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PROGRESS IN THE PREPARATION OF THE IN-DEPTH REVIEW OF THE IMPLEMENTATION OF THE PROGRAMME OF WORK ON AGRICULTURAL BIODIVERSITY OF THE CONVENTION ON BIOLOGICAL DIVERSITY (CBD)

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PROGRESS IN THE PREPARATION OF THE IN-DEPTH REVIEW OF THE IMPLEMENTATION OF THE PROGRAMME OF WORK ON AGRICULTURAL BIODIVERSITY OF THE CONVENTION ON BIOLOGICAL DIVERSITY (CBD)

I. INTRODUCTION

1. In its decision VIII/23, the Conference of Parties to the Convention on Biological Diversity (COP) requested the Executive Secretary, in partnership with the Food and Agriculture Organization of the United Nations (FAO) and in consultation with other relevant international organizations, to prepare a full review of the Programme of Work on Agricultural Biodiversity, for consideration by the Conference of Parties at its ninth meeting in May 2008.

2. The primary aim of the Review is to determine progress made in advancing the objectives of the Convention within the thematic area of agricultural biodiversity. Decision VIII/15 stresses the importance of ascertaining "whether, and to what degree, the implementation of activities has contributed to meeting the objectives of the Convention and provisional goals and targets of the framework for evaluating implementation of the three objectives of the Convention and progress towards the 2010 target..."

3. The Review will assess progress made, identify barriers and gaps in implementation and assess, where relevant, how the programme addresses major challenges and emerging issues. The Review will also the assess progress of the three international initiatives presently being implemented under the programme. The Review will be considered at the Thirteenth Meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), to be held in FAO in February 2008 and presented at the Ninth meeting of the Conference of the Parties (COP) in June 2008 in Germany.

4. At its Tenth Session, the Commission reviewed cooperation with the Convention on Biological Diversity. In doing so, it recommended that "FAO work closely with the Executive Secretary of the Convention, and play a leading role in the in-depth review of the Convention's Programme of Work on Agricultural Biological Diversity, which will be considered at the Ninth Conference of the Parties in 2008 and,..., that the Commission's Eleventh Session would consider any preliminary findings".[1] This document responds to such recommendation and complements the information provided in document *Cooperation with the Convention on Biological Diversity*[2] that the Commission will review at its present Session.

5. The CBD Executive Secretary and FAO have established a partnership and have agreed on a work plan to prepare the review, in consultation with other organizations. Based on this workplan, the information contained in this document provides an overview of progress made on the Review up to 21April, 2007. It also presents preliminary findings from a FAO analysis on the contribution of international organizations to the implementation of the Programme of Work on Agricultural Biodiversity. These findings should be viewed as highly preliminary and may be subject to significant change as the review progresses.

II. THE PROGRAMME OF WORK ON AGRICULTURAL BIODIVERSITY

6. After recognising "the special nature of agricultural biodiversity, its distinctive features and problems needing distinctive solutions" in its decision II/15, the COP decided at its next meeting to establish a multi-year programme of activities on agricultural biological diversity (decision III/11).

[1] CGRFA-10/04/REP, para. 76.

[2] CGRFA-11/07/17.

7. The Programme of Work on Agricultural Biodiversity, adopted in 2000 as COP decision V/5, was the result of intensive collaborative work by FAO and the CBD Secretariat over a number of years, including a Memorandum of Cooperation between the two organisations signed in 1997 (this was revised to a Memorandum of Understanding and signed in May 2005) and the secondment, by FAO, of an Agricultural Biological Diversity Officer to the CBD Secretariat between 1997 and 2003.

8. As a further contribution, FAO carried out an international assessment of ongoing activities and instruments on agricultural biodiversity (UNEP/CBD/SBSTTA/5/INF/10) and recommended priorities for a Programme of Work (UNEP/CBD/SBSTTA/5/10), as well as hosting a number of relevant workshops and liaison group meetings.

9. Based on these assessments, the Programme of Work on Agricultural Biodiversity was developed with an understanding and recognition of the ongoing efforts of other conventions, organizations and initiatives in this area. It aimed to promote synergy and coordination, to avoid duplication between relevant programmes and "build upon existing international plans of action, programmes and strategies that have been agreed by countries" as well as to ensure harmony with the other relevant programmes of work under the CBD.

10. Decision V/5 also reflects how the basis of the Programme of Work is the Ecosystem Approach, noting that "in implementing the programme of work, the ecosystem approach adopted under the Convention on Biological Diversity will be applied. The application of this approach implies, *inter alia*, intersectoral cooperation, decentralization of management to the lowest level appropriate, equitable distribution of benefits, and the use of adaptive management policies that can deal with uncertainties and are modified in the light of experience and changing conditions. The implementation process will also build upon the knowledge, innovations and practices of local communities and thus complement Article 8(j) of the Convention. A multi-disciplinary approach that takes into account scientific, social and economic issues is required."

11. The Programme of Work on Agricultural Biodiversity consists of four complementary elements:

- Programme element 1, *Assessments* aims "to provide a comprehensive analysis of status and trends of the world's agricultural biodiversity and of their underlying causes (including a focus on the goods and services agricultural biodiversity provides), as well of local knowledge of its management".
- Programme element 2, *Adaptive management* aims "to identify management practices, technologies and policies that promote the positive and mitigate the negative impacts of agriculture on biodiversity, and enhance productivity and the capacity to sustain livelihoods, by expanding knowledge, understanding and awareness of the multiple goods and services provided by the different levels and functions of agricultural biodiversity".
- Programme element 3, *Capacity-building* aims "to strengthen the capacities of farmers, indigenous and local communities, and their organizations and other stakeholders, to manage sustainably agricultural biodiversity so as to increase their benefits, and to promote awareness and responsible action".
- Programme element 4, *Mainstreaming* aims "to support the development of national plans or strategies for the conservation and sustainable use of agricultural biodiversity and to promote their mainstreaming and integration in sectorial and cross-sectorial plans and programmes".

12. Decision V/5 also outlines ways and means of achieving, and timing of, expected outputs. These were further elaborated in Annex 1 of decision VI/5, which outlined "steps for the further implementation of the programme of work by the Executive Secretary and partner

organizations". Annex 1 provides a brief review of some important milestones in COP decisions related to agricultural biodiversity.

