

PROCEEDINGS

THE REGIONAL CONSULTATION ON CAPACITY BUILDING IN BIOSAFETY OF GM CROPS IN ASIA

**Century Park Hotel, Bangkok Thailand
7–10 July 2003**

DAY 1

I. Background and Rationale

1. Agriculture plays an important role in national economy and development in Asia, where most of the population resides in rural areas and depends on agriculture for subsistence. While the region has experienced record gains in productivity over the past three to four decades, a sustained increase in farm productivity is vital for the region, particularly with the limited availability of extra arable land. In this respect, biotechnology presents considerable potential by boosting outputs, reducing production costs, increasing nutritional value and promoting the efficiency of agroprocessing. In the meantime, as the impacts of biotechnology on human health and the environment remain unknown, biosafety has become a primary issue.
2. Although they have differing stages of biotechnology research and development (R&D), all the countries in the region are aware of the importance of capacity building to assess and manage the risks and benefits associated with genetically modified organisms (GMOs). With the support of the Government of Japan, the Food and Agriculture Organization of the United Nations (FAO) is implementing the project “Capacity Building in Biosafety of GM Crops in Asia” (GCP/RAS/185/JPN); this project assists Asian countries in their efforts to harness the benefits of biotechnology in accordance with relevant global agreements and ensures safety in the introduction and use of genetically modified crops (GMCs), based on transparent and scientifically based approaches.
3. With the aforementioned background as a rationale, the Regional Consultation on Capacity Building in Biosafety of GM Crops in Asia was held from 7 to 10 July, 2003 at the Century Park Hotel, Bangkok, Thailand. The participants included delegates from project-participating countries (Bangladesh, China, India, Indonesia, Malaysia, Pakistan, the Philippines, Sri Lanka, Thailand, and Viet Nam), Japan, UN agencies, the CGIAR¹ and other international research centres, non-governmental organizations (NGOs) and the industry sector; resource persons and stakeholders were also present.
4. The primary objectives of the Regional Consultation included: (i) identification of strengths and weaknesses in national capacities; (ii) prioritization of support needed to enhance national capacities; (iii) development of a work plan on the harmonization of biosafety methodologies; (iv) promotion of collaboration to avoid duplication of efforts; (v) development of a constitutional framework for the Asian Bionet; and (vi) organization of the Steering Committee and the Technical

¹ Consultative Group on International Agricultural Research

Expert Group meetings.

II. Opening Ceremony

Welcome Remarks

5. The participants were welcomed by FAO's Assistant Director-General and Regional Representative, Dr He Changchui. Dr He Changchui stated that regardless of the United Nations Millennium Development Goals, 500 million people in Asia remain undernourished. Biotechnology presents considerable potential for food production and poverty reduction. However, it also provokes concerns related to health and environment risks, ethics, equity (the question of access) and democracy in decision-making.
6. He pointed out that the Regional Consultation presents an arena for concrete discussions on future visions for Asia and ways to address common concerns. FAO findings have revealed gaps in the exploration of biotechnology benefits as well as differences in the degree of R&D among countries. In this context, capacity building is critical. Recognizing the need to establish mechanisms for assessing and managing the potential environmental risks associated with GMCs under the Cartagena Protocol on Biological Diversity, FAO, with funding support from Japan and in partnership with the participating countries, is implementing the project on "Capacity Building in Biosafety of GM Crops in Asia".
7. The Regional Consultation aims to identify country-specific strengths and weaknesses relating to national capacities on the biosafety of GMCs, as well as to address the prioritization of the support needed to enhance biosafety capacities in the participating countries. Dr He reiterated that FAO would continue to work with partners to address issues relating to the use of agricultural science to reduce hunger and poverty.
8. Dr He hoped the participants would have a fruitful meeting and a pleasant stay in Bangkok.

Introduction

9. Dr Susumu Kawabe, Plant Biotechnology/Biosafety Specialist (GCP/RAS/185/JPN), provided a brief overview of the project, which is supported by Japan for three years (2002–2005). He explained that the development of GMCs presents huge potentials for food security, poverty alleviation and sustainable agriculture; however due consideration has to be accorded to biosafety needs and this is reflected in national legislation and regulations concerning the harnessing of GMCs. Meanwhile the GMC issue remains controversial, particularly in the face of increasing cross-border movement.
10. The project addresses biosafety needs in accordance with global agreement, in conjunction with the strengthening of technical cooperation among Asian countries to ensure biosafety, particularly with regard to environmental impacts. Efforts to generate adequate scientific, legal and institutional controls and to harmonize biosafety standards and regulations need to be based on voluntary initiatives and collaboration among participating countries, with assistance from FAO and other international organizations.

11. He indicated that the project aims to strengthen capacities; establish an effective Asian Bionet; contribute to the harmonized implementation of standards, guidelines, measures and methodologies for risk assessment and management; and promote research and technology development. Such objectives are to be achieved *inter alia* through a wide range of activities such as regional and national workshops, training manual preparation and the establishment of Internet-based national and regional information-sharing mechanisms.
12. He stressed that the Regional Consultation, the Steering Committee and the Technical Expert Group meetings would facilitate the identification of strengths and weaknesses of national capacities; decision-making on priorities in capacity building; the promotion of harmonization of methodologies, standard and regulations; and the formulation of specific work plans.

III. Election of Chairperson and Rapporteur

13. Dr M. Nurul Alam from the Ministry of Agriculture of Bangladesh was designated Chairperson and Ms Rhoda Grace As. Pituan from the Bureau of Plant Industry of the Philippines as Rapporteur. Ms Asna Booty binti Othman from the Department of Agriculture of Malaysia was designated Co-chairperson.

IV. Plenary I

Keynote Address: Biosafety of GM Crops in Asia — Opportunities and Challenges

14. Dr Eric Schoonejans, Biotechnologist, Ministry of Ecology and Sustainable Development, France, explained that we are in the early dawn of major technological changes facing agriculture and food, including extremely powerful new GM biotechnologies. This needs to be accompanied by appropriate biosafety frameworks. When appropriately integrated with other technologies for the production of food, agricultural products and services, biotechnology can be of significant assistance in meeting the needs of an expanding and increasingly urbanized population during the new millennium.
15. Biosafety refers to ensuring the sustainable and safe use of biotechnology, in accordance with international obligations and addressing common policy. It improves the acceptability of innovations and provides improved legal and trade conditions. A biosafety framework for GMCs signifies a system of legal, administrative mechanisms set in place to address environmental and human health safety in the field of modern technology. It sometimes covers issues of cost/benefit analysis, economic or social impacts. It is a controversial subject because of growing mutual distrust between the public and “technicians”, which is attributable to insufficient communication of their respective perceptions and needs.
16. The biosafety framework for GMCs should be a regulatory framework; an administrative system; a decision-making process encompassing risk assessment and management; as well as a means for public information and participation. Preferably, the biosafety framework will be country-driven

and harmonized globally. Concomitantly, the framework:

- facilitates the efficient use of regional and sub-regional capacities, resources and infrastructures;
 - is complete, specific and comprehensive;
 - is based essentially on the risk analysis paradigm;
 - is transparent, proportionate, effective and binding;
 - is the complex articulation between instruments.
17. Capacity building for biosafety needs to be accompanied by continuous R&D on biotechnology, with national or regional efforts geared towards the required (and skilled) human resources. It is important that capacity building is undertaken in such a way as to (i) build upon existing capacities and initiatives; (ii) cater to specific needs; and (iii) promote linkages with other ongoing initiatives rather than duplicating them.

