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Food Security and Sustainable Agriculture

1. Introduction

Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Food security covers availability, access, utilization and stability issues, and — in its focus on individuals — also embraces their energy, protein and nutrient needs for life, activity, pregnancy, growth and long-term capabilities¹. Sustainable agriculture is not officially defined but generally refers to the capacity of agriculture over time to contribute to overall welfare by providing sufficient food and other goods and services in ways that are economically efficient and profitable, socially responsible, and environmentally sound.²

This brief reviews international time-bound and some qualitative commitments in the area of food security and sustainable

agriculture agreed to in: Agenda 21 (1992); Rome Declaration on World Food Security (1996)³; JPOI (2002); MDGs (2000) and CSD17 decision on agriculture, rural development and drought and desertification. Implementation activities against these commitments are reviewed as well as proposals made so far by member states and other stakeholders in the context of Rio+20 to fill gaps in implementation.

2. Existing time-bound commitments

Chapter 14 of Agenda 21 is dedicated to sustainable agriculture and rural development (SARD). The chapter contains ten time-bound commitments and cross-references are made to chapter 18 (with three agriculture-related time-bound commitments), 19 (with four), and 21 (with one). Those taken up again at Johannesburg were only included once in the JPOI.

Table 1. Summary of time-bound commitments and progress

Source document	Target	Delivery Date	Progress
Agenda 21 Chapter 14	Promoting sustainable agriculture and rural development	--	--
A. Agricultural policy review, planning and integrated programmes in the light of the multifunctional aspect of agriculture, particularly with regard to food security and sustainable development Para 14.8	a) to review and, where appropriate, establish a programme to integrate environmental and sustainable development with policy analysis for the food and agriculture sector and relevant macroeconomic policy analysis, formulation and implementation;	1995	Not achieved. Several efforts such as IAASTD have advance thinking, but without consensus.
	b) To maintain and develop, as appropriate, operational multisectoral plans, programmes and policy measures, including to enhance sustainable food production and food security;	1998	Some countries have made progress, e.g CAADP Not achieved by 2005 but CAADP helped by 2008
	c) To maintain and enhance the ability of developing countries, particularly the least developed ones, to themselves manage policy, programming and planning activities	2005	Idem
E. Land conservation and rehabilitation Para 14.45	(a) To review and initiate, as appropriate, national land-resource surveys, detailing the location, extent and severity of land degradation; (b) To prepare and implement comprehensive policies and programmes leading to the reclamation of degraded lands and the conservation of areas at risk, as well as improve the general planning, management and utilization of land resources and preserve soil fertility for sustainable agricultural development.	2000	a) Progress in methods and tools for land degradation assessments. b) Some countries have made progress in conservation tillage systems, groundwater, and watershed management.

G. Conservation and sustainable utilization of plant genetic resources for food and sustainable agriculture Para 14.57	(c) to adopt policies and programmes for in situ on-farm and ex situ conservation and sustainable use of plant genetic resources for food and agriculture, integrated into strategies and programmes for sustainable agriculture.	2000	Some programs are in place but funding is lacking
I. Integrated pest management and control in agriculture Para 14.75	(a) to improve and implement plant protection & animal health services, including mechanisms to control the distribution and use of pesticides, and to implement the International Code of Conduct on the Distribution and Use of Pesticides;	2000	Limited progress has been made on IPM, more needed
	(c) to establish operational and interactive networks among farmers, researchers and extension services to promote and develop integrated pest management.	1998	Progressed in some countries, especially on IPM and declined in others
J. Sustainable plant nutrition to increase food production Para 14.85	(a) to develop and maintain in all countries the integrated plant nutrition approach, and to optimize availability of fertilizer and other plant nutrient sources;	2000	Not achieved. Several areas are nutrient depleted
	(b) to establish and maintain institutional and human infrastructure to enhance effective decision-making on soil productivity.	2000	Not achieved
Agenda 21 Chapter 18	Protection of the quality and supply of freshwater resources: application of integrated approaches to the development, management and use of water resources	--	--
F. Water for sustainable food production and sustainable rural development Para 18.68	FAO projections for improved irrigation, drainage and small-scale water programmes for 130 developing countries: (a) 15.2 million hectares of new irrigation development; (b) 12 million hectares of improvement/modernization of existing schemes; (c) 7 million hectares installed with drainage and water control facilities; and (d) 10 million hectares of small-scale water programmes and conservation.	2000	Partially achieved through large scale irrigation systems Modernisation lagging. Sub-Saharan Africa lacks basic infrastructure in many cases
Agenda 21 Chapter 19	Environmentally Sound Management of Toxic Chemicals, Including Prevention of Illegal International Traffic in Toxic & Dangerous Products	--	--
A. Expanding and accelerating international assessment of chemical risks Para 19.13	To strengthen international risk assessment. Several hundred priority chemicals or groups of chemicals, including major pollutants and contaminants of global significance, should be assessed, using current selection and assessment criteria.	2000	Partially achieved. (e.g. DDT use in Stockholm Convention)
B. Harmonization of classification and labelling of chemicals Para 19.27	Globally harmonized hazard classification and compatible labelling system, including material safety data sheets and easily understandable symbols, should be available, if feasible.	2000	Harmonized system developed. Uptake is slow

