

New Delhi March 6 to 8, 1989

---

**Asian and Pacific Development Centre  
Seminar on  
Public Policy Implications of Biotechnology  
for Asian Agriculture**

1. Format of Seminar

The Seminar is intended for senior level decision makers and will be structured in a manner that an interactive dialogue is promoted among the participants. For this purpose there will be a series of panel discussions, with carefully chosen Panel Members leading the discussion on each topic. The scientists chosen should have a high scientific reputation and credibility but with the capacity to articulate clearly issues and ideas in a non-technical language.

2. Duration

3 days.

3. Date

6-8 March 1989.

4. Venue

New Delhi, India.

5. Participation

5.1 Participants

(a) Political and administrative leaders connected with decision making on priorities in science and technology and on the allocation of resources for biotechnology research and development from the following countries;

(b) Eminent Asian biotechnologists; and

(c) Eminent world leaders in developmental banking.

5.2 Countries to be invited

- o ASEAN member countries
- o SARC member countries
- o Countries from West Asia
- o China
- o Vietnam
- o the 2 Koreas
- o Burma
- o Japan
- o USSR

## 6. Scope

All aspects of Asian agriculture, namely, crop husbandry (both annual and perennial crops), animal husbandry, fisheries and forestry will be considered. Since mixed farming is a way of life in most parts of rural Asia, the implications of developments in biotechnology for improving the productivity, profitability, stability and sustainability of major farming systems, including crop-livestock, agriculture-aquaculture and agro-forestry systems of land and water use, will be discussed. The time frame for the topics to be considered will be up to the year 2000.

## 7. Topics for Discussion and Potential Panel Members

### Topic I. Asian agriculture in the context of the emerging trends in global agriculture

The directions of change will be considered in the context of the dynamics of consumer preferences.

#### (a) Domestic Consumers

- i) Household needs
- ii) Commercial and industrial needs.

#### (b) International Trade

- i) Household consumption
- ii) Commercial and industrial uses.

The emerging trends in food consumption patterns, particularly with reference to the "Health Foods of the Future" will receive special attention. The role of technology, services (supply of inputs including credit) and public policies in accelerating agricultural advance will be considered. In the Asian context, "land saving crop husbandry" and "grain saving animal husbandry" will receive special stress, since the per capita availability of arable land is fast declining.

### Panelists

#### (a) Population and Food and Nutrition Security

- i) Prof. Nurul Islam (Bangladesh)  
International Food Policy Research Institute  
Washington
- ii) Assistant Director General, FAO.

Both the quantitative and qualitative dimensions of the food security issues will be considered.

(b) Commercial and industrial aspects of agriculture

- i) Dr. Sartaz Aziz  
Minister of Agriculture, Pakistan  
-- International Trade in Agricultural  
Commodities
- ii) Dr. A.S. Ganguly  
Chairman, Hindustan Lever Ltd., Bombay  
-- Opportunities for Export of Agricultural  
Commodities
- iii) Dr. Oshima, Japan  
-- Viewpoints of Developed Countries
- iv) Dr. Trindade  
U.N. Office of Science and Technology for  
Development, New York  
-- Recent Developments in Science and Technology  
as related to Agriculture
- v) Director General, UNIDO, Vienna  
-- Role of Biotechnology in Asian Agriculture
- vi) Prof. Umberto Colombo, Rome  
-- Integration of Biotechnology with Traditional  
Technologies

The speakers will deal with trade opportunities, tariff barriers and on methods of remaining competitive in a changing world. The comparative advantages and handicaps of Asian countries in the global market will be discussed.

Topic II. Positive Implications of Biotechnology for Asian Agriculture: The Era of Opportunities

The target groups will be small farmers and fishermen households from the point of view of assessing the potential benefits of biotechnology research. The topics will be dealt with using a matrix approach, as shown below.

Biotechnology Matrix

No.	Major Areas of Production	Implications				
		Economics	Ecology	Employment	Equity	Energy
1.	Crops					
2.	Animals					
3.	Fisheries					
4.	Forestry					
5.	Farming Systems					
6.	Biomass Utilization and Post Harvest Technology					

The economic viability assessment will include the consideration of the cost, risk and return structure of new farming systems. In the case of employment, the major aim will be to achieve the diversification of labour use and to avoid the displacement of labour.

The issues will be considered with reference to both the production and post-harvest phases of technology development and adoption. The session will identify areas of hope for the rural poor working in agriculture.

Panelists(a) Crops

Prof. V.L. Chopra, New Delhi

(b) Animals

i) Dr. J. McWilliam  
Australian Centre for International Agricultural Research (ACIAR), Canberra

ii) Prof. Tiwari  
Head, New Delhi Component of the International Center for Genetic Engineering and Biotechnology (ICGEB)

(c) Fisheries

Dr. Rafael Gueverra, Philippines

(d) Forestry

Dr. Salleh Mohammad Nor, Kuala Lumpur

(e) Farming Systems

i) Prof. Charan, Bangkok

ii) Prof. Li Zhenzheng  
Vice President, Academic Sinica, Beijing

iii) ICLARM, Manila (Dr. Roger Pullin)

(f) Biomass Utilization and Post-harvest Technology

i) Dr. W. Padolina, Philippines

ii) Prof. Falasi  
Head, Trieste Component of ICGEB, Trieste, Italy

iii) Prof. Lars Munck  
Carlsberg Laboratory, Copenhagen, Denmark

They will be requested to prepare a joint paper, if possible.