13. As the lead agency in supporting the development and implementation of the Programme of Work on Agricultural Biodiversity, FAO has continued to contribute strongly to its implementation, and facilitates and coordinates the *International Initiative for the Conservation and Sustainable Use of Pollinators* and the *International Initiative for the Conservation and Sustainable Use of Soil Biodiversity.* It has also contributed to the establishment of the new *Cross-cutting Initiative on Biodiversity for Food and Nutrition* and has been invited to participate in its implementation.

14. The ongoing collaboration with the CBD Secretariat on matters relating to agricultural biodiversity recognizes the importance of existing agreements and initiatives such as the International Treaty on Plant Genetic Resources for Food and Agriculture, the International Plant Protection Convention, the Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture, the Global Strategy for the Management of Farm Animal Genetic Resources, and the Code of Conduct on Responsible Fisheries.

III. TERMS OF REFERENCE FOR THE REVIEW

15. In its decision VIII/23, the Conference of Parties requested the Executive Secretary, in partnership with the Food and Agriculture Organization of the United Nations (FAO) and in consultation with other relevant international organizations, to prepare a full review of the Programme of Work on Agricultural Biodiversity, for consideration by the Conference of Parties at its ninth meeting in May 2008.

16. Guidelines for the review of programmes of work of the Convention are provided in annex III to COP decision VIII/15 (see annex 2). These guidelines note that "the primary aim of the review is to determine progress made to advance the objectives of the Convention within its thematic areas", and that the review should include information from Parties on:

- Progress made on implementation of the programme of work;
- Barriers to implementation of the programme of work;
- Priorities for capacity-building to address the barriers;
- The contribution the programme of work has provided to Parties in implementing the Convention; and
- The contribution of the programme of work in reducing the rate of biodiversity loss.

17. According to the guidelines, the review process might result in suggestions for modification of existing programmes of work, however these should only occur where a significant gap has been identified and filling this gap would provide valuable further guidance to Parties, other Governments and organizations supporting implementation of the Convention.

18. The review should also address the adequacy of the programme of work to address major challenges including current and projected major threats, new scientific knowledge and other emerging issues, as well as their effectiveness in the context of the Millennium Development Goals and the Johannesburg Plan of Implementation of the World Summit on Sustainable Development.

19. In revising and updating the Programme of Work on Agricultural Biodiversity, the Review should define goals and objectives and integrate the vision, mission and provisional framework of goals and targets as outlined in annex III to decision VII/30 and, where applicable, the goals and objectives of the Strategic Plan.

IV. PROGRESS ON THE REVIEW TO DATE

20. Following the request in March 2006 to the Executive Secretary of the CBD and FAO to prepare the full review of the Programme of Work on Agricultural Biodiversity, FAO and the Executive Secretary have jointly developed a proposed workplan for the Review.

21. The proposal establishes "a joint workplan for the in-depth review of the Programme of Work on Agricultural Biodiversity, agreed by FAO and the CBD Secretariat, outlining the main activities, timetable and responsibilities to ensure timely delivery for SBSTTA 13 and COP 9".

22. The Review will be considered at the Thirteenth Meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), to be held at FAO Headquarters in February 2008 and presented at the Ninth meeting of the Conference of the Parties (COP) in June 2008 in Germany.

23. In preparation for the review, FAO and the CBD Secretariat began the process of gathering information from international organisations and from national reports to the CBD, respectively. A brief and preliminary synthesis of information gathered to date by FAO in this context is provided in Section V below.

24. Information gathered will contribute to a draft review document that is currently under preparation for SBSTTA 13. The review process will take into account the work of the Commission on Genetic Resources for Food and Agriculture (CGRFA) in developing a Multi-Year Programme of Work (MYPoW), including the studies commissioned for this meeting.

V. PRELIMINARY FINDINGS

25. This section on the preliminary findings of the Review is based on the information gathered up to the 21April, 2007, as the contribution of international organisations to the Programme of Work on Agricultural Biodiversity. As part of the review process, FAO and the CBD Secretariat jointly sent a questionnaire to all relevant international organizations on their activities pertinent to agricultural biodiversity. Soliciting responses further to this initial request has been followed up by FAO through telephone and email, and information has been supplemented with Internet research.

26. This section aims to provide a brief synthesis of some of the information gathered through the above-motioned process, in the context of the four elements of the Programme of Work on Agricultural Biodiversity: Assessment, Adaptive Management, Capacity Building and Mainstreaming, as well as the international initiatives on soil biodiversity, pollinators and food and nutrition. These findings should be viewed as highly preliminary and may be subject to significant change as the review progresses.

Programme element 1: Assessments

27. The first Programme Element is to be carried out by Parties, Governments and networks, making use of existing networks and programmes of international organizations. Various activities are to be funded through the Secretariat, with in-kind contributions from participating organizations. Two key expected outputs were identified in the original programme of work:

- A key set of standard questions and a menu of potential indicators of the status and trends of agricultural biodiversity that may be used by Parties at the national level, and agreed terminology of production environments by 2002; and
- Reports on the state of the world's genetic resources, as programmed, leading progressively towards a comprehensive assessment and understanding of agricultural biodiversity, with a focus on the goods and services it provides, by 2010.

28. Most of these activities have now been completed or have made significant progress. Assessments on the status and trends of the world's plant and animal genetic resources, which the Commission oversee, are in place. These major assessments continue to be supported by the work of relevant international organisations, both through participation in relevant working groups and through support to countries in carrying out these assessments. The second report on the State of the World's Plant Genetic Resources for Food and Agriculture is currently under preparation (see CGRFA-11/07/12) and the first State of the World's Animal Genetic Resources has now been finalized and is expected to be endorsed by the First International Technical Conference on Animal Genetic Resources (available as CGRFA-11/07/Inf.6).

29. The assessment of invertebrates and micro-organisms poses a number of specific challenges. Issues relating to the status and needs of the biodiversity of microorganisms and insects for food and agriculture are discussed in greater depth in the document CGRFA-11/07/15.3. In general, the assessment of invertebrate groups is approached from the perspective of their functionality, particularly for pollination, pest control and for the maintenance of soil fertility. Regarding pollinators, a diverse range of assessments have been carried out and a first report on the *Rapid Assessment of the State (or "Status") of Pollinators* will be presented to the CBD in 2008. These activities are described under the International Initiative for the Conservation and Sustainable Use of Pollinators

30. A number of projects are underway that examine ecological interactions and their potential benefits for agriculture, particularly for pest management. There are also ongoing efforts to assess the interactions between agricultural practices and the conservation and sustainable use of components of biodiversity, particularly at the landscape scale.