International Trends in GM Crop R &D and FAO Initiatives on their Biosafety

18. Dr Andrea Sonino, Senior Agricultural Research Officer, Secretariat of the Commission on Genetic Resources for Food and Agriculture, FAO headquarters, reiterated the potentials of biotechnology. If integrated properly with other technologies, it can address food security and other key agricultural challenges in developing countries. It needs to be accompanied, however, by systematic risk assessment and management. In this connection, he introduced FAOBioDeC, which is a database on the status of the development, adoption and application of biotechnologies in developing countries.
19. The geographical distribution of biotechnology application is largely uneven, and concentrated in North and South America. Biotechnology application in developing countries remains mostly at the research level, with limited commercialization and limited field testing. The commercial release of GMOs has been undertaken in a few developing countries for a few traits, focusing mainly on commodities. Therefore its contribution to food security remains insignificant. GMO research in developing countries focuses largely on crops and traits relevant for food security.
20. The “monocultural divide” (exclusion of vast areas by biotechnology application) is attracting increasing attention, while important problems are addressed insufficiently or neglected completely. The impact on the biodiversity of tropical ecosystems, for example, is virtually unknown. At the same time, an effective biosafety framework is missing in many countries.
21. FAO is aware of this situation and carries out a wide range of activities to promote biosafety. These activities include the provision of a neutral forum to develop international instruments of governance; the provision of policy advice; the ensuring of access to neutral and balanced information; and the provision of technical assistance.

NGO/Private Group Initiatives on Biosafety of GM Crops

22. Dr George Fuller, Executive Director, Crop Life Asia, introduced his organization, which represents the plant science industry in Asia. This industry invents, develops, manufactures and sells products and services designed to improve the global production of food, feed, fibre and other products in a

sustainable way. The industry employs biotechnology, chemistry, plant breeding and other techniques taking into account ethics and standards as well as impacts on human health and the environment. The industry addresses the concerns of all stakeholders in a transparent manner.

23. Crop Life Asia is a regional network of 14 national crop protection associations and six multinational R&D corporations; priorities are stewardship, regulations, business and societal issues, and communication and industry concerns. Its key activities include regulatory affairs for agrochemicals; advocacy/acceptance; science-based regulations for biotechnology; communications through magazines, its Web site, its newsletter and special publications; as well as e-learning via the Asia-Pacific Regional Training Centre. The Internet-based distance learning courses on the safe and responsible use of integrated pest management (IPM), digital literacy and resource management have proved to be an effective conduit for capacity building.
24. Crop Life Asia recently published its *Reference guide: biosafety frameworks addressing the release of plant LMOs* (living modified organisms) to (i) contribute to internationally harmonized objective and science-based national biosafety regulatory frameworks; and (ii) develop national capabilities in implementing regulatory frameworks transparently, thus ensuring safety while providing predictability to the proponents.
25. Primarily, the Reference Guide is designed to serve decision-makers in the formulation and updating of their biosafety regulatory frameworks. The Reference Guide was prepared as an important input to national capacity-building programmes. It is organized in such a way that discrete parts can be incorporated into national regimes, and includes citations to relevant existing authorities.

V. Country Paper Presentations

Bangladesh

26. The Bangladeshi economy depends mainly on the agricultural sector. About 55 percent of the country's population is engaged directly or indirectly in agriculture. Despite progress during the past 30 years, which has led to a 150 percent increase in food production, food insecurity remains one of the critical concerns. Since current technologies are insufficient to meet the future challenges of agricultural production, it is envisioned that the introduction of modern biotechnologies will contribute to food security and national food sufficiency.
27. In 1999 the government formulated and approved biosafety guidelines for conducting biological research and testing of GMCs. The guidelines facilitated the creation of national and institutional biosafety committees responsible for the identification, assessment and evaluation of the potential risks of GMOs; as well as a recommendation for measures to minimize risk and to review or amend national policies and guidelines on biosafety. Enforcement of the biosafety guidelines, however, is still pending.
28. Biotechnology R&D is at an embryonic stage in Bangladesh. Its activities focus only on the development, standardization and use of *in vitro* culture and micro propagation. One particular problem for the government in its R&D activities is the lack of laboratory facilities and highly

trained human resources to conduct biotechnology research such as gene mapping. There is also a need to create opportunities for strengthening the capacity of biosafety management and to learn from the experiences of other countries.

China

29. While research on agricultural engineering in China has been relatively late in arriving, the Chinese government places importance on biosafety. In the early 1990s the Ministry of Agriculture (MOA) initiated an agricultural safety assessment programme to regulate transgenic biosafety issues. To date, the GMCs approved by the MOA fall into four categories, namely: insect-resistant cotton, delayed ripening tomato, colour-altered petunia and disease-resistant sweet pepper.
30. In 1993 the State Science and Technology Commission promulgated the Safety Administration Regulation on Genetic Engineering, which was the first law on biosafety. In 1996 the Office of Genetic Engineering Safety Administration was founded to regulate field tests, environmental releases and commercialization of transgenic organisms. In 2001 the State Council issued the Regulation on Biosafety Administration of Agricultural GMOs, which was applicable to R&D on all GMOs. It stipulates safety assessment systems concerning the assessment and approval of all GMOs and their by-products. According to the Regulation, the license is issued to any persons or organizations intending to market GM materials, prior to commercial production. It requires proper identification of all GMOs listed in the labelling catalogue before entering the market, and demands that GMOs destined for importation to China are subject to biosafety administration.
31. Major challenges regarding biosafety issues include environmental and biodiversity safety; human health concerns; food safety; impacts on trade and economy; as well as societal and ethical matters. Specifically, China faces challenges in terms of insufficient scientific data on biosafety research; political and trade-related concerns and pressures; incomplete nationwide supervision and inspection systems; poor public acceptance; the unclear long-term impacts of GMOs on the environment and human health; and the need for the strengthening of capacity building.

India

32. Being one of the leading countries that actively participated in the formulation and negotiation of the Cartagena Protocol, India acceded to the Biosafety Protocol in January 2003. The country's biodiversity is vast and it has a wide range of agricultural products. India's National Development Plan identifies biosafety research and capacity building as an important national priority. In the meantime, *Bt*-cotton is the only transgenic crop approved for commercial cultivation.
33. India has a firm regulatory mechanism for the development and evaluation of transgenic substances. Its legal framework was established in 1989 whereas the recombinant DNA safety guidelines were approved in 1990. The framework oversees the development of GMOs from laboratory research to contained use in open field trials and large-scale field testing before release into the environment. The Government of India is following a policy of case-by-case approval of transgenic crops. The Department of Biotechnology under the Ministry of Science and Technology is the main agency that supports research on crop biotechnology.

34. India has expertise in the safe production, use and handling of GMOs through its network of public and private sector institutions and industries. However, the upgrading of institutional training of human resources in advanced techniques, including analytical detection methods and institutional strengthening is necessary to enhance core competence in areas of environmental risk assessment and food safety regulation.

Indonesia

35. The development of agricultural biotechnology began in 1983. The agricultural biotechnology programme focuses on food production and import substitution, utilization of genetic diversity, and development of bio-industry. The Agency for Agricultural Research and Development (Ministry of Agriculture), the Research and Development Centre of Biotechnology (Indonesian Institute of Science), universities and the private sector are developing transgenic food, horticultural, estate and forest crops to improve resistance traits to biotic stresses, quality and yield.
36. To accelerate the programme, the Government of Indonesia has revitalized the National Research Council, which is responsible for priority setting in biotechnology. A biosafety committee was formed and is supported by a technical team, which has formulated guidelines for the release of GMOs. Of the seven transgenic crops that the committee has evaluated, only *Bt*-cotton has been released into the environment. In order to encompass public participation in decision-making for GMO release, the Government of Indonesia is drafting a governmental regulation on the safety of genetically engineered products. Under the new regulation, the Committee for Safety of Biotechnology Engineered Products provides assessment results for the public via the official news network before making recommendations.
37. Capacity building of human resources with specific expertise is a critical issue for Indonesia, partly since research and risk issues and biosafety management of transgenic crops are still at the initial stage and very limited. Additional support for the capacity building of specialists in risk analysis and public awareness is desired.

