Science and Technology for Development in a Postcolonial World. Negotiations at the United Nations, 1960–1980

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Wissenschaft und Technik für Entwicklung in einer postkolonialen Welt. Verhandlungen bei den Vereinten Nationen, 1960–1980

Seit den frühen 1960er Jahren haben die Vereinten Nationen Wissenschaft und Technik als Bestandteil von Entwicklungspolitik begriffen. Verstand man diese Verbindung zunächst als die Anwendung wissenschaftlicher Forschungsergebnisse aus dem globalen Norden, wandte sich in den 1970er Jahren im Zuge der Verhandlungen einer neuen Weltwirtschaftsordnung die Aufmerksamkeit den Strukturen globaler Wissenschaftspolitik zu. Die UN-Konferenz über Wissenschaft und Technik im Dienste der Entwicklung 1979 beschäftigte sich entsprechend mit Möglichkeiten einer Förderung von wissenschaftlicher und technischer Forschung und Lehre insbesondere in Entwicklungsländern. Konflikte zeigten sich in der Frage der Finanzierung von Wissenschaftsförderung, wobei Pläne der G-77 Länder für eine automatische Gebührenerhebung mit den Vorstellungen führender Industrieländer unvereinbar waren, die auf freiwillige Beiträge bestanden. Vordergründig behandelten die Gespräche die Höhe von Finanzleistungen. Tatsächlich drückten sie jedoch grundsätzlich divergierende Vorstellungen einer Weltordnung aus, so dass Wissenschaft und Technik zum Medium für tiefgreifende Auseinandersetzungen über Fragen globaler Entwicklung und Gerechtigkeit wurden.

Schlüsselwörter: Wissenschaft, Technik, Vereinte Nationen, Neue Weltwirtschaftsordnung, Entwicklung

Ever since the early 1960s, the United Nations has acknowledged science and technology as integral components of developmental policies. While this connection was initially perceived as the application of findings from scientific research conducted in the Global North, by the 1970s, in the context of negotiations for a New International Economic Order, attention shifted towards the structures of the global management of science. Accordingly in 1979 the UN Conference on Science and Technology for Development discussed possibilities of strengthening scientific and technological research and teaching, particularly in developing countries. During subsequent negotiations conflicts erupted over the question of how to finance programs supporting science. When the G-77 nations presented plans involving automatic financing schemes, these concepts proved incompatible with the insistence of important industrialized countries that all financial contributions should be voluntary. These discussions appeared to be concerned with the size of financial contributions. In a larger perspective, however, they reflected fundamentally different concepts of a world order, turning science and technology into a medium for far-reaching debates about questions of global development and justice.

Keywords: Science, Technology, United Nations, New International Economic Order, Development

Introduction

In March 2016 representatives of over 80 countries and over 100 organizations met at Dakar, Senegal, for a three-day New Einstein Foundation Global Gathering. In a joint declaration participants professed a belief in the “essential role of science in promoting human development,” endorsed the “promotion of science and technology globally with a focus on Africa” and expressed commitment to “increased investment in Science and Technology to reach 0.7% of GDP by 2020 and 1% of GDP by 2025” (Next Einstein Forum 2016). A German journalist marveled at the audacity of embracing science and research in Africa and called the event a “world premiere” (Sentker 2016). He was wrong.

The African Union had already proclaimed the very same financing targets in the Lagos Plan of Action in 1980 (OAU 1980: 52). Nine years earlier, the World Plan of Action of the UN Advisory Committee on the Application of Science and Technology had called for similar financial goals (Pfetsch 1982: 343). Declaring science an essential component of the development of low-income countries has an even longer tradition. Since 1963, there have been several international conferences addressing the relation between science/technology and development, all very different in character and approach (Standke 1997). As early as 1962 the *United Nations Development Decade: Proposals for Action* drafted by the UN Secretariat under the auspices of Hans Singer to guide the first Development Decade listed as one of six major tasks a “redirection of science and technology to attack the problems of developing” (Jolly et al. 2004: 89).

These efforts were mostly unsuccessful. This is not to say that the work of international organizations did not entail elements of science and technology (S&T).¹ Many of these organizations had their origins in industrialization, when increasing interdependence of different societies through trade, production and research called for cooperation and standardization in numerous technological fields. In the nineteenth and early twentieth century this trend gave rise to agencies like the International Statistical Institute, the International Bureau of Weight and Measures or the Office International d'Hygiène Publique. After 1945 various technical agencies affiliated with the United Nations (UN) such as the World Health Organization, the Food and Agriculture Organization or the World Meteorological Organization, naturally made use of their respective S&T bases. Collectively, they embraced a shared modernization paradigm as a perceived basis for development and socio-economic advancement.

No doubt, these contributions have often truly benefitted the Global South, but their underlying logic has been problematic. One basic assumption of modernization theory was that universities and learning in

low-income countries were incapable of providing the know-how required to meaningfully address problems in those areas. Therefore, in keeping with this paradigm, instead “of building local capacity through higher education and research, the required knowledge could preferably be imported from more advanced countries.” (Arocena et al. 2014: 589). However, importing knowledge is often unhelpful. Arguably, successes resulting from the activities of scientists from industrialized countries in the developing world have largely been limited to the fields of medical research and health care (Sagasti 2004: 104). Often, the knowledge used was of little help under conditions in the Global South, or, worse, its practices may actually have hampered the generation of endogenous knowledge. (Arocena et al. 2014: 591). The efforts described in this paper were mainly attempts to change the developmental logic. Though technology transfer from high to low-income countries was part of the demands raised, the central objective was to increase the endogenous capacity of developing countries to build and make use of their own science and technology according to their own agenda. The ultimate aim, therefore, was not so much to influence development aid but to bring about structural changes affecting low as well as high-income countries along with concomitant institutional changes in the UN administration, which would stimulate such a growth of endogenous S&T capacity.

This paper focuses on a little known episode within this question: the United Nations Conference on Science and Technology for Development (UNCSTD), which took place in Vienna, Austria, in August 1979, and the debates and events in and around the United Nations that preceded it. Gathering 1856 representatives of 142 countries, numerous UN agencies and NGOs, it was probably the largest and certainly the most political and ambitious of meetings dedicated to S&T and development. It gave rise to a new machinery of institutions, designed to foster and coordinate how S&T could be better integrated into global development processes, including an elaborate financial system. Nevertheless, the impact—or lack thereof—was such that nearly forty years later, a meeting in Africa with the same goal, still appeared as groundbreaking. This paper analyzes the circumstances in which this conference took place and possible reasons for this lack of apparent success. In the process, it explores how this science/technology cluster briefly became part of a grand debate about competing visions of global order, development and justice.

For this purpose, the paper reviews the early international initiatives, which established S&T as a central component of development at the UN and led to the establishment of an institutional infrastructure. It then lays out the main components of negotiations regarding NIEO and their integration of S&T demands. These two strands framed the problem as one of

a mismatch between S&T capabilities and needs and specifically of insufficient autonomous capacity and financial resources in low-income countries, thus setting the agenda for further debates. Based on a close reading of pertinent UN documents, the next part analyzes the lengthy preparation process for the UNCSTD with a focus on the Preparatory Committee, its division between delegates from industrialized and G-77 countries, respectively, and their profoundly different views regarding what needed to be done and by whom. The subsequent sections on the UNCSTD and its aftermath explores how the decline of NIEO negotiations shifted the debates from larger political to tangible practical questions. The paper concentrates on controversies regarding financial transfers for an S&T capacity building program, the question in which underlying political tensions continued. Eventually, this paper argues, the failure of these negotiations to materially change the global distribution of S&T capacity, reflected a larger competition between different views in high and low-income countries regarding global justice in which the former gained the upper hand. The conclusions discuss in how far the most recent developments call for a more nuanced interpretation, taking into account the shifting center of economic and S&T power from North to South.

