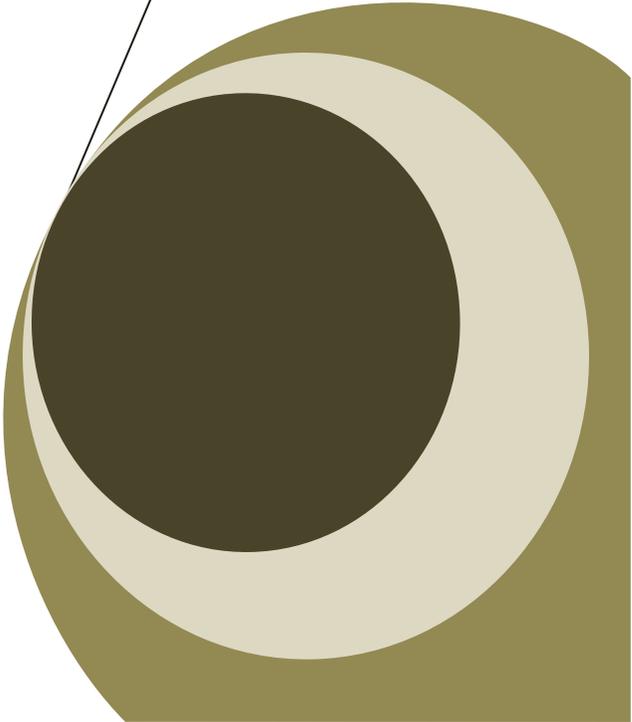
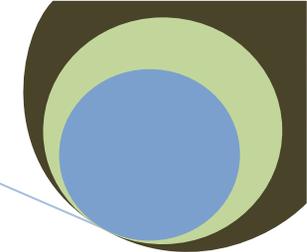


Catalogue of Knowledge Management (KM) and Decision Support (DS) methods, tools and products on Sustainable Land and Water Management (SLM)

This catalogue was prepared in the context of the User Needs Survey on Sustainable Land and Water Management (SLM) launched in April 2013. It summarises the key KM and DS methods, tools and products on SLM, produced over the last 30 years by The Food and Agriculture Organization of the United Nations (FAO), its Land Degradation Assessment in Drylands Programme (LADA) and the World Overview of Conservation Approaches and Technologies (WOCAT).

Prepared by **Iwona Piechowiak**, Consultant FAO Land and Water Division (NRL)
with the supervision of **Sally Bunning**, Lead Technical Officer FAO/NRL
April 2013





Introduction

General Objective of the Catalogue

This catalogue was prepared to help [Sustainable Land Management \(SLM\) – User Needs Survey](#) respondents to familiarize themselves with the existing KM and DS methods, tools and products produced over the last 30 years by The Food and Agriculture Organization of the United Nations (FAO), its Land Degradation Assessment in Drylands Programme (LADA) and the World Overview of Conservation Approaches and Technologies (WOCAT).

Structure of the Catalogue

This Catalogue is divided into 8 sections referring to different areas on Sustainable Land and Water Management:

1. Water (Water Quality, Water Harvesting, Irrigation Management, Crops and Water Management)
2. Land (Soil Assessment, Soil Management, Land Use Planning, Rangelands and Grasslands)
3. Trees and Forestry (Forestry Management and Conservation)
4. Climate Change (Climate-Smart Agriculture (Mitigation+Adaptation+Productivity), Climate Change Mitigation in Agriculture (Including Soil Carbon Sequestration))
5. Impact Assessment
6. Policy Reforms (Water Legislation, Land Legislation)
7. Gender (Gender Mainstreaming)
8. Capacity Development (Capacity Development and Training)
9. Global Studies (Other SLM Publications)

Each of the above mentioned sections is presented in a separate table that is divided in six Columns giving:

1. A photo of the tool or product (if available)
2. Title, author and publication year of the tool or product
3. A short description of the tool or product
4. Web link of the tool or product
5. Language(s) of the tool or product
6. Format of the tool or product, e.g. publication, CD- Rom, e-learning course

Annex 1 - "Further Reading" provides information on additional KM and DS methods, tools and products on SLM

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Climate Change

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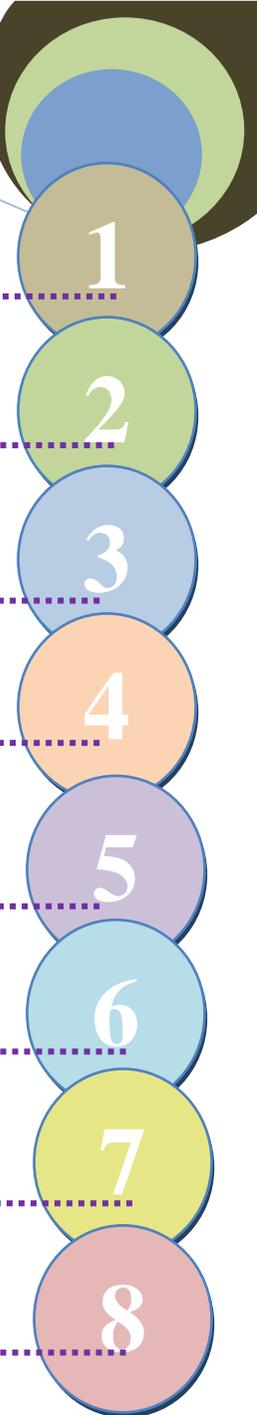
Gender

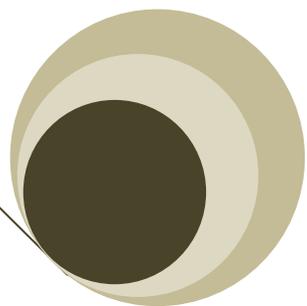
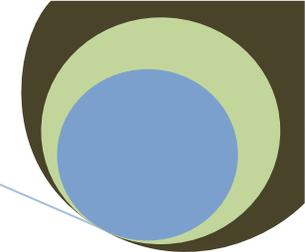
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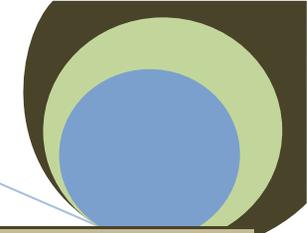


1.Land

1.1 Soil Assessment

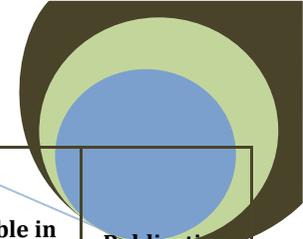
1.2 Soil Management

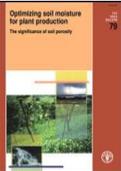
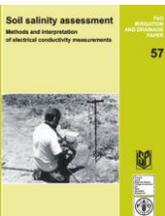
1.3 Land Use Planning

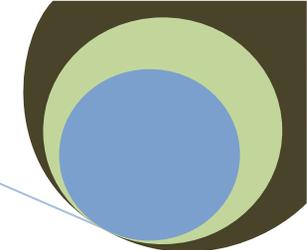


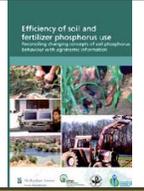
1.1 Soil Assessment

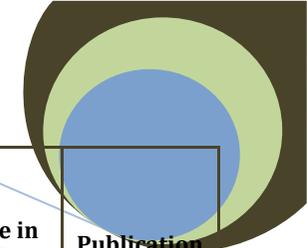
1.1 a		<p>Visual Soil Assessment: Field Guides by G. Shepherd, F. Stagnari, M. Pisante, J. Benites FAO, 2008</p>	<p>The present publication on Visual Soil Assessment is a practical guide to carry out a quantitative soil analysis with reproducible results using only very simple tools. Besides soil parameters, also crop parameters for assessing soil conditions are presented for some selected crops. The Visual Soil Assessment manuals consist of a series of separate booklets for specific crop groups, collected in a binder. The publication addresses scientists as well as field technicians and even farmers who want to analyze their soil condition and observe changes over time.</p>	<p>http://www.fao.org/docrep/010/i0007e/i0007e00.htm</p>	<p>Available in English</p>	<p>Publication</p>
1.1 b		<p>World reference base for soil resources by FAO, 2006</p>	<p>After eight years of intensive worldwide testing and data collection, the current state-of-the-art of the World Reference Base for Soil Resources (WRB) is presented. This publication reflects the valuable work of the authors of the earlier drafts and the first version of the WRB, as well as the experiences and contributions of many soil scientists who participated in the work of the IUSS Working Group on the WRB.</p>	<p>ftp://ftp.fao.org/agl/agl/docs/wsrr103e.pdf</p>	<p>Available in English and Polish</p>	<p>Publication</p>
1.1 c		<p>Guidelines for soil description by FAO, 2006</p>	<p>The guidelines provide a complete procedure for soil description and for collecting field data necessary for classification according to second edition of the World Reference Base for Soil Resources (WRB). Notes for classification purposes are added to each chapter and explain the relevance of the described feature for classification according to the WRB.</p>	<p>ftp://ftp.fao.org/agl/agl/docs/guidel_soil_descr.pdf</p>	<p>Available in English</p>	<p>Publication</p>
1.1 d		<p>Guiding principles for the quantitative assessment of soil degradation With a focus on salinization, nutrient decline and soil pollution by G.W.J. van Lynden (Ed.), S. Mantel, A. van Oostrum FAO, 2004</p>	<p>This document discusses guiding principles, rather than a comprehensive set of guidelines for quantitative soil degradation assessment, since these are different for each type of soil degradation, current or intended land use, and site characteristics. Each kind of soil degradation needs a distinct assessment method, in terms of analytical or field data needed as well as of model formulation. For example, the effects of water erosion on soil properties are totally different from those of pollution. The impact of soil fertility decline may be serious on agricultural land, but is generally irrelevant for an envisaged construction site or other non-agricultural land uses.</p>	<p>ftp://ftp.fao.org/agl/agl/docs/misc36e.pdf</p>	<p>Available in English</p>	<p>Publication</p>

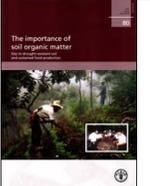
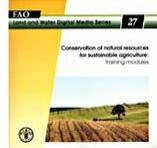
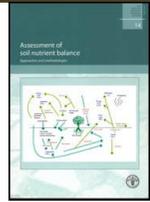


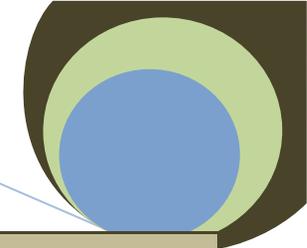
1.1 e		<p>Optimising soil moisture for plant production – The significance of soil porosity by F. Shaxson and R. Barber FAO, 2003</p>	<p>This publication discusses the processes above, within and below the soil that enable water to move and crops to grow, and is intended to help land users make better use and take better care of these basic resources. It will be useful to anyone concerned with maintaining and improving the productivity, quality and health of land, including farmers, advisory staff, trainers and their students etc.</p>	<p>http://www.fao.org/docrep/006/Y4690E/Y4690E00.HTM</p>	<p>Available in English</p>	<p>Publication</p>
1.1 f		<p>Soil Salinity Assessment - Methods and interpretation of electrical conductivity measurements by J.D. Rhoades, F. Chanduvi and S. Lesch FAO, 1999</p>	<p>The technology described in this report for measuring soil salinity has been extensively and successfully field-tested. The advocated instrumental methodology is practical, cost effective and well developed for essentially all general applications. The presented salinity assessment technology offers substantial practical potential to inventory, monitor, manage and control soil and water salinity, as will be needed to sustain irrigated agriculture.</p>	<p>ftp://ftp.fao.org/agl/aglw/docs/idp57.pdf</p>	<p>Available in English</p>	<p>Publication</p>
1.1 g		<p>Land Quality Indicators and Their Use in Sustainable Agriculture and Rural Development Proceedings of the Workshop FAO, 1997</p>	<p>A workshop entitled Land Quality Indicators for Sustainable Resource Management held in FAO Headquarters, Rome. The workshop provided a technical forum to discuss issues relating to land quality indicators (LQIs) and their use by planners and policy-makers. LQIs can be used at the national and district levels to assess the qualities of land, to monitor its changing conditions, and to formulate policies and development programmes that take land quality into account.</p>	<p>http://www.fao.org/docrep/W4745E/W4745E00.htm</p>	<p>Available in English and Spanish</p>	<p>Publication</p>



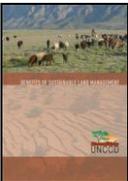
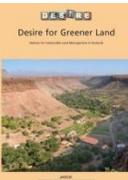
1.2 Soil Management						
1.2 a		Guide to laboratory establishment for plant nutrient analysis by FAO, 2008	This publication provides practical guidelines on establishing service laboratories for the analysis of soil, plants, water and fertilizers. A service laboratory needs information on a methodology that is widely acceptable, taking into consideration the ready availability of chemicals, reagents and instruments while ensuring a reasonable degree of accuracy, speed and reproducibility of results.	http://www.fao.org/docrep/011/i0131e/i0131e00.htm	Available in English	Publication
1.2 b		Efficiency of soil and fertilizer phosphorus use Reconciling changing concepts of soil phosphorus behaviour with agronomic information by FAO, 2008	This report reviews, analyses and synthesizes information on the efficient use of soil and fertilizer P. It presents information on the plant availability of soil and fertilizer P, with an emphasis on soil-plant interactions. The focus is on the changing concepts of the behavior of both soil and fertilizer P and on the need to define and assess their recovery and, thus, P-use efficiency, more appropriately.	http://www.fao.org/docrep/010/a1595e/a1595e00.htm	Available in English	Publication
1.2 c		Fertilizer Use by Crop by FAO, 2006	This publication is based on 21 country reports on fertilizer use by crop issued by FAO between 2002 and 2006. Its objective is to demonstrate the importance of information on fertilizer use by crop, not only on a national level but also by agro-ecological zone, or in even greater detail.	ftp://ftp.fao.org/agl/agl/docs/fpnb17.pdf	Available in English	Publication
1.2 d		Plant nutrition for food security: A guide for integrated nutrient management by FAO, 2006	This bulletin provides comprehensive updated coverage of the key aspects of plant nutrition with special reference to integrated nutrient management for crop production. The topics covered include: present and future demand for plant nutrients; food security and agricultural production; plant nutrients and the basics of plant nutrition; soil fertility and crop production; sources of plant nutrients and soil amendments: optimizing plant nutrition:	http://www.fao.org/docrep/010/a0443e/a0443e00.htm	Available in English	Publication
1.2 e		Drought-resistant soils: Optimization of soil moisture for sustainable plant production by Bot and J.Benites FAO, 2005	Water is the "lifeblood" of agricultural practice worldwide. As well as being a consequence of low or erratic rainfall, the perceived water scarcity may be caused by choices made by the farmer, e.g. of a crop or variety sensitive to water stress, or by inadequate management of available water from rainfall. Inappropriate practices in a particular context can have a dramatic affect on water resources management and soil moisture availability.	http://www.fao.org/docrep/009/a0072e/a0072e00.htm	Available in English	Publication

