

**REPORT**

**TECHNICAL WORKSHOP**

**BIODIVERSITY  
IN SUSTAINABLE DIETS**

**ROME, 31 MAY – 1 JUNE 2010**



**REPORT**

**TECHNICAL WORKSHOP**

**BIODIVERSITY  
IN SUSTAINABLE DIETS**

**ROME, 31 MAY – 1 JUNE 2010**

**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS**

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned.

The views expressed in this information product are those of the author(s) and do not necessarily reflect the views of FAO.

All rights reserved. FAO encourages the reproduction and dissemination of material in this information product. Non-commercial uses will be authorized free of charge, upon request. Reproduction for resale or other commercial purposes, including educational purposes, may incur fees. Applications for permission to reproduce or disseminate FAO copyright materials, and all queries concerning rights and licences, should be addressed by e-mail to [copyright@fao.org](mailto:copyright@fao.org) or to the Chief, Publishing Policy and Support Branch, Office of Knowledge Exchange, Research and Extension, FAO, Viale delle Terme di Caracalla, 00153 Rome, Italy.

© FAO 2010

# TABLE OF CONTENTS

FOREWORD.....	iii
ACKNOWLEDGEMENTS .....	v
ACRONYMS AND ABBREVIATIONS.....	vii
PREFACE .....	ix
SUMMARY .....	xi
1. OBJECTIVES .....	1
2. BACKGROUND.....	1
3. ENVIRONMENT AND ECONOMIC ISSUES .....	2
4. NUTRITION AND HEALTH ISSUES .....	4
5. SOCIO-CULTURAL ASPECTS .....	5
6. DEVELOPMENT OF KEY POINTS AND RECOMMENDATIONS FOR A DEFINITION OF “SUSTAINABLE DIETS”, IN LINE WITH THE ECOSYSTEM APPROACH .....	6
7. RECOMMENDATIONS .....	8
8. PROPOSALS FOR THE IMPLEMENTATION OF ELEMENTS WITHIN THE FRAMEWORK OF THE CROSS-CUTTING INITIATIVE ON BIODIVERSITY FOR FOOD AND NUTRITION.....	9
ANNEXES	
I DRAFT PROPOSAL FOR A “CODE OF CONDUCT FOR SUSTAINABLE DIETS,” based on the model of the Code of Conduct for Marketing of Breast Milk Substitutes.....	11
II AGENDA Technical Workshop on ‘Biodiversity in Sustainable Diets’ .....	13
III LIST OF PARTICIPANTS .....	15
IV LIST OF BACKGROUND PAPERS.....	19



## FOREWORD

The alarming pace of food biodiversity loss and ecosystem degradation makes a compelling case for re-examining agricultural systems and diets. Globalization, industrial agriculture, population increases and urbanization have changed patterns of food production and consumption in ways that profoundly affect ecosystems and human diets.

Today close to one billion people suffer from hunger and another two billion suffer from micronutrient deficiencies. Simplification of diets, low in variety but high in energy, contribute to the escalating problems of undernutrition and micro-nutrient deficiencies, but also of obesity and chronic diseases, particularly among poor segments of the populations in developed as well as in developing countries.

The Food and Agriculture Organization of the United Nations (FAO) activities in biodiversity, nutrition and sustainable diets aim at highlighting biodiversity, food production and food consumption as interconnected elements, with the purpose of promoting a broader assessment of the link between local food products, biodiversity, nutrition, food security and sustainability.

Currently, there is no internationally-agreed common understanding of a 'sustainable diet'. Such an agreed understanding/definition is urgently needed to address sustainability along the whole food chain, while acknowledging the interdependencies of food production, food requirements and nutrient recommendations and providing more eco-friendly food recommendations for consumers.

The notion of sustainable diets, by stressing the concept of "getting biodiversity from the farm into the plate", should guide an innovative intersectoral effort to further raise awareness of consumers and governments of the mainstreaming role of food biodiversity in human nutrition and poverty alleviation.

The workshop "Biodiversity in Sustainable Diets" which was organised jointly by FAO and Bioersity International and held at the FAO headquarters in Rome, Italy, on 31 May and 1 June 2010 aims specifically to get the experts in this field to agree on a working definition of "sustainable diets" through a set of key recommendations that address the links between diets, biodiversity and sustainability in line with the ecosystem approach.

The workshop is also a contribution from FAO and Bioersity International to the advancement of the Cross-cutting Initiative on Biodiversity for Food and Nutrition.

*Ezzeddine Boutrif*  
*Director, Nutrition and Consumer Protection Division*  
*FAO, Rome*



## **ACKNOWLEDGEMENTS**

FAO acknowledges with thanks the technical organizational support of Sandro Dernini, FAO consultant, and the very valuable contribution of all participants in the Workshop. Special appreciation is due to Denis Lairon, who served as Chairperson of the Workshop, and to Rekia Belahsen, Gianluca Brunori and Harriet Kuhnlein, who served as rapporteurs.

This document was prepared by Sandro Dernini with contributions from Barbara Burlingame, Ruth Charrondière and Stefano Mondovi. Special thanks go to Giuseppina Di Felice for her indispensable administrative support.