Topic III. Areas of Concern: Potential Adverse Impact of New Technologies

Panelists

(a) Substitutes for Natural Products

i) Dr. H.K. Jain, ISNAR, The Hague  
or

Dr. C.R. Bhatia  
Bhabha Atomic Research Center, Trombay, Bombay

(b) Patents and Intellectual Property Rights

i) Dr. John H. Barton, Stanford University

ii) Dr. Anand Chakraborty  
Chairman, Panel of Scientific Advisors, ICGEB  
or

Dr. S. Varadarajan, New Delhi

(c) Biological Diversity: Conservation and Utilization

- i) Dr. R.B. Singh, FAO, Bangkok  
-- Breeders' Rights and Farmers' Rights
- ii) Dr. Duvik, Pioneer Lead Company  
or  
Dr. Don Marshall, Australia  
or  
Dr. Setijati Sastrapradja, Bogor, Indonesia

(d) Biosafety, Environmental Hazards and Ethical Issues

- i) Dr. D. Ramirez  
Dean of the Graduate School, UPLB  
Los Banos, Philippines
- ii) Hon. Mr. W.M. Catenhusen  
Chairman of the Biosafety Committee of the  
German Parliament
- iii) Dr. John Evans  
Chairman, Board of Trustees of the Rockefeller  
Foundation and  
Chairman, Allelix Company, Canada

IV. Institutional Framework for Biotechnology  
Development and UtilizationPanelists(a) Generation of Political Will and Political Action

Public policies to promote national capabilities in research, education and agricultural applications.

- i) Prof. Habibie  
Minister of Science and Technology, Indonesia
- ii) Mr. He Kang  
Minister of Agriculture, Fisheries and Animal  
Husbandry, China
- iii) Korean Minister of Science and Technology.

(b) Research

Promoting relevance and excellence in national, regional and international research and development of institutional mechanisms for setting priorities and implementing well defined tasks.

- i) Dr. Lewis Branscomb, Harvard University  
-- User-orientation to Research
- ii) Dr. Gunsalus  
Director, ICGEB, Trieste  
-- Organization of Networks
- iii) Prof. Falsella  
Director General  
Science and Technology Department, EEC, Brussels
- iv) Dr. Nan Hai Chua  
Rockefeller University, New York  
-- R.F. Network in Rice
- v) Drs. B. Sigurbjornsson, IAEA, Vienna and ) joint  
Dr. Mohammad Zehni, FAO ) paper

(c) Education and Training

1. Orientation of Political Leaders in Biotechnology  
Issues and Options

- i) Prime Minister of India
- ii) Prime Minister of Malaysia
- iii) Prime Minister of Sri Lanka
- iv) Mr. Abheyarama, Bangkok.
- v) Prof. Habibie, Minister of Science and  
Technology, Indonesia

2. Human Resource Development -- Training of  
Professionals

Training at the national, regional and international levels -- existing opportunities and need for additional facilities.

- i) Prof. Dr. Omar b. Abdul Rahman  
Science Advisor to the Prime Minister  
Kuala Lumpur
- ii) Prof. Hirotsuke Okada  
Director, International Center for Cooperative  
Research in Biotechnology, Osaka University,  
Japan
- iii) Dr. A. Sasson, UNESCO
- iv) Prof. Yongyuth Yuthavong, Bangkok.

### 3. Educating the Public and Generation of Awareness of the Potentials and Limitations of Biotechnological Options in Agriculture

The topics to be discussed will include (a) mobilizing the mass media and (b) development of educational resources including software for communication.

Panelists may be invited from BBC, London, Television Studios of Japan, Singapore and Australia, Mr. Juan Mercado of FAO, Dr. Anil Agarwal and Dr. Anil Sadgopal from India.

### V. Financial Resources

#### Panelists

- i) Dr. David Hopper  
Senior Vice-President, IBRDM
- ii) Mr. M. Fujioka  
President, ADB
- iii) Mr. Riyochi Sasakawa  
Sasakawa Foundation, Tokyo
- iv) Mr. S. Okhita, Tokyo
- v) Mr. J.R.D. Tata, Bombay, India.

### VI. Closing Session

#### Biofuture for Asian Agriculture

- i) Prime Minister of China
- ii) Prime Minister of India
- iii) Prime Minister of Italy
- iv) Prime Minister of Malaysia
- v) Prime Minister of Singapore

Asia will have over 4 billion of the anticipated 6 billion human population by the year 2000. Over 50% of this population will be below the age of 21. Asian agriculture therefore faces the following challenges.

- (1) How can more and more food be produced from less and less land to meet the needs of an expanding population under conditions of shrinking land resources for food production?