So far, such efforts to address S&T as specific drivers of development have received only limited attention in the relevant literature. Apart from the study cited above, one recent publication dedicates several chapters (Currie-Alder et al. 2014: 546–629) to this topic, but others mention it only in passing (Stokke 2009: 144–145; Jolly et al. 2004: 95–97) or not at all (Rist 2008; Roberts et al. 2015). Another recent volume addresses the specific use of S&T elements in various contexts but not the question of overall S&T management (Frey et al. 2014). Given the extent to which development builds on and is shaped by a broad base of pertinent S&T contributions, more interest in this question seems called for. Assuming that developing countries engage in and have access to few scientific activities simply because they are allegedly “underdeveloped”, involves a certain amount of blurred logic regarding cause and effect. S&T inequality, like wealth inequality is a function of historical processes, which can and should be explored.

The paper is based mainly on archival material of the UN archive in New York. By providing information regarding the day-to-day negotiations at the UN level these documents allow important insights into the relevant activities. They are, therefore, highly rewarding with regard to the main focus of the discussions, the disagreements and efforts at reconciliation of incompatible viewpoints. However, by revealing little about specific actors, often not even naming speakers, they allow only limited analyses of subdivisions and diverging interests between different countries. But no

country specific source material has been located in national archives so far, especially with regard to countries of the Global South, and until such material is found the present analysis seems the best possible account. So, inevitably, this paper will be a somewhat simplistic but not altogether inaccurate account of what was, in essence, a clash between two conflicting narratives of how the world should work, pitting representatives of industrialized countries, on the one hand, against representatives of low-income countries of the Global South, on the other.

In this vein, the present paper is predominantly a political analysis. Issues regarding specific scientific or technological questions played some role in the early years of the debates but were largely ignored during the 1970s, when attention turned to the overall framework of international science and technology organization. In that sense, the relevant questions were about science and technology, but they were not scientific or technological. The actors understood “science and technology” in generic terms as the capacity to develop solutions for practical, mostly technical, problems in their countries. They had little interest in nuances or even in differentiating between science and technology as two distinct entities. At its core, the debate was about power and justice.

Establishing a Science & Technology Infrastructure for Development at the UN

Science has been on the UN agenda from the beginning. One of its technical agencies, the United Nations Educational, Scientific and Cultural Organization (UNESCO) includes science in its name, and early on, meetings like the 1948 Conference on the Scientific Conservation and Utilization of Resources and two conferences on the Peaceful Uses of Atomic Energy in 1955 and 1958 addressed scientific topics and/or methods. However, until the 1990s, UNESCO, considered science and technology as issues of interest and relevance principally to high-income countries (UNESCO undated).

This view was not uncontested. Arguably, the proclamation of the (first) UN Decade of Development, already cited above, was the first major document to draw attention to the fact that science and technology, considered a key prerequisite to economic development, was seriously deficient in low-income countries. Subsequently, several initiatives addressed this issue. In 1961, the United Nations General Assembly (UNGA) discussed issues of the transfer of patented and unpatented technology to developing countries (Pfetsch 1982: 343). In 1963, the UN held a conference on the *Application*

of Science and Technology for the Benefit of the Less Developed Areas, drawing 1,665 participants from 96 countries, who presented more than 2,000 papers addressing topics ranging from agriculture, industry, education to resources (UN 1963: vii). It was a classical scientific conference, in which scientists presented and discussed findings in thematic sections. At the time, nobody was irritated that only 16 percent of the participants came from developing countries, thus largely resulting in a debate about people from the Global South, not with them (Standke 1997: 5).

Subsequently, the contents of the papers and of the discussions were combined into narrative accounts and released as an eight volume publication. The breadth of topics was enormous, addressing the promise as well as threats emanating from scientific activities, ranging from pollution, to irrigation and anthropogenic climate change. In his foreword, UN Secretary-General U Thant, while noting the inherent risks in S&T, mainly reflected the upbeat atmosphere at the conference and the prevalent view of science as the harbinger of modernization and a better future (UN 1963). As institutional legacy, it triggered the creation of the UN Advisory Committee on the Application of Science and Technology to Development (ACAST) in 1964. Answering to the Economic and Social Council (ECOSOC), it consisted of twenty-eight independent experts nominated by the UN Secretary-General.² Its task was to recommend measures for international cooperation between low and high-income countries in the field of science and technology. But in practice, ACAST received little recognition and support, and after a few years disillusionment set in. The third ACAST report, issued in 1966, stated:

[...] only a very small fraction of the world's scientific and technical resources is devoted to the problems of the developing countries; the overwhelming proportion of the world's intellectual capital, as well as its physical capital, is applied towards meeting the needs of the highly developed countries.³

ACAST hoped that A World Plan of Action for the Application of Science and Technology for Development, planned to coincide with the beginning of the second Decade of Development, would provide a helpful stimulus, and turned to academia for support. In 1969, the UN asked the University of Sussex to provide an analysis of the challenge of S&T and development along with policy recommendation, which could serve as introductory chapter to the World Plan. In 1970, the self-dubbed "Sussex Group", consisting of seven scholars from different institutes of the university and chaired by Hans Singer, issued a "Sussex Manifesto: Science and Technology to Developing Countries during the Second Development Decade". Using OECD data, the text made brutally clear the unchanged

imbalance of S&T capabilities. 70 percent of S&T related expenditures in market economies were spent in the United States, 28 percent in other developed market economies, with the remaining two percent in developing countries suspected of being not only quantitatively negligible but also qualitatively less productive than funds invested in high-income countries. Of the funds spent on S&T in developed market economies, less than one percent addressed specific problems of developing countries. In fact, not only was the overwhelming majority of global funds directed at research that was not helpful to development countries, some effects were directly harmful, such as the development of synthetics replacing natural raw material produced in developing countries, or the brain drain of scientists from Southern countries. (Sussex Group 1970: 5–8). The text was adamant that a reliance on technology transfer from the North to the South was necessary but insufficient. There was no alternative to the development of local scientific capabilities in order to ensure that the challenges of developing countries were addressed and that transferred exogenous technology could even be absorbed. Building up such an indigenous scientific capability in the developing countries was, therefore, a fundamental necessity (Sussex Group 1970: 4).

For this purpose, the manifesto called for the reform of international and national institutions, a better coordination of educational and scientific efforts and their outcomes, but also for increased spending: developing countries should increase their S&T expenditures from an estimated average 0.2 percent of GDP to 0.5 percent by the end of the decade (assuming six percent GNP growth, this was expected to result in a 15 percent increase in real expenditures over the decade). In addition, “advanced countries” should transfer resources equivalent to 0.05 percent of their GNP to bolster S&T capabilities of developing countries and should spend 5 percent of their own R&D expenditures on specific problems affecting developing countries. (Sussex Group 1970: 13–17).

However, the text also acknowledged that, if implemented, such steps would result in a massive increase in S&D expenditures, but that this would be insufficient to bring about basic change. The larger economic context also needed to be considered:

When we remember that, at present, there is every evidence that the developing countries are unable to absorb available technologies and to exploit scientific and technical potentials, it is clear that the expanded science and technology programme implies the necessity of major changes in economic organization. This point cannot be too strongly emphasized. Science and technology may be necessary for

development; but simultaneously, development efforts are necessary if science and technology are to be used. (Sussex Group 1970: 21).