## ACRONYMS AND ABBREVIATIONS

AFROFOODS	INFOODS Regional Data Centre for Africa
BIOVERSITY	Bioversity International
CBD	Convention on Biological Diversity
CIAT	International Centre for Tropical Agriculture, Colombia
CIBFN	Cross-cutting Initiative on Biodiversity for Food and Nutrition
CIISCAM	International Interuniversity Studies Center on Mediterranean Food Cultures, Italy
CIHEAM	International Centre for Advanced Mediterranean Agronomic Studies
CODEX	Codex Alimentarius Commission
ENEA	National Agency for New Technologies, Energy and Sustainable Economic Development, Italy
FAO	Food and Agriculture Organization of the United Nations
FENS	Federation of European Nutrition Societies
IFAD	International Fund for Agricultural Development
INFOODS	International Network of Food Data Systems
INRAN	National Research Institute on Food and Nutrition, Italy
IUNS	International Union of Nutritional Sciences
MDGs	Millennium Development Goals
NGO	Non Governmental Organization
RUTF	Ready-to-Use Therapeutic Food



## **PREFACE**

The Food and Agriculture Organization of the United Nations (FAO) is actively promoting the conservation and sustainable use of biodiversity for food and nutrition. Biodiversity contributes to food security and improved nutrition on three levels: genetic diversity, species diversity and ecosystem diversity.

Nutrition and biodiversity converge as one common path leading to food security and sustainable development. They feature directly in the Millennium Development Goals (MDGs) to halve the proportion of people who suffer from hunger (MDG Number 1, Target 3) and to ensure environmental sustainability (MDG Number 7).

Globalization, industrial development, population increase and urbanization have changed patterns of food production and consumption in ways that profoundly affect ecosystems and human diets. High-input industrial agriculture and long-distance transport increase the availability and affordability of refined carbohydrates and fats, leading to an overall simplification of diets and reliance on a limited number of energy-rich foods. Diets low in variety but high in energy contribute to the escalating problems of obesity and chronic disease which are increasingly found alongside micronutrient deficiencies and undernourishment, sometimes in the same community or household, or even individual.

Presently, one billion people are suffering from hunger and the majority of people in most countries have become overweight and obese. The trends are alarming, highlighting the inadequacy of the present food supply and dietary patterns.

The present food production, food supply and food consumption systems do not and will not meet future human needs, because of reliance on non-renewable energy, chemicals inputs, long-distance transport, low-cost human labour, greenhouse gas emissions and marked alterations of ecosystems.

There is thus an urgent need to launch a strategy to develop the concept of sustainable diets in the various contexts around the world, in developed and developing countries, with biodiversity as a central principle for sustainable food production and food consumption. The aim of this technical workshop was to identify the key points for sustainable diets and biodiversity: economics, agriculture, environment, nutrition, health, and cultural and social aspects.

The causes and consequences of the dramatic reduction of food diversity and the simplification of diets are complex. However, the role that agricultural biodiversity plays in moderating nutritional problems is being increasingly acknowledged. The traditional food systems of indigenous peoples show the important role of a diversified diet base.

Countries, communities and cultures that maintain their own traditional food systems are better able to conserve local food specialties with a corresponding diversity of crop varieties and animal breeds. They are also more likely to show a lower prevalence of diet-related chronic diseases. The Mediterranean diet offers a clear example.

New market niches are being developed for previously underutilized and neglected food species, varieties and breeds. Indeed, food biodiversity, with its often higher and unique nutritional properties, provides products with added value which appeal to consumers and thus improve livelihoods for many rural people.

FAO is promoting a series of activities towards “sustainable diets” linking local food products, biodiversity, nutrition, and sustainability. The development of sustainable diet guidelines and a code of conduct will serve the sectors of health, agriculture, the environment and food industries to ensure and/or deliver quality nutrition, while promoting the conservation through sustainable use of food biodiversity.

*Denis Lairon*  
*Chairperson*  
*Technical Workshop*

*Barbara Burlingame*  
*Group Leader*  
*Nutrition Assessment and*  
*Nutrient Requirements Group*  
*AGNDA/FAO*

## SUMMARY

The purpose of the two-day Technical Workshop, as a contribution to the advancement of the Cross-cutting Initiative on Biodiversity for Food and Nutrition, was to obtain input from experts for a definition of “sustainable diets” through a set of key recommendations for linking sustainable diets to biodiversity in line with the ecosystem approach.

The Workshop was conceived as a transdisciplinary, intersectorial effort to counteract the simplification of diets and of agricultural systems and ecosystems, as well as the erosion of food cultures. Local food systems, household food security, ecologically-healthy and sustainable food supply chains were considered critical for maintaining and building positive options for human well-being. Existing knowledge warrants immediate action to promote the sustainable use of biodiversity in nutrition programmes.

In the Workshop, it was highlighted how local food systems, household food security, ecologically-healthy and sustainable food supply chains are critical for maintaining and building positive options for human well-being. The need to generate further scientific evidence on the nutrient composition and consumption of food biodiversity, to review the most successful case studies and to demonstrate the main role of biodiversity in nutrition, offering key options for sustainable livelihoods and poverty alleviation were also emphasised. The Mediterranean diet was presented as an example of a sustainable diet.

The Workshop served to identify topics, agenda and programme of the Scientific Symposium “Biodiversity and Sustainable Diets” to be held from 3 to 5 November 2010, at FAO Headquarters, in Rome. A draft proposal, see Annex III, for a “Code of Conduct for Sustainable Diets”, based on the model of the Code of Conduct for Marketing of Breast-milk Substitutes, was discussed and agreed to be further developed to be presented at the “Biodiversity and Sustainable Diets” Symposium. A set of proposals for the implementation of the Framework of the Cross-cutting Initiative on Biodiversity for Food and Nutrition were developed to be presented at the Symposium.