C. Information exchange on toxic chemicals and chemical risks. Para 19.38	As feasible, full participation in and implementation of the PIC procedure, including possible mandatory applications through legally binding instruments, taking into account the experience gained within the PIC procedure.	2000	Achieved in 2004 through Rotterdam Convention
E. Strengthening of national capabilities and capacities for management of chemicals. Para 19.58	National systems for environmentally sound management of chemicals, including legislation and provisions for implementation and enforcement, should be in place in all countries to the extent possible.	2000	Some progress made. Limited resources and political will hamper progress
Agenda 21 Chapter 21	Environmentally Sound Management of Solid Wastes & Sewage-Related Issues	--	--
A. Minimizing wastes Para 21.9	(c) Apply, in all countries, in particular in industrialized countries, programmes to reduce the production of agrochemical wastes, containers and packaging materials, which do not meet hazardous characteristics.	2000	Not achieved
Johannesburg Plan of Implementation (including those reiterated from MDGs and above)			
Chapter II. Poverty Eradication Para 7	(a) Halve the proportion of the world's people whose income is less than 1 dollar a day and the proportion of people who suffer from hunger	2015	On track to reach poverty but not hunger target.
Chapter III. Changing unsustainable patterns of consumption and production Para 23	(c) Encourage countries to implement the new globally harmonized system for the classification and labelling of chemicals as soon as possible with a view to having the system fully operational by 2008	2008	Limited capacity to implement hampers progress in developing countries
Chapter IV. Protecting and managing the natural resource base of economic and social development Para 40	(a) Achieve the Millennium Declaration target to halve the proportion of the world's people who suffer from hunger and realize the right to a standard of living adequate for the health and well-being of themselves and their families, including food, including by promoting food security and fighting hunger in combination with measures which address poverty.	2015	On track to reach poverty but not hunger target. Food crisis in horn of Africa
Para 26 [only those closely related to agriculture included]	Develop integrated water resources management and water efficiency plans, with support to developing countries, through actions at all levels to: (a) Develop and implement national/regional strategies, plans and programmes with regard to integrated river basin, watershed and groundwater management and introduce measures to improve the efficiency of water infrastructure to reduce losses and increase recycling of water; (c) Improve the efficient use of water resources and promote their allocation among competing uses in a way that gives priority to the satisfaction of basic human needs and balances the requirement of preserving or restoring ecosystems and their functions.	2005	Not achieved 26 CAADP national plans of action + 16 peer reviewed national investment plans through the L'Aquila Food Security Initiative Not achieved – several areas are running out of water

The Rome Declaration on World Food Security had seven more detailed commitments (without targets or time limits). These included commitments (1) to provide enabling political, social, and economic environment, as well as (2) and (4) policies, including trade policies to improve food security, (3) pursue participatory and sustainable food, agriculture, fisheries, forestry and rural development policies and practices everywhere and at all levels, (5) prevent and be prepared for natural disasters and man-made emergencies, (6) promote optimal allocation and use of public and private investments to foster human resources, sustainable food, agriculture, fisheries and forestry systems, and rural development, and (7) implement, monitor, and follow-up this Plan of Action at all levels in cooperation with the international community.