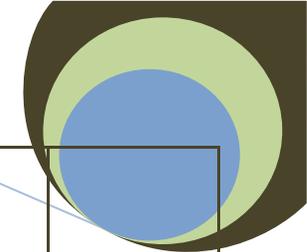


1.2 f		The Importance of Soil Organic Matter: Key to Drought-Resistant Soil and Sustained Food Production by Bot, J. Benites FAO, 2005	This soils bulletin concentrates on the organic matter dynamics of cropping soils. In brief, it discusses circumstances that deplete organic matter and the negative outcomes of this. The bulletin then moves on to more proactive solutions. It reviews a “basket” of practices in order to show how they can increase organic matter content and discusses the land and cropping benefits that then accrue.	http://www.fao.org/docrep/009/a0100e/a0100e00.htm	Available in English	Publication
1.2 g		Photo Library on Soil Erosion Processes by FAO, 2004	The trilingual photo library is a complementary and technically annotated photography annex to the "Guidelines for mapping and measurement of rainfall-induced erosion processes in the Mediterranean coastal areas, which are also included on this CD ROM and gives guidelines and illustrations for mapping soil erosion processes.	www.fao.org/landwater/agll/photo-lib/refs_e.htm	Available in English	CD- ROM
1.2 h		Conservation of natural resources for sustainable agriculture: training modules (27) by FAO, 2004	The objectives of these training modules are to raise awareness of CA benefits and to provide materials for technical training for promoters who are much in demand at training, seminars and field days. This CD-ROM provides practical information about the different principles of conservation of natural resources for sustainable agriculture. The training guide consists of the following 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.	http://www.fao.org/nr/land/pubs/digital-media-series/en/	Available in English	CD- ROM
1.2i		Scaling soil nutrient balances Enabling mesolevel applications for African realities by FAO, 2004	The report synthesizes studies on soil nutrient stocks, flows and balances in order to calculate mesolevel balances for Ghana, Mali and Kenya. It explains nutrient flow calculations, shows how to construct mesolevel nutrient balances, and discusses the differences between levels and between the three countries.	http://www.fao.org/docrep/008/y5749e/y5749e00.htm	Available in English	Publication
1.2 j		Assessment of soil nutrient balance /Evaluation du bilan en éléments nutritifs du sol Approaches and Methodologies by FAO, 2003	Nutrient-balance assessments are valuable tools for examining the impact of farming on soil fertility. This publication provides a comparative review of nutrient balance studies and considers methodologies at the macrolevel, mesolevel and microlevel. This review will be of use in the further development of assessment methodologies as reliable tools for devising time-scale soil fertility management interventions.	http://www.fao.org/docrep/006/y5066e/y5066e00.htm	Available in English and French	Publication

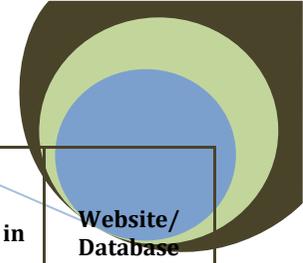


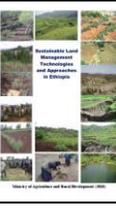
1.3 Land Use Planning

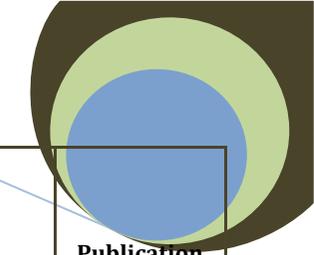
1.3 a		<p>Brochures- benefits of SLM by WOCAT and UNCCD</p>	<p>WOCAT brochures highlight local, regional and global benefits of sustainable land management and illustrates the importance of ecosystem services provided by sustainable land management.</p>	<p>https://www.wocat.net/en/knowledge-base/documentation-analysis/brochures.html?category=17</p>	<p>Available in English</p>	<p>Publication</p>
1.3 b		<p>Desire for Greener Land by DESIRE and WOCAT, 2012</p>	<p>The book describes the DESIRE approach and WOCAT methodology for a range of audiences, from local agricultural advisors to scientists and policymakers. Links are provided to manuals and online materials, enabling application of the various tools and methods in similar projects. The book also includes an analysis of the current context of degradation and SLM in the study sites, in addition to analysis of the SLM technologies and approaches trialed in the DESIRE project.</p>	<p>https://www.wocat.net/en/knowledge-base/documentation-analysis/global-regional-books.html</p>	<p>Available in English</p>	<p>Publication</p>
1.3 c		<p>A Proposal for Financing Sustainable Land Use at Scale (INARI) by L. Munden, P. Holmgren and others FAO, 2012</p>	<p>Whether in agriculture, forestry or elsewhere, the challenge with sustainable land use is not so much determining what to do, but rather, how to pay for it and change the incentive structure necessary to achieve a quantum shift in practices on a large scale. Existing investment schemes, both public and private, do not match the practices that drive sustainable land use.</p>	<p>http://www.fao.org/docrep/016/ap076e/ap076e.pdf</p>	<p>Available in English</p>	<p>Publication</p>
1.3 d		<p>LADA Methodology and Results (whole set of tools) by WOCAT, LADA and DESIRE, 2011</p>	<p>LADA (Land Degradation Assessment in Drylands project) is a scientifically-based approach to assessing and mapping land degradation at different spatial scales – small to large – and at various levels – local to global. It was initiated in drylands, but the methods and tools have been developed so as to be widely applicable in other ecosystems and diverse contexts with minimal required adaptation.</p>	<p>http://www.fao.org/nr/lada/index.php?option=com_content&view=article&id=152&Itemid=168&lang=en</p>	<p>Available in English</p>	<p>Publication</p>

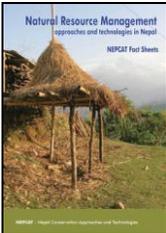


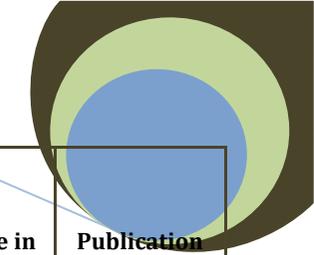
1.3 e		Mapping Land use Systems (LUS) at Global and Regional Scales for LD and SLM Assessment by FAO, 2011	Land use is the single most important driver of land degradation as it focuses on interventions on the land which directly affect its status and impacts on goods and services. To characterize land use in a systematic and harmonized way allows the evaluation of the various aspects of land degradation, particularly when information on related ecosystem characteristics (on which land degradation has a major impact by affecting the good and services provided by each system) and socio-economic attributes of the area (which are often the indirect cause of land degradation) are associated with it.	http://www.fao.org/nr/lada/index.php?option=com_content&view=article&id=152&Itemid=168&lang=en	Available in English and Russian	Publication
1.3 f		Manual for the National Level Assessment of Land degradation (QM) Questionnaire for Mapping Land Degradation and Sustainable Land Management (QM) by WOCAT, LADA and DESIRE, 2011	The WOCAT-LADA-DESIRE mapping tool is based on the original WOCAT mapping questionnaire (WOCAT, 2007). It has been expanded to pay more attention to issues such as biological and water degradation; it also places more emphasis on direct and socio-economic causes of these phenomena, including their impacts on ecosystem services. It evaluates what type of land degradation is actually happening where and why and what is being done about it in terms of sustainable land management (SLM) in the form of a questionnaire. Linking the information obtained through the questionnaire to a geographical information system (GIS) allows the production of maps as well as area calculations on various aspects of land degradation and conservation.	http://www.fao.org/nr/lada/index.php?option=com_content&view=article&id=152&Itemid=168&lang=en	Available in English, French, Spanish, Russian, Arabic and Vietnamese	Publication
1.3 g	N/A	Data Collection Software for Assessment of National Level Land Degradation by FAO, 2011	The offline QM database consists of a single Microsoft Access database and has been designed with the following three specific objectives: Fully autonomous system which does not require any operation in Microsoft Access by a database administrator, but users familiar with the software can directly enter data through Microsoft Access; Import of bulk QM data from Microsoft Excel and export of QM data to GIS software compatible format; Support storage of a single QM database for a single country or for various databases for various countries	http://www.fao.org/nr/lada/index.php?option=com_content&view=article&id=152&Itemid=168&lang=en	Available in English	Website/ Database
1.3 h		LADA Manual for Local Level Assessment Part 1, Planning and methodological approach, Part 2, Field methodology and tools by FAO, 2011	This document is the first part of a two part manual on local level assessment of land degradation and sustainable land management: Part 1 – Planning and Methodological Approach, Analysis and Reporting; Part 2 – Field Methodology and Tools	http://www.fao.org/nr/lada/index.php?option=com_content&view=article&id=152&Itemid=168&lang=en	Available in English, French, Spanish and Chinese	Publication

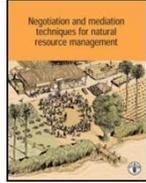


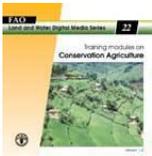
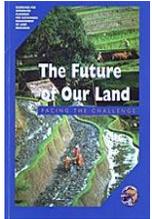
1.3 i		<p>Guidelines for the Identification and Description of Nationally Based Indicators of Land Degradation by FAO, 2011</p>	<p>This guidelines booklet is addressed to the LADA partner countries and, more in general, to the increasing number of countries which are expressing their interest in implementing the LADA approach for mapping Land Degradation. The specific objective is to provide guidelines for the identification, selection and description of nationally based indicators of land degradation.</p>	<p>http://www.fao.org/nr/lada/index.php?option=com_content&view=article&id=152&Itemid=168&lang=en</p>	<p>Available in English</p>	<p>Website/ Database</p>
1.3 j		<p>Sustainable Land Management in Practice by WOCAT and FAO, 2011</p>	<p>The document highlights the main principles of SLM, identifies and analyses best practices for improved productivity, livelihoods and ecosystem services and offers a framework for investment in SLM on the ground. It is illustrated with 47 case studies from 18 countries.</p>	<p>https://www.wocat.net/en/knowledge-base/documentati-on-analysis/global-regional-books.html</p>	<p>Available in English, Spanish and French</p>	<p>Publication</p>
1.3 k		<p>Tajikistan: Pilot Programme for Climate Resilience (PPCR). Sustainable Land Management - Technologies and Approaches by B. Wolfgramm WOCAT, 2011</p>	<p>This publications summarises Sustainable Land Management Technologies and Approaches for Tajikistan. All technologies and approaches can be also accessed through:</p> <ul style="list-style-type: none"> • Database on SLM Approaches: The database on SLM Approaches is newly developed and is online available on this link http://cdewocat.unibe.ch/wocatQA/ • Database on SLM Technologies: The new online database on SLM Technologies is available now for data entry and is online available on this link http://cdewocat.unibe.ch/wocatQT/ 	<p>https://www.wocat.net/en/knowledge-base/documentati-on-analysis/national-books-factsheets.html?category=14</p>	<p>Available in English and Russian</p>	<p>Publication</p>
1.3 l		<p>Sustainable Land Management Technologies and Approaches in Ethiopia By D. Dale WOCAT, 2010</p>	<p>This publications summarises Sustainable Land Management Technologies and Approaches for Ethiopia. All technologies and approaches can be also accessed through:</p> <ul style="list-style-type: none"> • Database on SLM Approaches: The database on SLM Approaches is newly developed and is online available on this link http://cdewocat.unibe.ch/wocatQA/ • Database on SLM Technologies: The new online database on SLM Technologies is available now for data entry and is online available on this link http://cdewocat.unibe.ch/wocatQT/ 	<p>https://www.wocat.net/fileadmin/user_upload/Ethiocat_book.pdf</p>	<p>Available in English</p>	<p>Publication</p>
1.3 m		<p>TerrAfrica: Country Support Tool For Scaling up sustainable land management in sub Saharan Africa by FAO, 2009</p>	<p>This tool aims at providing a methodological tool and guidance to national country teams. It is meant to be a summary of how a country should engage more programmatically in SLM, how to identify, prioritize and formulate a SLM investment framework, and bring together other products/tools from TerrAfrica Platform as well as other relevant tools. This is not meant to be a prescriptive tool, but rather to be used as a checklist to ensure that all critical steps are taken into consideration.</p>	<p>http://knowledgebase.terrafrica.org/ter-documents/ter-view-doc/0/?uid=44755</p>	<p>Available in English and French</p>	<p>Publication</p>

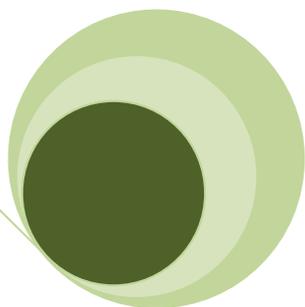
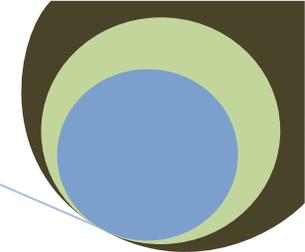


1.3 n		<p>Bangladesh: Selected Natural Resource Management Approaches and Technologies in different agro-ecological zones by S.K. Khisha, J.U. Shoaib WOCAT,2009</p>	<p>The BANCAT experiences are compiled in an electronic database. For ease reference, 16 Technologies and 7 Approaches have been published as fact sheets, in print form and on a CD-ROM, to facilitate sharing with a wider audience in Bangladesh and other countries.</p>	<p>https://www.wocat.net/fileadmin/user_upload/documents/Books/BANCAT_FactSheets2009.pdf</p>	<p>Available in English</p>	<p>Publication /Fact sheets</p>
1.3 o		<p>China: Best Practices for Land Degradation Control in Dryland Areas by J. Zehui WOCAT, 2008</p>	<p>This publications summarises Sustainable Land Management Technologies and Approaches for Tajikistan. All technologies and approaches can be also accessed through:</p> <ul style="list-style-type: none"> • Database on SLM Approaches: The database on SLM Approaches is newly developed and is online available on this link http://cdewocat.unibe.ch/wocatQA/ • Database on SLM Technologies: The new online database on SLM Technologies is available now for data entry and is online available on this link http://cdewocat.unibe.ch/wocatQT/ 	<p>https://www.wocat.net/en/knowledge-base/documentation-analysis/national-books-factsheets.html?category=14</p>	<p>Available in English</p>	<p>Publication /Fact sheets</p>
1.3 p		<p>Natural Resource Management- approaches and technologies in Nepal : NEPCAT Fact Sheets by WOCAT, 2008</p>	<p>In the present publication, thirty technologies and approaches from the Nepal Conservation Approaches and Technologies (NEPCAT) database, documented using the WOCAT tool, are being published as printed fact sheets to facilitate sharing with a wider audience. The fact sheets are designed to support the efforts of rural development, especially in Nepal, and provide impetus and ideas for decision makers, development actors, and land users. They cover adaptations of methods and new options for land use and rehabilitation and growing and processing crops that increase productivity and support income generation. Users are encouraged to print out, copy, and distribute the sheets in any form that facilitates sharing.</p>	<p>https://www.wocat.net/fileadmin/user_upload/documents/Books/Nepcat_Factsheets_2008.pdf</p>	<p>Available in English</p>	<p>Publication / Fact sheets / CD- ROM</p>
1.3 q		<p>The Near East Drought Planning Manual : Guidelines for Drought Mitigation and Preparedness Planning by FAO, 2008</p>	<p>Drought planning involves identifying objectives and strategies to effectively and equitably prepare for, respond to, and recover from the effects of drought, as well as the development of a plan to implement the strategies.</p>	<p>http://drought.unl.edu/portals/0/docs/NearEastDroughtPlanningManual.pdf</p>	<p>Available in English</p>	<p>Publication</p>



