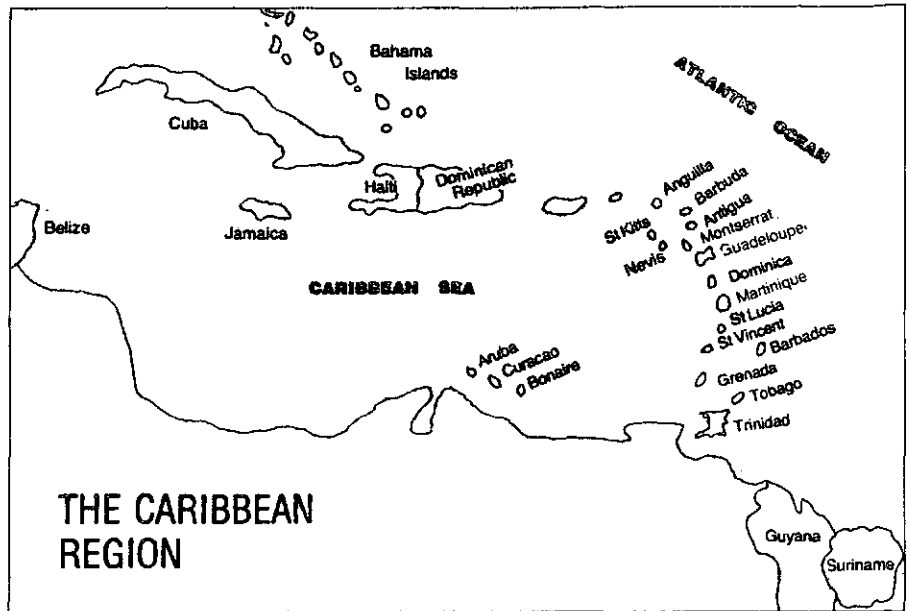


CARIBBEAN
DEVELOPMENT
AND
CO-OPERATION
COMMITTEE



GENERAL

CDCC/CCST/82/9

22nd October 1982

ORIGINAL: ENGLISH

ECONOMIC COMMISSION FOR LATIN AMERICA
Office for the Caribbean

CARIBBEAN DEVELOPMENT AND CO-OPERATION COMMITTEE

CARIBBEAN COUNCIL FOR SCIENCE AND TECHNOLOGY

Second Plenary Session of the
Caribbean Council for Science
and Technology
Kingston, Jamaica
3 to 5 November 1982



FIRST ANNUAL REPORT
OF THE
CARIBBEAN COUNCIL FOR SCIENCE AND TECHNOLOGY



UNITED NATIONS

ECONOMIC COMMISSION FOR LATIN AMERICA Office for the Caribbean

[Faint, illegible text, possibly bleed-through from the reverse side of the page]

[Faint, illegible text, possibly bleed-through from the reverse side of the page]

[Faint, illegible text, possibly bleed-through from the reverse side of the page]

FIRST ANNUAL REPORT
OF THE
CARIBBEAN COUNCIL FOR SCIENCE AND TECHNOLOGY

BACKGROUND

The Caribbean Development and Cooperation Committee (CDCC) decided at its Second Session in the Dominican Republic during March 1977 that a Caribbean Council for Science and Technology (CCST) should be established. This decision was brought to successful fruition when the Statutes of the CCST were adopted and signed in Jamaica on 17th April 1980.

The Statutes in three working languages - English, French and Spanish - were signed by representatives of the following Governments :-

Belize	Haiti	Dominican Republic	Suriname
Jamaica	Cuba	Trinidad + Tobago	Grenada
Dominica	Guyana	Netherlands Antilles	

After ratification or acceptance by the above-named countries the First Plenary Session of CCST was held in Barbados from 29 June to 2 July 1981 when the following Officers were elected in accordance with the principle of equitable geographic distribution :-

Chairman	:	Dr. D.H. Irvine	(Guyana)
Vice Chairman	:	Mr. Iwan Kortram	(Suriname)
Treasurer	:	Ms. Merline Smith	(Jamaica)

In addition to the above officers, Article 10 of the CCST statutes requires one additional Council Member to comprise the Executive Committee and Dr. James de Vere Pitt (Grenada) was duly elected.