The aftermath was highly unusual: the UN considered the document too radical for acceptance and the enraged scholars threatened to sue. Eventually, the text was added as an annex to the final report (STEPS-Centre undated). In spite—or because—of this controversy, the text shaped the following discussions in important ways and formed the basis of several demands of the following years. Specifically, its recommendations regarding increased expenditures as GNP percentages were fully adopted into the World Plan. The plan did not receive sufficient institutional support nor much attention (Pfetsch 1982: 343). But it set a precedent for subsequent developments at the UN where discussions on research, science and technology would focus not on considerations of which scientific or technological fields would deserve more research but on how such research should be financed.

While the UN proved unable to influence S&T related spending, it could and did provide some institutional infrastructure for improved international S&T coordination. In 1971, ECOSOC set up an Intergovernmental Committee on Science and Technology for Development. It was an intergovernmental and eminently political body, whose 54 members represented different regions of the world rather than different scientific fields. ACAST continued to provide expert advice.⁴ A UN Office of Science and Technology acted as a secretariat for these two bodies.⁵

Thus, in theory, a well-coordinated infrastructure was in place. However, in reality, the existing bodies received little support, a fact that was noted by contemporary observers. By the early 1970s, scholars as well as organizations such as the international Council of Scientific Unions, the Soviet Academy of Sciences and the OECD bemoaned the lack of progress in the application of science and technology to developmental challenges. Obviously, criticism grew particularly in the developing countries themselves, as they became more organized in the non-aligned movement and the Group of 77. Thus, the conferences in Bandoeng (1955), Cairo (1964), Lusaka (1970), Algiers (1973), and Colombo (1976) all indicated in some way or other the drastic imbalance of existing global R&D capabilities and called for a freer diffusion of knowledge and for efforts to adapt scientific and technological work to the needs of low-income countries. (Pfetsch 1982: 343–347). These demands were also taken up in a 1974 memorandum by the Algeria G-77 committee on S&T (Dedijer 1979: 238). Inexorably, questions of global S&T became part of evolving debates at the recently founded UNCTAD, as the non-aligned and the G-77 states began system-

atizing their complaints into calls for a New International Economic Order (NIEO).

Negotiating a New International Economic Order (NIEO)

Evaluations about the NIEO differ. Some authors point out the radical character inherent in the fundamental restructuring of international economic, financial, and political relations (Jolly et al. 2004: 121–122). Others have been critical, sometimes scathing, in what they regard as a mere cosmetic change whereby the ruling elites of low-income countries sought the chance to enrich themselves at par with Northern capitalists while, in the process, reinforcing an exploitative economic system (Rist 2008: 143–157); similar points, to varying degrees, are raised in the contributions in Addo (1984) and by Aseniero in his analysis of calls for technology transfer (Aseniero 1984). This view of NIEO as nothing new to see seems plausible, maybe, from a theoretical viewpoint but is belied by the often vehement rejection of the scheme by key industrialized countries and by the widespread belief in its transformative potential. In hindsight, it is, indeed, difficult to imagine that

political and economic leaders throughout both the postcolonial world and the industrial core of the global economy took seriously the possibility—the former mainly with Wordsworthian hope, the latter often with Lovecraftian horror—that they might be witnessing the downfall of the centuries-long hegemony of what was coming to be known simply as “the north”. (Gilman 2015: 1)

This unlikely episode owed its short-lived existence to a combination of circumstances. Its basic driver was the growing frustration in low-income countries, including many that had recently become independent, about the disappointing results of the post-1945 development process. Increasingly, representatives of Southern countries were convinced that global conditions and power relations continued to place them at a disadvantage and stood in the way of their struggles for economic growth and full economic and political sovereignty. Various complaints suggested that the existing system actively thwarted efforts of low-income countries to improve their status, including market restrictions of industrialized countries limiting the export opportunities of developing countries, unclear legal status of transnational organizations, unpredictable fluctuations of raw material prices and exchange rates and the evidence that in an unregulated market exporters of raw materials were facing steadily deteriorating

terms of trade in the face of technologically improving manufactured good (Singer-Prébissh thesis), (Jolly et al. 2004: 50–95). The groundwork was laid by Raúl Prébissh when he analyzed asymmetries in the global economic setup and suggested remedies in the “Prébissh Report” in 1964, just prior to the first United Nations Conference on Trade and Development (UNCTAD). Then, and during the following years, UNCTAD would identify key grievances of low-income countries that would subsequently be taken up by the NIEO, notably trade preferences for developing countries, more balanced prices and a regulation of multinational corporations (Kunkel 2014).

Southern discontent was strengthened by growing disappointment with international developmental policies. Almost all industrialized countries (except the USA and Switzerland) had explicitly endorsed the goal to give 0.7 percent of their GDP as official development assistance (ODA), proclaimed after intense negotiations by the UNGA in 1970, but only a few, notably the Scandinavian countries and the Netherlands, honored this pledge (OECD 2002). On the contrary, among the wealthiest states, ODA declined from 0.42 percent in 1964–66 to 0.3 percent in 1976, and even that sum frequently came with political or economic strings attached. Discontent turned into activism when the oil crisis of 1973 demonstrated that high-income countries could be vulnerable to the policies of countries in the Global South if the latter controlled a key resource and that demands and a united position could achieve more than “appeals to the conscience of the rich” (Streeten 1982: 411). Finally, the fact that, until 1978, the project found charismatic leadership in Algerian president Houari Boumediene, helped give alternative concepts a face and a voice (Gilman 2015: 6–8).

Perspectives on what exactly NIEO encompassed differed, ranging from changes in financial and trade regulations to a more far-reaching restructuring of the economic, political, legal and cultural bases of power asymmetries. While the former offered room for win-win strategies for all participants, the latter inevitably entailed an element of zero-sum changes in which the gains of some countries represented losses for others (Streeten 1982: 412 f.).

Specifically, the demands focused on seven points: more stable prices for commodities or raw materials exported by low-income countries; the transfer of resources from richer to poorer states through increased development aid and/or debt relief; increased industrialization and technology in low-income countries; regulations for transnational corporations (TNCs); free or much expanded access to the markets of industrial countries for products of developing countries; reforms of the international monetary system to make it more responsive to the interests of low-income countries; and generally more influence in international platforms

where political and economic questions were negotiated (Streeten 1982: 409 f.). More radical proponents, like Algerian jurist Mohammed Bedjaoui, demanded a reconsideration of treaty and contractual obligations dating from colonial rule (Gilman 2015: 5).

For a while, it seemed that the developing world was near-united in its support for NIEO. But fissures showed soon and widened as the rising oil price divided the G-77 into a group of increasingly wealthy oil-producing countries and increasingly struggling others. In the wake of the oil crises of 1973 and 1979 and the emerging debt crisis interests tangibly diverged. On the part of the industrialized countries, NIEO demands received some support from a few high-income countries such as the Netherlands, Sweden and Norway, but the governments of the economically more powerful countries like the United States, Great Britain, Japan and West Germany were patently hostile. The dominant position among industrialized countries was not so much uncompromising opposition or ready accommodation but procrastination, while the consensus among G-77 countries was eroding (Stokke 2009: 174–176).