## **1. OBJECTIVES**

1. The definition of “sustainable diets” based on the ecosystem approach;
2. the provision of scientific advice and prospective paper for FAO and Bioversity on how to advance the present agenda of the Cross-cutting Initiative on Biodiversity for Food and Nutrition;
3. the identification of the topics, agenda and programme of the Scientific Symposium “Biodiversity and Sustainable Diets” to be held from 3 to 5 November 2010, at FAO Headquarters in Rome;
4. the identification of new partnerships and areas of collaboration, particularly in the direction of advocacy, policy, public awareness, research and funding.

The Technical Workshop also had the aim of identifying recommendations for a new plan of action for the Cross-cutting Initiative on Biodiversity for Food and Nutrition towards the achievement of the MDGs.

## **2. BACKGROUND**

The Cross-cutting Initiative on Biodiversity for Food and Nutrition is being jointly developed by the CBD and its partners, the Food and Agriculture Organization of the United Nations (FAO) and Bioversity International (Bioversity). This Initiative was established by decision VIII/23 A of the Conference of the Parties, held on 9-31 March 2006, in Curitiba, Brazil. 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 11, Goal 72 and related goals and targets and, thereby, to raise awareness of the importance of biodiversity, its conservation and sustainable use.

The framework of the Cross-cutting Initiative on Biodiversity for Food and Nutrition identifies the contribution of agricultural biodiversity as a priority for improving the nutrition and health of the rural and urban poor. It addresses major global health issues and trends such as micronutrient deficiencies, the decline of dietary diversity and the concomitant rise in chronic diseases that are affecting developing countries and, particularly, among the poor. The initiative promotes the use of local biodiversity, including traditional foods of indigenous and local ecosystems with their many sources of nutritionally-rich species and varieties as readily-accessible, locally-empowering and sustainable sources of quality nutrition. Furthermore, the Cross-cutting Initiative recognizes that, in an increasingly global, urban and commercial environment, fulfilment of the potential of local resources must successfully integrate production, marketing, consumption and the health of rural and urban dwellers alike as components of sustainable food systems.

To advance the Cross-cutting Initiative on Biodiversity for Food and Nutrition, the FAO Nutrition and Consumer Protection Division, in collaboration with Bioversity International and INFOODS, organized this Technical Workshop. Biodiversity contributes directly to food and nutrition security and well-being by providing a variety of plant and animal foods from domesticated and wild sources. Biodiversity can sustain productive agricultural ecosystems, serve as a safety-net for vulnerable households during times of crisis, and present income

opportunities to the rural poor. The purpose of the Technical Workshop was to define a framework and topics for the International Symposium on “Biodiversity and Sustainable Diets” to be held from 3 to 5 November 2010, at FAO headquarters in Rome, as part of the 2010 World Food Day programme.

### **3. ENVIRONMENT AND ECONOMIC ISSUES**

Food can be seen as an ecosystem service, as it is available in nature and its production can be increased by managing local ecosystems and natural cycles. Food production makes use of solar energy and water to turn Co<sub>2</sub> into sugar, complex foodwebs in the soil and outside the soil, to store and release nutrients to plants. Species and varieties adapted to local ecosystems are able to optimize the use of existing resources, and the combination of different species and varieties in space and in time can improve conditions of cultivation by structuring the soils, keeping parasites under control, defending soil from wind erosion, attracting pollinators, controlling water runoff and evaporation from soil. People's knowledge of specificities of local ecosystems, of local biodiversity developed through daily observation, interaction within rural communities, transferred from generation to generation, should also be considered a precious resource.

Modern agriculture has made food production, to a great extent, independent from the limits of local ecosystems through the use of inputs produced elsewhere. Improved species and varieties, highly input-responsive, have also created pressure on local resources, such as water, have strongly reduced local biodiversity and the use of synthetic fertilizers has made soil fertility less necessary. The possibility of making animal husbandry independent from feed production has allowed intensification and specialization. To a great extent, these developments have been made possible thanks to the availability, and relative abundance, of fossil fuels. The availability of fossil fuel has also fostered long-distance transportation, packaging, processing and refrigeration.

Food production and distribution systems have progressively made large quantities of food at relatively low prices available to people in developed countries, independently from the local availability of natural resources. Urbanization has made consumers unaware of the link to natural resources of the food they consume, and has made possible a convergence of diets across countries and across cultures. Trade has given the possibility for countries to have access to food in times of shortage, but at the same time has reduced self-reliance on local food systems.

As a result of above-mentioned processes, food consumption choices are largely decoupled from the conditions of production and from their natural limits. The process of modernization has not avoided the situation where one billion people are undernourished and many more malnourished. Modernization of agriculture has not equally benefited consumers and farmers in the world: rather it has generated winners and losers. The capacity of modern food production-distribution systems to mobilize food through global vertically-integrated commodity chains creates an increasing disparity among countries and within countries. Concentration in the food system makes producers more and more dependent on consumption choice in the North and on technical and commercial standards set by big actors in the food chain. The exchange value of food does not take into account the real cost of such systems, so

that conspicuous and unreflexive consumption is the driver of social and environmental inequality.

In a time of resource scarcity and of food crises, the limits to this model are challenged. On one hand, it is now clear that food production has natural limits as evidenced, for example, by the exhaustion of fish stocks, desertification of soils, reduction of water tables and presence water pollution. On the other hand, there is large evidence that food production and consumption compete (and will compete even more in the following years) with other human activities over the use of natural resources, such as energy, water, land, forests. Biodiversity, both natural and domesticated, having been considered as a non-resource within the dominant production and consumption patterns, has been strongly reduced. Moreover, there is increasing evidence of the contribution of food consumption and production to GHG emissions. Modern diets tend to increase the flow of long-distance, highly-processed, packaged food that contributes to the increase in GHG emissions and to depletion of non-renewable resources.

