Asia-Pacific Consortium on Agricultural Biotechnology (APCoAB)¹
(A Strategic Initiative for Agricultural Development in the Asia-Pacific Region)

(A Concept)

Preamble

“An Expert Consultation on the status of Biotechnology in Asia and the Pacific”, was organized jointly by FAO and APAARI in Bangkok from March 21 to 23, 2002, to assess the potential of agricultural biotechnology for increasing both productivity and profitability in the region, and to address concerns for adoption of this technology for the benefit of both the farmers and consumers. The meeting recognized that application of biotechnology will be a key factor to ensure sustainable food and nutrition security in the future. The participants also felt that biotechnology at present is both, knowledge and cost-intensive, and needs alliances between both public and private institutions engaged in biotech research. It was also realized that each developing countries national research system needs right institutions in place, right human resource, enabling environment, access to right knowledge and also the required inter-institutional, inter-regional and international linkages. The meeting also took cognizance of the fact that all the National Agricultural Research Systems (NARS) and agricultural research institutions in the region differ in their capacity to apply biotechnological tools for agricultural productivity (crop/livestock/fisheries) improvement and also to deal with testing and release procedures. It was also recognized that the progress in biotechnology research and promotion of biotechnologies for the ultimate benefit in the developing countries is faced with certain impediments such as lack of clear priorities and how best to integrate research results with broader objectives set for agricultural development, and how to deal with concerns for the much hyped issues of biosafety and bioethics. The meeting, therefore, unanimously recommended for the establishment of an Asia Pacific Consortium on Agricultural Biotechnology (APCoAB) involving the key stakeholders in the region to pool their synergies, harness comparative advantages and ensure judicious use of limited resources to promote application of biotechnology for sustainable agricultural development in the region.

Introduction

The population of Asia-Pacific region, from the present 3.2 billion (approximately 55% of world's population) is expected to reach 4.1 billion by the year 2010. Nearly, 57% of this population derives its livelihood from agriculture, cultivating around 32% of the global agricultural land, comprising of small farm holdings of less than an acre. The other limiting factors in agriculture include, unfavourable land / farmer ratio; deteriorating natural resources; vast risk prone areas; diverse farming systems; conversion of agricultural land to non-agricultural uses; fragmentation of land holdings; inadequate support services-markets, credit, extension, and post production facilities/technologies.

¹A draft concept note prepared by APAARI Secretariat for discussion among all key stakeholders with regard to the possibility of establishing APCoAB to promote agricultural biotechnology in the Asia-Pacific region.
Further, as per IFPRI estimates, the demand for food in the sub-regions of East Asia and South Asia is likely to be 27.27 and 19.12 per cent, respectively of the increased global demand of 957 mt for cereals. Obviously, a second green revolution is needed to increase food production to match the needs of burgeoning population. Agricultural research also needs to address the challenge of improving the livelihood of rural poor in order to ensure the increased availability of nutritious food at affordable prices for the urban poor. Since agriculture in the region is seriously constrained by several factors, the increase in food, feed, fuel and fiber production will have to come mainly through increase in productivity and improved efficiency of production systems.

Biotechnology applications integrated into traditional systems hold a great potential to augment conventional agricultural production and productivity in a sustainable manner. Recent advances in classical genetics and plant molecular biology have opened new ways for dramatic modification of crop plants for agricultural and consumer needs. These developments have added a new dimension of biosafety to human and animal health as well as the environment in the deployment of biotechnology. Many societies in this region find themselves at cross roads with these technologies, often due to the lack of information, and more often, due to misinformation. On the whole, the regulatory systems currently in force do not favour an easy spread or popularization of agri-biotechnology. Promoting the use of biotechnology will call for some important changes in the policy framework and also general public attitude which could be possible through general public awareness concerning technological, health, environmental and socio-economic considerations.

Considering the new options and opportunities that this new science offers, we need to move aggressively to address all concerns and be got convinced either to or not to reap the likely benefits for the advancement of society.

Since, the coming decades will see a greater role of biotechnology in agriculture, the societies need to be educated and better informed to make right judgments for themselves. Equitable distribution of benefits from biotechnology will require global access and adoption of the technology and the support and participation of all the key players involved. Major challenges associated with these technologies are that these are often patented and are under the domain of private sector mainly. The multi-dimensional issues of biotechnology are scientific and ethical, and those concerning biosafety and environmental safety, partnerships, economics, intellectual property and trade. The challenge is for the public and private sector, in both industrialized and developing countries, to work together in new and creative partnership towards common goals of food security, poverty alleviation and a better quality of life.