Malaysia

38. Malaysia has been a world leader in a number of plantation crop industries. The government has stressed the need for producing a sufficient amount of food for national security and stability, and affords considerable support to biotechnology. Biotechnology is earmarked as one of the areas of advancement under the 8th Malaysian 5-Year Plan.
39. To accelerate biotechnology development, the National Biotechnology Directorate was established, with the task of spearheading and coordinating biotechnology research. The Ministry of Science, Technology and the Environment is the focal point; it has the responsibility of coordinating all matters pertaining to biological diversity, including biosafety under the Convention on Biological Diversity (CBD). The Genetic Modification Advisory Committee (GMAC) was formed in 1996 to ensure that any risk associated with the use, handling and transfer of GMOs is identified and managed safely; it also advises the government about matters in genetic modification technology and its application. Currently, GMOs are regulated by GMAC-formulated guidelines, which have

not passed into law yet.

40. All research on GMOs is still at the experimental phase under their confined use. With insufficient expertise on risk assessment and the management of GMOs in the environment, there is an urgent need for adequately trained human resources. Infrastructure development is also critical to establish up-to-date laboratories for monitoring and detecting imported GM plants, plant products or food.

Pakistan

41. In Pakistan, crop improvement initiatives using modern biotechnology started in 1985. Currently there are 26 biotechnology centres/institutes, few of which have desirable physical facilities and trained human resources to develop GMCs. Most of the activities have been related to rice and cotton. Biotechnology is viewed by many political leaders, policy-makers and leading scientists as a priority. Pakistan is a member of the World Trade Organization (WTO) and signatory to the CBD and the Cartagena Protocol.
42. Overall, the development of biosafety regulations has been slow and largely incoherent. Despite local production of transgenic plants, field evaluation is blocked due to the absence of legislation related to biosafety. Although a draft document was prepared in 1999 under the UNEP-GEF, The National Biosafety Guidelines, Plant Breeders Rights Act 2002 and the Geographical Indication for Goods remain subject to discussion, evaluation and analysis. Meanwhile, an illegal GMC (cotton) has manifested itself in farmers' fields.
43. Coordinated efforts are needed among various ministries to implement regulations and capacity building for import/export and local handling of GMCs. There is an urgent need to organize training workshops for policy-makers, legislators and lawyers regarding the WTO, CBD and the Cartagena Protocol. Further, Pakistan would benefit from the experiences of Asian countries that have similar situations. While the development of GMCs is almost a routine activity particularly for cotton, rice, potato and tomato, there is a need to conduct research in the areas of functional genomes, chloroplast transformation and biofarming.

The Philippines

44. The Philippines realizes the importance of using new technologies to attain a sustainable increase in farm productivity. The overarching policy on GMOs is to support the application of scientific information and the development of new technologies that hasten agricultural development. The Department of Agriculture undertakes a national biotechnology programme that ensures the formulation, advocacy and implementation of biotechnology policies, which deal with policy formulation and advocacy; capacity building for regulation and technology development; and education and information.
45. Biotechnology-related activities are regulated by the National Committee on Biosafety (created in 1996), which formulates and oversees the implementation of guidelines, policies and capacity building; and the Department of Agriculture Administration Order No. 8, which covers GMO safety for human health and the environment in connection with the import and direct use of food and feed, field trials and the propagation of GM plants. Its principles include service-oriented and

transparent risk assessment; this is carried out by the Bureau of Plant Industry, the Bureau of Agriculture and Fisheries Product Standards, the Fertilizer and Pesticide Authority and the Bureau of Animal Industry.

46. The Philippine capacity building programme encompasses training on risk assessment and compliance monitoring; harmonization of policies, standards and procedures; forging of partnerships with industry stakeholders for technology transfer and development; and the development of biosafety guidelines for GM animals, aquaculture and pharmaceuticals.

Sri Lanka

47. Agriculture constitutes 19 percent of the GDP in Sri Lanka. The country realizes that agricultural biotechnology would significantly contribute to productivity and an increase in food production. However, the potential of GMOs to achieve this end has not been accepted fully yet. While the country has been developing and applying biotechnology in some areas since the mid-1970s, advanced biotechnology remains in its infancy.
48. The Government of Sri Lanka is engaged actively in preparing a national biosafety framework (NBF) in accordance with the Cartagena Protocol. The Ministry of Environment and Natural Resources implements the Protocol. Currently there are no laws to deal specifically with GMOs. However, some provisions in existing laws could be applied to control, check and even to ban the introduction of certain GMOs to the country. These could be used as a basis in formulating the national biosafety regulations.
49. As a CBD signatory, Sri Lanka is obliged to develop national guidelines and regulations for safety that are applicable to all aspects of GMOs and their products. Critical issues in this sense include the necessity for regulatory systems; development of institutional capacity for risk assessment; development of human resources; and infrastructure concerning the benefits and risks of GMOs. More specifically, the priority subjects for training and research are R&D; information exchange; fellowship/postgraduate and short-term training; and other areas such as intellectual property rights, industrial activities and links with the private sector.

Thailand

50. Thailand appreciates the importance of modern biotechnology and genetic engineering for national development. Nevertheless, it has not yet ratified the CBD, thus making the country ineligible to sign the Cartagena Protocol. In the meantime, with liberal policies on R&D for gene technology, the government fully supports development and capacity building in research and production for modern biotechnology. The commercial release of genetically modified plants, however, is not allowed until they are proven "safe".
51. Since the establishment of the National Center for Genetic Engineering and Biotechnology (Biotec) in 1983 under the National Science and Technology Development Agency, biosafety has been identified as a national priority. An ad hoc Biosafety Sub-committee was established under Biotec in 1992 with the main responsibility of drafting biosafety guidelines in genetic engineering for laboratory work, fieldwork and releases. The Biosafety Guidelines on Genetic Engineering and

Biotechnology for Laboratory Work and for Field Work and for Planned Release were finalized in 1992, and followed by the foundation of the National Biosafety Committee and a number of institutional biosafety committees in 1993 and thereafter. The Committee covers policy, institutional and technical guidelines.

52. Challenges related to biosafety for Thailand include a variety of constraints and limitations in terms of financial and human resources. In particular, non-ratification of the CBD poses a number of limitations.

Viet Nam

53. Viet Nam is an agriculturally oriented country with approximately 71 percent of the population residing in rural areas. To guarantee food security and sustainable agricultural development in parallel with social-economic renovation, the Vietnamese government pays close attention to R&D for biotechnology. Local transgenic plants are produced by research institutions and kept in laboratories or greenhouses. No local GMCs have been released into the environment. The most important transgenic plants that have been developed are rice, maize, flowers, tubers and forest plants. There is limited public awareness on and interest in GMOs, and public reaction to GMOs is mixed.
54. Currently there are no biosafety guidelines in Viet Nam. In 1999 the government established a working group to draw up biosafety regulations. However, the government has not approved any of the several drafts of biosafety regulations that have been drawn up so far. The Vietnamese delegate emphasized that the Decree on Biosafety Regulations for GMOs and Their Products (the latest draft of 2003), was open to suggestions and comments from all of the participants at the Regional Consultation.
55. Viet Nam has a number of training and capacity building needs to address.

Japan

56. In Japan, many R&D activities are being conducted to utilize modern biotechnology in plant breeding. While it is prohibited to sell and import GMOs that have not been declared safe for human consumption, there is currently no commercial cultivation of GMCs.
57. The Ministry of Agriculture, Forestry and Fisheries (MAFF) established guidelines in 1989 to ensure the environmental safety of GMOs. The guidelines will be replaced by new legally binding regulations to implement the Cartagena Protocol. MAFF is also responsible for evaluation and approval and established another guideline in 1996 for the evaluation and approval of feed safety; this was converted to legally binding regulations in 2003. The guidelines concerning a safety assessment system for GMO food application under the former Ministry of Health (current Ministry of Health, Labour and Welfare) were converted into a legally binding regulation in April 2001.
58. It is assumed that there is an increase of food and feed (potentially) containing GMOs into the Japanese market, which is proportionate to the expanded production of GMCs in major exporting

countries. Japanese consumers are very concerned about the safety of GM foods (GMFs). Recent incidents regarding unapproved GM varieties have raised further confusion and worries among the public. The food industry has been subject to negative consumer reactions since the middle of 1999.