- (2) How can the primary sector generate more jobs in the secondary and tertiary sectors, so that the farm and off-farm sectors together can provide greater opportunities for gainful employment in rural areas?
- (3) How can farming become both intellectually stimulating and economically rewarding so that it is able to attract and retain youth in rural areas?
- (4) How can the triple objectives of agriculture -- more food, more jobs and more income -- be accomplished in an ecologically sustainable manner so that today's progress is not in conflict with tomorrow's prospects? and
- (5) How can Asia capitalize on its vast human resource and its immense diversity in climate, soils and genetic resources through the intelligent integration of traditional and emerging technologies?

These issues will be considered in the concluding session based on the implications of biotechnology for Asia's agricultural future.

ProgrammeDay 1

9.00 to 10.00 am

Session I

Inauguration

10.30 to 12.30 pm

Session IIAsian Agriculture in the Context  
of a Changing World

2.00 to 5.00 pm

Session IIIThe Era of Opportunities --  
Positive Implications of  
BiotechnologyDay 2

8.30 to 10.30 am

The Era of Opportunities --  
Positive Implications of  
Biotechnology (contd)

11.00 to 12.30 pm

Session IVArea of Concern -- Anticipatory  
Action

2.00 to 3.30 pm

Area of Concern -- Anticipatory  
Action (contd)

4.00 to 5.30 pm

Session VInstitutional Framework for Techno-  
logy Development and UtilizationDay 3

8.30 to 10.30 pm

Institutional Framework for Techno-  
logy Development and Utilization  
(contd)

11.00 to 12.30 pm

Session VIResources for Blending Biotechno-  
logy with Traditional Technologies

2.00 to 5.00 pm

Session VIIClosing Session  
Biofuture for Asian Agriculture

6. Writing up, editing, publication and dissemination of seminar proceedings and summary papers April-May 1989

10. Administrative Arrangements

I. The organization of the seminar involves:

- (i) a Steering Committee
- (ii) APDC
- (iii) a local organizing committee in the host country.

(a) Steering Committee

The Steering Committee consists of participants of the Expert Group Planning Meeting (Annex ...) and Dr. A.I.M. Mohammad who was unable to attend the meeting. Dr. Getubig, the APDC Project Co-ordinator, was appointed the Secretary-General of the Steering Committee.

(b) Local Organizing Committee

Prof. V.L. Chopra agreed to be the Secretary-General of this committee. It was suggested that the Secretary of the Biotechnology Department, Government of India, be invited to head/chair the committee.

II. Division of Task

(a) APDC

APDC will be responsible for major administrative arrangements which include:

- (i) sending official letter to the Government of India, the host country
- (ii) sending invitation letters to panelists, governments and collaborating organizations
- (iii) international travel arrangements
- (iv) preparation of budget and co-ordinating sponsorship for the seminar.

(b) Local Organizing Committee

This committee will be responsible for the following:

- (i) obtaining appropriate seminar facilities
- (ii) accommodation arrangements for participants

- (iii) local logistic arrangements
- (iv) security arrangements for high level officials.

(c) Steering Committee

Members of the committee agreed to:

- (i) attempt to advise their individual governments concerning nominations of participants to the seminar
- (ii) where possible, they will brief paper writers about the seminar and the papers to be written
- (iii) provide the APDC Project Co-ordinator relevant information (e.g. complete name and address of invitees) necessary for invitation letters
- (iv) attend the second steering committee meeting to review papers submitted and finalize the programme of the seminar.

III. Some Specific Issues Highlighted and Discussed

(a) Official letter to the Government of India

This letter should be from the APDC Director and it should contain the following:

- (i) A brief description of the nature and objective of the seminar.
- (ii) The recommendation of the Steering Committee, i.e. venue, date, invitees, proposed programme.
- (iii) Formal request for host government facilities for seminar.

The letter should be sent through the High Commission of India by 31 July 1988.

(b) Invitation Letters to Panelists, Governments and Collaborating Organisations

The invitation letters must be sent by 31 July 1988. It was suggested that special seminar letterheads be used for the invitation letters. The name of members of Steering Committee should also be printed on the letterheads. Letters to paper writers must state that papers will not be presented at the seminar. Instead the writer will be given about 10 minutes to summarize the paper. The papers will be distributed to the participants one month before the seminar.

(c) Number of Participants

Two policy makers will be invited from each country. However, if considered necessary, a third policy maker may be invited. It was agreed that the total number of seminar participants should not exceed 100.

(d) Rapporteur

In order to enable a 'wrap-up' in the closing session, rapporteuring is necessary for each session. It was agreed that one Rapporteur-General and two rapporteurs must be appointed for each session.

(e) Second Meeting of the Steering Committee

The Steering Committee will meet again on the 12 and 13 June 1989. The following matters will be taken up at this meeting:

- (i) Finalization of seminar programme
- (ii) Finalization of logistic arrangements
- (iii) Appointment of Chairmen of sessions
- (iv) Appointment of Rapporteur-General and rapporteurs
- (v) Review of papers submitted by paper writers.