



SAFA

Sustainability Assessment of Food and Agriculture systems

Guidelines

(Test Version 1.0)

NATURAL RESOURCES MANAGEMENT AND ENVIRONMENT DEPARTMENT

FAO, Rome, 12 June 2012

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 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.

Acknowledgements

The Natural Resources Management and Environment Department is grateful for the research work provided by Sasha Courville, Jan Grenz, Elisabeth Guttenstein, Julia Jawtuschk, Madeleine Kaufmann, Jonathan Loh, Noemi Nemes, Christian Schader, Susanne Stalder and Christian Thalmann.

Special thanks go to the hundreds individuals who provided their insights on the occasion of the SAFA experts consultations held in November 2009 and April 2011, electronic fora held in early 2011 and 2012, and numerous stakeholders' surveys and interviews. Last but not least, the knowledge of nearly one hundred colleagues across the legal, agriculture, forestry, fisheries, social and economic Departments of FAO is acknowledged.

Preface

The SAFA guidelines are produced in the same spirit of codes of practice, guidelines and other recommended measures to assist in achieving fair practices in food and agriculture production and trade. This publication is intended to guide and promote the elaboration and establishment of definitions and requirements for sustainable food and agriculture systems and to assist in their harmonisation.

The SAFA guidelines are the result of an iterative process, built on the cross-comparisons of codes of practice, corporate reporting, standards, indicators and other technical protocols currently used by food and other companies and organizations that implement sustainability tools. The structure and methodology of the SAFA Guidelines draw specifically upon: ISO 14040:2006 (International Organization for Standardization, 2009), the ISEAL Code of Good Practice (version 1.0; International Social and Environmental Accreditation and Labelling Alliance, 2010), the Reference Tools of the Global Social Compliance Programme (GSCP, 2010) and the Sustainability Reporting Guidelines and Food Sector Supplement of the Global Reporting Initiative (version 3.1; GRI, 2011a; 2011b).

The SAFA Guidelines consist of three parts. Part A contains the rationale, purpose, vision, goals and principles of SAFA. Part B outlines the procedure of SAFA implementation. Part C contains the list of SAFA categories and indicators.

This Guidelines version will be pilot tested in a number of settings, including small and large food and non-food chains, at the agriculture, processing and retail levels, in both developed and developing countries. Based on the pilot tests' outcomes, the SAFA Guidelines will be revised and finalised in 2013 in order to improve their practicality, applicability, usefulness and soundness.

Further information on SAFA may be obtained from:

Nadia El-Hage Scialabba
Natural Resources Management and Environment Department
Food and Agriculture Organization of the United Nations
Viale Terme di Caracalla
00153 Rome, Italy
Tel: +39 06 5705 6729
Fax: +39 06 5705 3064
E-mail: nadia.scialabba@fao.org
Website: www.fao.org/nr/sustainability/sustainability-assessments

Foreword

These guidelines have been prepared for the purpose of providing an agreed approach to the requirements which underpin sustainable production, manufacturing and retailing of food and agriculture products.

The aims of these guidelines are:

- to offer a fair playing field to primary producers, manufacturers and retailers in the food and agriculture sector, including crops, livestock, forestry and fisheries production of food, fibre, energy and other biomass-related products;
- to provide a benchmark that defines the essential components of sustainable food and agriculture systems, including the natural, social, economic and institutional components;
- to provide a template for agriculture and food sustainability assessment, for those who wish to substantiate sustainability claims.

These guidelines are the result of three years of participatory development, together with practitioners from civil society and private sector. At this stage, the guidelines are a first step into international harmonisation of the requirements for sustainability in terms of production and marketing of sustainable agriculture, forestry and fisheries commodities. Experience with the development of such requirements and their implementation is still limited. Moreover, perception on what sustainability entails differs widely among stakeholders. Therefore, the following is recognised at this stage:

- the guidelines are a useful instrument in assisting producers, manufacturers and retailers to undertake sustainable management and reporting;
- the guidelines need regular improvement and updating in order to take into account technical progress and the experience with their implementation;
- the guidelines do not prejudice the implementation of more customised arrangements and more detailed requirements by stakeholders in order to respond to specific consumer demands.

The guiding vision of SAFA is that food and agriculture systems worldwide are characterised by environmental integrity, economic resilience, social well-being and good governance. The SAFA Guidelines support a sustainability management that facilitates continuous progress towards this vision. A SAFA is a voluntary rating of sustainability performance at the level of a company or production site, according to an authoritative and verifiable reference. The SAFA Guidelines specify principles, procedure, thematic scope and rating criteria.

Twenty years have passed since the principle of sustainable development received nearly universal agreement at the 1992 Earth Summit. Recent years have seen some progress in the realisation of a socially, economically and environmentally sustainable development. Many stakeholders in the food and agriculture sector have contributed to this progress, by improving agricultural productivity, protecting human and natural resources and conceiving and implementing frameworks, standards and indicators for assessing and improving sustainability across the sector and along the value chain. Yet, enormous challenges remain. The world is confronted with a multitude of crises, from food and fuel crises to climate and financial crises. Tackling these challenges could be greatly facilitated by a common language for sustainability and accountability that integrates all dimensions of sustainability.

The SAFA Guidelines support the development of such a common language by providing a globally adaptable template for assessments of the sustainability of primary production, manufacturing, processing and retail. They provide guidance on how to conceptualise and do a sustainability assessment, and include a generic set of sustainability themes and sub-themes, goals and indicators to rate sustainability performance. SAFA implementation involves an adaptation to geographic, sector-specific and individual conditions of the assessed entity, and the comprehensive use of existing documentation, standards and tools. To assist the sustainability assessment, example indicators and a generic rating scheme are provided in the Guidelines.

Sustainability assessments based on the SAFA Guidelines serve internal management and business-to-business communication. Assessments based on the Guidelines can take the form of a self-evaluation. The Guidelines do not replace existing systems, but set a frame to which such systems can be related. Companies, organisations and other stakeholders who want to improve the sustainability performance of their value chains are encouraged to take up the SAFA Guidelines as a framework for sustainability assessment and monitoring, and to transparently report on results and experiences. This will enable others to benchmark their activities and eventually allow a dynamic improvement of value chains towards sustainability. The Guidelines build on and acknowledge existing standards, attempt to add value rather than duplicate, and are meant to be the basis of an open learning system.

Abbreviations

4C	Common Code for the Coffee Community
B2B	business-to-business
B2C	business-to-consumer
BLIHR	Business Leaders Initiative on Human Rights
BSCI	Business Social Compliance Initiative
CBD	Convention on Biological Diversity
CoC	Code of Conduct
COSA	Committee on Sustainability Assessment
CSR	Corporate Social Responsibility
CSV	Creating Shared Value
EFQM	European Foundation for Quality Management
EMAS	Eco-Management and Audit Scheme
FAO	Food and Agriculture Organization of the United Nations
FLO	Fairtrade Labelling Organizations International
FSC	Forest Stewardship Council
GCG	Good Corporate Governance
GDP	Gross Domestic Product
GEA	Greening the Economy with Agriculture
GHG	Greenhouse Gas
GlobalG.A.P.	Global Good Agricultural Practice
GRI	Global Reporting Initiative
GSCP	Global Social Compliance Programme
HACCP	Hazard Analysis Critical Control Points
IDEA	Indicateurs de Durabilité des Exploitations Agricoles
IISD	International Institute for Sustainable Development
ILO	International Labour Organization
ISEAL Alliance	International Social and Environmental Accreditation and Labelling Alliance
ISO	International Organization for Standardization
LCA	Life-Cycle Assessment
MSC	Marine Stewardship Council
OECD	Organisation for Economic Co-Operation and Development
PCR	Product category rules
RISE	Response-Inducing Sustainability Evaluation
ROL	Rule of Law
RSB	Roundtable on Sustainable Biofuels
RSPO	Roundtable on Sustainable Palm Oil
RTRS	Roundtable on Responsible Soy
SAFA	Sustainability Assessment of Food and Agriculture systems

SAI Platform	Sustainable Agriculture Initiative Platform
SAN	Sustainable Agriculture Network
SME	Small and Medium Enterprises
UNCED	United Nations Conference on Environment and Development
UNCSD	United Nations Conference on Sustainable Development
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNGC	United Nations Global Compact
WBCSD	World Business Council for Sustainable Development
WCED	World Commission on Environment and Development
WEF	World Economic Forum
WHO	World Health Organization

Glossary of terms and definitions

Agricultural biodiversity: agricultural biodiversity encompasses the variety and variability of animals, plants and microorganisms which are necessary to sustain the functions of the agro-ecosystem, its structure and processes for, and in support of, food production and food security.

Areas of high biodiversity value: habitats recognised for important biodiversity features by governmental or non-governmental organisations, or through a biodiversity assessment. This includes, but is not restricted to, areas protected by law.

Audit: a systematic and functionally independent examination to determine whether activities and related results comply with planned objectives (CAC, 1995).

Auditor: individual or group of individuals, belonging to an organisation, or a natural or legal person external to that organisation, acting on behalf of that organisation, carrying out an assessment of the sustainability management system in place and determining conformity with the organisation's sustainability policy and programme, including compliance with the applicable requirements relating to sustainability (modified after EC, 2009).

Benchmark: in SAFA, benchmarks are values, with which the performance of an enterprise in an indicator domain is compared to facilitate a rating of sustainability performance. Regional and/or sectoral averages, as well as defined average (standard) and best practice values can be used as benchmarks.

Best practice: similar to “leading practices”, as defined by GSCP (2010); proactive identification, development and adoption of the latest technology, techniques or practices that contribute to a better sustainability performance.

Biodiversity: the diversity within species, between species and of ecosystems, including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part¹.

Critical review: process intended to ensure consistency between a SAFA study and the principles and requirements of the SAFA Guidelines (modified after ISO, 2009).

CSR reporting: most common type of sustainability reporting. Regular communication of information on economic, social, environmental and governance performance to shareholders, stakeholders and the general public. Other types of sustainability reporting include CSV reporting and triple bottom line reporting.

Cut-off criteria: specification of the amount of material or energy flow, or the level of environmental significance, associated with unit processes or product system to be excluded from a study (ISO, 2009).

Due diligence: identification, prevention and mitigation of the actual and potential adverse impacts of an enterprise's activities; integral part of business decision-making and risk management systems (OECD, 2011).

¹ Convention on Biological Diversity: www.cbd.int

Food and agriculture systems: in the context of the SAFA Guidelines, systems that serve the production and marketing of goods that originate from agriculture, forestry or fisheries.

Food security: food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. The pillars of food security are availability, access, utilisation and stability (FAO, 1996).

Full-cost accounting: in SAFA, the collection and presentation of information about the direct and indirect economic, environmental and social costs of operations (Triple Bottom Line, “true cost accounting”).

Gender: social, economic and cultural roles and relations between women and men. Gender takes into account the different responsibilities of women and men in a culture or location, and in different population groups (FAO, 1997).

Generic: “characteristic of, or relating to, a class or group of things; not specific”(Oxford Dictionary). Here, the term refers to the meaning in mathematics, where properties are shared by almost all objects of a certain type. The SAFA Guidelines provide principles, processes and themes that should apply to (almost) all sustainability assessments in the food and agriculture sector.

Good corporate governance: the political system of an enterprise. It defines the rights of stakeholders, provides the separation of powers between management and supervisory board, and seeks to insure responsible leadership in all dimensions of the organisation (Maak & Ulrich, 2007).

Governance: the process of decision-making and the process by which decisions are implemented (UNESCAP, 2009).

Greening the Economy with Agriculture (GEA): refers to ensuring the right to adequate food, as well as food and nutrition security (see above) and contributing to the quality of rural livelihoods, while efficiently managing natural resources and improving resilience and equity throughout the food supply chain, taking into account countries’ individual circumstances (FAO Council, 2011).

Impact: primary and secondary long-term effects directly or indirectly produced by an intervention (OECD, 2002).

Indicator: quantitative or qualitative factor or variable that provides a simple and reliable means to measure achievement, to reflect the changes connected to an intervention, or to help assess performance (adapted after OECD, 2002).

Livelihood: capabilities, assets (both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, and maintain or enhance its capabilities or assets while not undermining the natural resource base (Chambers & Conway, 1991).

Living wage: a wage ensuring for a person and his/her family an existence worthy of human dignity, and supplemented by other means of social protection (UN 1948, Article 23.3). It ensures a standard of living adequate for the health and well-being, including food, clothing, housing, medical care, necessary social services and the right to security (UN, 1948, Article 25.1).

Marketing: is holding for sale or displaying for sale, offering for sale, selling, delivering or placing on the market in any other form (CAC, 1999).

Performance: degree to which an intervention or an entity operates according to specific criteria, standards and guidelines, or achieves results in accordance with stated goals or plans (OECD, 2002).

Product: any goods or service (ISO, 2009). For the purpose of SAFA, goods based on materials produced through agricultural, forestry or fisheries activities during the production and processing of food, agricultural commodities or animal feeds.

Preparation: the operations of slaughtering, processing, preserving and packaging of food and agricultural products and also alterations made to the labelling concerning the presentation of the production method (CAC, 1999).

Production: the operations undertaken to supply food and agricultural products in the state in which they occur on the farm, including initial packaging and labelling of the product (CAC, 1999).

Rare species: species listed as vulnerable, endangered or critically endangered on the IUCN² Red List, or found to be vulnerable or endangered by scientific sources or a field study.

Regional/local: regions can be defined based on homogeneity and functionality, both in relation with the activities whose sustainability is assessed. There is no single definition of the perimeter (in km) that can be used for distinguishing regional from supra-regional.

Renewable energy: energy derived from natural processes, such as sunlight and wind, replenished at a higher rate than they are consumed; for example solar, wind, geothermal, hydro, and biomass³.

Resilience: the ability to resist disturbance and return to an equilibrium after perturbations (equilibrium resilience); ability to absorb or accommodate shocks before the system changes (Holling & Meffe, 1996).

Site: distinct geographic location under the management control of an organisation covering activities, products and services, including all infrastructure, equipment and materials (EC, 2009).

Soil degradation: reduction in the capacity of a soil to provide ecosystem goods and services, and to support agricultural and forestry production. Soil degradation can be caused by a variety of processes⁴.

Sustainability management: environmental and social management and corporate governance, in conjunction with financial management. Processes or structures that an organisation uses to meet its sustainability goals and objectives while transforming inputs into a product or service (modified after UNEPFI, 2006).

Sustainable: the capacity to sustain, or maintain. There are numerous definitions of sustainability but all converge on the need to reconcile environmental, social and economic demands for present and future generations.

² International Union for Conservation of Nature and Natural Resources: www.iucnredlist.org

³ International Energy Agency Glossary of terms: www.iea.org/glossary/glossary_R.asp

⁴ FAO glossary of Land and Water Terms: www.fao.org/landandwater/glossary

Sustainable agriculture and rural development (SARD): management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such sustainable development (in the agriculture, forestry, and fisheries sectors) conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable (FAO, 1989).

Sustainable development: development processes that protect the natural resource base and ecosystem functions, enhance economic resilience and promote human rights and well-being in a manner that preserves future generations' ability to secure their needs.

Value chain: a mechanism that allows producers, processors, buyers, and sellers – separated by time and space – to gradually add value to products and services, as they pass from one link in the chain to the next until reaching the final consumer. The main actors in a value chain are suppliers, producers, processors, marketers and buyers. They are supported by a range of private and public technical, business and financial service providers. In a value chain, the various business activities in the different segments become connected and to some degree coordinated (UNIDO, 2011).

Well-being: the state of being or doing well in life; healthy, or prosperous condition; moral or physical welfare (of a person or community).

CONTENTS

Acknowledgements	2
Preface	3
Foreword	4
Abbreviations	6
Glossary of terms and definitions	8
PART A: PRINCIPLES	14
1. Background and introduction	15
2. Sustainability Assessment of Food and Agriculture Systems (SAFA)	16
2.1 Vision	16
2.2 Purpose and principles	17
2.3 Subject and scope	18
2.4 Assessment procedure	20
2.5 Roles and responsibilities	21
PART B: PROCEDURE	22
3. Doing a SAFA – step by step	23
3.1 Step 1: Setting goals and scope	23
3.2 Step 2: Adapting the SAFA Guidelines	24
3.3 Step 3: Selecting tools and indicators	27
3.4 Step 4: Collecting data	30
3.5 Step 5: Analysing and interpreting SAFA results	31
3.6 Step 6: Reporting	32
PART C: SUSTAINABILITY THEME PROTOCOLS	34
4. Sustainability dimensions and themes	35
5. Sustainability theme protocols	39
5.1 Governance structure (G1)	40
5.2 Accountability (G2)	42
5.3 Participation (G3)	44
5.4 Rule of law (G4)	47
5.5 Holistic management (G5)	50
5.6 Atmosphere (E1)	52
5.7 Freshwater (E2)	55
5.8 Land (E3)	58
	12

5.9 Biodiversity (E4)	61
5.10 Materials and energy (E5)	65
5.11 Animal welfare (E6)	68
5.12 Investment (C1)	70
5.13 Vulnerability (C2)	72
5.14 Product safety and quality (C3)	76
5.15 Local economy (C4)	79
5.16 Decent livelihood (S1)	81
5.17 Labour rights (S2)	83
5.18 Equity (S3)	86
5.19 Human health and safety (S4)	89
5.20 Cultural diversity (S5)	92
References	94
Appendix A	105
Appendix B	106
Appendix C	108

Part A: Principles

1. Background and introduction

Sustainable development – progress and challenges

The ecological, economic and social principles of sustainable development (WCED, 1987) received nearly universal agreement during and following the 1992 Earth Summit. One of the summit's major outcomes, Agenda 21, includes a whole chapter (Chapter 14) on sustainable agriculture and rural development. Much progress has been made in the past two decades. For most social and economic Millennium Development Goals, improvements have been substantial (UN, 2011). Global per capita Gross National Income has more than doubled between 1992 and 2010 (from 5,035 current international USD at PPP to 11,058; World Bank, 2011). Yet, reaching the poorest, all over the world, remains a challenge (UN, 2011) and it is today generally recognised that GDP growth alone is not a sufficient indicator of development progress. The number of undernourished people was estimated by FAO to be 925 million in 2010. This figure has increased by 75 million people since 1990-92 (FAO, 2010a). Rockström et al. (2009) estimate that humanity has transgressed three of the environmental planetary boundaries within which we can operate safely, namely for climate change, biodiversity loss and changes to the global nitrogen cycle. Boundaries for ocean acidification and possibly the global phosphorus cycle might also be close to being crossed.

As agricultural land and forests occupy more than 60% of terrestrial surface, and fishery activities can be found on virtually any water body, agriculture, forestry and fisheries are major contributors to the ecological footprint of humanity. For example, 31% of global greenhouse gas emissions have been attributed to agriculture and forestry (IPCC, 2007). Agriculture alone accounts for 70% of global freshwater withdrawals (FAO, 2011). On the other hand, farming, animal husbandry, forestry and fisheries produce the food and renewable materials basis of humanity's existence and provide livelihoods to more than 2.6 billion people (FAOSTAT, 2011), including many of the world's poor.

One approach to tackle the risk of the human economy's overstraining the capacities of Earth's ecosystems is the concept of a "Green Economy"⁵ that respects planetary boundaries and adopts eco-efficiency as a guiding principle. This concept brings about major challenges in relation with freedom and distributional equity (UNDP, 2011). The translation of the green economy concept for the food and agriculture sector is reflected through the GEA concept that recognises the need to take an ecosystem- and rights-based approach to development, according to specific country circumstances (FAO, 2012a). The challenge of delivering sustainability lies in an effective integration of the environmental, economic and social dimensions of development. This can be only achieved through good governance.

Need for a common language

Recent years have seen the development of frameworks, initiatives, standards and indicators for assessing and improving the environmental and social impacts of human activities. More than one hundred countries have established national strategies for sustainable development, as well as sets of sustainability targets and indicators (UN, 2007). Thousands of companies have adopted concepts such as corporate social responsibility, creating shared value, responsible supply chain management

⁵ An economy „that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities“ (UNEP, 2011).

and the triple bottom line⁶. These concepts are put into practice through internal management, B2B and B2C communication. Systems for independent, third-party verification, certification and accreditation have been put in place.

Of the many verification systems, tools, databases and other approaches for measuring, communicating and improving sustainability, environmental impact or social impact, respectively, few cover the whole value chain and all dimensions of sustainability at the same time (Appendix A). In the development and application of sustainability systems and frameworks, SME and stakeholders from developing and emerging countries are less represented than large companies and stakeholders from industrialised countries, in spite of many systems' building on transparent, participative mechanisms.

Despite the valuable efforts for making sustainability assessments in the food and agriculture sector accurate and easy to manage, no internationally accepted benchmark unambiguously defines what sustainable food production entails. There also is no widely accepted definition of the minimum requirements that would allow a company to qualify as sustainable.

FAO and the SAFA Guidelines

In order to offer a fair playing field, FAO has built on existing efforts and developed the present Guidelines for Sustainability Assessment of Food and Agriculture systems (SAFA) as part of its efforts for the 2012 United Nations Conference on Sustainable Development (UNCSD). In line with the FAO mandate, the vision of the SAFA Guidelines is to contribute to a sustainable development of the food and agriculture sector. This shall be achieved by enhancing the measurability of sustainability performance and the accessibility and transparency of sustainability measurements. The SAFA Guidelines provide a benchmark that defines what sustainable production is, and a template for agriculture and food sustainability assessment, for the use by primary producers, food manufacturers and retailers who wish to substantiate sustainability claims. Existing sustainability indicator systems and assessment tools can be related to the content of the SAFA Guidelines.

2. Sustainability Assessment of Food and Agriculture Systems (SAFA)

2.1 Vision

The guiding vision of SAFA is a sustainable development of the food and agriculture sector, from primary production in agriculture, forestry and fisheries, through manufacturing and to the point of sale to the consumer. This development ensures human rights and well-being without depleting or diminishing the capacity of Earth's ecosystems to support life. It allows for well-being that is not achieved at the expense of the well-being of others or of future generations.

In agricultural production and rural development, sustainable development is characterised by an appropriate balance between food self-sufficiency and food self-reliance, employment and income generation in rural areas, and natural resource conservation and environment protection⁷. This vision can be realised through different pathways, depending on local circumstances.

⁶ The triple bottom line is a business approach to full-cost accounting that refers to three pillars: people (social), planet (environmental) and profit (economic).

⁷ FAO Council, 1989.

2.2 Purpose and principles

Purpose

A SAFA is an evaluation of the sustainability performance of a company or production site that forms part of a supply chain rooted in primary production. The purpose of a SAFA is to contribute to the realisation of the above-mentioned vision by supporting the implementation of effective sustainability management and communication in the agriculture and food sector, worldwide. Stakeholders in food production, distribution and retail can do a SAFA to substantiate sustainability claims and to enhance sustainability management in their value chain.

The SAFA Guidelines specify principles (part A), procedure (part B), themes and assessment criteria of a SAFA (part C). The target audience are producers, distributors and retailers who wish to substantiate sustainability claims. The Guidelines do not replace existing systems but complement them and put them into the perspective of a common sustainability language for the food and agriculture sector. Being science-based and generic in nature, they can be adapted to different contexts.

SAFA Principles

The SAFA Guidelines are based on the following methodological principles:

- **Relevance.** A SAFA shall cover all relevant aspects of sustainability, such that the obtained rating closely correlates with sustainability performance. All SAFA goals must be in line with the sustainability paradigm as defined in Agenda 21 and specified in the above SAFA vision. All SAFA goals should be in line with the current state of scientific knowledge on the economic, environmental, social and governance impacts of human activities.
- **Cost efficiency.** In order to leave a maximum of resources for improvement measures, the cost of doing a SAFA is minimised by making the best use of existing data. Companies that participate in systems with sustainability claims can use the SAFA Guidelines to identify areas not yet covered by their sustainability management.
- **Goal orientation.** By defining a vision and sustainability goals, the Guidelines establish a goal-oriented, generic framework (von Wirén-Lehr, 2001). There are various ways by which the SAFA sustainability goals can be reached.
- **Performance orientation.** A SAFA serves to determine the degree to which the sustainability performance of an enterprise is in accordance with SAFA sustainability goals. Commitments and management plans alone do not suffice to qualify as sustainable. The same applies to participation (e.g. in certification systems), as the evidence does not yet allow to universally infer enhanced sustainability (Beuchelt & Zeller, 2011; Blackman & Rivera, 2011). For some sustainability categories, a rating of measures can be acceptable in some instances.
- **Transparency.** The disclosure of system boundaries, indicators, data sources and stakeholder relations is a mandatory part of every SAFA report.
- **Adaptability.** The Guidelines are generic in nature in order to be applied worldwide and across the whole diversity of situations that exist in the agriculture and food sector, by adapting the generic set of themes and subthemes' indicators to different socio-economic and environmental circumstances, type of entity and data availability.

Implementation, development and maintenance of SAFA:

- Build on existing standards. The principles of the Bellagio STAMP⁸ (IISD, 2009; Pinter et al., 2011) should be followed when doing a SAFA. The SAFA methodology draws upon the ISO norms for Life Cycle Assessment (ISO, 2009), the ISEAL Code of Good Practice (version 1.0; ISEAL Alliance, 2010), the Reference Tools of the GSCP (2010) and the GRI Sustainability Reporting Guidelines (version 3.1; GRI, 2011). No SAFA goal must contradict rules and principles that emanate from national law and relevant international agreements. The conduction of a SAFA must comply with all applicable legal provisions, in particular concerning privacy protection.
- Add value instead of duplication. The SAFA Guidelines shall add to the value of existing sustainability, environmental and social management and auditing systems by rendering it easier to integrate the information produced by these systems and to close thematic gaps. Implementing the Guidelines should not impose an increased audit load on stakeholders.
- Take place in an open and learning system. The SAFA Guidelines are developed and hosted by FAO and are freely available to any interested party. They are the result of a continuing, open development process, contributions to which are welcome from all who have a stake in the sustainable development of food and agriculture systems. SAFA participation must always be voluntary. Implementing SAFA is in itself a learning pathway to create change and ultimately, deliver sustainability.

2.3 Subject and scope

Subject

With a SAFA, the performance of a company, branch of a company or production site is rated concerning economic, environmental, social and governance sustainability. A SAFA can address all entities in value chains based on primary production, from the site of primary production (agriculture, fisheries, forestry) to that of final sales to the consumer (Fig. 1). A SAFA can be limited to a single production site or step of the value chain. Sustainability ratings can be aggregated for multiple sites and along a value chain. A SAFA neither is a rating of product sustainability, nor does it cover the use and end-of-life phases of products (ISO, 2009).

Physical scope

A SAFA should cover the complete sphere of impact and influence of the assessed entity. This includes processes (i) that are an inseparable part of production or of the chain, (ii) that generate significant sustainability impact and (iii) over which the assessed entity exerts control or significant influence regarding financial and operating policies and practices (GRI, 2011a). The substantiality of impact and the scope of action of the company can serve as cut-off criteria. For example, the physical and spatial scope of SAFA includes the production of procured raw materials and inputs, if (a) the production and provision of these materials and inputs cause substantial sustainability impact (e.g. by aggravating regional water scarcity) and (b) the extent of the sustainability impact can be significantly influenced by the buyer.