3. Delivery on commitments

3.1 General assessment

Global delivery of the food security and sustainable agriculture-related commitments has been disappointing. Since the 1996 World Food Summit, the 8th session of the Commission on Sustainable Development in 2000 and the Johannesburg Plan of Implementation adopted by the World Summit on Sustainable Development in 2002, as well as the Millennium Declaration goals all reaffirmed the objective of, and called for the implementation of, the World Food Summit. CSD-17 reiterated several of the quantitative Agenda 21 objectives. The summary of the Secretary General Report on Agriculture for CSD-17 called for *“renewed commitment and a new vision for global cooperation to implement policies that simultaneously aim at increasing agricultural productivity, creating fair trade regimes, conserving natural resources and promoting investment in agricultural related infrastructure.”*⁴ Several of the proposed options and measures focused on natural resources management and reiterated previous commitments. The difference with previous reviews is the focus on social issues, on small holder, especially women farmers, who must be at the center of any intervention. Reducing the gender gap in access to agricultural inputs alone would increase women’s yields by 20-30%.⁵ The close interdependencies, or nexus, of water, energy and land management have been accentuated by climate change. Numerous examples of successful actions worldwide to effect integrated resources management are available for replication or scaling up.⁶

3.2 Agricultural policies

By June 2008, before the food crisis, a dozen African countries were actively developing or implementing compacts or national plans of action under the Comprehensive Africa Agriculture Development Program (CAADP) aimed at eliminating hunger and reducing poverty by increasing public investment in agriculture to 10 per cent of their national budgets and raising agricultural

productivity by at least 6 per cent by 2015. Only four countries have met their spending target, and investment in national plans and the public sector contribution to agriculture and rural development have been very variable, with a significant number of countries showing low or declining contributions.

Some progress has been made in mountain regions (through the FAO-SARD-M(mountain) partnership), in globally important agricultural heritage systems and through the TerrAfrica process (for stocktaking review and development of strategic investment frameworks) for sustainable land management in sub-Saharan Africa⁷.

Decades of disinvestment in agriculture were reversed following the 2008 food crisis that highlighted the need for sound agricultural development plans to achieve food and nutrition security, economic growth and progress on the MDGs. Renewed government commitment led to a rise in public agricultural research and development in Brazil, China and India. In addition, the G8-led l’Aquila Food Security Initiative committed to mobilise \$22 billion over three years to support country-led plans for agriculture and food and nutrition security. In Africa, the fund specifically supports countries’ CAADP processes. So far, only the equivalent of USD 925 million has been pledged but the process has sped up the completion of national plans.

The Five Rome Principles for Sustainable Global Food Security and the High Level Task Force on Global Food Security have set up principles and a framework for increased investment in agriculture and food security and improved coordination of international interventions through the updated Comprehensive Framework for Action (CFA). The Committee on Food Security was also reformed and the Global Strategic Framework for Food Security and Nutrition (GSF) now provides strategies to foster coordinated and coherent global and national action, while the recent International Assessment of Agricultural Knowledge, Science and Technology for Development has stressed the close linkages between food security and sustainable agriculture.

3.3 Land, plant, water, pest management

The SARD initiative was created in 2002 to help implement Chapter 14 of Agenda 21. The initiative has developed various policy briefs, tools, databases of good practices and guides that were published on the FAO-SARD web site⁸ and a summary of achievements was submitted to the 16th CSD session. Like many of the CSD partnerships, the SARD initiative ceased operations in 2008 but not before leading to the creation of several new multistakeholder partnerships and policies. A number of investments and innovative approaches have also come out of non-governmental partnerships such as Sustainable Rice Intensification.

3.4 Irrigation

Irrigation investments increased in the 1960s and 70s, slowed down in the 80s, and started increasing again thereafter. However, irrigation is challenged by aging infrastructures, increasing water scarcity, and the need for more flexible water management strategies to account for ecosystem water requirements. Some regions such as Sub-Saharan Africa still lag behind in terms of irrigation infrastructure.

3.5 Drought and desertification

Progress includes (i) conservation tillage systems spreading worldwide, (2) groundwater management and recharge to address land and water contamination by salts and chemicals in regions such as Andhra Pradesh, India, (3) watershed and river basin management including capacity building of local institutions and benefit sharing arrangements in parts of Latin America and Africa, iv) holistic livestock management, as well as v) agroforestry and integrated crop-livestock systems for diversification and other benefits.

The TerrAfrica partnership also promoted the preparation and the implementation of national soil and land management (SLM) investment frameworks in more than 25 African countries to support the CAADP process. Several policy guidelines, data bases on SLM best practices (WOCAT), and a set of methods and tools for conducting national and local level land degradation assessments emerged (FAO-LADA) and were piloted in 6 countries, then further used in 20 countries for supporting UNCCD implementation.

3.6 Sound management of agricultural chemicals and packaging

Progress is more notable in this area with most countries having some regulatory system in place since 2000. Closer linkage with wider chemicals management has been achieved since the creation of IOMC and the creation of SAICM in 2007. Yet, limited capacity for implementation in developing countries hampers progress. Progress has also been slow in implementing effective methods to register pesticides and address illegal trade, poor quality products and poor health and safety practices among pesticide users.