1.3 r		<p>Where Land is Greener by WOCAT, 2007</p>	<p>The WOCAT book 'where the land is greener - case studies and analysis of soil and water conservation initiatives worldwide'; contains an extensive range of case studies from around the world: 42 soil and water conservation technologies and 28 approaches in total; provides a detailed analysis of the case studies under 'technologies' and 'approaches' and policy points for decision makers and donors</p>	<p>https://www.wocat.net/en/knowledge-base/documentation-analysis/global-regional-books.html</p>	Available in English	Publication
1.3 s		<p>Participatory Rapid Diagnosis and Action Planning for Irrigated Agricultural Systems (PRDA) by M. L. van der Schans and P. Lempérière FAO, 2006</p>	<p>This manual has been developed within the framework of the project «Amélioration des Performances des Périmètres Irrigués» (Improving Irrigation Performance in Africa) funded by the French Ministry of Foreign Affairs (MAE). This manual which offers a participatory and practical methodology based on practices, experience and thinking of many farmers and irrigation professionals in Ethiopia and Kenya.</p>	<p>ftp://ftp.fao.org/docrep/fao/009/a0489e/a0489e00.pdf</p>	Available in English	Publication
1.3 t		<p>Stakeholder-oriented valuation to support water resources management processes Confronting concepts with local practice by: L. Hermans, D. Renault and others FAO, 2005</p>	<p>This report confronts concepts from the literature on water valuation with practical experiences from three local cases where an effort was made to embed existing valuation tools and methods in ongoing water resources management processes. It uses the lessons from this exploration to provide a first outline for a stakeholder-oriented water valuation process.</p>	<p>ftp://ftp.fao.org/agl/wr30_eng.pdf</p>	Available in English	Publication
1.3 u		<p>Participatory and Negotiated Territorial Development - an approach to rural development by FAO, 2005</p>	<p>This note presents an update on the work done on participatory and negotiated territorial development (PNTD) and modes of intervention in areas with competitive and multiple uses of land and natural resources, drawing on the experiences of the Rural Development Division in different geographical settings and on various subjects.</p>	<p>http://www.fao.org/sd/dim_pe2/docs/pe2_050402d1_en.pdf</p>	Available in English, French, Spanish and Portuguese	Publication
1.3 w		<p>Negotiation and mediation techniques for natural resource management by A. Engel, B. Korf FAO, 2005</p>	<p>This guide looks at how negotiation and consensus building can be used to manage conflict and build collaboration. The guide provides practical, step-by-step advice on working with many different stakeholders to reach mutually satisfactory agreements in collaborative natural resources management. As such, it is concerned with people's livelihoods - their means of living, and the influences that affect the ways in which they live and work.</p>	<p>http://www.fao.org/docrep/008/a0032e/a0032e00.htm</p>	Available in English, Spanish and French	Publication

1.3 x		Conservation Agriculture training modules (18) by FAO, 2002	This CD-ROM contains detailed information and literature about Conservation Agriculture to improve the knowledge base of those interested in this concept of sustainable agriculture. It will provide technical staff as well as policy- and decision- makers with information and arguments that will help to support, promote and introduce Conservation Agriculture.	http://www.fao.org/nr/land/pubs/digital-media-series/en/	Available in English	CD- ROM
1.3 y		The Future of Our Land / Futuro de Nuestra Tierra / Le Futur de Nos Terres Facing the Challenge Guidelines for Integrated Planning for Sustainable Management of Land Resources by FAO, UNEP, 1999	This document is the last in a series of three publications which introduce these new concepts and propose an 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 government in creating the conditions within which rural people can use their land resources productively and sustainably	http://www.fao.org/docrep/004/x3810e/x3810e00.htm	Available in English and French	Publication
1.3 z		Guidelines for land-use planning/ Directives pour la Planification de l'Utilisation des Terres by FAO, 1993 reprinted 1996	Guidelines for land-use planning is primarily intended for people engaged in making land-use plans, or those training to do so, including staff of local government, national agencies and international projects in developing countries. The guidelines also provide an overview of land-use planning for administrators and decision-makers.	http://www.fao.org/docrep/T0715E/T0715E00.htm	Available in English and French	Publication
1.3 aa		Planning for sustainable use of land resources Towards a new approach by FAO, 1995	An integrated approach to planning the use and management of land resources entails the involvement of all stakeholders in the process of decision making on the future of the land, and the identification and evaluation of all biophysical and socio-economic attributes of land units. This requires the identification and establishment of a use or non-use of each land unit that is technically appropriate, economically viable, socially acceptable and environmentally non-degrading.	http://www.fao.org/docrep/V8047E/V8047E00.htm	Available in English	Publication
1.3 ab		FESLM: An international framework for evaluating sustainable land management by A.J. Smyth and J. Dumanski FAO, 1993	This report proposes a strategic framework approach for evaluating sustainable land management. This approach is advocated because the concept of what constitutes sustainability cannot be rigid; it needs to be capable of change from area to area and over time. As solutions become more precise they will have to be increasingly location and time specific.	http://www.fao.org/docrep/T1079E/t1079e00.htm	Available in English	Publication

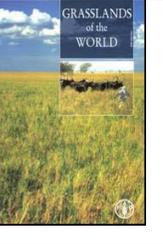
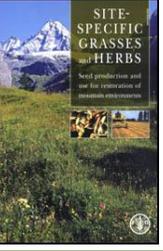


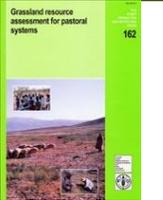
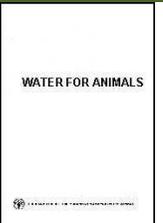
2. Rangeland, Grassland, Trees and Forest

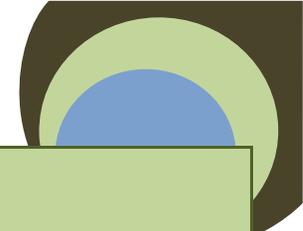
2.1 Grassland and Rangeland Management

2.2 Trees and Forest Management

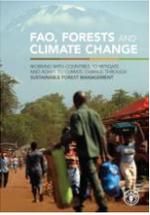
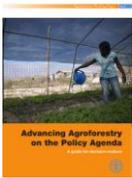
2.1 Grassland and Rangeland Management

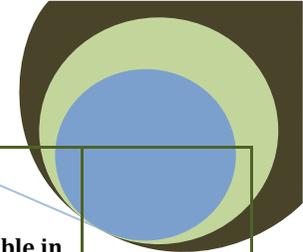
2.1 a		<p>An international consultation on integrated crop-livestock systems for development by FAO,2011</p>	<p>A new kind of sustainable intensified agriculture based on CA is emerging and new production systems often also include trees grown as hedge rows to control grazing and provide habitats and fuel, or include such as at the community or trees as strip crops with annual crops rotated in adjacent strips. Trees in crop-livestock systems often add significant synergistic values. Innovations that can strengthen the multi-dimensional role of integrated crop-livestock-trees systems.</p>	<p>http://www.fao.org/agriculture/crops/publications/detail/en/item/86485/jcode/2/?no_cache=1</p>	Available in English	Publication
2.1 b		<p>Grasslands of the world by J.M. Suttie, S.G. Reynolds and C. Batello FAO,2005</p>	<p>This book brings together information on the contrasting characteristics, condition, present use and problems of the world's main natural grasslands. Since grassland is commercialized through the grazing animal, particular attention is paid to the livestock production systems associated with each main type. Grazing resources are more than simply edible herbage: many other factors have to be taken into account, notably water in all areas, and shelter in winter-cold climates.</p>	<p>http://www.fao.org/docrep/008/y8344e/y8344e00.htm</p>	Available in English	Publication
2.1 c		<p>Grassland species profiles by FAO,2005</p>	<p>This CD-ROM contains detailed descriptions of more than 600 grassland species from various agro-ecological zones. The Grassland Index database can be accessed by species common name, Latin name or genus. A linked Picture Gallery contains many photos. There is also a considerable bibliography and notes about the authors of each species profile.</p>	<p>http://www.fao.org/ag/AGP/agpc/doc/Gbase/Default.htm</p>	Available in English	Website/Database/CD-ROM
2.1 d		<p>Site-specific grasses and herbs. Seed production and use for restoration of mountain environments by B. Krautzer FAO,2004</p>	<p>This publication describes 25 different grasses and herbs occurring naturally in the middle and high Alpine zones suitable for restoration. Primarily for nature protection rather than merely for forage production, sit-specific grasses and herbs have gained significance in recent years. Large building projects (such as ski lifts, ski runs, snow-making facilities, reservoir power stations, roads and tourist infrastructure) must provide rapid surface protection, restoration stability and protection of biomes.</p>	<p>http://www.fao.org/docrep/007/y5576e/y5576e00.htm</p>	Available in English	Publication

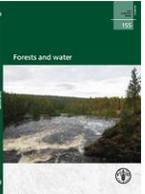
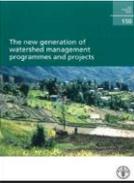
2.1 e		<p>Cactus (Opuntia spp.) as Forage by C. Mondragón-Jacobo FAO, 2001</p>	<p>The utilization by man of the cactus Opuntia was recorded in Mexico in pre-Hispanic times, where it played a major role in the agricultural economy of the Aztec empire; with maize (Zea mays) and agave (Agave spp.), opuntias are the oldest cultivated plants in Mexico. There are three crucial steps in the transition from the use of wild plants to planned cultivation, namely:* the gathering of wild plants;* cultivation of (wild) plants near human settlements, and* cultivation of varieties, altered by selective propagation methods, in intensive farming for the purpose of marketing.</p>	<p>http://www.fao.org/docrep/005/Y2808E/Y2808E00.HTM</p>	<p>Available in English and Spanish</p>	<p>Publication</p>
2.1 f		<p>Grassland resource assessment for pastoral systems by Peter S. Harris FAO, 2000</p>	<p>This publication deals with the study of extensive grazing lands and forage production systems and the assessment of grassland conditions and productivity. Although a complex subject, it is a very necessary one for the correct management of grazing lands and the design and execution of projects to improve sustainable extensive livestock production and enhance the living standards of traditional herders. Modelling is emphasized as a powerful tool for dealing with the complexities of the pastoral system.</p>	<p>http://www.fao.org/docrep/003/X9137E/X9137E00.HTM</p>	<p>Available in English</p>	<p>Publication</p>
2.1 g		<p>Sustainable animal production / Production animale durable / Producción animal sostenible by FAO, 1992/93</p>	<p>Farming is a complex, multicomponent, interactive process that is dependent on land, animal, human and water resources as well as capital investment. Throughout the developing world it is practiced in many different ways and environments and with differing degrees of intensity and biological efficiency. Animals play an integral role in many of these farming systems. Unlike the specialized and intensified livestock systems in the developed world, animal production in developing countries utilizes the full range of animal outputs, many of which are returned as essential inputs to the farm production system.</p>	<p>http://www.fao.org/docrep/u7600t/u7600t00.htm</p>	<p>Available in English, French and Spanish</p>	<p>Publication /Journal</p>
2.1 h		<p>Water for Animals, by FAO, 1986</p>	<p>Inadequate stock water development in range areas not only contributes to an unstable livestock industry and serious livestock losses, but prevents profitable utilization of badly needed grazing areas and encourages destructive overgrazing in the vicinity of existing water supplies. The prime objective in developing a rangeland water supply may therefore be summarized as the provision of adequate clean water to enable an even utilization of the forage available without affecting the fragile equilibrium of the rangeland ecosystem.</p>	<p>http://www.fao.org/docrep/R7488E/R7488E00.htm</p>	<p>Available in English</p>	<p>Publication</p>

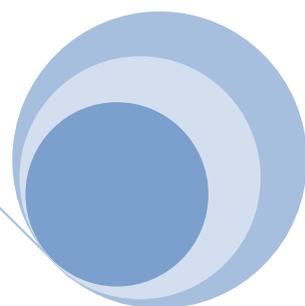
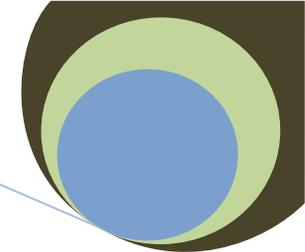


2.2 Trees and Forest Management

2.2 a		<p>FAO, Forests and Climate Change Working with countries to mitigate and adapt to climate change through sustainable forest management by FAO, 2013</p>	<p>This publication summarizes the work that FAO is undertaking, with its partners, to assist countries to mitigate and adapt to climate change as it relates to forests, trees and the people who depend on them. It is organized in four of the five main areas of FAO's integrated approach to Sustainable Forest Management: Monitoring and assessment; Management planning and practices, Policy and governance, Forest products, services and industry</p>	<p>http://www.fao.org/docrep/017/i2906e/i2906e00.pdf</p>	<p>Available in English, French and Spanish</p>	<p>Publication</p>
2.2 b		<p>Advancing Agroforestry on the Policy Agenda A new guideline for decision-makers by G. Buttoud FAO, 2013</p>	<p>In a new guide aimed at decision-makers, key policy advisors, NGOs and governmental institutions, FAO shows how agroforestry can be integrated into national strategies and how policies can be adjusted to specific conditions. The policy guide provides examples of best practices and success stories, as well as lessons learned from challenges and failures.</p>	<p>http://www.fao.org/docrep/017/i3182e/i3182e00.pdf</p>	<p>Available in English</p>	<p>Publication</p>
2.2 c		<p>Forest Management and Climate Change: stakeholder perceptions Forests and Climate Change by FAO, 2012</p>	<p>This document is part of the publications series produced by the Forest and Climate Change Programme of FAO. The programme seeks to provide timely information and tools to a wide range of stakeholders, with the ultimate objective of assisting countries' efforts to mitigate and adapt to climate change through actions consistent with sustainable forest management.</p>	<p>http://www.fao.org/docrep/015/md510e/md510e00.pdf</p>	<p>Available in English</p>	<p>Publication</p>
2.2 d		<p>Forests and energy Key issues by FAO, 2008</p>	<p>Forest and energy are at the centre of the global debate on climate change. Soaring energy consumption and prices, and increasing greenhouse gas emission, represent a major opportunity and challenge for the forestry sector to find a new role in energy supply, climate change and sustainable development. This publication will be useful to both specialized and general audiences interested in learning more about the role of forests in energy production.</p>	<p>http://www.fao.org/docrep/010/i0139e/i0139e00.htm</p>	<p>Available in English, Chinese, Arabic, Spanish, French and Russian</p>	<p>Publication</p>