31. There are several ongoing and completed major international assessments that contribute indirectly to the programme of work on agricultural biodiversity, such as the International Assessment on Agricultural Science & Technology for Development (IAASTD), the Millennium Ecosystem Assessment (MEA). Work on the Global Taxonomy Initiative (GTI), the Global Environment Outlook and the Global Biodiversity Outlook also contribute indirectly to a better understanding of agricultural biodiversity. While some relevant information on agricultural biodiversity can be found in these assessments, their major focus is the impact of agriculture on the conservation of wild biodiversity.

32. In decision VII/3, COP notes "the postponement of the preparation of the final report of the comprehensive assessment of agricultural biological diversity and related milestones by two years". As noted above, this is an important next step for the programme of work, and has been proposed as a long-term goal for the Commission within its MYPoW (see CGRFA-11/07/15.4).

33. Different classifications of production environments exist, and it is noted that the classification system used in the FAO/World Bank work[3] on farming systems, and FAO/IIASA work on agro-ecological zones[4] are commonly used.

34. Regarding indicators of agricultural biodiversity, considerable progress has been made and highly relevant work is ongoing by a number of international organisations. The main challenge in this area of work is to draw together, coordinate and refine the information generated from these sources in order for it to be useful and coherent on a global scale.

35. Databases and other information relevant to agricultural biodiversity, including case studies and information on best practices, are increasingly being made available on the Internet. Every international organisation considered in the survey of international organisations has a website, most of which include information on their activities, publications and often databases.

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[3] FAO/WB. "Farming Systems and Poverty: Improving Farmers' Livelihoods in a Changing World". 2001. ftp://ftp.fao.org/docrep/fao/003/y1860e/y1860e00.pdf

[4] http://www.fao.org/ag/AGL/agll/gaez/index.htm

There are also some significant and relevant information "clearing houses". As such, information becomes increasingly available; a major challenge is to ensure its accessibility and usefulness, globally.

36. There is also a range of ongoing work on the assessment of traditional and local knowledge related to the management of agricultural biodiversity. These efforts have mainly been conducted at regional or national level in Latin America, Asia and Africa. There are some ongoing efforts to coordinate and manage the information gathered in a useful way and some organizations are using the Internet to share available traditional and local knowledge. In general, an increase in the use of participatory approaches implies that indigenous and local knowledge is more often being taken into account in defining the needs of communities and in project formulation. A number of international initiatives are supporting efforts to better value and protect traditional and local knowledge associated with agricultural biodiversity. A number of other studies have also been reported on other socio-economic factors influencing agricultural biodiversity.

Programme element 2: Adaptive management

37. The second programme element is focused adaptive management, a key concept in the implementation of the ecosystem approach. For truly adaptive approaches to be possible, a deeper understanding is required of the multiple goods and services provided by the different levels and functions of agricultural biodiversity; and of the complex social, economic and environmental interactions that define its conservation and use. For this reason, a qualitative approach is anticipated in implementing this programme element, and the initial emphasis was on publishing, analysing and disseminating at least 30 case studies by 2005.

38. The case studies were to be carried out by national institutions, civil-society organizations, and research institutes, with support from international organizations, and should be representative of regional issues and prioritise. On the basis of these, cost-effective practices and technologies, and related policy and incentive measures that enhance the positive and mitigate the negative impacts of agriculture on biological diversity, productivity and capacity to sustain livelihoods would be identified, and information on them would be disseminated (decision V/5).

39. In general, considerable progress has been made in this area. A wide range of case studies have been carried out by different organizations and in different contexts. There is also a considerable range of ongoing work to identify and promote the dissemination of information on cost-effective practices and technologies. Nearly every organisation included in the survey has made some contribution to this activity within the context of their own mandate and focus, particularly regarding the analysis and dissemination of ways to mitigate negative and promote positive impacts. In particular, many CGIAR centres have carried out a great deal of work in this area in specific regions, environments and contexts.

40. Studies showing the financial value of biodiversity-friendly practices have been reported by a number of organisations including efforts to develop mechanisms for benefiting poor farmers through payments for ecosystem services. Most work being carried out in the areas of trade and marketing relate to the promotion of underutilised and new crops, market chain analysis and trade issues relating to plant genetic resources. In the area of policy as it contributes to adaptive management, there is considerable ongoing work on intellectual property rights, particularly on protecting the rights of local communities to landraces, and several organisations working to restrict or ban the use of GMOs. Other organisations continue to focus on the promotion of organic agriculture.

41. Many organisations are also working to promote methods of sustainable agriculture that employ management practices, technologies and policies that promote the positive and mitigate the negative impacts of agriculture on biodiversity. Integrated pest management is one major

focus of these activities and a number of organisations have noted the promotion and use of integrated and/or participatory approaches such as agroforestry, farmer field schools, watershed management, community based biodiversity management, holistic management etc.

42. While there is a great deal of activity under this programme element, there is a need for greater coordination of the results. Of the wide range of case studies pertinent to agricultural biodiversity carried out by international organisations, 38 are currently available on the website of the CBD. While this adequately meets the target set in the initial programme of work, it is limited in light of the range studies that have been carried out and to date there has been limited effort to synthesise and disseminate the findings of these studies in the context of the programme of work. Other case studies however can be found on individual websites of different organizations (e.g. case studies on pollinators, posted on the FAO web-site).

43. Activities under this programme element have been structured in such a way that the case studies are envisaged to form a basis for the other activities: activity 2.2: "identification and promotion of information on cost-effective practices and technologies, and related policy and incentive measures… "; and activity 2.3: "promote methods of sustainable agriculture that employ management practices, technologies and policies that promote the positive and mitigate the negative effects of agriculture on biodiversity…". Some organisations have indeed taken these steps and are using their case studies as a basis for further research and action. However, better linkages with such efforts and greater coordination may be required in this area to ensure the work that has been carried out does contribute to the development of adaptive management approaches in the context of the Programme of Work.