At the First Plenary Meeting (E/CEPAL/CDCC/83 Appendix) six projects were identified and approved as the basis of the CCST Work Programme. The members opined that the projects occupied common ground in the perception of national needs and that since CCST was intended to be a major coordinating agency in the field of Science and Technology in the Caribbean these projects would be the best means of demonstrating Council's usefulness. These projects

were subsequently reviewed at the meeting of the First Executive Committee (CDCC/CCST/81/10) and after considering the needs of the respective member countries together with the available human and financial resources, the following order of priority was assigned :

- (i) Assessment of National Science and Technology capabilities
- (ii) Establishment of a Science and Technology Journal of the CCST
- (iii) Development of Agro-industries and Employment opportunities particularly at rural level
- (iv) Preparation and exchange of audio-visual material for education in Science and Technology
- (v) Conservation and exchange of germplasm of crop plants
- (vi) Study of the consequences of the development of energy crops on food supplies in the region

The meeting also agreed to establish a number of committees or working groups, a report on which is carried further in this document.

At the Second Meeting of the Executive Committee (CDCC/CCST/82/4) the Chairman and Dr. Pat Munroe, Secretary General, NSRC (Guyana) were asked to prepare a booklet which would sensitise decision-makers at highest level on the importance to national development plans of the data which would be collected during the assessment of national science and technology capabilities. The booklet appears as document CDCC/CCST/82/5.

PROJECT I

ASSESSMENT OF NATIONAL SCIENCE AND TECHNOLOGY CAPABILITIES

Background

This project was identified as the first priority project for CCST, because if CCST was to play an effective coordinating rôle it was essential that both Council and member governments should be aware of the quality and quantity of resources available within the region. The United Nations Interim Fund for Science and Technology for Science and Technology for Development provided generous assistance in the form of a US \$15,000 grant to launch the project.

Objectives:

- (i) to identify regional resources and institutions that could participate effectively in the CCST work programme and thereby establish coordinated mechanisms for cooperation.
- (ii) to assist national planning agencies in the optimum deployment of S+T Personnel.
- (iii) to facilitate assessment of training needs as well as demands for training programmes in areas of crucial significance to the application of S+T for development

Methodology

The general consensus amongst CCST member countries was that parts of the above objectives could be achieved if (wherever possible):

- (i) the project could be undertaken by Caribbean nationals and
- (ii) a standard methodology could be adopted.

The project was therefore divided into three stages :

- FIRST STAGE : A Planning Workshop to standardise the methodology and to familiarise participants with its use.
- SECOND STAGE : The execution of the assessment in member countries.
- THIRD STAGE : A final Workshop to examine and analyse the national assessments and prepare specific recommendations for further action by CCST and Member Governments.

First Stage

The Planning Workshop was held in Paramaribo, Suriname from 12 - 15 October, 1981 and the report is contained in document CDCC/CCST/81/18.

Second Stage

At the time of preparing this Report the latest information received by CCST on developments is as follows :-

COUNTRY	ACTIVITY
Antigua	
Belize	
Cuba	
Dominica	
Dominican Republic	
Grenada	
Guyana	
Haiti	
Jamaica	
Montserrat	
Netherlands Antilles	
St. Lucia	
St. Vincent	
Suriname	
Trinidad and Tobago	

In July last, letters were sent out to all CDCC countries participating in the survey asking that CCST be informed of any assistance that might be needed in carrying out the survey. To date, Guyana has completed the survey. St. Lucia has informed this office that on completion, the survey will be forwarded to us. Montserrat has requested copies of the survey format and the Interviewer's Manual. Trinidad and Tobago has begun the project but it is still in progress. There has been no response from any of the other territories.

From the above mentioned list as well as from recent correspondence received at CCST, several countries need specific assistance in implementing and/or completing the project and after considering the financial implications Council should give precise directions as to how this Stage can be completed.

Third Stage

As this stage is attendant to completion of Stage Two no definite action can be proposed. However Council may wish to identify as a possible venue one of the member countries with pertinent experience in the implementation and the completion of Stage Two.

PROJECT II

ESTABLISHMENT OF A SCIENCE AND TECHNOLOGY JOURNAL OF THE ECST

Background

There was a general consensus amongst members that a regional S+T journal would be a most convenient vehicle for disseminating significant information in the following areas :-

- (i) technical processes appropriate to member countries;
- (ii) S+T Projects in progress and
- (iii) research results relevant to the development of regional capabilities in S+T.

