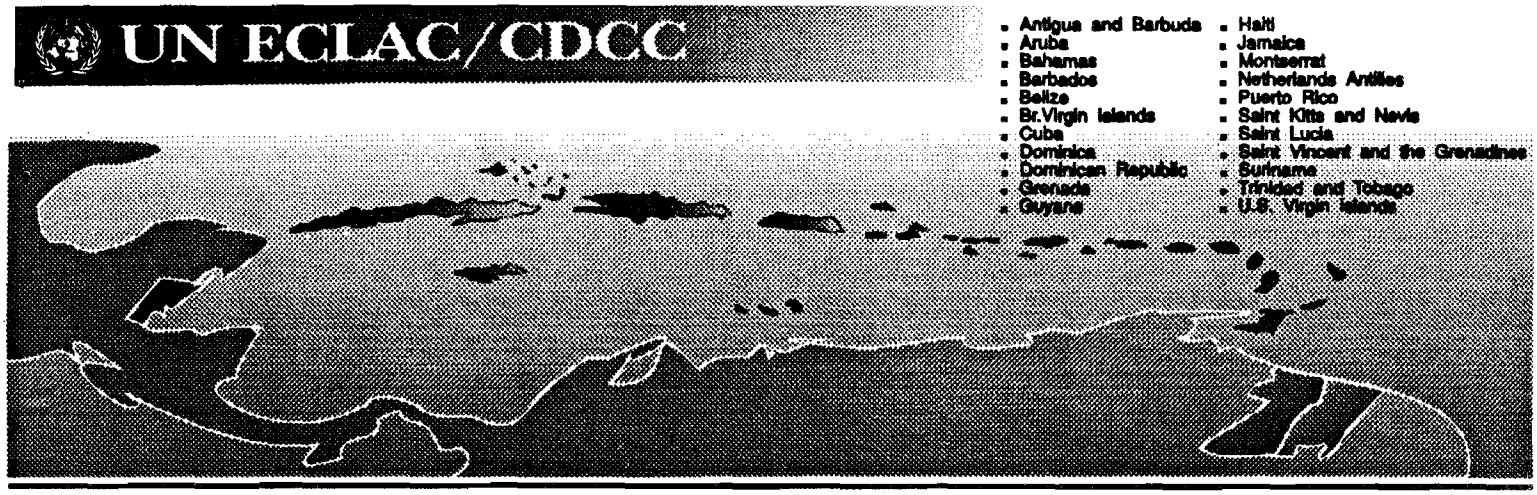
c 1



GENERAL
LC/CAR/G.367
CCST/92/7
1 OCTOBER 1992
ORIGINAL: ENGLISH

ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN
Subregional Headquarters for the Caribbean

CARIBBEAN DEVELOPMENT AND COOPERATION COMMITTEE

CARIBBEAN COUNCIL FOR SCIENCE AND TECHNOLOGY

Eleventh Plenary Session
Castries, Saint Lucia
12-14 September 1992

MINUTES OF THE ELEVENTH PLENARY SESSION OF THE CARIBBEAN COUNCIL FOR SCIENCE AND TECHNOLOGY (CCST)

Castries, Saint Lucia, 12-14 September 1992

UNITED NATIONS
ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN
Subregional Headquarters for the Caribbean
CARIBBEAN DEVELOPMENT AND COOPERATION COMMITTEE

MINUTES OF THE ELEVENTH PLENARY SESSION OF THE CARIBBEAN COUNCIL FOR SCIENCE AND TECHNOLOGY (CCST)

Saint Lucia, 12-14 September 1992

I. ORGANIZATION OF THE MEETING

1. The eleventh Plenary Session of the Caribbean Council for Science and Technology was convened in Saint Lucia from 12-14 September 1992. The meeting was hosted by the Government of Saint Lucia in collaboration with the Economic Commission for Latin America and the Caribbean (ECLAC).

Opening session

The Secretary of the CCST, Mr Donatus St Aimée, welcomed participants to the meeting. He viewed the continuing participation of members at the plenary session as a most encouraging sign for the progress of the Council, coming as it had immediately following the CCST-convened Regional Seminar/Workshop to Develop a Plan of Action for Science and Technology for the Caribbean, 8-11 September 1992.

Attendance

Representatives from the following CCST member countries were present: Antigua and Barbuda, Belize, Cuba, Dominica, Grenada, Guyana, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines and the United States Virgin Islands.