Sustainable food production is a goal that can be fulfilled by encouraging processes that respect ecosystem health, reducing agro-chemical inputs, promoting agroecological approaches to farming, focusing on resilience of production systems rather than maximization of productivity, deploying and maintaining diversity, respecting landscape complexity. In this regard, biodiversity can play a key role. In fact, biodiversity can be mobilized to implement new agricultural technologies, as an indicator of ecosystem health, as a principle for healthy, sustainable, diverse and tasty diets.

There are huge advancements that could be made in the direction of eco-efficiency, thanks to the development of sustainable production practices; but efficiency is not enough. What is needed is a clear focus on eco-effectiveness that is a reduction of pressure on resources at the global scale - and this calls consumption into question. Sustainability cannot be reached if feedback mechanisms between food production, consumption and resource use, which have been lost along with modernization, are not restored. In this regard, consumption plays a key role. As consumer choice, in the last instance, is determinant on the structure and on processes of food production, much can be done when food policies address the consumers' choice as a driver of change. First of all, consumers should be aware of the implications of their food choice on nutrition, health, use of resources, equity. In fact, consumers' freedom of choice is framed (and limited) by income, social and cultural factors, education, communication, physical access to food and food markets. All these aspects are strongly affected by the private sector. Restoring conditions for exposure of consumers to diversified information sources, including food education provided by independent bodies, and to diversified market outlets, would create the basis for a real freedom of choice.

Food security is now acknowledged as the right to affordable, nutritious and sustainable food. For many consumers income is a major barrier to freedom of choice. At the same time, market prices do not remunerate the costs farmers bear to carry out sustainable practices. If the real costs of food – including environmental and social costs – were to be calculated into market prices, it is likely that sustainable food would be as affordable as conventional food, as sustainable practices already internalize external costs. As markets do not guarantee affordable prices to consumers nor fair prices to farmers, who is going to pay for external costs? How should regulation be designed to be coherent with this principle?

Research policy deserves a specific point. In fact, at the moment, research is largely addressed to big crops and to the food industry. A lot of contradictions and unsolved problems limit the capacity of sustainable food production and consumption to develop, despite an increasing demand. These issues, in fact, are largely under-researched and any increase in research on these issue would make a significant step forward.

#### **4. NUTRITION AND HEALTH ISSUES**

The choice of foods and their contribution to nutrition and health status should involve the sustainability of the agricultural system considering biodiversity and food systems, nutritional quality, food safety and policies.

The nutrition and health sector should promote diverse food (intra- and inter- specific crop diversity) and dietary diversity by the promotion of healthy and traditional diet patterns. Nutrition and health campaigns should incorporate in their messages the promotion of biodiversity and local food consumption considering local people first. The emphasis should be on strengthening the concept of local food systems and also the sustainable use of wild species for food, and on the safeguarding of street food with improvement of their hygienic quality (sustainability/traditional ingredients). The current change of food habits with a drastic shift from traditional diet patterns has had an impact on nutrition and health status and contributes to emerging diseases (double burden of malnutrition, obesity).

In the recommended choice of foods, biodiversity should be considered and its impact on nutritional and health status emphasized. This includes generating, compiling and disseminating nutrient data on food biodiversity (species and cultivars/breeds) to characterize and enhance the nutritional value of fresh food/local foods, especially in terms of macro- and micro-nutrients and fibre density. Also, consuming minimally-processed food (particular in the case of nutritious grains) should be promoted, and post-harvest technology/food processing encouraged, enhancing nutritional value. Contribution of local crops/food permitting the consumption of food in seasons should be encouraged; an appropriate balanced consumption of plant and animal foods should be attained. The potential impact of these food choices on health in the context of nutrition transition should be stressed. This will reduce the necessity of supplementation and fortification.

Appropriate criteria and approaches should be considered for food safety in local food systems and traditional practices, distributed foods, and especially to reduce pesticide/chemical/hazard contaminants according to Codex Alimentarius.

To reduce reliance on food aid, promote a food-based approach we need to emphasize the existence of different nutrient requirements for different people (stage or way of life, ethnicity and genetic susceptibilities). Policies should not limit the use/market opportunities of the poor.

## 5. SOCIO-CULTURAL ASPECTS

Consumers in both rural and urban areas of developed and developing countries need expanded food choices that resonate with their cultures and stages of change in lifestyles so that sustainable diets can be attained. Consumers often face dilemmas about choices that reflect food that is available to them in contrast to their background cultures, conscious beliefs about environmental quality and integrity, their income and chosen lifestyle, and beliefs on the nutritional and other health benefits of foods they choose. Preferences and taste appreciation of family members also color food choices that are socially, culturally and politically acceptable. Availability and access to the diversity of foods known and used within their cultures improves possibilities for satisfactory and healthy choices by consumers that have long-term sustainability. In multi-cultural urban and rural areas a vast diversity of food choices should be possible for consumer choices among them. This is in counterpoint to the reduction of biodiversity in contemporary markets where consumers are forced to choose among many poor quality foods that are highly processed and low in nutrient density and which promote obesity and poor health.