44. Adaptive management in particular and the ecosystem approach in general require an understanding of linkages and complex issues and as such, their implementation takes time. One initiative that has the potential to contribute to synthesising the available knowledge is the global Platform for Agrobiodiversity Research that has recently been established by Bioversity, SGRP, FAO, and others. A Secretariat for the Platform, led by Bioversity International, based in Rome and Nairobi, was constituted in 2005. Further details on the progress of this platform are provided in the document CGRFA-11/07/19.2 on the work of the CGIAR centres (paragraphs 67-71).

Programme element 3: Capacity-building

45. Element 3 on capacity building focuses on empowering local communities to improve the management of agricultural biodiversity at the agro-ecosystem level. As such, it is to be implemented primarily through initiatives within countries, including through extension services, local government, educational and civil-society organizations, including farmer/producer and consumer organizations and mechanisms emphasizing farmer-farmer exchange. According to decision V/5, this programme element would engage the widest possible range of civil-society organizations, including those not normally linked to biodiversity initiatives.

46. According to planned outputs in the Programme of Work, examples at country level of operational mechanisms for participation by a wide range of stakeholder groups including civil-society organizations were to be available by 2002. Local-level forums and regional networks covering at least 1,000 communities should be established by 2010, by which time farmers and local communities should be involved in the majority of national programmes by 2010.

47. Participatory and adaptive approaches are key to enhancing local capacity in the management of agricultural ecosystems. An increasing number of international organisations are utilising approaches such as farmer field schools, farmer participatory research and participatory plant breeding etc., which contribute not only to improving productivity in the short term, but also enhance local people's understanding of the ecosystems on which they depend and hence increase their capacity to manage them in the longer term. In addition, some organisations are actively building farmer's networks.

48. As this element is focused at national level, much of the work being carried out in this context should be described in national reports to the CBD unfortunately this review shows that not must is going on. However, many international organizations are carrying out capacity building activities within the framework of their own mandates. The ongoing IIED project on "Sustaining Local Food Systems, Agricultural Biodiversity and Livelihoods" is directly focused on this programme element and aims to analyse how and under what conditions can decentralised governance, farmer participation and capacity building promote the adaptive management of agricultural biodiversity in the context of local food systems and livelihoods[5].

49. Many ongoing projects and programmes make efforts to involve multiple stakeholders and build networks in the process. Key challenges highlighted in building sustainable, multi-stakeholder partnerships include low levels of trust between farmers, agricultural policy and biodiversity conservation communities. It has been suggested that further investment is required in processes that enable stakeholders from agricultural and conservation sectors to build shared visions as the foundation for partnership development.

50. One major focus is in the area of genetic resources, for example through participatory breeding programmes and work to empower farmers and local communities to secure their facilitated access to and sustainable use of genetic resources – and in particular, focussing on locally adapted biodiversity.

51. A stronger focus, including from the international organizations, is needed to build capacity within the national agricultural research systems of developing countries that can have a role in mainstreaming agricultural biodiversity into national sectorial and cross-sectorial policies and strategies.

52. Activities are also ongoing to give local communities a voice in policy issues, for example the promotion of 'citizen's juries' to enable small farmers and indigenous peoples to participate in assessing different food, farming and rural development futures, and voice their priorities with regard to policy futures. Another example is the Bioversity International led project "Genetic Resources Policy Initiative", through which national level multistakeholder, multidisciplinary and multisectorial committees/platforms have been created to develop genetic resources policies in several countries**.**

53. Building capacity is relevant for improving the sustainable utilization of agricultural biodiversity - in doing so, countries will be able to better support local efforts to sustainably manage this vital resource, while improving achievement of internationally agreed goals and targets for biodiversity conservation and use. Success stories have shown that a bottom-up approach (such as Farmer Field Schools) from the community to national policy makers, is particularly effective.

Programme element 4: Mainstreaming

54. According to the Programme of Work (decision V/5), programme element 4 was to be implemented primarily at the national level, drawing on the experiences of ongoing programmes. It was expected that as a result of these activities, over 100 countries would have participated in various assessments under programme element 1 by 2005. There was also expected to be coordination between sectorial assessments and plans of action at national level in the majority of countries by 2005, and a range of guidelines published at international level.

55. As mentioned under element 1, many international organizations including the CGIAR have been providing support to countries to participate in the major ongoing assessments of components of agricultural biodiversity. Key challenges highlighted in this area by one

[5] www.diversefoodsytems.org

organization are that most countries lack the financial resources to initiate the assessment process, and that most national programs focus strongly on priority crops and activities.

56. With regard to policy issues, of particular note is the range of support is being provided to countries to assist with plant genetic resources policy issues, for example the implementation of international agreements such as the International Treaty on Plant Genetic Resources for Food and Agriculture, and to harmonise related policies and laws. Some early warning systems are in place or under development, for example for animal diseases or invasive species. However, with some exceptions of mainstreaming agricultural biodiversity into national policy (e.g. Lao PDR's National Agricultural Biodiversity Programme, developed and endorsed with technical and financial support from FAO), there has been limited activity in this area by international organizations.

57. A wide range of activities is ongoing for the conservation of genetic resources, in particular plant genetic resources. Most of the guidelines reported to date have also been produced on issues relating to PGRFA, for example on conservation and management, or policy issues such as access and benefit sharing. Other guidelines have been produced on issues such as invasive species management, or more general guidelines on integrating agriculture and biodiversity conservation policies and the development of policies that enable better conservation of agricultural biodiversity. The completion of the state of the world report on animal genetic resources is also anticipated to further stimulate ongoing activities in this area.

International Initiative for the Conservation and Sustainable Use of Pollinators

58. A wealth of activities has taken place globally with respect to pollinators, since the adoption of the International Initiative for the Conservation and Sustainable Use of Pollinators. Given the level of activity, it is worthwhile to consider what has been successful and where gaps remain.