The following Caribbean Development and Cooperation Committee (CDCC) members and associate members were also present: Barbados, British Virgin Islands, Dominican Republic and Puerto Rico.

The following institutions and organizations with interest in science and technology matters also attended as observers: the Caribbean Community (CARICOM) Secretariat, the University of the West Indies (UWI), the Caribbean Environmental Health Institute

(CEHI), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Industrial Development Organization (UNIDO) and the Saint Lucia National Commission for UNESCO.

The United Nations ECLAC Subregional Headquarters for the Caribbean, which serves as the secretariat for the CCST, provided secretariat services.

The list of participants is given at Annex I.

II. SUBSTANTIVE DISCUSSIONS

Adoption of the Agenda

(Agenda item 1)

The proposed agenda was adopted by general consensus. The agenda was as follows:

1. Adoption of the agenda
2. Minutes of the tenth Plenary Session and matters arising
3. Report of the thirteenth Executive Committee Meeting
4. Chairman's Report for 1991-1992
5. Report on CCST activities 1991-1992
   - (i) Work programme;
   - (ii) Budget performance
6. Topic for general discussion:
   Problems of the organization of science and technology in the small States of the Caribbean
7. CCST work programme 1992-1993
8. Secretariat for the CCST
9. Election of officers
10. Date and venue for fourteenth Executive Committee meeting
11. Date and venue for twelfth Plenary Session
12. Any other business

Minutes of the tenth Plenary Session
(Agenda item 2)

The document "Minutes of the tenth Plenary Session of the Caribbean Council for Science and Technology (CCST)"document LC/CAR/G.344, having been circulated previously, was tabled for discussion.

In response to a question on the admission of the United States Virgin Islands, the Secretary replied that the focal point for CCST had been appointed and the United States Virgin Islands was represented by Ms. LaVerne Ragster. Formal acceptance to the Council would take place later in the plenary session.

Minutes of the thirteenth Executive Committee Meeting
(Agenda item 3)

The document "Minutes of the thirteenth Executive Committee Meeting", document LC/CAR/G.355, was tabled and noted.

Chairman's report 1991-1992
(Agenda item 4)

The Chairman's report is presented at Annex 2. In his report, the Chairman noted that the Caribbean region had formulated many plans but had had less success at their implementation. Nevertheless, he was convinced that the Caribbean had the will and the desire to move forward collectively. He thanked the secretariat for its dedicated and hard work despite all the difficulties it had faced, which had made possible the Council's achievements to date.

Report on CCST activities
(Agenda item 5

The secretary introduced the document CCST/92/5;LC/CAR/G.365. In commenting on the report, the delegate of Cuba commented that despite the problems and difficulties mentioned by the Chairman the report of the secretariat had been the most optimistic and realistic one to date. On the work on the history of science and

technology in the Caribbean, the secretariat introduced a proposal from the Chairman of the Core Group which reads:

"The Core Group should have the responsibility for drawing the lines of action of the project, supervise its development and approve the work plan and budget for the year.

The coordination unit should have the responsibility for the scientific and technical direction of the project, coordinate actions with the focal points and institutions, carry put the corresponding actions included in the project and together with the executing unit, prepare the proposal of the work plan.

The executing unit should secure all the financial and operational arrangements approved in the work plan.

The Core Group and the coordinating institution should be maintained for the duration of the project to ensure its stability, unless its mandate is revoked by the CCST Plenary".

The proposal was accepted by members.

Members were particularly interested in the activities:

(a) Courses in project writing and language training, and

(b) Short-term assignments by personnel from one country to institutions in other countries.

The representative of the Netherlands Antilles drew the meeting's attention to the CDCC project proposal on the removal of language barriers which could assist in the language training courses.

In commenting on modalities for science and technology popularization in the region, a suggestion was made that perhaps CARIBVISION could feature similar science and technology activities in different countries. The representative of Jamaica offered to make available transcripts of a popular Jamaican series of S&T radio programmes to any country which wished copies.

The representative of CEHI stated that he often visited CCST countries as part of official duties and offered to make himself available for interviews within those countries if CCST focal points would make the necessary arrangements.

The UNESCO National Commissioner for Saint Lucia suggested that the CCST should be invited to attend meetings of the Regional Steering Committee for Science Fairs for the organization of the Fifth Regional Science Fair. The Steering Committee meetings are conducted via the UWIDITE system.

