

ANALYTICAL TOOLS TO ASSESS AND UNLOCK SUSTAINABLE BIOENERGY POTENTIAL

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Introduction

Bioenergy development and energy planning strategy is a field that is subject to many factors: uncertainty, long timeframes and high investments, along with the need to satisfy multiple decision-makers with many conflicting criteria.

Multiple criteria analytical tool or decision support tool is a generic term for all methods that help decision-makers according to their preferences, in cases where there is more than one conflicting criterion. The aim of these tools is to help decision-makers to organize and synthesize the collected information for use in supporting their decisions. These tools can also help decision-makers understand and identify the paramount criteria in the decision process.

The purpose of this report is to provide a collection of some important analytical tools for policymakers that have been proposed over the years or that are still under improvement or development.

The tools have been classified on the basis of their relevance to different assessment steps of the value chain of sustainable bioenergy production and use. The main advantages of the different tools, as well as the difficulties to which they may be subject, are evaluated. This work would set the stage for further analysis and comparison among different decision-support tools and their use to assess different phases of the development of a sustainable bioenergy sector.

Hundreds of analytical tools have been proposed in the last decade. The rationale and the scope differ in many areas—theoretical background, type of inputs needed and type of results given. Some of these tools have been created particularly for one specific problem, while others are more comprehensive; many of them have attained a good level of reliability and are widely deployed.

When choosing a decision support tool, there are many criteria to consider. Different tools can give different results, so the tool that reflects the user's preferences and objectives in the most possible accurate way should be chosen. In addition, the tool should provide the decision-makers with all the information needed, and should be compatible with the available/accessible data. The tool should also be easy to use and to understand. If the user doesn't understand the logic behind the methodology, it may be perceived as a black box, with consequent loss of trust in the outcomes or recommendations.

Overview and User Guide

This compilation of tools is targeted at decision-makers at regional, national or local levels in countries facing strategic decisions in developing a modern bioenergy sector.

There are many possible ways to classify the existing analytical tools for decision support. In this report, they are classified in three categories:

- ***Spatial planning for bioenergy production:*** decision support tools for land-use analysis, such as GIS-based multi-criteria analysis and simulation for mapping biomass supply/demand, land suitability and energy crop production potential;
- ***Technology options and potential:*** techno-economic analysis tools for evaluating the costs and energy demand of all stages of bioenergy chains;
- ***Implementation options and impacts:*** decision support tools allowing an integrated assessment and comparison of different bioenergy policy options and associated impacts.

The report is split into two parts:

- Part I contains the collection of real analytical tools, often computer-based, to assist countries in bioenergy decision-making, including defining options and considering related key risks and opportunities. It offers guidance on land suitability assessment (WHERE), technology options (WHAT), and implementation modalities (HOW) – each detailing a short background and resources for more in-depth discussion and analysis.



- Part II contains further technical back-up information, intended to provide decision-makers with the necessary technical resource material to allow them to take well informed decisions on different issues, ranging from stakeholder engagement to mitigation options and good practices. Some of these are datasets that could be used to retrieve useful quantitative information to be used as input for the decision-making tools.

This Report was developed by the Secretariat of the Global Bioenergy Partnership (GBEP) as the result of an extensive information-gathering process. It is mostly based on the Bioenergy Decision Support Tool prepared by FAO and UNEP under the framework of UN Energy (forthcoming).

PART I: ANALITICAL TOOLS

SPATIAL PLANNING FOR BIOENERGY PRODUCTION

Author	Agriculture and Agri-food Canada		Year	no date
Title	Biomass Inventory Mapping and Analysis Tool (BIMAT)			
Type	Inventory Mapping and Analysis Tool	Geographical coverage	Canada	
Target audience/ users		Decision-makers		
The Biomass Inventory Mapping and Analysis Tool (BIMAT) was developed to allow users to learn more about the availability of Canadian herbaceous and woody opportunity biomass as well as the spatial variability of the resource across Canada. This application provides internet-based GIS functionality to allow users the ability to query and visualize biomass inventory data. Users of this application will have the ability to make well informed decisions based on spatially explicit information that presents a nationally comprehensive picture of biomass quantity and opportunity across Canada. Biomass supply and location information is made available through a collection of thematic maps and interactive queries of the herbaceous and woody databases.				
Publisher	Agriculture and Agri-food Canada			
Link	http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1226509218872&lang=eng			

Author	NREL			Year	2011
Title	BioEnergy Atlas				
Type	Interactive map		Geographical coverage	US	
Target audience/ users		Non experts			
Built into Google Maps, BioEnergy Atlas includes two interactive maps, BioPower and BioFuels. These maps allow you to compare and analyze biomass feedstocks, biopower and biofuels data from the U.S. Department of Energy (DOE), U.S. Environmental Protection Agency (EPA), and the U.S. Department of Agriculture.					
Publisher	U.S. Department of Energy				
Link	http://maps.nrel.gov/bioenergyatlas				

Author	Food and Agriculture Organization of the UN (FAO)		Year	2003
Title	Woodfuels integrated supply/demand overview mapping – WISDOM			
Type	Tool	Geographical coverage	Global	
Target audience/ users		GIS experts wood fuel analysts		
A methodological approach for assessing woodfuel sustainability and supporting wood energy planning. It is a spatially-explicit planning tool for highlighting and determining woodfuel priority areas or “woodfuel hotspots”. Rather than absolute and quantitative data, WISDOM is meant to provide relative/qualitative values such as risk zoning or criticality ranking, highlighting, at the highest possible spatial detail, the areas deserving urgent attention and, if needed, additional data collection.				
Publisher	FAO, Rome			
Link	http://www.wisdomprojects.net/global/index.asp www.fao.org/docrep/005/Y4719E/Y4719E00.htm			

Author	The Global Trade Analysis Project (GTAP)			Year	2009
Title	Center for Global Trade Analysis				
Type	Database, Impact Assessment		Geographical coverage	Global	
Target audience/ users		Analysts, experts			
Databases and Global Equilibrium trade model: includes model versions addressing energy markets and biofuels, which considers land use impacts and GHG emissions.					
Publisher	Purdue University				
Link	https://www.gtap.agecon.purdue.edu/models/energy/default.asp				

Author	Competence Platform on Energy Crop and Agroforestry Systems for Arid and Semi-arid Ecosystems – Africa (COMPETE)			Year	2007
Title	Interactive COMPETE Maps				
Type	AEZ maps		Geographical coverage	Africa	
Target audience/ users		Decision-makers; technical experts			
The Interactive COMPETE Maps synthesise information from a range of high quality sources that have categorised and evaluated land use patterns in Africa with a view to identifying land (a) suitable for biomass production for energy, (b) suitable for biomass production for other uses, and; (c) filtering out land that is not available or not suitable for inclusion in future bioenergy land use scenarios.					
Publisher	Competence Platform on Energy Crop and Agroforestry Systems for Arid and Semi-arid Ecosystems – Africa (COMPETE)				
Link	http://www.compete-bioafrica.net/current_land/current_land.html				

Author	Cornell University/FAO			Year	1986
Title	Automated Land Evaluation System (ALES)				
Type	Software tool		Geographical coverage	Global	
Target audience/ users		Decision-makers; technical experts, project planners			
The Automated Land Evaluation System, or ALES, is a land information system which allows countries to determine the crops which are physically and economically best suited to their respective land units. ALES allows land evaluators to build expert systems to evaluate land according to the method presented in the Food and Agriculture Organization "Framework for Land Evaluation" (FAO 1976). It is intended for use in project or regional scale land evaluation. The entities evaluated by ALES are map units, which may be defined either broadly (as e.g. in reconnaissance surveys and general feasibility studies) or narrowly (as e.g. in detailed resource surveys and farm-scale planning).					
Publisher	Cornell University				
Link	http://www.un.org/esa/sustdev/natlinfo/indicators/idsd/infosyst/ales.htm http://www.itc.nl/personal/rossiter/landeval/ales/ales.htm				

Author	Bioenergy and Food Security (BEFS) project - FAO		Year	2008
Title	Land Suitability Assessment (LSA)			
Type	GIS-based software tool	Geographical coverage	Global	
Target audience/ users		Decision-makers; technical experts, project planners		
The Land Suitability Assessment, or LSA, is a tool which allows countries to determine the suitable land and the potential production of specific crops, based on agro-climatic information, soil characteristics and land form. It evaluates the land according to the agro-ecological zoning approach (FAO 1978). The tool is an open system and the experts can define the most appropriate land utilization types that reflect the country specific situation. It is a GIS-based tool and it is intended for land evaluation at national and subnational level.				
Publisher				
Link	http://www.fao.org/bioenergy/foodsecurity/befs			

Author	European Commission		Year	2007
Title	INSPIRE (Integrated Spatial Potential Initiative for Renewables in Europe) prototype			
Type	Spatial data sets and spatial data services	Geographical coverage	EU member states	
Target audience/ users	Decision-makers			
INSPIRE was a project aimed at linking renewable energy resource mapping with economic and life cycle analysis modelling, based on geographic information systems.				
It the model has been developed into an integrated methodology for the assessment of resource availability, financial viability and environmental factors for biomass-to-energy options at both regional and national levels.				
The INSPIRE geoportal provide the means to search for spatial data sets and spatial data services, and subject to access restrictions, view and download spatial data sets from the EU Member States. It aims at making available relevant, harmonised and quality geographic information to support formulation, implementation, monitoring and evaluation of policies and activities which have a direct or indirect impact on the environment.				
Publisher	European Parliament and Council of the European Union			
Link	http://www.inspire-geoportal.eu/index.cfm			

Author	McGarry, D.		Year	2004
Title	A Methodology of a Visual Soil – Field Assessment Tool – to support, enhance and contribute to the LADA program			
Type	Methodology	Geographical coverage	Global	
Target audience/ users		Farmers		
The VS-Fast methodology describes and evaluates the morphological conditions of soils in the field. This is a more rapid and immediate method of soil assessment than the conventional sets of soil physical measurements commonly used. Emphasis with VS-Fast is the assessment, both tactile/qualified and quantified, of soil physical condition (soil structure units and porosity) as well as soil colour, root development, soil fauna, slaking and dispersion, organic matter status and water infiltration.				
Publisher	FAO			
Link	ftp://ftp.fao.org/agl/agll/lada/vsfast_methodology.pdf			

Author	Food and Agriculture Organization of the UN (FAO)/J.F. Goethe University			Year	1999
Title	AQUASTAT – Global Map of Irrigation Areas				
Type	GIS map + database		Geographical coverage	Global	
Target audience/ users		Decision-makers			
The Land and Water Division of the Food and Agriculture Organization of the United Nations and the Rheinische Friedrich-Wilhelms-Universität in Bonn, Germany developed a global irrigation mapping facility.					
Publisher	FAO				
Link	http://www.fao.org/nr/water/aquastat/irrigationmap/index.stm				

TECHNOLOGY OPTIONS AND POTENTIAL

Author	Rosillo-Calle, Frank; de Groot, Peter; Hemstock, Sarah L.; Woods, Jeremy			Year	2007
Title	The Biomass Assessment Handbook – Bioenergy for a Sustainable Environment				
Type	Methodology/Tool		Geographical coverage	Global	
Target audience/ users		Non-expert			
The handbook is intended to provide a practical, common methodology for measuring and recording the consumption and supply of biomass energy. It mainly emphasises traditional bioenergy use, but also modern uses are also considered. It provides guidance on how to measure biomass potential, volume of trees and biomass flows etc.					
Publisher	Earthscan, London				
Link	www.earthscan.co.uk				

Author	Energy for Sustainable Development (ESD)			Year	1995
Title	Strategic Assessment Framework for the Implementation of Rational Energy (SAFIRE)				
Type	Assessment framework	Geographical coverage		Global	
Target audience/ users		Decision-makers			
SAFIRE is an engineering-economic bottom-up model for the assessment of the impact of energy technology and associated policies on a number of economic indicators: market penetration; net employment creation; pollutant emissions; value added; import dependency; capital expenditure; external costs; and government expenditure. It provides policy- and decision-makers with a tool to evaluate the market and impact of new energy technologies and policies. The SAFIRE project is being supported by the Commission of the European Communities' Directorate-General for Research and Development (DG XII) under the Joule II Programme.					
Publisher	Energy for Sustainable Development (ESD)				
Link	http://safire.energyprojects.net/				

Author	World Agroforestry Centre		Year	2006
Title	Tree Seeds for farmers - A toolkit and reference source			
Type	toolkit	Geographical coverage	Global	
Target audience/ users	Farmers			
<p>This toolkit has been developed to provide information on sustainable production of seeds and seedlings of agroforestry species.</p> <p>The prime objective of the toolkit is to provide information and examples of how the quality of seeds and seedlings can be maintained from collection to field planting for the great diversity of agroforestry species that are useful to small-scale farmers.</p>				
Publisher	World Agroforestry Centre			
Link	http://www.worldagroforestry.org/resources/databases/tree-seeds-for-farmers			

Author	Natural Resources Canada			Year	1998
Title	RETScreen				
Type	Software		Geographical coverage	Global	
Target audience/ users		Planners, decision-makers and industry to implement renewable energy			
The RETScreen Clean Energy Project Analysis Software is a decision support tool developed with the contribution of numerous experts from government, industry, and academia. The software, provided free-of-charge, can be used worldwide to evaluate the energy production and savings, costs, emission reductions, financial viability and risk for various types of Renewable-energy (and Energy-efficient Technologies). The software (available in multiple languages) also includes product, project, hydrology and climate databases, a detailed user manual, and a case study based college/university-level training course, including an engineering e-textbook.					
Publisher	RETScreen International				
Link	http://www.retscreen.net/				

