scientific and technological information system
- D. Development of human resources
- E. Institutional arrangements and structural transformations
- F. Global financial arrangements
  1. Objectives
  2. Resources of the system
  3. Other financial resources
  4. Allocation of resources for the interim and long-term arrangements (15)

The most visible result of UNCSTD was the agreement that a new *financing system for science and technology for development* should be established by the General Assembly of the United Nations. The 'Group of 77' expressed the hope at UNCSTD that 2 billion dollars could be raised by 1985 and 4 billion by 1990., i.e. at least two to four times the amount of the annual budget of UNDP.

At UNCSTD the donor countries agreed, however, only to the establishment of an Interim Fund for the years 1980-1981 to be sustained by voluntary contributions for which the Conference agreed that 'the target' should be no less than \$250 million. UNCSTD thus reiterated in Vienna the estimation made by ACAST eight years earlier, when suggesting that as tentative targets, the World Plan of Action fund, or account, \$125 million p.a. should be allotted for initiating or accelerating the programmes outlined by the Advisory Committee.

Although the Interim Fund was finally called 'operational' by the Administrator of UNDP, a series of pledging conferences mobilised only funds in the order of magnitude of altogether \$50 million. That is to say that the UNCSTD preparations and later the costs to administer the Fund exceeded the financial contributions mobilised through the UNCSTD exercise.

The Financing System for Science and Technology created by UNCSTD was formally terminated in 1986.

#### **(b) ACAST Colloquium on the Application of Science and Technology to Development**

One of the most major contributions which ACAST has made to the UNCSTD preparations was to serve as a liaison between the United Nations system and the international, non-governmental scientific and technological communities. The Advisory Committee has repeatedly stressed that *„...in the context of the Conference the instruments of action are science and technology and it is therefore equally essential to ensure that the scientific community of all the countries taking part is intimately and actively involved in all phases of the preparations and in the Conference itself. Such a close association between governmental decision makers and scientists is in any event a sine qua non at the national level for the successful application of science and technology to development (16).*

Consequently, ACAST has attempted to integrate the inputs from the international scientific and technological communities through a special forum prior to the Conference. The Colloquium provided thus an opportunity to scientists, technologists, social and economic planners to consider the role of science and technology in relationship to the issues to be discussed by the Governments at UNCSTD.

In addition, ACAST decided that instead of organising the Colloquium as a self-generating event, it would take advantage of and draw upon a series of symposia which were being sponsored by other organisations as their contributions to the non-governmental scientific and technological aspects of the Vienna Conference: *Global Problems* (Tallin), *Issues of Development: Towards a new role for science and technology* (Singapore), *Views from the developing world* (Kuala Lumpur), *science and technology in development planning* (Mexico).

The Colloquium was attended by 281 representatives of the science and technology community from 87 countries and by 102 representatives from 23 UN agencies and regional commissions.

Four keynote Addresses were given:

- *Science and Technology for Development - The Turning Point: Certain Imperatives for the Future* (M.G.K.Menon)
- *Historical and Cultural Perspectives of Science and Technology in the Development Process* (H.B.G.Casimir)
- *Sociological Implications of Tradition and Change in Developing Countries* (K.Mushakoji)
- *Structure and Performance of Science and Technology in the Development Process* (A.H.Jamal)

On selected sectoral areas Working Papers were presented and Recommendations elaborated:

1. *Food and Agriculture*
2. *Health*
3. *Natural Resources*
4. *Transport*
5. *Communication*
6. *Population*
7. *Human Settlements*
8. *Environment*
9. *Energy*
10. *Industrialisation*
11. *Appropriate Technology*
12. *Information Systems*

The findings of the Pre-UNCSTD symposia were presented as follows

- *Mobilising Science and Technology to Increase Endogenous Capabilities in Developing Countries* (D.A.Bekoe)
- *Science, Technology and Development Planning* (V.L.Urquidi)
- *Science, Technology and Global Problems* (J. Gvishiani)

The results of the Colloquium's deliberations were presented by the ACAST Chairman, W.K.Chagula of Tanzania to the Conference (17).

It is worth to mention that the ACAST Colloquium has not only received strong professional support from all concerned UN agencies (e.g. through commissioned position papers), it was also one of the rare UN-system-wide manifestations in which more than 100 senior staff members from 23 different organisations have actively participated as experts in all deliberations and working groups.