Diversity in traditional food, nutrition and health knowledge is held especially by women and elders within cultures. Rural cultures of indigenous and local peoples living close to the land have a vast knowledge of food diversity in their regions, and how good food prevails in the ecosystem over the long term, withstanding local and regional shocks. This knowledge of food (ecosystem-species-subspecies) biodiversity and food harvesting and preparation methods is a treasure for protection of an important component of cultural expression of individuals and within families and communities that enriches life. It represents cultural knowledge of integration and harmony of the self with the near and extended ecosystem and global environment. Safeguards should be put in place for preserving local knowledge and traditions, including the benefits for mental, emotional, physical and spiritual health. Practice of these traditions will help to ensure conserving this knowledge and use of a biodiverse cultural food supply.

Like the human right to food and nutrition security, there is a human right to culture and the food biodiversity known within cultures and the sustainable diets they provide. The legal and political issues of the right to culture and the biodiversity of food resources within cultures should be activated to ensure food sovereignty. There should be legal protection for the inequalities of access to food (including its production and distribution) and food biodiversity known and enjoyed within cultures. It is also clear that use of biodiverse elements affects many aspect of cultures, not just individuals, including many aspects of social function (ceremonies) and spirituality. Corporate social responsibilities should be fostered to protect biodiverse food systems sufficient for the populations they support. Similarly, benefits from using knowledge of these food systems should be returned to the population originating this knowledge.

Barriers and opportunities for using biodiverse cultural food systems of indigenous and local peoples need to be covered by all aspects of the media in developed and developing countries using appropriate media and messaging using local language and culture principles, both in rural and urban areas. Most importantly, the people holding knowledge of biodiverse food systems must be made aware of the nutrition and health benefits of these foods, and the possibilities for increasing their use realized however possible—through social networks and the agricultural, health, environment and education sectors as well as through the media.

While local knowledge is transmitted within families and communities, and in peer-to-peer exchange, all education networks (public education as well as formal education from elementary to post-secondary levels) should describe, discuss and encourage biodiverse healthy diets for all ages and genders for the many physical, social and spiritual benefits provided. Media messages for poor-quality, low-nutrient density, industrially-produced foods and drinks must be controlled at the source.

## **6. DEVELOPMENT OF KEY POINTS AND RECOMMENDATIONS FOR A DEFINITION OF “SUSTAINABLE DIETS”, IN LINE WITH THE ECOSYSTEM APPROACH**

A sustainable diet is one which is good for humans and the eco-sphere both in the present and the long term. In this sense, any definition of “Sustainable Diets” must meet the criteria derived from diverse bodies of knowledge. A common perspective exists which sees sustainable diets as the provision of food for present and future generations, which meet soundly evidence and measures under a number of broad headings. Improvements are needed on all such factors for diets to be truly sustainable.

They include:

- environmental: including biodiversity, energy, climate change, water, land use, and soil preservation;
- public health: including food safety, nutrition, equality of access, and waste reducing;
- socio-cultural: including acceptability, ethical and moral, identity, information, and education;
- economic: including affordability, accessibility, true price, productivity, efficiency, employment and waste reduction;
- qualitative: including taste, pleasure, appearance, perceived value, freshness, and seasonality.

These factors are often addressed in food policy and supply practice as separate ‘single issues’ when they need to be viewed coherently, as an integrated policy framework. The challenge for the twenty-first century is to produce diets which improve and promote all such factors, rather than being compromised by trading off different interests. Sustainable diets are biodiversity-promoting, food-based diets meeting nutrient requirements while conserving and promoting sustainable ecosystems and human wellbeing, optimizing natural resources and respecting environment carrying capacity. Sustainable diets require a strong emphasis on local production, distribution and consumption, to reduce embedded energy, while others stress the need to prioritize incomes of farmers, associated workers as well as of the food industry or respecting and protecting cultures of consumers and communities. Each nation must take into account its specific situation.

### **Definitions - Key points:**

1. Biodiversity is a key component in this wider conception of sustainable diets and the implications of how to translate biodiversity into diets needs to be championed in current thinking about raising production and productivity for the future.

2. Sustainable diets require an intersectoral effort to counteract the simplification of diets and the degradation of agricultural systems and ecosystems, as well as a further erosion of food cultures.
3. Sustainable diets provide recommendations for food production, distribution and consumption, with minimal negative impact on the environment.
4. Sustainable diets raise awareness of consumers and governments of the role of food biodiversity in human nutrition and poverty alleviation, within an understanding of the increasing degradation of the agrofood ecosystem.
5. Sustainable diets successfully integrate production, marketing, consumption as well as the well-being of rural and urban dwellers alike as main components of a sustainable agrofood ecosystem.
6. Sustainable diets re-position nutrition, food and biodiversity as central to sustainable development and the right to food. Sustainable diets support biodiversity as one component of a shifting paradigm in approaches to alleviation of malnutrition.
7. Sustainable diets, through promotion of food biodiversity, address the whole food chain and acknowledge the interdependencies of food production, food consumption, food and nutrient recommendations.
8. Sustainable diets, through biodiversity, provide more eco-friendly foods and nutrients to consumers and help clarify what is required for an environmentally sustainable food chain.
9. Sustainable diets bring biodiversity from harvest to the plate.
10. Sustainable diets support eating patterns that are healthier for the environment as well as for consumers.
11. Within the food globalization process and the increased industrialization of agricultural systems, sustainable diets give more attention to the biodiversity and sustainability of the agrofoods ecosystems.
12. Sustainable diets use local biodiversity, including traditional foods of indigenous and local ecosystems with their many sources of nutrient-rich species and varieties as readily-accessible and locally-empowering.
13. Sustainable diets develop a common ground between biodiversity and nutrition.
14. Sustainable diets support highly-diversified local/seasonal food systems to be produced through eco-friendly practices.
15. Sustainable diets contribute to food biodiversity that supports meeting nutrient requirements of all ages and life stage groups.
16. Sustainable diets contribute to the maintenance/promotion of healthy dietary patterns within local cultures.