Author	Stockholm Environment Institute (SEI)			Year	2008
Title	Long-range Energy Alternatives Planning System (LEAP)				
Type	Software		Geographical coverage	Global	
Target audience/ users		Decision-makers; technical experts (government agencies, academics, NGOs, energy utility companies, consulting companies)			
LEAP is an integrated modeling tool that can be used to track energy consumption, production and resource extraction in all sectors of an economy. It can be used to account for both energy sector and non-energy sector greenhouse gas (GHG) emission sources and sinks. In addition to tracking GHGs, LEAP can also be used to analyze emissions of local and regional air pollutants, making it well-suited to studies of the climate co-benefits of local air pollution reduction					
Publisher	SEI				
Link	http://www.energycommunity.org/default.asp?action=47				

Author	International Atomic Energy Agency (IAEA), IEJE, IIASA			Year	2006
Title	Model for Analysis of Energy Demand (MAED-2)				
Type	Software tool		Geographical coverage	Global	
Target audience/ users		Energy-planners			
MAED evaluates future energy demands based on medium- to long-term scenarios of socioeconomic, technological and demographic development. Energy demand is disaggregated into a large number of end-use categories corresponding to different goods and services. The influences of social, economic and technological driving factors from a given scenario are estimated. These are combined for an overall picture of future energy demand growth.					
Publisher	IAEA				
Link	http://www-pub.iaea.org/MTCD/publications/PDF/CMS-18_web.pdf				

Author	International Atomic Energy Agency (IAEA), IEJE, IIASA			Year	ongoing
Title	Model of Energy Supply Systems and their General Environmental Impacts (MESSAGE)				
Type	Energy model		Geographical coverage	Global	
Target audience/ users		Energy-planners			
MESSAGE is used to formulate and evaluate alternative energy supply strategies for user defined constraints on, for example, new investment limits, market penetration rates for new technologies, fuel availability and trade, environmental emissions, etc. MESSAGE is extremely flexible and can also be used to analyze energy/electricity markets and climate change issues.					
Publisher	IAEA				
Link	http://www.iiasa.ac.at/Research/ENE/model/message.html				

Author	International Energy Agency (IEA)		Year	1992
Title	Bioenergy Assessment Model (BEAM)			
Type	Excel based energy modelling tool	Geographical coverage	Global	
Target audience/ users		Energy-planners		
<p>The International Energy Agency first initiated the BEAM (Bioenergy Assessment Model) project in 1992. The purpose of the project was to build a computer based model to compare various biomass production processes and conversion systems. With this said it concentrates more on the financial and technical feasibility of projects, rather than on the impact of any particular project on the surrounding environment and economy.</p> <p>BEAM3 is a collection of Excel modules, each of which models the costs and performance of a discrete part of an integrated bioenergy system. A range of bioenergy systems, in terms of different feedstocks, products, and conversion routes, can be modelled. Furthermore, an executive program is available for controlling the definition of the basic system to ensure that a feasible combination of feedstock, product, and conversion route is made.</p> <p>Once a basic bioenergy system is defined, BEAM3 can be used to calculate technical and economic parameters for the system at a specific capacity based on the cost and performance characteristics of the chosen technology.</p>				
Publisher				
Link				

IMPLEMENTATION OPTIONS AND IMPACTS

Cross-cutting

Author	IIED			Year	2004
Title	Power tools				
Type	tool		Geographical coverage	Global	
Target audience/ users		Not specified			
The 26 power tools provide a wide range of techniques, tactics and tips based on experience in natural resource management around the world. They are available both as two-page summaries and as full-length reports. They intended to offer sets of adaptable ideas rather than finalised blueprints for action					
Publisher	IIED				
Link	http://www.policy-powertools.org/index.html				

Author	Silva Jr Aziz Galvão da, et al.		Year	2009
Title	BIODIESELFEO; Integrated system for socio-economic analysis of vegetal oil extraction and biodiesel projects.			
Type	Decision Support System	Geographical coverage	Latin America	
Target audience/ users	Rural advisers, Cooperatives professionals, Agronomists, Industrial engineers, governmental bodies.			
Training material in the use and management of "FAO Biosoft System" enabling to take or support decisions to invest in biodiesel projects. The system support negotiations between organizations of family farmers and biodiesel processing industry / oil extractor in relation, for example, the price of soybeans (or other variable of the project). It also allows the creation of scenarios based on agricultural and industrial variables and the evaluation of both axes through their respective indicators.				
Publisher	FAO-RLC			
Link	www.biodieselufv.com.br			

Author	UN Foundation (UNF) and the Energy Security Group			Year	2007-underway
Title	BioEnergy Evaluation Tool (BEET)				
Type	Toolkit		Geographical coverage	Global	
Target audience/ users		Decision makers			
The BEET project, a component of the U.S.–Brazil Biofuels Initiative, aims to develop a user-friendly, decision-support tool for evaluating the national/energy security, economic, and environmental and agricultural impacts stemming from bioenergy policies and strategies. As a decision-support tool, BEET would provide a quick-turnaround analytic capability to do trade-off and “what if” analysis of bioenergy policy options intended to support country-level priorities and goals. Capabilities continuously continue to be expanded, currently being expanded in support of developing and evaluating strategic ethanol plans for El Salvador and the Dominican Republic.					
Publisher	UN Foundation				
Link					

Author	Austrian Institute of Economic Research		Year	no date
Title	Austrian Biomass Model (ABM)			
Type	Computable general equilibrium model (CGE)	Geographical coverage	Austria	
Target audience/ users		Policy makers		
The Austrian Biomass Model (ABM) was developed for a bioenergy study in Austria, carried out by the Austrian Institute of Economic Research and partners. ABM is an economic model that compares the various options to increase biomass energy supply, focusing on the respective macroeconomic and environmental implications of such an increase. The study focuses on biomass as the quantitatively most important renewable resource in Austria, and considers three energy markets: electricity, heat and liquid fuels. By using general equilibrium analysis it is possible to quantify the impacts of deploying biomass energy on: the labour market; the foreign trade structure; the public budget; sectoral and overall gross production, and CO2-emissions.				
Publisher				
Link				

Author	Laboratory of Agribusiness Management, Agricultural University of Athens (EU Funded)		Year	2004
Title	Alternative Crops Integration in a Spatial Analysis (ACISA)			
Type	Decision support tool	Geographical coverage	Global	
Target audience/ users		Producers, consultants, policy makers, regional planners, action agencies and environmentalists		
<p>Acisa performs evaluation of biomass-to-energy systems with respect to biomass production, transportation and exploitation along with the associated economic, social and environmental impacts.</p> <p>Alternative bioenergy integration strategies can be tested that may in turn lead to sustainable development, a reduction in environmental pollution, or a maximum economic return or compromise solutions among the above.</p> <p>Acisa has been developed by a large team of experts in biomass production and exploitation from five European countries (Austria, France, Greece, Italy and Spain) and incorporates the experience in the field of bioenergy production into a user-friendly, spatial decision support tool.</p>				
Publisher	PILOTEC			
Link				

Author	Inter-American Development Bank		Year	2008
Title	IDB Biofuels Sustainability Scorecard			
Type	Scorecard	Geographical coverage	Global	
Target audience/ users	private sector			
The Scorecard addresses environmental and social sustainability issues specific to biofuels projects, based on the sustainability criteria of the Roundtable on Sustainable Biofuels. The primary objective is to provide a tool for thinking through the complex issues associated with biofuels throughout their entire life cycle. The Scorecard is designed to be a living document, improving and evolving over time as additional issues are incorporated.				
Publisher	IDB			
Link	http://www.iadb.org/biofuelsscorecard/index.cfm?language=English			

Author	Ethanol and Sugar Impact Analysis (ESIA)		Year	no date
Title	Ethanol and Sugar Impact Analysis (ESIA)			
Type	Impact assessment	Geographical coverage	Global	
Target audience/ users		Producers		
To promote sustainable development, ESIA's Economic and Social Impact Assessment guarantees that sugar/ethanol companies respect social, communal and environmental standards. ESIA offers a purpose built solution for companies seeking to improve their corporate social responsibility in the bioenergy sector. The ESIA criteria have been inspired both from the work of the Roundtable on Sustainable Biofuels (RSB), the Better Sugarcane Initiative (BSI) and SA 8000. Certification is always done by ESIA.				
Publisher	Ethanol and Sugar Impact Analysis			
Link	http://www.esiaconsulting.com/			

Author	GTZ – ProBEC		Year	2010
Title	SADC Bioenergy Policy Development Tool			
Type	Paper version with CD-Rom	Geographical coverage	Southern African Development Community (SADC)	
Target audience/ users		Policy makers involved in bioenergy in the SADC region		
Upon requests from SADC Member States, the SADC biofuel taskforce commissioned GTZ-ProBEC to develop this policy support tool. The tool is designed to fit SADC specific conditions and priorities but draws on existing international policy support material. The tool acknowledges the SADC Framework for Sustainability and other important SADC policy documents and has been developed jointly together with the SADC biofuel taskforce members and selected Member States.				
Publisher	GTZ			
Link	http://www.probec.org/fileuploads/fl11102010033325_GTZ_ProBEC_SADC_BIOENERGY_POLICY_DEVELOPMENT_Aug_2010.pdf http://www.sadc.int/ http://www.probec.org/			

Environmental Aspects

Author	CIFOR			Year	2006
Title	VEGCLASS				
Type	software		Geographical coverage	Global	
Target audience/ users		Non botanic experts			
VegClass is a Windows -based software package developed by CIFOR with assistance from ACIAR and the Swiss Agency for Development and Cooperation. The software is designed to assist with compilation and analysis of data recorded by a rapid vegetation proforma.					
Publisher	CIFOR				
Link	http://www.cifor.cgiar.org/online-library/research-tools/vegclass.html				

Author	Product of Ecology Consultants (PRé)	Year	2010
Title	System for Integrated Environmental Assessment of Products (SimaPro)		
Type	Impact assessment	Geographical coverage	Global
Target audience/ users	SimaPro is a widely used tool for lifecycle assessment (LCA) for collection, analysis and monitoring of environmental information for products and services. The software follows the ISO 14040 series and has integrated databases and impact assessment procedures.		
Publisher	Product Ecology Consultants		
Link	http://www.pre.nl/simapro/		

Author	Food and Agriculture Organization of the UN (FAO)		Year	2006
Title	RuralInvest for successful projects			
Type	Toolkit	Geographical coverage	Global	
Target audience/ users		Any agency, project, organization or private investor managing funds for small and medium scale agricultural and rural investments		
RuralInvest is a free multilingual toolkit that was developed by FAO and that comprises training courses, manuals and custom developed software which provides the necessary support to prepare successful rural development projects.				
Publisher	FAO Investment Centre			
Link	http://www.fao.org/investment/ourrole/ruralinvest/jp/			

Author	Oeko Institut/IFEU/Copernicus Institute		Year	2010
Title	Bioenergy Environmental Impact Analysis (BIAS): Analytical Framework			
Type	Analytical framework	Geographical coverage	Global	
Target audience/ users		Decision-makers		
The objective of BIAS analytical framework is to provide an integrated yet simple approach for the comprehensive analysis of environmental impacts associated with production and use of biomass for bioenergy. It focuses on key impacts – biodiversity, soil, water and greenhouse gas emissions – and briefly identifies linkages of these environmental impacts to food security issues.				
Publisher	FAO			
Link	http://www.fao.org/docrep/013/am303e/am303e00.pdf			

Author	Jerome K Vanclay		Year	1999
Title	FLORES: Forest Land Oriented Resource Envisioning System			
Type	Model	Geographical coverage	Global	
Target audience/ users	Policy makers, researchers and resource managers			
FLORES is intended to be a model to help explore the consequences at the landscape scale of policies and other initiatives intended to influence land use in tropical developing. It seeks to provide an accessible platform to foster interdisciplinary collaboration between researchers and resource managers, and to facilitate empirical tests of hypotheses and other propositions.				
Publisher	CIFOR			
Link	http://www.cifor.cgiar.org/online-library/research-tools/flores.html			

Author	World Bank/World Wildlife Fund (WWF)			Year	2008
Title	Biofuels: Environmental Sustainability Scorecard				
Type	Scorecard		Geographical coverage	Global	
Target audience/ users		Decision-makers; technical experts			
The Scorecard allows the user to: compare different biofuels and different biofuel production systems across key criteria in terms of environmental sustainability; understand what kind of changes to production systems would result in more sustainable production; and track progress in improving sustainability over time.					
Publisher					
Link	http://www.fao.org/bioenergy/20548-0e3bfa02bfb74ce060268a4bbe61efba3.pdf				

Author	BirdLife International/Conservation International/United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC)		Year	2008
Title	Integrated Biodiversity Assessment Tool (IBAT)			
Type	Assessment tool	Geographical coverage	Global	
Target audience/ users	Investors; businesses			
IBAT for business is an innovative tool designed to facilitate access to accurate and up-to-date biodiversity information to support critical business decisions. IBAT for business provides integrated information at the site scale – at the level of individual parks, concessions or other fine-scale management units. IBAT allows users to explore supporting information behind these site data, and helps users understand the extent of data quality and coverage. IBAT also situates this data within the wider context by including information on broad-scale global conservation priorities, administrative boundaries and populated places.				
Publisher	BirdLife International/Conservation International/UNEP-WCMC			
Link	IBAT for Business: https://www.ibatforbusiness.org/ IBAT for Research and Conservation Planning: www.ibat-alliance.org/ibat-conservation			