Suggestions were made that :

- (a) The journal should utilise the format of "R+D Mexico" which is published by the Council for Science and Technology (CONACYT) in Mexico;
- (b) The journal should be distributed regionally amongst scientists, technologists, policy-makers and planners and
- (c) The CDCC Secretariat could provide the basic editorial services but that consulting editors would also have to be appointed.

At the time of preparing this report the developments are as follows :-

Costing

Production costs have been calculated at approximately TT \$30,000 and it is envisaged that this sum will be realised through ten (10) sponsored advertisements at TT \$3,000 per page. Several Regional Organisations/Corporations have been approached and have responded favourably.

Contents

Authors have been identified to prepare articles for the first issue of the magazine and the following have already submitted their scripts:-

AUTHOR(S)	COUNTRY	TITLE OF ARTICLE
Dr. A.D. Van Dijk	Suriname	Rice Technology in Suriname
Mr. Julian Branche	Guyana	Charcoal as an Energy Source in Guyana
Prof. G.M. Sammy	Trinidad	Food Processing in Grenada
Dr. P.A. Munroe + Balram Tulsi	Guyana	The Guyana Approach to Science and Technology for Regional Development

Action taken to date

The other persons who have been requested to prepare articles have been reminded of the deadline. Probable sponsors have been identified and copies of articles to be published in the Journal have been prepared FOR RESTRICTED CIRCULATION. Council is asked to give formal guidance on :-

- (i) Composition of Editorial Board
- (ii) Number of Publications
- (iii) Frequency of Publications
- (iv) Target Groups for circulation
- (v) Any other relevant issues