2.2 e		<p>Forests and water / Los bosques y el agua/ Les forêts et l'eau A thematic study prepared in the framework of the Global Forest Resources Assessment 2005 by L.S. Hamilton FAO, 2008</p>	<p>This study deals with the extent to which forests cover land surface and with their importance to the hydrological cycle . It provides information for much-needed efforts to maintain and restore water-related ecosystems – identified by the United Nations Commission for Europe as a global priority. and stream flow, through interception of precipitation, and evaporation and transpiration from foliage.</p>	<p>http://www.fao.org/docrep/011/i0410e/i0410e00.htm</p>	<p>Available in English, Spanish and French</p>	<p>Publication</p>
2.2 f		<p>The new generation of watershed management programmes and projects. A resource book for practitioners and local decision-makers based on the findings and recommendations of a FAO review by FAO, 2006</p>	<p>On the occasion of the International Year of Mountains-2002, FAO and its partners undertook a large-scale assessment and global review of the current status and future trends of integrated and participatory watershed management. The overall objectives were to promote the exchange and dissemination of experiences in implementing watershed management projects in the decade from 1990 to 2000 and to identify the vision for a new generation of watershed management programmes and projects. This resource book represents a summary and critical analysis of the rich discussions and vast materials that emerged during the review, as well as the review's findings and recommendations.</p>	<p>http://www.fao.org/docrep/009/a0644e/a0644e00.htm</p>	<p>Available in English, French and Spanish</p>	<p>Publication</p>
2.2 g		<p>Adaptation of forest ecosystems and the forest sector to climate change by C. Robledo FAO, 2005</p>	<p>This document summarizes information that facilitates the definition and formulation of policies and projects aimed at decreasing vulnerability to climate change, with special emphasis on forest ecosystems and the social groups that depend on them. It emphasizes that adaptation to climate change must be part of a country's development process, and that every adaptation action should be framed within the national development policies.</p>	<p>http://www.fao.org/docrep/008/j6525e/j6525e00.htm</p>	<p>Available in English</p>	<p>Publication</p>
2.2 h		<p>Trees outside forests Towards a better awareness by FAO, 2002</p>	<p>Rural people around the world are of one mind when it comes to the durability, availability and use of the goods and services provided by tree resources, whether inside or outside the forest. These men and women make no distinction between field trees and forest resources, perceiving the clear and close link between the two, and their interaction. Policy-makers and planners, however, tend to view these resources as different entities.</p>	<p>http://www.fao.org/docrep/005/y2328e/y2328e00.htm</p>	<p>Available in English</p>	<p>Publication</p>



3 Water

3.1 Water Quality

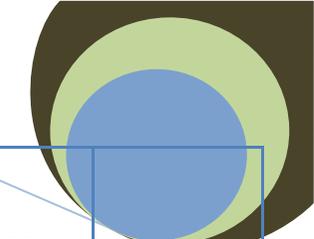
3.2 Water Harvesting

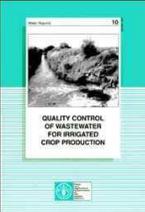
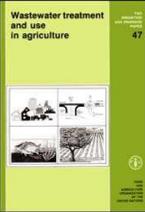
3.3 Irrigation Management

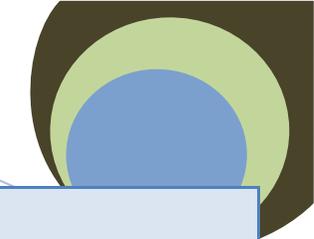
3.4 Crops and Water Management

3.1 Water Quality

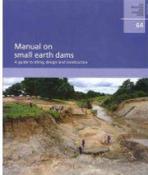
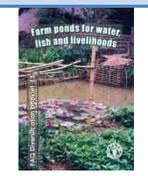
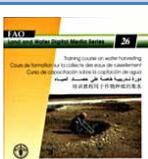
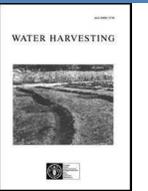
3.1 a		<p>Agriculture and water quality interaction - a global review. SOLAW Background Thematic Report - TR08 by J. Mateo-Sagasta, J. Burke FAO, 2011</p>	<p>Water quality and agriculture interactions are many and complex. The development of large irrigation schemes has been an important contributor to global food security, particularly in arid areas, but it has also been associated with land and water salinity problems. Both, expansion and intensification of agriculture have led to an increasing use of fertilizers and pesticides that, when not well managed, has degraded the water quality of rivers, lakes and marine water bodies.</p>	<p>http://www.fao.org/fileadmin/templates/soilaw/files/thematic_reports/TR_08.pdf</p>	<p>Available in English</p>	<p>Publication</p>
3.1 b		<p>The wealth of waste: The economics of wastewater use in agriculture by J. Winpenny FAO, 2010</p>	<p>The use of reclaimed water in agriculture is an option that is increasingly being investigated and taken up in regions with water scarcity, growing urban populations and growing demand for irrigation water. This report presents an economic framework for the assessment of the use of reclaimed water in agriculture, as part of a comprehensive planning process in water resource allocation strategies to provide for a more economically efficient and sustainable water utilization.</p>	<p>http://www.fao.org/docrep/012/i1629e/i1629e00.htm</p>	<p>Available in English and Spanish</p>	<p>Publication</p>
3.1 c		<p>Experiencia en practicas de manejo de aguas servidas para la producción agrícola a pequeña escala/ Experiences in wastewater management practices for agricultural production on small scale by J. Garcia, J.V. Wambeke, FAO, 2010</p>	<p>This document is a compilation of experiences of practices in wastewater management for small-scale agricultural production in Latin America, with the aim that can be replicated in larger numbers and locations. In particular, the emphasis is on the systematization of low-cost techniques for treating contaminated water and addresses the proper management of domestic wastewater, circumstance directly related to the problem of wastewater irrigation.</p>	<p>http://www.rlc.fao.org/uploads/media/aguasserv.pdf</p>	<p>Available in Spanish</p>	<p>Publication</p>
3.1 d		<p>Guidelines for the safe use of wastewater, excreta and greywater Volume 2: Wastewater use in agriculture by WHO/FAO/UNEP, 2006</p>	<p>Volume 2 explains requirements to promote safe use concepts and practices, including health-based targets and minimum procedures. It also covers a substantive revision of approaches to ensuring the microbial safety of wastewater used in agriculture. It distinguishes three vulnerable groups: agricultural workers, members of communities where wastewater-fed agriculture is practiced and consumers. It introduces health impact assessment of new wastewater projects.</p>	<p>http://www.who.int/water_sanitation_health/wastewater/gsuww/en/index.html</p>	<p>Available in English</p>	<p>Publication</p>



3.1 e		<p>Quality control of wastewater for irrigated crop production by D.W. Westcot FAO, 1997</p>	<p>This document reviews the availability of water quality standards and describes an interim approach to standards that emphasizes promotion of safe production areas for high-risk crops such as vegetables. The approach is to assess the quality of water actually being used for irrigation against a known standard.</p>	<p>http://www.fao.org/docrep/W5367E/W5367E00.htm</p>	Available in English	Publication
3.1 f		<p>Water quality for agriculture by R.S. Ayers and D.W. Westcot Reprinted 1989, 1994</p>	<p>Field guide for evaluating the suitability of water for irrigation. Included are suggestions for obtaining maximum utilization of an existing or potential water supply. Guideline values given identify potential problem water based on possible restrictions in use related to 1) salinity, 2) rate of water infiltration into the soil, 3) a specific ion toxicity, or 4) to some other miscellaneous effects.</p>	<p>http://www.fao.org/D/OCREP/003/T0234E/T0234E00.HTM</p>	Available in English	Publication
3.1 g		<p>Wastewater treatment and use in agriculture by M.B. Pescod FAO, 1992</p>	<p>A guide to the use of treated effluent for irrigation and aquaculture. This document presents the latest views on health risks, environmental hazards and crop production potential associated with the use of treated wastewater. It draws on the WHO Guidelines for health protection measures considered appropriate under various conditions.</p>	<p>http://www.fao.org/docrep/T0551E/t0551e00.htm</p>	Available in English	Publication

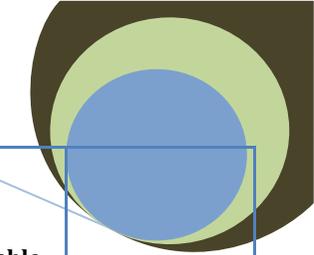


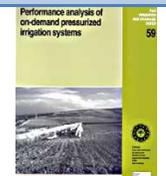
3.2 Water Harvesting

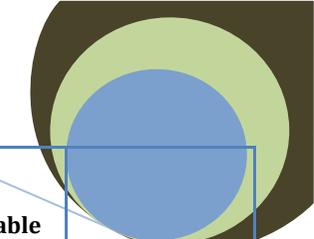
3.2 a		<p>Manual on Small Earth Dams. A Guide to Siting, Design and Construction by T. Stephens FAO, 2010</p>	<p>This publication aims to fill a void of practical guidelines for the construction of small earth dams. It presents readers with sound, reliable and practical source material to improve dam sitting and design capacity in rural areas, to introduce a beneficiary and gender sensitive approach and to enhance safety and competence in construction.</p>	<p>http://www.fao.org/docrep/012/i1531e/i1531e00.htm</p>	Available in English	Publication
3.2 b		<p>Farm Ponds for Water, Fish and Livelihoods by James W. Miller FAO, 2009</p>	<p>This booklet provides practical information on multiple-use smallholder farm ponds. Its aim is to promote ponds as a diversification enterprise. It describes what should be considered to make pond-based farm enterprises successful and sustainable as a business. It suggests ways by which smallholder farmers can participate in the market economy through better market access and outlines strategies to attract the private sector to do business with smallholders.</p>	<p>http://www.fao.org/docrep/011/i0528e/i0528e00.htm</p>	Available in English	Publication
3.2 c		<p>Training course on water harvesting training modules (26) by FAO, 2003</p>	<p>This CD ROM provides training modules and other relevant material on water harvesting focusing on 'runoff farming systems' for improved production of crops, trees and rangeland species in drought-prone areas.</p>	<p>http://www.fao.org/nr/land/pubs/digital-media-series/en/</p>	Available in English, Arabic, Chinese, French and	CD- ROM
3.2 d		<p>Water Harvesting in Western and Central Africa Proceedings of a regional workshop held in Niamey, October 1999 by FAO, 2001</p>	<p>This book describes the technical, socio-economic and institutional context of water harvesting in Western and Central Africa. The authors testify to the variety of indigenous and adapted technologies that are used in the region, and look at their history, their economic and environmental impact and their social acceptability.</p>	<p>ftp://ftp.fao.org/agl/agl/w/docs/waterharvraf.pdf</p>	Available in English and French	Publication
3.2 e		<p>Water harvesting - A Manual for the Design and Construction of Water Harvesting Schemes for Plant Production by W. Critchley, K. Siegert & C. Chapman</p>	<p>This manual has been written with the intention of providing technicians, extension workers, rural development specialists and planners with practical guidelines on the implementation of water harvesting schemes. The focus of the manual is on simple, field scale systems for improved production of crops, trees and rangeland species in drought prone areas.</p>	<p>http://www.fao.org/docrep/U3160E/U3160E0.htm</p>	Available in English	Publication

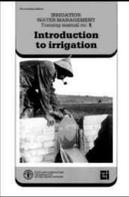
3.3 Irrigation Management

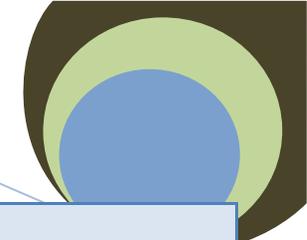
3.3 a		<p>Mapping systems and Services for Multiple Uses (MASSMUS) by D. Renault, T. Facon and R. Wahaj FAO, 2010</p>	<p>The MASSMUS module is developed in the same way as MASSCOTE, with a stepwise progressive process starting with a Rapid Appraisal Procedure (RAP), and then proceeds with further steps on Capacity, Water balance, Cost and move towards the development of a vision and corresponding interventions to modernize the management set up and operation techniques.</p>	<p>http://www.fao.org/nr/water/docs/MASSMUS-BHH-Report-17Dec09web.pdf</p>	Available in English	Publication
3.3 b		<p>Scoping agriculture - wetland interactions Towards a sustainable multiple-response strategy by A. Wood and G.E. van Halsema FAO, 2008</p>	<p>This report explores the nature of Agriculture-wetland interactions (AWIs) through the application of the drivers, pressures, state changes, impacts and responses (DPSIR) framework to 90 cases drawn from around the world. The analysis is set within the context of a literature review and a conceptualization of AWIs.</p>	<p>http://www.fao.org/docrep/011/i0314e/i0314e00.htm</p>	Available in English	Publication
3.3 c		<p>Irrigation Management Transfer Worldwide efforts and results by FAO, 2007</p>	<p>The present water report is the final product emanating from efforts by FAO, IWMI and others to document and understand the implications of the irrigation sector embarking on a wide reform process. It is intended to be a knowledge synthesis document that captures the global experiences emerging from a wide-reaching process targeting the reform of the irrigation sector. This study indicates that IMT is an approach for irrigation sector reform with the potential to improve the sustainability of irrigation systems.</p>	<p>http://www.fao.org/docrep/010/a1520e/a1520e00.htm</p>	Available in English and Spanish	Publication
3.3 d		<p>Materials for subsurface land drainage systems by L.C.P.M. Stuyt, W. Dierickx, J. M. Beltan FAO, 2007</p>	<p>This publication presents practical guidelines to assess the need for envelopes and to select appropriate materials (i.e. pipes and envelopes) for the proper and lasting performance of subsurface drainage systems. In addition, it contains guidelines for adequate installation and maintenance of drainage materials as well as the required specifications and standards of such materials.</p>	<p>http://www.fao.org/docrep/010/ah861e/ah861e00.htm</p>	Available in English	Publication
3.3 e		<p>Guidelines and computer programs for the planning and design of land drainage systems by W.H. van der Molen, J. Martínez Beltrán and W.J. Ochs FAO, 2007</p>	<p>The aim of this paper is to facilitate the planning and design of land drainage systems for sound land and water management for engineers and other professionals. The text of this publication provides guidelines for the appropriate identification of drainage problems, for the planning and design of field drainage systems (surface and sub-surface) and the main drainage and disposal systems.</p>	<p>ftp://ftp.fao.org/docrep/fao/010/a0975e/a0975e.pdf</p>	Available in English	Publication



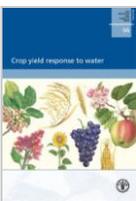
3.3 f		<p>Modernizing irrigation management - the MASSCOTE approach Mapping System and Services for Canal Operation Techniques by D. Renault, T. Facon and R. Wahaj FAO, 2007</p>	<p>This publication describes the MASSCOTE methodology illustrated by several applications in Asia. MASSCOTE is a comprehensive methodology for analyzing the modernization of canal operation. The aim is to enable experts to work together with users in determining improved processes for cost-effective service-oriented management. It is based on previous tools and approaches widely used in Asia by FAO in its modernization training programme (rapid appraisal procedures and benchmarking).</p>	<p>http://www.fao.org/docrep/010/a1114e/a1114e00.htm</p>	<p>Available in English</p>	<p>Publication</p>
3.3 g		<p>Performance Analysis of On-demand Pressurized Irrigation Systems by N. Lamaddalena and J.A. Sagardoy FAO, 2007</p>	<p>The present work was started with the idea of developing such tool based in the great capacity of computers to generate randomly many situations which could be analyzed statistically and provide clear indications of where the network was not functioning satisfactorily.</p>	<p>http://www.fao.org/docrep/010/ah860e/ah860e00.htm</p>	<p>Available in English and French</p>	<p>Publication</p>
3.3 h		<p>Demand for products of irrigated agriculture in sub-Saharan Africa by P.J. Riddell and M. Westlake and J. Burke FAO, 2006</p>	<p>If irrigated production is to make a significant contribution to food security and economic growth in Sub Saharan Africa, it will have to be re-structured across the region as a whole. This is the main conclusion of a study undertaken by FAO to analyze the drivers of demand for irrigated production in Sub-Saharan Africa (SSA). Steeply rising commercial food import bills for staple crops across SSA are indicative of the level demand that is not being met from domestic production.</p>	<p>http://www.fao.org/docrep/009/a0736e/a0736e00.htm</p>	<p>Available in English</p>	<p>Publication</p>
3.3 i		<p>Agricultural Drainage Water Management in Arid and Semi-Arid Areas by K. K. Tanji and N. C. Kielen FAO, Reprinted 2003</p>	<p>This publication provides planners, decision-makers and engineers with guidelines to sustain irrigated agriculture and at the same time to protect water resources from the negative impacts of agricultural drainage water disposal. On the basis of case studies it distinguishes four broad groups of drainage water management options, e.g. water conservation, drainage water reuse, drainage water disposal.</p>	<p>http://www.fao.org/docrep/005/y4263e/y4263e00.htm</p>	<p>Available in English</p>	<p>Publication</p>
3.3 j		<p>Irrigation Guidelines by FAO, 2001</p>	<p>The objective of this CD-ROM is to present a collection of irrigation guidelines for small- to medium-scale irrigation schemes (up to 1000 ha). The aim is not solely to present existing irrigation guidelines on a CD-ROM but to use the interactive potential of this medium to assist the user in extracting information and data from the guidelines for specific purposes.</p>	<p>http://www.fao.org/catalog/search/department.asp?aries_id=101697</p>	<p>Available in English</p>	<p>CD ROM</p>