59. With respect to the first element, assessment, a diverse range of assessments has been carried out on different levels and often with different objectives. The first *Rapid Assessment of the State of Pollinators* is underway. Comprehensive censuses of the status of pollinators in whole countries, or assessments of status and trends across an entire continent, have yielded useful results as benchmarks or as inputs into tools for decision makers, but they are unlikely to be sustained over the long-term. Yet many groups have pointed to the necessity for long-term monitoring for mobile and highly variable taxa such as pollinators. For such an effort to be sustained, it must be cost effective and widespread, and targeted in scope to particular indicators to reduce variability. Initiatives to enlist volunteers with simple methods and to focus on key crop pollination systems have these characteristics. The final focus of the IPI Plan of Action's activities in monitoring the status and trends of pollinators is to develop and implement a global programme for monitoring pollinator diversity. Lessons learned from pilot projects are that there needs to be agreement on standardized methods; training is needed in the field; a few indicative systems should be selected and observations from around the world need to be pooled to identify global trends. Monitoring methods are highly specific to the taxa being monitored, whether it is bees, butterflies or bats.

60. Other areas of assessment are similar: Efforts have begun to develop methods for economic valuation of pollination, and through the contribution of case studies, an assessment of the state of scientific understanding, taxonomic capacity and indigenous knowledge is possible. As with monitoring of pollinators, agreement on standard methods for example for economic valuation would greatly advance the ability to assess global values, and comparative values across regions and sectors. Assessments of the state of knowledge have concluded that effective conservation or restoration of pollinator populations requires comprehensive knowledge of their biology, which is currently insufficient to inform the design of sustainable management and maintenance programs. A substantial initial contribution is to compile existing information in a

readily accessible format; this is currently being undertaken by collaboration between FAO and GBIF.

61. With respect to the other three elements of the Plan of Action - adaptive management, capacity building, and mainstreaming - a strong tradition in "Bee Courses" has taken root, with an annual Bee Course held that has trained people in bee taxonomic skills in over 20 countries, and a similar course, the African Bee Course, running in that continent.

62. However, pilot work in identification and indicators of best practices in agricultural and land management, capacity building to implement best practices, and development of policy measures to support these point in a similar direction: that conservation of pollination services at the ground level and at the policy level involves integration with other ecosystem goods and services. While the full range of practices and polices still need better definition, these virtually always include aspects relating to other ecosystem services. The rationalization or reduction in pesticide use to benefit pollination services also promotes biodiversity that mitigates pests and diseases; habitat manipulation and ecological engineering on farm promotes both, and also increases the capacity of agroecosystems to serve as watersheds and mitigate pollution. Increases in functional biodiversity in farming systems provide insurance functions for adapting to climatic and other environmental changes. The case for integrating plans of action for different functional aspects of agrobiodiversity in the management and mainstreaming phases may be quite compelling. However, it is felt that pollinators deserve a special attention in the international arena and to that effect the international initiative on pollinator have been instrumental in giving the profile needed to further the understanding of the role of wild pollinators.

International Initiative for the Conservation and Sustainable Use of Soil Biodiversity

63. The International Initiative for the Conservation and Sustainable Use of Soil Biodiversity was established in 2002 (decision VI/5). In 2006 (decision VIII/23), the CBD endorsed a framework for action as a basis for the initiative's implementation, which will be integrated into the Programme of Work on Agricultural Biodiversity at the ninth meeting of the COP.

64. The Initiative is to be implemented as a cross-cutting initiative within the Programme of Work on Agricultural Biodiversity, "through the coordination, and with the technical and policy support of the Food and Agriculture Organization of the United Nations (FAO), with appropriate links to other thematic programmes of work of the Convention, particularly those on the biodiversity of dry and sub-humid lands, mountain and forest biological diversity, and with relevant cross-cutting issues, particularly the Global Taxonomy Initiative and work on technology transfer and cooperation". Decision VIII/23 also notes that the Initiative provides an opportunity to apply the ecosystem approach and the Addis Ababa Principles and Guidelines for Sustainable Use, and that it will liaise closely with the United Nations Convention to Combat Desertification and its advisory bodies and processes.

65. Work on soil biodiversity has started in many different areas, however there is as yet limited coordination of these efforts. Some workshops and events have taken place, such as the International Technical Workshop on Biological Management of Soil Ecosystems for Sustainable Agriculture, organized by the Brazilian Agricultural Research Corporation (EMBRAPA) and the Food and Agriculture Organization of the United Nations in Londrina, Brazil, in June 2002, a side event on soil biodiversity at COP-8 in Curitiba, Brazil, and an African Regional Workshop on sustainable use of biological diversity in Kenya. Some relevant indicators have also been developed[6]. Some case studies carried out by international organisations are relevant to soil biodiversity, and a few major projects and activities are also focused on this area. In addition, many initiatives are underway to generally improve soil fertility and soil and water conservation, in the process contributing to the sustainable management of soil biodiversity. Most of these

[6] E.g. the 2004 OECD document "Agricultural Impacts on Soil Erosion and Soil Biodiversity: Developing Indicators for Policy Analysis".

activities have also included a dimension on networking and information exchange, as well as capacity-building activities.

66. Regarding objective 1, *sharing of knowledge and information and awareness-raising,* case studies exist and some of these are available on the CBD website, however there have been no efforts as yet to compile, synthesize, and evaluate case studies for practical advice and active dissemination. While some networking activities are intrinsic to project work being carried out, in general the considerable potential for networking in this area has yet to be taken up. Likewise some efforts have been made to enhance public awareness, however there is much more work required in this area. Many information systems and databases exist that contain relevant information, however there is as yet no coordinated effort to gather data and information specific to soil biodiversity.

67. Regarding objective 2, *capacity-building for the development and transfer of knowledge of soil biodiversity and ecosystem management into land use and soil management practices,* the promotion of adaptive management approaches, as well as capacity building efforts and some targeted participatory research is ongoing in the context of the programmes and projects mentioned above. Some very relevant work has been undertaken on indicators, which has the potential to contribute to broader efforts to develop tools, build information and identify and develop datasets on soil biodiversity at national level that are important for agriculture.

68. Regarding objective 3, *strengthening collaboration among actors and institutions and mainstreaming soil biodiversity and biological management into agricultural and land management and rehabilitation programmes,* activities have so far been limited. However, there are many organizations involved in areas such as soil and water conservation that are directly complementary to this Initiative and considerable potential for synergies in relevant work.