PROJECT III

DEVELOPMENT OF AGRO-INDUSTRIES AND EMPLOYMENT
OPPORTUNITIES PARTICULARLY AT RURAL LEVEL

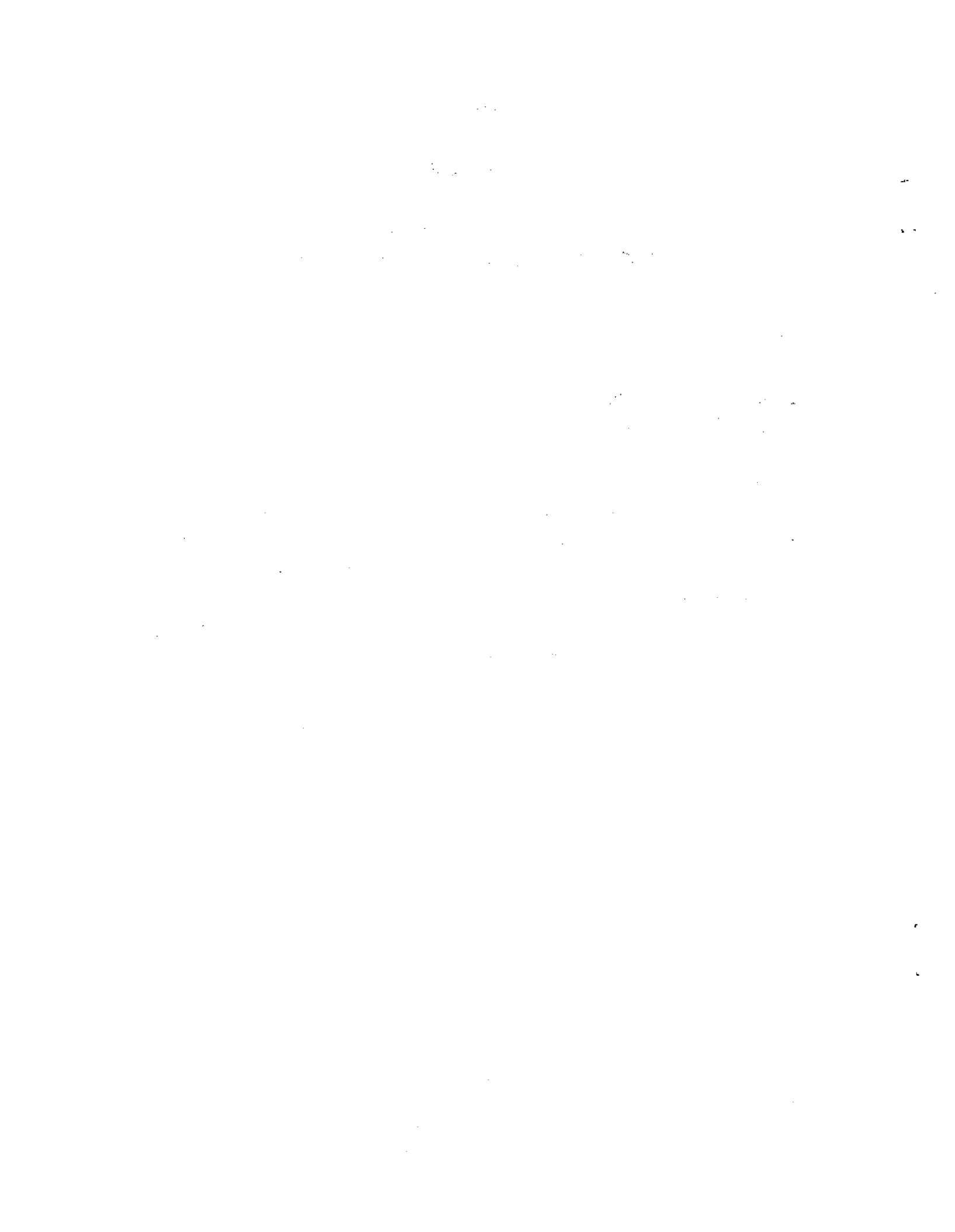
Background

Background information to this project is contained in the document E/CEPAL/CDCC/83, in which it appears as Annex IX of the Appendix to that document.

Action to date

In July a contract for Professor George Sammy, Professor of Food Technology of the University of the West Indies was prepared. His services were utilised to assess the available skills and natural resources in food processing in Grenada and Dominica. To this end, Professor Sammy travelled to the above mentioned countries in September to discuss developments in Agro-Industries with officials of those countries and has prepared a report.

Council is asked to discuss the Report and give guidance as to any further action which should be taken.



PROJECT IV

PREPARATION AND EXCHANGE OF AUDIO-VISUAL MATERIAL FOR
EDUCATION IN SCIENCE AND TECHNOLOGY

Objectives :

To sensitize students, teachers and the general public and create an awareness of the role of Science and Technology in the society by making available information in a format that can be understood by all levels of users.

Background/Justification

Science and Technology tradition is greatly lacking in the Caribbean. Very little has been done by way of making known indigenous research, development activities and services in the area of Science and Technology. Since activities in this field affect everyone's daily lives, it is imperative that measures be taken to ensure that knowledge in this area be made available.

A series of audio-visual materials therefore, starting with video tapes but including film strips prepared in the languages of the CCST member countries, will be prepared to educate on the benefits and dangers of developments in Science and Technology.

The CCST should then act as a catalyst for the preparation of materials at national level and where appropriate and subject to availability of funds, prepare its own audio-visual materials.

The project is now envisaged as comprising three phases viz. Phase 1 where the Trinidad and Tobago experience in preparation of audio-visual material will be used to illustrate how a national unit can be identified and utilised to produce a film illustrating the impact of Science and Technology on everyday life in any particular developing country.

Phase 2

Preparation of a series of audio-visual material (video-tapes, film strips, etc.) in the official language of CCST countries to highlight the benefits and pitfalls of various developments in Science and Technology.

Phase 3

- (a) Using the audio-visual material to train students, teachers and undergraduates in the various scientific and technological disciplines.
- (b) Using the processes of preparation of the audio-visual material to train teachers, film technicians and adult educators in the various possibilities of displaying and projecting Scientific and technological subjects so that they can be readily understood and appreciated by non-scientists.

UN/ECLA Port of Spain and CCST will cooperate in providing liaison services, background research, financial and other infra-structural support.

Phase 1 (15th November 1982 to 9th February 1983)

Action to date

Identification of a Project Leader, Mr. Bruce Paddington, B.A. P.G.C.E who also holds a postgraduate diploma in Film and Television and who is currently employed by the Trinidad and Tobago Ministry of Education as a Director of Instructional Materials. Preliminary discussions have been taking place between CCST and Mr. Paddington since April 1982 but specific action was delayed pending official approval from the Ministry of Education for Mr. Paddington to be associated with the project.

Verbal approval was obtained on 14th October and a preliminary work programme was formulated during a meeting on 18th October at UN/ECLA.

Action to be taken

- (i) Identification of a unit capable of producing audio-visual materials. Two proposed sources are :
 - (a) Trinidad and Tobago Bureau of Standards;
 - (b) Mucurapo Schools Community Project housed in the Ministry of Education.