Author	Conservation International		Year	1990
Title	Rapid Assessment Program (RAP) - Toolkit			
Type	Toolkit	Geographical coverage	Global	
Target audience/ users		Decision-makers		
The RAP Tool Kit is a free, online resource for all people interested in rapid biodiversity assessment. The RAP Tool Kit offers information and recommendations compiled by Conservation International's Rapid Assessment Program (RAP) over 20 years and from more than 65 biodiversity surveys. The objective of the RAP Tool Kit is to provide information needed to plan, design, implement and publish rapid biodiversity surveys in order to promote biodiversity surveys around the world				
Publisher	Conservation International			
Link	https://learning.conservation.org/biosurvey/RAP/Toolkit/Pages/default.aspx#			

Author	Kuncoro, S.A., M.v. Noordwijk, E. Martini, P. Saipothing, V. Areskou, A.E. Putra, and T. O'Connor.		Year	2006
Title	Rapid Agrobiodiversity Appraisal (RABA) in the Context of Environmental Services Rewards			
Type	Assessment tool	Geographical coverage	Global	
Target audience/ users		Biologists; Agronomists; Rural Development Specialists; non-experts		
RABA is a tool in which approaches to collect data and appraise the conservation value of an area rapidly are combined, summarized and adapted. Different techniques such as Rapid Rural Appraisal and Stakeholder Analysis are among the methods or approaches that are suggested for use in different phases of RABA.				
Publisher	ICRAF, World Agroforestry Centre			
Link	www.worldagroforestrycentre.org/sea/Networks/RUPES/download/RABA/RABAFinal2509.pdf			

Author	Pheloung et al.			Year	1999
Title	Alien plant screening system				
Type	Checklist/scoresheet	Geographical coverage		Hawaii and Pacific Islands	
Target audience/ users		Biologists; Plant Specialists			
Checklist/scoresheet aimed to assess the invasiveness of alien plants.					
Publisher					
Link	http://www.botany.hawaii.edu/faculty/daehler/WRA/description.htm				

Author	Food and Agriculture Organization of the UN (FAO)		Year	2011
Title	AQUACROP v.3.31+			
Type	Software	Geographical coverage	Global	
Target audience/ users		Crop modellers		
AquaCrop is the FAO crop-model to simulate yield response to water of several herbaceous crops. It is designed to balance simplicity, accuracy and robustness, and is particularly suited to address conditions where water is a key limiting factor in crop production.				
Publisher	FAO			
Link	http://www.fao.org/nr/water/aquacrop.html			

Author	Food and Agriculture Organization of the UN (FAO)			Year	2011
Title	CropWat 8.0				
Type	Software		Geographical coverage	Global	
Target audience/ users		Agro-meteorologists; agronomists; and irrigation engineers			
CROPWAT 8.0 for Windows is a computer program for the calculation of crop water requirements and irrigation requirements based on soil, climate and crop data. In addition, the program allows the development of irrigation schedules for different management conditions and the calculation of scheme water supply for varying crop patterns. CROPWAT 8.0 can also be used to evaluate farmers' irrigation practices and to estimate crop performance under both rainfed and irrigated conditions.					
Publisher	FAO				
Link	http://www.fao.org/nr/water/infores_databases_cropwat.html				

Author	Stockholm Environment Institute (SEI) U.S. Center			Year	2011
Title	WEAP - Water Evaluation and Planning System v.311				
Type	Software tool		Geographical coverage	Global	
Target audience/ users		Water experts			
WEAP is a user friendly modelling tool for water resources planning, taking into account agricultural, municipal industrial and ecological water use. It considers both ground and surface water.					
Publisher	Stockholm Environment Institute (SEI) U.S. Center				
Link	http://www.weap21.org/				

Author	U.S. Department of Agriculture – Agricultural Research Service (USDA-ARS)/Texas A&M University		Year	1990
Title	SWAT soil and water assessment tool			
Type	Model	Geographical coverage	Global	
Target audience/ users		Water experts		
SWAT is a river basin or watershed, scale model developed to predict the impact of land management practices on water, sediment and agricultural chemicals yields in large complex watersheds with varying soils, land use and management conditions over long periods of time surface water.				
Publisher	USDA-ARS/Texas A&M University			
Link	http://www.brc.tamus.edu/swat/			

Author	U.S. Department of Agriculture – Agricultural Research Service (USDA-ARS)		Year	2005
Title	Revised Universal Soil Loss Equation 2 (RUSLE2)			
Type	Assessment tool	Geographical coverage	Global	
Target audience/ users		Soil specialists		
RUSLE2 can be applied to any land (including cropland) where mineral soil is exposed to the direct forces of waterdrop impact and surface runoff generated by rainfall intensity being greater than the infiltration rate of water into the soil. RUSLE2 estimates rates of rill and interrill soil erosion caused by rainfall and its associated overland flow. The four major factors of climate, soil, topography, and land use determine rates of rill and interrill erosion. A RUSLE2 user applies RUSLE2 to a specific site by describing field conditions at the site for these four factors. RUSLE2 uses this field description to compute erosion estimates.				
Publisher	USDA-ARS			
Link	http://www.ars.usda.gov/Research/docs.htm?docid=6010			

Author	Argonne National Laboratory		Year	2008
Title	The Greenhouse Gases, Regulated Emissions, and Energy Use in Transport Model (GREET)			
Type	Methodology	Geographical coverage	Global	
Target audience/ users		Researchers; analysts		
Freely available Life Cycle Analysis (LCA) methodology particularly applicable to the assessment of life cycles of biofuels for transport. It allows researchers and analysts to evaluate various vehicle and fuel combinations on a full fuel-cycle/vehicle-cycle basis.				
Publisher	Argonne National Laboratory			
Link	http://www.transportation.anl.gov/modeling_simulation/GREET/index.html			

Author	Natural Resources Canada		Year	2001
Title	GHGenius – A model for LCA of transportation fuels v. 3.0			
Type	Model	Geographical coverage	Canada, United States, Mexico, India	
Target audience/ users	Researchers; analysts			
<p>The GHGenius model has been developed for Natural Resources Canada over the past ten years. It is based on the 1998 version of Dr. Mark Delucchi's Lifecycle Emissions Model (LEM). GHGenius is capable of analyzing the emissions of many contaminants associated with the production and use of traditional and alternative transportation fuels. It also considers a few circumstances where the fuels could be used in stationary applications rather than for transportation. GHGenius can predict emissions for past, present and future years through to 2050 using historical data or correlations for changes in energy and process parameters with time that are stored in the model. GHGenius can perform the LCA for specific regions (east, central or west) of Canada, the United States and Mexico or for India as a whole. For Canada, it is also possible to model many of the processes for the largest provinces. It is also possible for model regions of North America. All of the steps in the life cycle are included in the model from raw material acquisition to end-use.</p>				
Publisher	Natural Resources Canada			
Link	http://www.ghgenius.ca/			

Author	European Commission and IEA Bioenergy Task 38		Year	2004
Title	BIOmass based climate change MITigation through Renewable Energy systems (BIOMITRE) project			
Type	software tool	Geographical coverage	Global (Bioenergy chain level)	
Target audience/ users	Policy and industry decision makers			
<p>The aim of this project is to develop a standard, user-friendly software tool that can be used to analyse GHG balances and cost-effectiveness of different biomass energy technologies. The software tool enables a biomass energy technology to be compared with a reference system, such as a fossil fuel system. Modules will be developed for different elements of biomass systems and reference systems. The modules include elements such as the biomass source, supply system, conversion and end-use. Excel software is used to develop the software tool.</p> <p>The tool has been developed for several user groups and the results can be used in different applications as policy-making or evaluation of technologies.</p>				
Publisher	IEA			
Link	http://www.ieabioenergy-task38.org/softwaretools/			

Author	Swiss State Secretary for Economic Affairs SECO - Empa		Year	2009
Title	Sustainability Quick Check for Biofuels			
Type	Web-based tool	Geographical coverage	Global	
Target audience/ users	Policy and industry decision makers			
This tool is designed for a rapid assessment of environmental impacts of individual biofuels by combining key factors of the individual production chain with life cycle data from ecoinvent-reference data sets. It enables producers from south countries to check the compatibility of their biofuels production with sustainability certification criteria. It allows facilitating the access to the Swiss market for biofuels' producers in emerging countries, and therefore contribute to a more sustainable implementation of biofuels production.				
Publisher				
Link	http://www.sqcb.org/			

Author	Food and Agriculture Organization of the United Nations (FAO)		Year	2010
Title	EX-ACT (EX-Ante Carbon-balance Tool)			
Type	Software (excel based)	Geographical coverage	Global	
Target audience/ users		Project planners/managers		
<p>This tool is aimed at providing ex-ante measurements of the mitigation impact of agriculture and forestry development projects, estimating net Carbon (C) balance from GHG emissions and C sequestration. EX-ACT is a land-based accounting system, measuring C stocks, stock changes per unit of land, and CH4 and N2O emissions expressed in t CO2e per hectare and year. The main output of the tool is an estimation of the C-balance that is associated with adoption of alternative land management options, as compared to a business as usual scenario. EX-ACT has been developed using primarily the IPCC 2006 Guidelines for National Greenhouse Gas Inventories, complemented by other existing methodologies and reviews of default coefficients where available. Default values for mitigation options in the agriculture sector are mostly from the 4th Assessment Report of IPCC (2007). Thus, EX-ACT allows for the Cbalance appraisal of new investment programmes by ensuring an appropriate method available for donors and planning officers, project designers and decision makers within agriculture and forestry sectors in developing countries. The tool can also help to identify the mitigation impacts of various investment project options, and thus provide an additional criterion for consideration in project selection. These technical guidelines for using EX-ACT aim at providing the user with the details of procedures and numbers used to perform calculation of C balance.</p>				
Publisher	FAO			
Link	http://www.fao.org/easypol/output/search_by_type.asp?type_pub=3&id_elem=3&id_cat=3			

Author	Stockholm Environment Institute		Year	2010
Title	Resources and Energy Analysis Programme (REAP)			
Type	Software	Geographical coverage	United Kingdom	
Target audience/ users	Policy-makers			
<p>REAP is an input-output-based software tool that calculates the environmental pressures associated with consumption activities. It contains baseline data on the greenhouse gases, air pollutants and ecological footprints for every local authority area, government region and nation in the UK. One of REAPs most important functions is the scenario editor. This can be used to explore the environmental pressures associated with changes in population, consumption patterns and production technology over time.</p> <p>The REAP tool was launched in 2006 as part of the Ecological Budget UK project funded by Biffaward. Since then the input-output based methodology behind REAP has been used by SEI to create a family of models all promoting sustainable development.</p>				
Publisher	SEI			
Link	http://www.sei-international.org/mediamanager/documents/Publications/Rethinking-development/introducing%20reap%20100216%20web.pdf			

Socio-Economic Aspects

Author	International Labour Office (ILO) and Food and Agriculture Organization of the UN (FAO)		Year	2007
Title	Toolkit for mainstreaming employment and decent work			
Type	Toolkit	Geographical coverage	Global	
Target audience/ users	Project developers, staff in governments, financing agencies, civil society and the corporate sector			
This free toolkit is designed to be a “lens” that agencies can look through to see how their policies, strategies, programmes and activities are interlinked with employment and decent work outcomes and how they can enhance these outcomes by taking full account of the implications of their policies, strategies, programmes and activities for employment and decent work during the design stage and while advising and assisting countries and constituents with regard to their adoption and implementation.				
Publisher	ILO and FAO			
Link	http://www.fao-ilo.org/fileadmin/user_upload/fao_ilo/pdf/MainstreamingDEtoolkit.pdf			

Author	European Federation of Regional Energy & Environment Agencies (FEDARENE)		Year	1996
Title	Evaluation of Local Value Impacts for Renewable Energy (ELVIRE)			
Type	Evaluation tool	Geographical coverage	Project-level	
Target audience/ users		Decision-makers; local and regional operators		
<p>The ELVIRE model evaluates the externalities associated with renewable energy projects, by weighing up the overall impacts of a project against its initial costs. In particular, it outlines a development's likely impact on 1) regional economic development; 2) employment; 3) the return on public finances; 4) sustainable development; and 5) the environment.</p> <p>It has been developed by FEDARENE's working group on renewable energies and some of its member agencies, with support from the ALTENER programme.</p>				
Publisher	FEDARENE			
Link	fedarene@infoboard.be			

Author	BEFS Project of Food and Agriculture Organization of the UN (FAO)		Year	2010
Title	Bioenergy and Food Security Analysis methodology			
Type	Methodology guide	Geographical coverage	Country-level	
Target audience/ users		Policy-makers, food security and bioenergy stakeholders and private sector		
<p>The overall goal of the document is to provide a methodology to assess the bioenergy development potential and the implications for food security at the country level. The methodology is called BEFS Analysis approach. The methodology components include estimation of the biomass potential, technical feasibility and economic competitiveness of biofuel production and the economic and food security implications at the country and household level. The overarching aim of the assessment is to inform the policy making process in the country. The BEFS approach is being implemented in three countries, namely Peru, Tanzania and Thailand. Each country's analysis is tailored to country specific circumstances. An array of options are analyzed and presented to the countries to illustrate the use of the tools so that the countries can identify how best to extend and adapt them to reflect prevailing country priorities.</p>				
Publisher	FAO			
Link	http://www.fao.org/bioenergy/foodsecurity/befs/home/en/			

