DR. M.S. SWAMINATHAN

5 May 1988

Dr. M.A.J. Shahari
Director
Asian and Pacific Development Centre
Pesiaran Duta
P.O. Box 12224
50770 Kuala Lumpur
MALAYSIA

My dear Dr. Shahari,

I thank you very much for your kind letter of 19 April inviting me to attend a planning meeting on June 27 and 28 at Kuala Lumpur. I find the issues you have identified for discussing the implications of Biotechnology for Asian Agriculture are of importance. Prof. V.L.Chopra had told me about this meeting and I shall be happy to work with you, Prof. Chopra and others, who will be involved in organizing this important workshop.

As regards my air ticket, I shall buy it here. You can reimburse for the Delhi-Kuala Lumpur-Delhi sectors.

With warm regards,

Sincerely yours,

M.S. SWAMINATHAN

CC: Prof. V.L. Chopra

ASIAN AND PACIFIC DEVELOPMENT CENTRE

Pesiaran Duta,
P.O. Box 12224
50770 Kuala Lumpur, Malaysia.

Telephone : 2548088
Cable : APDECEN Kuala Lumpur
Telex : MA 30676 APDEC

19 April 1988

Dr. M.S. Swaminathan
B-4/142 Safnarjang Enclave
New Delhi 110029
India

Dear Dr. Swaminathan,

The Asian and Pacific Development Centre plans to organize a workshop on the relevance of biotechnology for the developing countries and, in particular, for the countries of the Asia and Pacific region. The objective is to assess the contribution of new biology as a catalyst to the developmental process leading to the improvement of quality of life of people in the region. For this activity, the Centre has earmarked a modest budget for seed money, which will be augmented by seeking co-sponsorship from agencies and organizations having interest in the development and use of biotechnology. We are aware of your interest in this activity and are pleased to invite you to join us in this endeavour.

A planning meeting to finalize details of the workshop will be convened on 27-28 June 1988 at APDC, Kuala Lumpur. We have pleasure in inviting you to this preparatory meeting. The Centre would be happy to provide you with return economy airfare and a modest DSA for the duration of the meeting.

Enclosed is a project brief which provides a general overview of some of the issues that may be considered by the experts/participants during the planning meeting.

I shall eagerly look forward to hearing from you soon.

With kind regards,

Yours sincerely,

M.A.J. Shahari
Director

PROJECT A-5

IMPLICATIONS OF BIOTECHNOLOGY FOR ASIAN AGRICULTURE

A. Development Objectives

The development objectives to which this project relates are:

1. To strengthen policy-making capacity of national institutions in Asia in charge of Research and Development in biotechnology in agriculture by providing them with research-based policy alternatives and implications, and through a programme of dialogue and exchange of experiences among policy-makers;

2. To promote regional co-operation in R&D in biotechnology in agriculture among countries in the region.

B. Immediate Objective

1. to review current developments and trends in the application of biotechnology in Asian agriculture;

2. to assess their short- and long-term prospects and implications on agriculture (technological and economic), trade in agricultural products, and technological self-reliance/dependency on technologically advanced countries;

3. to identify areas of regional/sub-regional co-operation in biotechnology R&D, application and technology transfer in Asian agriculture; and

4. to bring to the attention of agricultural policy-makers in Asia the need to address the issues of rapid technological developments in biotechnology and their likely impact on Asian agriculture and related areas.

C. Special Considerations

Promotion of technical co-operation among developing countries in Asia in the area of biotechnology R&D and technical exchange in the field of agriculture.

D. Background and Justification

One of the most significant technological developments in recent years has occurred in the field of biotechnology - the application of scientific and engineering principles to the processing of materials by biological agents such as micro-organisms and enzymes. Although a relatively new field (as it is presently known), a number of technological breakthroughs have already taken place with far-reaching implications in the field of agriculture, medicine and industry. These developments are bound to influence in a

major way man's technological and economic environment and, more significantly for LDC countries, his capacity to tackle problems of development.

Biotechnology is now increasingly being viewed to usher in a new era of industrial revolution based on micro-organisms which are, unlike the energy base of the old industrial revolution, renewable, cheaper and less polluting.

In agriculture, "biorevolution" is rapidly gaining momentum in the form of increasing productivity of crops and livestock, increasing land resource base by making marginal lands productive and by developing plants resistant to salinity, water-logging and drought, decreasing dependence on some types of non-renewable commercial fertilizers through nitrogen-fixing microbes, increasing food supply by converting inedible biomass into foodstuff, and other unconventional developments. Biotechnology products like bacterial pesticides, pest-resistant crops, increased plant responsiveness to low levels of fertilizer and growth regulators may be more suited to Third World countries than the Green Revolution packages. Indeed, biorevolution is widely believed to have the potential of making a far greater impact than the Green Revolution technologies in the near future, partly because it will apply to all living organisms, both plants and animals, whereas the latter is restricted to only a few crops.