- (ii) Preliminary identification of specific material for the first film. This will focus on the Science and Technology work programme of regional institutions which have offices in Trinidad and Tobago.

Caribbean Council of Science and Technology (CCST)
Caribbean Epidemiology Centre (CAREC)
Caribbean Research Institute (CARIRI)
U.W.I. (Faculty of Agriculture and Mechanical Engineering)
Meterological Office
Siesmic Unit
CARDI

- (iii) Selection of material that is already available on Film

- (iv) Interviews with: Dr. John Spence - Director, ECLA, Port of Spain
Dr. P.A. Munroe
Dr. George Smith
Mr. Jones Madiera
Dr. Jeffrey Dellimore
Dr. Dennis Irvine

- (v) Filming relevant material on Science and Technology programmes in Trinidad, Guyana, St. Lucia and Barbados.

- (vi) Post production and editing.
- (vii) Completion of Film and delivery to CCST by 9th February 1983.

Provisional Cost

1. Air fares - Trinidad-Guyana-St. Lucia-Barbados Trinidad for 4 persons	US \$2,000.
2. Subsistence for 4 persons for 15 days	\$5,000
3. Twenty-five (25) video cassette tapes (16mm)	\$1,000
4. Transfer of material from tapes to film	\$1,000
5. Incidentals (telex, telephone, postage)	\$1,000
TOTAL	<u>US \$10,000</u>

PROJECT V

CONSERVATION AND EXCHANGE OF GERMPLASM OF CROP PLANTS

Background

Background information to this project is contained in the document E/CEPAL/CDCC/83, in which it appears as an Appendix to that document.

Action to date

No source of funding has been found for this project.

100

100

100

100

100

100

100

100

100

100

PROJECT VI

STUDY OF THE CONSEQUENCES OF THE DEVELOPMENT OF
ENERGY CROPS ON FOOD SUPPLIES IN THE REGION

Background

Background information to this project is contained in the document E/CEPAL/CDCC/83, in which it appears as an Appendix to that document.

Action to date

In September 1982, a contract was prepared for Dr. Lloyd Rankine, Department Head, Agricultural Economics, Faculty of Agriculture, U.W.I., St. Augustine, to begin a document on the subject. This Office has not received his Report.

SPECIALIZED COMMITTEES AND WORKING GROUPS

At the First Meeting of the CCST a decision was taken to establish a number of Committees or Working Groups in the following areas:

1. Energy
2. Transfer of Technology and Patents
3. Information Systems
4. Agricultural Research
5. Marine Affairs (including Fisheries)
6. Health
7. Universities, Industrial Sector and other private and public Sector Institutions.

(See page 6 Document, E/CEPAL/CDCC/83)

The First Executive Committee Meeting added to this list a Committee on Newly-Emerging Technologies (i.e. information systems, micro-processors and bio-technology (see page 3, CDCC/CCST/82/10) and asked the Secretariat to write to each National Science Council, or similar body requesting submission of the names of nationals who could serve on the various Committees. With respect to Agricultural Research, it was agreed to request the Directors of Research (Crop and Livestock) of CDCC member countries to serve. This request was carried out and the submissions received are given as Annex 1.

With respect to the area designated Newly-Emerging Technologies, the Government of Trinidad and Tobago (in collaboration with CARIRI and UNDP) has already taken some initiatives at national level. A national seminar workshop is scheduled to be held in Trinidad and Tobago early in 1983 and on the basis of its success, to be translated to the other territories of the region with the assistance of CCST. A copy of the outline is given as Annex 11.

With respect to a meeting of the Committee/Working Group on Agricultural Research, a proposal was drafted for a Workshop on Agricultural Research Policy and Management (Annex 3). The Secretariat was subsequently informed by the IICA that the Latin American Regional Representative of IDRC had indicated favourable support in providing US \$5,000 - \$6,000 to facilitate participation of non-English speaking Caribbean countries in the proposed Seminar.

The Secretariat is now attempting to procure the additional funding for such a Workshop which would prove very useful as a tool for regional co-ordination and development.