Author	Food and Agriculture Organization (FAO) of the UN		Year	2010
Title	Bioenergy and Food Security (BEFS) Analytical Framework			
Type	Toolkit	Geographical coverage	National, Global	
Target audience/ users		Policy-makers and bioenergy/food security analysts		
The BEFS Analytical Framework provides a set of approaches for understanding the impacts bioenergy has on food security and how bioenergy can be a driver for agricultural and rural development. It assists governments and policymakers by providing an informed basis for decision-making and in identifying teams of experts that have the correct abilities and skills to carry out the required analyses.				
Publisher	Food and Agriculture Organization (FAO) of the UN			
Link	http://www.fao.org/bioenergy/foodsecurity/befs/en/ http://www.fao.org/docrep/013/i1968e/i1968e.pdf			

Author	Gaouyer, J.P, CRES, J.C. Jacquemin, G. Caserta, P. Rijk, J. Bahr, K. Healion, and W. Grosskopf		Year	1999
Title	Biomass Socio-Economic Multiplier (BIOSEM)			
Type	Quantitative model	Geographical coverage	Global	
Target audience/ users		Decision-makers; project developers; regional economic development officers and agencies; policy makers		
BIOSEM is a quantitative model designed to capture the socio-economic effects of local bioenergy production. It can trace both the extent and distribution of income and employment gains, and can assess the merits of differing (energy and agricultural) policy packages, such as grants and subsidies on bioenergy production. A range of biomass fuels and conversion processes can be modelled (e.g., from residues to dedicated energy crops), as can the recipient markets for heat and electricity.				
Publisher				
Link	http://www.biomatnet.org/secure/Fair/S657.htm			

Author	PEREZ, Ronaldo; SILVA JR, Aziz Galvão da; BORGES, Moacir			Year	2007
Title	BIOSOFT (Decision supporting system for implantation of biofuel production units)				
Type	Decision Support System	Geographical coverage	Brazil and Portuguese speaking countries		
Target audience/ users		Rural advisers, Cooperatives professionals, Agronomists, Industrial engineers, governmental bodies.			
<p>Software for the analysis of biodiesel projects with the participation of family agriculture, used to determine the economic/financial viability of different (energy) crops.</p> <p>Results of production chain analysis and economic indicators calculated by the BioSoft system have allowed identifying the regular supply of oil at competitive prices as the key point to the efficiency of biodiesel production chains.</p> <p>BioSoft is used to examine the feasibility of the models which requires fixed investments (civil works, machinery and equipment) and working capital needed, workforce, raw material, inputs, transportation costs, and others, in order to get all the short-term expenses necessary to the production process, allowing the calculation of operational costs. Based on these data, the software calculates and shows values of the main indicator, as the internal rate of return, the time of return of capital and equilibrium. It also calculates the number of jobs created in each production unit, allowing an analysis of the social impact of each model.</p>					
Publisher	Brazilian Ministry of Agrarian Development				
Link	www.biodieselufv.com.br				

Author	Oak Ridge National Laboratory (ORNL) – Biofuels Feedstock Development Program (BFDP)		Year	no date
Title	BIOCOST			
Type	Decision support tool	Geographical coverage	Regional (US)	
Target audience/ users		Energy-planners		
BIOCOST can model the cultivation of dedicated energy crops and thus allows a cost comparison to be made with alternative crop production. It estimates bioenergy crop production costs for seven U.S. regions: the Lake States; the Corn Belt; Appalachia; the Southeast; the North Plains; the South Plains, and the Pacific Northwest, where these regions correspond to major U.S. agricultural crop production areas. It estimates the full economic cost of producing bioenergy crops in 1995 U.S. dollars. Variable cash expenses (e.g., seeds, chemicals, fertiliser, fuel, repairs, and hired labour), fixed cash costs (e.g., overhead, taxes, interest payments), and the costs of owned resources (e.g., producer’s own labour, equipment depreciation, land rents, opportunity cost of capital investments) are included in the estimated production costs.				
Publisher				
Link				

Author	East Tennessee State University (ETSU)		Year	no date
Title	Renewable Energy Crop Analysis Programme (RECAP)			
Type	Computer-based bioenergy model	Geographical coverage	Global (specific to a certain production chain)	
Target audience/ users		<p>RECAP was developed by the East Tennessee State University (ETSU) on behalf of the U.K. Department of Trade and Industry (DTI). It is designed to assess the financial feasibility of any biomass project using either dedicated energy crops or other biomass sources.</p> <p>It's a versatile computer model of biomass-to-energy systems, which, in one integrated model, can study all the costs associated with bioenergy production. It models all the costs involved from production, harvesting, storage, and transport through to the conversion of energy crops to heat and power. Accordingly, it can make a financial assessment of both the feedstock chain and the conversion process. The model calculates cash flows and undertakes an investment appraisal by calculating NPV and IRR for both the farmer and the conversion plant operator. This model was a precursor to the financial analysis in BIOSEM.</p>		
Publisher				
Link				

Author	Agricultural University of Athens			Year	1996
Title	Biomass Economic Appraisal & eValuation ExpeRt (BEAVER)				
Type	Investment appraisal tool	Geographical coverage	Global (for specific feedstocks)		
Target audience/ users		BEAVER is an investment appraisal system for the economic evaluation of biomass cultivation. Its knowledge data bases currently hold detailed information about three biomass crops, namely sweet sorghum, poplar and willow. The model also uses genetic algorithms to identify optimal values for externally determined parameters.			
Publisher					
Link					

Author	Agricultural University of Athens and partners (EU funded)		Year	2000
Title	BEE (Biochains Economic Evaluation)			
Type	Software	Geographical coverage	Global	
Target audience/ users	Decision makers in commerce and industry			
<p>Bee is a packaged computerised model which performs full economic evaluation of bioenergy chains based on the cultivation and production of biomass from different bioenergy crops. It examines the whole chain from farm to useful energy or fuel delivered at the conversion plant gate and it may analyse more than one crops and more than one conversion technologies at the same time. Some parts of the model are based on completed previous modelling work and some others, such as the economic analysis have been especially prepared for Bio-Energy Chains. It is primarily intended to cover the needs for the economic analysis of bioenergy chains, but its agricultural module is general enough to be capable of evaluating plants or plantations other than bioenergy crops as well.</p> <p>Each module performs economic analysis based on supplied data or pieces of information maintained by the model itself. The analysis consists of all the steps necessary for decision making and capital budgeting, i.e. cost analysis, and investment appraisal. For this purpose it maintains monthly Balance Sheets, Cash Flows and Income Statements of each and all of the Project modules. It also estimates and analyses the full cost of biomass production and calculates the most important financial indices and criteria of investment appraisal.</p>				
Publisher				
Link	http://www.aua.gr/tmhmata/oikonom/soldatos/Bee/BeeHelp/meth_bee.htm			

Author	IFAD		Year	2010
Title	Multidimensional Poverty Assessment Tool (MPAT)			
Type	Methodological framework / Software	Geographical coverage	Developing countries	
Target audience/ users	Project management officers working with donor-supported and/or government-supported poverty reduction projects in rural areas, or governments, donors, United Nations agencies, non-governmental organizations, practitioners or academics			
MPAT is a newly developed, multi-purpose tool that can be used to assess and support rural poverty alleviation efforts in developing countries. MPAT takes a step back from assessment methods that are focused on economic- and consumption-oriented indicators and strives to provide an overview of fundamental and relatively universal dimensions of rural livelihoods and rural life, and thus of rural poverty. MPAT is a survey-based (household and village level) thematic indicator primarily designed to support monitoring and evaluation, targeting, and prioritization efforts at the local level.				
Publisher	IFAD			
Link	http://www.ifad.org/mpat/			

Author	GTZ – Natural Resource Management Programme, India			Year	2009
Title	Oil2Energy (O2E)				
Type	Internet based Software Tool	Geographical coverage		Global	
Target audience/ users		Project developers for rural energy supply based on Straight Vegetable Oils (SVOs)			
This tool has been created to generate economic and financial business scenarios integrating sustainability criteria along the whole value chain for energy supply generated locally and directly from non-edible vegetable oils (SVO) like Jatropha in a rural community based environment.					
Publisher	GTZ				
Link					

PART II: SOURCEBOOKS, GUIDELINES, HANDBOOKS AND DATASETS

STAKEHOLDER ENGAGEMENT

Author	UNEP			Year	2005
Title	REED Toolkit – A Handbook for Energy Entrepreneurs				
Type	Toolkit (guide)		Geographical coverage	Africa	
Target audience/ users		Business entrepreneurs			
The Toolkit is a step-by-step guide to turning a clean energy business idea into a reality. The topics covered range from defining personal and business objectives to preparing financial analyses and determining a distribution strategy. In addition to explaining what information is needed in an effective Business Plan, the Toolkit will help the user to gather that information, and then to present it in an informative and convincing manner. By the end, the user will have a Business Plan to attract financing and to guide the growth of his/her company.					
Publisher	UNEP				
Link	http://www.ared.org/training/toolkit/				

Author	Kirk Herbertson, Maria Athena Ballesteros, Robert Goodland, Isabel Munilla		Year	2009
Title	Breaking Ground: Engaging Communities in Extractive and Infrastructure Projects			
Type	Handbook	Geographical coverage	Global	
Target audience/ users		WRI analyzed existing community engagement standards and guidance, as well as experiences in several high profile projects. Based on this analysis, WRI developed seven Principles for Effective Community Engagement for extractive and infrastructure projects.		
Publisher	WRI			
Link	http://www.wri.org/publication/breaking-ground-engaging-communities			

Author	UNEP			Year	2005
Title	The Stakeholder Engagement Manual: The Practitioner's Handbook on Stakeholder Engagement vol. 2				
Type	Guidebook	Geographical coverage	Global		
Target audience/ users					
Volume 2 provides a step-by-step guide for the organization on how to start and improve its engagement with stakeholders, based on a selection of core principles and focusing on continual improvement.					
Publisher	UNEP				
Link	http://www.unep.fr/scp/publications/details.asp?id=WEB/0115/PA				

Author	Worldbank		Year	2003
Title	The Social Analysis Sourcebook			
Type	Sourcebook	Geographical coverage	Global	
Target audience/ users	Banks, governments, other stakeholders			
The Social Analysis Sourcebook presents a conceptual framework for social analysis and describes how task teams can incorporate its principles into project design, implementation, and monitoring and evaluation. The Sourcebook provides guidance on good practice to improve the quality of social analysis and to improve its impact by harnessing it to examine the social opportunities, constraints and likely impacts of Worldbank-supported operations, based on the lessons learned during the past five years.				
Publisher	Worldbank			
Link	http://go.worldbank.org/RVPWNZ7H80			

Author	V. N. Asopa (Indian Institute of Management) and G. Beye (FAO)		Year	1997
Title	Management of agricultural research: A training manual. Introductory module			
Type	Online handbook	Geographical coverage	Global	
Target audience/ users		trainers		
This training programme on agricultural research management has been developed to support the training of trainers, with the expectation of a multiplier effect, and to facilitate a common perception of the structure and terminology of management, thus enhancing communication and understanding among agricultural research managers in discussing management problems, solutions and opportunities.				
Publisher	Food and Agriculture Organization of the UN (FAO)			
Link	http://www.fao.org/docrep/W7500E/w7500e00.htm			

Author	Practical Action Consulting			Year	2011
Title	Interactive renewable energy toolkit – iRET				
Type	Training material		Geographical coverage	Global	
Target audience/ users		Development practitioners			
The interactive renewable energy toolkit is designed to assist development workers to deliver renewable energy initiatives. It taught about renewable energy technologies, how to implement on energy projects and about financing possibilities.					
Publisher	Oxfam, Christian Aid				
Link	http://practicalaction.org/iret				

Author	Food and Agriculture Organization of the UN (FAO)		Year	2003
Title	A Handbook for Trainers on Participatory Local Development			
Type	Handbook	Geographical coverage	Global	
Target audience/ users		Trainers in local development		
The FAO Handbook for participatory local development includes 13 training modules for participatory planning inclusive participatory planning of local natural resources management. The Handbook has been developed in close collaboration with the Indian Federal Government and is used as training material by NIRD Hyderabad for training for trainers of local government staff from 28 States. Global relevance - already applied in many regions.				
Publisher	Food and Agriculture Organization of the UN (FAO)			
Link	ftp://ftp.fao.org/docrep/fao/007/AE536e/AE536E00.pdf			

Author	Worldbank		Year	2005
Title	Social Analysis Guidelines in Natural Resource Management - Incorporating Social Dimensions into Bank-Supported Projects			
Type	Guidebook	Geographical coverage	Global	
Target audience/ users		The purpose of this guidance note is to provide an overview of the salient social issues relating to natural resource management (NRM) sector activities and to discuss practical ways of applying social analysis in the design, implementation, and monitoring and evaluation of World Bank-financed NRM operations.		
Publisher	Worldbank			
Link	http://siteresources.worldbank.org/INTRANETSOCIALDEVELOPMENT/Resources/FINAL_NRM_Guidance_Note_web.pdf			