Synthesis of the General Discussion

59. In response to an inquiry from the AVRDC² representative concerning the way in which China deals with illegal biosafety procedures, Chinese representatives explained that since biosafety regulation in China is a recent development, it is uncertain whether any violations have occurred. However, Chinese regulations are very strict. AVRDC representatives, referring to a case in the Japanese “checking system” where consumers’ negative reactions to illegal products led to distrust of the manufacturing company and possible loss in GMO sales, highlighted the importance of the effective implementation of established laws.
60. The ICRISAT³ representative pointed out that revising nomenclature such as “biosafety” and “risk assessment” may contribute to changes in public reactions. Another issue raised was the need for careful consideration when establishing a multilateral biosafety regulatory body in a country that is unable to manage biosafety on its own. Further attention should be paid to the benefits of biotechnology for farmers and the environment. In this context, the Indian representative responded to a question from the Vietnamese national project coordinator that public consultation in India, while still informal, increasingly includes NGOs, farmers and other stakeholders. Companies are invited to make presentations, and the government is requested to release further information on its Web site.
61. The delegate from FAO’s headquarters recaptured a point raised by Viet Nam that there is currently no clear-cut distinction between legality and illegality related to biosafety. He stressed the importance of regulations. Information is critical, particularly transparency and communication with the public. The need to narrow the “monocular divide” was also reiterated, while still allowing all countries the freedom to decide whether to accept importation of GMOs.
62. Day 1 concluded with a vote of thanks by the Co-chairperson and the Plant Biotechnology/Biosafety Specialist.

DAY 2

VI. Summary of Country Presentations

63. The Chairperson and the Rapporteur reported on the highlights of Day 1, focusing on the common issues of concern raised during the country presentations as follows:
 - *Background and status of GMCs:* Agriculture plays an important role in national economies and development, as most of the populations reside in rural areas. Biotechnology presents potentials

² Asian Vegetable Research and Development Center

³ International Crop Research Institute for Semi-Arid Tropics

and risks. The development of biotechnology varies among participating countries. There is limited public understanding about the potentials and risks involving GMOs and GMFs, and biotechnology and biosafety remain controversial issues.

- *Policy, legislative framework/regulations and mechanisms related to biotechnology and biosafety:* Many countries already have a number of regulatory guidelines, although some are not specifically directed at GMOs/GMFs/biotechnology. In most countries, biosafety issues fall under the responsibilities of different ministries and authorities. Various committees, sub-committees and institutions have been established to deal with relevant issues.
- *Training and research needs:* A wide range of training needs was addressed, such as risk assessment, monitoring, public awareness (including outreach, human resource development), biosafety guidelines and regulations. Country delegates also stressed the importance of R&D on biotechnology and biosafety, which contributes to, *inter alia*, capacity building, raising public awareness and increased crop productivity.
- *Asian Bionet:* The delegates agreed on the importance of the Asian Bionet, which will improve harmonization and information exchange among participating countries.

VII. PLENARY II

64. Prior to issuance of the guidelines provided by the Plant Biotechnology/Biosafety Specialist, the delegates agreed, following a suggestion by a Malaysian representative, to prepare a matrix to analyse strengths and weaknesses. A small group would draft the matrix to be filled out by the participants and discussed during Day 2. The UNEP-GEF representative stressed the importance of discussing about cross-cutting issues, particularly the issue of capacity building.

Guidelines on Discussions/Plenary Sessions

65. The Plant Biotechnology/Biosafety Specialist thanked the participants for their contribution on Day 1. He provided some guidelines for discussion during Day 2, which would focus on cross-cutting issues related to biosafety. Resource persons would highlight some of the key issues, followed by general discussions. Capacity building would be a key subject and the delegates would be expected to draw up concrete action plans to facilitate the effective implementation of the project.

Legislative Framework including Harmonization of Biosafety Procedures

66. Dr Fee-Chon Low, Biosafety Expert, the Ministry of Science, Technology and the Environment of Malaysia stated that the finalization of the Cartagena Protocol under the CBD was a cornerstone in the development of an international legally binding instrument to address biosafety. The Cartagena Protocol deals with the issues regarding transboundary movement of GMOs and allows countries to make informed decisions on whether to import GMOs. The successful implementation of the Cartagena Protocol, however, is contingent on the establishment or development of a national framework for biosafety, which constitutes a priority for all countries.
67. Despite country diversity, the legislative framework for biosafety will have common elements

such as scope, objectives, institutional administrative structures, application and authorization processes, review and revocation procedures, public awareness and enforcement. In general, biosafety procedures will involve systems to handle advanced informed agreement (AIA) information pertaining to imports and application; mechanisms to review application; decision-making; facilities for inspection and monitoring; and responses for public information and participation.

68. Regional harmonization needs to be sought in areas not impinging on the sovereign rights of nations, such as safety reviews and the reporting of dissemination on decisions and sharing of information related to biosafety. Information exchange is a potential area for regional cooperation, juxtaposed with the joint development of authoritative biology documents for crops most important to the region. Information sharing on risk assessment/management and monitoring is also important, as well as the joint production of outreach materials for public awareness.
69. Dr Ken-ichi Hayashi, Vice-Chairperson of the OECD⁴ Working Group on Harmonization of Regulatory Oversight in Biotechnology, provided an overview of the activities and initiatives on the harmonization of biosafety procedures. He stated that, despite differences among countries regarding positive and negative GMO issues, it is important to create mutual understanding related to biosafety, such as collaborative work on the harmonization of biosafety procedures.
70. Past activities and programmes on biosafety in accordance with the development of biotechnology include, *inter alia*, OECD initiatives to develop the concepts of “familiarity” (for environmental safety) and substantial equivalence for food safety; accompanied by biannual international biosafety symposiums supported by the goodwill and enthusiasm of participating countries for the development of agricultural biotechnology.
71. Efforts concerning the harmonization of biosafety procedures are geared towards assisting countries in their regulatory oversight activities especially with regard to ensuring safety and generating more transparent and efficient policies. Harmonization promotes mutual understanding, reduces duplication and increases efficiency which in turn improves safety and avoids unnecessary disputes. For 2003 to 2005, the following areas of activities are envisaged for the OECD Working Group: preparation of consensus documents as a compilation of information related to the safety evaluation of transgenic crops; outreach activities, including information exchange and dissemination for the evaluation of biotechnology safety by governments and industry; and a workshop on consensus documents and other issues.

Synthesis of the General Discussion

72. The keynote speaker pointed out that the work of the OECD is very important particularly its outreach activities under the Harmonization of Regulatory Oversight in Biotechnology Working Group, which takes into account the views of non-member countries. It would be useful for the countries of the region to consider expressing opinions about the species of GMCs and submitting comments on existing documents. The ICCP⁵ is a repository of valuable information.

⁴ Organisation for Economic Co-operation and Development

⁵ Intergovernmental Committee for the Cartagena Protocol on Biosafety

73. The Crop Life Asia representative observed that while the NBF can precede policy-making, it appears that having policies in place contributes to obtaining political support from decision-makers, rendering the NBF process smoother. Related to this point, given the limited information on policies, compiling a list of such information would be useful. The representative from FAO headquarters noted that the FAO Web site contains relevant information.