### **(c) New institutional arrangements for Science and Technology within the UN system after UNCSTD**

As a consequence of the new institutional arrangements for the science and technology 'machinery' within the UN system foreseen by Vienna Programme of Action the existing infrastructure created after UNCSAT was abolished:

- The UN Advisory Committee for the Application of Science and Technology (ACAST)
- The UN Committee on Science and Technology for Development (CSTD)
- The ACC Subcommittee for Science and Technology
- The UN Office for Science and Technology

They were replaced by:

- The UN Advisory Committee on Science and Technology for Development (ACSTD)
- The UN Intergovernmental Committee on Science and Technology for Development (IGCSTD)
- The Interagency Task Force on Science and Technology
- The UN Centre for Science and Technology for Development (UNCSTD)

In addition, a special secretariat unit was created within UNDP for the administration of the Interim Fund.

Mainly as a consequence of the unsatisfactorily development of the Funding situation on which much was built in Vienna, the member states seem to have lost somewhat political interest in the science and technology issues within the UN deliberations. The Secretary-General, pressured to downscale wherever possible the secretariat as well as special committees, has therefore decided to gradually abolish at UN headquarters the entire science and technology mechanism built-up in various stages since the 1963 Geneva Conference:

Neither the Advisory Committee ACSTD nor the *Scientific Advisory Committee* of the Secretary-General exist anymore. The functions of the Intergovernmental Committee after its termination have been transferred to the UNCTAD *Commission on Science and Technology for Development* in Geneva together with the few remaining secretariat positions formerly belonging to the UN Centre or the former UN Office for Science and Technology. The UN Fund for Science and Technology has much earlier ceased to exist as a special entity within UNDP.

### **D. UNESCO High-level Colloquium on Science and Technology for the Future - A Fresh Look at International Co-operation**

To commemorate the 10<sup>th</sup> anniversary of UNCSTD and as a contribution to the 'end-of-decade-review' of the Vienna Programme of Action on Science and Technology for Development undertaken by the UN, UNESCO organised from 14-16. June 1989 a

colloquium at its headquarters on the theme „*Science and Technology for the Future - A Fresh look at International Co-operation*’

The Colloquium was attended by 84 representatives of the scientific community and of representatives of organisations within and outside the United Nations System: they included outstanding experts in specialised fields of science and technology, the Chairmen of the United Nations Intergovernmental Committee on Science and Technology for Development and of the Development Assistance Committee of the OECD, the French Minister of Research and Technology, specialists from major intergovernmental organisations, presidents of national and international academies of science and presidents and/or secretaries general of the main science and technology international non-governmental organisations. The chairmen of all major international science programs of UNESCO were also present.

The colloquium provided a forum for debate on the pervasive role of science and technology over a broad spectrum of most human endeavour and the implications of emerging socio-economic and technological trends for international science and technology co-operation in the years to come.

The agenda of the colloquium dealt with 5 broad areas:

### **1. Changing Perceptions**

- *Persistent Gaps* (Federico Mayor)
- *The survival of international co-operation* (Frank Press)
- *Challenges and reforms* (G.I. Martchuk)
- *Science, technology and humanity* (M.G.K.Menon)
- *Imperatives of modern science* (J. Auiboin)
- *Revitalising development dialogues* (Sergio S. Trindade)
- *Development assistance strategies* (J.C.Wheeler)
- *Globalisation of problems* (Henri Curien)

### **2.) New Directions: Science and Technology**

- *An overview* (R. Sagdeev)
- *Basic sciences* (W. Gordon)
- *Energy and new materials* (H. Czichos)
- *Biotechnology* (F. Gros)
- *Information technology* (A. Danzin)

### **3.) New Concerns: Environment**

- *An overview* (M.S.Swaminathan)
- *The oceans and coastal systems* (U. Lie)
- *Terrestrial ecosystems* (W. Li)
- *Earth and water sciences* (L.J. Mosterman)

### **4. New Socio-economic Context**

- *An overview* (Alexander King)
- *Strategic planning considerations* (Francisco. Sagasti)

### **5. Current and Future Strategies**

- *An overview* (Walter Rosenblith)
- *Human resources development* (Thomas Odhiambo)
- *Funding science and technology* (Rustum. Lalkaka)

- *International co-operation in scientific research* (Abdus Salam)
- *International co-operation in technological research* (R. Legards)

**Conclusion** (Klaus-Heinrich Standke)

The report of the colloquium, which because of the high demand needed a second edition, was widely disseminated throughout the science community, to the permanent delegations of member states to UNESCO and to the permanent missions of member states to the UN. (18)

### 3. Possible lessons for the preparations of the *World Science Conference* in 1999

The general climate, the *'Zeitgeist'* seems to augur well for launching a WSC:

In the documentation for the forthcoming Ministerial Council of the OECD devoted to „Globalisation and Linkages to 2020“ it is said: „*Today's globalising world economy provides a co-incidence of interests for OECD and non-OECD countries, for perhaps the first time in history.*“ (19)

On a national scale, President Chirac has made an appeal in February 1997 to the French Academy of Sciences to mobilise the Scientific Community in order to solve some of the urgent problems of the country. President Clinton, also in February 1997, has made the topic 'Education' as the center piece of his Presidential inaugural address. The German Minister for Research and Higher Education Rüttgers is calling his Ministry 'the Ministry for the Future' and announced the need to transform the country into a *'Knowledge Society'*.

The President of the World Bank J. Wolfensohn has most recently repeated his earnest intention to transform the World Bank during his term of office into a *World Knowledge Bank*.

#### a.) Title of the Conference

- A World **Science** Conference, worthy of such a title, has no predecessor:
- The UN World Conferences dealing with science issues have always linked *'Science'* with *'Technology'* and *'Science and Technology'* with *'Development'*,

#### b.) Conference input

- As conference inputs, there are models according to which a key individual has been commissioned to author - linked with his name - a 'Report' on the topic of a later conference or of expected important governmental or intergovernmental policy decisions, e.g.:
  - Ø 'Bush report': 'Science - The Endless Frontier', a report commissioned by US-President Roosevelt, Washington 1944
  - Ø 'Auger-Report': 'Current Trends in Scientific Research' (UN-UNESCO) 1961
  - Ø 'Buzzati-Traverso' Report: *'The scientific enterprise, today and tomorrow'* (UNESCO) 1977
  - Ø Other models can be mentioned in which a conference process or the preparations for a Ministerial meeting have been set in motion through an *ad hoc* Committee of Experts or by a Commission, e.g.
    - Ø 'Freeman-Report': *'Science, Economic Growth and Government Policy'* (OECD) 1963
    - Ø 'Schneider-Report': *'Fundamental Research and the Policies of Governments'*, OECD 1966
    - Ø 'Brooks-Report': *'Science, Growth and Society'* (OECD) 1971
    - Ø 'Delapalme-Report' 'Technical Change and Economic Policy - Science and Technology in the New Economic Context' (OECD) 1980
    - Ø 'North-South Commission on Co-operation for World Recovery'

- (Brandt-Commission) 1983
- Ø 'The World Commission on Environment and Development' (Brundtland-Commission) 1987
- Ø Commission indépendante sur les questions humanitaires internationales (Sadruddin Aga Khan et Hassan bin Talal) 1988
- Ø 'The International Commission on Peace and Food' (Swaminathan-Commission) 1988
- Ø 'World Commission on Culture and Development' (Pérez de Cuéllar Commission) 1995
- Ø 'The Independent Commission on Population and Quality of Life' (Maria de Lourdes Pintasilgo) 1996
- Another formula introduced by the 'Club of Rome' is the presentation of complex issues in form of a report '*prepared for*' a particular institution, e.g.
  - Ø 'The Limits to Growth', A report for the Club of Rome's Project on the Predicament of Mankind by D.H. Meadows, J. Randers and W. W. Behrens III (1972)
  - Ø 'L'éducation - un trésor est caché dedans', Rapport à l'UNESCO de la Commission Internationale sur l'éducation pour le vingt et unième siècle, présidée par Jacques Delors, 1996
- Still another formula consists in commissioning the analysis of the '*state of the art*' of selected topics either on an *ad hoc* basis to several individuals or to a Standing Committee, e.g.
  - Ø 'State of the World' Reports prepared by the Worldwatch Institute
  - Ø 'World Resources' Reports prepared by the World Resources Institute in collaboration with UNEP
  - Ø 'UNESCO World Science Reports 1993 and 1996'
  - Ø 'The World Plan of Action for the Application of Science and Technology to Development' prepared by UN-ACAST 1971

### c.) Objectives

If one of the principal objectives of the WSC is

- „*the achievement of an enhanced political commitment and investment in science*“ an intergovernmental type of conference is called for. UNCSAT and the ACAST World Plan of Action, being mainly 'expert-driven' could neither obtain a political commitment nor assurances for funding. UNCSTD and its negotiated 'Vienna Plan of Action' obtained at the conference assurances for both commitment and financial investments' which were later, however not fulfilled.
- „*a general improvement of the way science is understood by the public at large*“ a high-level expert meeting similar to the ACAST Colloquium in 1979 or the UNESCO Colloquium in 1989 could serve as a sort of model: Both had the mix of political representation and science community representation but were not meant to reach governmental or other support for funding. The role of the media is, of course, vital.
- „*the establishment of a dialogue between science and the rest of the society*“ this would call for an NGO event with all segments of society involved („*Assises scientifiques*“).