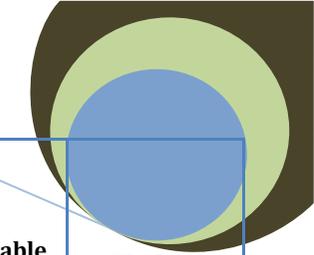


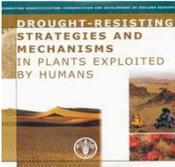
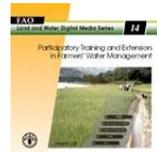
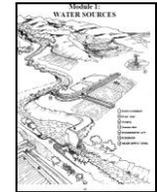
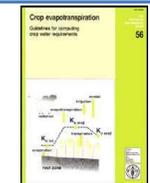
3.3 k		<p>Water lifting devices / Les machines élévatoires by P.L. Franken FAO, 1986</p>	<p>The primary purpose of this paper is to provide a basis for comparing and choosing between all present and (near) future options for lifting irrigation water on small and medium sized is also hoped that this paper will be useful to those seeking techniques for lifting water for purposes other than irrigation.</p>	<p>http://www.fao.org/docrep/010/ah810e/ah810e00.htm</p>	<p>Available in English and French</p>	<p>Publication</p>
3.3 l		<p>Irrigation Water Management: Training Manual No. 1 - Introduction to Irrigation by FAO, 1985</p>	<p>Introduction to Irrigation is the first in a series of training manuals on irrigation. As the title suggests, the manual contains an introductory discussion of irrigation topics that will be dealt with in greater detail in the subsequent elements of the series: it brings together explanatory notes on concepts, terms, methods and calculations that are basic to the discussion of the subject matter. In doing so this manual may serve as an easy reference in the study of irrigation.</p>	<p>http://www.fao.org/docrep/R4082E/R4082E00.htm</p>	<p>Available in English</p>	<p>Publication</p>
3.3 m		<p>Small Hydraulic Structures: FAO Irrigation and Drainage by B. Kraatz, and K. Mahajan FAO and International Commission on Irrigation and Drainage, 1982</p>	<p>The scope of the Handbook is confined as the title suggests to small structures used at the farm level in fields, and in networks with small discharges at the intakes, such as from small surface or ground water resources. Such structures account for more than 70 per cent of all the hydraulic structures installed in many irrigation networks.</p>	<p>ftp://ftp.fao.org/agl/agl/docs/ido26_2.pdf</p>	<p>Available in English</p>	<p>Publication</p>

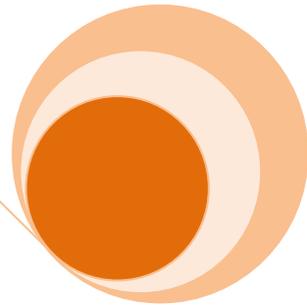
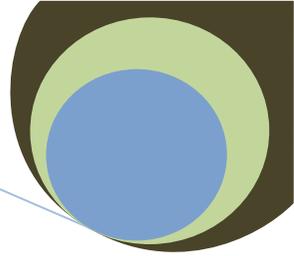


3.4 Crops and Water Management

3.4 a		<p>A Trainer's Manual for Community Managed Water Supplies in Kenya by FAO, UNICEF and Oxfam GB, 2012</p>	<p>The Manual is focused on community managed water supplies. In the past there has been tremendous effort to incorporate sanitation and hygiene elements within community water projects. After consultations with stakeholders it was felt that there is adequate documentation on hygiene and sanitation training and therefore facilitators are referred to recognised materials on CHAST/PHAST/CLTS training to cover these topics.</p>	<p>http://www.disaster-riskreduction.net/fileadmin/user_upload/drought/docs/TrainersManual-CommunityManagedWaterSupplies-Kenya.pdf</p>	Available in English	Publication
3.4 b		<p>Crop yield response to water by P. Steduto, T. C. Hsiao, E. F. and D. Raes FAO, 2012</p>	<p>These tools provide the means to sharpen assessment and management capacities required to: compare the result of several water allocations plans; improve soil-moisture control-practices under rainfed conditions; optimize irrigation scheduling; sustainably intensify crop production; close the yield and water-productivity gaps; quantify the impact of climate variability and change on cropping systems; enhance strategies for increased water productivity and water savings; minimize the negative impact on the environment caused by agriculture.</p>	<p>http://www.fao.org/docrep/016/i2800e/i2800e00.htm</p>	Available in English	Publication
3.4 c		<p>Conservation Agriculture and Sustainable Crop Intensification in Karatu District, Tanzania by FAO, 2011</p>	<p>This report is about the Conservation Agriculture (CA) for Sustainable Agriculture and Rural Development (CA-SARD) project in Tanzania funded by the German Government and implemented by FAO and the Ministry of Agriculture of the United Republic of Tanzania. The publication describes the experiences of introducing CA as a concept for sustainable crop production intensification in farming communities of Karatu District, Arusha Province, Tanzania.</p>	<p>http://www.fao.org/docrep/015/i2643e/i2643e00.pdf</p>	Available in English	Publication
3.4 d		<p>Natural Resource Assessment for Crop and Land Suitability: An application for selected bioenergy crops in Southern Africa region by FAO, 2011</p>	<p>The pilot regional assessment carried out for Southern Africa and described in this publication was designed to help evaluate the crop and land suitability of bioenergy crops which are also food crops, namely: cassava, sugarcane, sweet sorghum, sunflower and oil palm under rainfed production conditions.</p>	<p>http://www.fao.org/agriculture/crops/publications/detail/en/item/141489/iconde/?no_cache=1</p>	Available in English	Publication
3.4 e		<p>Manual for Professionals in the Water Sector in Egypt, Syria, Jordan and Yemen - Training Programme Manual by FAO, 2008</p>	<p>The purpose of this manual is to provide you with information and hands-on experience on: How to design a project; How to prepare a concept note; How to prepare a project proposal; How to manage a project. This Manual is not about fundraising or giving you suggestions where you can apply for funding.</p>	<p>http://www.fao.org/docrep/011/i0353e/i0353e00.htm</p>	Available in English	Publication



3.4 f		<p>Drought-Resisting Strategies and Mechanisms in Plants Exploited by Humans by FAO, 2003</p>	<p>This Cd-Rom contains information related to biochemical, molecular, physiological and structural strategies of a selected number of plants to respond to drought. A description of some plants exploited by humans, as well as an updated bibliography including a selection of full articles, completes the CD-Rom. The CD-Rom is addressed to young scientists and plant breeders dealing with research and development of drought resisting plants to meet the challenge of increasing production in dryland ecosystems.</p>	<p>http://www.fao.org/ag/AGP/AGPC/doc/Newpub/drought_cd/drought_info.htm?aries_id=103862</p>	Available in English	CD- ROM
3.4 g		<p>Participatory Training and Extension in Farmers' Water Management training modules (14) by FAO, 2003</p>	<p>This CD-ROM provides guidelines, procedures and relevant material for the development of a participatory training and extension programme for technical staff, extension workers and other stakeholders, to assist farmers to take charge of water management at field and scheme level and adopt, in a sustainable manner appropriate water technologies. The programme is particular relevant to irrigation management transfer</p>	<p>http://www.fao.org/nr/land/pubs/digital-media-series/en/</p>	Available in English	CD- ROM
3.4 h		<p>Farmers' Training Manual Participatory Training and Extension in Farmer's Water Management Module 1 Water Sources, Module 2 Farmers' Irrigation System Improvement, Module 3 Field Water Management, Module 4 Drainage, Flood and Salinity Control, Module 5 Water Users Association by FAO, 2001</p>	<p>This training manual provides a detailed procedure for field staff to implement a series of training sessions for farmers and water users associations. The manual is subdivided into: Part A: Farmers Seasonal Planning (704 KB). This includes procedures for participatory planning with farmers to define a water management improvement plan to be implemented in the coming season Part B: Farmers Seasonal Training. This includes procedures to provide guidance and assistance to farmers in the implementation of water control technologies.</p>	<p>ftp://ftp.fao.org/agl/aglw/fwm/Manual_PartA.pdf</p>	Available in English	Publication
3.4 i		<p>Crop evapotranspiration - Guidelines for computing crop water requirements by R.G. Allen, L. S. Pereira, D. Raes and M. Smith FAO, 1998</p>	<p>This publication presents an updated procedure for calculating reference and crop evapotranspiration from meteorological data and crop coefficients. These guidelines are intended to provide guidance to project managers, consultants, irrigation engineers, hydrologists, agronomists, meteorologists and students for the calculation of reference and crop evapotranspiration.</p>	<p>http://www.fao.org/docrep/X0490E/X0490E00.htm</p>	Available in English and Spanish	Publication
3.4 j		<p>The use of saline waters for crop production by J.D. Rhoades, A. Kandiah and A.M. Mashali FAO, 1992</p>	<p>The of these guidelines is to facilitate the safe use of saline waters for crop production, while promoting water conservation and environmental protection. A secondary objective is to create an awareness of the degradation and pollution consequences that result from prevalent irrigation practices and the potential to minimize these problems through the interception, isolation and reuse of drainage water for irrigation employing appropriate strategies and practices.</p>	<p>http://www.fao.org/docrep/T0667E/T0667E00.htm</p>	Available in English	Publication



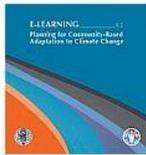
4 Climate Change

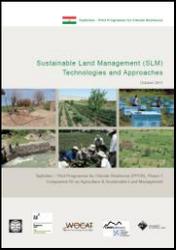
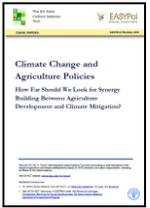
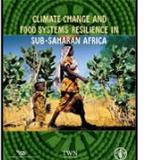
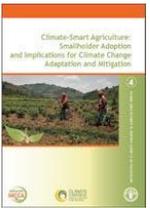
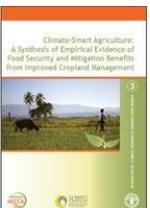
4.1 Climate- Smart Agriculture (Mitigation+Adaptation+Productivity)

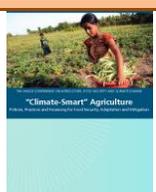
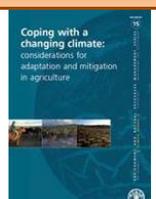
4.2 Climate Change Mitigation in Agriculture (including Soil Carbon Sequestration)

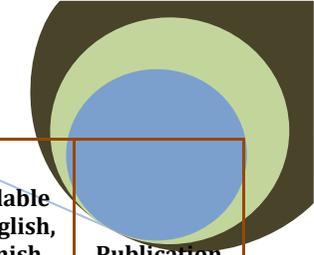
4.1 Climate- Smart Agriculture (Mitigation + Adaptation + Productivity)

4.1 a		Climate Change module (QC) – resilience of SLM technologies by WOCAT, 2012	The WOCAT climate change module was developed to evaluate Sustainable Land Management (SLM) technologies and approaches in the context of climate change. The WOCAT climate change module builds on the basic WOCAT questionnaires SLM Technologies and SLM Approaches and evaluates them in the context of climate change. The main question is how resilient or how vulnerable are technologies to climate change.	https://www.wocat.net/en/methods/module/s/climate-change.html	Available in English	Publication / Questionnaire
4.1 b		Herramientas para la adaptación y mitigación del cambio climático en el sector agropecuario by FAO y GIZ 2012	<p>Este reporte recoge las memorias de un taller regional en que se describen diversas herramientas de FAO, para la adaptación y mitigación del cambio climático. Recoge la evaluación de los usuarios de las herramientas revisadas a través de ejercicios prácticos y casos de estudio locales, señalando sus ventajas y desventajas, siendo un valioso aporte en español al análisis de los productos de la FAO.</p> <p>This proceeding from the regional LAC workshop contains the tools presented and analyzed of FAO for climate change adaptation and mitigation. Also, it includes the evaluation of the revised tools, through practical exercises and local case studies, pointing out their advantages and disadvantages, becoming a valuable contribution for the analysis of FAO products.</p>	http://www.rlc.fao.org/es/publicaciones/acc/	Available in Spanish	Publication
4.1 c		Greening the Economy with Climate- Smart Agriculture by FAO, 2012	This paper considers the intertwined challenges of food security and climate change, potential impacts of climate change on agriculture, and the impact of agriculture on climate. It further develops and illustrates with concrete examples the concepts of increasing resource efficiency and building resilience as guiding principles to address these challenges. It shows how changing practices in the field can drive sustainable economic development.	http://www.fao.org/docrep/016/ap403e/ap403e.pdf	Available in English	Publication
4.1 d		Mainstreaming climate-smart agriculture into a broader landscape approach by FAO, 2012	This paper examines how landscape approaches can be used in developing integrated multipurpose production systems that are environmentally and socially sustainable. The paper assesses the key policy, governance, financial and institutional interventions required, and looks at how a landscape approach can support the adoption of climate-smart agriculture and generate green growth. Finally, the paper considers how synergies between the agriculture and forestry sectors can be improved and how this can be facilitated through REDD+ implementation.	http://www.fao.org/docrep/016/ap402e/ap402e.pdf	Available in English	Publication