⁸ www.iisd.org/pdf/2009/brochure_bellagiostamp.pdf

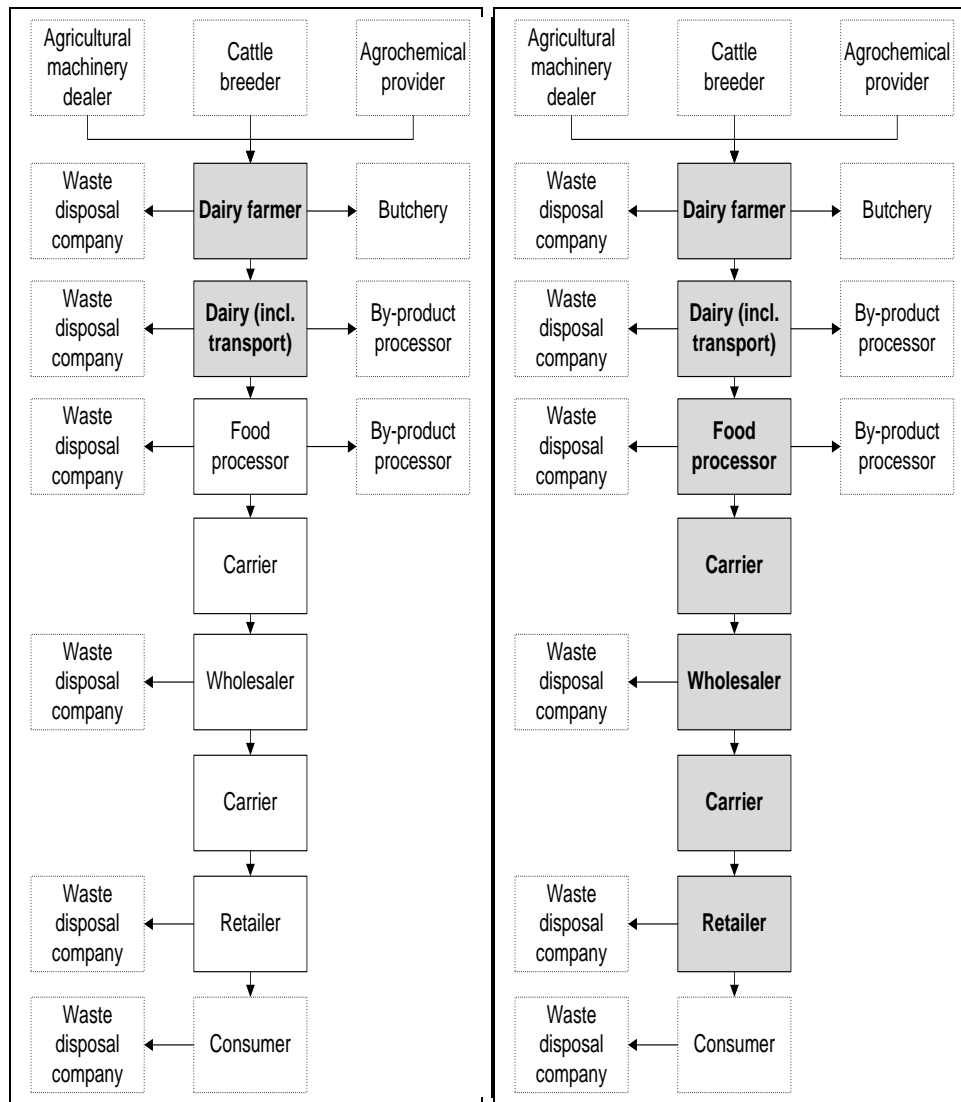


Figure 1. Two examples of SAFA scope in dairy value chains. Grey rectangles with bold writing symbolise actors whose operations are covered by a SAFA done by a dairy (left) and a retail company (right), respectively. Dashed rectangles represent actors outside the general scope of SAFA.

Time and space

The temporal scope of SAFA covers one year. For some indicators, multi-year trends should be assessed or sustainability impacts be allocated to a longer period. The spatial coverage of SAFA extends to production facilities and their surroundings, insofar as the assessed entities control or substantially affect the utilisation of these areas (GRI, 2011a).

Thematic scope: sustainability dimensions and themes

The SAFA sustainability rating pertains to the four dimensions of sustainability. Within these dimension, 20 sustainability themes were identified, each of which contains sub-themes (Table 1; wording based on UN, 2007). Details on dimensions, themes, sub-themes and indicators are provided in part C of the SAFA Guidelines.

Table 1. SAFA sustainability dimensions, core sustainability themes (left) and sub-themes (right).

GOOD GOVERNANCE	
G1 Governance structure	Corporate ethics; Due diligence
G2 Accountability	Holistic audits; Responsibility
G3 Participation	Stakeholder dialogue; Grievance procedures; Conflict resolution
G4 Rule of law	Commitment to fairness and legitimacy; Remedy, restoration and prevention; Co-responsibility; Resource appropriation
G5 Holistic management	Sustainability in quality management; Certified production and sourcing; Full-cost accounting
ENVIRONMENTAL INTEGRITY	
E1 Atmosphere	Greenhouse gases; Air pollution
E2 Freshwater	Water quantity; Water quality
E3 Land	Organic matter; Physical structure; Chemical quality; Land degradation and desertification
E4 Biodiversity	Habitat diversity and connectivity; Ecosystem integrity; Wild biodiversity; Agricultural biodiversity; Threatened species
E5 Materials and energy	Non-renewable resources; Energy supply; Eco-efficiency; Waste disposal
E6 Animal welfare	Freedom from stress; Species-appropriate conditions
ECONOMIC RESILIENCE	
C1 Investment	Internal investment; Community investment; Long-ranging investment
C2 Vulnerability	Stability of supply; Stability of marketing; Liquidity and insurance; Employment; Stability of production
C3 Product safety and quality	Product information; Traceability; Food safety; Food quality
C4 Local economy	Value creation; Local procurement
SOCIAL WELL-BEING	
S1 Decent livelihood	Wage level; Capacity building
S2 Labour rights	Employment; Forced labour; Child labour; Freedom of association and bargaining; Working hours
S3 Equity	Non-discrimination; Gender equality; Support to vulnerable people
S4 Human health and safety	Physical and psycho-social health; Health resources; Food security
S5 Cultural diversity	Indigenous knowledge; Food sovereignty

2.4 Assessment procedure

For a detailed description of the SAFA assessment procedure, see part B of the Guidelines. To conduct a SAFA, the following phases must be run through:

- 1) Setting goal and scope of the assessment
- 2) Adapting the SAFA Guidelines: relevance and compliance check
- 3) Selecting tools and indicators
- 4) Collecting data
- 5) Analysing and interpreting SAFA results
- 6) Reporting

The final visible output of a SAFA is the SAFA report, comprising a descriptive and an analytical part.

2.5 Roles and responsibilities

Audience

The SAFA guidelines are intended for use by primary producers, food manufacturers and retailers, primarily in internal management and for B2B communication. These stakeholders will either commission independent audits by third parties or conduct self-declaratory assessments. In both cases, the generic framework provided by the SAFA Guidelines must be concretised and adapted to regional, sectoral and individual circumstances, in a transparent and responsible manner.

Auditors

Initially, SAFA can take the form of a self-assessment. The accordant audits can be conducted by staff of the company itself or by qualified auditors. Once structures for verification and accreditation have been established, SAFA can be done by independent third parties, if sustainability claims are to be communicated to business partners, the public or administration. Where a SAFA forms part of a formal certification procedure, compliance with the respective rules for certification and accreditation must be ensured. The auditor's responsibilities are subject to contractual arrangements between the commissioning and the auditing company.

Provider

The SAFA Guidelines are provided by FAO. They are publicly available and no license fees may be charged for their use as such. The correct application of the Guidelines is the responsibility of the implementing company. FAO is neither liable nor responsible for consequences of using the SAFA Guidelines.

Part B: Procedure

3. Doing a SAFA – step by step

To conduct a SAFA, six phases must be run through (see Fig. 2). While it is important to stick to the sequence as stated here, because each phase builds the basis for the next, an iterative approach may prove necessary, e.g. when it becomes clear during data collection that system boundaries must be modified to better cover the analysed entity's sphere of influence. The final visible output of the procedure is the SAFA report, comprising a descriptive and an analytical part.

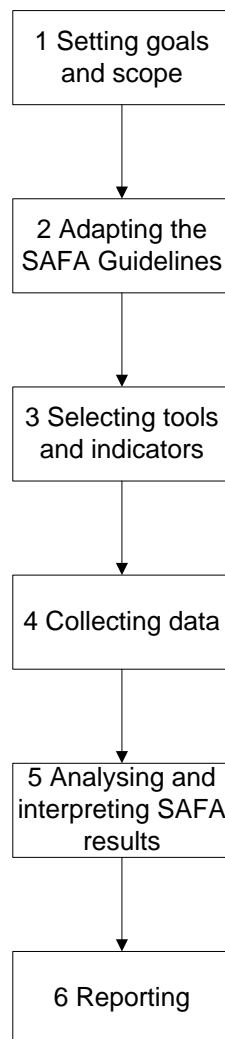


Figure 2. Sequence of steps in doing a SAFA.

3.1 Step 1: Setting goals and scope

Statement of goals

The descriptive part of the SAFA report starts with a statement of goals. In analogy to the LCA methodology, the goals should unambiguously state the reasons for doing the assessment, the intended audience and the intended use of the results (ISO, 2009). The goals of the SAFA should be related to the assessed entity's goals and, where possible, to the Bellagio STAMP⁹ (Pintér et al., 2011).

⁹ SusTainability Assessment and Measurement Principles – a set of guiding principles used to measure and assess progress towards sustainability www.iisd.org/measure/principles/progress/bellagiostamp

Subject and scope of the assessment

A SAFA is an assessment of the sustainability performance of one or several entities forming part of a value chain rooted in agriculture, forestry, fisheries or aquaculture. It can address all entities from the site of primary production to that of final sales to the consumer. For details on the general scope and principles of SAFA, see part A of the Guidelines. The thematic scope of SAFA is defined through the set of sustainability themes and sub-themes (see part C of the Guidelines). Each SAFA implementation includes the adaptation of this thematic scope to the situation of the assessed entity. A SAFA covers the entity's material and spatial spheres of impact and influence¹⁰. The decision tree of the GRI G3.1 Guidelines¹¹ is recommended as a decision aid (GRI, 2011a). Decisions on the following must be justified and documented in the SAFA report:

- Subject of the analysis. Key properties of the entity: organisation, site(s), dimensions, products, sector, position in the value chain.
- Material system boundaries. Which entities and processes are included in the assessment? What is the entity's sphere of influence? Which processes are excluded from the assessment, for what reasons? A flow diagram of all assessed processes should be drawn, indicating where processes were cut off.
- Spatial system boundaries. How far do substantial environmental, economic and social impacts occur beyond the land owned or directly used by the assessed entity? Which of these impacts are included in the SAFA?
- Temporal system boundaries. For what indicators does the assessment deviate from the one-year time frame? By how many years is the temporal scope extended for an indicator¹²?
- Rules for impact allocation. Where sustainability impacts are inseparable between assessed and non-assessed processes, entities, locations and time periods, defined proportions of these impacts have to be attributed to the processes, entities etc. Physical, spatial and temporal system boundaries should be set such that allocation problems are minimised.
- Critical review. Will a critical review be undertaken? If yes, what type of review (e.g. internal or external)? What will be covered to what level of detail?

Output of Step 1

- A precise statement of goals and purpose of the SAFA.
- A description of the assessed entity and of its sphere of influence and impact.
- A delineation of physical, spatial and temporal system boundaries, in relation with the sphere of influence and impact.
- A description and justification of cut-off and impact allocation criteria.

3.2 Step 2: Adapting the SAFA Guidelines

Use of existing information in a SAFA

¹⁰ This implies that larger companies have a much larger sphere of influence than, for instance, a single farmer. Thus SAFA acknowledges the growing responsibility for sustainable production with growing company size.

¹¹ www.globalreporting.org/resourcelibrary/G3.1-Guidelines-Incl-Technical-Protocol.pdf, pp. 17-19

¹² Example: carbon sequestration in vegetation and soils may be calculated for the whole sequestration period, i.e. until a new equilibrium has been reached. This can take several decades.

A SAFA must neither be conceived as an isolated assessment nor be done in ignorance of existing legislation, standards and documentation. The Guidelines provide a generic frame that must be adapted to regional and sectoral circumstances and to the individual situation of the assessed entity. At the heart of the assessment lies a rating of performance in relation with all applicable SAFA themes and sub-themes. The rating is done by comparing the entity’s performance in relation with the sub-themes and the sustainability goal of each theme. The adaptation process serves to identify SAFA sub-themes that are irrelevant in the respective situation or that are covered by existing documentation and certification. Adaptation must neither attenuate nor alter the relevance of the SAFA results with regard to sustainable development as defined in part A of the Guidelines. Where information gaps remain, SAFA-specific data collection and rating using the indicators defined in part C of the Guidelines serve to complete the holistic rating of sustainability performance. The process of SAFA adaptation and rating is illustrated in Figures 3 and 4.

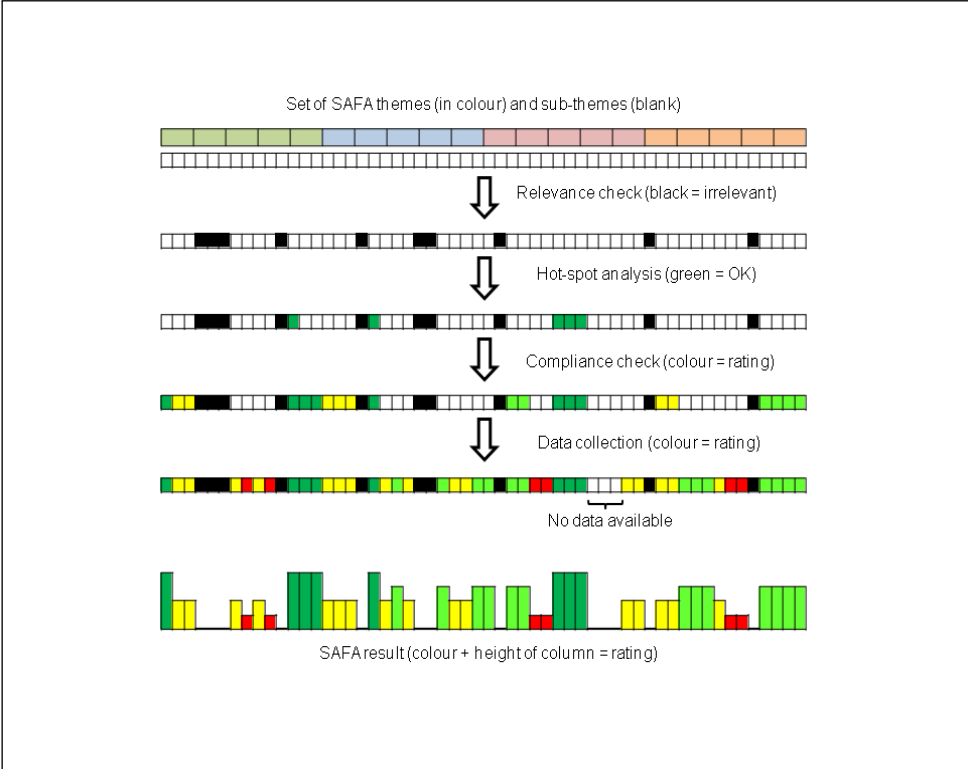


Figure 3. Procedure of SAFA adaptation and rating. Inapplicable SAFA sub-themes are omitted. Information available at regional and enterprise level is related with the SAFA sub-themes. Performance in relation with the remaining sub-themes is rated using SAFA-compliant indicators. Finally, all applicable sub-themes for which data are available are rated to complete a holistic rating of sustainability performance.

3.2.1 Relevance check and hot-spot analysis

Each assessed entity should be classified according to the sector and branch of the economy to which it belongs, its position in the value chain, its geographical location and other features. Based on this classification, part of the SAFA themes and sub-themes can be omitted as they are not relevant for this type of enterprise (e.g. the “Land” theme will usually be irrelevant for fisheries). All themes and sub-themes deemed relevant for the sustainability performance of the assessed entity must be addressed such that the thematic scope of the theme respectively sub-theme, as described in part C of the Guidelines, is completely covered.

As a result of different climatic conditions, cultural norms, political and legal systems, the risk of occurrence of certain sustainability deficits is higher in some regions and countries than in others. It should be checked whether a high sustainability performance in a SAFA theme or sub-theme can be automatically concluded for the location where the entity is found.

Available publications, reports and maps should be consulted in this step. Sources must be presented in the SAFA report. Examples of sustainability aspects that can be the subject of a regional relevance check include physical water scarcity (e.g. Pfister et al., 2009), human rights situation and rule of law, soil degradation risk and land use cover change (ecosystem degradation). Sustainability theme and sub-theme omissions resulting from the hot-spot analysis must be declared and justified.

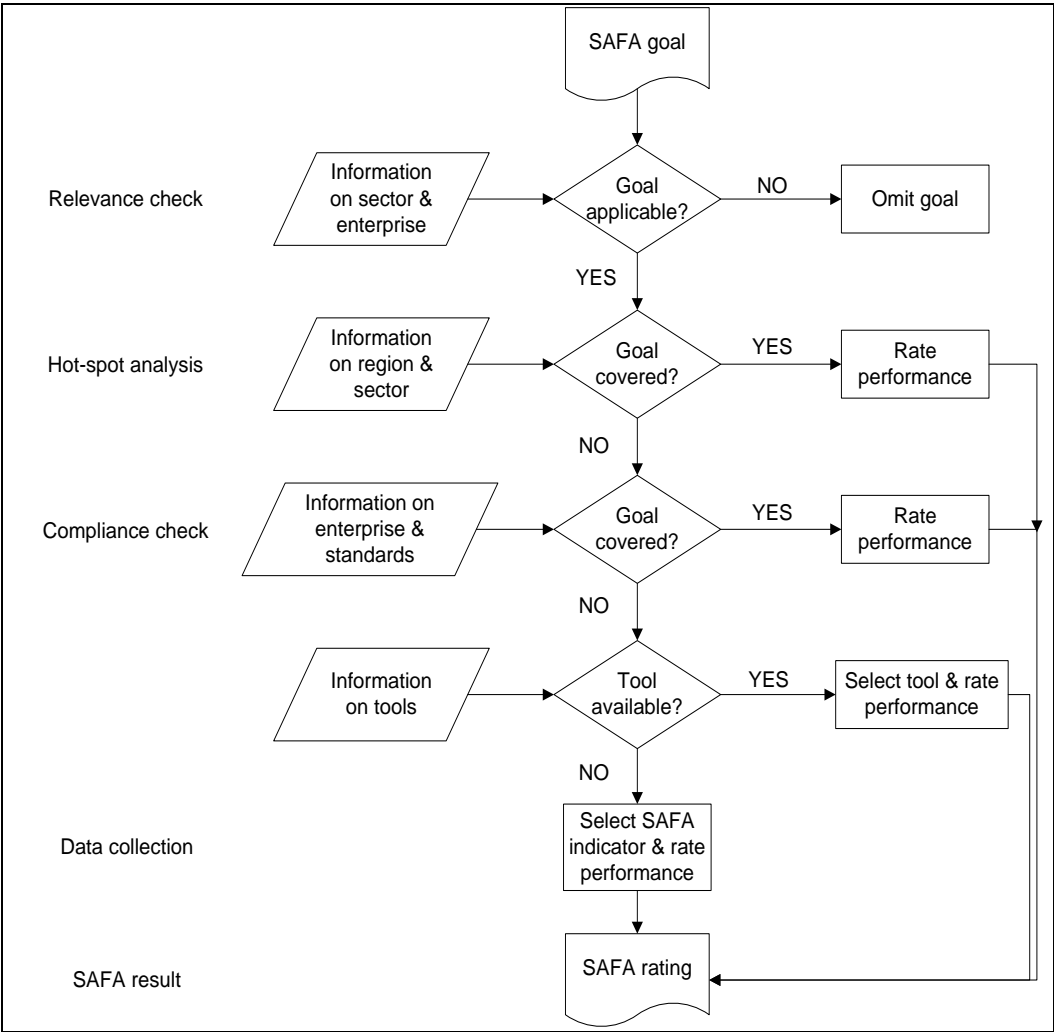


Figure 4. Flowchart of the procedure of SAFA adaptation and rating for the sustainability goal of one SAFA theme. During SAFA implementation, this procedure is run through for each of the goals and sub-themes presented in part C of the Guidelines, until all relevant aspects of the theme are completely covered.

3.2.2 Compliance check

Many enterprises participate in, or are certified, according to one or more schemes aiming at quality management or improved environmental, social and governance performance. Compliance with the rules and standards of such schemes often means that for part of the SAFA themes, performance

data already exist or the respective sustainability goal has been reached to a certain degree. Examples of relevant systems include:

- Quality or risk management, for example according to ISO 9001, EFQM and HACCP¹³.
- Environmental management, for example according to ISO 14001 and EMAS.
- Compliance with voluntary social and economic standards, such as FLO, BSCI and SA 8000.
- Compliance with legal standards, such as the national implementation of the EU Cross Compliance scheme or the Swiss Proof of Ecological Performance.
- Participation in voluntary production standards, such as those of FSC, MSC, organic agriculture, GlobalG.A.P., Rainforest Alliance (SAN), 4C, RSB, RSPO, RTRS, BSCI, and many others.
- Corporate social responsibility, creating shared value or similar reporting, according to the guidelines and goals set by e.g. GRI, GSCP and UN Global Compact.
- A recent analysis with a science-based method, such as LCA, Water Footprinting, Carbon Footprinting, RISE, COSA, IDEA or AgBalance.

For an overview of the thematic coverage of selected schemes, see Appendix A.

Output of Step 2

- A list of SAFA sustainability themes and sub-themes that are applicable to the assessed situation and have not yet been covered in the existing documentation.
- A declaration and justification of omissions of sustainability themes and sub-themes.
- An overview of sustainability performance concerning those themes and sub-themes already covered by the existing documentation.

3.3 Step 3: Selecting tools and indicators

3.3.1 Selecting appropriate tools

Sustainability performance must be assessed for every relevant SAFA theme and sub-theme. Performance in relation to relevant, not yet covered (Step 2) themes and sub-themes is preferably assessed using existing tools and standards. The above list used for the compliance check can provide guidance in identifying appropriate standards and tools. The selection of tools must be based on (a) the sustainability themes and sub-themes identified as relevant in SAFA step 2, (b) the availability of information on the entity's performance, and (c) the budgetary frame of the assessment.

3.3.2 Selecting sustainability indicators and rating thresholds

Indicator selection

Performance in relation with a SAFA is rated using one or more performance indicators for each sub-theme - either from existing standards, or from part C of the Guidelines -, such that the sub-theme scope is completely covered. Indicator suggestions presented in part C of the SAFA Guidelines should be checked for applicability in descending order. Choosing an indicator from a lower category is appropriate where no information is available for any higher category. In such cases, the enterprise should strive to improve data availability and upgrade their indicators to a higher level. Where no suitable performance indicators can be used, measure-based tools or indicators can be selected. Performance indicators provide information that directly reflects the degree to which the enterprise operates according to the sustainability goals of the respective SAFA theme. With measure-based

¹³ See list of abbreviations.

indicators, measures taken to meet the sustainability goal are rated for their expected efficacy; hence, this is a more indirect and thus, less rigorous type of indicator. For some SAFA themes, particularly in the governance dimension, performance and measures can overlap, as the goals require, for instance, the existence of a mission statement meeting specified criteria. An overview of SAFA indicator types is given in Table 2. The classification of indicators in part C refers to the hierarchy established in this Table. Decisions concerning the choice of indicators and the omission of themes and sub-themes must be declared and justified in the SAFA report.

Table 2. Hierarchy of SAFA indicator types.

Type of indicator					Indicator example
	Type of information on which rating is based	Quantitative or qualitative data?	Rating based on absolute scale or on benchmark comparison?	State or trend data?	
1	Performance-based	Quantitative	Absolute	State	Total freshwater use (m ³) in 2012
2	Performance-based	Quantitative	Benchmark ¹⁴	State	Total freshwater use (m ³) per kg of milk solids, in % of regional average in 2012
3	Performance-based	Qualitative	Absolute	State	Does the enterprise meet criteria for water use efficiency stated e.g. by local government or a standard?
4	Performance-based	Qualitative	Benchmark	State	Does the enterprise meet stricter criteria for water use efficiency (see above) than other enterprises in the same sector and region?
5	Measure-based ¹⁵	Qualitative	Absolute	State	Rating of irrigation and other water use technology, based on standard data on the efficiency of these technologies
6	Measure-based	Qualitative	Benchmark	State	Rating of irrigation and other water use technology, in comparison with the regional average

Threshold determination

Quantitative and qualitative threshold definitions facilitate the translation of collected and calculated data into one sustainability rating per indicator. Where more than one indicator is assessed per sub-theme, scores should be aggregated into a single rating per sub-theme. A four-level rating scale is used in SAFA. It can be visualised using an extended “traffic light” color code. Generic definitions of the thresholds separating performance levels are provided in Table 3. For examples of classification thresholds, see Table 4.

¹⁴ Comparison with a reference value, e.g. regional average, sector average or a defined situation. Note that combinations of absolute and benchmark comparisons are a further appropriate option.

¹⁵ Qualitative rating of technologies or measures based (e.g. on resource efficiency).

Table 3. “Traffic light” scale for rating and visualising performance in relation to SAFA sub-themes.

Rating	Performance
Best sustainability performance	<p><u>Performance</u>: All operations of the assessed entity fully comply with the sustainability goal, as proven through performance data.</p> <p><u>Compliance</u>: All operations fully comply with applicable law and agreements.</p> <p><u>Measures</u> (only for some categories): All applicable measures have been taken, best practice.</p>
Good sustainability performance	<p><u>Performance</u>: The sustainability goal is reached in more than 80% of operations¹⁶.</p> <p><u>Compliance</u>: All operations fully comply with applicable law and agreements.</p> <p><u>Measures</u> (only for some categories): In more than 80% of operations, substantial¹⁷ measures to improve sustainability performance have been taken.</p>
Moderate sustainability performance	<p><u>Performance</u>: The sustainability goal is reached in less than 80% of operations.</p> <p><u>Compliance</u>: All operations fully comply with applicable law and agreements.</p> <p><u>Measures</u> (only for some categories): In less than 80% of operations, substantial measures to improve sustainability performance have been taken.</p>
Insufficient sustainability performance	<p><u>Performance</u>: Operations damage environment and society.</p> <p><u>Compliance</u>: Operations violate applicable law and relevant agreements.</p> <p><u>Measures</u>: No effective improvement measures have been taken.</p>

Threshold values must be adapted to the conditions of the sector and region under consideration. The adaptation must be done transparently, with sound justifications provided for each value. In some instances, few or no intermediate levels exist. When checking for forced labour, there normally are just two clearly distinguishable cases – either it exists or it does not. If it exists, the rating will be “insufficient sustainability performance”, if it does not, it will be “best sustainability performance”. In order to refine the rating scale, proactive measures to remove forced labour, e.g. in supplier operations, can be rated as well.