Topic for general discussion: Problems of the organization of science and technology in the small States of the Caribbean (Agenda item 6)

This topic had been extensively dealt with in the Regional Seminar/Workshop for the development of a Plan of Action for Science and Technology for the Caribbean and most countries had made presentations then.

Work Programme of the CCST 1992-1993 (Agenda item 7)

The output of the just-concluded seminar for the development of a plan of action for science and technology for the Caribbean would provide the basis for the future work programme document of the Council. The secretariat and the Executive Committee would develop the work programme which would be circulated to member countries for comment and approval.

The Council, nevertheless, would continue to implement already approved and on-going activities. These activities included the CCST Newsletter, the project on the History of the Development of Science and Technology in the Caribbean, the project on a Technology Extension Service, the courses in project writing and language training and the exchange of personnel for assignments from one country to another.

Dr. Thomas DeGregori, Professor of Economics of the University of Houston, a noted writer in the area of the history of science and technology in Africa and Pakistan, was invited to address the Council on the history of science and technology, given his vast experience in this area.

Dr. DeGregori stated that science and technology resulted from human activity; and science and technology in the Caribbean had not begun with the arrival of Europeans to the region but was already in existence with the people who lived there. He further stated that effective technology transfer resulted from movement of ideas. A history of the science and technology of the Caribbean would provide a history of technological diffusion in the region and would give individual national understanding of technology transfer.

Secretariat of the CCST
(Agenda item 8)

The Chairman presented the background to this agenda item for the benefit of new Council members. He read aloud a reply from the Executive Secretary of ECLAC in response to recommendations made by the Council regarding modalities for staffing the CCST secretariat. The Executive Secretary responded that CDCC member governments would need to approve any reallocation of existing resources, following which the Commission could initiate the appropriate actions for implementation of their decisions.

The Council requested that CCST focal points should apprise their CDCC representatives of this information to enable member governments to decide favourably when the matter would be discussed at the upcoming meeting of CDCC, scheduled to take place from 8-11 December 1992 in Grenada.

Election of officers
(Agenda item 9)

The meeting voted to retain the officers of the existing Executive Committee for the upcoming three years. The Council also agreed to a proposal made by the representative of Grenada that the United States Virgin Islands be appointed as a member-at-large in addition to Trinidad and Tobago.

Date and venue for fourteenth Executive Committee Meeting (Agenda item 10)

The Chairman and Secretary would confer and decide on an appropriate date and venue for the fourteenth Executive Committee Meeting.

Date and venue for twelfth Plenary Session (Agenda item 11)

It was agreed that the secretariat would, after due consultation, indicate the date and venue for the twelfth Plenary Session, to be held in September 1993.

Any other business (Agenda item 12)

Admission of new member

On behalf of the Council, the Chairman welcomed the United States Virgin Islands as a member of the CCST.

The representative of the United States Virgin Islands made an acceptance speech in which he thanked the Council for the efforts which it had taken to make it possible for non-independent territories to participate as full members of the Council and pledged his State's full support for the work of the Council.

Closing remarks

The representative of Antigua and Barbuda, speaking on behalf of all participants, expressed gratitude to the Government of Saint Lucia for its warm and generous hospitality. He also thanked the Chairman for effectively guiding discussions so that all the business on the agenda was successfully concluded.

The Chairman wished to record his sincere appreciation to the secretariat for its hard and dedicated work, which had made possible the achievements of the previous year and had also made both the plenary session and preceding workshop successful.

There being no further business, the meeting was declared officially closed.

ANNEX I

LIST OF PARTICIPANTS

Countries

ANTIGUA AND BARBUDA	Hayden Thomas Government Chief Chemist/Food Technologist Chemistry & Food Technology Division Ministry of Agriculture, Fisheries, Land & Housing St. John's Tel: (809) 462-4502 Fax: (809) 462-4502
BARBADOS	Eslie H. Alleyne Director National Council for Science and Technology "Flodden" Culloden Road, St Michael Tel: (809) 427-1820 Fax: (809) 436-1495
BELIZE	Cecil Emmanuel Ford Deputy Head of Department (Engineering) Belize Technical College P.O. Box 366 Belize City Tel: 011-501-02-44049
BRITISH VIRGIN ISLANDS	Beverlie Brathwaite Education Officer (Science & Mathematics) Department of Education and Culture P.O. Box 72 Road Town Tortola Tel: (809) 494-3408/494-3409