4.1 e		<p>Developing a climate-smart agriculture strategy at the country level: lessons from recent experience by FAO, 2012</p>	<p>Since the Global Conference on Climate Change, Food Security and Agriculture held at the Hague in 2010, the concept of climate-smart agriculture (CSA) has gained increasing attention at international and national levels, with several countries initiating related activities. The objective of this paper is to highlight recent experiences with country-level implementation of CSA to identify some key lessons to incorporate in ongoing efforts to expand the use of the approach in developing countries.</p>	<p>http://www.fao.org/docrep/016/ap401e/ap401e.pdf</p>	<p>Available in English</p>	<p>Publication</p>
4.1 f		<p>Incorporating climate change considerations into agricultural investment programmes A guidance document by FAO, 2012</p>	<p>This following guidance document aims to assist investment project formulation practitioners in incorporating climate change considerations into agricultural investment projects and programmes. The main focus is on project/programme formulation (i.e. identification and design), although some aspects of supervision and evaluation will also be presented. It is intended for national and international staff and consultants, as well as government staff involved in mobilizing investment for agriculture and rural development, mainly through assistance to project or programme identification, formulation and supervision.</p>	<p>http://www.fao.org/docrep/016/i2778e/i2778e.pdf</p>	<p>Available in English and Spanish</p>	<p>Publication</p>
4.1 g		<p>Climate and Flood Forecast Applications in Agriculture by FAO, 2012</p>	<p>This online version of the e-learning tool is being released for extensive testing by interested practitioners, and its finalization will be based on feedback received. A downloadable final version will be made freely available as soon as it has been completed. This test version consists of six modules: a description of context; basic aspects of weather and climate; bio-physical interactions and impacts; and application of climate and flood information for disaster preparedness. Background reading material, maps and figures are included under the last module.</p>	<p>http://www.fao.org/nr/clim/abst/clim_071203_en.htm</p>	<p>Available in English, Spanish and French</p>	<p>web-based e-learning tool</p>
4.1 h		<p>The e-learning tool 'Planning for Community Based Adaptation (CBA) to Climate Change' by FAO, 2011</p>	<p>This e-learning tool supports training on community-based climate change adaptation in agriculture. The tool links research-based knowledge on climate change impacts with examples and experiences on CBA drawn from FAO field projects and a range of country-specific case studies. The intended outcome of the tool is to assist all actors, who face the challenge of initiating and facilitating adaptation processes at community level.</p>	<p>http://www.fao.org/climatechange/67624/en/</p>	<p>Available in English, Spanish and French</p>	<p>web-based e-learning tool /CD-ROM</p>

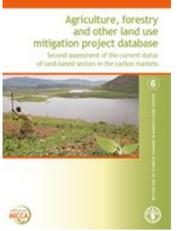
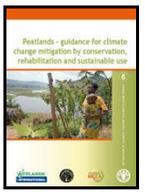
4.1 i		<p>Tajikistan: Pilot Programme for Climate Resilience (PPCR). Sustainable Land Management - Technologies and Approaches by B. Wolfgramm WOCAT,2011</p>	<p>This publications summarises Sustainable Land Management Technologies and Approaches for Tajikistan. All technologies and approaches can be also accessed through:</p> <ul style="list-style-type: none"> Database on SLM Approaches: The database on SLM Approaches is newly developed and is online available on this link http://cdewocat.unibe.ch/wocatQA/ Database on SLM Technologies: The new online database on SLM Technologies is available now for data entry and is online available on this link http://cdewocat.unibe.ch/wocatQT/ 	<p>https://www.wocat.net/fileadmin/user_upload/documents/Books/Tajikistan_wocat-collection2011_eng_fin_al.pdf</p> <p>https://www.wocat.net/fileadmin/user_upload/documents/Books</p>	Available in English and Russian	Publication
4.1 j		<p>Climate Change and Agriculture Policies. How Far Should We Look for Synergy Building Between Agriculture Development and Climate Mitigation? by FAO, 2011</p>	<p>There are different possibilities to finance climate change activities. Some are market based, others are not. Within this last category, there is a possibility to launch Payment of Environmental Services PES1. Whatever activities are launched to cope with climate change issues should bring finance, ecosystems protection as well as poverty reduction in developing countries.</p>	<p>http://www.fao.org/docrep/016/ap251e/ap251e.pdf</p>	Available in English	Publication
4.1 k		<p>Climate Change and Food systems Resilience in Sub-Saharan Africa by FAO, 2011</p>	<p>This volume, Climate Change and Food Systems Resilience in Sub-Saharan Africa, demonstrates the possibility of harmonizing agricultural production with the wellbeing of the biosphere and that this can be achieved in Africa, our biosphere's least developed continent, and the continent which is likely to suffer most from climate change.</p>	<p>http://www.fao.org/docrep/014/i2230e/i2230e00.htm</p>	Available in English	Publication
4.1 l		<p>Climate-Smart Agriculture: Smallholder Adoption and Implications for Climate Change Adaptation and Mitigation by FAO, 2011</p>	<p>In this paper, we provide a brief review of the adaptation and mitigation benefits from various practices, and then focus in detail on empirical evidence concerning costs and barriers to adoption, both from household and project-level data. Findings indicate that up-front investment costs can be a significant barrier to adoption for certain investments and practices, and furthermore, the evidence also supports the hypotheses that opportunity and transactions costs across a wide range of investments and practices.</p>	<p>http://www.fao.org/docrep/015/i2575e/i2575e00.pdf</p>	Available in English	Publication
4.1 m		<p>Climate-Smart Agriculture: A Synthesis of Empirical Evidence of Food Security and Mitigation Benefits from Improved Cropland Management by FAO, 2011</p>	<p>This paper synthesizes the results of a literature review reporting the evidence base of different sustainable land management practices aimed at increasing and stabilizing crop productivity in developing countries. It is shown that soil and climate characteristics are key to interpreting the impact on crop yields and mitigation of different agricultural practices and that technology options most promising for enhancing food security at smallholder level are also effective for increasing system resilience in dry areas and mitigating climate change in humid areas.</p>	<p>http://www.fao.org/docrep/015/i2574e/i2574e00.pdf</p>	Available in English	Publication

4.1 n		<p>Climate change, water and food security by H. Turrall, J. Burke and J.M. Faurès FAO, 2011</p>	<p>The impacts of climate change on the global hydrological cycle are expected to vary the patterns of demand and supply of water for agriculture—the dominant user of freshwater. The extent and productivity of both irrigated and rainfed agriculture can be expected to change. As a result, the livelihoods of rural communities and the food security of a predominantly urban population are at risk from water-related impacts linked primarily to climate variability. economic uses of water.</p>	<p>http://www.fao.org/docrep/014/i2096e/i2096e00.htm</p>	<p>Available in English</p>	<p>Publication</p>
4.1 o		<p>Climate-Smart Agriculture: Policies, Practices & Financing for Food Security, Adaptation & Mitigation by FAO, 2010</p>	<p>This paper examines some of the key technical, institutional, policy and financial responses required to achieve this transformation. Building on case studies from the field, the paper outlines a range of practices, approaches and tools aimed at increasing the resilience and productivity of agricultural production systems, while also reducing and removing emissions.</p>	<p>http://www.fao.org/docrep/013/i1881e/i1881e00.htm</p>	<p>Available in English, Spanish and French</p>	<p>Publication</p>
4.1 p		<p>Gestión del riesgo de sequía y otros eventos climáticos extremos en Chile. Estudio piloto sobre la vulnerabilidad y la gestión local del riesgo by FAO, 2010</p>	<p>Ese estudio propone metodologías para la gestión del riesgo asociado a eventos climáticos extremos, con énfasis en la gestión de la sequía en Chile. Realiza un diagnóstico de condiciones locales de vulnerabilidad y las capacidades de la sociedad para enfrentar el fenómeno. Se sugieren acciones institucionales de contingencia, prevención y reducción del riesgo.</p> <p>This study brings forward risk management methodologies associated with extreme climate events, with emphasis on drought management in Chile. It makes a diagnosis of local vulnerability conditions and coping capacities of the society. Institutional measures are proposed for contingency, prevention and risk reduction</p>	<p>http://www.rlc.fao.org/en/publications/gestion-riesgo-sequia-en-chile/</p>	<p>Available in Spanish</p>	<p>Publication</p>
4.1 q		<p>Coping with a changing climate: considerations for adaptation and mitigation in agriculture (No. 15) by FAO, 2009</p>	<p>Changing climatic conditions are projected to affect food security from the local to global level. The predictability in rainy season patterns will be reduced, while the frequency and intensity of severe weather events such as floods, cyclones and hurricanes will increase; other predicted effects will include prolonged drought in some regions; and water shortages; and changes in the location and incidence of pest and disease outbreaks.</p>	<p>http://www.fao.org/docrep/012/i1315e/i1315e00.htm</p>	<p>Available in English</p>	<p>Publication</p>
4.1 r		<p>Food Security and Agricultural Mitigation in Developing Countries: Options for Capturing Synergies by FAO, 2009</p>	<p>The paper explores potential synergies between food security, adaptation and climate change mitigation from land-based agricultural practices in developing countries, which could help to generate the multiple benefits needed to address the multiple demands placed on agriculture. It indicates promising mitigation options with synergies, options that involve trade-offs, possible options for required financing, and possible elements in designing country implementation processes.</p>	<p>http://www.fao.org/docrep/012/i1318e/i1318e00.pdf</p>	<p>Available in English</p>	<p>Publication</p>

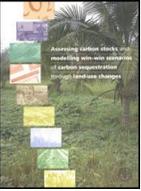


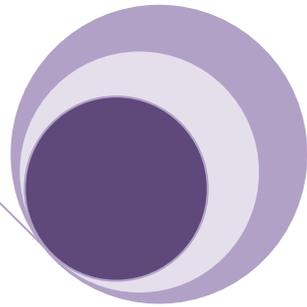
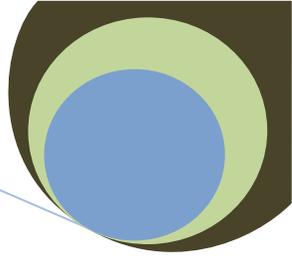
4.1 s		<p>FAO Profile for Climate Change / FAO Perfil para el cambio climático/ FAO Profil sur le changement climatique by FAO, 2009</p>	<p>With this Profile for Climate Change, FAO outlines its priorities for its current and future work on climate change. FAO's work focuses on adaptation mitigation agricultural sectors and advocates for better management synergies trade-offs among both. It also points to the areas where adaptation mitigation activities merge with ongoing development efforts to improve sustainable use of natural resources for increased production, income, food security and rural development.</p>	<p>http://www.fao.org/docrep/012/i1323e/i1323e00.htm</p>	<p>Available in English, Spanish and French</p>	<p>Publication</p>
4.1 t		<p>Climate resilient and environmentally sound agriculture by FAO, 2007</p>	<p>Through simplified concepts and relevant resources and examples, we explore the impacts of global change on agriculture, the impacts of agriculture on ecosystems and possible technical and policy considerations that can help building food security under current and future challenges. The information package has six modules, different levels of text and a wealth of resources from all over the world.</p>	<p>http://www.fao.org/agriculture/crops/new-s-events-bulletins/detail/it/item/115598/icode/?no_cache=1</p>	<p>Available in English</p>	<p>Online Information Package /CD-ROM</p>

4.2 Climate Change Mitigation in Agriculture (including Soil Carbon Sequestration)

4.2 a		<p>MICCA-series 6: Agriculture, forestry and other land use mitigation database Second assessment of the current status of land-based sectors in the carbon markets by FAO, 2013</p>	<p>This paper presents the second analysis of the Agriculture, Forestry and Other Land Use Mitigation Project (AFOLU MP) database¹. The original analysis published in November 2010 in the second volume of the MICCA Series contained information on 497 AFOLU mitigation projects gathered from 11 different registries, both crediting scheme registries and third party databases. This follow-up study includes 78 new projects from 12 different registries. As with the first publication, this paper summarizes the insights that have been gained from the analysis of the updated database.</p>	<p>http://www.fao.org/docrep/017/i3176e/i3176e.pdf</p>	Available in English	Publication
4.2 b		<p>Soil carbon monitoring using surveys & modelling General description and application in the United Republic of Tanzania by FAO, 2012</p>	<p>The objective of this report is to describe the application of survey- and modelling-based methods for monitoring soil organic carbon stock and its changes on a national scale. Examples of applying the methods are demonstrated in the United Republic of Tanzania, which represents a developing country in the tropics. The report presents i) a design of the first inventory of soil organic carbon, including discussion on factors that affect the reliability of carbon stock estimates; and ii) a design of a modelling-based approach, including links to national forest inventory data and discussion on alternative soil organic carbon models.</p>	<p>http://www.fao.org/docrep/015/i2793e/i2793e00.htm</p>	Available in English	Publication
4.2 c		<p>Peatlands - guidance for climate change mitigation by conservation, rehabilitation and sustainable use by FAO, 2012</p>	<p>Peatland drainage - mainly for agriculture, grazing and forestry - and peat fires are responsible for almost one quarter of carbon emissions from the land use sector. Peatlands and organic soils contain 30% of the world's soil carbon but only cover 3 percent of the Earth's land area. Peatlands provide many important ecosystem services, including water regulation, biodiversity conservation, and carbon sequestration and storage.</p>	<p>http://www.fao.org/docrep/015/an762e/an762e00.htm</p>	Available in English	Publication
4.2 d		<p>Climate Change Mitigation Finance for Smallholder Agriculture A guide book to harvesting soil carbon sequestration benefits by FAO, 2011</p>	<p>This FAO publication focuses on climate change mitigation financing for smallholders. The Organization, however, fully recognizes that adaptation may be the imperative and priority over the short and medium term for many smallholders in circumstances where climate change may adversely impact their efforts to overcome poverty and food insecurity. In many cases, most countries will need to deal with both adaptation and mitigation. FAO is supporting national efforts on CSA.</p>	<p>http://www.fao.org/docrep/015/i2485e/i2485e00.pdf</p>	Available in English	Publication

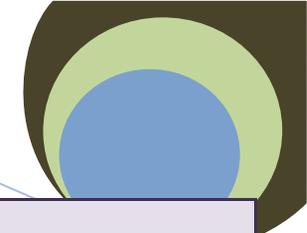
4.2 e		<p>Grassland carbon sequestration: management, policy and economics by FAO, 2010</p>	<p>Soil carbon (C) sequestration in grasslands may mitigate rising levels of atmospheric carbon dioxide (CO₂) but there is still great uncertainty about the size, distribution and activity of this “sink”. Carbon accumulation in grassland ecosystems occurs mainly below ground where soil organic matter (SOM) is located in discrete pools, the characteristics of which have now been described in some detail. Carbon sequestration can be determined directly by measuring changes in C stocks or by simulation modelling.</p>	<p>http://www.fao.org/docrep/013/i1880e/i1880e00.htm</p>	Available in English	Publication
4.2 f		<p>MICCA-series 2: Agriculture, forestry and other land use database by FAO, 2010</p>	<p>This paper sums up the lessons that can be drawn from the analysis and interpretation of this database, setting the context for the pilot projects that are being developed under the MICCA project, assessing the status of AFOLU mitigation projects and identifying the gaps to be filled on the climate change agenda to enable the AFOLU sectors to contribute in a recognized way to climate change mitigation.</p>	<p>http://www.fao.org/docrep/013/am010e/am010e00.pdf</p>	Available in English	Publication
4.2 g		<p>MICCA Series 1: Global survey of agricultural mitigation projects by FAO, 2010</p>	<p>At the beginning of 2010, a new project, Mitigation of Climate Change in Agriculture (MICCA) was established at the Food and Agriculture Organization of the United Nations (FAO) to support efforts to mitigate climate change through agriculture in developing countries and to move towards carbon friendly agricultural practices. As part of this project activity, a review was made of current agricultural mitigation projects.</p>	<p>http://www.fao.org/docrep/012/al388e/al388e00.pdf</p>	Available in English	Publication
4.2 h		<p>Challenges and Opportunities for Carbon Sequestration in Grassland Systems A technical report on grassland management and climate change mitigation by FAO, 2010</p>	<p>Implementing grassland management practices that increase carbon uptake by increasing productivity or reducing carbon losses (e.g. through high rates of offtake) can lead to net accumulation of carbon in grassland soils – sequestering atmospheric carbon dioxide (CO₂). This report reviews the current status of opportunities and challenges for grassland carbon sequestration. Based on these observations, the report then identifies components that could foster the inclusion of grasslands in a post-2012 climate agreement, and the development of policies to improve grassland management.</p>	<p>http://www.fao.org/docrep/012/i1399e/i1399e00.htm</p>	Available in English	Publication
4.2 i		<p>Soil Organic Carbon Accumulation and Greenhouse Gas Emission Reductions from Conservation Agriculture by FAO, 2010</p>	<p>This publication presents a meta analysis of global scientific literature with the aim to develop a clear understanding of the impacts and benefits of traditional tillage agriculture and Conservation Agriculture with respect to their effects on soil carbon pools. The study attempts to reduce the existing uncertainty about the impact of soil management practices on soil carbon and is addressing scientists as well as policy makers to facilitate decision making regarding future farming models.</p>	<p>http://www.fao.org/agriculture/crops/publications/detail/en/item/135142/icode/?no_cache=1</p>	Available in English	Publication