¹⁶ In terms of the number of employees, the amount of produce, the area, the number of animals etc. directly affected by improvement measures.

¹⁷ In terms of the investment made, the impact on operations (interruptions, restructuring, required training of employees etc.) and the effects on sustainability performance.

Table 4. Example of SAFA rating for the “Land” sustainability theme.

Rating	Sustainability sub-themes			
	Organic matter	Physical structure	Chemical quality	Land degradation
	Indicators (examples)			
	Performance: soil organic matter content and C:N ratio in topsoil	Measures: compaction prevention, reduced tillage since >3 years.	Performance: soil NPK balances, pH (5 years ago and now), absence of pollutants	Performance: area lost or rehabilitated, area affected by substantial erosion (wind, water)
Best sustainability performance	Content and quality of soil organic matter are at the optimum level achievable under the given pedo-climatic conditions.	Bulk density and aggregate stability are at the optimum achievable under the given pedo-climatic conditions.	Nutrient status and pH are at optimum levels for crop growth, and no chemical or biological soil pollution occurs.	No soil is lost through erosion or sealing and all degraded land is rehabilitated.
Good sustainability performance	Substantial measures to enhance soil organic matter implemented on >80% of the area, for >5 years.	Substantial measures to enhance soil structure implemented on >80% of the area, for >5 years.	Substantial measures to enhance soil nutrient status and pH, on >80% of the area. No pollution for >5 years.	No soil or land loss has occurred and degraded soils exist but were not reclaimed.
Moderate sustainability performance	Measures to enhance soil organic matter were taken on <80% of the area.	Measures to enhance soil structure were taken on <80% of the area.	Measures to enhance chemical soil health were taken on <80% of the area.	Soil is lost due to erosion or sealing. Losses are compensated through reclamation elsewhere.
Insufficient sustainability performance	Operations cause a loss or quality deterioration of soil organic matter. No countermeasures were taken.	Operations cause soil compaction or other disturbances of soil structure, without countermeasures.	Soils are polluted, mined (NPK depletion), eutrophicated, acidified or salinised.	Soil has been lost through erosion or sealing, without compensation.

Output of Step 3

- Indicator descriptions with threshold values for all sustainability sub-themes deemed relevant but not yet covered by existing documentation.

3.4 Step 4: Collecting data

Data collection can take different forms, for example a farm or factory visit, interviews with personnel, management, a stakeholder survey or data collection from public and other independent sources of information. In small, poorly documents enterprises (e.g. most of the world’s farms) almost all enterprise-related information will have to be collected via a farmer interview and a personal inspection of farm and fields. This means that the “how” and “when” of data collection can have influence on data quality and SAFA results. For some of the environmental themes (e.g. “Freshwater” and “Land”), doing field measurements and laboratory analyses is desirable, but not a must. The form of data collection must be documented, and its representativeness of the enterprise’s work routines shall be justified. The following rules hold for the data collection phase:

- Use the most precise and reliable performance data available. Where no performance data exist, measures can be enumerated and rated. The indicator tables in part C of the Guidelines provide initial guidance on data sources.
- Data should have been collected using standardised measurement methods (IISD, 2009). Where quantitative data are used, these should be expressed in SI units.

Output of Step 4

- Complete set of data needed to calculate and rate scores for all indicators defined in Step 3.

3.5 Step 5: Analysing and interpreting SAFA results

A SAFA results in at least one sustainability indicator score, thus in at least one rating, per applicable sustainability sub-theme. Some sub-themes require the measurement of more than one indicator. To obtain ratings, the threshold values defined in Step 3 are applied to the collected and calculated data. Calculations are done individually for each indicator. Where the assessment covers production sites with different performance regarding an indicator, the rating should be based on the worst performance observed. For some indicators, a rating based on the percentage of area, employees, produce etc. where a certain performance is achieved, is possible as well. The following rules apply:

- The calculation process must be transparent, with all functions presented.
- Data insufficiencies can sometimes require the estimation of certain values. In order to ensure transparency, data quality must be indicated for all quantitative values used.
- Decisions on rules for aggregation and weighting of indicator values must be justified and described.
- Calculation rules should be in line with standards already applied in the respective sector.

The achieved ratings are interpreted with respect to validity (inaccuracies due to lack of data or assessment methods), context, scope and priorities for action. During the interpretation of results with regard to context, a holistic approach should be adopted, i.e. the assessed entity should be perceived and understood as a whole. For example, results for the “Freshwater”, “Land” and “Biodiversity” themes will often be linked with the same activities, such as soil tillage, use of crop protection products and wastewater discharge. Such linkages should be identified and addressed explicitly, as the resulting synergies, trade-offs and side effects of activities will affect the planning and implementation of improvement measures.

Aggregation and visualisation

The communication of SAFA results, be it internally, B2B or B2C, may require an aggregation of the obtained scores. Aggregation can be done for sub-themes within a sustainability theme, for sustainability themes within a company, and for multiple companies along the value chain. A variety of aggregation approaches can be employed, depending on the purpose and target audience of the SAFA. For example, internal sustainability management may require a hot-spot analysis. In this case, aggregation may consist in the identification of the sustainability theme for which the worst score was obtained, hence where there is the greatest need for action. Other options include the calculation of the mean or the median of all sustainability theme scores, or of the scores within each sustainability dimension. All types of aggregation have in common that a gain in communicability is accompanied by a loss of information and a risk of relevant information being masked.

Visualisation techniques can partly overcome the trade-off between the communicability and the completeness of information. Two examples of illustrations of overall sustainability performance and sustainability gaps are provided in Figures 3 and 5.

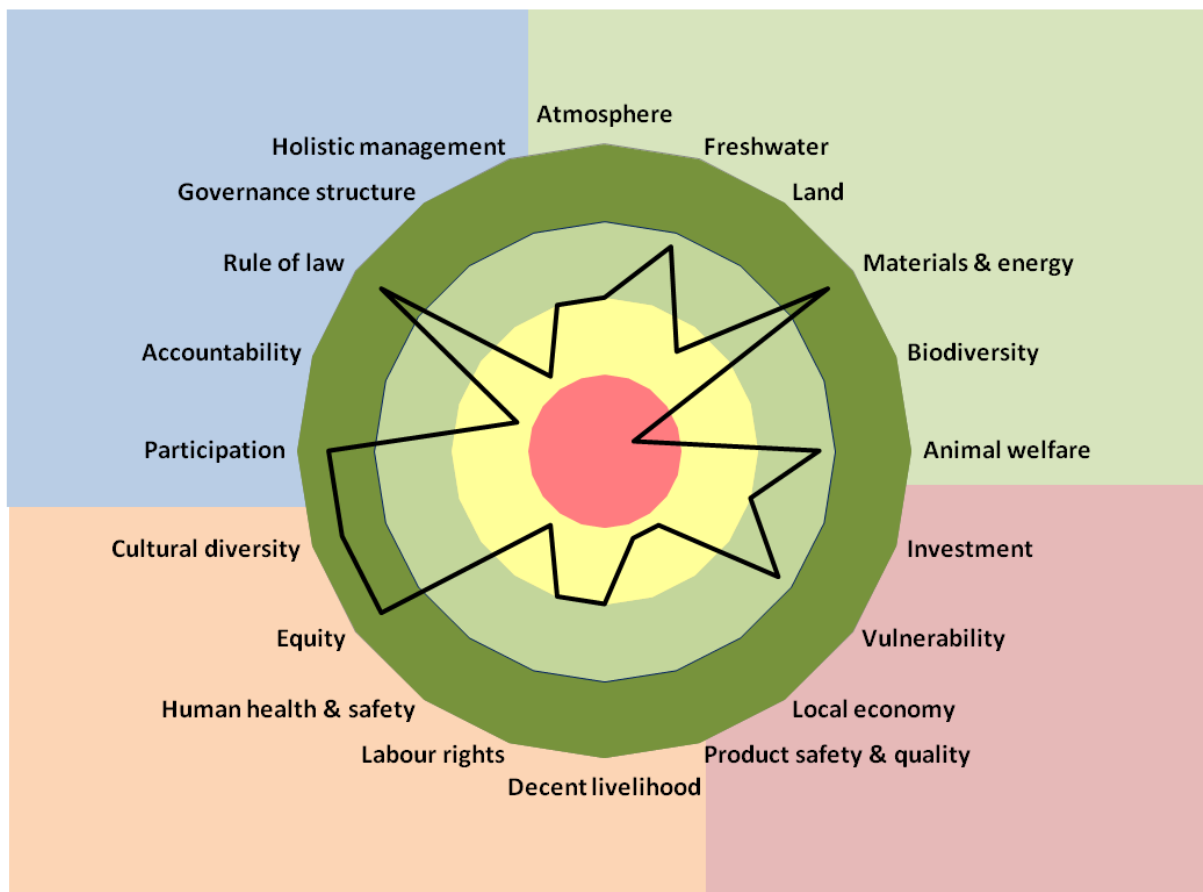


Figure 5. Visualisation of a SAFA sustainability polygon of a hypothetical enterprise. The thick black line connects them' performance: best (dark green), good (light green), moderate (yellow) or insufficient (pink).

Output of Step 5:

- A complete table of ratings for sustainability themes, sub-themes and indicators. A written interpretation of the ratings.
- A visual representation of SAFA results at entity level. Where entities at several steps of a value chain have been assessed, a visualisation at chain level is required.

3.6 Step 6: Reporting

All documentation notes from the above steps are combined into a report that is the visible output of the SAFA. The following principles, partly based on the Bellagio STAMP, apply to reporting:

- The structure of the report reflects the structure of the SAFA process steps.
- The report consists of a descriptive and an analytical part.
- The report is written in clear and concise language.
- All information is presented in a fair and objective way (both positive and negative results).
- Data must be made available in as much detail as practically feasible.

Critical review

A critical review, either by the assessing or assessed organisation or a third party, is an essential part of a SAFA. It fosters the quality, credibility and transparency of the assessment. This is in line with the

procedure outlines of LCA (ISO, 2009) and the G3.1 Guidelines (GRI, 2011a), and the transparency principles of the Bellagio STAMP (IISD, 2009) and the ISEAL Impacts Code (ISEAL Alliance, 2010).

In a SAFA, the critical review can be handled in different ways. The disclosure of procedure should provide all information needed for a critical appraisal by interested stakeholders. In addition, a rigorous internal or external review can be undertaken. Where results are designated for B2B or B2C communication, an external review is imperative. Type, comprehensiveness and complexity of the review are defined during the SAFA scoping phase. Whether and how the review results are made available to the public is decided by the commissioning entity.

Disclosure of procedure

Companies undertaking a SAFA should have the possibility of benefiting from the experiences of others and of striving for the best sustainability performance and the strictest sustainability thresholds. In line with the transparency principle of the Bellagio STAMP¹⁸ (IISD, 2009), the public should have access to information that helps critical consumers understand how a SAFA was done.

Therefore, information on the selected system boundaries, indicators, threshold values, valuation functions, data sources, inclusion of data from other audits, assumptions and uncertainties and about stakeholder relations in each SAFA process should be made publicly accessible. This will allow companies operating in the same region or industry sector to use previously used SAFA configurations for orientation. The concept is analogous to the Product Category Rules (PCR) used in environmental impact assessment (ISO, 2006). Since sustainability is often considered a pre-competitive issue by the private sector, as testified by the cooperation of numerous companies in the frame of multistakeholder initiatives (e.g. WEF, 2010), mutual access to SAFA-related information is in the interest of participating companies.

Output of Step 6

- A complete SAFA report, structured as outlined in Appendix C.

¹⁸ www.iisd.org/pdf/2009/brochure_bellagiostamp.pdf

Part C: Sustainability Theme Protocols

4. Sustainability dimensions and themes

All 20 sustainability themes presented in Table 1 (see Part A) must be reflected in a SAFA, unless one or more themes are absolutely not applicable to the respective operations, or outside the assessed entity's sphere of influence (see Part B for details of the relevance check). The content and general relevance of the sustainability dimensions is explained below, and theme descriptions with example indicators are provided thereafter.

Good governance

Governance is the process of making and implementing decisions (UNESCAP, 2009). In a nation, this is achieved through institutions. In a company, it translates into corporate governance, which, according to the OECD Principles of Good Corporate Governance (GCG) is a set of relationships between management, board, shareholders and other stakeholders that furnishes the structure through which the enterprise's goals are set, and the means for achieving these goals and monitoring performance (OECD, 2004). A definition inspired by business ethics states that "good corporate governance describes the political system of an enterprise. It defines the rights of stakeholders, provides the separation of powers between management and supervisory board, and seeks to ensure responsible leadership in all dimensions of the organisation" (Maak & Ulrich, 2007).

While governance has not always been considered a separate dimension of sustainable development, the first two versions of the Commission on Sustainable Development Core Indicator Framework presented sustainability themes according to the social, environmental, economic and institutional dimensions. SAFA has taken forward the "institutional" dimension, especially because SAFA users are concerned with value chains and stakeholder relations, in which good corporate governance is of paramount importance. The weight given to governance in the SAFA Guidelines is in line with other business-centered approaches, such as the UN Principles for Responsible Investment¹⁹, the UN Global Compact (UNGC/IFC, 2009) and the G3.1 Guidelines (GRI, 2011a). The governance dimension of SAFA revolves around an understanding of GCG that explicitly takes into account all affected stakeholders. Sustainability performance is not only of concern to shareholders, but equally to all stakeholders affected by activities of an enterprise. This broad understanding of GCG is linked with the idea of corporate citizenship (UNGC/IFC, 2009).

The sustainability performance of an enterprise rests on a conscious corporate strategy and management, ideally expressed in a binding corporate mission statement and code of conduct. A business purpose that contradicts or ignores the sustainability principle will not lead to a sustainably operating enterprise in the long run. Equally, where a firm anchorage of sustainability lacks at the top level, parts of the enterprise may have a good sustainability performance, but the whole will lack targeted control and long-term support and thus, not perform sustainably.

A mission statement should help to put operations into the context of ecological and social co-responsibility, to create awareness at all management levels and among employees, and to align individual actions with corporate sustainability policy. It should shape corporate culture, while reflecting to society the enterprise's commitment to contribute to sustainable development (Maak & Ulrich, 2007). An enterprise committed to sustainable development needs a sustainability-oriented

¹⁹ www.unpri.org

governance structure, in which content, values and responsibilities of the company are clearly stated and through which transparency and accountability are ensured. It organises processes that facilitate an active participation of all stakeholders. Further elements include a strict orientation towards legitimacy and the rule of law and a rigorous sustainability management.

Environmental integrity

To protect the integrity of Earth's ecosystems, the use of natural resources and the environmental impacts of activities must be managed such that negative environmental impacts are minimised and positive impacts fostered. The protection and sustainable utilisation of biotic and abiotic resources can be fostered by adopting an ecosystem approach. This approach, defined by the Convention on Biological Diversity (CBD), comprises complementary and interlinked principles²⁰, as well as operational guidances²¹. The CBD considers that a general application of an ecosystem approach will help achieve a balance of three objectives, namely conservation, sustainable use and the fair and equitable sharing of benefits arising out of the utilisation of genetic resources. The need for an ecosystem approach applies to the whole food and agriculture sector, including fisheries and forestry.

A variety of methods for quantifying, rating and managing environmental impact and resource use exists, including LCA (ISO, 2009), ecological, water and carbon footprinting (e.g. Wackernagel & Rees, 1997), methods specified in the ISO 14000 series of norms, as well as methods for environmental impact assessment. While some aspects of the environment, such as water quantity and quality and energy use, are quite well measurable, others, like soil fertility, biodiversity and animal welfare, defy straightforward quantification. Indicators of natural resource use and of emissions either refer to absolute quantities, such as litres of water withdrawn or megajoules of energy used, or they are eco-efficiency or "decoupling" measures that relate environmental pressure (resource consumption or emissions) to the quantity or value of production (WBCSD, 2000; OECD, 2003). The downside of eco-efficiency indicators is that what counts from an ecosystem perspective is absolute pressure on the environment or absolute scarcity of a resource, both of which are not always linearly linked with eco-efficiency. For example, a fruit grower whose orchards are highly water-efficient compared to others in the region may very well deplete groundwater resources and thus not work sustainably. In a SAFA, the following aspects of environmental sustainability are addressed: atmosphere, freshwater, land, materials and energy, biodiversity and animal welfare. These categories were found to best reflect the main areas of concern regarding adverse human impacts and unsustainable exploitation and to give a comprehensive picture of environmental sustainability.

Economic resilience

Economic activity involves the use of labour, land and capital to produce goods and services to satisfy peoples' needs (Jörissen et al., 1999). This dimension of sustainability is directly linked with the fulfilment of needs, a pillar of sustainable development as defined by the World Commission on Environment and Development (WCED, 1987). Explicit and targeted sustainability management is increasingly perceived as providing competitive advantages in business (Haanaes et al., 2011). Sustainability in the social and environmental domains is supported by functioning businesses. It is therefore necessary to assess economic sustainability as a sustainability dimension in its own right. In SAFA, this assessment focuses on the micro-economic level. At this level, economic sustainability can be understood as an enterprise's ability to materially enable the stake- and shareholders taking part in,

²⁰ www.cbd.int/ecosystem/principles.shtml

²¹ www.cbd.int/ecosystem/operational.shtml

and affected by, its activities to live a decent, humane life, continuously and in the short and long run. In a wider sense, the company's ability to contribute to social and environmental sustainability, also at the regional level, adds to this definition (Doane & MacGillivray, 2001).

An enterprise should be capable of paying all its debts, generating a positive cash flow and adequately remunerating staff and shareholders. To be considered economically sustainable, the enterprise must take precautions that ensure the maintenance of these capabilities in situations of economic, social and environmental turbulence (e.g. extreme weather conditions). In brief, it must be economically resilient. Some aspects of economic sustainability have been controversially discussed, most prominently the question of "sustainable growth". Steady and adequate economic growth is a common proxy for positive socio-economic development. Economic growth is the declared goal of most nation states and was endorsed by WCED (1987) and UNEP (2011). The possibility of endless economic growth in a limited ecosphere has been contested by many, and even dismissed as an oxymoron (Daly, 1990). Increasingly, the goal of decoupling economic growth from the use of limited natural resources is becoming popular (UNEP, 2011). The SAFA Guidelines forego the rather macro-economic issue of growth rates in favour of a micro-economic approach that focuses on the enterprise and the local community. The following themes are covered by the economic dimension of SAFA: investment (into sustainability), vulnerability of operations, product safety and quality, and local value creation.

Social well-being

The WCED, in its report "Our common future" (WCED, 1987), stated that social sustainability is about the satisfaction of basic human needs and the provision of the right and the freedom to satisfy one's aspirations for a better life. This applies as long as the fulfilment of one's needs does not compromise the ability of others or of future generations to do the same. The social dimension of sustainability pertains to human development, which is "the expansion of people's freedoms to live long, healthy and creative lives; to advance other goals they have reason to value; and to engage actively in shaping development equitably and sustainably on a shared planet" (UNDP, 2011).

Basic human needs and rights are defined in the International Bill of Human Rights, which consists of the Universal Declaration of Human Rights (UN, 1948), the International Covenant on Civil and Political Rights (UN, 1966a) and the International Covenant on Economic, Social and Cultural Rights (UN, 1966b). For the food and agriculture sector, Human Rights are translated into the Right to Adequate Food (FAO, 2004). Human Rights are further specified for work environments in the Declaration of Fundamental Principles and Rights at Work (ILO, 1998). Guidance on how to protect and respect Human Rights in business operations is provided by the 'Protect, respect and remedy' framework, proposed by the Special Representative of the UN Secretary-General on the issue of Human Rights and transnational corporations and other business enterprises. According to the framework, the signatory states of the aforementioned treaties have the duty to guarantee protection from human rights violations. Business enterprises are responsible of respecting human rights, both in their own business activities and where human rights impacts are "directly linked to their operations, products and services by their business relationships" (UNHRC, 2011). The framework was welcomed by stakeholders from the civil society, multilateral, business and industry domains.

Widely adopted normative documents, including the OECD Guidelines for Multinational Enterprises (OECD, 2011), the UN Global Compact and the SA 8000 International Standard (SAI, 2008), are in line with the 'Protect, respect and remedy' framework and with the ILO Declaration of Fundamental Principles and Rights at Work. The same applies to standards such as the Codes of Conduct of the Busi-

ness Social Compliance Initiative (BSCI, 2009) and the Common Code for the Coffee Community (4C Association, 2009), the Standards of Fairtrade International (Fairtrade International, 2011a-d), the Sustainable Agriculture Standard (SAN, 2010), and the compliance indicators of the Roundtable on Sustainable Biofuel (RSB, 2010), to cite just a few. Further standards, including the Basic Standards for Organic Production and Processing (IFOAM, 2005) and the Principles and Criteria for Forest Stewardship (FSC, 1996) refer to parts of the body of human and labour rights.

In SAFA, the contribution of the assessed entity to the fulfilment of human needs is at the centre of the social sustainability dimension. Social sustainability is broken down to the categories of decent livelihood, labour rights, equity, health and safety, and cultural diversity.

Interrelations between sustainability categories

Sustainability has to be analysed considering the assessed entity as a whole. This holistic perspective is required during most phases of SAFA, from the definition of the assessment’s goals through the delineation of its scope to the interpretation of results and the planning of measures based on the SAFA results. Numerous direct and indirect linkages connect the sustainability themes. The strongest and most direct of these are illustrated in Figure 6. Themes with manifold interdependencies include the Rule of Law (G4), Participation (G2), Decent Livelihood (S1) and Labour Rights (S2). This is a result of the multifaceted, multi-stakeholder nature of these themes. In the environmental dimension, intensive reciprocal interactions, mostly related with emissions, link Freshwater (E2), Land (E3), Biodiversity (E4), and Materials and Energy (E5).

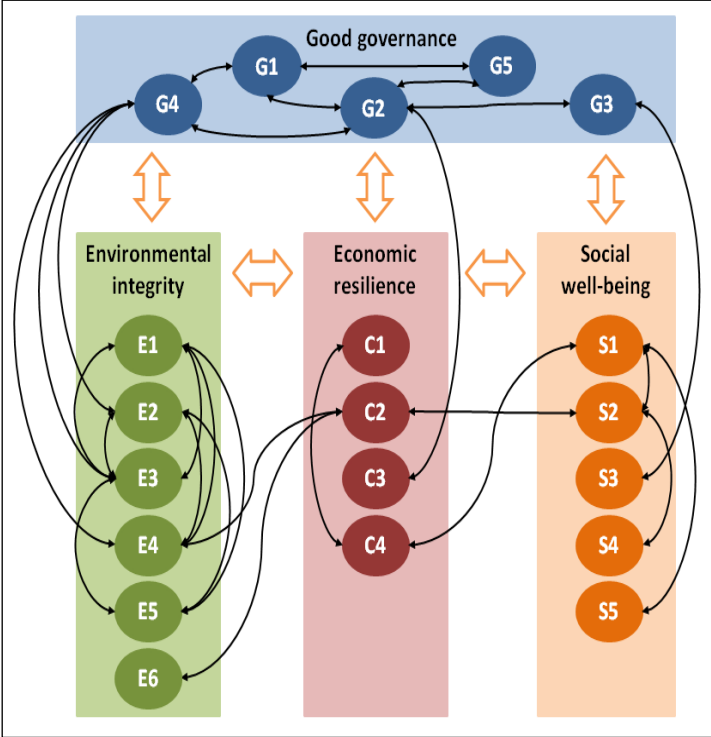


Figure 6. Interrelations between SAFA sustainability dimensions and themes. Lines indicate strong, direct interrelations between one or more sub-themes. Theme numbers as in Table 1.

5. Sustainability theme protocols

The following sustainability theme protocols provide detailed guidance on the contents of all SAFA sustainability themes. Each protocol (Table 5) includes examples of suitable indicators to determine sustainability performance for each sub-theme.

Table 5. Outline of SAFA sustainability theme protocols.

1. Relevance of the theme
Rationale for including the theme, acknowledged relation with sustainable development, important challenges, relation with food and agriculture systems, important international agreements.
2. Sustainability Goal
Translation of societal and higher-level goals to the operational level. One sustainability goal is formulated for each SAFA theme.
3. Sub-themes and Indicators
Tabular overview and description of sub-themes, examples of indicators for measuring performance in relation to the sustainability goal of the theme, data sources and classification of indicators.

5.1 Governance structure (G1)

Relevance of the subject

A good governance structure is the foundation of a successful, sustainability- and integrity-oriented enterprise culture (Loew & Braun, 2006; Erwin, 2010). Governance structure in SAFA means how the sustainability principle is embedded in the fabric of the whole enterprise. Through the governance structure, responsibilities for sustainability-related issues have to be assigned at the highest level of the enterprise, as the commitment of the top decision-makers is essential for superior sustainability performance (Loew & Braun, 2006). Many enterprises issue a mission statement in which purpose and goals of the enterprise are expressed, and which provides guidance to strategy development (Hill & Jones, 2007). Good governance includes the formulation of a statement that goes beyond profit to embrace ethics and sustainability, with due reference to existing international agreements and definitions. A mission statement building on integrity and sustainability is not limited to corporate self-interest (e.g. seeking market leadership), but should be based on a vision of a sustainable future that is attractive to all stakeholders (Maak & Ulrich, 2007). The mission statement should state, in credible, clear and authentic words, how the enterprise intends to contribute to a sustainable development. For the operational level, principles are defined through a Code of Conduct (CoC) defining normative guidelines for the pursuit of the business purpose (Maak & Ulrich, 2007). The CoC provides clear guidance in concrete situations, is authoritative, without limiting scopes of action too much, and fosters desirable behaviour. It provides management guidance and priorities for decision making in situations where trade-offs between the dimensions of sustainable development are encountered.

The agriculture and food sector hosts a diversity of enterprises whose structures range from a virtual absence of governance to highly sophisticated systems. Size and market power of enterprises in the same sector, region or value chain are equally variable. This often results in major imbalances and disadvantages, particularly where small enterprises depend on large firms that are better organised, but lack a business purpose going beyond profit. Larger size implies a larger sphere of impact and influence and thus also of responsibility. Therefore, large, well-organised enterprises should contribute to the improvement of market structures and to the sustainability of production of their suppliers, rather than capitalising on their weakness. A corporate leadership that is aware of the responsibility of the enterprise in terms of sustainable development pays attention to the social and environmental contexts in which it operates. In the respective sector or region, structural sustainable deficits may occur. As a successful enterprise has expertise in understanding the complexity of its operating environment, responsible leadership implies that the enterprise takes proactive measures to improve the sustainability of this environment, where possible. As for the small enterprises typical of agriculture and fisheries, operating culture depends on the personal integrity and values of the entrepreneur, who is personally liable and responsible for the enterprise. In such situations, the SAFA goals on governance structure are relevant insofar as they can inspire reflections on values and principles.

Internationally valid recommendations on governance structure are established through the OECD Principles of Good Corporate Governance (OECD, 2004), the UN Principles for Responsible Investment²² and the UN Global Compact (UNGC/IFC, 2009). Suitable indicators are described e.g. in the G3.1 Guidelines (GRI, 2011a). While it does not deal with corporate governance, Agenda 21 provides a basis for global governance, with the aim of a sustainable development (UN, 1992).