CUBA	Tirso W. Saenz Head, School of Management for Science and Technology Academy of Sciences of Cuba Havana Tel: 21-8122 Telex: 512233 EMIDI CU
GRENADA	James S. De Vere Pitt Director National Science and Technology Council Tanteen St. George's Tel: (809) 440-3118
	Guido Marcelle Chief Analytical Chemist Ministry of Agriculture Tanteen St George's Tel: (809) 440-3273/440-0105 Fax: (809) 440-4191
GUYANA	Michael A Granger Director National Agricultural Research Institute Mon Repos East Coast Demerara Tel: 020-2842/020-2881-3
HAITI	Joseph Kechner Coordinator Unit of Applied Science and Technology Ministry of Planning Delmas 19 #29 Port-au-Prince Tel: 22-0700/22-4148/22-9970

JAMAICA	Gladstone Van Taylor Executive Director Scientific Research Council P.O. Box 350 Kingston 6 Tel: (809) 927-1912 Fax: (809) 927-1990 Telex: 3631 SRC STIN JA
NETHERLANDS ANTILLES	Joelle de Jong-Mercelina Head Division of International Organization Foreign Affairs Office Fort Amsterdam 4 Tel: 5999-613933 Fax: 5999-617123
	Franklin J. Rosheuvel Coordinator Netherlands Antilles Science and Technology P.O. Box 3072 Curacao Tel: 599-9-682969 Fax: 599-9-688288
PUERTO RICO	Rubén Muñoz Gonzales Researcher/Planner Corporation for Technological Transformation 6th Floor, Centre Building 312 De Diego Avenue Santurce
SAINT KITTS AND NEVIS	Milton Whittaker Coordinator Science & Technology Council College of Further Education P.O. Box 268 Basseterre Tel: (809) 465-2856

SAINT LUCIA	Bishnunarine Tulsie Energy, Science and Technology Officer Ministry of Planning New Government Building P.O. Box 709 Castries Tel: (809) 452-2611/453-1308 Fax: (809) 452-2506
SAINT VINCENT AND THE GRENADINES	Andreas N Wickham Industry Officer Ministry of Agriculture, Industry & Labour Murray's Road Kingstown Tel: (809) 456-1106/1410 Fax: (809) 456-2873
UNITED STATES VIRGIN ISLANDS	Carlyle Corbin Representative for External Affairs Government House St Thomas Tel: (809) 774-0001 Fax: (809) 774-1361
	LaVerne E Ragster Director Eastern Caribbean Centre University of the Virgin Islands St Thomas Tel: (809) 776-9200 ext. 1251 Fax: (809) 777-8701

Organizations

CARIBBEAN COMMUNITY SECRETARIAT (CARICOM)	Herman Rohlehr Chief, Industry Technology Tourism & Environment Section Bank of Guyana Building P.O. Box 10827 Georgetown GUYANA Tel: 592-2-69281/592-2-58044 Fax: 592-2-57341/66091 Telex: 2263 CARISEC GY

CARIBBEAN ENVIRONMENTAL HEALTH INSTITUTE (CEHI)	Naresh Singh Executive Director Caribbean Environmental Health Institute (CEHI) P.O. Box 1111 Castries SAINT LUCIA Tel: (809) 452-2501 Fax: (809) 453-2721
SAINT LUCIA NATIONAL COMMISSION FOR UNESCO	Lawrence M. P. Laurent Secretary General St Lucia National Commission for UNESCO Ministry of Education & Culture Laborie Street, Castries Saint Lucia Tel: (809) 452-7286 Fax: (809) 453-2299 Telex: 6394 FORAFF LC
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION (UNESCO)	Winthrop W. Wiltshire UNESCO Sub-regional Adviser for Science and TechnologY for the Caribbean UNESCO Port-of-Spain Office 8 Elizabeth Street St Clair TRINIDAD & TOBAGO Tel: (809) 622-0536 Fax: (809) 628-4827
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION (UNIDO)	Derick S. Haniph UNIDO Country Director P.O. Box 625 C Bridgetown BARBADOS Tel: (809) 436-3233 Fax: (809) 429-2448

Observers

Barbara Carby
Coordinator
Science and Technology
Office of the Principal
University of the West Indies
Mona Campus
Kingston 7
JAMAICA
Tel: (809) 927-2253