COMMITTEES/WORKING GROUPS

1. ENERGY

- GUYANA - Dr. V.O.D. Trotz, Director, Institute of Applied Science and Technology
A.M.B. Sankies, Dean, Faculty of Technology, University of Guyana
- BAHAMAS - Peter Bethel, General Manager, Bahamas Electricity Corporation
- MONTSERRAT - Mr. Joseph E. Daniel
- ST. LUCIA - Anthony Francis

2. TRANSFER OF TECHNOLOGY AND PATENTS

- GUYANA - Clarence James, Technical Specialists, Ministry of Economic Planning and Finance
G. Proctor, Manager, Information Systems, Guystac
- MONTSERRAT - Mr. Peter White

3. INFORMATION SYSTEMS

- GUYANA - L. Salisbury, Assistant Librarian, S+T, V.G.
A. McMurdock, Advisor in Information and Documentation Services, N.S.R.C.
- MONTSERRAT - William White

4. AGRICULTURAL RESEARCH

- JAMAICA - Dr. Karl E. Wellington, Director of Research and Development, Ministry of Agriculture
- NETHERLANDS ANTILLES - Irvin Moneir Alann, Head, Agricultural Section, Department of Economic Affairs
- ST. LUCIA - Mr. C. Michel, Research Officer, Department of Agriculture
- ANTIGUA + BARBUDA - Mr. Francis Henry, Director of Agriculture

5. MARINE AFFAIRS (INCLUDING FISHERIES)

- GUYANA - Reuben Charles, Chief Fisheries Officer, Ministry of Fisheries
- BAHAMAS - Edison Deleveaux, Fisheries Assistant, Ministry of Agriculture, Fisheries and Local Government

6. HEALTH

- GUYANA - Professor J.J. Niles, Co-ordinator, Environment Research Information Unit, N.S.R.C.
- Dr. P.A. Munroe, Secretary General, N.S.R.C.

7. UNIVERSITIES' INDUSTRIAL SECTOR AND OTHER PRIVATE AND PUBLIC SECTOR INSTITUTIONS

- GUYANA - Dr. D.H. Irvine, Vice-Chancellor, U.G.
- V. Samarokone, Mechanical Engineer, I.A.S.T.
- G. Walcott, Dean, Faculty of Science, U.G.
- MONTSERRAT - Mr. Howard Fergus

UNITED NATIONS DEVELOPMENT PROGRAMME

OUTLINE FOR A SEMINAR-WORKSHOP ON
THE IMPLICATIONS OF NEWLY EMERGING ADVANCED TECHNOLOGIES

A. Objectives:

- 1) To create awareness of the implications of new advanced technologies among senior officials and decision makers in the government, public and private institutions, organisations and enterprises engaged in the industrial production activities in the country.
- 2) To pave way for the elaboration of necessary measures required to cope with this important trend of technology development, in the short, medium and long-term time perspectives and given financial and manpower resources.
- 3) To eventually serve as a model seminar-workshop for application in adapted forms in the CCST Member countries and other developing countries.

B. Programme

The seminar-workshop would include a number of lectures prepared and delivered by top level experts in the fields of Genetic Engineering and Biotechnology, Electronics and Micro-processors and other important areas of emerging advanced technologies. These lectures would lay the basis for round table discussions with the participation and involvement of all participants in the form of brain-storming sessions. Subject to modifications as necessary, following are some topics that may be covered at the seminar-workshop:

- 1) Possible and actual applications of Micro-electronics in the industrial and services sectors. (Energy and energy based industries, capital goods industries, public utilities, improvement of productivity, information and communication etc)
- 2) Possible and actual implications of Micro-electronics in the socio-economic development. (Education, training, communication, data processing, etc.)

- 3) Possible and actual application of genetic engineering and Biotechnology in the industrial production sectors (energy agroindustry, health, mineral processing, fertilizer industry, food and food processing etc.)
- 4) Socio-economic impacts of Genetic Engineering and Biotechnology (problems of safety and acceptability).

C. ORGANISATION

- 1) It is proposed that the seminar-workshop be organised by UNIDO, National Council for Technology in Development (NCTD) under the sponsorship of the Ministry of Finance and Planning, National Institute of Higher Education (Research, Science and Technology) (NIHERST), UNDP and CCST.
- 2) The seminar-workshop will be held for two days in Port of Spain, for approximately 20 - 25 participants.

D. FUNDING

UNIDO will provide technical experts to present papers to the workshop. Local costs to be met by the designated national institution.

UNITED NATIONS DEVELOPMENT PROGRAMME

OUTLINE FOR A SEMINAR-WORKSHOP ON
TECHNOLOGY TRANSFER, DEVELOPMENT AND MANAGEMENT
IN TRINIDAD AND TOBAGO, W.I.