²² www.unpri.org

Sustainability goal

The enterprise disposes of explicit, publicly available sustainability objectives and effective means of implementation and verification, as well as of identification and proactive addressing of major sustainability challenges.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ²³
G1 Governance structure	G1.1. Corporate ethics	The enterprise has an explicitly and publicly stated business purpose, as well as a Code of Conduct, both of which are binding for management and employees, and the values and ethical guidelines of which are in line with sustainable development.	Existence of a publicly accessible mission statement including social, economic and environmental objectives of the enterprise AND existence of a Code of Conduct providing guidance concerning rules, information flow, sanctions and other important sustainability issues of the sector(s), supply chain(s) and region(s)	Mission statement, Code of Conduct, interview (management)	3
			Existence of procedures and instruments (e.g. risk management, environmental impact assessment) to identify and address sustainability challenges within sector and supply chain, in compliance with agreed international standards	Internal documentation (e.g. on risk management)	3
			Number and substantiality (share of turnover or gain invested, number of people affected) of activities and initiatives to improve sustainability, such as a rolling-plan for improving sustainability, capacity-building and partnerships, etc.	Internal documentation, CSR or similar report	1
	G1.2 Due diligence	Prior to decisions with potential major and long-term sustainability impact, due diligence procedures are done and relevant results made accessible to affected stakeholders in adequate form.	Share of important decisions in relation with which due diligence, risk assessment, or ex-ante and ex-post impact assessment on economic, environmental, social and governance issues were done, and the results shared with affected stakeholders	Internal documentation, interview (management, stakeholders)	1
			Existence of regular, timely, correct and adequate communication with all stakeholders affected by operations	Internal documentation, interview (stakeholders)	3

²³ 1: quantitative, absolute, performance; 3: qualitative, absolute, performance (re. Table 2).

5.2 Accountability (G2)

Relevance of the subject

Various meanings are attributed to the term “accountability”. In SAFA, it is interpreted as an account-giving relationship: accountability is about voluntarily informing others about the activities of the enterprise and justifying these activities, internally and externally. Since shareholders, contractors, consumers, the neighbourhood and other stakeholders may have to take decisions based on information disclosed by the enterprise such information must be complete, correct and accessible. The accountability concept is enhanced in SAFA to cover the disclosure of information about financial, environmental and social performance (the dimensions of the “triple bottom line” approach) and, where possible and relevant, its governance performance. This theme further integrates the implementation of due diligence procedures, as these go beyond the reporting of activities and performance.

The success of an enterprise *inter alia* depends on the stakeholders’ view of its credibility, transparency and performance. For employees, for example, identification with a well-respected company can be much better than with one that has a bad reputation. Consumers as well may prefer products of respectable companies, and shareholders and investors increasingly tend to put their money in operations of which they are convinced that all potential risks are thoroughly managed (G100, 2003). Perceptions of an enterprise’s integrity and accountability are affected by how performance with respect to the economic, environmental and social dimensions of sustainability is communicated. There is increased awareness that an active and holistic management of accountability, including multi-dimensional reports, compliance with auditable standards and labels as well as due diligence procedures all are essential elements of the enterprise’s integrity system. Further elements of this system include vision and mission statements of the board, a Code of Conduct (see “Governance structure”) and the transparency of all of these elements and activities towards stakeholders and the public (Maak & Ulrich, 2007). Holistic reporting requires the collection, evaluation and comprehensive compilation of performance data. Accounting complexity can be very high, particularly in diverse and internationally operating corporations. Reporting has to be adapted to the knowledge and interests of the concerned audience, meaning that a balance must be struck between complexity and accessibility. Assumptions e.g. in accountings and on the enterprise’s sphere of impact must be disclosed and justified.

The agriculture and food sector is at the nexus of the biosphere and the human economy and can thus be considered a custodian of land, crops, animals and other resources. Its products are directly used or consumed by everybody. This causes a high sensitivity of the public to actions and developments in this sector that impact on people and environment. Transparency and credibility are important success factors in food and agriculture, as proven by the growth of sales of organic, fairtrade and other credibly labelled products. Due diligence procedures can help anticipate and prevent negative impacts on environment and people, and thus protect the enterprise’s image.

Guidance on how to deal with accountability is available, for example, through the G3.1 Guidelines (GRI, 2011a), the AA1000 Principles Standard (AccountAbility, 2008), the SA8000 standard (SAI, 2008) and similar instruments.

Sustainability goal

The enterprise assumes full responsibility for its business behaviour and regularly, transparently and publicly reports on its sustainability performance.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ²⁴
G2 Accountability	G2.1 Holistic audits	All sustainability-related business areas are regularly reviewed in accordance with recognised sustainability reporting systems; reports are available to the public.	Existence of publicly available information about economic, social and environmental performance (e.g. CSR, CSV, triple bottom line reporting)	CSR or similar report	3
			Existence and accessibility to auditors of complete, correct data and records required for holistic auditing and reporting	CSR or similar report, audit-related documentation	3
	G2.2. Responsibility	Accordance of business behaviour with corporate ethics is regularly and explicitly assessed at the most senior level of the enterprise.	Existence of transparent definitions of mandates, responsibilities and accountability concerning sustainable development at all levels of management	Organisation chart, interview (management)	3
			Existence of procedures and instruments to evaluate the Code of Conduct and improve its implementation, including acting upon deviations	Internal documentation, reports	3
			Number of incidents where responsibility for incidents was not assumed.	Internal documentation, independent sources	1

²⁴ 1: quantitative, absolute, performance; 3: qualitative, absolute, performance (re. Table 2).

5.3 Participation (G3)

Relevance of the subject

Participation refers to the ability to actively take part in decision-making. In democratic forms of government, citizens dispose of a range of institutionalised forms of participation. In business as well, participation has become an important concept. In the context of SAFA, participation denotes stakeholder participation in the widest sense, as with the issue of sustainable development, many different stakeholders who may be affected by business activities come into focus. An enterprise that is serious about sustainability cannot express its performance solely through shareholder value, as the latter may grow through an externalisation of environmental, social or economic costs.

A stakeholder is any group or individual who can affect, or is affected by, the actions of the enterprise (Freeman, 1984). One needs to distinguish powerful stakeholders who "can affect" from stakeholders with little or no influence who "are affected by" decisions. Particularly concerning the second group, a wide interpretation of the term "stakeholder" should be followed, covering e.g. local community members, consumers, farmers and fishers, future generations and the living environment. From an ethical perspective, it is not the power of a stakeholder that determines the validity of his or her claims, but solely the legitimacy of claims, which ideally is established through a "power-free discourse" (Ulrich, 2008). This discourse has to facilitate understanding between dominant and dependent stakeholders and should be based on mutual respect, equal opportunity, recognition, understanding, willingness, honesty, and a readiness to reflect and to concede. It is about a real balancing of interests through communication (Maak & Ulrich, 2007). Where there is a large imbalance e.g. of market power between stakeholders, the weaker side should be empowered such that it can effectively participate in the dialogue. Mediators can help safeguard a balanced discourse. If a misuse of power occurs or stakeholders are harmed by actions of an enterprise, adequate grievance procedures must be in place to ensure that remedy and restoration are provided (see "Rule of law").

The number of people working in, dependent upon and affected by the agriculture and food sector as a whole is enormous, and likely surpasses that of any other sector of the economy. The number of potentially affected stakeholders can be very large, even for a small or medium enterprise. While identifying, informing and empowering stakeholders is highly relevant, also due to the importance of transparency and credibility in food chains (see "Accountability"), it is also a major challenge. Enterprises in the value chain will have to cooperate with each other to ensure correct and comprehensive stakeholder information and participation. This offers the advantage of enhanced transparency of the chain and of improved, systematic knowledge of the chain(s) of which the enterprise forms part. Even in smallholdings, at the level of rural households and among producers, participation is essential to share knowledge and take fair decisions regarding the use of family or community resources (see "Equity").

The OECD Principles of Good Corporate Governance (OECD, 2004) include detailed recommendations concerning shareholder and employee participation. The ILO Conventions 87 and 98 establish the freedom of association and the right of workers to organise and collectively bargain, and thus provide a basis for employee participation. Personnel participation is treated in the G3.1 Guidelines as well (GRI, 2011a). The strengthening of the role of major groups in development is the subject of section III of Agenda 21 (UN, 1992). In many countries, legislation requires stakeholder participation, and in particular the consent of local communities and administration, prior to the implementation of e.g. construction projects.

Sustainability goal

All stakeholders substantially affected by the enterprise's activities are identified, empowered and invited to share decision-making on activities impacting their lives and having major environmental impacts.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ²⁵
G3 Participation	G3.1 Stakeholder dialogue	In decision-making processes, potentially affected stakeholders, including those unable to claim their rights (e.g. nature, future generations) are proactively identified, informed, empowered and considered, to the extent possible.	Existence of a thorough stakeholder analysis based on legitimacy of claims, including explicit justification AND (*)	Internal documentation, interview (management)	3
			Percentage of identified stakeholders with whom the enterprise is in dialogue or contact and whose claims are duly considered in decision-making (*)	Internal documentation, interview (stakeholders, management)	1
			Rating of the quality of stakeholder participation in dialogues	Stakeholder survey	1
			Percentage of identified stakeholders with access to information that is sufficient to empower them to effectively participate in stakeholder dialogue ²⁶ (*)	Stakeholder survey	1
			Percentage of identified stakeholders who are actively informed (*)	Internal documentation, stakeholder survey	1
			Percentage of decisions on disputed subjects, which are thoroughly justified and explained to affected stakeholders	Internal documentation, stakeholder survey	1
	G3.2 Grievance procedures	All stakeholders have access to appropriate grievance procedures without a risk of negative consequences.	Percentages of personnel, customers and other stakeholders, respectively, with access formal,	Internal documentation, interview (management)	1 / 3

²⁵ 1: quantitative, absolute, performance; 3: qualitative, absolute, performance (re. Table 2).

²⁶ Processes involving free, prior, informed consent are a good example for an appropriate procedure.

			mutually recognised grievance procedures AND Existence and utilisation of procedures or instruments ensuring integrity of complaining persons or groups ²⁷		
G3.3 Conflict resolution	Conflicts of stakeholder interests are resolved through appropriate direct or mediated dialogue based on respect, mutual understanding, fair conflict resolution and equal power.	Percentage of disputed subjects that are addressed in a dialogue-based solution-finding process lead by an independent, commonly agreed party	Internal documentation, stakeholder survey	1	
		Existence and utilisation of procedures or instruments (e.g. mediators) ensuring that conflict solution is dialogue-based (not power-based)	Internal documentation, interview (management), stakeholder survey	3	

²⁷ Bold **AND** indicates that more than one indicator is needed to cover the sub-theme.

5.4 Rule of law (G4)

Relevance of the subject

The rule of law (ROL) is a concept important to modern legal systems and international agreements. The United Nations defines the ROL as a principle of governance by which all persons and entities are “accountable to laws that are publicly promulgated, equally enforced and independently adjudicated”. These laws have to be consistent with international human rights standards (UN, 2004). Among the key elements then is accountability before the law, legal certainty and legal transparency. The ROL goes beyond the above by demanding that the laws themselves are consistent with universally valid human rights, in particular the Universal Declaration of Human Rights (UN, 1948) and the rights protected by human rights treaties. In SAFA, the ROL is considered in a business context, its main central aim being the protection of the individual and group rights of all (Ehm, 2010).

Adherence to the ROL concept requires that (universal) justice be given absolute priority. Opportunities for profit are to be foregone where the moral, legitimate rights of others would be violated. An enterprise committed to the ROL will only conduct business that can be considered legitimate in the light of the moral rights of all humans, as expressed e.g. in the Universal Declaration of Human Rights (UN, 1948). Businesses must respect and avoid being complicit in human rights violations by the state, even if they are formally legal under applicable national law. Enterprises with a large sphere of influence and impact should not only respect the ROL in their own operations, but require business partners to do the same. Of 320 assessed cases of human rights abuses by international corporations, 40% included indirect forms of company involvement; most often, companies benefited from the abuses of others, including suppliers. Nearly 75% of cases involved company sourcing from suppliers (UNHRC, 2008).

In the context of agriculture, equitable access to and legal certainty over natural resources on which agriculture depends, stakeholder participation in decisions affecting natural resource use and access, the presence of mechanisms to monitor, enforce and ensure access to justice and the legal empowerment of stakeholders are of crucial importance. Enterprises in food and agriculture operate in a variability of legal frameworks, with different degrees of legal certainty and recognition of a universal ROL. Where states and judiciaries are weak, unclear or illegitimate situations can evolve, for example concerning ownership of and access to land, clean water and other resources. This applies in particular to remote rural regions, where law enforcement tends to be particularly difficult. Major imbalances between market players (see “Governance structure”) can further contribute to situations where “might makes right”. Of the 320 alleged human rights abuses mentioned above, 7% concerned the food and beverage sector, and 21% the retail and consumer products sector (UNHRC, 2008).

The moral rights of all humans emanate from the national laws (often the constitutions) of many countries. At international level, they are established through the Universal Declaration of Human Rights (UN, 1948). A clear position on human rights in business is available in the form of the “Protect, respect and remedy” framework (UNHRC, 2011). Through an online portal²⁸, the UN provide comprehensive knowledge resources on ROL. Most single aspects of the ROL are subject to national legislation as well as of internationally applied standards. For example, anti-bribery and anti-corruption are explicitly treated in the BSCI Code of Conduct (BSCI, 2009), the UN Global Compact (UNGC, 2010) and the G3.1 Guidelines (GRI, 2011a).

²⁸ <http://unrol.org>

Sustainability goal

The enterprise is uncompromisingly committed to fairness, legitimacy and protection of the Rule of Law, including the explicit rejection of extortion, corruption and of the use of resources that are under legal dispute, whose use contradicts international agreements or which is considered illegitimate by affected stakeholders.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ²⁹
G4 Rule of law	G4.1 Commitment to fairness and legitimacy	Legality of operations and compliance with national and international laws, including human rights, and with voluntary responsible business standards are given absolute priority over profit opportunities; actions that violate the Rule of Law are renounced.	Existence of a written commitment to legality and compliance (see left), and to not committing or being complicit in human rights violation is explicitly stated in the company’s internal business practice and codes.	Code of conduct or other protocols	3
			Existence of internal guidelines against bribery and corruption AND below indicator (*)	Internal documentation, interview (management)	3
			Number of trainings for employees who work in areas vulnerable to corruption AND below indicator (*)	Internal documentation (e.g. of human resources department)	1
			Number of cases of bribery and corruption involving the enterprise (*)	Independent external sources	1
	G4.2 Remedy, restoration and prevention	In case of infringements, effective remedy is provided and adequate actions for restoration and prevention are taken.	Existence of mechanisms for adequate remedy, restoration and commitment to non-repetition in case of infringements	Internal documentation, interview (responsible persons)	3
			Existence of simple and accessible recourse mechanism to address complaints of infringements by internal or external stakeholders	Internal documentation, interview (responsible persons)	3

²⁹ 1: quantitative, absolute, performance; 3: qualitative, absolute, performance (re. Table 2).

			Number of infringements after liability was assumed and adequate remedy was provided	Independent external sources, court files	1
G4.3 Co-responsibility	Within its sphere of influence, the enterprise does not seek to escape strict laws on social and environmental aspects (e.g. by relocating facilities), but supports the improvement of the regulatory framework on all dimensions of sustainability.	Existence of a statement in the Code of Conduct that requires compliance with the stricter environmental and social laws, where there are differences between old and new location	Code of Conduct	3	
		Number of incidents where local or national authorities were pressurised to offer conditions convenient to the enterprise, but detrimental to society or environment.	Interview (management), independent external sources (authorities)	1	
		Activities and initiatives taken to improve the regulatory framework on sustainability	Interview (management), independent external sources (authorities)	5	
		Number of attempts to influence the legal framework in the direction of sustainable development	Independent external sources (authorities)	1	
		Existence of a written protocol that excludes ownership of any operation involving the use of natural resources under legal or legitimate dispute	Code of Conduct or other documentation	3	
G4.4 Resource appropriation	Operations do not involve any use of water, land, biodiversity and other resources under legal or legitimate dispute, and are carried out with due diligence and respect for existing claims and access and use arrangements with local stakeholders.	Number of incidents where due diligence for recognition and respect for formal and informal claims, user or access arrangements over natural resources was not carried out	Internal documentation, interview (stakeholders, management)	1	

5.5 Holistic management (G5)

Relevance of the subject

Sustainable development offers many opportunities to entrepreneurs (Haanaes et al., 2011). The sustainability paradigm provides a basis for the strategic direction of entrepreneurial activities and economic decisions (see “Governance structure”). The growing number of companies participating in environmental and social management schemes, or reporting according to the standards of e.g. the Global Reporting Initiative (“an increasing number of companies and organisations want to make their operations sustainable”; GRI, 2011a) testifies to the rapidly increasing practical relevance of holistic management or elements thereof. In SAFA, holistic management is understood as management that aims at the continuous improvement of environmental integrity, economic resilience, social well-being and good governance, with the ultimate goal of operations being fully in line with a sustainable development of society.

In business, a successful management of sustainability performance is achieved if the management of environmental, social and governance issues is in line with increased competitiveness and economic performance. The triangle of “people, planet and profit” is frequently used to illustrate this. Holistic management thus requires the integration of environmental, social and economic management; it thus covers all the links between non-market and economic issues (Schaltegger et al., 2003; Porter, 2008). The implementation of such a view of sustainability faces challenges that require a long development process, as well as time and know-how (GfaW, 2012). One particular challenge to sustainability management is finding appropriate ways of dealing with trade-offs between sustainability goals. Holistic management is about striking a balance between short- and long-term interests, economic, social and environmental concerns, stakeholders and shareholders. An appropriate Code of Conduct (see “Governance structure”) provides guidance on how to deal with trade-offs.

Operations of enterprises, including those in the food and agriculture sector, cause external effects, i.e. impacts that are not taken into account in rational decision making from a purely economic standpoint and that are not normally reflected in the enterprise’s accounts. These external effects can be positive or negative and may be of an environmental (e.g. air pollution), social (e.g. education and training of young people) and economic (e.g. added value generated by NGOs due to donations for development projects outside the company’s sphere of interest) nature. The fact that these external effects are neither accounted for nor considered in economic decisions leads to undesirable consequences from a societal viewpoint. Therefore, the consideration of such external effects in decision-making and accounting is a cornerstone of sustainable development. Full-cost accounting is an integral part of holistic management that is particularly important in the agricultural sector, where production intensively interacts with the natural environment. However, there still is a lack of adequate methods for operationalising full-cost accounting in business.

The topic of holistic management (often termed sustainability management), is a relatively new one and thus not treated in detail by international agreements or recommendations. The G3.1 Guidelines provide guidance on the thematic scope and practice of holistic management (although their main subject is sustainability reporting; GRI, 2011a). The activities that are part of holistic management are as well described through the United Nations Global Compact Management Model (UNGC, 2010). Some guidance may also be derived from the UN Principles for Responsible Investment³⁰.

³⁰ www.unpri.org/principles

Sustainability goal

Production and procurement are managed, and accounting is done, with equal consideration of all dimensions of sustainability and of the trade-offs and synergies linking them.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ³¹
G5 Holistic management	G5.1 Sustainability in quality management	All relevant sustainability categories are managed effectively and with a holistic view; trade-offs between sustainability dimensions are managed actively and synergies are built with other partners in order to address hot spots.	Quality and completeness of planning instruments and documentation, and of implementation, in the social, governance, environment and economic dimensions	Planning documentation, interview (quality management), quality handbooks	3
	G5.2 Certified production and sourcing	The sustainability of production of the enterprise and its suppliers (first tier) is assured.	Share of inputs sourced from suppliers that have passed independent evaluations of social, ethical, human rights or environmental compliance or of sustainability performance	Records of purchases (disaggregated into certified and non-certified)	1
			Share of production taking place, or share of turnover generated, at sites that are certified according to accepted systems for environmental and social management	Certificates	1
	G5.3 Full-cost accounting	Business success is measured taking into account direct and indirect external effects in the social and environment dimensions	Rating of the comprehensiveness of internalisation of external effects into accounts	Internal documentation, accounts, protocol for full-cost accounting	5

³¹ 1: quantitative, absolute, performance; 3: qualitative, absolute, performance; 5: measures, absolute (re. Table 2).

5.6 Atmosphere (E1)

Relevance of the subject

Priority atmospheric issues include climate change, stratospheric ozone depletion, acidification and eutrophication, urban air quality and tropospheric ozone. Their impact relates to human health, biodiversity, health of ecosystems, economic damage and global security. Many of the effects are long-term, global in nature and irreversible, with consequences for future generations.

Global warming refers to the rising of average surface temperature, expected as a result of greenhouse gas (GHG) emissions into the atmosphere from human activity. During the last 100 years, global average surface temperature has risen by about 0.8°C, reflecting an increase of over 30% in atmospheric CO₂. If current GHG emission patterns continue unabated in coming decades, models project global surface temperature increases of 1.1 to 6.4°C by the end of the 21st century (IPCC, 2007). Such projected warming, together with associated changes in precipitation patterns and the frequency of extreme weather events, will modify the agro-ecological conditions that determine the regional flora and fauna distribution on the planet. Such pressures, increasing at an accelerated pace in coming decades, will threaten the very stability and thus productivity of ecosystems, with potential negative environmental, social and economic consequences at many scales.

Agriculture is strongly affected by global warming, as changes in temperature and rainfall patterns and dramatic weather events can impair agricultural activities, particularly in poor developing regions where people are already vulnerable to food insecurity. Agriculture activities and the food sector also are major contributors to climate change. Some 20 to 30% of global GHG emissions can be associated with food, while crop and livestock production alone account for 10 to 15 % of global GHG emissions (Bellarby, 2008; EC, 2010). Direct driving factors are enteric fermentation from livestock production, fertiliser application in agricultural lands, biomass burning, rice cultivation and management of animal waste. Indirect but significant emissions drivers are the agriculture-driven land use changes.

Energy use, motor transport and industrial food and agriculture, associated with high mobility and urbanisation, release air pollutants such as particulate matter, sulphur dioxide, nitrous oxides, volatile organic compounds and ground-level ozone. These pollutants impair human health and the integrity of ecosystems. The WHO attributes more than 2 million premature deaths per year to air pollution with particulate matter, a figure that is steeply rising. Anthropogenic emissions of ozone-depleting substances are caused by the use of solvents, refrigerants, foam-blowing agents, spray propellants and pesticides. The resulting decrease of the protective ozone layer causes increased ultraviolet radiation at the earth surface that can damage human health. Terrestrial and marine ecosystems are negatively affected e.g. through reduced photosynthesis.

Agriculture is the main source of anthropogenous N₂O and NH₃ emissions, which cause eutrophication in natural ecosystems. At the same time, food and agriculture activities are among the sectors most exposed to acidifying and eutrophication substances and of tropospheric ozone, which can all impair plant growth and ultimately limit productivity.

The United Nations Framework Convention on Climate Change (UNFCCC) aims at stabilising atmospheric GHG concentrations at a level that prevents dangerous climate change³². Linked to it are the Kyoto Protocol (of which target to reduce the emissions of developed countries by at least 5% of 1990 levels by 2008-2012 was not reached), the Bali Road Map and the Cancún Agreements. The

³²

<http://unfccc.int/resource/docs/convkp/conveng.pdf>

WHO has elaborated air quality guidelines,³³ whereas standards for air quality and technical requirements for air filtration are specified by national law in many countries. The 1999 Gothenburg Protocol³⁴ deals with the abatement of acidification, eutrophication and ground-level ozone. Production and consumption of ozone-depleting substances are phased out under the Vienna Convention and the Montreal Protocol³⁵, and recovery of the ozone layer is expected towards 2050.

Sustainability goal

The enterprise's actions contain greenhouse gases as much as possible and do not release quantities of ozone-depleting substances and air pollutants (such as particulate matter, sulphur dioxide, nitrogen oxides, volatile organic compounds and ground-level ozone) that would be detrimental to the health of ecosystems, plants, animals or humans.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ³⁶
E1 Atmosphere	E1.1 Greenhouse gases	Operations contain greenhouse gases as much as possible.	Net GHG emissions of the enterprise (kg of CO ₂ -eq)	Records of land use, livestock, of fuel, electricity and N fertiliser consumption, of de- and forestation, GHG balance	1
			GHG intensity of operations (net emissions in kg of CO ₂ -eq per unit product or revenue or area etc.)	As for the above indicator, plus records of production, land use, accounts etc.	
			List and efficacy rating of GHG mitigation measures, including carbon sequestration by soils and vegetation, and carbon off-set schemes (e.g. Gold Standard ³⁷ , Clean Development Mechanism ³⁸)	Documentation of measures taken	3 / 5
			Reduction of GHG emissions through mitigation	GHG balance	1

³³ www.who.int/phe/health_topics/outdoorair_agg/en

³⁴ www.unece.org/env/lrtap/multi_h1.html

³⁵ http://ozone.unep.org/new_site/en/index.php

³⁶ 1: quantitative, absolute, performance; 3: qualitative, absolute, performance; 5: measures, absolute; (re. Table 2).

³⁷ www.cdmgoldstandard.org

³⁸ <http://cdm.unfccc.int>

			measures (kg of CO ₂ -eq)		
E1.2 Air pollution		Operations cause no rise of concentrations of ozone-depleting substances, ammonia, NO _x , SO _x , particles, ground-level ozone, biological pollutants and other air pollutants to levels detrimental to the health of ecosystems, plants, animals and humans.	Total emissions of ammonia, CO, NO _x , SO _x , photochemical oxidants, particulate matter (PM2.5, PM10, suspended particulate matter etc.), pesticides, microorganisms	Records of purchases and use of relevant substances, inspection of abatement installations (see left)	1
			Total consumption of ozone-depleting substances (all substances treated in the annexes to the Montreal Protocol ³⁹)	Records of purchases of relevant substances and equipment containing them	1
			Ambient concentrations of gaseous pollutants (as above) in the surroundings of production sites	Measurement (or recent records)	1
			List and efficacy rating of measures implemented for reducing emissions of ammonia, CO, NO _x , SO _x , photochemical oxidants, particulate matter, pesticides, microorganisms	Records of purchases of relevant materials (see left)	5
			List and efficacy rating of measures implemented for reducing emissions of ozone-depleting substances	Documentation of measures (plan)	5

³⁹ http://ozone.unep.org/new_site/en/Treaties/treaty_text.php?treatyID=2

5.7 Freshwater (E2)

Relevance of the subject

Freshwater is essential to support all forms of life, as well as food production. Global issues of health, poverty, deforestation, desertification and land use change are all directly associated with water resources and their management. A fifth of the world's population, more than 1.2 billion people, live in areas of physical water scarcity (IWMI, 2007). With population increase and economic growth, it is estimated that 2/3 of world population will live in water-stressed areas by 2025. Low- to medium-income countries with high rates of population growth are particularly affected by environmental stress and socio-economic tension, resulting from water supply's being outstripped by demand (FAO, 2011). Of the 3900 km³ per year of freshwater withdrawn by humankind, 70% are used by agriculture. Irrigated land largely contributes to food security. Worldwide irrigated area has increased by 117% from 1961 until 2009. A further increase of irrigated area, from 301 million hectares in 2009 to 318 million hectares in 2050 has been projected (FAO, 2011). With agricultural water use being comparatively low-profit, water availability to agriculture is a constraint especially in areas with a high intensity of water use or inadequate management of water resources (FAO, 2011). The increase of sealed surfaces aggravates the difficulty of maintaining well-balanced water cycles. Surface sealing, not only in urbanised areas but also through the compaction of arable soils by heavy machinery, reduces soil infiltration capacity, resulting in surface runoff, soil erosion and floods.