Leonardo Antonio Abreu Padilla
Under-Director
Department of Economic Affairs
Ministry of Foreign Affairs
Avenue Independencia 752
Santo Domingo
DOMINICAN REPUBLIC
Tel: (809) 535-6280 Ext. 304
Fax: (809) 535-0133

Sergio William Calderon
Technical Advisor
Instituto Dominicano de
Tecnologia Industrial
(INDOTEC)
C/ Nunez de Cacerez, esq. J.A.
Soler
Apto. Postal 329-2
Santo Domingo
DOMINICAN REPUBLIC
Tel: (809) 566-8121
Fax: (809) 540-2809

Thomas R. DeGregori
Professor of Economics
Department of Economics
University of Houston
Houston, Texas
Texas 77204-5882
UNITED STATES OF AMERICA
Tel: (713) 743-3838
Fax: (713) 743-3798

ECLAC

Donatus St Aimee
Economic Affairs Officer
(Science and Technology)
ECLAC Sub-regional
Headquarters for the
Caribbean
P.O. Box 1113
Port-of-Spain
Republic of TRINIDAD & TOBAGO
Tel: (809) 623-5595/1969
Fax: (809) 623-8485

Larry Wilmore
Economic Affairs Officer
(Tourism and Industry)

Christine David-Lewis
Research Assistant

Sita P. Singh
Secretary

ANNEX II

CARIBBEAN COUNCIL FOR SCIENCE AND TECHNOLOGY
CHAIRMAN'S REPORT TO THE ELEVENTH PLENARY SESSION
SAINT LUCIA - SEPTEMBER 14-16, 1992

Ladies and gentlemen, colleagues, the last few days represent a watershed in the scientific and technological life cycle, not only of the region as a whole, but for all our individual nation states. Not only have the events of the last few days brought us to the realism, the knowledge, the understanding of where we actually are in terms of S&T in the region, but we have all been given the opportunity, and I think we have grasped the opportunity with both hands - to chart a course of ACTION for the region and nation states (and I stress "action") - because, outside of the former eastern block countries, it is reasonable to say as a whole, and individually, the caribbean people are the most planned for - we are never short on plans - there is a plan for everything, by everybody and for every day - what we never do is implement ie. bring plans to realization through action. for the first time, I have a sense of hope for S&T in the region - there seems to have been a spirit of commitment - rather than specious argument - a will and a desire to move physically forward collectively, rather than to float ethereally skyward. It seems we have our feet on the ground at last - or rather, we realize that our feet are on the ground, because actually they have always been there while our fancies went on a universal tour.

These few days however have not been of great significance only for the region as a whole, but perhaps more so for CCST - because the CCST has played a major role in making possible the events of the last few days and the conditions which shaped and facilitated their happenings. CCST has been the initiator, the facilitator, the prime mover of these portentous happenings. But there is even a greater significance for CCST than this, and that

is the realization of the role that the CCST must now play in implementing the S&T plan of action. Actual events might have charted the role that CCST has to play, rather than identifying a role and looking for a situation in which it can be applied. No other body is more strategically placed to have as great an impact on regional S&T plans as the CCST - an organization which brings together all the first line S&T strategists/planners/technicians of the region. I hope that in the next few days we will be able to chart the course for the key role which the CCST must now play in ensuring that the events of the last five years, and of the last few days in particular, do not dissipate into thin air, but that concrete action is taken.

I say the last five years, this has been a major element in, and it is perhaps the most important element of the work programme of the CCST's regional strategic plan for development to date. The objectives of the national consultations which have taken place over the last five years were to examine the role of science and technology in the development process in member countries, and to comment on the organization policy and programmes for S&T at the national level within the framework of the regional S&T policy.

Having completed these consultations, it was necessary to analyze them, and to evaluate the outcomes of such consultations, positioning them within the regional science and technology policy, in order to develop a plan of action, including programmes and projects dealing with science and technology aspects of development in the region. The just concluded evaluation workshop was therefore the logical and practical outcome. this has been a great achievement by the CCST, and I wish to make special mention of the magnificent effort put out by the Secretariat and to congratulate the Secretary and his dedicated staff on the successful achievement of this element of the CCST work plan. I wish to thank also the hard working members of the executive for the support they too have given in reaching this milestone.

The activities and achievements of the CCST during the last year form the basis of a report which will be examined in detail by members during the next three days, so I will not elaborate on these here. However, it is worthwhile as a prelude to our further discussions to mention some events and activities with which the CCST has been engaged during the last year.

