

COSTED

PROGRAMMES
AND
ACTIVITIES



COMMITTEE ON
SCIENCE AND TECHNOLOGY
IN
DEVELOPING COUNTRIES

ABOUT COSTED

COSTED:— Committee on Science and Technology in Developing Countries, was first established by the International Council of Scientific Unions (ICSU) in 1956. After its reconstitution in 1972, the terms of reference as adopted are:—

- * To co-ordinate and encourage efforts by the international Scientific Unions to assist developing countries.
- * To work with the special and scientific committees of ICSU to facilitate the greatest possible participation in their programmes by scientists of developing countries.
- * To foster affiliations of COSTED with national and regional Committees which could identify scientific and technical problems related to development and recommend programmes and activities for COSTED.
- * To provide liaison and advisory service to international and regional scientific development organisations such as the non-governmental organisations active in this field, and
- * To consider the methodology of using science and technology to assist developing countries.

COSTED- Committee on Science and Technology in Developing Countries is the “Conscience” of ICSU and the “Central instrument” to catalyse, co-ordinate, collate, collaborate and synchronise activities of ICSU in the area of development. Its emphasis is on developing countries; its goal is development; its tool is technology; its objective is to catalyse growth and propel progress. A clear mandate and special responsibility has been given to COSTED and re-emphasised recently”.

Funding :

The funds of COSTED are derived principally from the following sources:

— ICSU Subvention

- Voluntary Contributions from National Members
- Special Projects sponsored by National and International Agencies such as UNESCO, INSA, UNIDO, IDRC and various government and non-government agencies.
- Local contributions from National Agencies.

The accounts of COSTED are audited annually and presented to the COSTED Executive Board and ICSU.

Organisation of COSTED :

The Executive Board of COSTED is responsible for the development of policy, for the approval of programmes originating from the regional and central secretariats, and for the distribution of funds among the various programmes it has approved. It consists of 10 members including the President and the Scientific Secretary.

Each Regional Secretariat has a high level Advisory Board drawn from Scientists from the region to plan, advise and provide guidance in the implementation of the programmes of the respective regions.

New Re-orientation of COSTED Programmes:

Taking into consideration the strengthening of the COSTED Central and Regional Offices as well as the recommendations of the Study Group on ICSU's activities related to Developing Countries, the programmes and activities of COSTED will henceforth be organised around:

Scientific Research Workshops and Seminars:

This is aimed at science and technology transfer through the interaction between experts of industrialised countries and their counterparts in developing countries and at high-level scientific meetings. A high level scientific activity in the form of a Seminar or Workshop will be organised by each of the regional Secretariats. About five experts from industrialised countries and several participants from the region both experts and young scientists, will be invited. This programme is specially being supported by Federal Republic of Germany through DFG.

Research Grants to Scientists:

This programme will cover projects not normally covered by the activities of existing foundations. It will also cover the purchase of spare parts for maintenance of equipment.

Visiting Lectureships and Travel Fellowships:

The travel fellowship scheme enables active scientists from developing countries to participate in scientific conferences that take place anywhere in the world. COSTED makes a small grant, which then enables the recipient to obtain a matching grant from elsewhere. Sometimes the grant enables the recipient to meet living expenses in foreign currency, where he/she already has procured an air-ticket purchased in local currency. Under the same scheme, a lecturer from an industrialised or developing country can also visit a developing country and deliver a pre-arranged set of lectures over a short time, the local living expenses being met by the host institution.

Science Education and Training:

This covers, among other things, programmes that relate to the development of science curricula at all levels. It also covers summer schools and similar activities. Also included are the development and distribution of teaching aids and low-cost science texts and other teaching materials. COSTED, Madras already has an advanced programme in the development of electronic teaching aids. This is being replicated and modified in the regional offices in Africa, the Caribbean and Latin America to suit local needs. The Western African office has also initiated a low-cost science textbook project that should meet the present needs of students in that region.

Technology Application and Training:

The emphasis here is on programmes that enable technicians, technologists and scientists to keep abreast of the latest developments in technology and of the possibilities of such new developments in the practical day-to-day lives of people in each individual developing country. It will also include projects in the field.

Scientific Instrumentation:

The repair, maintenance and development of scientific instrumentation has long been recognised as an area that needs to be given deliberate attention in all developing countries. Already effective scientific instrumentation centres have been set-up in Kenya and Nepal. Department of Electronics, Govt. of India provides support for this programme in India.