4.2 j		<p>Carbon Finance Possibilities for Agriculture, Forestry and Other Land Use Projects in a Smallholder Context by FAO, 2010</p>	<p>This booklet is intended to guide extension service advisors and institutions who work with small-scale farmers and foresters with an interest in Carbon Finance and Carbon Projects. Its aim is to support setting-up carbon projects which involve small-scale farmers. Their participation allows them to be involved in the development and implementation of the project, influence the design of the project to generate positive impacts for the farmers and increase their knowledge about carbon finance. The definition of a small-scale farmer differs between and within countries. In most cases it is a farmer who cultivates less than one hectare of land and has diverse sources of livelihood.</p>	<p>http://www.fao.org/docrep/012/i1632e/i1632e00.htm</p>	<p>Available in English, French and Spanish</p>	<p>Publication</p>
4.2 k		<p>Review of evidence on drylands pastoral systems and climate change by C. Neely, S. Bunning and Wilkes FAO, 2009</p>	<p>It presents some key messages on the importance of grasslands and rangelands in terms of their contribution to carbon sequestration and to the livelihoods of the poor. It highlights the fact that management strategies and practices that contribute to mitigating climate change will also play a major role in climate change adaptation and reducing vulnerability to natural disasters for the millions of people – including the poor – who depend on these land-use systems. Finally, it provides some suggestions on ways forward in light of the current policy framework and climate change negotiations.</p>	<p>ftp://ftp.fao.org/docrep/fao/012/i1135e/i1135e00.pdf</p>	<p>Available in English</p>	<p>Publication</p>
4.2 l		<p>Assessing carbon stocks and modelling win-win scenarios of carbon sequestration through land-use changes by FAO, 2004</p>	<p>This report presents a methodology to assess the stocks of carbon pools both aboveground and belowground under various land-use systems, the status of their biodiversity and that of land degradation. The report also describes methods to analyse “win-win” land use and land management scenarios. These aim to reduce land degradation while enhancing soil fertility, land productivity and carbon sequestration. The report presents the related models and software tools and the test results of case studies in selected areas of Mexico and Cuba.</p>	<p>http://www.fao.org/docrep/007/y5490e/y5490e00.htm</p>	<p>Available in English</p>	<p>Publication</p>

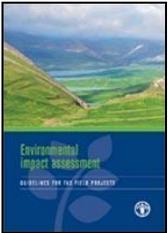


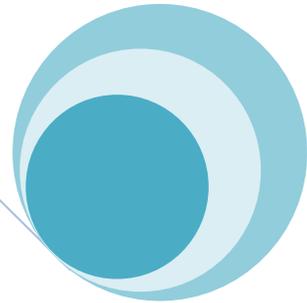
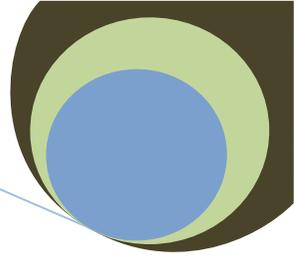
5 Impact Assessment

5.1 Impact Assessment



5.1 Impact Assessment

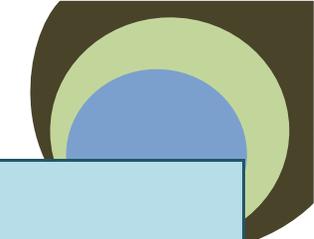
5.1 a		<p>Environmental impact assessment Guidelines for FAO field projects by FAO, 2012</p>	<p>This publication provides guidelines for all FAO units (headquarters departments and offices, as well as decentralized offices) to undertake environmental impact assessments (EIA) of field projects. The use of these guidelines apply to all FAO field projects and activities¹, as further specified in the sections below, requiring implications to be fully considered early in the planning process (and all the more so prior to taking final decisions) so as to avoid significant negative impacts of environmental or associated social nature.</p>	<p>http://www.fao.org/docrep/016/i2802e/i2802e.pdf</p>	Available in English	Publication
5.1b		<p>Assessing Impact of Development Programmes on Food Security by FAO, 2010</p>	<p>This course provides a comprehensive yet readily accessible source of guidance for assessing food security impact of development programmes. It has been designed to support countries and regions in assessing the overall impact of their investments in food security on the well being of the targeted populations.</p>	<p>http://www.imarkgroup.org/projects/login.asp?courseModule=IA&courseCode=IA&courseLanguage=EN</p>	Available in English	Online Course
5.1 c		<p>Environmental impact assessment and monitoring in aquaculture Requirements, practices, effectiveness and improvements by FAO, 2009</p>	<p>This document contains the main outputs of Component 2 of the FAO project "Towards sustainable aquaculture: selected issues and guidelines". Component 2 focused on environmental impact assessment and monitoring in aquaculture, in particular on the relevant regulatory requirements, the practice, the effectiveness and suggestions for improvements.</p>	<p>http://www.fao.org/docrep/012/i0970e/i0970e00.htm</p>	Available in English	Publication
5.1 d		<p>Environmental impact assessment of irrigation and drainage projects by T.C. Dougherty and A.W. Hall FAO, 1995</p>	<p>This guide aims to assist staff in developing countries from various disciplines and backgrounds (government officials, consultants, and planners) to incorporate environmental considerations into planning, designing, implementing and regulating irrigation and drainage programmes, plans and projects, thus leading to sustainable projects.</p>	<p>http://www.fao.org/docrep/V8350E/V8350E00.htm</p>	Available in English	Publication



6 Policy Reforms

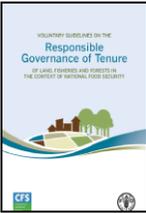
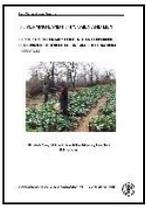
6.1 Water Legislation

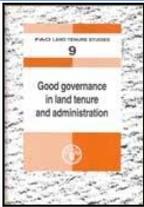
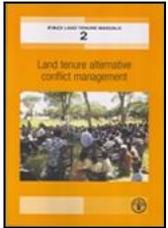
6.1 Land Legislation

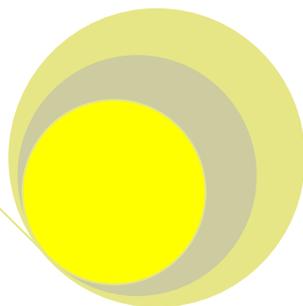
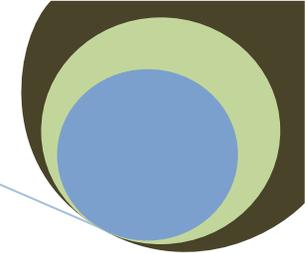


6.1 Water Legislation						
6.1 a		Water LEX Part of FAO legislative database FAOLEX by FAO	Water LEX is a searchable database established by FAO legal experts. The database represents a great utility to lawmakers, policymakers, researchers, lawyers, water technicians and, in general, government officials around the world who want to know more about the legislative and regulatory framework for water.	http://faolex.fao.org/waterlex/index.htm	Available in English	Website/ Database
6.1 b		Law for water management: a guide to concepts and effective approaches by FAO, 2009	This text is intended to support legal experts, policy experts and other interested individuals in understanding the scientific and technical issues associated with water, health and development, whilst raising awareness on the part of scientists and technical experts regarding the legal and policy issues surrounding water management.	http://www.fao.org/docrep/012/i1284e/i1284e00.htm	Available in English	Publication
6.1 c		Modern water rights - FAO Legislative Studies by FAO, 2006	This publication offers a fresh look at the theory and practice of modern water rights, from a comparative law angle. It sheds light on a number of key features of such rights, and contrasts these to traditional forms and kinds of water rights.	ftp://ftp.fao.org/docrep/fao/010/a0864e/a0864e00.pdf	Available in English	Publication
6.1 d		Groundwater in international law - FAO Legislative Studies by FAO, 2005	Despite the social, economic, environmental and political importance of groundwater, international law has paid relatively little attention to this resource. Groundwater represents about ninety-seven percent of the fresh water resources available, excluding the water locked in the polar ice.	http://www.fao.org/docrep/008/y5739e/y5739e00.htm	Available in English	Publication
6.1 e		Land and water? the rights interface - FAO Legislative Studies by FAO, 2004	This paper is concerned with the interface between land tenure rights and water rights. Such rights relate to what are arguably the most important natural resources of the modern nation-state. Land, in the form of territory, is a pre-requisite for a state's existence while freshwater is a pre-requisite for life.	http://www.fao.org/docrep/007/y5692e/y5692e00.htm	Available in English	Publication
6.1 f		Legislation on water user's organizations - A comparative analysis by FAO, 2003	The present publication offers a comparative analysis of the contemporary legislation of a vast variety of countries, providing the needed regulatory framework for water users' organizations to function and grow. In some ways, it follows on from an older publication of more limited geographical scope, styled "Irrigation Users' Organizations in the Legislation and Administration of Certain Latin American Countries.	http://www.fao.org/docrep/006/Y5049E/Y5049E00.HTM	Available in English	Publication

6.2 Land Legislation

6.2 a		<p>Voluntary guidelines on responsible governance for tenure of land and other natural resources by FAO, 2012</p>	<p>The Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security promote secure tenure rights and equitable access to land, fisheries and forests as a means of eradicating hunger and poverty, supporting sustainable development and enhancing the environment. They were officially endorsed by the Committee on World Food Security on 11 May 2012. Since then implementation has been encouraged by G20, Rio+ 20, and United Nations General Assembly.</p>	<p>http://www.fao.org/nr/tenure/voluntary-guidelines/en/</p>	<p>Available in English, French, Spanish, Arabic, Chinese and Russian</p>	<p>Publication</p>
6.2 b		<p>Private Investment in Land Implementing Responsible Governance of Tenure by FAO, 2012</p>	<p>This paper draws on proceedings of a meeting held to discuss the impact of growing private sector investments in land, fisheries and forests. This meeting, aimed at the private sector, took place at FAO headquarters on 28 February and 1 March 2011. The purpose of this paper is to provide a record of the discussion from the private sector perspective. The first section provides the context which led to the workshop concept. Section two discusses the investment environment in the context of access to land, fisheries and forests and identifies the main drivers behind investment.</p>	<p>http://www.fao.org/uploads/media/LTWP-21_Private_Sector_and_Investment_final.pdf</p>	<p>Available in English</p>	<p>Publication</p>
6.2 c		<p>Governing Land for Woman and Men Gender and Voluntary Guidelines on Responsible Governance of Tenure and Other Natural Resources by FAO, 2011</p>	<p>Land Tenure Working Paper 19. The present paper is written as part of the overall Voluntary Guidelines consultation and development process and is a contribution to the subsequent preparation of the Gender Technical Guide. It contextualizes and defines gender for the Voluntary Guidelines, discusses what governance of tenure means from a gender perspective and identifies and analyses key issues and themes. It then summarizes recommendations relevant to gender before drawing some conclusions for the development process of the Voluntary Guidelines.</p>	<p>http://www.fao.org/docrep/014/ma811e/ma811e00.pdf</p>	<p>Available in English</p>	<p>Publication</p>
6.2 d		<p>Reforming forest tenure / Reforma de la tenencia forestal / Reforme de la tenure forestiere Issues, Principles and Process by FAO, 2011</p>	<p>FAO's Global Forest Resources Assessment 2010 (FRA 2010) shows that 80 percent of the world's forests are publicly owned, but forest ownership and management by communities, individuals and private companies are increasing (FAO, 2010c). Globally, State ownership and management dominate forest tenure, but transitions are under way – more in some countries than in others. A more diversified tenure system could provide a basis for improving forest management.</p>	<p>http://www.fao.org/docrep/014/i2185e/i2185e00.pdf</p>	<p>Available in English, Spanish and French</p>	<p>Publication</p>

6.2 e		<p>Good governance in land tenure and administration by FAO, 2007 Reprinted 2008, 2009</p>	<p>Weak governance in land tenure and administration is a common and severe problem that is increasingly recognized. It has been a significant feature in the transition economies, reflecting the challenges of moving from centrally planned economies with largely state-owned resources to market economies. It is commonly a substantial issue in developing economies, and it is not an alien matter for the developed world.</p>	<p>http://www.fao.org/docrep/010/a1179e/a1179e00.htm</p>	<p>Available in English, French, Spanish, Arabic, Chinese and</p>	<p>Publication</p>
6.2 f		<p>Opportunities to mainstream land consolidation in rural development programmes of the European Union by FAO, 2008</p>	<p>For the period of 2007-13, the European Union introduced new support programmes for rural development for its member states, for candidate and potential candidate countries, and for European Neighborhood countries. This paper addresses the policy implications of using the new instruments to support land consolidation to increase agricultural competitiveness and improve rural conditions in transition countries. It describes the available funding options and makes recommendations for including land consolidation within a rural development programme.</p>	<p>http://www.fao.org/docrep/011/i0091e/i0091e00.htm</p>	<p>Available in English</p>	<p>Publication</p>
6.2 g		<p>Operations manual for land consolidation pilot projects in Central and Eastern Europe by FAO, 2007</p>	<p>This Operations manual complements FAO's Land Tenure Studies Number 6 on the design of pilot projects. It aims to support those people who are responsible for managing these projects. It focuses on the practical aspects of defining and implementing the first pilot projects. It identifies the main conditions that should be in place before the project starts, and it defines potentials and constraints.</p>	<p>http://www.fao.org/nr/lten/abst/lten_07101_en.htm</p>	<p>Available in English, French and Spanish</p>	<p>Publication</p>
6.2 h		<p>Land tenure alternative conflict management by FAO, 2006</p>	<p>It focuses on how to manage and resolve conflicts over land tenure rights, security of tenure and land access in the field of rural development. It results from complementary activities undertaken within FAO's Livelihood Support Programme (LSP) and Land Tenure Service. It addresses the specific issues of land tenure identified in the volume "Negotiation and Mediation Techniques for Natural Resource Management" published by the LSP on September 2005. It is therefore presented as the second volume in that series, and is the first of a number of planned complementary volumes in that series that will address specific areas where conflict is increasingly evident.</p>	<p>http://www.fao.org/docrep/009/a0557e/a0557e00.htm</p>	<p>Available in English, French and Spanish</p>	<p>Publication</p>