Freshwater quality is as important as sufficient water quantities. It is impaired by industrial waste and sewage pollution, intensive agrochemical use, saltwater intrusion and soil erosion. High nitrate levels in freshwater threaten human health and cause algal growth and eutrophication. Pollution with heavy metals, toxic xenobiotics, pathogens and other substances can impair the health of humans and ecosystems. Drinking water polluted with pathogens is a source of infectious disease, said to claim 6 000 human lives each day (UNESCO, 2003). About 20% of the world's irrigated land is salt-affected, and salt water intrusion is of particular concern to arid and semi-arid regions and small island states. Inappropriate agricultural water use can pollute waterways or cause secondary soil salinisation. The latter problem affects large tracts of land, in areas already affected by land and water scarcity (FAO, 2011). Agriculture is not only a non-point polluter of water, but also an important point source polluter: 70% of the pesticide pollution in surface waters is estimated to originate from point sources. Irrigation with insufficiently treated wastewater is a cause of infections by intestinal worms and bacteria and of diarrhea (Blumenthal & Peasey, 2002).

Chapter 18 of Agenda 21 calls for safeguarding an appropriate supply of good quality water for the entire population of the planet, while maintaining the hydrological, biological and chemical functions of ecosystems (UN, 1992). Millennium Development Goal 7 includes target 7.C, "halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation"⁴⁰. The WHO has issued guidelines for drinking water quality, as well as for the safe use of wastewater, excreta and greywater⁴¹. This is complemented by national laws, and international regulations, such as the Nitrates Directive of the EU⁴².

⁴⁰ www.mdgmonitor.org/goal7.cfm

⁴¹ www.who.int/water_sanitation_health/publications/2011/dwq_guidelines/en/index.html

⁴² <http://ec.europa.eu/environment/pubs/pdf/factsheets/nitrates.pdf>

Sustainability goal

Freshwater withdrawal and use do not hinder the functioning of natural water cycles and ecosystems nor contribute to water pollution that would impair the health of human and animal communities.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ⁴³
E2 Fresh-water	E2.1 Water quantity	Surface water management (avoidance of surface sealing and deforestation) and freshwater withdrawal for operations do not contribute to impairing the functioning of natural water cycles, ecosystems and human communities.	Total freshwater use from all sources (tap water, rivers, wells, communal grid etc.; in m ³)	Records of water consumption	1
			Ratio of water withdrawal to recharge	Records of water consumption and local hydrological data	1
			Number of water-related disputes (lawsuits, social unrest, substantial and lasting dissonance)	Interview with concerned personnel, stakeholder survey	1
			Number, intensity and duration of disturbances and disruptions of production due to lack of water	Internal documentation, interview with concerned personnel	1
			Rating of irrigation technologies and their application (timing, installation etc.)	Documentation/inspection of irrigation equipment	3
			Hygienically safe water re-use (including water from rain-water harvesting) and recycling (in m ³ or in % of total water or treated wastewater volume)	Records of water consumption and or water re-use and recycling	1
			Water productivity, expressed in unit of product, or value of output (including services) per unit of water supply (cubic metre)	Records of water consumption and of production volumes	1

⁴³ 1: quantitative, absolute, performance; 3: qualitative, absolute, performance; 5: measures, absolute; (re. Table 2).

	E2.2 Water quality	Operations cause no pollution of water that would threaten the health of humans or ecosystems.	Water quality in groundwater and open water on and close to production sites (downstream): NO ₃ , PO ₄ , salts, faecal coliforms, plant protection products; BOD, COD (in ppm, dS/m, l of O ₂ per l of water etc.)	Measurements (or recent records)	1
			Rating of pollution risk from excreta and silage: safety of storage facilities, proximity to nearest water body (precision and efficiency of application technology, timing and conditions during application)	Documentation/inspection of storage facilities	5
			Amount of pesticides used that can have detrimental effects on aquatic ecosystems ⁴⁴ (also consider metabolites). If possible, rate the quality of pesticide application.	Records of pesticide use	1
			Rating of pollution: number of spills, volumes discharged, pollutant load of discharged water	Interview with concerned personnel, data of public administration	3
			Rating of wastewater treatment procedures by standard effluent quality	Documentation/inspection of treatment procedures	5

⁴⁴ The rating can use the Environmental Impact Quotient as a basis (www.nysipm.cornell.edu/publications/eiq).

5.8 Land (E3)

Relevance of the subject

Healthy soils are the basis of virtually all life and also of rural lifestyles. Humans use soils to grow food and fodder crops, renewable raw materials and energy. Soils provide ecosystem services including water purification, nutrient cycling, carbon storage and buffer, filter and habitat functions. Due to expanding human requirements, fertile land, suitable for primary production of biomass, is a scarce resource. The magnitude of land cover change threatens the stability and resilience of ecosystems, *inter alia* through its impacts on global warming. Soil health (fertility) is determined by several factors, including soil reaction (pH), soil texture and structure, cation exchange capacity, soil organic matter content and quality, and the presence of soil organisms or biota. These in turn are the result of factor combinations, and all interact with geology, climate, vegetation, landform and soil management.

Agriculture and forestry play a pivotal role in sustainable land use, as it occupies one third of terrestrial surface, with forests occupying another third. Natural fertile soils can hardly be increased, but can easily be destroyed (World Soil Charter, 1981). While the world's cultivated area has grown by 12% from 1961 until 2009, it decreased from more than 0.4 ha to 0.25 ha (0.17 ha in low-income countries) per capita in the same period. Given the limited availability of original fertile soils, more than 80% of the required growth of agricultural production until 2050 will have to come from yield enhancement on currently cultivated soils (FAO, 2011).

Maintaining and rehabilitating soil health is an absolute imperative. Yet land degradation occurs on about 2 billion hectares, including 30% of irrigated and 40% of rainfed agricultural area, and 70% of rangelands (ECOSOC, 2000). The most important processes (in terms of area) are water erosion, wind erosion, salinisation, compaction and chemical pollution (Oldeman et al., 1991; MEA, 2005). Surface sealing, soil nutrient depletion, acidification, compaction and the formation of salt or metal oxide crusts are further problems. Land degradation causes off-site damages, such as sedimentation and eutrophication of rivers, estuaries and ocean regions, dust emissions, floods and emissions of greenhouse gases like N₂O (MEA, 2005; van der Ploeg et al., 2006). It is caused by population pressure, unsuitable land allocation, inappropriate farming and grazing practices and lack or misuse of appropriate technologies.

Desertification was identified as one of the greatest challenges to sustainable development during the Earth Summit in 1992. With a view to reverse and prevent desertification, the United Nations Convention to Combat Desertification (UNCCD) was established in 1994⁴⁵. Chapter 10 of Agenda 21 provides a basis for sustainable soil use. In Chapter 14, a holistic approach to using an integrated, ecosystem-based management is advocated to achieve sustainable land management (UN, 1992). Soil protection is addressed by the 1982 World Soil Charter⁴⁶, which is based upon the European Soil Charter of 1972. At the national level, the sustainable utilisation of soils often is subject to laws on environment protection and on agriculture.

Sustainability goal

No land is lost due to surface sealing or mismanagement of arable lands and pastures, and soil fertility is preserved or enhanced.

⁴⁵ www.unccd.int

⁴⁶ www.fao.org/docrep/T0389E/T0389E0b.htm

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ⁴⁷
E3. Land	E3.1 Organic matter	Content (at least 1% of organic matter in the topsoil) and quality of soil organic matter provide the best conditions for plant growth and soil health.	Percentage of land where soil organic matter in the topsoil exceeds 1%.	Measurement (or recent records)	1
	E3.2 Physical structure	Bulk density and aggregate stability provide the best conditions for plant growth and soil life that are achievable under the given soil and climate conditions.	Percentage of land where infiltration rate is between 10 and 20 mm of water per hour	Measurement (or recent records)	1
	E3.3 Chemical quality	Contents of plant nutrients in the soil and soil pH provide the best conditions for plant growth and soil life that are achievable under the given soil and climate conditions; neither chemical nor biological soil pollution occurs.	Plant-available N, P and K content in the root zone	Measurements (or recent records)	1
			Ratio of nutrient (N, P, K) supply to demand, at farm or parcel level	Records of live-stock and crop production, fertiliser imports and exports	1
			Percentage of crop and livestock nutrient (N, P, K) demand covered from farm sources	Records of live-stock and crop production, fertiliser imports and exports	1
			Percentage of land where pH in the root zone is between 5.5 and 7.0	Measurements (or recent records)	1
	E3.4 Land degradation and desertification	No soil is lost through sealing, degraded land is rehabilitated and soil erosion is controlled at a minimum level that must not exceed 10 tons per ha and year.	Percentage of land where soil erosion is below 10 tons per hectare and year AND indicator marked with “*”	Risk assessment e.g. based on the Revised Universal Soil Loss Equation	1
			Net loss or gain of productive land surface (area where productivity was restored minus	Interview (concerned personnel), remote sensing,	1

⁴⁷ 1: quantitative, absolute, performance (re. Table 2).

			area lost due to degradation or sealing) (*).	visual inspection	
			Percentage of area used for growing any ingredient for a product, where natural habitat was destroyed during the last ten years AND indicator marked with “*”.	Interview (concerned personnel), remote sensing, land use map	1
			Percentage of utilised areas where effective soil conservation or rehabilitation measures are in place AND indicator marked with “*”	Interview (concerned personnel), remote sensing, land use map	1

5.9 Biodiversity (E4)

Relevance of the subject

Biodiversity is the diversity of ecosystems, of species in these ecosystems and of the genome within these species. Its preservation is essential for humankind, not only because we utilise a great diversity of species but also because healthy ecosystems provide vital services like pollination, pest management, filter functions of soils and the regulation of nutrient cycles. In 1997, the global economic value of ecosystem services was estimated at USD 16 to 54 trillion (Costanza et al., 1997); global GDP then was USD 18 trillion. Measures for the protection of biodiversity and ecosystems pay off, return on investment being estimated to exceed cost by a factor of 10 to 100 (TEEB, 2009).

Humans have altered ecosystems at unprecedented scales and intensity. As a result, biodiversity is adversely affected by pollution, land degradation, habitat fragmentation and loss, introduction of exotic species, climate change and natural disasters. Consequences include a loss of species and an impairment of ecosystem services (Pimm & Raven, 2000; MEA, 2005). In many ecosystems, the loss of diversity is associated with reduced adaptive capability and resilience (CBD, 2010). The production of genetically modified crops over large areas is increasingly associated with resistance by weeds to glyphosate (UNEP, 2011), thus compromising the resilience of GM-based production systems.

Agricultural biodiversity encompasses the variety and variability of animals, plants and microorganisms which are necessary to sustain the functions of the agro-ecosystem, its structure and processes for, and in support of, food production and food security. Agriculture, forestry and fisheries dispose of powerful levers to influence biodiversity, such as the allocation of areas to different uses, the choice of species, varieties and breeds, fertilisation, harvesting etc. In agricultural landscapes, biodiversity depends on the landscape's richness in biological structures and on the intensity of farming. Networks of ecological infrastructures, including spacious protected areas and smaller stepping-stone and corridor habitats, should pervade landscapes (Fischer et al., 2001; Boller et al., 2004).

A rich diversity is the foundation for sustainable production; yet most people depend on just 14 mammal and bird species for 90% of their food supply from animals. In industrialised societies, wheat, maize, rice and potato alone provide half of the food calories derived from plants. As regards fisheries, 32% of marine fish stocks were overexploited, depleted or recovering by 2008, 50% of stocks were fully exploited, meaning there is no possibility to sustainably expand catches. The over-use of fish resources endangers livelihoods, especially for small-scale fishers in developing countries (FAO, 2010b). The situation in forestry is alarming, too. Net forest area declines by 5.2 million hectares per year (FAO, 2010c).

To protect biodiversity, the Convention on Biodiversity (CBD) was adopted in 1992. In 2010, it was complemented by the Aichi Biodiversity Targets⁴⁸, which demand that at least 17% of terrestrial and inland water and 10% of coastal and marine areas be conserved. Further biodiversity-related global agreements include the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Bonn Convention on Migratory Birds (CMB), the Cartagena Protocol on Biosafety, the Marine Mammal Action Plan (MMAP), the UN Forum on Forests (UNFF)⁴⁹ and the Nagoya Protocol on Access and Benefit-Sharing⁵⁰.

⁴⁸ www.cbd.int/sp/target

⁴⁹ www.unep.org/dec/links/biodiversity.html

⁵⁰ www.cbd.int/abs

Sustainability goal

The areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of all forms of biodiversity.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ⁵¹
E4. Biodiversity	E4.1 Habitat diversity and connectivity	The diversity of natural habitat is conserved and corridors between natural habitats are maintained	Number of habitat types ⁵² within sphere of influence and presence of biodiversity corridors between the natural habitats	Documentation/inspection of habitats	1
	E4.2 Ecosystem integrity	Operations contribute to the achievement of the Aichi conservation targets (17% of terrestrial and inland water, 10% of coastal and marine areas) and do not threaten ecosystem.	Percentage of total area where natural or near-natural ecosystems and habitats are protected from human interventions	Documentation (internal or of public administration)	1
			Net deforestation (in ha) due to the activities and share of primary forest damaged	Interview (concerned personnel), remote sensing, maps and statistics of land use	1
	E4.3 Wild biodiversity	The diversity of wild species (from all biological taxa) and wild populations are not impaired by the activities.	Amount of toxic substances used for plant protection, livestock treatments, cleaning etc., total or per hectare	Records of pesticide purchases and use	1
			Number of incidences of introduction of potentially invasive species	Documentation (internal, public administration, nature protection organisations, stakeholders)	1
			Trends in catch per unit effort	Fishing operation reports	
			Percentage of utilised area and stocks with certified organic or	Certification	1

⁵¹ 1: quantitative, absolute, performance; 3: qualitative, absolute, performance; 5: measures, absolute;. (re. Table 2).

⁵² Example classification of habitat types: <http://eunis.eea.europa.eu/habitats-code-browser.jsp>

			integrated production		
E4.4 Agricultural biodiversity	The diversity of used species and their genome (crop varieties, livestock breeds, fish species) is at the optimum level achievable under the given conditions.	Percentage of utilised area where a single plant species is grown, without rotation or percentage of the livestock by breed	Records of crop production, forest stands and livestock	1	
		Existence of a written policy promoting the purchase of wood products from known, uncontroversial sources audited on their sustainable forestry plan	Code of Conduct or specific protocol	3	
		Percentage of wood-based materials (paper, cork, wood) contained in products, packages and facilities that come from certified sources (e.g. FSC, PEFC) or were recycled	Records of purchases of wood-based materials (diaggregated by source), interview (procurement)	1	
E4.5 Threatened species	Operations contribute to the protection of threatened and vulnerable species and populations, both used and wild.	Substantiality of measures taken to improve state of threatened wild species and trend of their population	Inspection and IUCN Red List	5	
		Number of wild species and domesticated plant varieties and animal breeds recognised as deserving protection (e.g. under national programs) and their population trend with the sphere of influence	Records of crop varieties and livestock breeds and IUCN red list	1	
		Existence of a written policy promoting the purchase of marine products from known, uncontro-	Code of Conduct or specific protocol	3	

			versial sources		
			Percentage of marine-based products that come from labelled sources (e.g. MSC)	Records of purchases of marine origin	1

5.10 Materials and energy (E5)

Relevance of the subject

The flows of materials into, within and out of the human economy have reached unprecedented levels. Unsustainable consumption and production patterns fuel material consumption, energy use and waste generation. For example, 30% of foods produced are not consumed, meaning the inputs made to its production are wasted as well. To date, physical scarcity has not been a major constraint to the global availability of most materials. But where recycling rates do not match demand, lower grade ores and deposits (e.g. of rock phosphate and petrol) must be used. This requires growing inputs of energy, labour and capital per unit output, causing a reversal of the long-term trend of falling resource prices. The large quantity of global waste poses great challenges with regard to recycling and disposal. Improper transport of hazardous waste, especially its export to countries with insufficient national regulations on waste treatment, poses serious threats to humans and ecosystems. Sustainable management of these flows is a key component of the green economy concept (UNEP, 2011), which rests on the twin pillars of efficient resource utilisation and circular material flows (recycling and reuse).

Nutrient losses from agriculture contribute to soil acidification, eutrophication of ecosystems, reduced biodiversity, health problems and global warming. Nitrogen (N) flows from terrestrial into aquatic ecosystems have more than doubled compared to pre-industrial times (Vitousek et al., 1997). N compounds (NO_3 , NH_4 , NO_x) are very mobile and thus difficult to utilise in a targeted way and an estimated 50% or less of the N applied to arable fields end up in crops (Crews & Peoples, 2004). Human actions have caused a fourfold increase of phosphorus (P) flows into the biosphere (MEA, 2005). As this non-renewable resource is essential to all forms of life, avoiding physical or economic scarcity of P is crucial. High-grade phosphate ores may be depleted much earlier and cause P scarcity to become a critical geopolitical issue. Unproductive nutrient and energy losses can be minimised by optimising timing and rates of application of fertilisers, and implementing improved storage and recycling technologies. Minimising post-harvest losses of produce is important for this as well.

Statistically recorded global energy use was 76.4 GJ per year and person in 2008 (IEA, 2009), a figure projected to continue rising for decades. While demand for oil may outstrip supply soon, foreseeable bottlenecks for natural gas and coal will not be related with geological availability (BGR, 2006), but rather with rising prices and the capacity of the atmosphere to serve as a sink for CO_2 released from burning these fuels (see "Atmosphere"). Challenges to sustainable energy use include geological (limited stocks of fossil fuels), biological (limited productivity of vegetation), economic (cost of renewables) and social (limited acceptance of renewables) limitations. For a sustainable energy future, "a global revolution" of energy supply and use is required, centered on efficient and clean energy technologies (OECD/IEA, 2008). The primary sector can raise its energy efficiency e.g. by optimising the heating and cooling, ventilation, tillage, synthetic fertiliser use and irrigation. Primary producers can be providers of biogas, firewood, biofuels, solar energy and wind and water power.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (UNEP, 1992) regulates waste exports, requiring informed consent about the nature of the waste. While the convention recognises the urgency of the problem, an adequate international regulatory framework has not yet been established (UNDP, 2011). Energy efficiency and renewable energy supply are internationally accepted and feature prominently in national targets. The UNFCCC pertains to climate change (see "Atmosphere"), but has implications for energy use, too.

Sustainability goal

Damage to ecosystems and resource scarcity resulting from non-renewable material extraction, non-renewable energy use and waste disposal are minimised through economical and efficient use, consequent re-use and recycling, and safe disposal.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ⁵³
E5. Materials and energy	E5.1 Non-renewable resources	Operations cause only minimal negative environmental, social and economic impact resulting from the extraction of non-renewable materials.	Percentage of total material use (raw materials, associated process materials, semi-manufactured goods) made up of materials that are rare (static range of few decades) and cannot be substituted	Records of material purchases and use	1
			Total non-renewable material use per unit produced (by weight, volume, value etc.)	Records of material purchases and use and of production volumes	1
	E5.2 Energy supply	Whenever possible, the energy used in operations is entirely based on renewable energy sources and carriers.	Energy efficiency: amount of final energy (in MJ) used per unit of produce / revenue / area / workforce. Calculate from quantities of energy carriers and energy densities, correct by energy exports and imports (e.g. contractual work in agriculture).	Records of energy use and of production volumes, databases with energy densities	1
			Percentage of renewable energy sources in total energy use	Records of energy use, by energy source	1
	E5.3 Eco-efficiency	Recycling rates are at the maximum, and unproductive losses of produce and energy, as well as waste generation are at the minimum achievable given the existing technology.	Percentage of total material use that is made up of recycled materials AND indicator marked with “*”.	Records of total material purchases and use and of recycled material use (may have to be checked with these materials’ suppliers)	1
			Total amount of annual waste (units volume or weight) by category: hazardous / non-hazardous and	Records of type and quantities of wastes	1

⁵³ 1: quantitative, absolute, performance; 5: measures, absolute (re. Table 2).

			trend of waste avoidance (*).		
			Total amount of waste and of hazardous waste generated per unit produced and trend of waste avoidance	Records of waste quantities	1
			Percentage of lost or wasted food in relation to total amount of food produced and marketed	Records of food waste, re-use and recycling	1
	E5.4 Waste disposal	All wastes are disposed of in a way that does not pose the health of ecosystems, animals, plants or humans at risk.	Percentage of total waste segregated	Records of type and quantities of wastes	1
			Share of disposal methods in disposed waste (reuse/recycling/composting/recovery/ burn/ deep well injection/landfill/export)	Records of type and quantities of wastes, by way of disposal	1
			Yearly amount of treated waste classified as "hazardous" by the Basel Convention, Annexes I through IV	Documentation (internal or public administration)	1
			Amount of hazardous waste stored and average age of waste and compliance with international standards ⁵⁴ .	Documentation, inspection	1

⁵⁴ <http://www.fao.org/agriculture/crops/obsolete-pesticides/resources0/>

5.11 Animal welfare (E6)

Relevance of the subject

Animals play a role in most agricultural production systems, in fisheries and in aquaculture. Globally, 1.5 billion cattle and buffalos, 2 billion sheep and goats, 0.9 billion pigs and 18.4 billion chicken were kept in 2008 (FAOSTAT, 2010). In the savannas of the Sahel, the steppes of Central Asia and the alpine meadows, pasture management is the only option for agricultural land use. Permanent grassland covers 69% of the global agricultural area, (2009 figure; FAOSTAT, 2012) and livestock production accounts for 40% of global agricultural production (FAO, 2006a). It thus, however, also account for much of agriculture's ecological impact. Some 20% of all pasture areas are affected by land degradation. Livestock production is a major source of ammonia and methane emissions. Methane accounts for about 14% of global GHG emissions (IPCC, 2007) and 2/3 of the emitted methane stems from enteric fermentation of ruminants and manure management (see "Atmosphere").

Livestock production under conditions inappropriate for animal welfare and health is a major concern across production systems and geographical regions. Common problems include overstocking, reliance on unadapted breeds, excessive or inadequate use of veterinary medicines, lack of space, light, clean water and adequate fodder, and cruel treatment. Where animal husbandry systems are not conducive to animal health, the excessive use of veterinary drugs is a potential ecological problem. Via animal excreta, these chemicals and their metabolites enter soils and water. The evolution of pathogens resistant to antibiotics is a further risk (Boxall et al., 2003; Stoob et al., 2005; Helmholtz-Zentrum, 2007).

Ethical considerations are a major reason to take care of animal welfare. Being sentient creatures, animals are respected in many cultures and protected by law in many countries. For agronomic reasons as well, they have to be kept such that their well-being is ensured, meaning that animals must be kept in an environmentally unproblematic and species-appropriate way. The latter encompasses the "five freedoms": freedom from hunger and thirst, from discomfort, from pain and disease, from constraints to natural behavior, and from fear and distress (FAWC, 1979).

While animal welfare is protected, and the cruel treatment of animals prohibited, by national laws of many countries, only proposals exist for international agreements, such as the "Universal Declaration of Animal Welfare". Animal welfare provisions also emanate from regulations of the EU.

Sustainability goal

Animals are kept such that they can express their natural behaviour and are free from hunger, thirst, discomfort, pain, disease and other distress.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ⁵⁵
E6. Animal welfare	E6.1 Freedom from stress	Animals are kept free from hunger and thirst, discomfort, pain, injury and disease, fear and distress.	Assessment of housing conditions, body condition and behaviour of animals (e.g. based on Welfare Quality ⁵⁶ protocols)	Inspection using standard protocols	5
			Assessment of lighting, aeration, noise, space, hygiene and water supply; signs of stress	Inspection using standard protocols	3
			Assessment of conditions and distances of transportation to slaughterhouses and methods of killing	Inspection using standard protocols	3
			Incidence of animals affected by illnesses or injuries, and animals lost prematurely due to diseases, injuries and accidents (including during transport to slaughterhouse)	Livestock-related records	1
			Annual cost of veterinary treatments or amounts of veterinary medicines, including those used prophylactically, curatively and to boost performance.	Records of veterinary treatments	1
			Percentage of animals subject to tail docking, beak clipping etc. without use of analgesics or anaesthetics	Inspection or livestock-related records	1
	E6.2 Species-appropriate conditions	Animals are free to express their natural behaviour.	Assessment of possibilities for animals to express normal behaviour (space, bedding, contact with conspecifics, etc.)	Inspection using standard protocols	5

⁵⁵ 1: quantitative, absolute, performance; 3: qualitative, absolute, performance; 5: measures, absolute; (re. Table 2).

⁵⁶ www.welfarequality.net

5.12 Investment (C1)

Relevance of the subject

Investment is an important factor in sustainable development. Improved production and marketing and transfer of financial resources and knowledge are critical to ensure that economic growth leads to social development, while preserving or enhancing the natural resource base. Decisions about how and where to invest reflect the strategic direction of the enterprise. In SAFA, the term 'investment' is seen from a microeconomic perspective, i.e. it is putting money into something, such as capital goods, human resources or ecosystems, with a view to gain. Financial speculation, another form of investment, today has an enormous importance for the economy, including in the food and agriculture sector. As no enterprise operates in isolation from the surrounding community and ecosystems, the scope of SAFA is extended for this theme to cover investments into sustainable development at the community level. Furthermore, investment in value chain development must be considered as well, since sustainable value chains require coordinated investment by actors along the chain, with private enterprises having a key role in investing in improved logistics, transportation, post harvest treatment, storage facilities etc. Investment that is solely aimed at public relations (branding, advertisements etc.) does not fall into the scope of this theme.

Sustainable investment aims at supporting a development of the enterprise towards enhanced social, environmental, economic and governance performance. Such investment can for example take the form of research and development expenditures, development and/or acquisition of equipment that reduces polluting emissions to the environment, measures or technologies that enhance buffering capacity against any kind of shocks (e.g. build-up of soil organic matter to better withstand drought spells), and measures directed at capacity building or creating awareness of sustainability in the organisation. Some investment into sustainability may have been done under different titles in the past, for example "lean manufacturing", or "eco-efficiency". A survey by MIT Sloan Management Review and The Boston Consulting Group revealed that "a growing number of companies are now increasing their investments in sustainability"; 59% of respondents said they had increased their commitment to sustainability from 2009 to 2010. As benefits, improved brand reputation (49%), reduced costs due to energy efficiency (28%) and increased competitive advantage (26%) were most frequently cited (Haanaes et al., 2011).

Investment in the agriculture and food sector includes investment into agricultural and agro-ecological research, agricultural training, the improvement and utilisation of neglected and underutilised crops, and smallholder agriculture (IAASTD, 2009). On the other hand, problematic investment exists in the sector, with international investment in land being one controversially discussed issue (HLPE, 2011). Furthermore, speculation on grains may have been one of the reasons of the 2007-08 price hikes of agricultural commodities, which had detrimental impacts on food security (IFPRI, 2009).