69. The work carried out to date has highlighted the very real need and considerable potential for work under this Initiative to develop further. In order to make the most of the opportunities that present themselves, a considerable increase in the available financial and human resources will be required. Information on FAO's activities in this area is provided in the document CGRFA-11/07/20.1 (paragraphs 54 - 58).

Cross-cutting Initiative on Biodiversity for Food and Nutrition

70. Formally established by COP decision VIII/23 in March 2006, the Cross-cutting Initiative on Biodiversity for Food and Nutrition is the most recently established Initiative under the Programme of Work. A proposed framework for the Initiative is provided in an annex to decision VIII/23, drawing on the work of the first expert consultation on biodiversity for food and nutrition (Brasilia, March 2005), as well as a Nutrition Stakeholders Meeting (Rome, February 2006).

71. The overall aim of the initiative is to promote and improve the sustainable use of biodiversity in programmes contributing to food security and human nutrition, as a contribution to the achievement of Millennium Development Goal 1, Goal 7 and related goals and targets and, thereby, to raise awareness of the importance of biodiversity, its conservation and sustainable use. The proposed framework also notes that activities should be implemented taking into account the Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security (the "Right-to-Food Guidelines") adopted by the FAO in November 2004.

72. The Initiative, led by FAO and Bioversity International, has already made significant progress in some areas despite its recent establishment, and a number of activities have also been planned for 2007 and early 2008. The Initiative is defined in the context of four elements:

73. Element 1, *Developing and documenting knowledge,* aims to improve the evidence base, i.e., data on composition and consumption of food genetic resources, to substantiate the links and relationships between biodiversity and nutrition, and the relevant links between human health and ecosystem health. This element focuses on research and case studies, as well as the development of relevant indicators. Particular needs have been identified in terms of biodiversity indicators in food composition and nutritional analysis, and an International Workshop on *Nutrition Indicators for Biodiversity* is planned in São Paulo, Brazil on October 21, 2007 as an official satellite meeting to the 7th International Food Data Conference (IFDC7), which has adopted the theme of Nutrition and Biodiversity for its 3 day meeting (22-25 Oct 2007).

74. The need for cross-training between nutritionists and those involved in biodiversity science has also been highlighted, and Bioversity and FAO have planned courses in 2007 in Brazil, Malaysia and Nigeria as well as the first West African Graduate Course on Food Composition and Biodiversity in Accra, Ghana. FAO and Elsevier jointly published a Special Issue of the Journal of Food Composition and Analysis on Biodiversity and Nutrition in 2006[7], and further Special Issues of this journal are being planned on relevant topics including animal genetic resources. A significant point of focus in information gathering activities has been on the role of traditional foods, and a number of international organisations have conducted studies in this area including highly relevant case studies such as those soon to be published by CINE in the book "Indigenous Peoples' Food Systems for Nutrition and Health".

75. Element 2 addresses *the integration of biodiversity, food and nutrition issues into research and policy instruments*, including nutrition instruments and food security and poverty reduction strategies. The integration of biodiversity concerns into nutrition instruments has been initiated in the context of FAO's program of work in nutrition. FAO's Regional and Subregional offices have worked towards specific major outputs in food composition analysis and dietary assessments in projects for the promotion of traditional food crops. Work is also ongoing in the area of food composition analysis and dietary guidelines, and some work has started on the integration of biodiversity for food and nutrition concerns into food security and poverty reduction strategies has also started. A number of food security projects and programmes have also started to integrate diversity and nutrition aspects.

76. The ways and means described for element 3 on *conserving and promoting wider use of biodiversity for food and nutrition* note that most of the activities outlined under this element will be pursued under the Convention's existing Programme of Work on Agricultural Biodiversity. Activities under the FAO Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture and the Global Strategy for Plant Conservation will contribute strongly to the conservation and diversification of plant genetic resources, and in considering the role of animal products in relation to nutrition, the Global Strategy for the Management of Farm Animal Genetic Resources "provides an important technical and operational framework for guiding activities on conserving animal genetic diversity"(decision VIII/23). In terms of market-related activities, activity 14 of the GPA is highlighted, as well as opportunities for cooperation with the BioTrade Initiative of the United Nations Conference on Trade and Development (UNCTAD). In general, most of the activities described under the main Programme of Work contribute to the objectives of element 3.

77. Element 4 on *public awareness* aims to raise awareness of the links between biodiversity, food and nutrition, and the importance of biodiversity conservation to meeting health and development objectives, including the elimination of hunger and other forms of malnutrition. A general communication strategy has not yet been developed on biodiversity for food and nutrition. A range of public awareness materials is available or under development, including recipe books, posters and a field guide related to traditional foods and nutrition, as well as other relevant publications such as manuals on food composition and how to set up and run a school garden. A significant number of relevant workshops and conferences have also been convened,

[7] see CGRFA-11/07/20.

including the two consultations that contributed to the development of the Initiative: the first expert consultation on biodiversity for food and nutrition (Brasilia, March 2005) and the Nutrition Stakeholders Meeting (Rome, February 2006) and a number of other international and regional meetings workshops. More international and regional meetings are under preparation, including the COHAB Initiative Second International Conference on Health and Biodiversity, planned to be held in Galway, Ireland from the 25th to 28th February 2008.

78. The Initiative has made considerable progress relative to the short time since its inception, highlighting the importance of this issue. Particular limitations exist in the area of human resources, as this is a relatively new field and considerable training and awareness rising is required to increase in-depth understanding of the linkages between biodiversity and nutrition issues. Further information on FAO's activities in this area is available in the document CGRFA-11/07/20.2 (paragraphs 15-20).

The on-going review of the CBD Programme of Work on Agricultural Biodiversity: some preliminary general observations

79. To date, a number of important achievements in the field of agricultural biodiversity have emerged since the development of the Programme of Work on Agricultural Biodiversity (COP decision V/5). Most notably, there has been major progress in consolidating the intergovernmental agenda on agricultural biodiversity, a process in which FAO and its Commission on Genetic Resources for Food and Agriculture played a key role. Major accomplishments include:

- The adoption of the International Treaty on Plant Genetic Resources for Food and Agriculture by the FAO Conference in November 2001. The Treaty entered into force in June 2004, and the first Session of the Governing Body concluded the first phase for the operationalization of the Treaty. With more than 100 Parties, the Governing Body is now a new but well established international player in the field of agricultural biodiversity.
- The preparation of the *State of the World's Animal Genetic Resources for Food and Agriculture*, which should be endorsed by the First International Technical Conference on Animal Genetic Resources in Interlaken, Switzerland, in September 2007. It is envisaged that the results of the Conference will further strengthen intergovernmental cooperation and action for the conservation and use of Animal Genetic Resources, which will be then integrated back into the future planning of the Commission. The importance of further strengthening work on Animal Genetic Resources at FAO needs to be highlighted.
- The consultative process to develop the Multi-Year Programme of Work (MYPOW) since the last session of the CGRFA indicates that strengthening mutual cooperation with the CBD will be an important priority for the future work on agricultural biodiversity.