17. Sustainable diets enhance local food systems, household food security, ecologically-healthy and sustainable food supply chains that are critical for maintaining and building positive options for human well-being.
18. The sustainable diets concept does not include food aid, monoculture agriculture, high chemical inputs, intensive livestock industries and the non-essential use of supplements, RUFT and fortification.

## **7. RECOMMENDATIONS**

- Immediate action is required to promote the sustainable use of biodiversity in nutrition programmes as contributions to the achievement of the MDGs.
- Research projects and programmes on biodiversity and sustainable diets should be financed and supported by governments and international organizations
- Sustainable diets should be promoted by stakeholders (governments, UN organizations, civil societies, non-governmental organizations [NGO] and the private sector) to assist populations in meeting nutritional requirements through production and consumption of a biodiverse food supply with reliance on supplementations, fortification and food aid only as short-term measures.
- Decision-makers should give priority to and promote sustainable diet concepts in policies and programmes in the agriculture, environment, trade, education and health sectors. The emphasis should also be on getting nutrition higher on the agenda of plant and animal breeders, and in improving the evidence base through research on nutrient content of food biodiversity.
- The promotion and use of sustainable diets need the development of programme activities and policies towards sustainable food production, processing and food consumption to minimize environmental degradation and biodiversity loss.
- The promotion and use of sustainable diets need scientific evidence related to the nutrient composition and the consumption of food biodiversity to demonstrate key alternatives for sustainable livelihoods and poverty alleviation.
- The promotion and use of sustainable diets need the development of new projects and case studies to demonstrate the synergies of biodiversity, nutrition and socio-economic, cultural and environment sustainability, with a particular focus on developing countries. The Mediterranean diet as an example of sustainable diet should further investigated.
- Sustainable diets by integrating biodiversity into food and nutrition security and anti-hunger policies should be further promoted to generate more socio-economic benefits supporting poverty-alleviation efforts.

- Sustainable diets must be compatible with a fair distribution of economic value among the actors of the food system and must have an effective social impact.
- Policies at all levels of government should reflect concern and need for increasing food biodiversity and sustainability of healthy diets for the food and nutrition security of the population. Ministries involved should collaborate in policy development—including the Ministries of Agriculture, Environment, Health, Education, Culture, Finance, etc. The private and public sector should be involved in discussions, including social entrepreneurs, NGOs, foundations, and concerned private citizens.
- Tools for measuring the gradual enhancement of food biodiversity and sustainable diets should be developed and implemented by the United Nations agencies.
- Sustainable diets through a biodiversity perspective need to be further explored in the fields of trade, environment, agriculture, nutrition, health, education, and culture, to demonstrate benefits to many sectors and institutions, such as those of the UN system, civil society and private sector.
- Proponents of sustainable diets should develop broader alliances with the environment sector, that traditionally is the home of most biodiversity activity, but does not generally consider these resources in terms of food, nutrients or human nutrition.
- Sustainable diets should further enhance the Cross-cutting Initiative on Biodiversity for Food and Nutrition to counteract the simplification of diets and of agricultural systems and ecosystems.

## **8. PROPOSALS FOR THE IMPLEMENTATION OF ELEMENTS WITHIN THE FRAMEWORK OF THE CROSS-CUTTING INITIATIVE ON BIODIVERSITY FOR FOOD AND NUTRITION**

The framework of the Cross-cutting Initiative on Biodiversity for Food and Nutrition is built around four elements:

- element 1: Developing and documenting knowledge;
- element 2: Integration of biodiversity, food and nutrition issues into research and policy instruments;
- element 3: Conserving and promoting wider use of biodiversity for food and nutrition;
- element 4: Public awareness and their supporting activities.

The following proposals were made for the implementation of the Initiative's framework:

- to develop a common understanding of a sustainable diet;
- to develop a shared vision on how to achieve sustainable diets through biodiversity;
- to foster intersectoral and inter-disciplinary dialogue/linkages;
- to promote an integrated approach involving the relevant sectors;
- to promote development of enabling policies at national/inter level.

**DRAFT PROPOSAL FOR A “CODE OF CONDUCT FOR SUSTAINABLE DIETS,” based on the model of the Code of Conduct for Marketing of Breast-milk Substitutes.**

Affirming the right of every human being to be adequately nourished, as a means of attaining and maintaining health;

Acknowledging that malnutrition is part of the wider problems of lack of education, poverty and social injustice;

Recognizing that the health of humans cannot be isolated from the health of ecosystems;

Conscious that food is an unequalled way of providing ideal nutrition for all ages and life stages;

Recognizing that the conservation and sustainable use of food biodiversity is an important part of human well-being;

Considering that when ecosystems are not able to support sustainable diets, there is a legitimate use of supplements, RUTF and fortificants; that all these products should accordingly be made accessible to those who need them through commercial or non-commercial distribution systems; and that they should not be marketed or distributed in ways that may interfere with sustainable diets;

Recognizing further that when ecosystems are able to support sustainable diets, nutrition programmes, policies and interventions supporting the use of supplements, RUTF, fortificants, and infant formulas are inappropriate and can lead to malnutrition, and that the marketing of these food substitutes and related products can contribute to major public health problems;

Appreciating that there are a number of social and economic factors affecting sustainable diets, and that, accordingly, governments should develop social support systems to protect, facilitate and encourage them, and that they should create an environment that fosters sustainable diets, provides appropriate family and community support and protection from factors that inhibit it;