The Thirteenth Executive Committee meeting which was held March 17-19, 1992 was an important landmark in that it represented a novel approach undertaken by the CCST to foster expended regional co-operation and collaboration in S&T through director interaction at a tangible level among states in the region. The Executive Director of the Centre for Corporation for Technological Transformation (CTT) on behalf of the Commonwealth of Puerto Rico, presented an offer for the CTT and the CCST to work towards designing an exchange programme whereby professionals and government personnel from Puerto Rico and CCST countries could collaborate on the basis of an exchange of technical and administrative personnel to provide opportunities for contact and networking, and the transfer of knowledge skills and "know-how". This offer was of course accepted, and follow-up action which has been taken, and further proposed action, will be later presented to members for discussion. another new approach which, is being developed by the council, is that of exploring avenues for short intensive language training in spanish for english speaking Caribbean scientists to enable them to understand scientific literature written in spanish, thus facilitating or enhancing cooperation efforts.

The matter of the Secretariat has been receiving some considerable attention. It will be recalled that the Caribbean Development Cooperation Committee (CDCC) at its 13th Session held in Jamaica in July 1991, mandated that the CCST should at its next plenary session, settle all outstanding issues relating to the functioning of the CCST. The matter was examined by the CCST at

its Tenth Plenary Session and it was agreed that:-

1. The present interim arrangement seriously affects the Secretariat's ability to fully address the CCST's work programme;
2. the mobilization of funds for the implementation of the Council's work and the organic linkages between the Council, CDCC, ECLAC and other supporting agencies remain indispensable to the long term survival of the Council;

3. any other arrangement should not require significant increase in country contributions, nor should it result in the diversion of funds from projects to personnel costs.

Taking the above into consideration, it was agreed that ECLAC should be requested to reallocate resources and provide, for the post of the Science and Technology Officer to be allocated to the CCST to serve as Executive Secretary. Additionally, one Research Assistant and on Secretary with posts now existing in ECLAC, Port-of-Spain, should also be allocated to the CCST on a full-time basis.

The decision and request have been communicated to the Executive Secretary of ECLAC, Santiago Chile, and a reply is awaited.

Considering the stagnating effect that this long outstanding matter has had and is having on the operations of the CCST, progress to date on the work programme of the CCST has been good. The CCST Newsletter continues to be published bimonthly and at least three issues have been published since the last Plenary Session.

Two of the major projects being undertaken within the work programme of the CCST deserves mention here, not only because of

success factors, but because of the potential long term impact and the ultimate importance to the region as a whole. First "A Science and Technology Service" Members will recall that the long term objective of this project is to facilitate small business development programmes, initially in the OECS in keeping with the objectives of the OECS Governments' Country Action Plans (CAP's). The immediate objective or implementation strategy is to establish industrial extension services within the six OECS countries in collaboration with the Industrial Development Corporations (IDC's) and the Produce Chemist Laboratories (PCL's) of these countries. this is to provide an effective community developmental tool.

Secondly, "The History of Science and technology in the Caribbean" The eventual output of this project is intended to be a document which highlights the achievements of S&T of all member countries. At an early state of the project Cuba provided a methodology for the project's development. Through this project it is hoped to identify the factory or variables that have shaped the perception of S&T in the region and to devise means to change these so that S&T can have a more meaningful role in the development process of the region. This project is held but the Council to be of such importance that a core working group was set up to ensure and facilitate its development.

Many problems remain with us however. Despite the impact in some areas, much of the contribution to the region by the CCST remain in the realm of the potential. There is the exacerbating matter of the Secretariat which I mentioned earlier. There is the matter of financial support of the programmes and activities of the Council by member states. This is poor in general and very strong attempts will have to be made to improve this situation. I think with a proper secretariat and adequate staff, more practical attention could be made to address this matter. These is also the matter of country representation. This can best be described as posing disastrous consequences for the operation of the Council.

In some countries the coal point is not know, or where know, at any one time is subsequently likely to undergo rapid change in terms of personnel. Attendance at CCST meetings is relatively poor. Many of those who attend is a reflection of what happens on the national level. Representatives are usually attending for the first time, have had to do so at the last moment, know very little about what has been happening, and have very little or no authority to make the very important decisions which need to be taken. As a result many important matters seem never to be resolved, or take an inordinately long time with the resultant lack of impact because the ball game has changed.