80. At the technical level, a number of successful international initiatives on agricultural biodiversity have been on-going, namely those on pollinators, soil biodiversity and nutrition. Preliminary findings show that the creation of these initiatives have garnered momentum for key international players to implement activities to achieve the objectives of these initiatives. In some cases, such as for pollinators, this momentum has leveraged the creation of partnerships to conduct technical work. An example of this is the creation of the African Pollinator Initiative.

81. Some other preliminary general observations are drawn from the on-going analysis and include:

- Particularly outstanding in the review of activities is the entrenchment of two areas of work (throughout all the programme elements) in which there has been a strong focus for many years: Plant Genetic Resources for Food and Agriculture (PGRFA) and Integrated Pest Management (IPM). While activities in these fields have been on-going, and continuously being developed, since the 1950s and '60s – before the adoption of the

Programme of Work on Agricultural Biodiversity - a large proportion of these ongoing activities nonetheless contribute substantially to the implementation of the PoW on Agricultural Biodiversity The development over time of these areas of work and the increased involvement of a wide range of organisations provides a positive message to more recent areas of activity where significant effort is being invested, such as animal genetic resources and pollinators, as well as many other focal areas.

- The success of these areas of work in filtering gradually into more "mainstream" thinking also highlights the importance of such points of focus to the overall Programme of Work. Cross-cutting initiatives within the Programme of Work have great potential to highlight particular issues and to focus work in these areas.
- Many of the international players, when dealing with agricultural biodiversity, still do not consider the full range of agricultural biodiversity components but restrict to plant genetic resources for food and agriculture. As the work in plant genetic resources for food and agriculture has now been consolidated in FAO, in particular with the entry into force of the International Treaty, future focus of the CBD Programme of Work on Agricultural Biodiversity should shift to other components of agricultural biodiversity with an ecosystem and farming system approach.
- The scope of agricultural biodiversity is broad by nature and the Programme of Work addresses a wide range of issues. This structure gives the Programme of Work the capacity to adapt and remain relevant as new issues emerge to challenge the conservation and sustainable use of agricultural biodiversity, while the regular development of cross-cutting initiatives as the need arises can provide spearhead programmes to target progress effectively in the areas where it is most needed.
- Also outstanding is the wide range of information available that relates directly or indirectly to agricultural biodiversity. A major challenge is now to bring together and synthesise the available information is a meaningful and useful way, in all areas of the Programme of Work.
- An ecosystem approach to agricultural biodiversity implies the need for an in-depth understanding of interactions between social, economic and environmental factors. While sectorial assessments contribute significantly to the understanding of aspects of agricultural biodiversity, the development of a more comprehensive assessment is an important next step, not only to form the basis for further activities but also to solidify the concept of agricultural biodiversity more universally, including its scope and importance. The development of an authoritative report on *The State of the World's Biodiversity for Food and Agriculture* has been proposed as a long-term goal for the Commission within its MYPOW (see CGRFA-11/07/15.4).
- A stronger focus from the international organizations is needed to build capacity within the national agricultural research systems of developing countries for mainstreaming agricultural biodiversity into national sectorial and cross-sectorial policies and strategies, in particular for improving the sustainable utilization of agricultural biodiversity. Evidence from success stories show that bottom-up approaches are particularly effective.
- The preliminary outcomes of the review illustrate that conservation and sustainable use of agricultural biodiversity plays an important role in achieving the Millennium Development Goals (MDGs) – in particular MDGs 1 and 7.

Appendix 1

BRIEF REVIEW OF SOME IMPORTANT MILESTONES IN COP DECISIONS RELATED TO AGRICULTURAL BIODIVERSITY

Decision	Milestone
II/15	Recognized "...the special nature of agricultural biodiversity, its distinctive features and problems needing distinctive solutions".
III/11	Considered "...the importance of biological diversity for agriculture and taking note of the interrelationship of agriculture with biological diversity..." and requested the Secretariat, and the FAO, in close collaboration with other relevant organisations, to identify and assess relevant ongoing national and international activities and instruments.
IV/6	COP reiterated its wish that FAO maintain its coordinating role in the assessment of ongoing activities and instruments.
V/5	Established a Programme of Work on Agricultural Biodiversity and requested the Executive Secretary to invite FAO to support the development and implementation of the Programme of Work.
VI/5	Decides to establish an International Initiative for the Conservation and Sustainable Use of Soil Biodiversity as a cross-cutting initiative within the Programme of Work on Agricultural Biodiversity, and invites the Food and Agriculture Organization of the United Nations, and other relevant organizations, to facilitate and coordinate this initiative. Contained provisions on the implementation of the Programme of Work, the International Pollinator Initiative, soil biodiversity, animal genetic resources, trade liberalization and genetic use restriction technologies (GURTs). Also outlined "Steps for the further implementation of the Programme of Work by the Executive Secretary and partner organizations", which lists programme element and activity; expected outputs; actors and partners; status and milestones.
VII/32	COP requested the Executive Secretary, in collaboration with FAO and IPGRI to undertake the necessary consultations and bring forward options for consideration by COP-8 for a cross-cutting initiative on biodiversity for food and nutrition.
VII/3	Notes the postponement of the preparation of the final report of the comprehensive assessment of agricultural biological diversity and related milestones by two years.
VIII/23	Section D requests the Executive Secretary, in partnership with the Food and Agriculture Organization of the United Nations and in consultation with other relevant international organizations, to prepare the full review of the Programme of Work on agricultural biodiversity for consideration by the Conference of the Parties at its ninth meeting. The review should take into account the guidelines for the review of programmes of work (decision VIII/15, annex III);

Appendix 2

GUIDELINES FOR THE REVIEW OF THE PROGRAMMES OF WORK UNDER THE CONVENTION (ANNEX III TO COP DECISION VIII/15)

A. PURPOSE OF THE REVIEW

The primary aim of the review is to determine progress made to advance the objectives of the Convention within its thematic areas. The review should include information from Parties on:

a) Progress made on implementation of the Programme of Work;

b) Barriers to implementation of the Programme of Work;

c) Priorities for capacity-building to address the barriers;

d) The contribution the Programme of Work has provided to Parties in implementing the Convention; and

e) The contribution of the Programme of Work in reducing the rate of biodiversity loss.