Affirming that health-care systems, and the health professionals and other health workers serving in them, have an essential role to play in guiding sustainable diet practices, encouraging and facilitating sustainable diets, and providing objective and consistent advice to families, communities and governments about the superior value of sustainable diets;

Affirming further that educational systems and other social services should be involved in the protection and promotion of sustainable diets;

Aware that families, communities, women's organizations and other nongovernmental organizations have a special role to play in the protection and promotion of sustainable diets, particularly for pregnant and lactating women and infants and young children;

Affirming the need for governments, organizations of the United Nations system, non-governmental organizations, experts in various related disciplines, consumer groups and industry to cooperate in activities aimed at the improvement of human and environmental health through sustainable diets;

Considering that manufacturers and distributors of food substitutes have an important and constructive role to play in relation to sustainable diets, and in the promotion of the aim of this Code and its proper implementation;

Affirming that governments are called upon to take action appropriate to their social and legislative framework and their overall development objectives to give effect to the principles and aim of this Code, including the enactment of legislation, regulations or other suitable measures;

Believing that, in the light of the foregoing considerations, and in view of the vulnerability of ecosystems, and the human health risks involved in inappropriate feeding practices, including the unnecessary and improper use of food substitutes, the marketing of substitutes requires special treatment, which makes usual marketing practices unsuitable for these products;

**THEREFORE:**

The Technical Workshop on Sustainable Diets and Biodiversity calls for a Code of Conduct to be drafted and presented at the “Biodiversity and Sustainable Diets” Symposium, as a basis for action.

*Article 1. Aim of the Code*

*Article 2. Scope of the Code*

*Article 3. Definitions*

*Article 4. Information and education*

*Article 5. Consumers*

*Article 6. Health Sector, Agriculture Sector, Environment Sectors, Food Industry Sector*

*Article 7. Implementation and monitoring*

## ANNEX II

### AGENDA

#### Technical Workshop on 'Biodiversity in Sustainable Diets'

<b>31 May 2010</b>	<b>MORNING</b>	
<b>10.00-10.30</b>		
<b>10.00-10.30</b>	<b>OPENING SESSION</b> <i>Welcome and Opening Remarks</i>	FAO, Bioversity International
<b>10.30-11.00</b>	1. Objectives and expected outputs of workshop 2. Review of background paper key points	
<b>11.00-11.15</b>	<i>Coffee break</i>	
<b>11.15-13.00</b>	3. Election of Chair and Rapporteurs 4. Open discussion: Definition of a sustainable diet within an ecosystem approach 5. Break out into working groups to focus on key recommendations leading to a definition and guiding principles of sustainable diets	Facilitator: Sandro Dernini
<b>13.00-14.00</b>	<i>Lunch Break</i>	
<b>AFTERNOON</b>		
<b>14.00-16.00</b>	Preparation of working group reports	
<i>Coffee and tea available at 15.30</i>		
<b>16.00-18.00</b>	Presentation of working group reports and plenary discussion	Rapporteurs and participants
<b>1 June 2010</b>		
<b>MORNING</b>		
<b>09.00-10.15</b>	Revision of working group reports - discussion	All participants
<b>10.15-10.30</b>	<i>Coffee break</i>	
<b>10.30-13.00</b>	Editing and approval text definition of sustainable diets	Rapporteurs and participants
<b>13.00-14.00</b>	<i>Lunch Break</i>	
<i>Coffee and tea available at 16.00</i>		
<b>14.00-15.30</b>	<ul style="list-style-type: none"> <li>• Advice for the agenda of the Scientific Symposium October 18-20, 2010</li> <li>• Cross-cutting Initiative on Biodiversity for Food and Nutrition: directory priorities</li> </ul>	
<b>15.30-16.30</b>		
<b>16.30-17.00</b>		
<b>CONCLUDING REMARKS</b>		



## ANNEX III

### LIST OF PARTICIPANTS

*Isaac Akinyele*  
*Head, Department of*  
*Nutrition University of Ibadan,*  
*Nigeria*

*Rima Alcadi*  
*Economist / Coordinator of Small*  
*Grants*  
*IFAD, Programme Management*  
*Department ,*  
*Rome,*  
*Italy*

*Rekia Belahsen*  
*(Rapporteur Working Group Nutrition*  
*and Health Issues)*  
*General Secretary, IUNS-International*  
*Union of Nutrition Societies*  
*Professor Training and Research Unit*  
*on Nutrition and Food Sciences*  
*Chouaib Doukkatli University,*  
*Morocco*

*Gianluca Brunori*  
*(Rapporteur Working Group*  
*Environment and Economic Issues)*  
*Professor Dept. of Agronomy and*  
*Agro-ecosystem Management*  
*University of Pisa,*  
*Italy*

*Carlo Cannella*  
*President, INRAN, Rome, Italy*  
*Director, CIISCAM,*  
*Rome,*  
*Italy*

*Massimo Iannetta*  
*Head, Sustainable Development and*  
*Innovation of the Agro-Industrial*  
*System Technical Unit, ENEA,*  
*Rome,*  
*Italy*

*Harriet V. Kuhnlein*  
*(Rapporteur Working Group Socio-*  
*Cultural Aspects)*  
*Founding Director, Professor of*  
*Human Nutrition*  
*CINE,*  
*Canada*

*Denis Lairon*  
*(Chairman Workshop)*  
*President, FENS-European*  
*Federation of Nutrition Societies*  
*University Aix-Marseille, France*

*Timothy Lang*  
*(by telephone conference)*  
*Professor of Food Policy, Centre for*  
*Food Policy*  
*City University London,*  
*United Kingdom*