Public Participation/Stakeholder Involvement

74. Ms Lin Li Fen, Third World Network, stressing the importance of public participation, indicated that there are provisions for public participation in Article 23 of the Cartagena Protocol which requires Parties to, *inter alia*, promote and facilitate public awareness, education and participation; endeavour to ensure that there is access to information for public awareness and education; and consult the public in the decision-making process and to communicate the results. Public participation on a matter as delicate as genetic engineering is a matter of democracy, transparency, accountability and collective responsibility.
75. Meaningful public participation should be anchored on public awareness and education; rather than educating the public on a certain point of view that is biased towards policy decisions that have been adopted already, public awareness and education must honestly air the scientific uncertainties and debates, and ethical and socio-economic concerns. In the area of genetic engineering, there are almost no independent peer-reviewed scientific data on research to establish the safety of GMOs. While some concerns over GMOs still need to be scientifically verified, so also must the claims of benefits, as the extravagant propaganda surrounding the technology is so great that many resources are being diverted into it, at the expense of other options.
76. Public awareness and education start with admitting what we do not know and what science does not know. A challenge is communicate scientific issues to the public in an understandable manner, so that the public can decide for themselves, as science and technology are supposed to serve the needs of society. It should also be stressed that the real test of a government's commitment to public awareness and participation lies in its efforts to reach out to the unorganized sector of society. The public should have an opportunity to be involved in the decision-making on matters that affect them.

Synthesis of the General Discussion

77. The importance of public involvement in biosafety issues was echoed by a number of participants. In this connection, the Third World Network delegate answered an inquiry on effective ways of public consultation other than the Internet engine. Public consultation in New Zealand is carried out in an innovative manner, in which people send their comments in writing. In parallel, a series of public consultations has been held nationwide. The UNEP-GEF representative added that the effectiveness of this approach lay also in its cultural sensitivity to hold consultations with the indigenous population.
78. The Crop Life Asia delegate pointed out that it is important to understand the dilemmas of the regulators who have to devise policies and regulations amid uncertainties of issues that are currently unknown but may be clarified in the future. Regarding farmers' participation (the need

for which was reiterated by many participants) he attributed their limited participation to the small number of organizations that represent their interests. The Third World Network delegate added that very limited information on biosafety is disseminated to the public, and GMOs and GMFs are commercialized often without public consultation.

79. The keynote speaker added that each country should consider the level of public participation it wishes to ensure, both at the national and local levels. To address the issue of transparency, the regulators need to identify areas of uncertainty that have negative implications, which in fact, can be areas of future research. Another issue is to involve scientists from various disciplines including social science.

Vision and Scope Document for SPFS Asia Information Management System

80. Dr Ajit Maru of the ISNAR⁶ Biotechnology Service, on behalf of Mr Michael Riggs, FAO-RAP, explained that the Special Programme for Food Security (SPFS) has been a major FAO initiative since 1994. Its main objective is to assist low-income food deficit countries (LIFDCs) to improve food security at national and household levels, through rapid increases in food and production and reduction of year-to-year production variability. The SPFS Asia Information Management System (SAIMS) addresses the consistency of the information management framework and tools, which underpin the overall evaluation of SPFS projects.
81. SAIMS will serve as a central repository for SPFS project information outputs, being a common platform for accessing and managing information and data from different countries on the Internet. It will be easy to use, reducing the workload of data management while eliminating the need to respond to individual requests for data from other stakeholders. Its main features include: a Web-based user interface for data management and system administration; a central data warehouse containing country-level data and the potential for managing more complex data; search facilities; a user interface accessible by those without advanced computer literacy; and information access controlled by an identification process.
82. FAO WAICENT⁷ has been established as a strategic framework for FAO in connection with agricultural information management and dissemination. As a corporate framework, WAICENT integrates and harmonizes standards, tools and procedures for the efficient and effective management and dissemination of high-quality information products. In addition to WAICENT, FAO's Asia-Pacific Information Management activities include livelihood approaches to ICTs (Information Communication Technologies) in support of rural development and food security; information management for food security; a Virtual Extension-Research Communication Network; and a Rural Community Information Network.

Synthesis of the General Discussion

⁶ International Service for National Agricultural Research

⁷ World Agricultural Information Centre

83. The delegate from FAO headquarters reminded the participants that this consultation could discuss the way in which to profit from FAO's expertise and experiences to facilitate the establishment of the Asian Bionet. He encouraged the participants to contribute ideas about information to be included in Asian Bionet.
84. The Indonesian delegate observed that existing Web sites feature scientific information, but very little useful information for farmers. The ISNAR representative referred to the need to include the entire community affected by biotechnology. The question of "who holds the responsibility to inform the public" is also critical. Support to reinforce weak national systems, and consequently regional systems, as well as the capacity building of the public to make informed decisions is another key issue. An FAORAP representative remarked that FAO would be in a position to support national authorities in this regard. Related to this point, the national project coordinator from Indonesia stressed the importance of reinforcing the communication skills of scientists who often have difficulty in expressing information articulately for farmers.

Research Needs for Biosafety in GM Crops

85. Dr Dolores Ramirez from the University of the Philippines at Los Baños explained that biosafety, which is not a concern in crops improved by conventional plant breeding methods, has become a key research agenda for GMCs. Biosafety research is focused on food and feed safety, and on environmental safety. The safety of new GMCs for consumption should be assessed on a case-by-case basis.
86. The R&D agenda for food and feed safety should revolve around the safe consumption of the introduced DNA and of newly produced protein; the biochemical and physical properties of newly produced protein; and the composition and nutritional values of new GMCs compared to non-GM counterparts. Food and feed safety research should include substantial equivalence of the GMCs; toxicity and antinutritional studies; allergenicity tests and animal performance tests.
87. The R&D agenda for environmental safety should address direct and indirect ecological effects. Direct ecological effects involve gene flow, weeds and the relative fitness of the GMCs. Indirect ecological effects include the effect of the GMC production and processing systems on the non-GMC production and processing systems; food chain links between the GMCs and the native flora and fauna; and the effects of GMC cropping systems on biodiversity. Monitoring during commercial production of GMCs will determine, *inter alia*, compliance with regulatory requirements; assessment of environmental quality; and occurrence of unexpected or potentially damaging effects. Research along these lines will help to identify the appropriate interventions in order to prevent undesirable environmental impact. Furthermore, research findings are expected to enhance the risk assessment protocols and assure that GMCs are safe as food and feed and are environmentally friendly.

Environmental Impact Assessment of GM Crops in Japan

88. Dr Mitsunori Oka, Director, Department of Environmental Safety, National Institute of

Agro-Environmental Sciences, explained that with the fiftieth ratification of the Cartagena Protocol by the Republic of Palau on 13 June 2003 and its passing into effect 90 days later on 11 September 2003, as well as the approval of municipal law in line with the Cartagena Protocol, biosafety research and regulations in Japan are afforded top priority.

89. The safety assessment of GMCs (in environmentally isolated fields) in Japan concerns gene existence and expression, morphology and growth characteristics and environmental impact. Japan is implementing a comprehensive research project on the assurance of the safe use of GMOs from 1999 to 2006, to guarantee GMO safety and win public acceptance, and to address food and environmental problems. The project aims to develop methodologies required for the safety assessment of the application of recombinant DNA techniques; classify the impacts of GMOs on other organisms and on the environment; and study the global needs for GMOs and their public acceptance through public opinion surveys. Organized by the National Institute for Agro-Environmental Sciences, it involves nine national institutes, five universities, six public institutes and five private and semi-autonomous research organizations.
90. Research conducted to date has examined: gene flow (such as the field arrangement of two maize varieties for pollen donors and recipients, and estimation of the crossing rate by xenia in maize); the distribution of crossing plants and the decline of the crossing rate in the field; the effect of *Bt*-maize pollen on non-target insects; and the biosafety of GM maize pollen toxicity. Allelopathy and evaluation are undertaken at various interaction points between plants and other life forms by natural chemicals. Public acceptance of GMCs in Japan begins with the provision of basic knowledge on GMCs by experts to the public. This is followed by questions and answers by citizen panels, to be answered by experts as well as citizens. Based on discussions at consensus meetings on GMCs, citizens formulate proposals for investigation and research.