Meanwhile, NIEO documents integrated the language from the Sussex Manifesto and earlier declarations regarding S&T as agents of development. Thus, the *Declaration on the Establishment of a New International Economic Order*, adopted by the UN General Assembly (UNGA) in May 1974, called for

Giving to the developing countries access to the achievements of modern science and technology, and promoting the transfer of technology and the creation of indigenous technology for the benefit of the developing countries in forms and in accordance with procedures which are suited to their economies.⁶

The Charter of Economic Rights and Duties of States, which the UNGA adopted as a follow-up resolution in December 1974 repeated these demands almost verbatim and called on all countries to cooperate in the development of “internationally accepted guidelines or regulations for the transfer of technology, taking fully into account the interest of developing countries” (UNGA 1974).

In the process, demands for a promotion of science and technology for the benefit of development shifted in focus from the benefits which scientific research in many fields could bring to Southern countries in need of development (the approach of the 1963 conference) to the need to change underlying structures which determined the procedures, contents and beneficiaries of ongoing scientific and technological research. It also transformed a diversified, content-oriented discussion, which looked

at a large number of scientific and technological questions on their own, sometimes contradictory merits, to one in which S&T management became a central, unified political demand.

Preparing the UNCSTD

This change of perspective was reflected in a shift of approach during the period preceding a second conference on S&T and development. In 1973, a year before the NIEO declaration at the UNGA, the UN Secretary-General presented a report highlighting in conventional terms the role of modern science and technology in the development of nations. In response, ECOSOC declared a need for national strategies in the promotion of science and technology and called on both high-income countries and the UN to support low-income countries to develop such strategies. It also proposed holding a second UN conference on the topic.⁷ By 1976, the UNGA couched its decision to convene a conference on science and technology in 1979 in NIEO terms, citing as its main objects “the adoption of ways to use science and technology in establishing a new international economic order; the strengthening of the technological capacities of the developing countries; the effective use of science and technology in the solution of national, regional and global problems; and the provision of suitable instruments of co-operation.”⁸

The decision put into motion an elaborate preparatory process, involving numerous meetings and publication activities. A Preparatory Committee, based on the existing Committee on Science and Technology for Development but open to delegates of all Member States of the UN and headed by ACAST member M.G.K. Menon from India, met four times.⁹ The political nature of the upcoming meeting was never in doubt. Menon made clear that in “his view the important issues under discussion were primarily related to fulfilling the objectives of the New International economic Order and the goals of the Third United Nations Development Decade.”¹⁰ Within this framework, the principal task at this point was to decide what the United Nations Conference on Science and Technology for Development (UNCSTD) should be all about. Should this be a meeting mainly on pressing scientific and technological challenges? Or on ways to channel scientific activities into areas considered relevant to developmental issues? Or on ways to improve the conditions, the effectiveness or the international cooperation of scientific research? In addition to the Preparatory Committee, various other groups saw the need and the opportunity to make their voices heard, including ACAST, an NGO Committee and a se-

ries of regional preparatory meetings, usually (co-)organized by regional scientific associations with or without UN support: in Singapore in January 1979, in Kuala Lumpur in late April 1979, in Lomé in May 1979, in West Berlin in May 1979, and in Mexico City later that same month. Immediately before UNCSTD, ACAST held a scientific colloquium discussing a list of tangible items, ranging from health to energy and “appropriate technology.” All approached various aspects of how science and technology could be brought into better sync with the developmental needs of low-income countries, proposing various combinations of tangible topics to be addressed and strategies of promoting the growth of an indigenous S&T capacity and its connection to socio-economic development.

The Preparatory Committee eventually favored a horizontal approach. Instead of discussing tangible scientific questions or technological challenges, it focused on questions of principle regarding ways in which science and technology per se could be strengthened in low-income countries. In line with NIEO thinking, the preparatory paper called for strengthening scientific capacities within developing countries, and for discussions on how to restructure international scientific and technological relations, how to increase financial resources and how to strengthen the role of the United Nations (Standke 1997: 10–12).¹¹

However, discussions within the UN Secretariat about what exactly such a strengthened UN role could or should look like revealed that there was little support for a totally new approach which would fundamentally transform the UN system—supposedly at the expense of several technical agencies with a stake in maintaining a scientific component in their work. A feasibility study by Secretary-General Kurt Waldheim reviewed the existing activities in various agencies within the UN system and argued that the interspersed nature of existing responsibilities for science and technology corresponded to the way science was tied to specific objectives served in these agencies. Thus, the report explicitly opposed the establishment of a new organization or UN program in the way UNEP had resulted from the 1972 Stockholm Conference on the Human Environment.¹² This argument was remarkable, given that the dispersed nature of the environment had justified the creation of a program—rather than a new technical organization. But UNEP had emerged before NIEO debates and, therefore, in a politically somewhat less strained context.

However, the Waldheim report did see room for improvements in the coordination and cooperation of existing activities. This point was strengthened by another report drafted by the Administrative Committee for Coordination (ACC), a UN body in charge of overseeing the coordination of different UN bodies. It recommended the reformation of ACAST as an advisory body. In order to be both efficient and competent, it should

consist of a small nucleus of people who would invite specific experts to cooperate as topics required. However, the report also identified a major point which would come to dominate further discussions:

[...] no significant break-through in the application of science and technology to development can be expected unless the total volume of resources which the international community is prepared to earmark for the purpose is adequate to meet the goals set by that community. In this respect, special attention needs to be paid to the requirements of developing countries, not only in terms of the technical co-operation which the UN system would be able to provide, but also in providing adequate support for the national efforts of the countries themselves.¹³

It was the clearest enunciation to date that no amount of organizational efficiency would be able to compensate for too little money provided for activities in science and technology in and for the development of low-income countries. Inexorably, the questions of organizational structure and financing turned into the central point on which the different positions of conference participants—and of the world beyond—crystallized.

On the eve of the conference, the participants were visibly split along the lines of NIEO supporters and opponents. The main problem was not that the draft plan of action still contained a number of bracketed wording where agreement had not yet been reached but that this draft excluded two major proposals submitted by the “Group of 77” (G-77) and amendments proposed by the US government, which the Preparatory Committee had not even considered yet. The G-77 proposal appeared problematic mainly because of its suggestion to establish a new high-level intergovernmental committee, open to all states, in charge of formulating guidelines, preparing an operational plan for carrying out the program of action and monitor future UN activities in this field. One of its functions should be to oversee a new financial arrangement, beginning in January 1981, designed to reach an annual target of at least 2 billion dollars by 1985, and at least 4 billion dollars by 1990. The controversial element of this plan was not only the massive scale of this planned funding but also the fact that these funds should partly be raised automatically from assessed contributions, whereby assessments “would be levied on developed countries in proportion to the average five-year surpluses in their balance of trade in manufactured goods with the developing countries, and on developing countries commensurate with the level of their financial, scientific and technological capacities.”¹⁴ These funds should be supplemented by voluntary contributions from “developed countries,” from foundations, intergovernmental and non-governmental organizations and institutions.