*Helena Pachón*  
*Director, Nutrition Quality*  
*Laboratory*  
*CIAT,*  
*Colombia*

*Martine Padilla  
Scientific Director  
CIHEAM-IAMM, Montpellier  
France*

*Flavio Paoletti  
Head, Production Systems and  
Technological Processes: Vegetable  
Quality Production, INRAN,  
Rome,  
Italy*

**FAO Participants**

*Barbara Burlingame  
Group Leader, Nutrition Assessment  
and Nutrient Requirements Group  
Nutrition and Consumer Protection  
Division, FAO*

*Ruth Charrondière  
Nutrition Officer  
Nutrition Assessment and Nutrient  
Requirements Group  
Nutrition and Consumer Protection  
Division, FAO*

*Sandro Dernini  
Consultant, Nutrition Assessment and  
Nutrient Requirements Group  
Nutrition and Consumer Protection  
Division, FAO*

*Marie-Claude Dop  
Nutrition Officer  
Nutrition Assessment and Nutrient  
Requirements Group  
Nutrition and Consumer Protection  
Division, FAO*

*Charlotte Dufour  
Consultant, Nutrition Education and  
Nutrition Awareness Group  
Nutrition and Consumer Protection  
Division, FAO*

*Ruth Garcia Gomez  
Associate Professional Officer  
Aquaculture Service, Fisheries and  
Aquaculture Department, FAO*

*Harinder Makkar  
Animal Production Officer  
Livestock Production System Branch  
Animal Production and Health  
Division, FAO*

*Stefano Mondovi  
Consultant, Nutrition Assessment  
and Nutrient Requirements Group  
Nutrition and Consumer Protection  
Division, FAO*

*Florence Tartanac  
Agro-industries Officer  
Post-harvest Management Group  
Rural Infrastructure and Agro-  
industries Division, FAO*

**From Bioversity International**

*Emile Frison  
Director-General  
Bioversity International*

*Kwesi Attah-Krah  
Deputy Director-General  
Bioversity International*

*Mauricio Bellon Corrales  
Programme Director  
Bioversity International*

*Stefano Padulosi  
Senior Scientist  
Bioversity International*

*Jessica Fanzo  
Senior Scientist  
Bioversity International*

**Working Groups:**

Working Group 1. Environment and Economic Issues

Rapporteur: Gianluca Brunori; participants: Mauricio Bellon Corrales, Ruth Charrondière, Marie-Claude Dop, Massimo Iannetta, Martine Padilla, Flavio Paoletti.

Working Group 2: Nutrition and Health Issues

Rapporteur: Rekia Belahsen; participants: Isaac Akinyele, Barbara Burlingame, Denis Lairon, Helena Pachón, Stefano Padulosi, Rekia Belahsen,

Working Group 3: Socio-Cultural Aspects

Rapporteur: Harriet V. Kuhnlein; participants: Rima Alcadi, Kwesi Attah-Krah, Charlotte Dufour, Stefano Mondovi.



## LIST OF BACKGROUND PAPERS

- 1) Framework for a Cross-cutting Initiative on Biodiversity for Food and Nutrition, Decision VIII/23A, 8<sup>th</sup> Conference of the Parties of the Convention on Biological Diversity, Curitiba, Brazil, 2006; <http://www.cbd.int/decision/cop/?id=11037>
- 2) Toledo, A. and Burlingame, B. *Biodiversity and nutrition: A common path toward global food security and sustainable development*. Journal of Food Composition and Analysis. 19 (2006) 477-483;
- 3) John, T. and Eyzaguirre, P. *Linking biodiversity, diet and health in policy and practice*. Proceeding of the Nutrition Society. 65 (2006) 182-189;
- 4) Herrin, M. and Gussow, JD. *Designing a Sustainable Regional Diet*, Journal Nutrition Education. 21 (1989) 270-275;
- 5) Nestle, M. *Ethical dilemmas in choosing a healthful diet: vote with your fork*. Proceeding of the Nutrition Society. 59 (2000) 619-629;
- 6) CIISCAM. *Biodiversity? Sustainable Food for All. The Mediterranean Diet as an Example of Sustainable Diet*. Talk Show Proceedings. Rome, 22 May 2010;
- 7) The CIHEAM Watch Letter, *The Mediterranean Diet*, Spring 2010, N. 13;
- 8) Sustainable Development Commission. *Setting the Table, Advice to the Government on priority elements of sustainable diets*. 2009;
- 9) Lang, T. *What is a sustainable diet for planet earth?* paper non published, 2009;
- 10) FAO and SINER-GI. *Linking People, Places and Products. A guide for promoting quality linked to geographical origin and sustainable geographical indications*. 2009;
- 11) Millennium Ecosystem Assessment. *Ecosystems and Human Well-Being. A Framework for Assessment*. 2003;
- 12) World Bank. *Directions in Development. Repositioning Nutrition as Central to Development. A Strategy for Large-Scale Action*. 2006;
- 13) AFROFOOD. *Call for Action from the Door of Return*, Dakar, 10 December 2009, <http://www.fao.org/infoods/AFROFOOD%20CALL%20and%20APPEL.pdf>;
- 14) CIISCAM. *The Mediterranean Diet Today, A Model of Sustainable Diet*. Conference Brochure, Parma, Italy, 3 November 2009, [http://www.ciiscam.org/files/download/Convegno%20ed%20Eventi/parma\\_brochure\\_en.pdf](http://www.ciiscam.org/files/download/Convegno%20ed%20Eventi/parma_brochure_en.pdf)