Synthesis of the General Discussion

91. A Biotec representative inquired about the effect of GMCs on micro-organisms, and about the impact of rotation. It was explained that the effect appears to be considerable. However, it is necessary to draw up lines on how much research is needed. It was also noted that flora changes are not necessarily due to the influence of GMCs. More information is needed concerning crop life. Longer-term monitoring is also necessary. The ICRISAT representative referred to the long-term development of GMCs to respond to insect resistance. The FAO headquarters' representative suggested that on this issue, information sharing can play a role. For example, the information presented by Japan could be useful for other countries.
92. The ISNAR delegate remarked that risk is also a matter of perception. Socio-economic issues (soft-science issues) need to be taken into account. The Chairperson repeated the importance of scientific information as a basis to address non-scientific issues, including legislative frameworks and public awareness.

GMO Detection

93. Dr Apichart Vanavichit, on behalf of Dr Somvong Tragoonrung, DNA Laboratory, Biotec, explained that genetically engineered plants and animals are the primary issues in the food market.

There are two major methods to produce transgenic plants. Employing *Agrobacterium tumefaciens* includes infection; co-cultivation, gene expression testing, and tissue selection; while the particle gun method involves a gene-coated particle gun, tissue selection, and gene expression testing on plant cells/tissues. There are two sources of genes used in transgenic plants, i.e. the plant gene itself and genes from other organisms.

94. Transgenic development aims at providing benefits for farmers and for seed companies; and responding to public concerns about GMO safety issues such as the long-term effects of consumption, as well as addressing issues related to environmental impacts, intellectual property rights and religion. GMO analysis is conducted using samples such as raw materials, processed products and highly processed products. The steps followed are sampling, DNA isolation, polymerase chain reaction (PCR) and analysis of PCR results.
95. Almost all commercially developed transgenic crops will contain either the CaMV35S promoter (Cauliflower Mosaic Caulimovirus) or the NOS terminator (*Agrobacterium tumefaciens* Ti plasmid). GMO analysis needs to take into account whether DNA has been extracted successfully from the samples; if there is any contamination during the DNA extraction process or the PCR reaction step; and if there is any experimental error. As for labelling, countries have different regulations. Thailand, for example, established a 5 percent threshold for labelling as of April 2000 (to enter into effect in May 2003).

Synthesis of the General Discussion

96. A Biotech representative inquired about internationally standardized methods for GMOs. It was explained that currently five laboratories in the world work on this issue, on a personal contact basis. The FAO headquarters' representative observed that this presentation demonstrated example areas for regional cooperation, such as doublechecking of test results; the possibility of using facilities existing in a country for the testing of materials of other countries; and training on relevant fields.

Segregation, Traceability and Identity Preservation (STIP) Systems — Implications for the Use of GMOs

97. Dr Ajit Maru, ISNAR Biotechnology Service explained that the issue of segregation, traceability and identity preservation (STIP) is in general relevant for all processed crops including livestock, organic and tailor-made crops, and is not limited to GMCs. STIP is very important because of the increasing specificity in agricultural commodity markets, the widening demands for maintaining product safety and the growing concern about marked failures and liabilities. However, as far as implications for developing countries are concerned, the STIP system and labelling for GMCs entail extra cost; more complicated agriculture; the need for new regulatory organizations, mechanisms, laboratories and the capacity to manage the information system and small farmers' organizations; and lower participation in global agricultural trade.
98. He also explained about the Programme for Biosafety System (PBS), which is a US\$14.8 million award from the United States Agency for International Development (USAID) mainly to assist developing countries in enhancing biosafety policy and research. The PBS will be run by a

consortium of professionals and institutions and will work initially in countries such as Bangladesh, India, Indonesia, the Philippines, as well as West and East Africa. Its mission is to empower partner countries for science-based biosafety decision-making while strengthening capacity to implement biosafety through initiatives in system design. Its overall goal is to address biosafety effectively within a sustainable development strategy, anchored by agriculturally led economic growth, trade and economic objectives.

99. The PBS will assist national governments in studying policies and procedures for evaluation and management of the potential harmful effects of modern biotechnology on the environment and human health. Its goals are to improve regional cooperation on various subjects related to GMOs and expand management skills; to assist governments in making science-based decisions on the effects on biodiversity through the introduction of GMOs into the environment; and to assist partner countries in regulating and safely conducting experimental field trials.

Synthesis of the General Discussion

100. A Philippine representative referred to the difficulty in undertaking proper labelling. This is partly attributable to the similarities between GMOs and non-GMOs, but also to the influx of GMOs from countries which do not segregate GMOs. This is an issue to be addressed both by exporting and importing countries. In this connection, the keynote speaker reiterated the importance of GMO traceability. It would be useful to keep record of products that are approved or not approved in different countries.

UNEP-GEF Projects on National Biosafety Frameworks

101. Dr Nizar Mohamed, UNEP-GEF Biosafety Unit, Regional Coordinator for Asia and the Pacific, International Environment House, spoke about UNEP-GEF projects on national biosafety frameworks. The total cost is US\$38.4 million, of which US\$26.1 million is provided by the UNDP-GEF, including co-financing between UNEP and 150 participating countries. The projects aim at preparing countries for entry into force of the Cartagena Protocol; assisting eligible countries to establish NBFs; promoting regional and sub-regional cooperation; providing technical support for the production of NBFs; and strengthening of synergies with other agencies and initiatives.
102. The projects identify key elements for all NBFs, namely, regulatory systems; administrative systems; risk assessment and management; and public awareness and participation. Project execution follows four steps involving starting up, information gathering, consultation and analysis and drafting of the frameworks. The projects include activities at global, regional, sub-regional and national levels, covering respectively provision of information and support, understanding of the Cartagena Protocol and exchange of different experiences, training and capacity building and development of NBFs.
103. Interactive sub-regional workshops aim at building capacities in (i) risk assessment and management; (ii) public awareness and participation; (iii) administrative systems; and (iv) regulatory systems. The second round of training workshops was held from November 2002 to May 2003 with a particular focus on risk assessment and management along with public

awareness and participation. The third round of training workshops will be organized from the second half of 2003 with principal attention being focused on regulatory and administrative issues. As of June 2003, 118 countries from Africa, Latin American and Caribbean countries (GRULAC), Central and Eastern Europe, and Asia and the Pacific will participate in the projects.

104. Since September 2002 UNEP-GEF has been implementing another series of projects on the implementation of NBFs. With an average duration of three years and a US\$70 000 budget, eight participating countries undertake national level activities concerning biosafety policies, regulatory regimes, systems to handle requests, monitoring and inspections, as well as public information. In addition, a new UNEP-GEF project on capacity building for the use of the biosafety clearinghouse (BCH) is presently under development in collaboration with the CBD Secretariat. The project will be designed to meet the physical capacity and capacity building needs of eligible countries that are parties to the Cartagena Protocol and to train them in access, use and entry of data into the BCH. Furthermore, the GEF Council has set aside funds to support implementation of NBFs when the Cartagena Protocol is effected in September 2003.