In reviewing the capacity and capability of biotechnologies in developing countries, vis a vis developed countries, a vast technological divide appears evident which is quite difficult to bridge. The lack of trained human and financial resources coupled with poor infrastructure and congenial research environment are the impediments in application of biotechnology. Therefore, bi- or multi-lateral partnership arrangements, among the countries to share the individual strengths of NARS/Institutions and the Private Sector could prove to be a viable mechanism in the development and popularization of agricultural biotechnologies in the region. Under these circumstances, formation of a consortium by the stakeholders can provide common
platform to facilitate identification of policy issues, problems and opportunities, strategic planning and implementation of programmes for the larger benefit of all concerned.

As a neutral facilitator and integrator, APAARI and FAO could catalyze the key partners engaged in biotechnology to join hands in establishing an Asia-Pacific Consortium on Agricultural Biotechnology (APCoAB) by bringing together countries of the Asia-Pacific, the universities, the bioscience industry, civil society organizations, foundations, and non-profit public interest organizations of the farmers and NGOs. Once formed, APCoAB will serve as a neutral platform and catalysts for forging new alliances providing policy guidance, addressing public concerns and above ensuring benefits of new technologies for the farmers and consumers alike.

Mission
The Asia-Pacific Consortium on Agricultural Biotechnology (APCoAB) will act as a neutral platform to promote the required scientific interactions and partnerships among the institutions/organizations to achieve the following mission:

“To harness the benefits of agricultural biotechnology for the advancement of society in the Asia-Pacific region.”

Goals
The major goal of the APCoAB is to enhance the benefits of biotechnologies for the sustainable agricultural development in the Asia-Pacific region, through greater stakeholder partnerships, improved policy environment, enhanced capacity building and greater public awareness.

Objectives:
- To serve as a neutral forum to bring together the key partners engaged in research, development, and commercialization of agricultural biotechnology in the Asia-Pacific region.
- To facilitate and promote the process of greater public awareness and understanding relating to important issues of IPRs, Sui generis systems, biosafety, risk assessment and benefit sharing in order to set at rest various concerns and doubts relating to adoption of agricultural biotechnology.
- To encourage development of competent human resource for meaningful application of agricultural biotechnologies for improved crop productivity and income for small scale farmers.
- To promote and harness novel biotechnologies for the benefit of resource poor farmers in the developing countries.
### Table 1. Summary of the goals and benefits of APCoAB

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<thead>
<tr>
<th>Goals</th>
<th>Benefits</th>
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<tr>
<td><strong>Research:</strong></td>
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<td>1. Be a service-oriented focal point to promote biotech research and development in the Asia-Pacific</td>
<td>- Access to new technology</td>
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<td>2. Research prioritization exercise involving all stakeholders</td>
<td>- Problem-solving research to enhance productivity and profitability</td>
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<td>3. Provide extended research opportunities for NARS personnel/institutions in the region</td>
<td>- Create new partnership opportunities for biotech research between public and private institutions</td>
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<td>4. Facilitate the access to and promotion of new agricultural biotechnology innovations through strong partnership initiatives</td>
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<td><strong>Education:</strong></td>
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<tr>
<td>1. Facilitate public awareness and conduct of short-courses, workshops and conferences on:</td>
<td>- Proper understanding regarding benefits and concerns about adoption of agricultural biotechnology</td>
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<td>(i) Biosafety related issues,</td>
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<td>(ii) Institutional capacity to deal with issues of Intellectual Property Rights, patenting, and benefit sharing</td>
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<td><strong>Policy Advocacy:</strong></td>
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<tr>
<td>1. Convince national policy makers and planners on bio-safety issues of Genetically Modified Organisms and other biotech products</td>
<td>- Promote use of agricultural biotechnology by the society.</td>
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<td><strong>Technology Dissemination:</strong></td>
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<td>1. Effective technology transfer</td>
<td>- Facilitate transfer of proven biotechnologies backed by adequate biosafety, awareness and adoption measures</td>
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### Programme strategy

**Research:** APCoAB will serve as a facilitator for biotech researchers in the regional NARS/Institutions, both private and public, to share facilities and expertise in relevant subject matter and technologies. An Advisory Steering Committee will provide recommendations on critical research, human resource development and education needs in agricultural biotechnology for the countries in the region. In addition, by sponsoring symposia and workshops, the APCoAB will identify researchable issues in agricultural biotechnology relevant for the region. The
APCoAB will assist the countries in organizing consortia to tackle more complex or long-term projects. In plant biotechnology research, where IP issues often govern the access to proprietary technologies, APCoAB will strive to bring together the owners of technologies and the users on amicable terms to develop and deploy technologies for the benefit of the general public. The APCoAB will seek mutually beneficial licensing agreements with the plant biotechnology industry.