The review process might result in suggestions for modification of existing programmes of work. Modification of programmes of work should only occur where a significant gap has been identified and filling this gap would provide valuable further guidance to Parties, other Governments and organizations supporting implementation of the Convention.

B. PROCESS FOR REVIEWING AND, AS NECESSARY, REVISING THE PROGRAMMES OF WORK

1. Review of the current Programme of Work

The review of implementation of a Programme of Work could include:

1. *A review of implementation against the elements of the Programme of Work itself* (objectives, activities, etc). The review should ascertain:

a) Whether, and to what degree, the implementation of activities has contributed to meeting the objectives of the Convention and provisional goals and targets of the framework for evaluating implementation of the three objectives of the Convention and progress towards the 2010 target;

b) Identification of barriers to effective implementation of the Convention within the thematic area, and capacity-building priorities to address the barriers;

c) Whether, and to what degree, operational objectives and all or selected priority activities of the Programme of Work at the national, regional and global level were implemented by Parties and others, and the extent to which this was facilitated by the Convention Secretariat and other partners;

d) Whether, and to what degree, the Convention Secretariat and other partners have facilitated the mobilization of the necessary financial resources with respect to the thematic areas. This would involve analysing the trends in funding for the thematic area, as well as actions taken by the financial mechanism and other multilateral and bilateral donors in response to the guidance of the Conference of the Parties regarding the Programme of Work;

e) Whether, and to what degree, the implementation of activities has contributed to meeting the goals and objectives of the Programme of Work;

2. *An assessment of the adequacy of the Programme of Work to address major challenges.* The review should assess the current and future effectiveness of the Programme of Work in the context of the Millennium Development Goals and the Johannesburg Plan of Implementation of the World Summit on Sustainable Development. The goals, objectives and activities of the Programme of Work should be assessed against the status and trends in biodiversity, current and projected major threats (including threats primarily associated with other biomes), new scientific knowledge and other emerging issues, to determine whether these remain adequate for reducing rates of biodiversity loss, promoting sustainable use, and contributing to the fair and equitable sharing of benefits arising out of the utilization of genetic resources.

2. Revision and updating of the Programme of Work

The Programme of Work should only be revised and updated if the need to do so is identified through the review process outlined in section 1 above. Revisions of programmes of work should only be undertaken where a significant gap is identified and addressing this gap would provide essential further guidance to Parties, other Governments and relevant organizations to achieve the objectives of the Convention with regard to its thematic areas. Steps to follow when revising and updating the Programme of Work are:

1. Define goals and objectives according to needs, in light of status and trends in biodiversity, and against current and projected major threats, new scientific knowledge and other emerging issues, in order to contribute to the achievement of the three objectives of the Convention;
2. Integrate the vision, mission and provisional framework of goals and targets as outlined in annex III to decision VII/30 into the Programme of Work and, where applicable, the goals and objectives of the Strategic Plan;

3. Assess activities:

a) Include activities required to address needs, in light of: (i) status and trends in biodiversity, current and projected major threats to biodiversity and new scientific knowledge, obstacles to sustainable use and to the fair and equitable sharing of benefits arising out of the utilization of genetic resources, and the experience of the previous version of the Programme of Work; and (ii) results of a gap analysis taking into account all relevant activities including those being undertaken within the framework of other conventions, and by organizations and initiatives that contribute to the objectives of the Programme of Work (the gap analysis would also help to identify opportunities for collaboration, as well as areas where additional activities would add the most value);

b) Acknowledge activities being undertaken by other conventions, organizations and initiatives to meet the objectives of the Programme of Work and focus on activities in the Programme of Work under the Convention on Biological Diversity that fill gaps and provide added-value;

c) Consider the financial implications of activities according to their likely effectiveness and impacts, and the capacity of Parties and partners to implement them.

4. Consider measures to provide practical support, including financial and technical support, for national and regional implementation.

C. INFORMATION, TOOLS AND MECHANISMS TO SUPPORT THE REVIEW AND REVISION OF THE PROGRAMMES OF WORK

1 Types and sources of information

1. Degree of implementation of the Programme of Work:

a) Information from Parties (including national reports and thematic reports);

b) Information from the 2010 monitoring exercise (global headline indicators);

c) Additional information from relevant United Nations agencies, conventions, international and regional organizations, indigenous and local communities, and other partners.

2. Status and trends in biodiversity, and threats to biodiversity and obstacles to sustainable use and to the fair and equitable sharing of benefits arising out of the utilization of genetic resources:

a) Information from the 2010 monitoring exercise (global headline indicators);

b) Information from Parties (including national reports and voluntary thematic reports);

c) Additional information from relevant United Nations agencies, conventions, international and regional organizations and processes, and other partners, including in particular the Millennium Ecosystem Assessment and other assessments and scenarios work;

d) Information from other international and national scientific bodies such as science academies and science associations.

3. Financial resources for implementation:

a) Information from Parties and other Governments on financial resources and the financial mechanism with respect to programmes of work (including national reports and thematic reports);

b) Reports of, and information from, the Global Environment Facility and other multilateral and bilateral donor agencies on thematic areas and cross-cutting issues;

c) Additional information from relevant United Nations agencies, conventions, international and regional organizations, and other partners and stakeholders.

2. Supporting tools and mechanisms

1. Use of expert groups, regional workshops and consultations.
2. Development of a framework for the mobilization and coordinated use of available assessment data from disparate sources.
3. Use of independent peer review, where appropriate.
4. Use of a rational timeline for review of implementation – one that takes into account when national reports and other information will be available.
5. Share experiences and approaches through the clearing-house mechanism and other mechanisms.