Synthesis of the General Discussion

105. The discussion centered on the draft matrix presented by the designated group, which would be elaborated on Day 3. The AVRDC representative suggested clarifying specific timeframes. The Plant Biotechnology/Biosafety Specialist reminded the meeting that activities would need to be concluded within the project duration. It was stressed meanwhile that, with sustainability being the objective of the project, FAO would expect the activities to continue via voluntary initiatives from the participating countries after the project has been completed.
106. The participants agreed that the matrix covered most of their needs. In the meantime, some additions and modifications were suggested. The FAO headquarters' representative raised issues from the first day's discussion, namely, training on information management, capacity building on intellectual property rights — including the possibility of public-private partnership. His suggestions were supported by a number of participants. Further additions and modifications to the matrix included: biosafety in human resource development to be upped to first priority from the second position (India, Pakistan); detection and verification mechanisms including the possibility of using facilities in other countries (India, Pakistan, Sri Lanka, Thailand); information management, including dissemination, to be prioritized (India, Pakistan, the Philippines); coordination of research projects (Sri Lanka); a biotechnology regulation system including policies to be upped to first priority from the third position (Thailand; Viet Nam); coordination of government ministries within the country (Thailand); promotion of multi-disciplinary efforts to include industry and farmers (Thailand); and the establishment of a code of conduct (Thailand).
107. Concerning project implementation, the UNEP-GEF representative asked about the possibility of expanding member countries to include Lao PDR, Cambodia and Myanmar. It was explained by the Project Secretariat that this topic would be discussed on Day 3. Japan reiterated the need to focus on priority areas of the project given the limited time and budgets. The FAO headquarters' representative thanked the Japanese government for supporting the project, for which he hoped there would be swift implementation, despite the late start owing to various problems. Expanding the number of participating countries and the scope of the project is envisaged, by attracting additional support not only from Japan but also from other donors. Further, while this is a regional project, FAO is in a position to consider proposals for national-level projects which complement

the project.

108. The Plant Biotechnology/Biosafety Specialist reminded the delegates that the establishment of the Asian Bionet was a critical issue for Day 3. He encouraged the active participation of the participants. Day 2 concluded with a vote of thanks by the Chairperson at 1700 hours.

DAY 3

109. The Chairperson informed the participants of the revision in the agenda for Day 3, which was agreed by the participants ([Appendix 1](#)).

Capacity Building in Biosafety of GM Crops in Thailand

110. Dr Songkran Chitrakon from the Office of Biotechnology Research and Development, Department of Agriculture of Thailand explained that scientists in Thailand feel free to conduct R&D using modern biotechnology. However, the government does not allow the release of genetically modified plant varieties for commercial purposes if they have not been scientifically proven to be safe. Further, the importation of GMOs into Thailand is prohibited. In the meantime, Thailand adopted its own biosafety guidelines in 1992. The draft policy on GMFs and agricultural products (2002–2006) touches upon six areas of policies: on production; on human resource and technical development; on biosafety evaluation; on trade; on public relations; and on public participation.
111. Under the notification of the Thai Ministry of Agriculture and Cooperatives (MOAC) in 1994, 40 transgenic plant species were specified as prohibited materials unless permitted by the Department of Agriculture (DOA) as solely for experiment and research. To date, the DOA has approved the importation of six GM plants for experiments, namely, *Bt*-cotton resistant to cotton bollworm, Roundup-Ready™ maize, herbicide-resistant cotton, extended shelf-life tomato, papaya resistant to ringspot virus, and rice resistant to bacterial leaf blight. Most research on transgenic plants, with emphasis on economic plants has aimed at acquiring resistance to insect pests, diseases and extreme environmental conditions. Most of the experiments are in progress and being tested in the greenhouse and in field trials, in strict accordance with the Biosafety Guidelines.
112. Dr Chitrakon's recommendations are to promote coordination among national government agencies in the formulation of policies and biosafety implementation strategies; to foster regional cooperation for biosafety and capacity building in line with existing international regulatory mechanisms; to enhance multidisciplinary research; to provide training on risk analysis; and to develop a code of conduct for safe, transparent and widely publicized application of biotechnology.

VIII. Presentation of the Summary of the Plenary Session

113. The Rapporteur recaptured the highlights of Day 2 as follows:
 - The agenda for Day 2 consisted of presentations by resource persons followed by general

discussions. The issue of capacity building was given priority, with a view of achieving concrete action plans to facilitate the effective implementation of the project.

- Emphasizing the importance of the Cartagena Protocol, the participants reiterated the need to prioritize, *inter alia*, issues related to the transboundary movement of GMOs; development of NBFs; taking regional harmonization with national diversities into account; information exchange and management, risk assessment and monitoring; public awareness building (outreach) and informed participation; effective R&D; and proper labelling.
- The participants shared information on ongoing initiatives such as the OECD Working Group on Harmonization of Regulatory Oversight in Biotechnology, FAO SAIMS, WAICENT and Asia-Pacific Information Management, Japan's comprehensive research project on the assurance of safe use of GMOs, STIP and PBS by ISNAR, UNEP-GEF projects on national biosafety frameworks and another series of projects on NBF implementation.
- The participants recognized the importance of discussing the establishment of the Asian Bionet for participating countries and all the stakeholders, including farmers.
- Participants also discussed the matrix, indicating priority areas. Most participants commented that the matrix covers most of their needs. Concrete modifications suggested by the participants would be duly taken into account and reflected in the revised matrix.

IX. JOINT STEERING COMMITTEE AND TECHNICAL EXPERT GROUP MEETING

Composition of the Steering Committee and Technical Expert Group

114. The Plant Biotechnology/Biosafety Specialist informed the participants that the Steering Committee consists of the heads of leading biosafety agencies or designated government representatives in the participating countries, FAO, representatives from CGIAR centres, representatives from NGOs, and representatives from the private sector. The Technical Expert Working Group is composed of heads of national biosafety committees, institutions or designated representatives of the participating countries.
115. In response to an inquiry from a Malaysian representative, the FAO Project Secretariat explained the Steering Committee would focus on overall supervision and provide guidelines, while the Technical Expert Working Group would deal with general management and technical issues. The participants requested the Project Secretariat to formulate the terms of reference (TORs).
116. Concerning the members to be included on the committee, the UNEP-GEF representative suggested that the UNEP-GEF Project Steering Committee members should be included, in order to reinforce mutual benefits and reduce duplication. The national project coordinator from Indonesia recommended that members should be selected from the Ministry of Agriculture and the Ministry of Environment. The Indonesian representative suggested the inclusion of BIOTROP⁸ to reinforce the database. The resource person from the Malaysian Ministry of Science and Technology and the Environment observed that, instead of directly involving a plethora of existing networks in each country, the Steering Committee should consist of country representatives, while

⁸ Southeast Asian Regional Center for Tropical Biology

maintaining links with relevant networks. It was further suggested by the participants that JIRCAS⁹ should be included on the Steering Committee.

Formulation of Specific Activities

117. Based on the priorities identified through the matrix analysis, the FAO headquarters' representative presented a preliminary proposal for specific activities. Concerning monitoring, in order to address the needs for human resource development and validation of protocols and results, possible activities could include regional practical training courses on GMO detection; and laboratory networking for the exchange of protocols, twin analyses, secondary verification and so forth. As for needs related to risk assessment/management procedures, namely, human resource development and the development of agreed guidelines (consensus documents), national training workshops and regional technical workshops can be considered. In order to promote public awareness, for which the need for public outreach materials was identified, the production of common basic materials to be translated into local languages and dialects (possibly accompanied by training on communication) was proposed. Further, to respond to additional human resource development needs such as intellectual property rights, public private partnerships and information management, a national training workshop was proposed (possibly in conjunction with a regional workshop).
118. The representative from the Society for Techno-innovation of Agriculture, Forestry and Fisheries pointed out that agreed guidelines and the consensus document refer to different materials, with the latter being a neutral scientific/biology document.
119. The representative from the Malaysian Ministry of Science and Technology and the Environment stressed the importance of reinforcing partnerships with existing international agencies to build on existing activities while reducing duplication, particularly UNEP-GEF (on public involvement) and ISNAR (on intellectual property rights and information sharing). This suggestion was welcomed by the UNEP-GEF and ISNAR representatives.
120. The keynote speaker noted that for human resource development, workshops do not necessarily produce long-term impacts. It would be useful to utilize existing in-country networks through Internet-based communication. In this connection, a roster of experts and possibly the advisory committee at the regional level can be considered. The Crop Life Asia delegate added that the project can source existing mechanisms and frameworks such as the Asia Food Information Center and the International Food Science Center.
121. The Indian representative reiterated India's willingness to share its experience on *Bt*-cotton. She also pointed out that support from Japan, which is the largest importer of GMCs, will be useful, particularly regarding the detection and verification of imported GMCs. Further, in order to complement regional workshops, countries can submit lists of concerned officers and stakeholders to be included in the network of information exchange. Further comments on proposed activities included the need to present general proposals rather than specific ones (the Philippines); to consider hands-on training in addition to IT-based training (Pakistan); to highlight country-specific

⁹ Japan International Research Center for Agricultural Sciences

needs and initiatives (Malaysia); to address socio-economic aspects (Indonesia); and to emphasize monitoring of transgenic risks (China).