Guidance on sustainable investment is provided through the UN Principles for Responsible Investment⁵⁷. A discussion note issued in 2010 by FAO, IFAD, UNCTAD and the World Bank Group stipulates Principles for Responsible Agricultural Investment that Respects Rights, Livelihoods and Resources⁵⁸.

⁵⁷ www.unpri.org

⁵⁸ http://siteresources.worldbank.org/INTARD/214574-1111138388661/22453321/Principles_Extended.pdf

Sustainability goal

Through its investments, the enterprise enhances its sustainability performance and contributes to sustainable development at the community, regional, national or international levels.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ⁵⁹
C1 Investment	C1.1 Internal investment	In a continuous, fore-sighted manner, the enterprise invests into enhancing its social, environmental and governance performance.	Percentage of revenue that is invested into research, capacity-building and infrastructure that improve sustainability performance ⁶⁰ .	Accounts, interview (management)	1
	C1.2 Community investment	Through its investments, the enterprise contributes to a sustainable development of the community, at local or national level.	Percentage of total revenue that is invested into the maintenance or rehabilitation of common goods (soils, water, forests etc.) and into capacity-building at community level	Accounts, interview (management)	1
	C1.3 Long-ranging investment	Investments into production facilities, resources, market infrastructure, shares and acquisitions aim at long-term sustainable profit, not on maximum short-term profit.	Rating of the decision criteria for investing and holding resp. selling shares, facilities etc.	Interview (management), internal documentation	5
			Ratio between actual and necessary investment into maintenance of production facilities (taking into account capital availability)	Accounts, interview (concerned personnel, independent experts)	1
			Ratio between periods that shares are held and facilities are used, compared with average holding periods on the market and with potential useful life of such facilities.	Internal documentation, market statistics, data on useful life of facilities	1

⁵⁹ 1: quantitative, absolute, performance; 5: measures, absolute (re. Table 2).

⁶⁰ Examples: research into agroecology, green inputs, renewable energies; afforestation, eco-efficient buildings, heat and rainwater recovery, native tree nurseries, ecological sanitation; awareness of personnel etc.

5.13 Vulnerability (C2)

Relevance of the subject

The vulnerability of enterprises, value chains and markets to the dynamics of natural and socio-economic environments can be buffered and their resilience enhanced by building and maintaining adaptive capacity. Building resilient social, economic and ecological systems is a key challenge on the way to sustainable development (Folke et al., 2002).

Some lessons on factors and mechanisms affecting resilience may be drawn, with due caution, from the study of ecosystems. The resilience and stability of ecosystems belonging to a variety of different types was found to increase with species diversity in the system (McCann, 2000; see “Biodiversity”). In economic systems, strong dependence on single suppliers and/or buyers due to a dominance of one or few companies, or because only a single product is marketed, can reduce the resilience of the enterprise. Factors that contribute to resilience include a diversity of suppliers of production factors (including capital and labour), a diversity of income sources. Complementary to diversity, the duration and stability of business relationships are predictors of resilience. A stable long-term relationship with the same contractor has proven a good means to buffer times of crisis, for example in value chains of organic products. Striking a balance between the long-term goal of maintaining the diversity of production and marketing channels needed to maintain resilience on the one hand, and the short-term drive to reduce unit costs through specialisation (i.e. reduce diversity) on the other, is a major challenge. A third pillar of resilience is a sufficient buffering capacity, in the form of solvency, stocks, and formal and informal insurance, which helps the enterprise withstand crises. Buffers are of a social, environmental or economic nature, e.g. sufficient liquidity to withstand market turbulence, formal and informal insurance and safety nets, sufficiently high soil organic matter content, water and nutrient storage capacities etc.

Enterprises in the food and agriculture sector operate under very volatile conditions. Market dynamics, political developments and technological progress tend to be unpredictable. In addition, the primary sector is particularly affected by intra- and inter-annual variations of temperature and rainfall, by occurrences of extreme weather conditions and by outbreaks of pests and diseases. The globalisation and growth of markets, as well as climate change, enhance the uncertainty and volatility of economic and environmental conditions (e.g. IPCC, 2007). These and other developments interact and cause non-linear responses in human and natural systems, thus rendering it even more difficult to anticipate future chances and risks. In most industrial agro-ecosystems, which rely on a very narrow basis concerning species and genome, production can be disrupted if only one or few species substantially suffer e.g. from abiotic or biotic stress. While such agro-ecosystems mainly depend on the availability of buffers in the form of energy (fuel), pesticides and financial liquidity, buffering capacity can also be provided by soils with sufficient content and quality organic matter and a good water retention capacity, by a diversity of utilised species, varieties and breeds, and by services provided by intact natural ecosystems, e.g. biological pest control.

Vulnerability and resilience in agriculture and food systems are not internationally regulated. However, measures known to enhance resilience *inter alia* through increased diversity and buffer capacity are defined in standards of organic (IFOAM, 2005) and integrated agriculture, as well as standards for sustainable forestry (e.g. FSC, 1996), fisheries (MSC, 2010) and aquaculture⁶¹.

⁶¹ www.fao.org/focus/e/fisheries/sustaq.htm

Sustainability goal

The enterprise secures the resilience of production, supply and marketing in the face of environmental variability, economic volatility and social change.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ⁶²
C2 Vulnerability	C2.1 Stability of supply	Stable business relationships are maintained with a sufficient number of input suppliers, and alternative procurement channels are accessible.	Number of actual and alternative suppliers	Records of purchases, interview (procurement)	1
			% dependence on the biggest provider of inputs	Records of purchases, accounts	1
			Stability of supplier relations (e.g. past problems)	Internal documentation, interview (procurement, management)	3
			Rating of contractual arrangements by duration, conditions, volume	Internal documentation, interview (procurement, management)	3
	C2.2 Stability of marketing	Stable business relationships are maintained with a sufficient number of buyers, income structure is diversified, and alternative marketing channels are accessible.	Number of actual and alternative buyers	Records of sales, interview (marketing)	1
			% dependence on the biggest source of income	Records of sales, accounts	1
			Stability of buyer relations (e.g. past problems)	Internal documentation, interview (marketing, management)	3
			Rating of contractual arrangements by duration, conditions, volume	Internal documentation, interview (marketing, management)	3
			Rating of access to and utilisation of information systems (related	Interview (sales)	3

⁶² 1: quantitative, absolute, performance; 3: qualitative, absolute, performance (re. Table 2).

			to markets and policies)		
	C2.3 Liquidity and insurance	Financial liquidity, access to credits and insurance (formal and informal) against economic, environmental and social risk enable the enterprise to withstand short-falls in payment.	Indebtedness (share of debt in total assets)	Accounts	1
			Debt service coverage ratio (% of short-term debt service limit that is utilised)	Accounts	1
			Stability of lender relations (e.g. past problems)	Internal documentation, interview (accounting)	3
			Existence of a formal and informal safety net that is sufficient to withstand liquidity crises	Interview (management)	3
	C2.4 Employment	Employment conditions are stable (e.g. legally recognised contractual arrangements).	Average duration from announcement to filling of positions	Internal documentation (human resources)	1
			Fluctuation rate of personnel (annual percentage of total personnel leaving the enterprise)	Internal documentation (human resources)	1
			Matching of job applicant qualifications with requirements	Internal documentation, interview (human resources)	3
			Percentage of personnel with legally recognised, work contract of unlimited duration	Employment records	1
	C2.5 Stability of production	Production (quantity and quality) is sufficiently resilient to withstand environmental, social and economic shocks.	Geographical distribution of production sites in relation with major production risks ⁶³	Internal documentation, maps and databases of climate risk (e.g. re-insurances); proxy: insurance sums	3
			Stability of production (e.g. past interruptions)	Records of crop, livestock etc. production	3

⁶³ Meaning environmental, political and socio-economic events that disrupt a large share of production at the affected sites, and that are likely to occur within the lifecycle of the production facility, or the risk of whose occurrence has substantially increase over the last years.

				(multi-year)	
			% dependence on a single species or variety of crop, fish, tree, livestock	Records of crop, livestock etc. production	1
			Existence of stocks of inputs, food etc. that are sufficient to withstand crop shortfalls and supply bottlenecks	Records of stocks, interview (management, on shortfalls)	3

5.14 Product safety and quality (C3)

Relevance of the subject

All people have the right to expect the products they consume, in particular their food, to be safe and suitable for consumption (FAO/WHO, 2003a). Likewise, producers, processors, retailers and consumers have a right to be informed by their suppliers about all attributes of a product relevant for its utilisation. As value chains have become more complex, the number of opportunities for contamination and other quality loss, and for deception concerning origins and quality have increased.

Food can easily be contaminated, for example, through environmental pollution of air, water and soils, the intentional use of chemicals such as pesticides and animal drugs (Campbell, 1992), and microbiological contamination and spoilage. Contaminants may also be present in food as a result of the production, manufacture, processing, preparation, treatment, packing, packaging, transport or holding of such food (CAC, 2011). Food quality and safety can be achieved through food quality and safety management systems that are built on pre-requisite programmes, such as good agricultural practices, good manufacturing practices, GHP's and HACCP, and by controlling the flow of food ingredients and products along the entire food chain, as well as through traceability. Further measures include the development of Codes of Practice to reduce contaminant levels in food, define maximum levels of food additives and maximum residue levels of pesticides and veterinary drugs (WHO, 2009).

FAO and WHO, in an expert report released in 2003, presented scientific evidence on the relationship of diet, nutrition and physical activity with the occurrence of chronic diseases. The WHO estimated that more than 1.4 billion adults were overweight in 2008, 500 million of these being obese⁶⁴. Often persisting into adulthood, childhood obesity increases the risk of suffering from serious diseases. Halting the global surge in chronic diseases requires strong linkages between those involved in health and agriculture, at global, regional and national levels (FAO/WHO, 2003b). Improving the quality of consumer information can improve understanding of the possible health effects of foods and stimulate changes in patterns of food choice that improve consumer health (European Advisory Service, 2004). Food advertising and marketing play an important role in encouraging unhealthy eating habits in children (BHF, 2008).

The growing number of food safety problems and consumer concerns has prompted governments all over the world to intensify their efforts to improve food safety (WHO, 2007). The Codex Alimentarius⁶⁵ is a collection of norms on food safety and product quality; it contains the recommendation to adopt the HACCP concept. A further relevant standard is the Recommended International Code of practice general principles of food hygiene (FAO/WHO, 2003a). Concerning the handling of food additives, EU regulation 1333/2008 provides guidance and *inter alia* postulates that only additives that are explicitly authorised may be used. Authorisation is granted only if the additive is technically necessary, neither misleads consumers nor compromises their health (EC, 2008).

Sustainability goal

Any contamination of produce with potentially harmful substances is avoided, and nutritional quality and traceability of all produce are clearly stated.

⁶⁴ www.who.int/mediacentre/factsheets/fs311/en/index.html

⁶⁵ www.codexalimentarius.net/web/index_en.jsp

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ⁶⁶
C3 Product safety and quality	C3.1 Product information	Products bear information that is correct, accessible, and by no means misleading. This information enables the subsequent members of the food chain to safely and correctly handle, store, process, prepare and display the product.	Percentage of comprehensively ⁶⁷ and correctly labelled products in total produced volume (or in turnover or profit)	Records of production (by product, segregated according to quality of labelling)	1
	C3.2 Traceability	Systems and procedures ensure traceability over all stages of production, processing and distribution. The lot or batch of a product can be easily and correctly identified and recalled.	Percentage of stages of production, processing and distribution for which traceability is guaranteed and related sanctions defined	Internal documentation, documents confirming participation in traceability-related systems	1
	C3.3 Food safety	Any contamination of food with potentially harmful substances is avoided. Food hazards are systematically controlled over the entire process chain.	Number of production facilities certified by an independent party concerning food safety management (e.g. HACCP, Good Manufacturing Practice)	Documents on certification, interview (quality management)	1
			Number of incidents of chemical and biological food contamination (heavy metals, pesticides and their metabolites, mycotoxins, GMO)	Internal documentation, records of public or private laboratories	1
C3.4 Food quality	The quality of food products meets the highest nutritional standards applicable to the respective type	Percentage of food products that meet the highest nutritional standards, e.g. low contents of saturated and trans fat, added sugars and added sodium,	Records of production (or sales): total and "high-value" volumes	1	

⁶⁶ 1: quantitative, absolute, performance. (re. Table 2).

⁶⁷ "Comprehensive" means to provide at least the information required by Directive 2000/13/EC of the European Parliament and Council (http://europa.eu/legislation_summaries/consumers/product_labelling_and_packaging/l21090_en.htm). Further information deemed relevant by consumer organisations (e.g. on genetically modified organisms) should be provided, wherever possible.

		of product.	no food additives		
			Percentage of food products that achieve a high rating in a nutritional rating system, such as the overall nutritional quality index ⁶⁸	Internal documentation or own rating, information on ingredients	1
			Expenditures on advertisement for children under age 12 (except healthy products) and in primary schools	Records of advertising expenditures, interview (independent expert)	1

⁶⁸ [www.nuval.com/images/upload/file/ONQI Manual 5_5_09.pdf](http://www.nuval.com/images/upload/file/ONQI_Manual_5_5_09.pdf)

5.15 Local economy (C4)

Relevance of the subject

In a sustainable economy, the region is not only a place to work, but one where incomes are also spent and invested and where taxes are paid. Local economic development (LED) is a process in which all sectors work together to stimulate local commercial activity. It has been considered a cornerstone of sustainable development (UN Habitat, 2009). A sustainable local economy is diversified and does not simply shift the costs of maintaining its good health onto other regions. LED can thus reduce environmental pressures related to transportation of goods over large distances (Norberg-Hodge & Gorelick, 2002). It adds as much value as possible in the region rather than just exporting raw materials.

LED should foster employment, infrastructural development, as well as a high quality of life (OECD, 2010). Beyond economic growth, it is about providing opportunities for all to obtain decent work at the local level. LED should be people-centered, promote participation and local social dialogue and culture. It is meant to connect people and their resources for better employment and a higher quality of life (ILO, 2012). It can contribute to a region's becoming more resilient to turbulence in the global economy, e.g. to fluctuating cereal prices on the world market (McInroy & Longlands, 2010). Rather than opposing globalisation, LED strategies aim at strengthening local economies such that they benefit from the exchange with other regions rather than becoming overly fragile and losing their functionality. Localisation means to strike a balance between supra-regional trade and local production. This can be achieved by diversifying economic activity and by shortening distances between producers and consumers (Norberg-Hodge & Gorelick, 2002). Regions, localities and cities around the world are turning to LED strategies in response to the challenges of globalisation and the drive for decentralisation. Labels testifying a product's provenance from the region where it is sold (or from another specified region) are increasingly becoming popular and motivate consumers to pay premium prices.

In rural areas, farming substantially contributes to LED through value and job creation and the creation and maintenance of infrastructure (FOAG, 2009). This is particularly relevant for a sustainable development of these areas, as over the last 50 years, 800 million people have moved from rural areas to cities and to foreign countries (IFAD/FAO, 2008). This development often goes along with a "brain drain", i.e. a loss of competent, innovative workforce who could otherwise play a positive role for the sustainable development of the region. The lack of investment in agriculture and rural areas, not only by private investors, but also by governments, is among the principal causes of rural poverty and migration into cities (IFAD, 2007). This lack of investment has been identified as an underlying cause of the recent food crisis and of the difficulties developing countries encountered in dealing with it. Enterprises in the food and agriculture sector thus are in a particularly good position to contribute to local economic development in those areas where local value creation is needed the most.

Reducing economic disparity between regions is a key objective in achieving balanced regional development (WDC, 2007). For example the European Union, through the European Regional Development Fund, tries to reduce the gap between the levels of development of the various regions by contributing to balanced and sustainable development of economic activities, to a high degree of competitiveness and a high level of employment, by supporting initiatives that foster the regional and local economy (ERDF, 2010). In many countries, similar mechanisms exist at the national level.

Sustainability goal

Through production, employment, procurement, marketing and investments in infrastructure, the enterprise contributes to sustainable local value creation.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ⁶⁹
C4. Local economy	C4.1 Value creation	Operations substantially benefit local value creation through employment at all levels of qualification, investment, marketing and tax payments.	Ratio of lowest paid wage to average regional wage	Accounts, payslips	1
			Percentage of regionally hired workforce and of new jobs created in the region	Interview (human resources, personnel, management)	1
			Ratio of value added through operations (or tax payments) to total revenue (or profit)	Accounts	1
			Percentage of total revenue (or profit) invested into the regional economy	Accounts	1
			Percentage of turnover (or profit) coming from short resp. local value chains	Accounts (disaggregated according to type of chain), interview (management)	1
	C4.2 Local procurement	Operations substantially benefit local value creation through procurement from local suppliers.	Percentage of inputs procured from the region (not for inputs that are not regionally available)	Records of purchases, interview (procurement)	1

⁶⁹ 1: quantitative, absolute, performance (re. Table 2).

5.16 Decent livelihood (S1)

The Universal Declaration of Human Rights claims that “everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control” (UN, 1948). Livelihood concepts, as reviewed by Hussein (2002), adopt a broader focus than just on the material basis of living. The Sustainable Livelihood Approach, for example, differentiates between three groups of components in the livelihood framework: (1) the asset portfolio forming the core element of livelihood, (2) the vulnerability context, including policy, institutions and processes, and (3) the loop that links livelihood strategies and livelihood outcomes (Carney et al., 1999; DFID, 1999). According to Chambers and Conway (1991), a livelihood comprises the capabilities, assets and activities required for a means of living. It is sustainable when it can withstand and recover from stresses and shocks and maintain or improve its capabilities or assets without undermining the natural resource base. The term “capability” denotes the ability “to cope with stress and shocks, gaining access to and using services and information, exercising foresight, experimenting and innovating, competing and collaborating with other, and explaining new conditions and resources” (Chambers & Conway, 1991).

An adequate standard of living is no reality for billions of people around the world, particularly for rural populations in developing countries and for vulnerable groups such as women and children. Some 1.4 billion people live in extreme poverty⁷⁰ (in 2005), particularly in Sub-Saharan Africa (51% of the population in 2005) and South Asia (39%). More than 2.6 billion people lack access to improved sanitation. The number of urban residents living in slum conditions is estimated at 828 million, in developing regions. Food security is no reality for 900 million people estimated to be undernourished. Analyses of the current situation show an aggravation of livelihoods in many places around the world. Indeed, overexploitation of natural resources impairs people’s capabilities to cope with stresses and shocks and economic crisis resulting in significant job losses add pressures on livelihoods. The food and agriculture plays a pivotal role to provide sustainable livelihoods, as it can provide employment and create value for particularly vulnerable people. For smallholdings and family farms in general, the sustainability of the enterprise and that of the family’s livelihood can hardly be separated, and one cannot be achieved in isolation from the other.

A global standard for decent livelihoods is set by the above-cited Universal Declaration of Human Rights (UN, 1948). Poverty and hunger are subject to Millennium Development Goal 1, which *inter alia* requires to halve, from 1990 until 2015, the proportion of people living on less than 1\$ a day as well as the proportion of people who suffer from hunger⁷¹. The Right to Food has been reaffirmed by the UN Human Rights Council⁷², and guidance on the issue provided by FAO⁷³. The Human Development Index⁷⁴, an aggregate of per capita GDP, life expectancy and education, is a widely cited measure for the achievement of a decent livelihood at national level.

Sustainability goal

⁷⁰ People living on less than 1.25 US\$/day PPP (purchasing power parity)

⁷¹ www.un.org/millenniumgoals/poverty.shtml

⁷² http://ap.ohchr.org/documents/E/HRC/resolutions/A_HRC_RES_7_14.pdf

⁷³ www.fao.org/righttofood/publi_02_en.htm

⁷⁴ <http://hdr.undp.org/en/statistics>

The enterprise provides assets, capabilities and activities that increase the livelihood security of all personnel and the local community in which it operates.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ⁷⁵
S1. Decent livelihood	S1.1 Wage level	All persons (regardless of sex, ethnicity, etc.) working in the enterprise earn enough money to guarantee more than their ability to earn a livelihood, including sufficient pension and social security benefits for preventing poverty.	Remuneration (lowest wages paid, corrected to account for in-kind payments; including informally employed personnel) compared with local living wage.	Accounts, payment records interview (human resources, workers, with local experts to define living wage)	1
	S1.2 Capacity building	All personnel are provided the skills, knowledge and competences they require to undertake all current and future tasks required by the enterprise.	Percentage of workforce undergoing training and further education during their employment / during one year disaggregated by sex and ethnicity (if available).	Records of trainings, interview (human resources, workers)	1
			Percentage of suppliers provided training on sustainability-related topics (e.g. integrated or organic crop production, health, nutrition, human rights etc.)	Records of trainings, interview (human resources, suppliers)	1
			Average quantity of training and further education of workers	Records of trainings, interview (human resources, workers)	1

⁷⁵ 1: quantitative, absolute, performance (re. Table 2).

5.17 Labour rights (S2)

Relevance of the subject

Basic human needs and rights are a framework for human development that has been acclaimed by the vast majority of countries. However, enforcement of international labour standards still represents a major challenge for the sector. Overall, due in particular to its largely informal nature, rural work is seldom covered by national labour legislation, in law and in practice. In some countries and sectors of the economy, human rights violations are a reality, including beatings and violence, the denial of basic freedoms, intimidation and harassment, and even torture and death⁷⁶. The question of how business, particularly multinational enterprises, should deal with human (and thus also labour) rights issues not covered by national law is the subject of intensive debate. The position on the issue adopted in SAFA is that of the UN ‘Protect, respect and remedy’ framework, proposed by the Special Representative of the Secretary-General on the issue of Human Rights and transnational corporations and other business enterprises (UNHRC, 2011). The ‘respect’ pillar of the framework addresses business enterprises. They are responsible of respecting human rights wherever their own business activities and those directly linked with their business relationships cause human rights impacts. Human rights can thus be considered “a universal benchmark for what should be standards of behaviour for businesses” (BLIHR, 2009).

Where the principles underlying the international declarations and covenants on human and labour rights have been put into national law, their relevance to the food and agriculture industries is obvious. Many companies in the food and agriculture sector pro-actively recognise their potential to support human rights within their value chains, and also the benefits that arise from doing so. Many international standards and approaches also implemented in the sector address human and labour rights. Human Rights and labour rights are also a central issue in the standards of multi-stakeholder commodity roundtables, such as 4C Association, RSPO, RTRS, BCI and Bonsucro, to cite just a few. As labour rights can be a sensitive topic, for example on family farms, indicator selection and data collection in the context of a SAFA must be done very carefully. For example, it is recommendable to gather evidence from local communities and civil society organisations, including producers’ and workers’ organisations, as well as from labour inspectors, in addition to interviewing employees directly. Such mechanisms are particularly important in order to track the respect of main international labour standards in the frame of business relationships established (e.g. subcontractors).

The International Bill of Human Rights⁷⁷ and the Declaration of Fundamental Principles and Rights at Work (ILO, 1998) provide an almost universally agreed standard. The afore-mentioned UN ‘Protect, respect and remedy’ framework, pertains to the issue of Human Rights and transnational corporations and other business enterprises (UNHRC, 2011). Private standards include, for instance, SA 8000 (SAI, 2008), the Code of Conduct of the Business Social Compliance Initiative (BSCI, 2009) and the Ethical Trading Initiative⁷⁸, whose Base Code provided guidance to the formulation of SAFA goals. Procedures for the implementation of human and labour rights in business enterprises have been proposed, e.g. a twelve-step due diligence for Human Rights (Taylor et al., 2009), and the “essential steps” recommended by the Business Leaders Initiative on Human Rights (BLIHR, 2009).

⁷⁶ For explanations and examples, see www.business-humanrights.org/Categories/Issues/Abuses

⁷⁷ www.ohchr.org/Documents/Publications/FactSheet2Rev.1en.pdf; www2.ohchr.org/english/law

⁷⁸ www.ethicaltrade.org/eti-base-code

Sustainability goal

The enterprise provides regular⁷⁹ employment that is fully compliant with national law and international agreements on contractual arrangements, labour and social security.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ⁸⁰
S2. Labour rights	S2.1 Employment relations	Operations are based on regular employment and fully compliant with national law on contractual arrangements, labour and social security.	Percentage of personnel with a legally binding work contract and no precarious employment AND who benefit from a contribution of the employer to formal and safe pension and other social security schemes, and who can take paid sick, personal and annual leave	Work contracts, employment and payment records, interview (workers), labour or human rights audit (applies for all of the theme)	1
			Percentage of personnel whose wages and benefits are rendered in full compliance with all applicable laws and wage setting procedures involving social partners	Internal documentation, interview (human resources, worker organisation)	1
			Number of human rights abuses	Interview (workers, independent external institutions e.g. human rights NGO)	1
			Percentage of personnel who are paid a living wage and who always receive their full wage in time	Payment records, payslips, interview (workers)	1
	S2.2 Forced labour	The enterprise accepts no form of forced or involuntary labour, nor in its own operations nor those of business	Number of incidents of forced, bonded or prisoner labour among workers and subcontractors	Interview (workers, independent external institutions e.g. human rights NGO)	1

⁷⁹ „Regular“ means that employment should not be precarious, illegal or otherwise illegitimate.

⁸⁰ 1: quantitative, absolute, performance (re. Table 2).

		partners.	Percentage of suppliers pro-actively and positively influenced on the issue of forced labour	Internal documentation, interview (suppliers, procurement)	1
S2.3 Child labour	The enterprise accepts no child labour that has a potential to harm the physical or mental health or hinder the education of minors, neither in its own operations nor those of business partners.		Number of incidents of unacceptable forms of child labour among workers and subcontractors	Interview (workers, independent external institutions e.g. human rights NGO)	1
			Percentage of workers under the age of 18 engaged in hazardous work, overtime or night shifts	Interview (concerned workers)	1
			Percentage of suppliers pro-actively and positively influenced on the issue of child labour	Internal documentation, interview (suppliers, procurement)	1
			Percentage of workforce who are free to organise, associate and collectively bargain	Interview (workers, human resources, worker organisation)	1
S2.4 Freedom of association and bargaining	All persons in the enterprise can freely execute the rights to (i) form or adhere to an association defending workers' rights and (ii) collectively bargain.		Percentage of workforce adhering to an association defending workers' rights	Interview (workers, human resources, worker organisation)	1
			Percentage of workforce whose working time arrangements are fully compliant with ILO standards	Interview (workers, human resources, worker organisation), work contracts	1
S2.5 Working hours	All persons in the enterprise have enough free time to recover physically and mentally. Overtime is voluntary and fully compensated.				