Author	UNIDO/UNEP Network of Cleaner Production Centres and selected renewable energy technology centres		Year	forthcoming	
Title	Bioenergy Capacity Building Programme (BIOCAB)				
Type	Bioenergy training package	Geographical coverage	Targeted primarily at the individuals in developing countries		
Target audience/ users		Decision-makers in the bioenergy sector (SMEs, institutions, government officials, local finance and banking sector, CSOs)			
The 3-year project will lead to the setting up of an infrastructure needed to guarantee the self-sustainability of the bioenergy training activities on a long-term basis: a Steering Committee, a network of Local Focal Points and a network of certified BIOCAB trainers (set up through a train-the-trainers approach).					
The project will develop the training contents and materials, which will be assessed and updated through a series of specific training events. By the end of the project, the Local Focal Points will have the adequate tools to run BIOCAB training courses at national and regional level based on locally assessed needs.					
Publisher	UNIDO				
Link	http://www.unido.org/fileadmin/user_media/Publications/Pub_free/Ebook_green_industry.pdf				

TECHNOLOGY OPTIONS AND POTENTIAL

Author	Food and Agriculture Organization of the UN (FAO)			Year	2009
Title	Ecocrop				
Type	Database		Geographical coverage	Global	
Target audience/ users		Agronomist, Biologist, Non-expert			
A searchable database with crop characteristics					
Publisher	FAO				
Link	http://ecocrop.fao.org/ecocrop/srv/en/home				

Author	UNIDO			Year	2008
Title	Guidebook on Modern Bioenergy Conversion Technologies in Africa				
Type	Guidebook	Geographical coverage		Africa	
Target audience/ users		<p>This guidebook is intended to serve as a resource for countries in Africa in their consideration of options to develop bioenergy production capacity in the region. Some level of bioenergy production capacity already exists in Africa, although not on very large scale. The possibilities for the production of bioenergy are manifest in the short term through the use of feedstocks such as jatropha, sugar cane and sweet sorghum, and in the long term through the use of agricultural, municipal and industrial waste. This guidebook provides: (a) information on the production processes for the priority types of bioenergy in Africa; (b) information on application technologies for the various types of bioenergy that are currently suitable to Africa, in order to help investors and policymakers understand exactly how the technology will benefit African society; (c) information on associated economic and environmental effects in relation to priority modern bioenergy conversion technologies; (d) selected case studies highlighting experiences in different African countries and lessons learned to date.</p>			
Publisher	UNIDO				
Link	http://www.unido.org/index.php?id=1000595				

Author	GIZ and EUEI PDF			Year	2011
Title	Biomass Energy Strategy (BEST) guide for policy-makers and energy planners				
Type	Guidelines	Geographical coverage		Africa	
Target audience/ users		In practical terms, the BEST initiative supports African governments to develop national biomass energy strategies that set out rational and implementable approaches to manage the biomass energy sector. These strategies are country specific but typically outline a combination of measures designed to improve the sustainability of supply, raise end-user efficiencies and promote alternative sources of energy where appropriate			
Publisher	GIZ				
Link	http://www.euei-pdf.org/fileadmin/user_upload/Publications/BEST-Guide-2011-en.pdf				

Author	FAO-PISCES			Year	2009
Title	Small-Scale Bioenergy Initiatives: Brief description and preliminary lessons on livelihood impacts from case studies in Asia, Latin America and Africa				
Type	Case studies		Geographical coverage	Asia, Latin America, Africa	
Target audience/ users		Non-expert			
The focus of the study was on the impacts that different types of local level Bioenergy initiatives can have on Rural Livelihoods in different contexts in the developing world. Livelihoods are understood as the enhancement of the full range of natural, financial, human, social and physical capitals on a sustainable ongoing basis.					
Publisher	PISCES, Nairobi and FAO, Rome				
Link	ftp://ftp.fao.org/docrep/fao/011/aj991e/aj991e.pdf				

Author	Energy Sector Management Assistance Project (ESMAP)			Year	2005
Title	Advancing Bioenergy for Sustainable Development – Guideline for Policymakers and Investors				
Type	guidelines		Geographical coverage	global	
Target audience/ users		Decision makers or their advisors (Non-expert)			
The intent of the report is to provide non-bioenergy experts with background information and support to promote bioenergy for sustainable rural development, especially in developing countries. The report provides guidance on bioenergy project design and implementation for policymakers, entrepreneurs and other actors. Vol I provides an overview of biomass energy – potentials, opportunities and challenges. Vol II provides methodologies for resource assessments and a discussion of bioenergy technologies. Vol III provides nine concise profiles of bioenergy projects worldwide.					
Publisher	World Bank				
Link	http://www.energycommunity.org/documents/SustainableBioenergyFinal.pdf				

Author	Food and Agriculture Organization of the UN (FAO)			Year	2003
Title	Training Course on Water Harvesting				
Type	Technical Tool, training		Geographical coverage	Global	
Target audience/ users		Decision-makers			
This CD-ROM provides training modules and other relevant material on water harvesting in five languages (Arabic, Chinese, English, French and Spanish), focusing on "runoff farming systems" for improved production of crops, trees and rangeland species in drought-prone areas.					
Publisher	FAO				
Link	http://www.fao.org/landandwater/lwdms.stm				

Author	ESMAP			Year	2007
Title	Technical and economic assessment of off-grid, mini-grid and grid electrification technologies				
Type	Discussion		Geographical coverage	Rural areas	
Target audience/ users		Power system planners			
An economic comparison between different electrification options for rural areas. Assessments of grid connected technologies and off-grid technologies, conventional fossil fuel based as well as bioenergy based and other renewable options.					
Publisher	The World Bank				
Link	http://www.esmap.org/esmap/sites/esmap.org/files/TR121-07_GBL_Technical_and_Economic_Assessment_of_Off-grid_Mini-grid_and_Grid_Electrification_Technologies.pdf				

Author	The World Bank			Year	2008
Title	Designing Sustainable Off-Grid Rural Electrification Projects: Principles and Practices				
Type	Guidelines		Geographical coverage	Rural areas	
Target audience/ users		World Bank staff			
Practical guidelines for implementation of off-grid electrification projects in developing countries. The document provides a discussion about what to consider and examples of lessons learnt in previous World Bank projects.					
Publisher	The World Bank, Washington, D.C.				
Link	http://siteresources.worldbank.org/EXTENERGY2/Resources/OffgridGuidelines.pdf				

Author	UNIDO		Year	forthcoming
Title	Biomass Conversion Technology On-line Information Platform (BIOTIP)			
Type	Web-based on-line platform	Geographical coverage	Developing countries	
Target audience/ users		Policy makers at government level, bioenergy promotion agencies, agro-industries, forestry industry, local, smaller scale energy/electricity industry, public at large		
The overall objective of the BIOTIP project is to enable policy makers and bioenergy promotion agencies in developing countries to advise entrepreneurs take informed decisions on the selection of appropriate and commercially available biomass conversion technologies by providing ease of access to assessed information. BIOTIP is envisaged to become a one-stop-shop on commercially available bioenergy technologies for anyone interested in implementing a biomass conversion system in a developing country. The project addresses capacity building and information sharing as well as technology transfer issues in detail and will be implemented in close co-operation with UN partner agencies as well as bioenergy promotion agencies (including National Cleaner Production Centres, business associations, chambers of commerce, and research institutes) in developing countries.				
Publisher	UNIDO			
Link	http://www.unido.org/index.php?id=4835&ucg_no64=1/data/project/project.cfm&c=41949			

Author	Food and Agriculture Organization of the United Nations (FAO)			Year	2007
Title	Labour saving Technologies and Practices (LSTP)				
Type	On-line catalogue	Geographical coverage		Sustainable development	
Target audience/ users		People and organizations working in rural communities			
The Labour Saving Technologies and Practices (LSTP) ideas catalogue aims to enable rural communities to identify and assess labour saving technologies and practices which can reduce or spread the workloads and improve their livelihoods. It is of particular relevance to communities where a shortage of labour or other sources of power is undermining household food and nutrition security, and the sustainability of rural livelihoods.					
Publisher	FAO				
Link	http://www.fao.org/sd/teca/tools/lst/index_en.html				

IMPLEMENTATION OPTIONS AND IMPACTS

Employment generation and labour conditions

Author	International Labour Office (ILO) and Food and Agriculture Organization (FAO)			Year	2007
Title	Guidelines for Self Assessment				
Type	Guidelines	Geographical coverage	Global		
Target audience/ users	Primarily corporate sector managers, and also staff in governments, and civil society				
Free guidelines which are intended to help ensure that each organization will be able to determine how it could better deliver the outcomes under its own mandate by integrating employment and decent work outcomes and to use the results of its self assessment to develop its own action plan. They are a complement to the .Toolkit for mainstreaming employment and decent work presented above					
Publisher	ILO and FAO				
Link	http://www.fao-ilo.org/fileadmin/user_upload/fao_ilo/pdf/Guidelines-for-Self-Assessment-Toolkit1.pdf				

Land and natural resource competition

Author	Food and Agriculture Organization of the UN (FAO)		Year	2009
Title	Compulsory acquisition of land and compensation. FAO Land Tenure Studies 10			
Type	Guidelines	Geographical coverage	Global	
Target audience/ users	Project developers, staff in governments, financing agencies, civil society			
These guidelines are intended to support land tenure and land administration officials, valuers and civil society partners who are involved where policies, legal frameworks and capacities are being developed, and where compulsory acquisitions are being implemented. They do not seek to be exhaustive but rather reflect what FAO and its many collaborators have discovered are "good practices".				
Publisher	FAO			
Link	http://www.fao.org/docrep/011/i0506e/i0506e00.htm			

Author	International Finance Corporation (IFC)		Year	2002
Title	Handbook for preparing a resettlement action plan			
Type	Handbook	Geographical coverage	Global	
Target audience/ users	Project developers, staff in governments, financing agencies, civil society			
<p>The objective of the handbook is to document the essential steps for best practice in designing and implementing resettlement action. The handbook is organized into four sections with supporting annexes.</p> <p>Part I outlines the scope of application and identifies situations that require specific and detailed consultation between project sponsors and social development specialists. Part II describes fundamental principles, procedures, and requirements of resettlement action plans (RAP) preparation and provides examples of survey instruments and summary data tables. These examples illustrate both the logic and the approach of RAP preparation as well as output from data collection that is needed for RAP planning. Part III is a checklist that identifies the sequence of actions that specialists follow in reviewing the preparation, implementation, and evaluation of a RAP. Part IV provides a detailed outline of a RAP that can be adapted to meet the requirements of specific projects.</p>				
Publisher	IFC, The World Bank Group			
Link	http://www.ifc.org/ifcext/enviro.nsf/AttachmentsByTitle/p_resettle/\$FILE/ResettlementHandbook.PDE			

ASSESSMENT TOOLS – RISKS AND OPPORTUNITIES

Environment and natural resources

Author	Organization for Economic Cooperation and Development (OECD)		Year	2006
Title	Applying Strategic Environmental Assessment – Good Practice Guidance for Development Co-operation			
Type	Guidelines	Geographical coverage	Global	
Target audience/ users	Staff in development agencies and government; policy analysts and planners			
Drawing on practical experience and established “good practice”, the Guidance points to ways to support the application of SEA in the formulation and assessment of development policies, plans and programmes.				
Publisher	OECD, DAC Guidelines and Reference Series			
Link	www.oecd.org/dataoecd/4/21/37353858.pdf			

Author	IEA Bioenergy Executive Committee		Year	2009
Title	Bioenergy – a sustainable and reliable energy source: a Review of status and prospects			
Type	Sourcebook	Geographical coverage	Global	
Target audience/ users	Policy makers			
The report provides an overview of: the bioenergy potential and related opportunities; the risks and challenges associated with an increased deployment of bioenergy; and, ways to mitigate risk and exploit opportunities (technology, practice and policy). It provides decision and policy makers with information on opportunities to exploit and challenges and risks to address and manage. The aim is to provide insight into the potential for growth of a sustainable bioenergy industry.				
Publisher	IEA Bioenergy			
Link	http://www.ieabioenergy.com/LibItem.aspx?id=6479			

Author	United Nations University/Rmit University/United Nations Environment Programme			Year	2006
Title	Environmental Impact Assessment – Open Educational Resource				
Type	Educational resource	Geographical coverage	Global		
Target audience/ users		Decision-makers			
Open educational resource on Environmental Impact Assessment (EIA). The resource is based on the course materials of UNEPs Environmental Impact Assessment Training Resources Manual, 2nd Edition (2002)					
Publisher	United Nations University (UNU)/Rmit University/United Nations Environment Programme (UNEP)				
Link	http://eia.unu.edu/				

Author	Eco-agriculture Partners/Cornell University		Year	no date
Title	Landscape Measures Resource Center			
Type	Handbook, tool	Geographical coverage	Global	
Target audience/ users		Researchers		
Resources to assess biodiversity conservation, agricultural production and livelihood performance at a landscape scale.				
Publisher	Eco-agriculture Partners/Cornell University			
Link	http://www.landscapemeasures.org/			

Ecosystems and biodiversity

Author	Tejaswini Apte		Year	2005
Title	An Activist Approach to Biodiversity Planning			
Type	Handbook	Geographical coverage	India	
Target audience/ users	Stakeholder involved in the NBSAP			
The aim of the handbook is to present user friendly tools used to elicit participation in the planning process which led to the creation of the National Biodiversity Strategy and Action Plan in India. The tools are described in a way that should make it possible for readers to apply/adapt the tools to their own settings, and to understand the strengths and weaknesses of the tools in terms of bringing out the voices of the targeted social sectors.				
Publisher	IIED			
Link	http://www.policy-powertools.org/related/docs/NBSAP.pdf			