Science Communication and Organisation:

It has been recognized that cross-fertilization is an essential tool in the development process. Thus, the creation of avenues for the dissemination of scientific information among developing countries, as well as between them and countries of industrialised cultures, is an important function of COSTED.

Percolation of scientific knowledge among members of a particular scientific community and the popularization of science among the larger society is what is attempted under this category. The organization of regional and cross-regional institutions has also proved useful. An example is the successful organisation by COSTED, Madras of the Federation of Asian Scientific Academies and Societies (FASAS), which can coordinate the activities of all the existing National Academies of Science of Asian Countries. The Trinidad office is also planning to inaugurate a Caribbean Academy.

When these activities are of an inter-regional or global nature they will be coordinated by COSTED Central Secretariat; if they are strictly of a regional nature, they will be coordinated by the regional Secretariat concerned. In all cases, COSTED activities will be undertaken in close cooperation with appropriate national and international bodies.

Travel Fellowships:

To provide opportunities for young scientists to participate in International Conferences, Symposia, Workshops and Short term Training Courses and to facilitate direct interaction between these young scientists and well known senior

scientists from developed countries, COSTED initiated a travel fellowship programme in 1974. The programme is restricted to scientists below 35 years of age who are resident and working in developing countries. The scientific areas chosen for support will be in keeping with the scientific priorities of developing countries.

These awards are made generally under the following categories:

- i) to individual scientists directly;
- ii) through sponsorship of conference-awards shared between COSTED and the Conference Organisers made to scientists on the basis of recommendations made by Conference Organisers;
- iii) awards made jointly with national scientific organisations and professional institutions;
- iv) awards made jointly with international Scientific Unions such as IUPAP, IUGG, COSPAR, IUBS and other unions who are members of ICSU on the basis of recommendations by the unions or by the Organisers of conferences on behalf of the unions; and
- v) joint Research Fellowships offered for work in well established research centres in developed countries. At present such opportunities are available under the COSTED-CCP (International Centre for Chemical Physics, London, Canada) and the COSTED-UNESCO-IFIAS (Stockholm, Sweden) Research/Travel Fellowship programmes.

From a modest beginning of 10 awards to scientists from 6 countries in 1974, the programme has expanded rapidly and now 300 awards are being made to scientists from over 40 countries. The need for such a programme and its effectiveness in maximising interaction among scientists are clearly emphasised by the fact that the demand for these awards is well over ten times the funds available with COSTED for this programme.

Details of this programme can be obtained from the Scientific Secretary, COSTED. Applications for Travel Fellowship Grant can be made on plain paper in duplicate giving a brief biodata, age, research interest and details of the conference and should be sent at least three months before the commencement of the conference to the Scientific Secretary, COSTED 24, Gandhi Mandap Road, Guindy, Madras-600 025, INDIA.

COSTED Publications :

COSTED publications are based on the following objectives:

- * to disseminate information on science education patterns in developing countries;
- * to focus attention on innovative methods of science education;
- * to disseminate information on impact of science and technology in developing countries;
- * to bring to the attention of the readers through its newsletter information on proposed meetings, conferences/symposia which have a direct bearing on problems of developing countries.

COSTED circulates 2000 copies of its newsletter and Journal, 'Science, Technology and Development' to interested individuals/ organisations at a very nominal cost.

COMPUTER Programmes:

COSTED has an in house Computer Center at Madras to expand its activities through undertaking Software development and computerization of unique scientific and technological application areas and offering regular training and awareness programmes.

COSTED Computer Center includes among its core personnel several professionals, besides whom it welcomes international experts whose services are called upon from time to time. The entire activities are self-financing efforts and dedicated to new software development ventures.

The Center has several IBM compatible PCs, a few APPLE IIs, VIC-Commodore and other Microcomputers, supporting training and development projects.

COMMITTEE ON SCIENCE AND TECHNOLOGY
IN
DEVELOPING COUNTRIES
(COSTED)

- President : Sir John Kendrew (UK)
- Members : John Hurley (USA)
J. Wiercimok (West Germany)
B. Sitter (Switzerland)
A. Badran (Jordan)
Hollis Charles (Caribbean)
D. Odhiambo (East Africa)
A. Maduemezia (West Africa)
R. Villegas (Latin America)
- Scientific Secretary : Professor S. Radhakrishna (India)
- Central Secretariat : 24, Gandhi Mandap Road
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Phone: 41 45 43/41 94 66/41 44 23
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Babaji / Srinivasa Rao

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4194 66

Sunday, June 19

Inform Kuvkula Jayaraj
410 434



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- ② Kunthala Jayaraman -

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Dr Rajishwari
Nahalingam . Dept.
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M.S.SWAMINATHAN

B4/142, Safdarjang Enclave,
NEW DELHI-110 029

Tel:679069

May 26, 1988.