This concept formed a direct connection between the support of world-wide science and technology with a certain punitive character, though it made perfect systemic sense: the more a country's trade relations with low-income countries were in imbalance, the more it would have to pay into a mechanism that would, supposedly, reduce this imbalance in the long run. Financial contributions, therefore, would be subject to the state of the global economic distribution rather than to political decisions and would move beyond the direct control of the donors. In the process, assisting the scientific and technological advancement of low-income countries would have been transformed from a charitable act by high-income countries to a global goal to which all countries would have been obligated to contribute through a tax-like fee. Clearly, this plan for financing science and technology in developing countries had implications far beyond the sums of funds concerned, though they were substantial. It challenged profound assumptions regarding the origins, legitimacy and repercussions of global economic inequality. Even more, it threatened the privileges and the power of high-income countries, transforming them from donors with the power to extend or withhold payments at will to components of a system, whose in-built drive towards egalitarianism they would be unable to thwart. The US amendments did not address this or any other plan to bolster science and technology in low-income countries. Instead, they proposed retaining the existing Committee on Science and Technology for Development as the responsible body, including its restricted membership and responsibilities, although somewhat complemented by a strengthened role of UNDP.¹⁵

The eminently political character of the conference discussions became even clearer in further conference documents. Mimicking NIEO wording, a discussion paper by Conference Secretary-General Luiz Carlos da Costa, based on various national and regional papers he had received during the preparatory process, talked about a "new international science and technology strategy." It entailed, among other points, the integration of technology planning into development planning, suggesting a shift towards planned economies in many countries. It also demanded new procedures for technology transfer from developed to developing countries, entailing skills and knowledge as well as patents and trademarks. In further direct opposition to the unfolding neoliberal approach to developmental policies, the paper called for a greater role of the public sector, an emphasis on the de-commercialization of publicly funded technologies, the organized diffusion of non-patented and patent-expired technologies, regulations for the activities of transnational corporations and a more direct role for the State in steering science and technology towards serving the development of the common good instead of leaving technology "preponderantly to private initiative and profit-motivated corporations."¹⁶ Similarly, the paper explicitly

called for a new concept of development that regarded economic growth as a means to an end rather than as a goal in itself. Overall, the paper presented a concept of science and technology within global development that was profoundly at odds with the world views and interests of the governments of the wealthiest industrialized countries, the very countries from whom most funding for these plans would have to come.

Unsurprisingly, the lack of enthusiasm among high-income countries for such plans was clear early on. In July 1979, some weeks before UNCSTD, Secretary General Waldheim sent Prince Sadruddin Aga Khan on a special mission to several Western governments to try to pave the way for upcoming negotiations. The French government made clear that, while they supported the idea in general and were prepared to increase their contributions to UNDP for this purpose, they were firmly opposed to any new bureaucracy and, particularly, to any form of automatic financing or financial target setting, which would place new commitments on them. The German government, by contrast, was ready to discuss earmarking a fixed target of funding for science and technology but rejected the idea of additional payments altogether, stressing, instead, their belief in liberal economic system and in the importance of foreign investments in low-income countries. Both governments were unwilling to discuss issues of transnational corporations and of technology transfer, the two other fields of work most directly relevant to technological development in low-income countries.¹⁷

These official explanations suggest a multiplicity of reasons for the opposition of governments of key industrialized countries to the schemes proposed. Part of it, doubtlessly, was a simple aversion to spending a lot of money that was unlikely to score points among domestic constituents, similar to the failure to honor the 0.7 percent target of development assistance in general. This relative stinginess was bound to increase in the wake of economic difficulties in industrialized countries, which experienced the second oil crisis, stagflation and rising unemployment at the time. Thus, Neil Marten, Britain's Overseas Development Minister, commented after UNCSTD that Britain would not provide any extra money because she did not have any (Lyon et al. 1980: 444). This may not have been literally true but may have come close to describing the feeling of Britons experiencing stagflation in their country. In addition, the program was at odds with core elements of market economies such as patent rights and a large role of private enterprise and, indeed, counteracted the shift in international climate of the time favoring privatization and a larger role for market forces at the expense of public policies and an important role of international organizations. Finally, the loss of control over S&T policies in development was unlikely to be welcomed in countries that saw little benefit in the pro-

cess and, on the contrary, tangible disadvantages in the destabilization of a structure which granted them a privileged position.

The United Nations Conference on Science and Technology for Development

The conference opened on 20 August 1979 in Vienna. Conditions were less than ideal. Observers were irritated by the scarcity of participating scientists and the virtual absence of scientific debates at what was supposedly a conference on science and technology (Standke 1997: 7). Politically, the odds for a successful conference had also deteriorated.

By that time, NIEO negotiations had passed their peak. The dramatic rise of the oil price and inflation increased the feeling of crisis and, consequently, the intransigence among high-income countries in general, and of the United States in particular (Lyon et al. 1980). Meanwhile the rising oil price divided G-77 countries into oil-producing countries, which benefited from this development, and the rest, which were harmed by it. As a result, there were two sub-groups, one on the brink of bankruptcy with fading interest in large political battles, and the other enjoying lavish incomes and losing interest in demands for global redistribution. In addition, increasing skepticism about the role of the state, among the political left as well as the right, further eroded trust in the state as the central organizing unit of important policies, a central tenet of the NIEO (Gilman 2015: 8). Tellingly, contributors to a collection of papers stemming from preparatory symposia, which was published on the eve of the conference, mused about “predictable failures of the UNCSTD” and about its slim chances of breaking “through the action barrier” (Dedijer 1979; Moravcsik 1979). One of the editors, Mexican academic Miguel Wionczek described an increasing “general feeling of malaise in respect to the prospects of UNCSTD,” (Wionczek 1979) and directed criticism at the UN Secretariat for insufficient guidance and at high as well as low-income countries for insufficient interest and preparation.

Given these low expectations, the large number of participants was already a success of sorts. In his opening statement, UN Secretary-General Waldheim tried to diffuse the obvious tension between industrial and G-77 countries by simple denial, arguing that a better use of science and technology was in everybody’s interest and that “the real divisions were not between North and South or between East and West, but between those who favoured a passive continuation of the status quo, that was prejudicial to all, and those who favoured dynamism, changes and innovation.”¹⁸ As if

to force it to become true through repetition, this point was taken up later by da Costa, but the message instantly lost plausibility when numerous speakers from low-income countries subsequently complained that the existing system gave transnational corporations exorbitant powers, directed against the interests of their countries, and called for a free flow of scientific knowledge. Representatives of high-income countries, by contrast, argued that contracts regarding the transfer of technology and licensing agreements were matters of negotiations between partners in the private sectors, in which governments should not interfere. Furthermore, they discouraged consultation regarding a future code of conduct for transnational corporations since similar negotiations were already being held in other UN bodies and should not be duplicated.

Overall, conference debates reflected the disagreements that had already been previously evident: should a suitable mechanism to better coordinate scientific cooperation be found in a new inter-governmental body, open to all nations and responsible to the UNGA (as demanded by low-income countries) or in a strengthened form of the existing machinery under the auspices of ECOSOC (position of high-income market economies)? Regarding funding, arguments mirrored the different positions during the NIEO negotiations: the delegates of some high-income countries recognized the need for future increase in funding, while others were less forthcoming and clearly opposed the idea of any mechanism of automatic financing. Meanwhile, the representatives of the Communist world rejected any part in a scheme involving high payments by stipulating, conveniently, that the financial burden should be borne by those countries that were supposedly responsible for underdevelopment because of their colonial past.¹⁹

There was little controversy regarding a list of other points: more attention should be paid to rural development, to the problems of migration and the concomitant brain drain, and to the role of women, both as actors in the development and as those, who were particularly affected by technological changes. These points reflected the prevalent topics of the development community of the time, but even this comprehensive consensus on the purposes to which S&T efforts should be channeled could not totally gloss over underlying tensions. Thus, the very muted reference to rural and supposedly simpler technology reflected the resentment among many leaders of low-income countries about pressure placed on them to adopt a “basic needs” approach to development, while modern science and technology should be reserved for high-income countries. Instead, they used the conference to make clear that they wanted to gain the capacities to engage in domestic research and to choose from the full range of available technologies (Agarwal 1980; Lyon et al. 1980: 441 f.). Countering

any illusions about the emotions raised by the issue of science and technology as part of development, one representative from the Global South regretted “that the accomplishments of science and technology were still controlled by a very small number of countries, especially the super-Powers, and that this dominance was being used in an attempt to establish world hegemony.”²⁰

Given this background, it must be considered a success already that the conference participants agreed on a Plan of Action on Science and Technology for Development, laying out a long list of measures to which all participants agreed. Reaffirming earlier declarations to this effect, the paper stated unequivocally that the ultimate aim of the conference and its policy recommendations formed an “integral part of the efforts of the international community for the establishment of the New International Economic Order.”²¹ This tight connection to fading NIEO negotiations may have provided a liability for UNCSTD efforts to reach a consensus. But in retrospect it offers a glimpse of sorts into the reach and limitations of compromise possible along NIEO lines in 1979, some months before the final failure of NIEO talks.