Author	CABI International		Year	2009
Title	Invasive Species Compendium (Alpha)			
Type	Compendium	Geographical coverage	Global	
Target audience/ users		Decision-makers; technical experts		
The Compendium is an encyclopaedic resource that brings together a wide range of different types of science-based information to support decision-making in invasive species management worldwide. It comprises detailed datasheets that have been sourced from experts, edited by an independent scientific organization, and enhanced with data from specialist organizations, images, maps, a bibliographic database and full text articles.				
Publisher	CABI International			
Link	http://www.cabi.org/isc/?site=144&page=459			

Author	Earthwatch Europe/ International Union for Conservation of Nature (IUCN)/World Business Council for Sustainable Development (WBCSD)		Year	2002
Title	Business & Biodiversity – A Handbook for Corporate Action			
Type	Handbook	Geographical coverage	Global	
Target audience/ users		Business leaders; managers responsible for Sustainable Development		
The Handbook outlines the business case for biodiversity, it identifies corporate biodiversity issues, and it provides guidance for developing biodiversity corporate action.				
Publisher	WBCSD			
Link	http://www.wbcsd.org/plugins/DocSearch/details.asp?type=DocDet&ObjectId=Mzc2			

Author	Food and Agriculture Organization of the UN (FAO)		Year	2006
Title	Responsible management of planted forests: voluntary guidelines			
Type	Guidelines	Geographical coverage	Global	
Target audience/ users		Decision-makers; investors; and forest managers		
These guidelines apply to planted forests that fulfil productive functions for the provision of wood, fibre and non-wood forest products or protective functions for the provision of environmental and/or social services. They cover all aspects of planted forests, from policy development and planning through the technical considerations of planted forest management. The scope of the guidelines is global: they may be adopted and applied to planted forests in all ecogeographical zones and to countries, regions and landscapes in all stages of economic development. Acceptance and implementation of the voluntary guidelines is not legally binding.				
Publisher	FAO, Planted Forests and Trees Working Paper 37/E			
Link	http://www.fao.org/docrep/009/j9256e/j9256e00.htm			

Author	Gemmill, B.		Year	2001
Title	Guide to Best Practices for Sectoral Integration: Managing Agricultural Resources for Biodiversity Conservation			
Type	Best practices	Geographical coverage	Global	
Target audience/ users		Decision-makers		
The Guide consists of three parts: principles or best practices relevant to the conservation of agricultural genetic resources; principles relative to the conservation of ecological services; and examination of conservation of wild biodiversity in agricultural areas. For each part, a list of best practices, means of implementation and relevant tools is provided.				
Publisher	UNDP/GEF/UNEP			
Link	www.unep.org/bpsp/Agrobiodiversity/agrobiodiversity%20thematic/agbioguide.pdf			

Author	International Union for Conservation of Nature (IUCN)			Year	2011
Title	Global Invasive Species Database				
Type	Database		Geographical coverage	Global	
Target audience/ users		Decision-makers			
The Global Invasive Species Database focuses on invasive alien species that threaten native biodiversity and covers all taxonomic groups from micro-organisms to animals and plants in all ecosystems. It aims to increase awareness about invasive alien species and to facilitate effective prevention and management activities.					
Publisher	IUCN				
Link	http://www.issg.org/database/welcome/				

Author	International Union for Conservation of Nature (IUCN)			Year	2008
Title	The IUCN Red List of Threatened Species				
Type	Reference list		Geographical coverage	Global	
Target audience/ users		Decision-makers			
Comprehensive list of threatened species by taxonomy (animalia, fungi, plantae, and protista), location, systems, habitat, and threats.					
Publisher	IUCN				
Link	http://www.iucnredlist.org/				

Author	World Health Organization		Year	2005
Title	The WHO Recommended Classification of Pesticides by Hazard – and Guidelines to Classification 2004			
Type	Classification & guidelines	Geographical coverage	Global	
Target audience/ users		Technical experts		
This document sets out a classification system to distinguish between the more and the less hazardous forms of selected pesticides based on acute risk to human health (that is the risk of single or multiple exposures over a relatively short period of time). It takes into consideration the toxicity of the technical compound and its common formulations. The document lists common technical grade pesticides and recommended classifications together with a listing of active ingredients believed to be obsolete or discontinued for use as pesticides, pesticides subject to the prior informed consent procedure, limitations to trade because of the POPs convention, and gaseous or volatile fumigants not classified under these recommendations.				
Publisher	World Health Organization			
Link	http://www.who.int/ipcs/publications/pesticides_hazard/en/			

Water availability and quality

Author	Critchley, W., K. Siegert		Year	1991
Title	A Manual for the Design and Construction of Water Harvesting Schemes for Plant Production.			
Type	Manual	Geographical coverage	Sub-Saharan Africa; arid and semi-arid areas	
Target audience/ users	Technicians; extensions workers; rural development specialists and planners			
<p>The focus of the manual is on simple, field scale systems for improved production of crops, trees and rangeland species in drought prone areas. Most of the systems outlined and experiences described are drawn from Sub-Saharan Africa. Nevertheless, the manual is also relevant to arid and semi-arid areas in other parts of the world where the basic problems - low and erratic rainfall, high rates of runoff, and unreliable food production are similar. The manual provides the field worker with selection criteria and detailed technical designs for the various systems, as well as information on field layout and construction. This is the main part of the document - but the full range of information given is much wider.</p>				
Publisher	FAO			
Link	http://www.fao.org/docrep/u3160e/u3160e00.HTM			

Author	WHO		Year	2006
Title	WHO Guidelines for the safe use of wastewater, excreta and greywater			
Type	Guidelines	Geographical coverage	Global	
Target audience/ users	Professionals concerned with issues relating to the safe use of wastewater, excreta and greywater, public health and water and waste management, including environmental and public health scientists, educators, researchers, engineers, policy-makers and those responsible for developing standards and regulations.			
This volume of the World Health Organization's describes the present state of knowledge regarding the impact of wastewater use in agriculture on the health of product consumers, workers and their families and local communities. It provides information on the assessment and management of risks associated with microbial hazards and toxic chemicals. It explains requirements to promote the safe use of wastewater in agriculture including minimum procedures and specific health-based targets, and how those requirements are intended to be used. This volume also describes approaches used in deriving the guidelines, including health-based targets, and includes a substantive revision of approaches to ensuring microbial safety.				
Publisher	WHO			
Link	http://www.fao.org/nr/water/docs/volume2_eng.pdf			

Author	Food and Agriculture Organization of the UN (FAO)			Year	no date
Title	AQUASTAT – Countries and regions - Country profiles				
Type	Country profiles		Geographical coverage	Developing countries	
Target audience/ users		Decision-makers			
They are useful to obtain a first idea on a countries' water situation, and its priorities. Have a paragraph on Institutional environment and Trends in water resources management.					
Publisher	FAO				
Link	http://www.fao.org/nr/water/aquastat/countries/index.stm				

Author	Food and Agriculture Organization of the UN (FAO)			Year	no date
Title	AQUASTAT - main country database				
Type	Database		Geographical coverage	Global	
Target audience/ users		Any			
AQUASTAT provides information (by country) on water and agriculture. The following categories are covered: land use and population; climate and water resources; water use, by sector and by source; irrigation and drainage development; and environment and health.					
Publisher	FAO				
Link	http://www.fao.org/nr/water/aquastat/dbase/index.stm				

Author	Global Water Partnership		Year	no date
Title	Toolbox – Integrated Water Resources Management			
Type	Toolbox	Geographical coverage	Global	
Target audience/ users		Decision-makers		
The Toolbox is a free and open database with a library of case studies and references that can be used by anyone who is interested in implementing better approaches for the management of water or learning more about improving water management on a local, national, regional or global level.				
Publisher	Global Water Partnership			
Link	http://www.gwptoolbox.org/			

Author	United Nations Statistics Division			Year	2006
Title	Integrated Environmental and Economic Accounting for Water Resources				
Type	Handbook		Geographical coverage	Global	
Target audience/ users		Water experts			
The purpose of this handbook is to provide a conceptual framework for organizing the hydrological and economic information in a coherent and consistent framework. It includes a set of standard tables focusing on hydrological and economic information as well as supplementary tables covering information on social aspects, which permit the analysis of the interaction between water and the economy.					
Publisher	United Nations Statistics Division				
Link	unstats.un.org/unsd/envaccounting/ceea/Plmeetings/Handbook_Voorburg.pdf				

Air quality

Author	World Bank/United Nations Environment Programme/United Nations Industrial Development Organization		Year	1999
Title	Pollution Prevention and Abatement Handbook, 1998: Toward Cleaner Production			
Type	Handbook	Geographical coverage	Global	
Target audience/ users		Decision-makers; technical experts		
The Handbook consists of three parts. Part I contains a summary of key policy lessons in pollution management. Part II presents good-practice notes on implementation of policy objectives and, finally, Part III provides detailed guidelines to be applied in the preparation of World projects. The guidelines, which cover almost 40 industrial sectors, represent state-of-the-art thinking on how to reduce pollution emissions from the production process. In many cases, the guidelines provide numerical targets for reducing pollution, as well as maximum emissions levels that are normally achievable through a combination of cleaner production and end-of-pipe treatment.				
Publisher	World Bank Publications			
Link	http://www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/1999/06/03/000094946_99040905052283/Rendered/PDF/multi0page.pdf			

Potential impacts on forest resources and products

Author	Dykstra, D.P, R. Heinrich		Year	1996
Title	FAO model code of forest harvesting practice			
Type	Good practices	Geographical coverage	Global	
Target audience/ users	Decision-makers; forest managers			
The FAO model code of forest harvesting practice is intended primarily to serve as a reference for FAO member countries considering the adoption or revision of their own codes of forest practice. Its overall purpose is to promote harvesting practices that will improve standards of utilization, reduce environmental impacts, help ensure that forests are sustained for future generations and improve the economic and social contributions of forestry as a component of sustainable development.				
Publisher	FAO			
Link	http://www.fao.org/docrep/V6530e/V6530E00.htm			

Author	Food and Agriculture Organization of the UN (FAO)		Year	2004
Title	National Forest Inventory – Field Manual - Template			
Type	Field manual	Geographical coverage	Country level	
Target audience/ users		Technical staff of governments in developing countries		
This field manual contains definitions and procedures used to plan and perform a national forest inventory and assessment following the approach developed by the Forest Resources Assessment programme (FRA) of FAO. The first part of the manual describes the adopted sampling design and the distribution and configuration of the tracts where measurements are carried out. The second part deals with the forest type/land use classification adopted to carry out the inventory. Recommendations to undertake data collection in the field are presented in the third part. In part four the field forms are described in detail. The Appendices provide some tools and methods for measuring the variables such as diameter, height, horizontal distance, a guide for the use of Global Positioning System receivers (GPS) as well as techniques and recommendations to carry out interviews and group discussions.				
Publisher	FAO, Forest Resources Assessment Programme, Working Paper 94/E			
Link	http://www.fao.org/docrep/008/ae578e/ae578e00.htm			

Author	ProForest		Year	2005
Title	Global HCV Toolkits			
Type	Toolkit	Geographical coverage	Global	
Target audience/ users		Forestry Specialist; forest managers		
The Toolkit provides guidance on how to take the generic HCV definitions and develop specific, detailed and clear National Interpretations for a particular country or region. It also provides guidance to forest managers on how to work with the generic definition when no national definition is yet available.				
Publisher	High Conservation Value Resource Network			
Link	http://hcvnetwork.org/resources/global-hcv-toolkits			

Productive capacity of the land

Author	Centre for Development and Environment (CDE)/Food and Agriculture Organization of the UN (FAO)/ISRIC – World Soil Information		Year	2008
Title	A Questionnaire for Mapping Land Degradation and Sustainable Land Management			
Type	Manual	Geographical coverage	Global	
Target audience/ users		Land-use experts		
The WOCAT-LADA-DESIRE mapping tool evaluates what type of land degradation is actually happening where and why and what is done about it in terms of Sustainable Land Management in the form of a questionnaire. Linked with a Geographical Information System permits the production of maps as well as area calculations on various aspects of land degradation and conservation. The map database and mapped outputs provide a powerful tool to obtain an overview of land degradation and conservation.				
Publisher	CDE-WOCAT/FAO-LADA/ISRIC			
Link	http://www.fao.org/nr/lada/index.php?option=com_docman&task=cat_view&gid=18&I			

Author	Food and Agriculture Organization of the UN (FAO)			Year	2009
Title	LADA and DISforLADA– Land Degradation Assessment Indicators				
Type	Tool, database		Geographical coverage	Global	
Target audience/ users		Decision makers			
The Land Degradation Assessment in Drylands project (LADA) aims at informed policy advice on land degradation at global, national and local level through the assessment of land degradation at different spatial and temporal scales and the creation of a baseline at global level for future monitoring. DISforLADA is a Land Degradation Assessment Indicator system developed by FAO and the LADA partners.					
Publisher	FAO/LADA, DISforLADA, NRD				
Links	Indicators site: http://dis-nrd.uniss.it/ LADA site: http://www.fao.org/nr/lada/				

Author	WOCAT		Year	2007
Title	Where the land is greener - case studies and analysis of soil and water conservation initiatives			
Type	Book/case studies	Geographical coverage	Global	
Target audience/ users		Soil and water specialists/conservationists		
Book on soil and water management providing a large sample of positive case studies of sustainable management of the land (in economic, social and ecological terms) from different contexts worldwide. Appropriate technologies and approaches are proposed to achieve the same results in other areas.				
Publisher	CTA/UNEP/FAO/CDE			
Link	http://www.wocat.net/en/knowledge-base/documentation-analysis/global-overview-book.html			