3.7 Halving hunger

The 2011 MDGs Report estimates that countries are on track to meet the poverty target of MDG1 but, with the 2008 food crisis and subsequent rise in food prices and price volatility, not the hunger target. In addition, these results hide geographical differences. The horn of Africa is currently facing a food crisis and though economic growth in East Asia, especially China, has

reduced the incidence of undernourishment in this region, South Asia contains the largest number of hungry people, 36 per cent of all undernourished people in the developing world. As many as 20 per cent more people could be at risk of hunger owing to climate-related losses in productivity, the majority in sub-Saharan Africa.⁸

Brazil offers an example of a holistic approach to fighting hunger and poverty through its Zero Hunger program. The Bolsa Familia program transfers cash to poor households on condition that the children attend school and keep up-to-date on vaccinations and health check-ups. The school meals program feeds 47 million children a day while supporting family agriculture, procuring up to 30 percent of the food from local family farmers, while involving supermarket chains. The program has lifted around 49 million Brazilians out of poverty and aims to lift the remaining 16 million poor out of poverty by 2014. Brazil has now launched the Centre of Excellence Against Hunger to share this experience and develop technical cooperation in African, Latin American and Asian countries.

4. Recent proposal to address the gap between commitments and delivery

Several submissions to the Compilation Text⁹ put food security and sustainable agriculture at the top of their priorities for Rio+20 and even at the center of the green economy. Several submissions also highlight that CSD-17 serves as a good basis for the Rio+20 outcome on the topic..

4.1 Sustainable development goals

The farmers' major groups has proposed the following goals:

- Increase the proportion of overseas development assistance focused on agriculture and rural development to 20%;
- countries meeting their I'Aquila and CAADP commitments;
- Increase yields on women's farms by 2.5% to 4%.

The Bonn DPI/NGO conference declaration from 1400 Civil Society Organizations has proposed:

- By 2030, global agricultural production is transformed from industrial to sustainable. Chemical inputs, herbicides, and pesticides are largely replaced with organic and biological alternatives. Interspersed natural areas are protected and restored as sources of pollination, pest control and soil fertility. Food for export is secondary to food for local consumption. Cultivated crop strains are diversified, as are production techniques and the mix of agricultural producers.
- Best management practices reduce erosion by 90% and nitrogen runoff by 50% or more.

UNSGAB proposed 70% of irrigated land using technology that increases crop per drop by 20x

5. How SDGs could be structured in this area

An overarching goal in this area could be universal access to nutritious foods, produced in a sustainable and resilient way, creating decent jobs, using less water, energy, land, and pesticides while preserving biodiversity. Several specific targets have been proposed in various submissions to the compilation text. These include: (1) zero net land degradation; (2) 20% increase in total food supply-chain efficiency – reducing losses and waste from field to fork; (3) 20% increase in water efficiency in agriculture—more nutrition and crop per drop; (4) 70% of irrigated land using technology that increases crop per drop. Means of implementation targets could include: (1) increase the proportion of overseas development assistance focused on agriculture, food security and rural development to 20%; (2) target an increasing share of these funds and extension services to smallholders and women farmers to support local production; and (3) support integrated food and nutrition security and sustainable agriculture and rural development action plans and policies, including through enhanced technical cooperation among countries and regions.

The purpose of the Rio 2012 Issues Briefs is to provide a channel for policymakers and other interested stakeholders to discuss and review issues relevant to the objective and themes of the conference, including a green economy in the context of sustainable development and poverty eradication, as well as the institutional framework for sustainable development.

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¹World Food Summit, Declaration on World Food Security. Held in Rome, Italy 13-17 November 1996. <http://www.fao.org/docrep/003/w3613e/w3613e00.htm>

²Sustainable Development Innovation Brief Issue 7. May 2009. The contribution of sustainable agriculture and land management to sustainable development. New York: UNDESA-DSD.

³World Food Summit 2006

⁴DESA 2009. Agriculture - Report of the Secretary-General on policy options and actions for expediting progress in implementation. E/CN.17/2009/.

⁵FAO's State of Food and Agriculture Report 2010-11

⁶FAO's State of the World's Land and Water Resources for Food and Agriculture. Forthcoming at <http://www.earthscan.co.uk/?tabid=102754>.

⁷available at: <http://www.fao.org/sard/en/sardm/Communi/index.html>

⁸<http://www.fao.org/sard/en/init/2536/966/index.html>

⁹<http://www.uncsd2012.org/rio20/index.php?page=view&nr=273&type=230&menu=38>