Rhetorically, the Plan of Action went far to adapt a G-77 view of the world. Thus, it framed the issue at hand in terms simultaneously criticizing the past context of disempowerment of low-income countries through colonialism and the present context of a developmental system, which failed to meet their economic, political and cultural needs:

Many countries, in particular those which have suffered from colonialism and foreign domination, have long been conscious of the need to restore their cultural heritage in order to strengthen their capacity for creation and innovation; to avoid the use of scarce human and material resources in creating new needs rather than satisfying existing ones; and to reach the threshold from which their knowledge and resources will enable them to grow and transcend dependency.²²

Accordingly, though the document stressed in its introduction that the primary responsibility for the progress of developing countries rested upon these countries themselves, more and also more far-reaching demands were directed at developed countries. Specifically, they should “make available in a systematic manner, in accordance with their national laws and regulations, the results of their research and development relevant to the social and economic development of developing countries” and to increase substantially research relevant to the needs of low-income countries.²³ They should also increase free training and education for scientists from low-income countries. While these proposals demanded special treatment for low-income countries, arguably others, which entailed merely equal treat-

ment, were more problematic. In all cases of scientific cooperation, including and particularly with regard to pharmaceutical tests, the ethical, professional and environmental standards of the developed country should apply. In addition, scientific and technological co-operation “should not be used to impose any particular political or economic system on developing countries.”²⁴ While perfectly acceptable in theory, both stipulations contradicted the economic and political logic that governed a good part of engagement of industrialized in low-income countries. In the increasingly global clinical trials industry, the variability in ethical standards has been one, though not the only, driving force for scientific cooperation (Petryna 2009). Meanwhile, during the Cold War development assistance of Western countries was “colored by efforts to ensure that Third World countries did not align themselves with communism, but instead embraced the concept of private capital, investment, and free trade as the foundation for development.” (Kharas 2014: 48) The countries of the Eastern Block did likewise, albeit with contrary political orientation (Radelet 2015: 403), and, generally, establishing or maintaining ties with governments or liberation groups considered ideologically compatible provided a major motivation for development cooperation at the time. (Lancaster 2006; Veen 2011).

Other points were similar in being readily acceptable in theory but somewhat removed from the real world, notably the stipulation that the UN should pay special attention to international codes of conduct relating to technology transfer and transnational corporations, and that they should mobilize world opinion in favor of disarmament and of shifting funds from the military sectors to civilian scientific research. In addition, it was difficult to see how the UN should facilitate the access of developing countries to technological information held under patent or other restrictions without intervening in national and international law in ways that would have been widely considered unacceptable meddling in internal affairs. Arguably, the most critical parts touched on fundamental disagreements along North-South lines with respect to the relevant institutional framework, technology transfer and finances.

Regarding institutions, the conference seemed to follow the G-77 line when it called for the establishment of a new Intergovernmental Committee on Science and Technology for Development, which should replace the existing Committee on Science and Technology for Development, as recommended by ECOSOC. This new Committee should be open to the participation of all full member states of the UN and report to the UN General Assembly through ECOSOC. It was to function as the central organ to promote the implementation of the Action Plan, including the harmonization and coordination of policies both within and outside of the UN, the stimulation of existing or the creation of new mechanism to

provide assistance to developing countries. However, it was an empty victory for the G-77 because the new Committee was denied a firm financial foundation. Though the Committee was meant to be “the vehicle for the mobilization, co-ordination, channeling and disbursement of financial resources” and though it was acknowledged that this responsibility required a predictable and continuous flow of financial resources far beyond existing levels, the Committee received no authority to raise such flows. Financial arrangements were limited to very vague references to the possibility of raising new funds from various public or private financial institutions or corporations and to plans for a special expert group to provide inventory of financial needs and supplies. On a provisional basis, an Interim Fund of 250 million dollars was to be created for the years 1980–1981, based on voluntary contributions and to be administered by the UNDP.²⁵ This arrangement was a firm rejection of the concept of a Committee able to undertake effective policy measures with funds received through mandatory and automatic payments, so that, realistically, it was little more than a suggestion of what a UN body in charge of science and technology could be if it had funding than such an agency in real life.

Yet this result safeguarded at least the appearance of an effective solution with some option for future improvement. No such face-saving device was found with regard to technology transfer. All the conference protocol could provide was an unfinished draft, full of bracketed text, which had been proposed by one country or another but without general support. Invariably, the G-77 pushed for more open distribution of information, while Western countries, notably the EEC and the USA, propagated a more restrictive approach with more emphasis on safeguarding the confidentiality of information. Tellingly, the entire paragraph addressing “global financial arrangements” was endorsed only by the G-77 states. It included the remark that the resources of new financial mechanism “should be substantial and supplementary to the resources that now exist, and furnished on a predictable, automatic and continuous basis.”²⁶ By contrast, several member states of the EEC went on record as stating that they reserved full freedom of decision for future policies regarding financial arrangements, and that their agreement to any funding scheme depended on it being voluntary.²⁷

This was the underwhelming ending of a long and costly conference, incurring expenses of some 50 million dollars, according to one estimate (Chinsebu & Kasanda 2012: 353). Criticism was not long in coming. One unnamed observer was cited as commenting: “Yet another impressive international gathering of bright minds and skilled negotiation comes to a close today. And yet again the world’s poor are in line for another diet of crumbs” (Agarwal 1980). But the overall evaluation depended on perspective. While the results were certainly a far cry from the original

demands and hopes of G-77 countries, they were more than nothing. After all, they entailed the acknowledgement that science and technology formed a crucial element of development as well as the promise of a 250 million dollar science and technology fund to be set up by industrialized countries for “developing nations” for 1980 and 1981. Anil Agarwal (1980) from Earthscan was ready to call the conference outcome “impressive.”

Efforts to Implement Conference Decisions

During the following months and years, as efforts to implement the Vienna agreements went underway, NIEO discussions ended, collapsing under the combined effects of the elections of Margaret Thatcher and Ronald Reagan, the eruption of the Latin American debt crisis and the powerful rise of neoliberalism as the dominant economic creed (Stokke 2009: 174–176).

These circumstances increased disagreements between developed and developing countries regarding the meaning of the Vienna results. A first difference of views emerged when the Director-General for Development and International Economic Cooperation issued a summary of the administrative implication of the Conference, listing as one consequence the establishment of a new secretariat. This move was supposed to strengthen the role of the UN in further development. Alarmed, the EEC protested that such a move was not included in the Vienna Plan of Action.²⁸

Their protest was overruled. On 19 December, the UNGA officially implemented its interpretation of the Vienna Conference, including a new structure within the UN Secretariat, responsible to the Director-General for Development and International Economic Cooperation and financed by the regular UN budget. This new secretariat should serve a new Intergovernmental Committee for Science and Technology for Development, which would be open to all member states and responsible for preparing an operational plan to carry out the complete Vienna Program of Action. Likewise it was slated to be in charge of the UN Financing System for Science and Technology for Development, designed to become operative in January 1982, following the expiry of the Interim Fund. This sounded impressive—except that no such financing system was in sight. In fact, even the Intergovernmental Group of Experts, which should study what funding would be required and where it could come from, was yet to be installed.