Author	Food and Agriculture Organization of the UN (FAO)		Year	2007
Title	LADA – Land Degradation Assessment in Drylands – Technical Report 2 – Biophysical Indicator Toolbox			
Type	Toolbox		Geographical coverage	
Target audience/ users		Policy makers, researchers, analysts		
The LADA project is developing an indicator toolbox containing a minimum set of ‘universal’ indicators that can be measured at local and global scale and which allow for extrapolation at these different scales. The indicators in the toolbox are relatively easy to measure or obtain, and in general are related to several conditions of the land, in such a way that the set of indicators, even if not exhaustive, can describe the system in a cost effective way With this document an attempt is made to propose a minimum set of pressure and state indicators as a contribution to the above-mentioned toolbox				
Publisher	FAO			
Link	http://www.fao.org/nr/lada/index.php?option=com_docman&task=doc_download&gid=15&Itemid=157			

Author	Food and Agriculture Organization of the UN (FAO)		Year	2007
Title	Land evaluation – Towards a revised framework			
Type	Framework/guidelines	Geographical coverage	Global	
Target audience/ users		Professionals (land evaluation and land-use planning)		
This document is intended to provide materials for a discussion on the direction in which land evaluation should evolve. It summarizes a number of new concepts and additional tools and procedures that might be appropriate for inclusion in a revised framework for land evaluation, and discusses advantages and disadvantages of each.				
Publisher	FAO, Land and Water Discussion Paper 6			
Link	http://www.fao.org/NR/Ida no datebst/lman_070601_en.htm			

Author	Food and Agriculture Organization /United Nations Environment Programme		Year	1999
Title	The Future of our land: facing the challenge – Guidelines for integrated planning for sustainable management of land resources			
Type	Guidelines	Geographical coverage	Global	
Target audience/ users	Professional and practitioners of land-use planning and land resource management			
Integrated planning approach for sustainable management of land resources based on an interactive partnership between governments and people. The approach is centred on the concept of stakeholders and their objectives, and the role of the government in creating the conditions within which rural people can use their land resources productively and sustainably. Integration of grass-roots participation with systematic procedures for evaluation of resources and planning is the key to this approach, and a necessary factor for its success.				
Publisher	FAO/UNEP			
Link	http://www.fao.org/DOCREP/004/X3810E/X3810E00.HTM			

Author	McDonagh, J., S. Bunning, F. Nachtergaele, and R. Biancalani		Year	2009
Title	LADA-L: Conceptual basis, methodological approaches and planning strategies			
Type	Manual	Geographical coverage	Global	
Target audience/ users		Decision-makers		
LADA-L is a system to record and interpret information on the nature, extent and dynamics of land degradation towards implementation of informed strategies to achieve the mitigation of land degradation, as well as the initiation of improved, integrated systems for more sustainable land management and socio economic conditions.				
Publisher	FAO			
Link	www.fao.org/nr/lada/index.php?option=com_docman&task=doc_download&gid=231&lang=en			

Author	Roy, R.N., R.V. Misra, J.P. Lesschen, and E.M. Smaling			Year	2003
Title	Assessment of soil nutrient balance - Approaches and Methodologies				
Type	Handbook	Geographical coverage	From the global level down to the farm level		
Target audience/ users	Decision-makers; higher level extension workers; researchers; NGOs; stakeholders				
This publication presents a state-of-the-art overview of nutrient-balance studies. It brings out the evolution of the various approaches and methodologies, provides for comparisons among them, and highlights the improvements made and the issues that are still to be addressed. It categorizes case studies into macro-level, meso-level and micro-level classes. The macro-level is used for national, continental and global farming-system levels. The meso-level coincides with the level of the province, district and agro-ecological zone. The micro-level is largely defined as the farm or village level. For each case, the study explains the methodological approaches, the elements of the nutrient balance, and the calculation of the nutrient flows. Furthermore, it also discusses knowledge gaps and caveats that warrant attention.					
Publisher	FAO, Fertilizer and Plant Nutrition Bulletin 14				
Link	http://www.fao.org/docrep/006/y5066e/y5066e00.htm				

Socio-Economic Aspects

Author	Food and Agriculture Organization of the United Nations (FAO)			Year	2008
Title	EASYPol				
Type	On-line repository		Geographical coverage	Global	
Target audience/ users		Policy-makers			
EASYPol is an FAO on-line, interactive multilingual repository of downloadable resource materials for capacity development in policy making for food, agriculture and rural development.					
Materials are structured into inter-related and cross-linked modules organised by topic, type and training paths that can be accessed through user-friendly search facilities.					
Publisher	FAO				
Link	http://www.fao.org/easypol/				

Author	Food and Agriculture Organization of the UN (FAO)			Year	Forthcoming
Title	Guide for Social and Livelihoods Analysis of Agricultural Investment Projects				
Type	Guide		Geographical coverage	Project-level	
Target audience/ users	Rural Sociology Specialists; Social Development Specialist; Development Specialists.				
The overall goal of the Guide is to contribute to capacity building in carrying out social analysis that can be used as a valuable input for agricultural investment project design and implementation.					
Publisher	FAO				
Link					

Author	George, H., M. Petri		Year	2006
Title	The rapid characterization and mapping of agricultural land-use: A methodological framework approach for the LADA project			
Type	Methodological framework	Geographical coverage	Global	
Target audience/ users		Decision-makers; land-use planners		
This paper presents a scale-independent, methodological framework for the consistent spatial integration of agricultural land use from diverse datasets containing different attributes of land-use information in a manner that is useful for planning, targeting and prioritising a wide range of land-related interventions connected with topical issues such as the incidence of food insecurity and poverty, and environmental sustainability.				
Publisher	FAO			
Link	http://www.fao.org/nr/lada/index2.php?option=com_docman&task=doc_view&gid=11&Itemid=157			

Author	University of Wisconsin			Year	no date
Title	Community Impact of Biodiesel and Bioethanol Plants				
Type	Assessment tool		Geographical coverage	Community-level	
Target audience/ users		Decision-makers			
This tool aims to calculate the sensitivity of sitting a bioenergy plant in a certain community					
Publisher	University of Wisconsin, Renk Agribusiness Institute				
Link	http://www.aae.wisc.edu/renk/impactcalculator.asp				

Author	World Bank, Food and Agriculture Organization of the UN (FAO), and International Fund for Agriculture and Development (IFAD)		Year	2009
Title	Gender in Agriculture - Sourcebook			
Type	Sourcebook	Geographical coverage	Global	
Target audience/ users		Practitioners; technical staff		
The purpose of the Sourcebook is to act as a guide for practitioners and technical staff in addressing gender issues and integrating gender-responsive actions in the design and implementation of agricultural projects and programs. In particular, it aims to deliver practical advice, guidelines, principles, and descriptions and illustrations of approaches that have worked so far to achieve the goal of effective gender mainstreaming in the agricultural operations of development agencies.				
Publisher	The International Bank for Reconstruction and Development / The World Bank			
Link	http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTARD/EXTGENAGRLIVSOUBOOK/0,,contentMDK:21348334~pagePK:64168427~piPK:64168435~theSitePK:3817359,00.html			

Author	European Commission and United States Department of Energy		Year	1991
Title	ExternE (Externalities of Energy) project			
Type	Source for methods and results for externalities estimation	Geographical coverage		Global
Target audience/ users		Practitioners; technical staff		
<p>ExternE (Externalities of Energy) is a project launched by the European Commission in 1991 in collaboration with the United States Department of Energy. It was the first comprehensive effort to evaluate the external costs associated with a range of different fuel cycles. ExternE is a source for method and results of externalities estimation.</p> <p>The framework can be applied to a wide range of receptors, including human health, natural ecosystem, and the environment. In addition, the methodology is also being extended to address the evaluation of externalities associated with the transport and domestic sectors, and a number of non-environmental externalities such as those associated with the security of supply.</p>				
Publisher	"ExternE" (External costs of Energy) European Research Network			
Link	http://www.externe.info/			

Land Tenure and Displacement Risk

Author	Food and Agriculture Organization of the UN (FAO)		Year	2008
Title	Methodological guidelines for Participatory Land Delimitation: an innovative method for securing rights acquired through customary and other forms of occupation			
Type	Guidelines	Geographical coverage	Global	
Target audience/ users		Land Tenure Specialists; non-experts		
Methodological guidelines for securing, through participatory land delimitation, land rights acquired through customary and other forms of occupation.				
Publisher	FAO, Land Tenure and Management Unit (NRLA)			
Link	ftp://ftp.fao.org/docrep/fao/012/ak546e/ak546e00.pdf			

Income Generation/Potential Exclusion

Author	Africa Sustainable Fuels Centre (ASFC) and Renewable Energy & Energy Efficiency Partnership (REEEP)		Year	2007
Title	Toolkit: facilitating access to finance for small-scale biodiesel producers			
Type	Financing guidebook	Geographical coverage	Tanzania and Gambia; high replicability	
Target audience/ users		Businesses/entrepreneurs		
This Toolkit has been developed in order to facilitate the development of new biodiesel supply and consumption in Tanzania and Zambia, though the general principles and outcomes can be adapted for any country. The specific focus of the Toolkit is on developing business plans for the use of biodiesel in Multi-Functional Platforms, or MFPs.				
Publisher	ASFC			
Link	http://toolkits.reeep.org/file_upload/10501013_1.pdf			

Author	FAO		Year	2009
Title	Voluntary Guidelines for Good Governance in Land and Natural Resource Tenure: Issues from an international institutional perspective			
Type	Guidelines	Geographical coverage	Global	
Target audience/ users		Project developers, staff in governments, financing agencies, civil society and the corporate sector		
The paper includes 14 principles for good governance in Land and Natural Resource Tenure. Voluntary guidelines are addressed to a wide range of stakeholders and therefore need to be derived from international agreements and credible examples of good practice if they are to command wide support.				
Publisher	FAO			
Link	http://www.fao.org/nr/tenure/infores/voluntary-guidelines/en/			

Author	Food and Agriculture Organization of the UN (FAO)		Year	2001
Title	Socio-economic and Gender Analysis Programme			
Type	Handbook	Geographical coverage	Global	
Target audience/ users		Decision-makers; development agents		
The purpose of this Handbook is to support participatory development planning at the community level. In particular, it provides toolkits specifically designed to support a participatory process that first, focuses on an analysis of the current situation, and second, focuses on planning for the future. The toolkits consist of a number of rapid rural and participatory rural appraisal tools, but include also a series of SEAGA Questions to facilitate and deepen analysis.				
Publisher	FAO			
Link	http://www.fao.org/sd/seaga/downloads/En/FieldEn.pdf			

Author	World Bank		Year	2005
Title	Gender Issues in Monitoring and Evaluation in Rural Development: A Tool Kit			
Type	Toolkit	Geographical coverage	Global	
Target audience/ users	Project task teams; WB's borrowers and partners.			
The Tool Kit has been developed to assist project task teams, borrowers, and partners to recognize and address gender concerns in designing rural development sector projects and to monitor and evaluate results, outcomes, and impact on achieving overall rural well-being.				
Publisher	World Bank			
Link	http://siteresources.worldbank.org/INTGENDER/Resources/RuralM_EToolkit2005.pdf			

Author	International Finance Corporation (IFC)		Year	2007
Title	International Finance Corporation's Guidance Notes: Performance Standards on Social & Environmental Sustainability - Guidance Note 5: Land Acquisition and Involuntary Resettlement			
Type	Guidelines	Geographical coverage	Global	
Target audience/ users		IFC staff and clients		
The Guidance Notes offer guidance on the requirements contained in the IFC's Performance Standards on Social and Environmental Sustainability, including reference materials, and on good sustainability practices to improve project performance.				
Publisher	IFC, The World Bank Group			
Link	http://www.ifc.org/ifcext/sustainability.nsf/Content/GuidanceNotes			

MITIGATION OPTIONS AND GOOD PRACTICES

Author	Food and Agriculture Organization of the UN (FAO)		Year	2010
Title	Analytical Framework and Tools for Sustainable Production Identification			
Type	Analytical framework	Geographical coverage	Global	
Target audience/ users		analyst		
The purpose of these guiding principles is not to set up an unattainable list of ideals, but rather to help to design a basis against which to assess the current status of cropping systems and to measure future changes in these systems. The Conceptual Framework <u>for SCPI</u> provides the context for developing tools that include guiding principles, checklists, indicators and case studies for use in developing policies, programme and projects related to sustainable intensification.				
Publisher	FAO			
Link	http://www.fao.org/agriculture/crops/core-themes/theme/spi/en/			

Author	Food and Agriculture Organization of the UN (FAO)		Year	2009
Title	Low Greenhouse Gas Agriculture – Mitigation and Adaptation Potentials of Sustainable Farming Systems.			
Type	Paper	Geographical coverage	Global	
Target audience/ users		NGO, researchers, analysts		
Paper examining current farming practices and using scientific data of mainly long-term field experiments as case studies for low greenhouse gas agriculture. Adaptive capacity of agro-ecological farming system approaches are also elucidated, using organic system case studies from the scientific literature.				
Publisher	FAO			
Link	ftp://ftp.fao.org/docrep/fao/010/ai781e/ai781e00.pdf			

Author	Baker C.J. and SaxtonK.E.		Year	2007
Title	No-Tillage Seeding in Conservation Agriculture			
Type	Handbook	Geographical coverage	Global	
Target audience/ users	Professional and academic workers in agronomy, soil science and agricultural engineering.			
Book describing and analysing no-tillage technologies, particularly those related to no-tillage seed drilling, from a variety of accumulated experiences over the past 40 years.				
Publisher	FAO/CABI			
Link	http://www.fao.org/docrep/012/al298e/al298e00.htm http://bookshop.cabi.org/default.aspx?site=191&page=2633&pid=1970			