122. The participants discussed subjectivity involved in the interpretation of terminology, despite the availability of reference materials that contain standard interpretations. The representative from the Society for Techno-innovation of Agriculture, Forestry and Fisheries advised that for the TORs and proposed project activities, it would be useful to use the terms in a general manner.

Establishment of the Asian BioNet

123. The Plant Biotechnology/Biosafety Specialist explained about the conceptual framework of the Asian Bionet. While the secretariat can be established initially within the FAO office, the Asian BioNet should be sustained, as a mechanism of regional collaboration and information exchange, upon the completion of the project.
124. A Malaysian delegate suggested that the establishment of the Asian Bionet could refer to an ASEAN (Association of Southeast Asian Nations) Bionet. The participants stressed that the project should seek linkages with existing initiatives such as the biosafety clearinghouse under the CBD and sub-regional Web sites, rather than duplicating them.
125. The FAO headquarters' representative probed the participants' opinions on the need for an Internet-based network; contents of this network (whether to include official and unofficial/unauthorized information); and ways to maintain it. The participants requested the Project Secretariat to prepare details on the Asian Bionet, in order to further consider these issues.

Expansion of the Participating Countries

126. It was explained that a number of countries in Asia and the Pacific including Nepal, Mongolia and Cambodia want to join the project. The Japanese Government indicated the difficulty in extending further support under the diminishing ODA (Official Development Assistance) budget. Nevertheless, this may be reconsidered depending on the project's performance. Meanwhile, the Plant Biotechnology/Biosafety Specialist explained that non-participating countries may be invited to some project activities such as training courses. The UNEP-GEF representative suggested that, in order to attend such training, these countries could seek resources other than the project budget.

Drafting of the Report and Recommendations

127. It was agreed that the group including the Chairperson, the Rapporteur and the FAO Project Secretariat would draft the report and recommendations of the Regional Consultation.

X. CLOSING SESSION

Presentation of the Draft Report and Recommendations

128. The Co-chairperson presented the draft recommendations ([Appendix 2](#)). The FAO headquarters'

representative explained that this summary reflected the discussions carried out during the Regional Consultation. Meanwhile, further additions could be considered.

129. The Crop Life Asia delegate proposed that UNEP-GEF, BIOTROP and JIRCAS should be included in the list of members. It was clarified that this addition would be mentioned in a relevant section of the proceedings of the Regional Consultation. In connection with GMO detection, the Indian delegate said that availability of laboratory facilities should be included. The subjects covered by the national workshops, which appear to be too encompassing, would need to be prioritized by each country. The expression “public awareness related to risk assessment” would need to be neutralized. The ISNAR representative added that the recommended actions should be guided and led by the Steering Committee, rather than subjecting them *in toto* to the participating countries.

130. With the understanding that these comments would be duly taken into consideration, the draft recommendations were adopted. The Chairperson, Co-chairperson, the Rapporteur and the FAO headquarters’ representative thanked the participants for their valuable input.

Closing Remarks

131. The Plant Biotechnology/Biosafety Specialist concluded the meeting by expressing his gratitude to all the persons involved in the preparation and implementation of the Regional Consultation. He indicated that this consultation offered an arena for the representatives of participating countries and organizations to meet for the first time and share valuable information. He thanked the delegates for their active participation. He expressed particular appreciation to Thailand, the host country, as well as to the Japanese government for its support.

132. The Regional Consultation concluded at 1600 hours.

Appendix 1

REVISED DAY 3 PROGRAMME

0800–0815 Capacity Building for Biosafety in Thailand
Dr Songkran Chitrakon

0815–0830 Presentation of the Summary of the Plenary Session
Chairperson/Rapporteur

Joint Steering Committee and Technical Expert Group Meeting

- 0830 –1030 Discussion
- Composition of the Steering Committee and Technical Expert Group
 - Formulation of Specific Activities
 - Establishment of the Asian BioNet
 - Expansion of the Number of Participating Countries
- 1030–1100 Coffee Break
- 1100–1500 Drafting of the Report and Recommendations
- 1500–1515 Coffee Break
- 1515–1645 Closing Session
- Presentation of the Draft Report and Recommendations
 - Discussion and Adoption of the Draft Report
 - Closing Remarks by Dr Susumu Kawabe

Appendix 2

REGIONAL CONSULTATION – “CAPACITY BUILDING IN BIOSAFETY OF GM CROPS IN ASIA” (GCP/RAS/185/JPN)

Agriculture plays an important role in national economy and development, with most of the population residing in rural areas. Biotechnology has potentials but its development is varied among participating countries. The benefits and potentials of GMOs and GMFs are recognized among a certain percentage of the population and authorities, but they remain controversial issues.

In this context, the Regional Consultation on “Capacity Building in Biosafety of GM Crops in Asia” was held from 7 to 10 July 2003 at the Century Park Hotel, Bangkok, Thailand. The participants included participating countries in the project (Bangladesh, China, India, Indonesia, Malaysia, Pakistan, the Philippines, Sri Lanka, Thailand, Viet Nam); Japan; representatives from UN Agencies, the CGIAR and other international research centres, NGOs/INGOs and the industry sector, resource persons and other stakeholders were also present.

The meeting reiterated the importance of joint efforts, and building upon existing initiatives and networks, in order to reduce overlapping and reinforce coordination among participating countries.

The meeting agreed on the following issues:

1. Capacity building through national or regional workshops, networking and a roster of experts on, *inter alia*, human resource development on biosafety; intellectual property rights; communication; and information management. Countries are encouraged to seek resources from various sources, in addition to this project.

There will be four regional training workshops to address common needs and priorities, namely, RA/RM procedures including monitoring; public awareness/risk communication; detection of GMOs; and intellectual property rights. Ten national workshops, one for each country, sponsored by the project, will be held to address the specific needs of each country. Each country may hold additional workshops as the need arises but they should seek additional resources.

2. Standardization of procedures and methodologies for risk assessment and risk management, including double verification and GMO detection. A regional consultation on this subject will be organized. Laboratory networking will be facilitated.
3. Public awareness on GMOs, including materials for public outreach; and methodologies for effective outreach.

The meeting also agreed on the establishment of the Asian BioNet, which will contribute to the coordination of stakeholders and information sharing. The secretariat will prepare the proposal for further

consideration by the Steering Committee and Technical Expert Group to facilitate the nomination of the Second Meeting.

The meeting agreed that the Project Secretariat should formulate the TORs to be sent to all the countries so they can express their preferences as to the designation of the representatives of both the Steering Committee and the Technical Expert Group. In this connection, the meeting recommended the inclusion of UNEP-GEF, BIOTROP, ISNAR and JIRCAS, NGOs and private sector representatives.

The Project Secretariat will prepare the proceedings of this consultation and send the document to the Steering Committee for their comments before finalization.