Mr.K.Srinivasa Rao
Committee on Science &
Technology in Developing Countries
Scientific Secretary - COSTED
Indian Institute of Technology
MADRAS - 600 026

My dear Sh.Srinivasa Rao,

I thank you very much for your kind letter of May 23, 1988. I plan to go to Madras with my wife on Sunday, June 19, 1988 by the morning Air Bus. I had written Prof.S.Radhakrishna about suitable arrangements for our stay from June 19th to 22nd, 1988. Please do the needful. I enclose my contact addresses during the next three weeks. I hope, you are in good health now.

With warm regards,

Yours sincerely,

M.S.SWAMINATHAN

mss/rs



COMMITTEE ON SCIENCE AND TECHNOLOGY
IN DEVELOPING COUNTRIES

SIR JOHN KENDREW — PRESIDENT
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A. MADUEMEZIA [W. Africa]
R. VILLEGAS [Latin America]
HOLLIS CHARLES [Caribbean]
S. RADHAKRISHNA—SCIENTIFIC SECRETARY

Central Secretariat :
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Scientific Secretary - COSTED
Indian Institute of Technology
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Phone : 414543, 414046 and 419466
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Regional Secretariats in :
KENYA, NIGERIA, VENEZUELA
AND TRINIDAD.

23 May 1988

Dr M S Swaminathan
B4/142 Safdarjung Enclave
Near Kamal Cinema
New Delhi 110 029

Respected Sir,

I enclose herewith a write-up regarding the International Centre for Biological Sciences as prepared by Prof. S Radhakrishna for your kind perusal.

I am sorry, I could not see you on 10th April, as I was struck with chicken pox.

Thanking you,

Sincerely yours,

(K SRINIVASA RAO)
for COSTED

The International Centre for Biological Sciences (ICBS) has been established by COSTED (Committee on Science and Technology in Developing Countries) of the International Council of Scientific Unions (ICSU) to organise training programmes, workshops, seminars in different emerging areas of Biological Sciences.

The centre will be located in Madras - India and the programmes will be organised for the benefit of all developing countries.

The centre will be organised on the lines of the International Centre for Theoretical Physics (ICTP) so ably established by Professor Abdus Salam at Trieste - Italy. The centre is intended to be a forum for Bioscientists all over the world to meet and exchange views on specific topics that will be organised periodically.

The centre will offer :

- * Short term and long term visiting fellowships including travel grants and local funds.
- * Well planned and Structural Workshops / Round tables / Seminars on different emerging areas of Biological Sciences.
- * Library facilities for visitors.
- * Accommodation and other facilities for visitors participating in the Centre's activities.

The Centre is headed by Dr. M.S. Swaminathan, F.R.S. the distinguished agricultural scientist and has a national management body besides an International governing body containing representatives from major Scientific Organisations globally.

The Centre will work in close co-operation with the International Bioscience Network already established by ICSU and the International Foundation for Sciences (IFS), UNESCO and the UN Centre for Science and Technology for Development (UNCSTD).

Some of the areas of immediate interest to the Centre are Chronobiology, Genetic Engineering, Neurobiology, Biological Diversity, Tissue Culture etc.

Address for Correspondence : Dr. M.S. Swaminathan
Chairman - ICBS
c/o C O S T E D
24, Gandhi Mandap Road
MADRAS 600 025, INDIA

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Telex: 41 21094 COST IN



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DR. BABUJI,
Sr. Sci. Officer
COSTED

COSTED,
Gandhi Mandap Road, Guindy
Madras-600 025, India

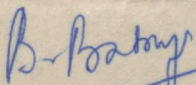
14 May 1988.

Dear Sir,

We have received your letter of 5 May, 1988, addressed to Prof. S. Radhakrishna, acknowledging receipt of the minutes of the meeting held on 9 April 1988, sent by us. We would like to let you know that Prof. S. Radhakrishna, is presently away from India and therefore we have passed on your message to him.