Author	Goddard et al. (eds.)			Year	2007
Title	No-Till Farming Systems				
Type	Handbook		Geographical coverage	Global	
Target audience/ users		Researchers, analysts, policy makers			
A review of status, advancements and innovation in no-till systems from around the world.					
Publisher	WASWC				
Link	WASWC publications on http://www.waswc.org/				

Author	IIRR/ACT			Year	2005
Title	A Manual for Farmers and Extension Workers in Africa.				
Type	Manual	Geographical coverage		Africa	
Target audience/ users		NGO, researchers, analysts, policy makers			
Manual explaining what conservation agriculture is, and why it is important; describing how to use conservation agriculture principles in the field; highlighting the issues and challenges that farmers and extension personnel may encounter when they adopt and adapt conservation agriculture; suggesting ways to adapt and disseminate this approach; and giving examples of experiences with conservation agriculture in real life.					
Publisher	IIRR/ACT				
Link	http://waswc.soil.gd.cn/books/1%20Conservation%20Agriculture%20Manual%20for%20Africa,%20IIRR%202005.pdf				

Author	Food and Agriculture Organization of the UN (FAO)			Year	2004
Title	Conservation agriculture. When agriculture is profitable and sustainable.				
Type	CD-Rom, Resource compilation	Geographical coverage	Global		
Target audience/ users		NGO, researchers, analysts, policy makers			
Land and Water digital media series, No 18. CD-ROM containing detailed information and literature about Conservation Agriculture to improve the knowledge base of those interested in this concept of sustainable agriculture. Provides technical staff as well as policy- and decision-makers with information and arguments that will help to support, promote and introduce Conservation Agriculture.					
Publisher	FAO				
Link	http://www.fao.org/ag/agl/lwdms.stm				

Author	Food and Agriculture Organization of the UN (FAO)			Year	2006
Title	Conservation of natural resources for sustainable agriculture				
Type	CD-Rom, training course	Geographical coverage	Global		
Target audience/ users	NGO, researchers, analysts, policy makers				
Training modules: concepts and principles of Conservation Agriculture; cover crops; soil (organic matter and biological activity, soil quality assessment, preventing compaction, fertility, moisture); tools and equipment; weeds; pests and diseases; livestock; economic benefits and exercises for learning-by-doing. Land and Water digital media series, No 27.					
Publisher	FAO				
Link	http://www.fao.org/ag/agl/lwdms.stm				

Author	Scherr et al. (eds.)			Year	2007
Title	Farming With Nature - The Science and Practice of Eco-agriculture				
Type	Handbook	Geographical coverage		Global	
Target audience/ users		NGO, researchers, analysts, policy makers			
Synthesis of state of the knowledge on agricultural landscapes managed not only to produce crops but also to support biodiversity and promote ecosystem health around the world.					
Publisher	Island Press				
Link	http://islandpress.org/bookstore/details403d.html?prod_id=1676				

Author	Food and Agriculture Organization of the UN (FAO)		Year	2003
Title	Good Agricultural Practices for Selected Agricultural Components			
Type	Paper	Geographical coverage	Global	
Target audience/ users		NGO, researchers, analysts, policy makers		
Document setting out the context and approach to GAP with respect to food security and the on-farm stages of the food chain; reviewing current applications of GAP by the public and private sectors, civil society and farmers; elaborating a proposed framework of principles and generic indicators and practices to guide further debate and action; proposing a way forward for developing GAP guidelines for on-farm production; and identifying issues for consideration by COAG and seeks guidance on FAO's role in further developing the concept of GAP.				
Publisher	FAO			
Link	http://www.fao.org/docrep/meeting/006/y8704e.htm			

Author	World Bank			Year	2008
Title	Sustainable Land Management Sourcebook				
Type	Sourcebook		Geographical coverage	Global	
Target audience/ users		Technical Practitioners			
A resource of good practice information on land and natural resource management issues that will be of operational relevance to practitioners in the tropics and sub-tropics.					
Publisher	World Bank				
Link	http://siteresources.worldbank.org/EXTARD/Resources/336681-1215724937571/eBook.pdf				

Author	WOCAT		Year	2008
Title	Wocat good practices			
Type	Web-based information resource	Geographical coverage	Global	
Target audience/ users		Technical Practitioners		
WOCAT provides information on appropriate SWC technologies and approaches, and decision support in the field and at the planning level. Questionnaires, database and guidelines.				
Publisher	WOCAT			
Link	http://www.wocat.org			

Author	TerrAfrica Partnership			Year	No date
Title	TerrAfrica Partnership				
Type	Web-based information resource		Geographical coverage	Africa	
Target audience/ users		Technical Practitioners, decision-makers on SLM			
An Internet-based tool that facilitates the access, the exchange and methodical accumulation of key knowledge to implement Sustainable Land Management (SLM) in Africa.					
Publisher	TerrAfrica Partnership				
Link	http://www.terrafrica.org/				

Author	Global Water Partnership			Year	2008
Title	Global Water Partnership Toolbox				
Type	Toolbox		Geographical coverage	Global	
Target audience/ users		NGO, researchers, analysts, policy makers			
Free and open database with a library of case studies and references for implementing better approaches for the management of water and learning more about improving water management on a local, national, regional or global level.					
Publisher	Global Water Partnership				
Link	http://www.gwptoolbox.org/				

Author	USAID-CIFOR-ICRAF			Year	2009
Title	Forests and Climate Change Toolbox				
Type	manual		Geographical coverage	Global	
Target audience/ users		Non experts			
The Forests and Climate Change Toolbox has been developed to build understanding and technical proficiency on issues of climate change and forests including mitigation, adaptation, carbon accounting and markets, and biofuels.					
Publisher	CIFOR				
Link	http://www.cifor.cgiar.org/fctoolbox/				

CERTIFICATION AND STANDARDS

Author	Forest Stewardship Council		Year	1996
Title	Forest Stewardship Council Principles and Criteria			
Type	Sustainability certification/ standards	Geographical coverage	Global	
Target audience/ users		FSC is an independent, non-governmental, not for profit organization established to promote the responsible management of the world's forests.		
Publisher	Forest Stewardship Council			
Link	http://www.fsc.org			

Author	The Programme for the Endorsement of Forest Certification (PEFC)		Year	No date
Title	The Programme for the Endorsement of Forest Certification (PEFC)			
Type	Guidelines	Geographical coverage		Global
Target audience/ users		Producers		
PEFC is an international non-profit NGO dedicated to promoting Sustainable Forest Management (SFM) through independent third-party certification. PEFC works throughout the entire forest supply chain to promote good practice in the forest and to ensure that timber and non-timber forest products are produced with respect for the highest ecological, social and ethical standards. PEFC is an umbrella organization, working by endorsing national forest certification systems developed through multi-stakeholder processes and tailored to local priorities and conditions. Each national forest certification system undergoes rigorous third-party assessment against PEFC's unique Sustainability Benchmarks to ensure consistency with international requirements. PFEFC covers both forest management and chain of custody verification.				
Publisher	The Programme for the Endorsement of Forest Certification (PEFC)			
Link	http://www.pefc.org/			

Author	GlobalGAP		Year	No date
Title	GlobalGAP			
Type	Guidelines, tool	Geographical coverage	Global	
Target audience/ users	Practitioners, program managers, private sector			
<p>GLOBALGAP (formerly known as EUREPGAP) is a private sector body that sets voluntary standards for the certification of agricultural products around the globe. The aim is to establish ONE standard for Good Agricultural Practice (G.A.P.) with different product applications capable of fitting to the whole of global agriculture. GLOBALGAP is a pre-farm-gate standard, which means that the certificate covers the process of the certified product from farm inputs like feed or seedlings and all the farming activities until the product leaves the farm. GLOBALGAP is a business-to-business label and is therefore not directly visible to consumers. GLOBALGAP certification is open to all producers worldwide.</p> <p>GLOBALGAP consists of a set of normative documents. These documents cover the GLOBALGAP General Regulations, the GLOBALGAP Control Points and Compliance Criteria and the GLOBALGAP Checklist.</p> <p>As many other on-farm assurance systems have been in place for some time prior to the existence of GLOBALGAP, to prevent farmers from having to undergo multiple audits, existing national or regional farm assurance schemes that have successfully completed their benchmarking process are recognised as an equivalent to GLOBALGAP.</p>				
Publisher	GlobalGAP			
Link	http://www.globalgap.org/cms/front_content.php?idcat=9			

Author	Better Sugar Cane Initiative (BSI)			Year	2008
Title	Better Sugar Cane Initiative Limited				
Type	Sourcebook		Geographical coverage	Global	
Target audience/ users		Practitioners, program managers, private sector			
BSI is a global multi-stakeholder non-profit initiative dedicated to reducing the environmental and social impacts of sugar cane production. It aims to achieve this with a Standard that measures these impacts accurately, and with the development of a system to certify that sustainable practices are being adhered to. The standard is regularly up-dated through the public consultation process					
Publisher	Better Sugar Cane Initiative (BSI)				
Link	http://www.bonsucro.com/				

Author	IEA Bioenergy			Year	No date
Title	IEA Task 40. Sustainable International Bioenergy Trade				
Type	Sourcebook		Geographical coverage	Global	
Target audience/ users					
Objective 2: Sustainability and certification: To determine how the sustainability of biomass supplies, use and trade can be secured optimally and efficiently, in particular from a market perspective, with specific attention for the impacts of certification/verification on international biomass and biofuels trade.					
Publisher	IEA				
Link	http://www.bioenergytrade.org/index.php				

Author	International Sustainability and Carbon Certification (ISCC) Association	Year	No date
Title	International Sustainability and Carbon Certification (ISCC)		
Type	Guidelines, tool	Geographical coverage	Global
Target audience/ users		<p>The International Sustainability and Carbon Certification (ISCC) is an international certification system for Biomass and Biofuels (fuels and electricity) that describes the rules and procedures for certification. This certification system is supported by the German Federal Ministry of Food, Agriculture and Consumer Protection via the Agency for Renewable Resources. ISCC does not issue certificates itself; this is done by the Certifying Bodies. ISCC System is operative and still under development. The objectives of ISCC are the establishment of an internationally oriented, practical and transparent system for the certification of biomass and bioenergy.</p>	
Publisher	ISCC		
Link	http://www.iscc-system.org/index_eng.html		

Author	The Council on Sustainable Biomass Production (CSBP)		Year	No date
Title	The Council on Sustainable Biomass Production (CSBP)			
Type	Guidelines	Geographical coverage	Global	
Target audience/ users	Practitioners, organizations			
CSBP is a multi-stakeholder organization established in 2007 to develop comprehensive voluntary sustainability standards for the production of biomass and its conversion to bioenergy. CSBP intends for its Standard to serve as the foundation for an independent third-party certification program, which will set the emerging bioenergy industry on a course of continuous improvement. The CSBP enjoys participation from growers, environmental and social interests and all sectors of the industry. All members support the goals and objectives of the program.				
Publisher	CSBP			
Link	http://www.csbp.org/ ; draft standard: http://www.csbp.org/files/survey/CSBP_Draft_Standard.pdf			

Author	Roundtable on Sustainable Palm Oil	Year	no date
Title	Roundtable on Sustainable Palm Oil Principles and Criteria		
Type	Guidelines	Geographical coverage	Asia, Global
Target audience/ users	Practitioners, private sector		
RSPO is “to promote the growth and use of sustainable palm oil through co-operation within the supply chain and open dialogue between its stakeholders”. The not-for-profit association has members representing major players along the palm oil supply chain, namely the oil palm growers, palm oil processors and traders, consumer goods manufacturers, retailers, banks and investors, environmental/nature conservation NGOs and social/development NGOs. The RSPO is a unique platform for pragmatic co-operation to contribute to the expansion of sustainably produced palm oil and its uses.			
Publisher	Roundtable on Sustainable Palm Oil		
Link	http://www.rspo.org Principles and Criteria: http://www.rspo.org/files/resource_centre/RSPO%20Principles%20&%20Criteria%20Document.pdf		

Author	Roundtable on Sustainable Biofuels (RSB)		Year	2009
Title	RSB Principles and Criteria for sustainable biofuels production RSB-STD-01-001 (version 1.0)			
Type	Guidelines, tool	Geographical coverage	Global	
Target audience/ users		Practitioners, decision makers		
The RSB Principles & Criteria include the general tenets of sustainable production (principles), the conditions to be met to achieve these tenets (criteria) and requirements that further detail how the criteria are to be met and are differentiated among minimum and “progress”categories.				
Publisher	Roundtable on Sustainable Biofuels			
Link	http://energycenter.epfl.ch/page84341.html			

Author	The Green Gold Label (GGL)		Year	No date
Title	The Green Gold Label			
Type	Guidelines	Geographical coverage	Global	
Target audience/ users		Practitioners, private sector		
The Green Gold Label (GGL) programme is a certificate system for sustainable biomass, with Control Union Certifications as an independent third-party certification body. GGL is registered and owned by the independent Green Gold Label Foundation, which is responsible for criteria and for the communication with stakeholders. GGL covers production, processing, transport and final energy transformation, thus, GGL offers standards for specific parts of the supply chain, as well as standards for the supply chain as a whole (track&trace). GGL has been operational since 2001 as the global certificate for sustainable biomass.				
Publisher	GGL			
Link	http://www.greengoldcertified.org/			