It seems what is needed most is for the countries of the region to express their commitment to CCST in very tangible terms - in terms of money and personnel. What we have it seems, is more by recognition of a national spiritual obligation rather that practical positive support for CCST by member states.

What is the S&T climate like in the region? What do we need and organization like CCST for? Does it relate to reality? Does its mandate address any real problems in the region? It is doesn't then CCST has no reason for existence. In fact, its raison d'etre is a reflection of the solutions it has no offer to perceived problems, and to the extent it addresses these problems or to the extent that its mandate is in keeping with the problems, its viability and strength are established.

What are some of the problems?

- inadequate human and financial resources
- weakness in science education, particularly with regard to the shortage of teachers and the inadequacy of the science curricula;
- lack of coordination between national developmental objectives and the activities of the R&D systems;
- lack of coordination between the scientific research community

and the productive sectors of the economy;

- o absence of proper coordination within the sub-sector, with the resulting fragmentation of the R&D system;
- o inadequate appreciation of the benefits of innovative technology at various levels in the society;
- o insufficient linkages between imported technology and local R&D, and the low priority accorded to local research;
- o non-existence of an environment conducive to creative work;
- o inadequate provision for assessment monitoring, evaluation and forecasting of S&T.

The board mandate of CCST is "to promote co-operation in the field of science and technology aimed at furthering the social and economic development of its member countries" Clearly this is intended to promote the CCST as part of the solution to these problems. We have identified the problems and prescribed the solutions, but are the problems solved? We have diagnosed the illness and we have the doctor, yet there is no surgery and the patient continues to be ill. We know the problems and we have worked out the solution yet it is not applied and the problems remains unsolved. Why? Some essential factor is missing and that is the **tools with which to work**, the scalpel to perform the surgery, the resources with which to implement the solution. The Caribbean behaviour pattern is to wait for such tools, to wait for such resources. The providers are to be what we vaguely refer to as the "political directorate". Non provision of resources indicate lack of political will. My experience tell me that we will be waiting a very long time for nothing, or if some tool is given it is inadequate.

I believe that mere "political will" never solves anything, much less S&T problems. Talking about political will is like talking about universal space - its there, but non tangible, you cant grasp it or get it to perform. More importantly, one can't pin responsibility anywhere. As "political will" in a democratic

system is really the will of the people, it all comes back therefor to us - nothing will happen to S&T unless we as scientists and technologists make it happen.

My proposal or advice is to push on. Lets fashion our own tool or deal with matters that do not demand or require sophisticated tools. Lets look at some of the problems in the region - not all - the patient has too many illnesses to be treated for all at once - lets look at the most dangerous, the most life threatening and try to address some of these. If in a year from now we could look back and say we have succeeded in mitigating or solving even on of these problems, we would have a proud record. Lets tackle for example, the problem of the lack of coordination between the scientific research community and the productive sectors - lets address the insufficient linkages between imported technology and local research and development, or address the lack or coordination with the S&T subsector with the resulting fragmentation of the research and development system. All the problems I have mentioned are within the same body - if we cure some of the problems the body gets healthy, it fights the remaining diseases of itself, obviating the need for more costly external medication.

What of the future then? Decisions taken over the last few days have set the stage for CCST, have identified the imperatives. I don't wish to preempt issues but obviously we must spend the next few days charting the course for CCST within the regional action plan. The Caribbean Council for Science and technology is the apex S&T body for the region. The regional action plan provides a golden window of opportunity to become active - to become relevant - to become necessary and indispensable at a practical level. The Council is in a unique position through the regional action plan to guide the advancement of science and technology in the region, and to provide a regional leadership in the development of a strong and well integrated S&T system for rapid socio-cultural and economic

progress. We must be more that just a "talk shop". So that there is no doubt about the nature of our responsibilities and scope of action in furthering the regional plan of action, I suggest that the CCST identify four main functions and responsibilities. These are:-

i) Recommend to regional governments specific programmes and policies which operationalize the regional policy and regional action plan, including recommendations of the resource requirements and the agencies/institutions best suited to effect implementation; and, on approval, to coordinate the implementation.

ii) Liaise with international organizations and funding agencies to secure financial support for the development of S&T infrastructure and capabilities. In the case of initiatives specifically for the advancement of science or other projects which have a significant scientific/technical component, CCST should advise on priorities and implementation arrangements.

iii) Recommend to regional governments priorities for the allocation of budget and programme resources to areas where a regional approach would allow for better project implementation.

iv) Monitor S&T projects and programmes and report to governments on the state of S&T at the regional level.