With best regards,

Yours sincerely,


(B. BABUJI)

Dr. M. S. Swaminathan,
B-4/142, Safdarjang Enclave
New Delhi-110 029.

ckk/bb/88.

May 20, 1988

My dear Prof. RadhaKrishna,

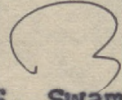
I hope you had a useful visit abroad. I have received an acknowledgement for my earlier letter from Dr. Babuji.

You may recall our discussion on the programme of work for the International Centre for Biological Sciences. I enclose a note which indicates some of the areas where we should concentrate initially.

I plan to come to Madras with my wife on Sunday the 19th June, 1988. I have to leave for Manila via Singapore on the night of Tuesday the 21st June. If possible we would like to stay in the Costed Guest House so that we can concentrate on our discussions, both ICBS and my own research centre. Please let me know whether these dates would suit you.

With warm personal regards,

Yours sincerely,


(M.S. Swaminathan)

Prof. S. Radhakrishna,
Scientific Secretary - COSTED
Indian Institute of Technology,
MADRAS-600 036 (TN)

RESEARCH PRIORITIES FOR THE INTERNATIONAL
CENTRE FOR BIOLOGICAL SCIENCES.

This centre should serve as an Institution without walls so that it can interact in an effective manner with other appropriate Institutions. ^{only} ~~One day~~ in this manner, we can make a meaningful contribution to advancing the frontiers of biological sciences. During the first three years, it would be useful to concentrate on the following areas:

1. Biological diversity: Conservation, evaluation and utilisation:

We should promote an integrated strategy for ex-situ and in-situ conservation ranging from DNA Libraries to Biosphere Reserves.

2. Integration of biotechnology with traditional technologies:

This aspect should deal with both molecular biology and ^{bio-} ~~by~~ processing.

3. Biological aspects of monsoon management:

Under this programme, we should encourage research and training on the biological approaches to maximising ^e ~~that~~ benefits from a normal monsoon and minimising the adverse impact of drought and flood.

4. Preparing for climate change:

We should initiate anticipatory research and training on the biological aspects of climate change ^{caused by events like} ~~in cost~~ by increased Co₂ concentration in the atmosphere.

5. Biological methods of measuring ^{sustainability}

The ecological sustainability of crop, animal and fish production. This is ^{an} exceedingly ~~an~~ important topic and ^{we} need to develop precise ^h ~~methods~~ for measuring the sustainability of the production process, ^{with reference to both terrestrial and aquatic production systems}

You may like to add additional items in consultation with the Members of our Committee.



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Regional Secretariats in :
KENYA, NIGERIA, VENEZUELA
AND TRINIDAD.

17 April 1988

Dear Sir,

I am enclosing minutes of a meeting organised at COSTED Madras on 9 April 1988 to formulate plans for the International Centre for Biological Sciences. It was unanimously agreed that the centre should be launched immediately. I am therefore writing to request you on behalf of COSTED to kindly agree to be a member of the National Advisory Committee. Dr. M S Swaminathan has kindly agreed to give his time for the organisation of such a centre in the first of its kind in any developing country. It is planned to organise it on the lines of the International Centre for Theoretical Physics at Trieste and we hope that with your blessings and cooperation, we will achieve this target. We hope to call for a meeting of the national advisory committee in the first week of July to consider the project document and plans.

I am enclosing some information about COSTED for your reference.

With best personal regards,

Sincerely yours

S. Radhakrishna

(S RADHAKRISHNA)
Scientific Secretary
C O S T E D

CO2
Dr. M S Swaminathan
Chairman
B4/142, Safdarjung Enclave
Near Kamal Cinema
NEW DELHI - 110 029

*Ex situ
and in situ*

encl : as above

DNA Libraries
to
Biosphere
Reserves
anm/srk/88

MINUTES OF THE MEETING HELD ON 9TH APRIL, 1988

Members Present :

1. Dr.M S Swaminathan
Chairman
B4/142 Safdarjung Enclave
Near Kamal Cinema
NEW DELHI - 110 029
 2. Prof.T S Sadasivam
Formerly President
Indian Academy of Sciences
Gokulam
86, M K Amman Koil Street
Mylapore
MADRAS - 600 004
 3. Dr.Kunthala Jayaraman
Head
Biotechnology Department
Anna University
MADRAS - 600 025
 4. Dr.A Mahadevan
Director
CAS in Botany
Madras University
MADRAS - 600 025
 5. Prof.C V Ramakrishnan
Hon. Programme Director
Biosciences
COSTED Premises
Gandhi Mandap Road
Guindy
MADRAS - 600 025
 6. Prof.S Radhakrishna
Scientific Secretary
COSTED
Gandhi Mandap Road
Guindy
MADRAS - 600 025
-
1. It was unanimously felt that there is an urgent need for COSTED to initiate steps to form an International Centre for Biological Sciences at Madras. It was agreed that the most appropriate name for such an activity is "International Centre for Biological Sciences" - (ICBS).