The growth of biotechnology-related industries has been phenomenal. One reliable source estimates a market of US$50-100 billion per annum for biotechnology-based agricultural inputs in the next two decades.

While biotechnology is potentially very valuable to the developing countries, there is increasing concern that the process of commercialization of biotechnology currently occurring may lead to serious negative impacts. The development of more efficient varieties of plants/animals which are reproductively unstable or require imported inputs may lead to increased technological dependency. The domination of TNCs in the R&D and the scaling-up stages of biotechnological application, the patenting and privatization of techniques and even genes, and access to biotechnology, are some of the issues. Developing countries, especially those with a major agricultural component in their economies, would find it in their interest to respond quickly to the rapid developments in biotechnology. What are the possible points of intervention (if intervention is desirable) available to developing countries in Asia and the Pacific given their limited resources? What kind of policies toward biotechnology R&D, application, and transfer should LDCs in Asia adopt to reap much of the benefits of

biotechnology while avoiding their potentially harmful effects?

The recent setting up of the two components of the International Centre for Genetic Engineering and Biotechnology (ICGEB) of UNIDO in New Delhi and Trieste (Italy) is an important step in enhancing biotechnology awareness and capacity, especially among developing countries. While this is a major step in the right direction, much still needs to be done, especially to bring accurate and policy-relevant information on biotechnology to the attention of policy-makers in developing countries. This project will provide a forum for dialogue between experts on the implications of biotechnology on agriculture and policy-makers from developing countries with a major agricultural component in their economies. In this endeavour, APDC will liaise closely with ICGEB - New Delhi whose focus is more on the agricultural, animal health and human health aspects of biotechnology.

E. Outputs

1. Proceedings of the conference.

2. Summaries of conference papers.

3 Areas of possible regional co-operation in biotechnology will be identified.

4. Policy-makers in participating countries who are aware of the implications of biotechnology on agriculture and some policy options available.

5. The APDC Project Co-ordinator's final report on the project.

6. An evaluation report on the project by an independent consultant.

F. Success Criteria

1. Participation of high-level representatives from agricultural policy-making bodies of governments in the region.

2. Clarification of issues relating to the potential impact of biotechnology in Asian agriculture and identification of areas of co-operation and policy options.

3. Increased collaboration between national research institutions in Asia and the Pacific engaged in biotechnology work in agriculture.

4. Increased awareness of policy-makers on the potential implications of biotechnological development on agriculture and policy options available to exploit their positive contributions.

G. Activities

	Tentative Dates
1. Preparatory project planning with the Lead Scholar	March 1988
2. Project planning meeting to plan conference and select paper writers and participants. Also to set terms of reference for an external evaluation of the project's performance by an independent consultant	June 1988
3. Invitation to paper writers and conference participants	July 1988
4. Preparation of papers for the conference (thematic papers addressing issues that transcend national boundaries, and country papers detailing the situation and issues relevant to each particular country)	July-Dec. 1988
5. Conference	To be decided at the Planning Meeting
6. Writing up, editing, publication and dissemination of conference proceedings, conference papers and summary papers, especially to policy-makers	
7. Submission of the APDC Project Co-ordinator's final report on the project to the Director of APDC and to UNDP	
8. Submission of the external evaluator's report on the project to APDC	

J. INSTITUTIONAL FRAMEWORK

The Centre would look for a suitable international organization (e.g., the ICGEB of UNIDO at New Delhi, FAO, the International Rice Research Institute (IRRI), the International Centre for Co-operative Research and Training in Microbial Engineering in Osaka, or the Regional Microbial Network for South-East Asia) to co-sponsor the conference. While initial enquiries indicate that the ICGEB at New Delhi may be the most active agency in this field (and with which the Centre will be liaising closely on this project), additional discussions will be conducted with other international agencies, particularly the FAO.

Participants of the conference will comprise directors of research centres engaged in biotechnology work in Asia, policy-makers representing government bodies that determine biotechnology-related policies, scholars and representatives from the business community. Tentatively, representatives from the following countries will be invited: Bangladesh, Pakistan, Sri Lanka, Nepal, India, Japan, Korea, Malaysia, Indonesia, Philippines, Singapore, Thailand, Fiji, Australia, the United Kingdom and U.S.A. In addition, representatives from the Technical Advisory Divison of the UNDP Bureau of Policy, Planning and Evaluation will be invited to the conference.