It is practically impossible for a region like the Caribbean to pioneer many major scientific discoveries or inventions across the whole scientific and technological spectrum, owing to the limitations imposed by inadequate scientific facilities and personnel. Hence one primary function of the CCST must be to help regional governments establish the relative priorities of programmes for generating new knowledge and to determine priorities

for the application of science and technology to development and spell out, directions towards which science and technology can be developed and utilized more efficiently and effectively.

Human resources represent and important factor in the development of science and technology. Hence the training of scientific and technological manpower at all levels, including the training of artisans, technicians, engineers, managerial personnel, other scientists etc. is a crucial factor. In the region this orientation would represents a drastic change in training and programmes. While CCST cannot itself alleviate the regional problem, it has the very important role to play of sensitizing the political directorate to the necessity for wholesale changes and the necessity for, and a regional approach to, the problem.

Following the adoption of a regional science and technology policy and future attempts to implement a regional S&T action plan, it will be necessary to initiate technology planning for the region as well. This consists of procedures, organizational arrangements, methods etc., aimed at the development of scientific and technological capabilities which will determine priorities for science and technology and the allocation of resources among other things. In planning for the development of S&T, it is essential to spell out the technological implications on the regional action plan isolating the technology required to alleviate the constraints imposed on the projects the natural resources needed, the targets etc. As a first step towards this technological planning for the region a few key sectors must be selected for detailed analyses. The CCST is in a strategic position not only to initiate this but to coordinate a regional approach.

Ladies and gentlemen, we cannot pursue the science of the traditional and developed world. Traditional science has attempted to place science and thereby knowledge outside of history, culture and language. In this view, the goal of research is to remove

subjectivity situated in the person. The goal is disinterest and distance from the results of investigation. This is the approach towards science which all of us have learnt in universities both in the region and abroad. it is this approach, which to a large extent has isolated S&T from the larger sectors of the Caribbean economy - the manufacturer, the farmer, the ordinary would be user - even out political bosses. We mostly express the universality of science and technology - the world view - rather than its immediacy and relevance to our individual problems. Science and technology is not neighbourly. In fact our profession is itself a barrier. While it is offered as a solution, it subtly becomes a part of the problem.

We gave to give science and technology more of a local flavour, a local culture, a local knowledge perspective, instead of the universalizing (knowledge) practices of the more developed countries. Instead of a science of the universe, or a science committed to the empirical, we have to focus it on our own domain - with our music, culture, our way of doing things - our special Caribbean environment. In fact, in a real sense our environment must now be taken into a new integrated S&T approach and endeavour for the region.

We are engaged in essence in a continuous struggle between two forces - one in which the advances in technology enhance the productivity of labour; and the other in which the exhaustion of resources used to fuel technological advances diminishes the productivity of other factors.

Over the last two hundred years technology has been the clear winner. For the next two hundred years, it is not clear whether the same pattern will or should be allowed to persist.

No country today is completely self-sufficient. Lets take mineral resources for example. These resources are exploited by the industrialized countries, either as national, local resources,

or imported as raw material. The more industrialized a country, the wider the range of materials required and the less likely it is that the country can achieve self-sufficiency and also develop a full technologically and industrial capacity. To some extent therefore, all countries must participate in the global market in order to meet their resource needs. Success in the global markets in turn leads to more national/internal development/growth which in order to maintain, promote or increase focuses such countries to greater participation in the global markets.

This is the threat that small countries of the Caribbean region face - extinction on the global market, by the ever increasing resource needs of insatiable monster economies, to which the present system of resource use gave birth. We obviously cannot compete in bulk - the Caribbean can only do so in flavour, in essence - our product on the world markets must have a distinctly regional or Caribbean flavour - and our S&T must reflect and provide for us this survival option.

Ladies and gentlemen, last year I proposed that one of the thrust of the CCST could be the promotion of a cohesive and comprehensive science and technology policies which would enable science to achieve its potential in contributing to government outcomes and national and regional needs. The opportunity to do so now presents itself. Over the last few days the region has finally fashioned a pathway for development, and this has provided a role for CCST. In the next few days let us find the strategies, let us develop the means, let us find and lead the way. Let CCST come of age. The region not only demands it but requires it. Let us heed the call. Thank you ladies and gentlemen.