2. It was decided that the Centre should organise a series of Workshops and Training Programmes in the area of Biological Sciences relevant to developing countries. Some of the topics for immediate action are indicated in the enclosure. While infrastructure of COSTED will be used presently, an independent conference complex will be planned.
3. It was also decided that the Centre will offer Short Term visiting fellowships to research workers who can come and make use of the facilities at the Centre and work for their Ph.D. Degree. They will be registered for Ph.D. Degree in Madras U*niversity/Anna University/Madurai Kamaraj University. A panel of 10 Professors will be formed for this purpose.
4. It was felt that there must be a National Organising Committee for the International Centre for Biological Sciences and it should consist of the following :
 1. Dr.M S Swaminathan FRS
Chairman
 2. Dr.T S Sadasivam
Advisor
Formerly President-Indian Academy of Sciences
 3. Prof.O Siddiqi FRS
T.I.F.R.
Bombay
 4. Dr.C Gopalan FRS
President - Nutrition Foundation of India
New Delhi
 5. Dr.S Krishnaswamy
Vice Chancellor-Madurai Kamaraj University
Madurai
 6. Prof.A Gnanam
Vice Chancellor - Madras University
 7. Prof.P N Tandon
(FASAS)
A.I.I.M.S., New Delhi

8. Dr.A K Sharma
President - FASAS(Federation of Asian Scientific Academies and Societies), Calcutta
9. Dr.C V Ramakrishnan
Hon. Programme Director
COSTED, Madras
10. Prof.S Radhakrishna
Scientific Secretary
COSTED, Madras
11. Dr.Kunthala Jayaraman
Head, Department of Biotechnology
Anna University, Madras
12. Dr.A Mahadevan
Director
CAS in Botany
Madras University, Madras
13. Dr.C A Sastry
Professor of Biotechnology
I.I.T., Madras
14. Prof.T Ramasarma
Chairman
Biochemistry, IISC, Bangalore

The International Advisory Council will consist of representatives of various ICSU bodies like CASAFA, IBN, IUBS, SCOPE, etc. COSTED will invite these organisations to nominate scientists.

Dr.M S Swaminathan was requested to prepare a short note which can be used to prepare the plan of action to be submitted to the Government of India and other organisations.

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International Center for Biological Sciences (ICBS)

The following are the major activities of the ICBS envisaged for the year 1988-89.

1. Seminars:

a) Conservation of Biodiversity :

In situ conservation of the biodiversity by means of germ plasm centers and community gene banks to augment biosphere resources will be the focus of this workshop. It is envisaged that this will be a traveling workshop wherein, visits to natural reserves will be planned with discussions on the suitable plans of action to suit the situations.

b) Biological aspects of monsoon management:

Programmes to cover situations of stresses like floods and droughts; to manage beneficial monsoons profitably; life support systems; special strains for tolerance of diverse conditions like temperature, photo-reactivity, etc. will be covered in this seminar.

c) Thermo tolerant organisms:

Taking advantage of the tropical climate the development of strains of different species that are resistant to heat; With micro organisms the obvious advantage of thermophiles in fermentation industry and food processing; genetic manipulations for transfer of thermo resistant traits in plants, microbes and animals; .. will be covered in this seminar.

Training programme

a) Analytical techniques in Biology: A series of training activity in the analytical methods in the different facets of biology will be conducted. Some of the topics envisaged are:

- i) Histochemical and in situ hybridization methods.
- ii) Electron microscopy and molecular cytology
- iii) Gene cloning and plant productivity
- iv) Gene cloning and Bio-process technology
- v) Isolation and characterization of proteins
- vi) Bioactive peptides
- vii) Plant biotechnology
- vii) Modern methods of animal breeding
- viii) Monoclonal antibodies - production and application
- ix) Chromatography
- x) Spectroscopic studies