**Education**: The APCoAB will cooperate with the universities and other institutions in the region to promote short courses and workshops on relevant topics, such as bioinformatics, new molecular techniques, biosecurity, benefit sharing etc. Short courses in these areas will expand the knowledge of researchers, development officials and the farmers. As this technology is becoming more complex, the APCoAB will work with stakeholders to keep them updated on latest advances and developments.

**Public Service**: The APCoAB will educate the general public about benefits of agricultural biotechnology. It will work with NGOs, farmers and organizations such as ISAAA, IARCs, GFAR, ARIs and Foundations interested in promoting biotechnology and organize in developing countries public fora and workshops/seminars and debates. The APCoAB will try to organize a biennial symposium to bring together all key national and international players in the field of agricultural biotechnology.

**Technology transfer**: The APCoAB will facilitate systematic dissemination and adoption of agricultural biotechnology through creation of awareness and understanding among producers and consumers of products.

**Funding strategy**

Funding for administrative/operations will come from the member countries and if possible with a startup grant from UN organizations like FAO, UNDP, Banks such as World Bank, ADB, IFAD etc. and Foundations such as Rockefeller, Ford, UN Foundation, Syngenta, Sasakawa, Aga Khan TATA, Crawford etc. and Private Sector organizations such as Monsanto, Syngenta, Pioneer, MAHYCO, etc. In addition, funding for grants and alliances will be generated from a variety of sources including member countries, development banks such as the World Bank and Asian Development Bank, CGIAR’s Challenge Programme initiative, GFAR, private seed and biotechnology sectors, charities, trusts and foundations. It is proposed that the APCoAB will develop its own funding programme that can be used to support the agreed activities through Networks/Consortia and bilateral/multilateral partnerships initiatives. The APCoAB will manage these funds according to guidelines devised and agreements with the donors/grantors.

**Expected outcome**

Biotechnology is both inter- and multi-disciplinary as also inter-institutional. Also both public and private sector institutions are the key players. APCoAB will play a critical role in unifying efforts of these organizations. APCoAB can serve as a unifier and promoter since the knowledge so gained can be applied for improving both the products and profits, and ultimately benefit the general public with a better quality of life.
Implementation strategy

Year 1
1. APAARI to play a proactive role to organize a meeting of likely stakeholder institutions and also solicit their consent to establish the consortium.
2. Initiate organizational tasks for the consortium.
3. Establish Advisory Committee and coordinate its meetings.
4. Gain acceptance of potential members through symposia and workshops.
5. Prepare a long-term strategy for functioning of the network/consortium.

Year 2 and 3
1. Complete establishment of the secretariat of the consortium and begin operations.
2. Prepare an action plan for fostering linkages between members to address specific issues emanating from workshops with member countries.
3. Prepare work plans for various aspects including capacity building, human resource development, biosafety, and intellectual property rights.

Organization and management of the APCoAB

The APCoAB will be an autonomous body steered by members or nominees of the APAARI or a Network/Consortium Board, and will be based in one of the member countries. International organizations such as ICRISAT, IPGRI, IRRI, ILRI, ISNAR, FAO, and ICGEB will play a pivotal role in assisting the network to accomplish its goals. The APCoAB will be managed by a secretariat that will be headed by a Facilitator and will be responsible to the APCoAB Steering Committee. The Facilitator will be appointed through a competitive process who will also act as a member secretary of the Steering Committee. The Advisory Committee will engage in a series of meetings of members for information gathering, surveying of capabilities and strategic planning. The Consortium will be tailored to provide general long-term benefits to the members by establishing strong interactions and to address the specific needs of the member countries with stressed economies, in particular. An organogram proposed for APCoAB is given in Fig.1.
Fig. 1: Asia Pacific Consortium on Agricultural Biotechnology - Functions, Inputs and Expected outcome

**APCoAB Advisory Committee**

### Training
- ICRISAT, ISNAR, IRRI, ILRI, ICLARM, ICGEB, NARS

### Funding
1. Member countries
2. Development banks
3. CGIAR and GFAR
4. Private sector
5. Foundations & Trusts
6. Donor agencies

### Outputs
1. Human resource development
2. Capacity building
3. IP protection and related issues
4. Awareness on biosafety issues
5. Technology transfer

### Policy issues
(ISNAR, IFPRI, IPGRI, ILRI, FAO)

### Stakeholders
- NARS
- IARCs/ARIs
- Pvt. sector
- Farmers’ Associations
- Regional Fora and GFAR
- NGOs
- Developmental agencies

### Functions
1. Collaborative research initiatives
2. Networking Centres of excellence with NARS
3. Strategic planning
4. Resource generation
5. Policy advocacy, Public awareness and

**Coordinator, Secretariat**

1. Member countries
2. Development banks
3. CGIAR and GFAR
4. Private sector
5. Foundations & Trusts
6. Donor agencies

7.