Clearly, the UNGA made the best of a difficult situation. Assigning responsibilities to a nonexistent financing system was a form of insisting that finding new forms of generating funds was still on the agenda. At the

same time, the UNGA instituted the Interim Fund for 1980/1981 under the auspice of the UNDP, and called for voluntary contributions. In spite of the unpredictable financial basis and a predictably short lifetime, the resolution provided a long list of suggestions of what the Interim Fund might support, including the services of experts or consultants, equipment, scholarships and fellowships, R&D for and testing of pilot production, basic and applied research in existing or new research institutions, the dissemination of the research results, and improved access of developing countries to scientific and technical information.²⁹ Providing details on how the Fund should operate, hire staff and cooperate with other UN bodies, the resolution conveyed a sense of urgency to see the start of tangible projects regarding more and better use of science and technology for the development process in low-income countries.

However, in real life implementation was patchy and slow. The new agencies did not commence work until late May 1980 when the Intergovernmental Committee had its first substantial meeting and a new sector at the UN Secretariat, called the Centre for Science and Technology for Development came into being. At the same time, the Intergovernmental Group of Experts, in charge of studying long-term financial arrangement for science and technology for development, was established and the Interim Fund, designed to finance the early work pending such arrangements, was declared operational.³⁰

Meanwhile, diplomats from low-income countries became disillusioned. In April 1980, the Organization of African Unity held a meeting in Lagos, Nigeria, to discuss strategies for the economic development of their member countries. The resulting Lagos Plan of Action (LPA) stated that the Vienna Programme of Action left “much to be desired” and complained that “for Africa the outcome of UNCSTD was not as effective and fruitful as anticipated.” Nevertheless, it urged member states to “take appropriate steps to ensure their active participation in the post-UNCSTD dialogue” (OAU 1980: 34). The recommended measures largely repeated those already discussed at Vienna, such as strengthening domestic technologies, the promotion of an exchange of know-how and of technical cooperation among Member States, enhanced education and training and a focus on rural development and industry. In addition, the LPA declared that Africa should receive at least 40 percent of the Interim Fund for Science and Technology for Development (OAU 1980: 34–57). Similarly, speakers at a meeting organized by US and Indian scientists a little later expressed bitter disappointment at the outcome of the Vienna conference and the slow pace of its implementation, and, again, the lists of demands and recommendations echoed those already made in Vienna (Zinberg 1981).

The practical results were even more disillusioning. Throughout 1980, the UNDP cooperated with developing countries in identifying suitable projects and preparing funding proposals. By the end of 1980, the Interim Fund had approved projects related to remote sensing in China, water desalination in Cape Verde and energy planning in the Seychelles. Further project proposals were underway.³¹ This record was a world away from earlier hopes and promises, and its components were depressingly uneven. While developing countries had submitted more than 700 projects for possible financing, the developed countries were less eager to provide the necessary funds for the agreed 250 million dollars. In December 1980, the UNGA noted that the financial resources available to the Interim Fund were “grossly inadequate to meet the already demonstrated needs and aspirations of developing countries for science and technology for development.”³² Half a year later, in July 1981, the UN findings regarding the discrepancy between demand and supply for financial support was even more sobering:

Notwithstanding the considerable efforts of the Interim Fund, as at 1 June 1981 the actual contributions that have been pledged amount to \$33.6 million, of which the paid-in amount is approximately \$9 million. At the same time about 800 proposals seeking support from the Interim Fund have been received.³³

Eventually, a series of pledging conferences mobilized a total of 50 million dollars, less than the expenses incurred by UNCSTD and the administration of the fund (Standke 1997: 10).

This outcome amply demonstrated that a system based entirely on voluntary contributions was not going to supply even remotely enough funds, and confirmed the need for an alternative long-term arrangement. In July 1981, the Intergovernmental Group of Experts on the United Nations Financing System for Science and Technology for Development presented its report. According to its mandate, it studied a) the requirements for additional funding for scientific and technological activities in developing countries and potential sources of funding; b) an inventory of existing funding programs, and c) alternative proposals put forth at the Vienna conference. The report took great pains to portray investing in science and technology in low-income countries as helpful not only to these countries but to the world at large. Beneficiaries would include scientists, who received more research opportunities, and governments, which, in the long run, could expect to save money on short-term economic assistance. Hence the Financing System was meant to encompass not only means of generating funds but also the wide-ranging shift in approach from problem-

solving to capacity-building, from uncoordinated, supply-oriented to coordinated and need-oriented financing, and from North-South transfer to a multilateral system to which all countries contributed and from which all benefited. The report estimated future financial requirements by extrapolating the number of scientists and engineers then doing research in developing countries and calculating that costs. Thus they arrived at the necessary amount of 2.2 billion dollars in 1985 and 5.4 billion dollars in 1990 respectively.³⁴

The report recommended a transitional goal of 1.2 billion dollars for the period 1983–1985 to bridge the gap between the end of the Interim Fund and the beginning of the final Financial System. It was only with regard to this transitional goal that the report debated ways of generating the funds. In view of the disappointing record of the Interim Fund, it rejected dependence on uncoordinated voluntary contributions. Linking payments to ODA or GDP was likewise not considered promising, given the experience of the previous decade with the 0.7 per cent target for development assistance. However, it also rejected the idea of automatic financing (as proposed by the G-77) as impractical, since it would require an international treaty and the complicated, time-consuming negotiation that would go with it. Generally, the Intergovernmental Group of Experts noted ongoing studies regarding various forms of international taxation and considered them not yet feasible, but went on record as stating that science and technology would have a legitimate claim on some schemes of taxation in the future. Instead, the report recommended a two-layered approach: a core sum of 600 million dollars should be raised through commitments for voluntary contributions with regional aggregated targets, sub-aggregated between different groups of countries, and specific country allocation to be negotiated within these groups. Administrative costs, which should not exceed five percent of all funding, should be received on the basis of assessments. All states joining would be required to pay. The remaining non-core contributions should derive from a “basket of funds” including bilateral contributions, contributions in kind, contributions in non-convertible currencies, private funds, co-financing, complementary sources and others. Overall, the report commented that the Financing System was “as it should be, to a large extent dependent on collective financial responsibility and solidarity.”³⁵

The report represented an exceptionally elaborate plan for financing development activities of the time. Ambitious in scope, it nevertheless tried to achieve a balance between maximum and minimum sums and between voluntary and mandatory contributions while maintaining the principle of shared global responsibility instead of unilateral North-South transfers. The difficulties involved may be deduced from the fact that the plan re-

ferred only to a transitional period, effectively by-passing its real goal. The scheme was discussed at the subsequent meeting of the Intergovernmental Committee on Science and Technology for Development in late August 1981, exactly two years after UNCSTD. The states of G-77 generally accepted the report but were divided over which body should be in charge. The EEC commented that the report “should be used as a basis for further consideration” but that the Interim Fund should be extended for another year.³⁶ In reality, the scheme was never implemented and was formally terminated in 1986 (Standke 1997: 10).