5.18 Equity (S3)

Relevance of the subject

Social equity is one of the principal values underlying sustainable development, with all people and their quality of life being recognised as a central issue. Equity involves the degree of fairness and inclusiveness with which resources are distributed, opportunities afforded and decisions made. It includes the provision of comparable opportunities of employment and social services, including education, health and justice. Significant issues related to its achievement include the distribution of productive resources and employment, gender and ethnic inclusiveness, and inter-generational opportunity. As discrimination of women prevails in many places, gender equality is particularly important. Women on average receive only 70 to 90% of men's wages for equal work in order to avoid reinforcing inequalities between men and women and to promote gender equality. In times of crisis, women are disproportionately more affected by job loss than men. Substantially more women live in poverty (829 million) than men (522 million). There is increased recognition of crucial links between poverty eradication, employment and equality (ILO, 2011). Poverty eradication programmes that focus on general income levels only (e.g. by providing income support) frequently miss the underlying causes of vulnerability. For example, schooling levels among poor children can be raised through spending on education, but future income will not increase without policies that effectively address causes of economic vulnerability, such as ethnic, racial and gender discrimination (UN, 2010).

In a business context, implementing the equity concept means that any discrimination of persons or groups on the basis of whatever characteristics must be avoided. This requirement applies to hiring, promotion, job assignment, termination, compensation, working conditions and even harassment, and it pertains to direct as well as indirect forms of discrimination (ILO, 2011). Enterprises are confronted with equity aspects also in their relations with suppliers, contractors, costumers or shareholders. Equity in business relations is a principal pillar of Good Corporate Governance.

In the agriculture and food sector, vulnerable and precarious working conditions are particularly prevalent. The sector employs large numbers of non-salaried family members, in particular women, of workers that have not benefited from professional training, and of seasonal workers, many of them foreigners at the location where they work. The provision of these types of work should on the one hand be recognised as a substantial benefit of the sector to society. On the other hand, it implies a need and responsibility to pay particular attention to equity at work and, on family farms, in the household.

International declarations (e.g. UN, 1948, Declaration of Human Rights; FAO, 2004, Right to Adequate Food), conventions (e.g. ILO 1951, Equal Remuneration Convention; ILO, 1958, Discrimination (Employment and Occupation) Convention), guidelines (e.g. FAO, 2012b, Voluntary Guidelines for the Governance of Tenure), standards and recommendations (e.g. the UN Global Compact; ISO 26000) build upon the universal validity of the concept of equity and postulate non-discrimination and fairness in general, and in contexts related with employment, occupation and business behaviour in particular. Millennium Development Goal (MDG) 1 *inter alia* aims at achieving full and productive employment and decent work for all, including women and young people⁸¹. Gender equality is also addressed through MDG 3, which requires eliminating gender disparity at all levels of education⁸².

⁸¹ www.un.org/millenniumgoals/poverty.shtml

⁸² www.un.org/millenniumgoals/gender.shtml

Sustainability goal

The enterprise pursues a strict equity and non-discrimination policy and pro-actively supports vulnerable groups.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ⁸³
S3. Equity	S3.1 Non-discrimination	A strict equity and non-discrimination policy is pursued towards all stakeholders. Non-discrimination and equal opportunities are explicitly mentioned in the Code of Conduct and adequate means for implementation and evaluation are in place.	Equity and non-discrimination commitments are explicitly mentioned in the Code of Conduct AND means for the implementation of an equity policy (e.g. equal pay audits) exist	Code of Conduct, Internal documentation, interview (management, workers), equality audit	3
			Number of incidences of discrimination in hiring, remuneration, access to training, promotion, termination, or retirement	Interview (workers, human resources), employment statistics (to check for inequalities)	1
			Number of incidences of harassment	Interview (workers)	1
			Wage gap: wage differential (in % of the higher wage) between permanent and temporary staff, local and migrant workers etc. doing similar work	Payment records	1
	Assessment of recruitment procedure (e.g. job adverts, short-list, interview, selection criteria list) ensuring that anti-discrimination procedures are implemented	Process description, interview (human resources), equality audit	5		
	S3.2 Gender equality	There is no gender disparity concerning hiring, remuneration, access to resources and education, and career opportunities.	Similar indicators as for S3.1, but with a focus on gender (e.g. gender wage gap)	See above.	See above.

⁸³ 1: quantitative, absolute, performance; 3: qualitative, absolute, performance; 5: measures, absolute (re. Table 2).

			Average number of training days differentiated by group (e.g. age, sex, race)	Records of training participation (disaggregated by group)	1
	S3.3 Support to vulnerable people	Vulnerable groups, such as women, minorities and disadvantaged staff are proactively supported.	Percentage of personnel with access to trainings and career development programs and other measures to promote women, handicapped, youth etc.	Interview (human resources, workers), records of training participation	1
			Assessment of policies and programmes that favour vulnerable groups	Interview (human resources, concerned workers)	5
			Share of workplaces appropriately equipped for disabled persons	Internal documentation, inspection	1
			Ratio of jobs that could be done by disabled persons to the actual number of disabled persons employed	Employment statistics, interview (workers, human resources)	1

5.19 Human health and safety (S4)

Relevance of the subject

Occupational safety and health are of paramount importance for the social sustainability of personnel relations, for the enterprise and for national economies. There is growing evidence that improving healthcare, fighting disease and increasing life expectancy are all essential for supporting economic growth and long-term business success. Neither development nor operations of enterprise can be sustained when a high proportion of the population and the workforce suffers from poor health. A clean environment is important to health and well-being. Protecting and promoting human health requires primary health care – especially in rural areas –, controlling communicable diseases and preventing health hazards originating in the working environment and from diets (see “Product safety and quality”).

The health of employees has a direct impact on their productivity at all types of work (Nelson & Prescott, 2008). Worldwide, more than 350,000 work-related fatal accidents and 2 million cases of work-related fatal disease occur each year. The number of non-fatal accidents (causing more than four days absence from work) is estimated to be 1,000 times higher (Al Tuwaijri, 2008). Beside the loss of work performance, the company sustains follow-on expenses for administration, recruitment and efforts for reintegration and due to loss of knowledge. According to the WHO healthy workplace framework, workers and managers should collaborate in a healthy workplace to achieve continuous improvement in protecting and promoting the health, safety and well-being of workers (Burton, 2010). The sustainability of the workplace should be improved by considering health and safety concerns in the physical and psycho-social work environment, including the organisation of work and workplace culture, as well as personal health resources in the workplace. Furthermore, participation to improve the health of workers’ families and other members of the community is desirable (Burton, 2010).

In the food and agriculture sectors, the occupational security and health situation is characterised by specific hazards and risks, with high numbers of incidences e.g. in agriculture (Toscano, 1997; EWCS, 2007). Straining physical work, exposure to harmful substances (e.g. chemicals, pesticides, dust), work with machines, equipment and animals all can cause health problems. Many enterprises in the sector are small and thus particularly suffer from absences from work. Working hours in the sector are often very long, especially in family enterprises and during the harvesting season, which can be critical for health and safety as well (see “Labour rights”).

While occupational health and safety are rather the subject of national legislation and private standards, some international standards exist. These include the ILO-OSH 2001 guidelines⁸⁴, published by ILO, and the OHSAS 18000⁸⁵ occupational health and safety management system specification. Both systems are based on the steps of policy, organising, planning and implementation, evaluation, and action for improvement. Compliance is checked by auditing. In addition, a series of ISO norms, including ISO 14000 and ISO 14001, pertains to workplace environmental standards.

Sustainability goal

The work environment is safe, hygienic and healthy and caters to the satisfaction of human needs, such as clean water, food, accommodation and sanitary installations.

⁸⁴ www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_110496.pdf

⁸⁵ www.ohsas-18001-occupational-health-and-safety.com

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ⁸⁶
S4. Human health and safety	S4.1 Physical and psycho-social health	The enterprise fosters the health, safety and well-being and caters to the satisfaction of human needs (clean water, food, accommodation, sanitary installations etc.), both at the work place and in the local community.	Number of work-related accidents and injuries	Records on work safety (factory security offices)	1
			Recordable incident rate: number of personnel involved in recordable injury or illness per 100 persons	Records on work safety (factory security offices, human resources)	1
			Severity rate (number of lost days per incident)	Records on work safety (factory security offices, human resources)	1
			Percentage of personnel with access to clean drinking water and to improved sanitary installations	Internal documentation, safety audit records, inspection	1
			Percentage of personnel adequately trained on occupational health and safety	Records of safety trainings, interview (workers)	1
			Percentage of personnel doing dangerous work who is adequately trained	Records of safety trainings, interview (workers)	1
			Percentage of personnel with access to adequate protective gear and medical assistance	Interview (workers), inspection, safety audit records	1
			Rating of the storage and application of dangerous substances	Inspection, safety audit records	5
			Rating of fire safety	Internal documentation, safety audit records, inspection	5
			Rating of personnel exposure to hazardous	Interview (workers),	5

⁸⁶ 1: quantitative, absolute, performance; 3: qualitative, absolute, performance; 5: measures, absolute (re. Table 2).

			substances and situations	inspection, safety audit records	
			Rating of security and health concepts	safety audit records	5
			Number of activities, effectiveness of activities addressing the psycho-social work environment		1/3
			Extent and effectiveness of activities addressing community health issues (e.g. promoting healthy lifestyle)	Interview (community), documentation of activities	3
S4.2 Health resources	Personal health resources are provided in the workplace (e.g. sport facilities, smoke-free buildings, healthy food in canteens).		Percentage of personnel (both men and women) with access to decent housing (if applicable), clean sanitary facilities, clean drinking water and effective medical aid	Interview (workers), inspection	1
			Percentage of workers with access to medical assistance or minimum levels of healthcare	Interview (workers), inspection	1
			Extent (e.g. money spent) and efficacy of activities, effectiveness of activities addressing personal health resources	Interview (workers), documentation of activities	1/3
S4.3 Food security	The enterprise contributes to food security of its personnel and the local community.		Share of production sites where operations contribute to the improvement of the economic and physical access of the local population to sufficient, safe and nutritious food	Interview (workers, community, management), food security due diligence	1
			Percentage of personnel whose food security is directly improved through activities of the enterprise	Interview (workers, community, management)	1

5.20 Cultural diversity (S5)

Relevance of the subject

Cultural diversity is a common heritage of vital importance for humankind. It is a concept that defies simple definition, with different meanings depending on context (De Guzman et al., 2007). The term “culture” relates to combinations of ethnicity, language and religion characteristics. Awareness of cultural diversity has become relatively commonplace, as a result of the globalisation of exchanges and the greater receptiveness of many societies to one another (UNESCO, 2008). However, greater awareness alone does not guarantee the preservation of cultural diversity. Awareness and preservation are all the more important, since culture is a determining factor for the relevance, failure and success of development interventions. Cultural diversity is an asset that has been considered indispensable for reducing poverty and achieving a sustainable development. Understanding this diversity is therefore a prerequisite for development interventions (UNESCO, 2008).

Workplace diversity as well is related to cultural diversity. Changing demographics and an increasingly diverse marketplace are urgent reasons for an increased interest in managing diversity at work. Many employers have come to realise that a diverse work force is not a burden, but a potential strength (Henderson, 1994). Companies providing culturally competent workplaces may gain a sustainable advantage over competitors that are less aware and active in this regard. Cultural competence should therefore become a core value of the organisation. The key is to understand cultural diversity well and manage it effectively (PENN Behavioral Health, 2008). Diversity management has become important for many organisations, companies and governments, and valuing diversity is essential for an effective management of human resources (Pitts, 2006). It is a strategy to promote the perception, acknowledgement and implementation of diversity in organisations and institutions.

One – but not the only – aspect of cultural diversity that is very important in the food and agriculture sector, also in economic terms, is the issue of intellectual rights emanating from traditional, indigenous knowledge for example of species and ecosystems. Particularly rural communities often dispose of a wealth of knowledge and have found ways to use genetic resources that can be commercially utilised to develop food, medicinal and other products. Where genetic resources and associated traditional knowledge are commercially used, this should take place with the prior informed consent of indigenous and local communities. Benefits resulting from the use of genetic resources rightfully held by indigenous and local communities should be shared with those communities (Nagoya Protocol, 2009).

The importance of cultural diversity was recognised in the Universal Declaration on Cultural Diversity, adopted in 2001, which aims to “preserve cultural diversity as a living, and thus renewable, treasure that must not be perceived as being unchanging heritage, but as a process guaranteeing the survival of humanity” (UNESCO, 2001). Concerning indigenous knowledge, the above-mentioned Nagoya Protocol, adopted in 2010 at the Conference of Parties to the Convention on Biological Diversity (CBD), contains access and benefit sharing requirements for the utilisation of traditional and cultural knowledge.

Sustainability goal

The enterprise respects the intellectual property rights of indigenous communities and the rights of all stakeholders to choose their lifestyle, production and consumption choices.

Sub-themes and indicators

Theme	Sub-Themes	Description	Indicators		
			What is being measured?	Data source	Type ⁸⁷
S5. Cultural diversity	S5.1 Indigenous knowledge	Intellectual property rights related with traditional and cultural knowledge are recognised and communities concerned are remunerated in a fair and equitable way, based on mutually agreed terms.	Monetary value of benefits related with traditional, cultural and ecosystem knowledge that is shared in a fair and equitable way based on mutually agreed terms	Accounts (recorded payments), contracts, interview (management, community)	1
	S5.2 Food sovereignty	The right of suppliers, employees and clients to pursue their own food production and consumption choices is not compromised.	Percentage of stakeholders who confirm they can freely pursue their own food production and consumption choices	Stakeholder survey	1

⁸⁷ 1: quantitative, absolute, performance (re. Table 2).

References

- 4C Association.** 2009. *The 4C Code of Conduct. Common Code for the Coffee Community Association* (available at www.4c-coffeeassociation.org/downloads/about4c/4CDoc_001a_CodeofConduct_v1.2_en.pdf).
- AccountAbility.** 2008. *AA100 AccountAbility Principles Standard 2008*. AccountAbility, New York (available at www.accountability.org/about-us/publications/aa1000.html).
- Al-Tuwaijri, S. et al.** 2008. *Beyond death and injuries: The ILO's role in promoting safe and healthy jobs. XVIII World Congress on Safety and Health at Work*, June 2008, Seoul, Korea – Introductory report. International Labour Organization, Geneva.
- Bellarby, J., Foereid, B., Hastings, A. & Smith, P.** 2008. *Cool Farming: Climate Change Impacts of Agriculture and Mitigation Potential* (available at www.greenpeace.org/international/en/publications/reports/cool-farming-full-report).
- Beuchelt, T. & Zeller, M.** 2011. *Profits and poverty: Certification's troubled link for Nicaragua's organic and fairtrade coffee producers*. *Ecological Economics* 70: 1316-1324.
- BGR.** 2006. *Deutsche Bundesanstalt für Geowissenschaften und Rohstoffe. Jahresbericht 2006* (in German). Hanover, Germany.
- BHF.** 2008. *Protecting children from unhealthy food marketing*. British Heart Foundation, London (available at www.childrensfoodcampaign.net/BHFnonbroadcastreport.pdf).
- Blackman, A. & Rivera, J.** 2011. *Producer-level benefits of sustainability certification*. *Conservation Biology* 25: 1176-1185.
- BLIHR.** 2009. *Policy Report 4. Business Leaders Initiative on Human Rights* (available at www.blihr.org/Legacy/Downloads/BLIHR_Report_2009.pdf).
- Blumenthal, U. & Peasey, A.** 2002. *Critical review of epidemiological evidence of the health effects of wastewater and excreta use in agriculture*. Unpublished document prepared for WHO (available upon request), World Health Organization, Geneva.
- Boller, E.F., Häni, F. & Poehling, H-M.** 2004. *Ökologische Infrastrukturen. Ideenbuch zur funktionalen Biodiversität auf Betriebsebene* (in German). LBL, Lindau, Switzerland.
- Boxall, A., Kolpin, B., Soerensen, B. & Tolls, J.** 2003. *Are veterinary medicines causing environmental risks?* *Environmental Science and Technology*. August 1, 2003: 286-294
- BSCI.** 2009. *Code of Conduct*. Business Social Compliance Initiative. Foreign Trade Initiative, Brussels (available at www.bsci-intl.org/resources/code-of-conduct).
- Burton, J.** 2010. *WHO Healthy Workplace Framework and Model: Background and supporting literature and practices*. World Health Organization, Geneva (available at www.who.int/occupational_health/healthy_workplaces_background_original.pdf).
- CAC.** 1995. *Principles for food import and export inspection and certification*. Codex Alimentarius Commission. GL 20 (available at www.codexalimentarius.net/download/standards/37/CXG_020e.pdf).
- CAC.** 1999. *Guidelines for the production, processing, labelling and marketing of organically produced foods*. Codex Alimentarius Commission. GL 32 (available at www.codexalimentarius.net/download/standards/360/cxg_032e.pdf).
- CAC.** 2009. *Guidelines for Organically Produced Foods*. Second Editin. Joint FAO/WHO Food Standards Programme. Codex Alimentarius Commission. GL 32 – 1999, Rev. 1 – 2001.

- Carney, D., Drinkwater, M., Rusinow, T., Neejes, K., Wanmali, S. & Singh, N.** 1999. *Livelihoods approaches compared*. London: Department for International Development DFID (available at www.livelihoods.org/info/docs/lacv3.pdf).
- Campbell, C.** 1992. *Contaminants in the food system: The consumers' response*. Proc. Nutr. Soc. Aust. 17: 33-35 (available at <http://apjcn.nhri.org.tw/server/apjcn/ProcNutSoc/1990-1999/1992/1992%2033-35.pdf>).
- CBD.** 2010. *Global Biodiversity Outlook 3. Secretariat of the Convention on Biological Diversity*. Montréal, Canada.
- Chambers, R. & Conway, G.** 1991. *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century* (available at <http://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/775/Dp296.pdf?sequence=1>).
- Commission on Sustainable Development.** 2001. *Indicators of Sustainable Development: Guidelines and Methodologies*. Second Edition. UN, NY, September 2001.
- Costanza, R. et al.** 1997. *The value of the World's ecosystem services and natural capital*. Nature 387: 253-260.
- Crews, T.W. & Peoples, M.B.** 2004. *Legume versus fertilizer sources of nitrogen: ecological tradeoffs and human needs*. Agriculture, Ecosystems and Environment 102: 279-297.
- Daly, H.E.** 1990. *Toward some operational principles of sustainable development*. Ecological Economics 2: 1-6.
- De Guzman, M., Hill-Menson, T. & Greve, V.L.** 2007. *Promoting cultural understanding and developing cultural competence*. University of Nebraska HE Form 575. Participant Manual (available at www.extension.unl.edu/c/document_library/get_file?folderId=221677&name=DLFE-3223.pdf).
- DFID.** 1999. *Sustainable livelihoods guidance sheets*. Department for International Development, London (available at www.eldis.org/vfile/upload/1/document/0901/section2.pdf).
- Doane, D. & MacGillivray, A.** 2001. *Economic Sustainability. The business of staying in business*. New Economics Foundation, London (available at http://projectsigma.co.uk/RnDStreams/RD_economic_sustain.pdf).
- EC.** 2008. *Regulation (EC) No. 1333/2008 of the European Parliament and of the Council on food additives*. European Council, Brussels (available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:354:0016:0033:en:PDF>).
- EC.** 2009. *Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS)*. European Council, Brussels (available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:342:0001:01:EN:HTML>).
- EC.** 2010. *Agriculture and climate change*. European Commission (available at http://ec.europa.eu/agriculture/climate_change/index_en.htm).
- ECOSOC.** 2000. *Integrated planning and management of land resources. Report of the Secretary-General*. UN Economic and Social Council. United Nations, New York (available at www.un.org/documents/ecosoc/cn17/2000/ecn172000-6.htm).
- Ehm, F.** 2010. *The rule of law: concept, guiding principle and framework. Report to the European Commission for Democracy through Law (Venice Commission)* (available at [www.venice.coe.int/docs/2010/CDL-UDT\(2010\)022-e.pdf](http://www.venice.coe.int/docs/2010/CDL-UDT(2010)022-e.pdf)).
- ERDF.** 2010. *European Regional Development Fund 2007-2013* (available at http://europa.eu/legislation_summaries/agriculture/general_framework/g24234_en.htm).
- Erwin, P.M.** 2010. *Corporate Codes of Conduct: the effects of Code content and quality on ethical performance*. Journal of Business Ethics 99: 535-548.

- European Advisory Service.** 2004. *The Introduction of mandatory nutrition labeling in the European Union.* Impact assessment undertaken for the Directorate-General for Health and Consumers of the European Commission (available at http://ec.europa.eu/food/food/labellingnutrition/nutritionlabel/impact_assessment.pdf).
- EWCS.** 2007. *Fourth European Working Conditions Survey.* (European Foundation for the Improvement of Living and Working Conditions) (Ed.), Luxemburg (available at www.eurofound.europa.eu/pubdocs/2006/98/en/2/ef0698en.pdf).
- Fairtrade International.** 2011a. *Generic Fairtrade. Trade Standard.* Fairtrade Labelling Organizations International e.V., Bonn, Germany (available at www.fairtrade.net/standards.0.html).
- Fairtrade International.** 2011b. *Generic Fairtrade Standard for Contract Production.* Fairtrade Labelling Organizations International e.V., Bonn, Germany (available at www.fairtrade.net/standards.0.html).
- Fairtrade International.** 2011c. *Generic Fairtrade Standard for Hired Labour.* Fairtrade Labelling Organizations International e.V., Bonn, Germany (available at www.fairtrade.net/standards.0.html).
- Fairtrade International.** 2011d. *Generic Fairtrade Standard for Small Producer Organizations.* Fairtrade Labelling Organizations International e.V., Bonn, Germany (available at www.fairtrade.net/standards.0.html).
- Falkenmark M.** 1997. *Meeting Water Requirements of an Expanding World Population.* In DJ Greenland, PJ Gregory, PH Nye: *Land Resources: On the Edge of the Malthusian Precipice?* CAB International, Wallingford, UK.
- FAO.** 1989. *Sustainable development and natural resources management.* Twenty-Fifth Conference, Paper C 89/2 - Sup. 2. Food and Agriculture Organization of the United Nations, Rome.
- FAO.** 1995. *FAO Trainer's Manual, Vol. 1. Sustainability issues in agricultural and rural development policies.* Food and Agriculture Organization of the United Nations, Rome.
- FAO.** 1996. *Rome Declaration on World Food Security and World Food Summit Plan of Action.* World Food Summit 13-17 November 1996. Rome.
- FAO.** 1997. *Gender: the key to sustainability and food security.* SD Dimensions, May 1997 (available at <ftp://ftp.fao.org/docrep/fao/005/y3969e/y3969e00.pdf>).
- FAO.** 2004. *Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security.* Food and Agriculture Organization of the United Nations, Rome (available at http://www.fao.org/righttofood/en/highlight_51596en.html)
- FAO.** 2001. *Lecture notes of the major soils of the World.* Food and Agriculture Organization of the United Nations, Rome.
- FAO.** 2006a. *Livestock's long shadow. Environmental issues and options.* Food and Agriculture Organization of the United Nations, Rome (available at [ftp.fao.org/docrep/fao/010/a0701e/a0701e00.pdf](ftp://ftp.fao.org/docrep/fao/010/a0701e/a0701e00.pdf))
- FAO.** 2006b. *Food Security, FAO Policy Brief, Issue 2, June 2006.* Food and Agriculture Organization of the United Nations, Rome (available at ftp://ftp.fao.org/es/esa/policybriefs/pb_02.pdf)
- FAO.** 2010a. *State of Food Insecurity in the World.* 2010 Report. Food and Agriculture Organization of the United Nations, Rome (available at www.fao.org/publications/sofi/en).
- FAO.** 2010b. *The State of World Fisheries and Aquaculture.* Food and Agriculture Organization of the United Nations, Rome (available at www.fao.org/docrep/013/i1820e/i1820e00.htm)
- FAO.** 2010c. *Global Forest Resources Assessment 2010.* Food and Agriculture Organization of the United Nations, Rome (available at www.fao.org/docrep/013/i1757e/i1757e.pdf).

- FAO.** 2011. *The State of the World's Land and Water Resources for Food and Agriculture*. Managing systems at risk. Food and Agriculture Organization of the United Nations, Rome (available at <http://www.fao.org/nr/solaw/solaw-home/en/>).
- FAO.** 2012a. *Greening the Economy with Agriculture* (available at <http://www.fao.org/docrep/015/i2745e/i2745e00.pdf>).
- FAO.** 2012b. *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security* (available at <http://www.fao.org/nr/tenure/voluntary-guidelines/en/>).
- FAO Council.** 2011. *Greening the Economy with Agriculture* (available at www.fao.org/docrep/015/i2745e/i2745e00.pdf).
- FAO/WHO.** 2003a. *Recommended International Code of practice general principles of food hygiene*. Food and Agriculture Organisation of the United Nations, Rome (available at www.mhlw.go.jp/english/topics/importedfoods/guideline/dl/04.pdf).
- FAO/WHO.** 2003b. *Expert report on diet, nutrition and prevention of chronic diseases*. Food and Agriculture Organisation of the United Nations, Rome (available at www.who.int/mediacentre/news/releases/2003/pr32/en).
- FAOSTAT.** 2010/2011/2012. *FAOSTAT-Agriculture Database* (available at <http://faostat.fao.org/default.aspx>).
- FAWC.** 1979. *The five freedoms*. Farm Animal Welfare Council of Great Britain (available at www.fawc.org.uk).
- Fischer, C., Frangenberg, A. & Geissen, V.** 2001. *Naturschutz in und mit der Landschaft. Möglichkeiten und Grenzen beim Schutz von Edaphon und Blütenpflanzen (in German)*. Gesellschaft zur Förderung des Integrierten Landbaus, Bonn, Germany.
- FOAG.** 2009. *Swiss agriculture on the move: The New Agriculture Act. Ten years on*. Federal Office of Agriculture of Switzerland (available at www.blw.admin.ch/aktuell/index.html?lang=en&download=NHZlpZeg7t,Inp6lONTU042l2Z6ln1ad1Zn4Z2qZpnO2Yuu2Z6gpJCEdIJ9gGym162epYbg2c_JKbNoKSn6A--).
- Folke, C., Carpenter, S., Elmqvist, T., Gunderson, L., Holling, CS. & Walker, B.** 2002. *Resilience and sustainable development: building adaptive capacity in a world of transformations*. *Ambio* 31: 437-440.
- Freeman, R.E.** 1984. *Strategic Management. A Stakeholder Approach*. Cambridge University Press, Boston.
- FSC.** 1996. *FSC International Standard. FSC Principles and Criteria for Forest Stewardship*. Forest Stewardship Council A.C., Bonn, Germany (available at www.fsc.org/fileadmin/web-da-ta/public/document_center/international_FSC_policies/standards/FSC_STD_01_001_V4_0_EN_FSC_Principles_and_Criteria.pdf).
- G100.** 2003. *Sustainability: A guide to triple bottom line reporting*. Group of 100 Incorporated. Melbourne, Australia (available at www.group100.com.au/publications/G100_guide-tbl-reporting2003.pdf).
- GfaW.** 2012. *Certified Sustainable Economics. Standard for certification of sustainable business management*. Gesellschaft für angewandte Wirtschaftsethik. Version 01/2012. Bad Sooden-Allendorf, Germany (available at <http://angewandte-wirtschaftsethik.org/wp-content/uploads/2011/09/en-final-Certified-Sustainable-Economics-Standard.pdf>).
- GlobalG.A.P.** 2011a. *Control points and compliance criteria. Integrated farm assurance. All farm base*. Version 4.0. GlobalG.A.P. c/o FoodPlus GmbH, Cologne (available at www.globalgap.org/cms/front_content.php?idcat=3).
- GlobalG.A.P.** 2011b. *Control points and compliance criteria. Integrated farm assurance. Crops base*. Version 4.0. GlobalG.A.P. c/o FoodPlus GmbH, Cologne (available at www.globalgap.org/cms/front_content.php?idcat=3).