A. Objectives:

- 1) To create awareness of technology transfer problems among decision makers and senior officials at managerial levels in the government, public and private enterprises, various scientific and technological institutions, organisations and associations including development banking/financing institutions and universities;
- 2) To identify and pave way for necessary institution building and/or strengthening of existing institutions, and their systematic integration in order to facilitate effective technology transfer management to bring about a positive impact on an accelerated industrial development process in the country;

B. Programme

The seminar-workshop would include a number of presentations/lectures prepared and delivered by national and international experts and consultants, which would lay the basis for round table discussions by all participants in the form of brain-storming sessions. Subject to modifications depending on further consultations between the organisers, following is a number of topics that will be covered by the workshop:

1. The Role of Science and Technology in the National Industrial Development process:

- 1) Technology policy and plans as an overall framework of activity;
- 2) Strengthening of technological capabilities (man-power development) and capacities (institutional infrastructure) at national level;
- 3) The impact of technological research and development on the national industrialisation process.

II. Approaches to a technology transfer Management System in Trinidad and Tobago

- 1) Technology transfer issues as regards promotion of local R+D versus technology acquisition from abroad including technology choice, acquisition, adaptation absorption and application as well as the commercialization of R+D results;
- 2) Outlook of national, regional and international cooperation (the concept at the national level of a technology services delivery system, and at the subregional level of the Caribbean technological consultancy service; building up and strengthening of an effective and viable technological information service; creation of a technology registry to monitor the acquisition of foreign technology; etc.).

C. Organisation

- 1) It is proposed that the seminar-workshop be jointly organised by UNIDO and NCTD under the sponsorship of the Ministry of Finance and Planning, NIHERST, UNDP and CCST.
- 2) The workshop will be held for three days in Port of Spain for approximately 30 - 35 participants.

PROPOSED WORKSHOP ON
AGRICULTURAL RESEARCH POLICY AND MANAGEMENT

Background

At the First Meeting of the Caribbean Council for Science and Technology in June/July 1981, a decision was taken to establish a number of committees or working groups, one of these being on Agricultural Research. This concept was further developed at a meeting of the Executive Committee of the CCST in August of that year. Subsequent to this meeting a request was made to the member Governments of the Caribbean Development and Co-operation Committee (CDCC), seeking approval for their Directors of Agriculture (Crop and Livestock) to serve as members of the proposed working group. Having had early favourable responses from a number of member Governments, the Executive Committee has decided to convene an early meeting of the working group on Agricultural Research to discuss Agricultural Research, Policy and Management. The meeting will take the form of a Workshop with the objectives as set out below.

Objectives :

1. To examine the relationship between policy, decision making and research activities.
2. To identify and/or suggest mechanisms for consultations between the policy-making and the research communities during the formulation of agricultural research policy guidelines.
3. To examine existing research programmes and facilities of regional and national institutions with a view to possible collaboration between the various institutions which may eventually lead to a network of agricultural research within the region.
4. To consider and make recommendations for the efficient management of agricultural research programmes and resources allocated to agricultural research activities.

Participation

This workshop will bring together the Permanent Secretaries of Ministries of Agriculture and the Directors of Agricultural Research in CCST member countries with non-member countries being invited as observers. Representatives of regional organizations including the Faculty of Agriculture of the University of the West Indies (UWI); the Caribbean Agricultural Research and Development Institute (CARDI); the Caribbean Food Corporation (CFC); the CARICOM Secretariat, the Organization of Eastern Caribbean States (OECS) Secretariat, the Caribbean Development Bank (CDB) and international organizations such as the United Nations Economic Commission for Latin America (UN ECLA); the Interamerican Institute for Co-operation in Agriculture (IICA) and the International Service for National Agricultural Research (ISNAR). Representatives of autonomous national research organizations may also be invited to attend as observers.

Programme

The Meeting/Workshop will extend over five days; two days will be devoted to discussions on research policy and three days devoted to issues concerning management of research institutions programmes and allocated resources.

Discussion papers will be prepared by national, regional and international experts. Other participants will be afforded the opportunity to present papers specific to their interests.

Organization

The Workshop will be jointly organized by the CCST, IICA and the UWI's Faculty of Agriculture. The intended venue is Trinidad and it is scheduled for late 1982.

8
1
2

8
1
2

2
3
4

5
6
7