The rest of the institutional framework did not fare much better. The failure of all attempts to establish a satisfactory financial system impeded effective work not only on a practical level. It also disillusioned and frustrated people, countries and institutions with a stake in the field. Under the influence of the Washington Consensus, international development policies de-emphasized S&T policies while focusing on the free play of market forces. At the tenth anniversary of the Vienna Conference, ACAST issued a declaration with a general call to put innovative and cooperative approaches to use for development. It went largely unnoticed. (Sagasti 2004: 105). Under increasing pressure to downscale an administration attacked as overblown and wasteful in the unfolding neoliberal climate of the 1980s and 1990s, the Secretary-General gradually dismantled the bodies in charge of science and development. The Intergovernmental Committee on Science and Technology for Development continued to exist until July 1992, when it was replaced by the UN Commission on Science and Technology for Development. The UN Center for Science and Technology for Development continued until 1993, when its work was taken over by the UN Conference on Trade and Development (UNCTAD). Its activities remained inconspicuous, virtually unnoted by contemporaries as well as historians. The Advisory Committee on Science and Technology for Development (which had replaced ACAST) and an Interagency Task Force on Science and Technology simply disappeared (Standke 1997: 12).

Conclusions—Results

It is unclear if or to what extent there ever was a real chance that UNCSTD would truly affect science, technology and development both in low-income countries and in the world at large. After all, the story of insufficient money preventing the implementation of policies to which numerous politicians had paid lip-service is a familiar one. In this case, the dramatic discrepancy between financial plans and financial provisions

suggests that any chance was slim at best and probably non-existent. Certainly, the timing was unfortunate.

However, actual expenditure was not the only and, in the long run, probably not the most important reason. Rather, the episode exemplified a larger discrepancy about different world views in different parts of the world. After all, the process closely resembled negotiations about NIEO, in that high hopes for radical changes were followed by the collapse of initiatives. By tying the meaning of science and technology in development so closely to the NIEO, the organizers inadvertently burdened discussions with all the controversial repercussions of NIEO. Effectively, by the early 1970s, discussions about science and technology had become a discussion about distributional justice. This focus was in striking difference to the 1963 conference, which had addressed a large number of issues, ranging from resources to pollution and climate change, without addressing related power structures.

Distribution referred to many things, including knowledge, access to research results, and decision-making powers in addition to wealth, but the controversy eventually focused on money, that is, the question of how an arrangement that was designed to bring about a more equal distribution of knowledge and research opportunities should be financed. Ultimately, this conflict also concerned the issue whether high-income countries would retain control over a process, which potentially threatened their position of economic privilege. Voluntary donations could be ended anytime. Automatic fees integrated into the set-up of the global system of economic interaction, however, not so easily.

Yet the decisions involved not only considerations of power but also different concepts of the world at large. When industrialized countries, and most explicitly the EEC, implicitly rejected the G-77 plan to tie automatic financing to trade surpluses with developing countries, they rejected the idea that such surpluses were inherently objectionable and that providing low-income countries with the knowledge capacity to mitigate and—eventually—end them was a serious goal.

The underlying difference was literally one of world view: was the world viewed as a single entity, in which all contributed to a common goal, or did it consist of several (groups of) countries engaged in separate foreign policy in line with their individual interests? Inevitably, all countries, rich and poor, chose the version in which they stood to gain the most or pay the least. Thus, the result can be seen as a failure of UN officers to convince governments that stimulating science and technology, specifically in low-income countries, was, indeed, a goal in which all had a stake, instead of a policy in which some countries would have to finance the benefits reaped by others.

In the short run, the failure of UNCSTD is easy enough to see. The long-term perspective is more difficult to evaluate. With regard to NIEO, Nils Gilman argues that, though NIEO negotiations collapsed in the early 1980s, by the early twenty-first century, a major shift of GDP distribution had occurred, resulting mainly from disproportionate growth rates in China and other BRIC countries. He suggests the term of “unfailure” as most appropriate assessment (Gilman 2015: 9 f.). Something similar could be said for global science and technology.

Though in 2004 one observer still found a picture of mostly small-scale, uncoordinated, and widely dispersed S&T cooperation programs, patently insufficient to develop the endogenous S&T capabilities of poor countries, (Sagasti 2004: 102), generally, the traditional industrialized countries no longer hold the dominant position they had in 1979. Again China in particular has emerged as a formidable player in the international scene of scientific research, thanks in large part to a determined governmental policy of large-scale investment in science education and scientific research and of seeking knowledge transfer by sending large numbers of Chinese students to Western universities (Xie et al. 2014) and by increasing the enrollment in higher education from 3.4 million students in 1998 to 21 million in 2010 (Arocena et al. 2014: 586). Thus, UNCSTD findings that funding and planned state policies were key to success have been powerfully corroborated. In that sense, a central goal of UNCSTD, a reduction of global research inequality, has been achieved even without a coordinated global program. However, success has been very uneven. Africa, has not experienced such a development as yet. While donor funding of universities in African countries has substantially increased (thus raising new questions of dependency) (Arocena et al. 2014: 590), the meeting mentioned at the beginning of this paper shows that substantial endogenous R&D still seems a thing of the future.

So is a transformation of an S&T infrastructure that seems adequate to address the challenges facing the world. In 2010, forty years after the Sussex Manifesto, the STEPS (Social, Technological and Environmental Pathways to Sustainability) Centre at the University of Sussex, issued a follow-up document, entitled “Innovation, Sustainability, Development: A New Manifesto” based on twenty roundtable discussions around the world. It called for a radical change in conceptualizing and performing innovation, and a “fundamental redistribution of attention, resources and power” to gain a “more vibrant and creative diversity of pathways—scientific, technological, organizational and social” so that “human ingenuity may truly rise to the imperatives of poverty alleviation, social justice and environmental sustainability.” (STEPS 2010: 24). The demand that science and technology would have to embrace fundamental changes within a context of broader

socio-economic changes sounded eerily reminiscent of similar demands made decades earlier, except that the world of the twenty-first century is a lot more complicated.

Acknowledgments

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Endnotes

- 1 “S&T” as a shorthand term for “science and technology” was not used in the discourse of the time. It is nevertheless used in this paper for the sake of convenience and readability.
- 2 International Colloquium on Science, Technology and Society organized under the auspices of ACAST, Programme, 13–17 Aug 1979, United Nations Archive (henceforth UNA) S-0913-0019-05.
- 3 ACAST, Third Report, May 1966, ESCOR, 1st session, supplement no. 12, (E/7148), para. 7, cited in Jolly et al. 2004: 96.
- 4 UN, Press Release 15 Aug 1979, TEC/274, UNA, S-0913-0019-06.
- 5 ACC, Utilisation of the United Nations System in the Application of Science and Technology to Development, Note submitted by the Administrative Committee on Co-ordination, 25 July 1979, UNA S-0913-0019-05.
- 6 Declaration on the Establishment of a New International Economic Order, A/RES/S-6/3201, 1 May 1974, <http://www.un-documents.net/s6r3201.htm>. (14.09.2016).
- 7 ACC, Utilisation of the United Nations System in the Application of Science and Technology to Development, Note submitted by the Administrative Committee on Co-ordination, 25 July 1979, UNA S-0913-0019-05.
- 8 UN Press Release, TEC/373, 10 July 1979, UNA S-0913-0019-05; UN, Press Release 15 Aug 1979, TEC/274, UNA, S-0913-0019-06.
- 9 UN Press Release, TEC/373, 10 July 1979, UNA S-0913-0019-05; UN, Press Release 15 Aug 1979, TEC/274, UNA, S-0913-0019-06.
- 10 Office of Science and Technology, “Application of Science and Technology to Development”, Newsletter No. 7, June 1979, UNA S-0913-0019-05, 2.
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