- GlobalG.A.P.** 2011c. *Control points and compliance criteria. Integrated farm assurance. Livestock base.* Version 4.0. GlobalG.A.P. c/o FoodPlus GmbH, Cologne (available at www.globalgap.org/cms/front_content.php?idcat=3).
- Grenz, J., Thalmann, C., Schoch, M. & Stämpfli, A.** 2011. *RISE 2.0 Field Manual.* Bern University of Applied Sciences, Zollikofen, Switzerland.
- GRI.** 2011a. *Sustainability Reporting Guidelines.* Version 3.1. Global Reporting Initiative, Amsterdam (available at <https://www.globalreporting.org/Pages/default.aspx>).
- GRI.** 2011b. *Sustainability Reporting Guidelines.* Version 3.1. Food Processing Sector Supplement. Global Reporting Initiative, Amsterdam (available at www.globalreporting.org/ReportingFramework/SectorSupplements/FoodProcessing).
- GSCP.** 2010. *Reference Tools of the Global Social Compliance Programme.* Issy-les-Moulineaux, France (available at www.gscpnet.com/working-plan.html).
- GWP.** 2000. *Towards water security: a framework for action.* Global Water Partnership, Stockholm (available at www.gwptoolbox.org/images/stories/Docs/water_security_2000_doc_78_en.pdf
- Haanaes, K., Arthur, S., Balagopal, B., Kong, M.T., Reeves, M., Velken, I., Hopkins, M.S. & Kruschwitz, N.** 2011. *Sustainability: the 'embracers' seize advantage. Findings from the 2010 Sustainability & Innovation Global Executive Study and Research Project.* MIT Sloan Management Review and The Boston Consulting Group (available at <http://c0426007.cdn2.cloudfiles.rackspacecloud.com/MIT-SMR-BCG-sustainability-the-embracers-seize-advantage-2011.pdf>).
- Helmholtz-Zentrum.** 2007. *Antibiotika und Antibiotikaresistenzen (in German).* FLUGS-Fachinformationsdienst. Helmholtz-Zentrum, München.
- Henderson, G.** 1994. *Cultural diversity in the workplace: issues and strategies.* Praeger, Westport (CT).
- Hill, C. & Jones, G.** 2007. *Strategic management theory: an integrated approach.* Houghton Mifflin Company, Boston.
- HLPE.** 2011. *Land tenure and international investments in agriculture. A report by the High Level Panel of Experts on Food Security and Nutrition.* Committee on World Food Security, Rome (available at www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/HLPE-Land-tenure-and-international-investments-in-agriculture-2011.pdf).
- Holling, C.S. & Meffe, G.K.** 1996. *Command and control and the pathology of natural resource management.* Conservation Biology 10: 328-337.
- Hussein, K.** 2002. *Livelihood approaches compared: A multi-agency review of current practice.* Commissioned by the UK Department for International Development's (DFID's) Sustainable Livelihoods Support Office (SLSO). London: Overseas Development Institute (available at www.eldis.org/vfile/upload/1/document/0812/LAC.pdf).
- IAASTD.** 2009. *International Assessment of Agricultural Knowledge, Science and Technology for Development.* www.agassessment.org
- IEA.** 2009. *World Energy Outlook.* International Energy Agency, Paris (available at www.iea.org/textbase/npsum/weo2009sum.pdf).
- IFAD.** 2007. *Lack of investment in agriculture is driving massive migration from rural areas.* International Fund for Agricultural Development, Governing Council meeting 2007. Rome (available at www.ifad.org/media/press/2007/15.htm).
- IFAD/FAO.** 2008. *International migration, remittances and rural development.* International Fund for Agricultural Development, Rome (available at www.ifad.org/pub/remittances/migration.pdf).

- IFOAM.** 2007. *The IFOAM Basic Standards for Organic Production and Processing (version 2005)*. International Foundation for Organic Agriculture Movements, Bonn, Germany (available at www.ifoam.org/about_ifoam/standards/norms.html).
- IFPRI.** 2009. *When speculation matters*. IFPRI issue brief 57, February 2009. International Food Policy Research Institute (available at www.ifpri.org/sites/default/files/publications/ib57.pdf).
- IISD.** 2009. *Bellagio STAMP: SusTainability Assessment and Measurement Principles*. International Institute for Sustainable Development, Winnipeg.
- ILO.** 1951. *Equal Remuneration Convention. C100*. International Labour Organization, Geneva (available at www.ilo.org/ilolex/cgi-lex/convde.pl?C100)
- ILO.** 1958. *Discrimination (Employment and Occupation) Convention. C111*. International Labour Organization, Geneva (available at www.ilo.org/ilolex/cgi-lex/convde.pl?C111)
- ILO.** 1998. *ILO Declaration on Fundamental Principles and Rights at Work*. International Labour Organization, Geneva (available at www.ilo.org/declaration/lang-en/index.htm).
- ILO.** 2011. *Equality at work: the continuing challenge*. Report of International Labour Conference, 100th session, 1 (B). International Labour Organization, Geneva (available at www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/publication/wcms_166583.pdf).
- ILO.** 2012. *Boosting local economies*. International Labour Organization, Geneva (available at www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/---led/documents/publication/wcms_175521.pdf).
- IPCC.** 2007. *Climate Change 2007: Synthesis Report*. Intergovernmental Panel on Climate Change, Geneva (available at www.ipcc.ch/publications_and_data/ar4/syr/en/contents.html).
- ISEAL Alliance.** 2010. *Assessing the impacts of environmental and social standards systems*. ISEAL Code of Good Practice, version 1.0. ISEAL Alliance, London (available at www.isealliance.org/resources/p041-impacts-code-of-good-practice).
- Isenring, R.** 2010. *Pesticides and the loss of biodiversity*. Pesticide Action Network Report. Pesticide Action Network Europe, London (available at http://www.pan-europe.info/Resources/Briefings/Pesticides_and_the_loss_of_biodiversity.pdf).
- ISO 14025.** 2006. *Environmental labels and declarations – Type III environmental declarations – principles and procedures*. International Organization for Standardization, Geneva.
- ISO 14040.** 2009. *Environmental management – Life cycle assessment – Principles and framework (ISO 14040:2006)*. German and English version, November 2009. Deutsches Institut für Normung e.V., Berlin.
- IWMI.** 2007. *Water for food, water for life: A comprehensive assessment of water management in agriculture*. London: Earthscan, and Colombo: International Water Management Institute. 645 pp.
- Jörissen, J., Kopfmüller, J. & Brandl, V.** 1999. *Ein integratives Konzept nachhaltiger Entwicklung* (in German). Wissenschaftliche Berichte FZKA 6393. Forschungszentrum Karlsruhe, Germany
- Loew, T. & Braun, S.** 2006. *Organisatorische Umsetzung von CSR. Vom Umweltmanagement zur Sustainable Corporate Governance*. Institute 4 Sustainability, Berlin & future e.V., München (available at www.4sustainability.org/downloads/Loew_Braun_2006_Organisatorische_Umsetzung_von_CSR.pdf).
- Maak, T. & Ulrich, P.** 2007. *Integre Unternehmensführung. Ethisches Orientierungswissen für die Wirtschaftspraxis* (in German). Schäfer Poeschel Verlag, Stuttgart, Germany.
- McCann, K.S.** 2000. *The diversity-stability debate*. Nature 405: 228-233.

- McInroy, N. & Longlands, S.** 2010. *Productive local economies creating resilient places*. Centre for Local Economic Strategies, Manchester, UK (available at www.cles.org.uk/wp-content/uploads/2011/01/Resilience-for-web1.pdf).
- MEA.** 2005. *Ecosystems and Human Well-being: Synthesis*. Millennium Ecosystem Assessment. (available at www.maweb.org/en/index.aspx).
- MSC.** 2010. *MSC Fisheries Standard. Principles and Criteria for Sustainable Fishing*. Marine Stewardship Council (available at www.msc.org/about-us/standards/standards/msc-environmental-standard).
- Nagoya Protocol.** 2009. *Nagoya Protocol on access to genetic resources and the fair and equitable sharing of benefits arising from their utilization to the convention on biological diversity* (available at www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf).
- Nelson, J. & Prescott, D.** 2008. *Business and the Millennium Development Goals: A Framework for Action* (2nd edition) (available at www-dev.iblf.org/docs/BMDG_final_w.pdf).
- Norberg-Hodge, H. & Gorelick, S.** 2002. *Think Global... Eat Local*. The Ecologist (UK) 32(7): 28-31 (available at www.rightlivelivelihood.org/fileadmin/Files/PDF/Literature_Recipients/Ladakh/Norberg-Hodge_-_Think_Globally.pdf).
- OECD.** 2002. *Glossary of key terms in evaluation and results based management*. Organisation for Economic Co-Operation and Development, Paris.
- OECD.** 2003. *OECD Environmental Indicators. Development, measurement and use*. Reference paper. Organisation for Economic Co-Operation and Development, Paris (available at www.oecd.org/document/28/0,3746,en_2649_33793_39681244_1_1_1_1,00.html).
- OECD.** 2004. *Principles of Good Corporate Governance*. OECD, Paris.
- OECD.** 2010. *Local development benefits from staging global events: Achieving the local development legacy from 2012*. Organisation for Economic Co-operation and development. Department of communities and local government. Paris (available at www.oecd.org/dataoecd/57/61/46207013.pdf).
- OECD.** 2011. *OECD Guidelines for multinational enterprises*. 2011 Edition. Organisation for Economic Co-Operation and Development (available at www.oecd.org/dataoecd/43/29/48004323.pdf).
- OECD/IEA.** 2008. *Towards a sustainable energy future*. International Energy Agency, Paris (available at www.iea.org/G8/2008/G8_Towards_Sustainable_Future.pdf).
- Oldeman, L.R., Hakkeling, R.T.A. & Sombrock W.G.** 1991. *Global Assessment of Soil Degradation - GLASOD. World map of the status of human-induced soil degradation*. ISRIC, Wageningen and UNEP, Nairobi.
- PENN Behavioral Health.** 2008. *Developing cultural competency at work: How organizations can benefit from opportunities provided by a multi-cultural staff*. University of Pennsylvania, Philadelphia (PA) (available at www.pennbehavioralhealth.org/documents/cultural_competency.pdf).
- Pfister, S., Koehler, A. & Hellweg, S.** 2009. *Assessing the Environmental Impacts of Freshwater Consumption in LCA*. Environ. Sci. Technol., 43: 4098-4104.
- Pimm, S.L. & Raven, P.** 2000. *Extinction by numbers*. Nature Volume 403: 843-845
- Pinter, L., Hardi, P., Martinuzzi, A. & Hall, J.** 2011. *Bellaggio STAMP: Principles for sustainability assessment and measurement*. Ecological Indicators 17: 20-28.
- Pitts, D.** 2006. *Implementation of Diversity Management Programs in Public Organizations: Lessons from Policy Implementation Research*. Georgia State University, Department of Public Administration and Urban Studies Fiscal Research Center. Working Paper 6-17. Atlanta (GA) (available at http://aysps.gsu.edu/pitts_implementationdiversity.pdf).

- Porter, T.** 2008. *Managerial applications of corporate social responsibility and systems thinking for achieving sustainability outcomes*. *Systems Research and Behavioral Science* 25: 397-411.
- Rockström et al.,** 2009. *A safe operating space for humanity*. *Nature* 461: 472-475.
- RSB.** 2010. *RSB Principles & Criteria for Sustainable Biofuel Production*. Roundtable on Sustainable Biofuels, Lausanne, Switzerland (available at <http://rsb.epfl.ch/page-67254-en.html>).
- RSB.** 2011a. *RSB Conservation Impact Assessment Guidelines*. Roundtable on Sustainable Biofuels, Lausanne, Switzerland (available at <http://rsb.epfl.ch/page-67254-en.html>).
- RSB.** 2011b. *RSB Social Impact Assessment (SIA) Guidelines*. Roundtable on Sustainable Biofuels, Lausanne, Switzerland (available at <http://rsb.epfl.ch/page-67254-en.html>).
- SAI Platform.** 2008. *Social accountability 8000. SAI Standard SA8000*. Social Accountability International.
- SAI Platform.** 2012. Sustainability performance assessment of farming practices. Guidelines for developers of quantitative monitoring tools. Version 1.0 (available at www.saiplatform.org).
- SAM.** 2011. SAM Research Corporate Sustainability Assessment Questionnaire. SAM Group Holding AG, Zürich, Switzerland (available at www.sam-group.com/images/sample-questionnaire_tcm794-267819.pdf).
- SAN.** 2010a. *Sustainable Agriculture Standard*. Sustainable Agriculture Network. San José, Costa Rica (available at <http://sanstandards.org/sitio>).
- SAN.** 2010b. *Standard for Sustainable Cattle Production Systems*. Sustainable Agriculture Network. San José, Costa Rica (available at <http://sanstandards.org/sitio>).
- SAN.** 2011a. *Group Certification Standard (version 2)*. Sustainable Agriculture Network. San José, Costa Rica (available at <http://sanstandards.org/sitio>).
- SAN.** 2011b. *SAN Climate Module. Criteria for mitigation and adaptation to climate change*. Sustainable Agriculture Network. San José, Costa Rica (available at <http://sanstandards.org/sitio>).
- Schaltegger, S. et al.,** 2003. *Managing and measuring the business case for sustainability. Capturing the Relationship between Sustainability Performance, Business Competitiveness and Economic Performance* (available at www.greenleaf-publishing.com/content/pdfs/bcsintro.pdf).
- Stoob, K., Schmitt, H. & Wanner, M.** 2005. *Antibiotikaeinsatz in der Landwirtschaft – Folgen für die Umwelt* (in German). EAWAG News 59d. EAWAG, Dübendorf, Switzerland.
- Taylor, M.B., Zandvliet, L. & Forouhar, M.** 2009. *Due diligence for human rights: a risk-based approach*. Working Paper No. 53. Corporate Social Responsibility Initiative, Harvard University (available at www.hks.harvard.edu/m-rcbg/CSRI/publications/workingpaper_53_taylor_et_al.pdf).
- TEEB.** 2009. *The Economics of Ecosystems and Biodiversity for National and International Policy Makers. Summary: Responding to the Value of Nature 2009* (available at www.teebweb.org).
- Toscano, G.** 1997. Brief: *Dangerous jobs*. In Bureau of Labor Statistics. Compensation and Working Conditions, Summer, 57–60.
- Ulrich, P.** 2008. *Integrative economic ethics: foundations of a civilized market economy*. Cambridge University Press.
- UN,** 1948. *Universal Declaration of Human Rights*. United Nations, Geneva (available at www.un.org/en/documents/udhr).
- UN.** 1966a. *International Covenant on Economic, Social and Cultural Rights*. United Nations Organization, New York.
- UN.** 1966b. *International Covenant on Civil and Political Rights*. United Nations Organization, New York.

- UN.** 1992. *Agenda 21. The United Nation's Programme of Action from Rio*. UN, New York (available at www.un.org/esa/dsd/agenda21).
- UN.** 2004. *The rule of law and transitional justice in conflict and post-conflict societies*. Report of the Secretary-General. United Nations Security Council (available at www.unrol.org/files/2004_report.pdf).
- UN.** 2007. *Indicators of Sustainable Development: Guidelines and Methodologies – Third edition*. Methodology sheets. United Nations Publications, New York (available at www.un.org/esa/sustdev/natlinfo/indicators/guidelines.pdf).
- UN.** 2010. *Retooling global development*. World Economic and Social Survey 2010. United Nations, Department of Economic and Social Affairs, New York (available at www.un.org/esa/policy/wess/wess2010files/wess2010.pdf).
- UN.** 2011. *The Millennium Development Goals Report 2011*. United Nations, New York (available at www.un.org/millenniumgoals/11_MDG_Report_EN.pdf).
- UNDP.** 2011. *Sustainability and Equity: A Better Future for All*. 2011 Human Development Report. United Nations Development Programme, New York (available at <http://hdr.undp.org/en/reports/global/hdr2011>).
- UNECE.** 2007. *Guidance Document on Control Techniques for Preventing and Abating Emissions of Ammonia*. United Nations Economic Commission for Europe (available at www.unece.org/env/documents/2007/eb/wg5/WGSR40/ece.eb.air.wg.5.2007.13.e.pdf).
- UNEP.** 1992. *Basel Convention on the Control of Transboundary Movements of Hazardous Waste and Their Disposal*. United Nations Environment Programme (available at www.basel.int/Portals/4/Basel_Convention/docs/text/BaselConventionText-e.pdf).
- UNEP.** 2011. *Towards a Green Economy. Pathways to sustainable development and poverty eradication*. United Nations Environment Programme (available at www.unep.org/greeneconomy).
- UNEPFI.** 2006. *Sustainability management and reporting. Benefits for financial institutions in developing and emerging economies*. UNEP Finance Initiative Sustainability Management and Reporting Project. UNEP, Geneva.
- UNESCAP.** 2009. *What is Good Governance?* United Nations Economic and Social Commission for Asia and the Pacific, Bangkok.
- UNESCO.** 2001. *UNESCO Universal declaration on cultural diversity* (available at <http://unesdoc.unesco.org/images/0012/001271/127160m.pdf>).
- UNESCO.** 2003. *1st UN World Water Development Report: Water for People, Water for Life*. Paris, New York and Oxford. UNESCO (United Nations Educational, Scientific and Cultural Organization) and Berghahn Books.
- UNESCO.** 2008. *UNESCO and cultural diversity* (available at www.unescobkk.org/culture/cultural-diversity/cultural-diversity-programming-lens/unesco-and-cultural-diversity).
- UNESCO.** 2009. *Water in a Changing World. The United Nations World Water Development Report 3*. UNESCO Publishing, Paris, and Earthscan, London (available at www.unesco.org/water/wwap/wwdr/wwdr3/pdf/WWDR3_Water_in_a_Changing_World.pdf).
- UNGC.** 2010. *United Nations Global Compact Management Model. Framework for Implementation*. United Nations Global Compact, New York (available at www.unglobalcompact.org/docs/news_events/9.1_news_archives/2010_06_17/UN_Global_Compact_Management_Model.pdf).
- UNGC/IFC.** 2009. *Corporate Governance. The foundation for corporate citizenship and sustainable business*. United Nations Global Compact / International Finance Corporation. New York & Washington D.C. (available at

- www.unglobalcompact.org/docs/issues_doc/Corporate_Governance/Corporate_Governance_IFC_UNGC.pdf).
- UN Habitat.** 2009. *Promoting Local Economic Development through Strategic Planning. Volume 5: Trainer's Guide*. United Nations Human Settlements Programme, Nairobi (available at www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=1922).
- UNHRC.** 2008. Report of the Special Representative of the Secretary-General on the issue of human rights and transnational corporations and other business enterprises. Addendum. *Corporations and human rights: a survey of the scope and patterns of alleged corporate-related human rights abuse* (available at www.reports-and-materials.org/Ruggie-2-addendum-23-May-2008.pdf).
- UNHRC.** 2011. Report of the Special Representative of the Secretary-General on the issue of human rights and transnational corporations and other business enterprises. *Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework*. A/HRC/17/31 (available at www.business-humanrights.org/media/documents/ruggie/ruggie-guiding-principles-21-mar-2011.pdf).
- UNIDO.** 2011. *Industrial Value Chain Diagnostics: An Integrated Tool*. United Nations Industrial Development Organization (UNIDO). Vienna.
- Unilever.** 2010. *Unilever Sustainable Agriculture Code* (available at www.sustainable-living.unilever.com/wp-content/uploads/2010/12/SustainableAgrCode2010UL.pdf).
- van der Ploeg, R.R., Ehlers, W. & Horn, R.** 2006. *Schwerlast auf dem Acker* (in German). Spektrum der Wissenschaft, August 2006.
- Vitousek PM, Aber JD, Howarth RW, Likens GE, Matson PA, Schindler DW, Schlesinger WH, Tilman D.** 1997. *Human alteration of the global nitrogen cycle: sources and consequences*. *Ecol. Appl.* 7: 737–750.
- von Wirén-Lehr S.** 2001. *Sustainability in agriculture – an evaluation of principal goal-oriented concepts to close the gap between theory and practice*. *Agriculture, Ecosystems and Environment* 84: 115-129
- Wackernagel M. & Rees W.** 1997. *Unser ökologischer Fussabdruck: Wie der Mensch Einfluss auf die Umwelt nimmt* (in German). Birkhäuser, Basel/Boston/Berlin.
- Wal-Mart.** unknown year. *Wal-Mart Supplier Sustainability Assessment* (available at <http://walmartstores.com/Sustainability/9292.aspx>).
- WBCSD.** 2000. *Eco-efficiency. Creating more value with less impact*. World Business Council for Sustainable Development, Geneva (available at www.wbcd.org/web/publications/eco_efficiency_creating_more_value.pdf).
- WCED.** 1987. *Report of the World Commission on Environment and Development: Our common future* (available at www.un-documents.net/wced-ocf.htm).
- WDC.** 2007. *Indicators, Balanced Regional development and the National Development Plan 2007-2013*. Western Development Commission, Republic of Ireland (available at www.wdc.ie/wpcontent/uploads/reports_IndicatorsBRDandNDP2007-2013.pdf).
- WEF.** 2010. *Realizing a New Vision for Agriculture. A roadmap for stakeholders*. World Economic Forum (available at www3.weforum.org/docs/IP/AM11/CO/WEF_AgricultureNewVision_Roadmap_2011.pdf).
- WHO.** 2007. *Food safety and foodborne illness*. World Health Organisation, Geneva (available at www.who.int/mediacentre/factsheets/fs237/en).
- WHO.** 2009. *Chemical risks in food*. World Health Organisation, Geneva (available at www.who.int/foodsafety/chem/general/en/index.html).

World Bank. 2011. *World dataBank. World Development Indicators (WDI) & Global Development Finance (GDF)*. World Bank, Washington D.C. (available at data-bank.worldbank.org/ddp/home.do?Step=12&id=4&CNO=2).

World Soil Charter. 1981. (available at www.fao.org/docrep/T0389E/T0389E0b.htm).

Appendix A

Scope of approaches for measuring, communicating and improving sustainability

Name (alphabetic order)	Steps of the value chain covered			Sustainability dimensions covered			
	Production	Processing	Retail	Environment	Economy	Governance	Social
4C Association, Code of Conduct (version 1.2)	x			x	x	x	x
Committee On Sustainability Assessment (COSA)	x			x	x	x	x
FLO-Cert Generic Fairtrade Standards (2011 versions)	x	x	x	x	x	x	x
GlobalG.A.P. control points and major musts (version 4.0)	x			x	x	x	x
Global Reporting Initiative (GRI) G3.1 Guidelines	x	x	x	x	x	x	x
Global Social Compliance Programme (GSCP) Reference Tools (2011 versions)	x	x	x	x		x	x
IFOAM Basic standards for organic production and processing (2005 version)	x	x		x		x	x
International Labour Organisation, Core Conventions	x	x	x				x
Life Cycle Assessment (ISO 14040, ISO 14044)	x	x	x	x			
OECD Environmental Indicators	x	x	x	x			
Response-Inducing Sustainability Evaluation (RISE, version 2.0)	x			x	x		x
SAI Platform Sustainability Performance Assessment (SPA; April 2012 draft)	x			x	(x) ⁸⁸		(x)
Roundtable on Sustainable Biofuels, Impact assessment guidelines (version 2.0)	x	x		x	x	x	x
SAM Sustainability Investing, Corporate sustainability assessment questionnaire	x	x	x	x	x	x	x
Sustainable Agriculture Network, Standards for Sustainable Agriculture (2010 version)	x			x	x	x	x
Unilever Sustainable Agriculture Code (2010 version)	x			x		x	x
Wal-Mart Sustainability Index	x	x		x		x	

Explanatory notes

Sustainability dimensions are interpreted in accordance with the SAFA thematic scope (for details, see part C of the Guidelines). “x” indicates that at least single, but not necessarily all, aspects of this dimension are taken into account in the approach.

⁸⁸ Farm financial stability and occupational health and safety are not yet considered in SPA (April 2012), but inclusion is intended for future versions.

Appendix B

Draft form for a SAFA relevance and compliance check

General questions

Entity name	
Whole entity covered by the SAFA?	<input type="checkbox"/> Yes <input type="checkbox"/> No If not: what branches are covered?
Steps of the value chain and branches of primary production	<input type="checkbox"/> Primary production <input type="checkbox"/> Processing <input type="checkbox"/> Retail ⁸⁹ If primary production, what branch? <input type="checkbox"/> Crop production ⁹⁰ <input type="checkbox"/> Livestock production ⁹¹ <input type="checkbox"/> Fisheries <input type="checkbox"/> Aquaculture <input type="checkbox"/> Hunting <input type="checkbox"/> Collection of plants from the wild <input type="checkbox"/> Forestry
Are there employees working in the entity?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes: are there vulnerable⁹² employees? <input type="checkbox"/> Yes <input type="checkbox"/> No
Do operations depend on the following?	<input type="checkbox"/> land use cover change <input type="checkbox"/> modifications of (near-)natural ecosystems <input type="checkbox"/> waste disposal or resource extraction with substantial impact on (near-)natural ecosystems? <input type="checkbox"/> use of machinery powered by fossil fuel or by electricity
Geographical regions	
Environmental goals covered in this region or country	For legal reasons: For pedo-climatic reasons: For other reasons:

⁸⁹ Transportation is not considered separately in the SAFA context, but is included in the processing and retail steps of the chain.

⁹⁰ Including mushroom production.

⁹¹ Including bee keeping.

⁹² Women, children, minorities, handicapped people etc.

Economic goals covered in this region or country	For legal reasons: For other reasons:
Social goals covered in this region or country	For legal reasons: For other reasons:
Governance goals covered in this region or country	For legal reasons: For other reasons:
Compliance with standards for better...	
...environmental sustainability performance	Name:
Sustainability goals covered (achieved level in brackets):	
...economic sustainability performance	Name:
Sustainability goals covered (achieved level in brackets):	
...social sustainability performance	Name:
Sustainability goals covered (achieved level in brackets):	
...governance sustainability performance	Name:
Sustainability goals covered (achieved level in brackets):	

Appendix C

SAFA report template

Descriptive part

Statement of goals

Scope of the assessment

- Description of the analysed entity

- Sphere of influence: material, spatial and temporal system boundaries

- Description and justification of cut-off criteria

- Description and justification of allocation rules

Relevance and compliance check

- Relevance check at entity level

- Hot-spot analysis at regional level

- Compliance check at entity level (e.g. compliance with voluntary sustainability standards)

- Description and justification of sustainability theme and sub-theme omissions

Indicators selected

- Description and justification of indicators (based on part C of the SAFA Guidelines)

Data sources

- Internal data of the analysed entity

- Ancillary data used for the assessment

Analytical part

Results

Interpretation

- Sustainability deficits and potentials

- Possible improvement measures

- Limitations of the assessment

Critical review

- Critical review of the assessment procedure

- Critical review of the assessment results and interpretation