A blending of all three elements into one conference will not be an easy undertaking.

### d.) Target group

To satisfy the innovative proposal that 'all parts of society' should be involved: *policy makers, the general public, intergovernmental and non-governmental bodies, younger generations, and present and future scientists*' no earlier experience seems to exist. Earlier

meetings have been 'by invitation only' as opposed to the NGO-fora which have become a tradition connected with all World Conferences regardless of their topic.

This question is, of course, intimately linked with the expected size of the WSC and also with the available financial means.

#### **(e) Conference format**

The proposed conference format seems to be close to that one of UNSAT( appr. 1700 participants): A combination of scientific sessions and sessions for policy makers. The public at large, was up till now not invited to these 'official events'.

#### **(f) Conference themes**

The proposals made are close to the agendas of UNCSAT, World Plan of Action, ACAST Colloquium of 1979 and UNESCO Colloquium of 1989: Overview Presentations on the history of science and the prospects for the future, Policy considerations, successes and failures, North-South issues, science education, sectoral case studies or state-of-the-art presentations. Cross cutting (horizontal) issues.

#### **(g) Involvement of partners and budgetary considerations**

With the exception of UNCSTD itself, all other mentioned earlier multilateral science and technology conferences have had a close involvement of all relevant UN specialised agencies on their specific fields of competence, the Financing Institutions, selected IGO's outside the UN system as well as the organised scientific community, first and foremost ICSU.

Involvement of partners in WSC means also involvement in the funding of the event.

The above mentioned multilateral UN conferences have had their budget for the general conference infrastructure, documentation, staff travel and usually a certain quota of funds allowing representatives from LDC's to attend. In the case of UNCSAT the Palais des Nations infrastructure was used. In the case of UNCSTD the Austrian government has absorbed a large portion of the conference costs as well as of the costs for the ACAST Colloquium. In the case of the ACAST colloquium, the UN has only provided funds for some 40 of the 400 participants. All other participants paid their own expenses or were sponsored by a multitude of different arrangements. The more than 100 UN system representatives were paid by their own organisations.

In the case of the UNESCO Colloquium there was no special central budget available. The science sector has paid for the participation of the representatives of the major science programmes, ICSU has provided the funds for its members, UNESCO has paid in exceptional cases travel and per diem for some participants in financial need, all others have met their own expenses. The French government has hosted a reception at the Quai d'Orsay and one permanent delegation has made the Embassy bus available for transportation.

WSC will also have to be co-financed by 'innovative mechanisms'.

#### **(h) Preparatory process**

The proposed approach in having a series of national, sub-regional and regional conferences preparing the way for the WSC is near the approach used by UNCSTD (see above). The UNESCO regional infrastructures can be mobilised for this purpose, as well as the regional infrastructure of the UN and of the specialised agencies. The COSTED network could also provide valuable assistance.

UNESCO's past experience in organising systematically regional conferences (MINESPOL, CASTAFRICA; CASTARAB; CASTASIA, CASTALAC could also be used. The regional Science and Technology Policy Networks operating under UNESCO's auspices in Asia ((STEPAN), Latin America (R-POP), Africa (STEMAF), Arab States (STEMARN) may also prove to be useful 'vehicles' to carry the WSC message.

### **(i) Expected Outputs and Follow-up**

The proposed WSC Plan of Action should be seen in context with the other Plans of Action generated by the series of World Conferences held since the beginning of this decade. (14)

The WSC Plan of Action should also be harmonised with the efforts of the United Nations which have started to prepare, also for 1999, some activities to commemorate the 20<sup>th</sup> Anniversary of the 'Vienna Programme of Action' and to elaborate a concept entitled ' *A Common vision for the Future*'.

Consideration should also to be given about the enhanced role UNESCO could possibly play as monitoring 'lead agency' for science and technology related substantive and policy issues within the UN system for the follow-up not only of WSC but also for the 'Plans of Action' of other related World Conferences. A 'consortium' type of arrangements involving in addition to the concerned specialised agencies also the IFI's and the non-governmental organizations seems to be called for. The lack of such a mechanism is one of the explanations why many 'Plans of Action' had no real follow-up.

### ***Bibliography***