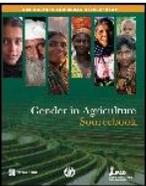
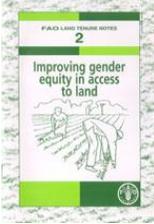


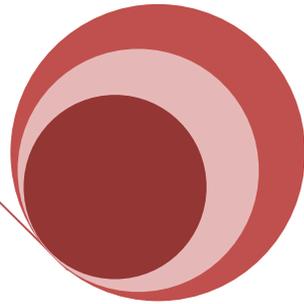
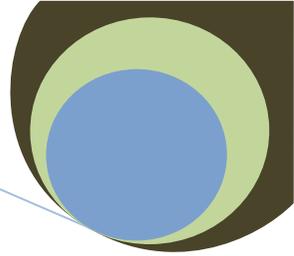
7 Gender

7.1 Gender mainstreaming

7.1 Gender Mainstreaming

7.1 a		<p>Passport Mainstreaming Gender in Water Programmes Key questions for interventions in the agricultural sector by FAO, 2012</p>	<p>The International Decade for Action, “Water for Life” (2005-2015) and the UN-Millennium Development Goals both call for women’s and men’s participation and involvement in water related development efforts. This booklet has been developed to help field staff mainstream gender issues in the design, implementation, operation and maintenance of water management projects for agricultural production.</p>	<p>http://www.fao.org/docrep/016/ap089e/ap089e00.pdf</p>	Available in English	Publication
7.1 b		<p>Improving Gender Equality in Territorial Issues (IGETI). Integrated Guidelines by FAO, 2012</p>	<p>The tools presented in the SEAGA Programme are designed to help development actors and community stakeholders to address key questions in an inclusive way and offers a means of promoting gender equality in land access and territorial development. These guidelines intend to provide target users with the knowledge to establish an environment where all actors in a given territory are listened to, sensitized and empowered to speak (and negotiate) for themselves on matters concerning equal access for men, women, youths, the poor to land and territorial development.</p>	<p>http://www.fao.org/docrep/016/me282e/me282e.pdf</p>	Available in English	Publication
7.1 c		<p>The Gender and Equity Implications of Land-Related Investments on Land Access and Labour and Income-Generating Opportunities A Case Study of Selected Agricultural Investments in Northern Tanzania by FAO, 2012</p>	<p>This report is organized as follows. Section 2 briefly overviews the background and policy context both globally and in Tanzania, in relation to gender and land-related, and specifically agricultural, investments. The study methodology is also described further. Section 3 comprises the main body of the case study, including analysis and findings from the labour and income-generating opportunities that were explored during the fieldwork. Some general findings from the focus group discussions and from the iterative research approach are also set out. Section 4 then ends the report with overall conclusions and policy recommendations for land-related investments in agriculture.</p>	<p>http://www.fao.org/docrep/016/ap433e/ap433e.pdf</p>	Available in English	Publication

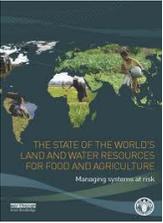
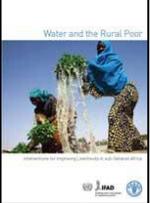
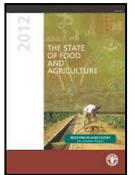
7.1 d		Training Guide: Gender and Climate Change Research in Agriculture and Food Security for Rural Development by FAO, 2011	The Training Guide provides a clear understanding of the concepts related to gender and climate-smart agriculture; describes participatory methods for conducting gender-sensitive research on the impacts of climate change; and offers guidance on different ways of reporting research findings so that they can be properly analysed. Using the guide will ensure that critical information on gender and climate change is collected, allowing researchers and development workers to formulate appropriate gender-sensitive policies and programmes for rural development.	http://www.fao.org/docrep/015/md280e/md280e00.htm	Available in English	Publication /Training Guide
7.1 e		Communicating Gender for Rural Development. Integrating gender in communication for development by FAO, 2011	In rural and agricultural development projects, 'communication for development' and 'gender' approaches are key to ensuring that food security, poverty and gender objectives are met sustainably. These two approaches are based on common values, namely the active and equal participation of all stakeholders, both men and women, and the empowerment of populations, particularly the most disadvantaged.	http://www.fao.org/docrep/014/am319e/am319e00.pdf	Available in English and French	Publication
7.1 f		Farmers in a changing climate. Does gender matter? by FAO, 2010	This report presents the findings of research undertaken in six villages in two drought-prone districts of Andhra Pradesh, India, Mahbubnagar and Anantapur1. The study, carried out by an international team led by FAO, used gender, institutional, and climate analyses to document the trends in climate variability men and women farmers are facing and their responses to ensure food security in the context of larger socio-economic and political challenges to their livelihoods and well-being.	http://www.fao.org/docrep/013/i1721e/i1721e00.htm	Available in English	Publication
7.1 g		Gender in agriculture / Manual sobre género en agricultura by FAO, 2010	Agriculture is central to the livelihoods of the rural poor and in the attainment of the Millennium Development Goals (MDGs). Agriculture can be the engine of growth and is necessary for reducing poverty and food insecurity, particularly in sub-Saharan Africa (IFAD 2001; World Bank 2007a). Understanding the dynamic processes of change is crucial to better position the sector for faster growth and sustained development, which is vital for food and livelihoods security for millions of men and women worldwide.	http://www.fao.org/docrep/011/aj288e/aj288e00.htm	Available in English and Spanish	Publication
7.1 h		Improving gender equity in access to land by FAO, 2006	FAO's Land Tenure Notes provide information on land tenure in a format that can be used by grassroots organizations which work with small farmers and others in rural communities. Improving secure access to land by the rural poor is essential in order to reduce poverty and hunger and to promote sustainable rural development. Improving people's knowledge of their rights to land is an important part of making rights real, thereby allowing people to improve their livelihoods.	http://www.fao.org/docrep/010/a0664e/a0664e00.htm	Available in English, French, Spanish and Arabic	Publication

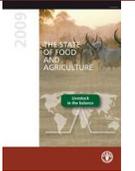
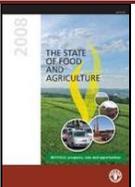
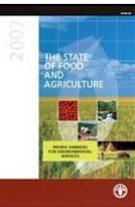
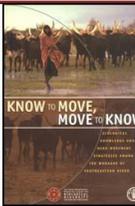


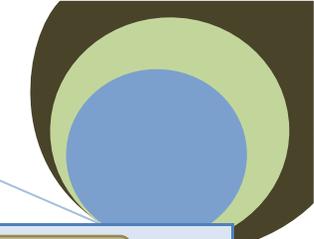
8 Global Studies

8.1 Other SLM Publications

9.1 Other SLM Publications

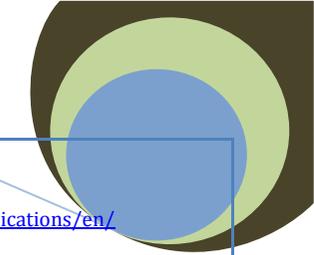
8.1 a		<p>The State of the World's Land and Water Resources for Food and Agriculture (SOLAW) by FAO, 2011</p>	<p>This edition of The State of the World's Land and Water Resources for Food and Agriculture presents objective and comprehensive information and analyses on the current state, trends and challenges facing two of the most important agricultural production factors: land and water. Land and water resources are central to agriculture and rural development, and are intrinsically linked to global challenges of food insecurity and poverty, climate change adaptation and mitigation, as well as degradation and depletion of natural resources that affect the livelihoods of millions of rural people across the world.</p>	<p>http://www.fao.org/docrep/017/i1688e/i1688e00.htm</p>	<p>Available in English, French, Spanish, Arabic, Chinese and Russian</p>	<p>Publication</p>
8.1 b		<p>Agricultural Biodiversity in FAO by FAO, 2008</p>	<p>. The importance of biological diversity for food security was reconfirmed in commitment No.3 of the Rome Declaration on Food Security made at the World Food Summit held in Rome in 1996. FAO is actively promoting the conservation and sustainable use of biodiversity for food and agriculture.</p>	<p>http://www.fao.org/docrep/010/i0112e/i0112e00.htm</p>	<p>Available in English, Spanish and French</p>	<p>Publication</p>
8.1 c		<p>Water and the Rural Poor Interventions for improving livelihoods in Sub-Saharan Africa by FAO, 2008</p>	<p>The primary goal of this report is to contribute to the development of strategies to reduce rural poverty in sub-Saharan Africa (SSA) through investments in the agricultural water sector. The present report relies strongly on the view that agriculture in SSA is the most promising option for broad-based poverty reduction in rural areas, and sets the role of water improvements in a wider context of overall reforms and investments in agriculture.</p>	<p>http://www.fao.org/docrep/010/i0132e/i0132e00.htm</p>	<p>Available in English and French</p>	<p>Publication</p>
8.1 d		<p>The State of Food and Agriculture 2012 Investing in Agriculture for a better future by FAO, 2012</p>	<p>Investing in agriculture is essential for reducing hunger and promoting sustainable agricultural production. Those parts of the world where agricultural capital per worker and public investments in agriculture have stagnated are the epicentres of poverty and hunger today. Demand growth over the coming decades will place increasing pressure on the natural resource base.</p>	<p>http://www.fao.org/publications/sofa/en/</p>	<p>Available in English, French, Spanish, Arabic, Chinese and Russian</p>	<p>Publication</p>
8.1e		<p>The State of Food and Agriculture 2010-11 Women in Agriculture Closing the gender gap for development by FAO, 2011</p>	<p>Women make significant contributions to the rural economy in all developing country regions. Increasing women's access to land, livestock, education, financial services, extension, technology and rural employment would boost their productivity and generate gains in terms of agricultural production, food security, economic growth and social welfare.</p>	<p>http://www.fao.org/publications/sofa2010-11/en/</p>	<p>Available in English, French, Spanish, Arabic, Chinese and Russian</p>	<p>Publication</p>

8.1 f		<p>The State of Food and Agriculture 2009 Livestock in the balance by FAO, 2009</p>	<p>Livestock contribute 40 percent of the global value of agricultural output and support the livelihoods and food security of almost a billion people. Rapidly rising incomes and urbanization, combined with underlying population growth, are driving demand for meat and other animal products in many developing countries.</p>	<p>http://www.fao.org/publications/sofa-2009/en/</p>	<p>Available in English, French, Spanish, Arabic, Chinese and Russian</p>	<p>Publication</p>
8.1 g		<p>The State of Food and Agriculture 2008 Biofuels: prospects, risks and opportunities by FAO, 2009</p>	<p>This publication explores the implications of the recent rapid growth in production of biofuels based on agricultural commodities. The boom in liquid biofuels has been largely driven by policies in developed countries in support of climate-change mitigation, energy security and agricultural development.</p>	<p>http://www.fao.org/docrep/011/i0100e/i0100e00.htm</p>	<p>Available in English, French, Spanish, Arabic, Chinese and Russian</p>	<p>Publication</p>
8.1 h		<p>The State of Food and Agriculture 2007 Paying farmers for environmental services by FAO, 2008</p>	<p>This publication explores the potential for agriculture to provide enhanced levels of environmental services alongside the production of food and fiber. The report concludes that demand for environmental services from agriculture - including climate change mitigation, improved watershed management and biodiversity preservation - will increase in the future, but better incentives to farmers are needed if agriculture is to meet this demand.</p>	<p>http://www.fao.org/publications/sofa-2009/sofa2007/en/</p>	<p>Available in English, French, Spanish, Arabic, Chinese and Russian</p>	<p>Publication</p>
8.1 i		<p>Biodiversity and the Ecosystem Approach in Agriculture, Forestry and Fisheries by FAO, 2003</p>	<p>The Eastern Cape province of South Africa is home to a large human population that is rural, poor and has experienced little development. The major pressures on these communal rangelands are from intense herbivory, wood fuel harvesting and shifting cultivation. 8 study sites in communal and commercial farming systems were selected and a number of diversity indices were performed on floristic data from these sites.</p>	<p>http://www.fao.org/docrep/005/Y4586E/Y4586E00.HTM</p>	<p>Available in English</p>	<p>Publication / Proceedings</p>
8.1 j		<p>Know to Move, Move to Know Ecological Knowledge and Herd Movement Strategies Among the Wodaabe of Southeastern Niger by FAO, 2003</p>	<p>FAO's goal is to alleviate poverty and hunger by promoting sustainable agricultural development, improved nutrition and food security, and ensuring that everyone has access at all times to the food they need for an active and healthy life. The importance of biological diversity for food security and sustainable agriculture has long been recognized by FAO.</p>	<p>http://www.fao.org/docrep/006/Y5115E/Y5115E00.HTM</p>	<p>Available in English</p>	<p>Publication</p>



Annex 1 Further Reading

Further Reading		
Section	Sub Section	Web link
1. Water	FAO Water resources series: <ul style="list-style-type: none"> • Irrigation and drainage • Water reports • IPTRID publications (Int. Programme for Technology, Research on Irrigation& Drainage) • Land & Water Bulletins • Land & Water Discussion Papers • Land and Water Digital Media 	http://www.fao.org/nr/water/jsp/publications/search.htm
	FAO Corporate Document Repository, Sustainable Natural Resources Management	http://www.fao.org/documents/en/Sustainable%20natural%20resources%20management/topicsearch/11
	FAO Water / Training tools	http://www.fao.org/nr/water/jsp/publications/search.htm
2. Land	FAO Land Resources Series <ul style="list-style-type: none"> • 35 Digital Media Series • Soils Bulletins: World Soil Resources Reports • Land & Water Bulletins • Land & Water Discussion Papers • Development Series 	http://www.fao.org/nr/land/pubs/en/?no_cache=1
	FAO Fertilizer and Plant Nutrition Bulletins	http://www.fao.org/agriculture/crops/publications/en/?no_cache=1
	FAO Corporate Document Repository, Sustainable Natural Resources Management	http://www.fao.org/documents/en/Sustainable%20natural%20resources%20management/topicsearch/11
	FAO Grasslands and Rangelands Publications	http://www.fao.org/agriculture/crops/core-themes/theme/spi/crop-and-pasture-systems/grasslands-rangelands-forages-publications/en/
	FAO Land Resources / Training tools	http://www.fao.org/nr/land/pubs/digital-media-series/en/
3. Forestry	FAO Forestry Papers	http://www.fao.org/forestry/publications
	Trees Outside Forests	http://www.fao.org/forestry/tof/en/
	FAO Corporate Document Repository, Forestry Management and Conservation	http://www.fao.org/documents/en/Forestry%20management%20and%20conservation/topicsearch/5



4. Climate Change	Key FAO documents on Climate Change <ul style="list-style-type: none"> • Food security • Impacts • Emission • Mitigation • Adaptation 	http://www.fao.org/climatechange/publications/en/
	FAO Corporate Document Repository, Sustainable Natural Resources Management	http://www.fao.org/documents/en/Sustainable%20natural%20resources%20management/topicsearch/11
	Capacity Development on Climate change	http://www.fao.org/climatechange/learning@155440/en/
5. Impact Assessment	FAO Water resources series	http://www.fao.org/nr/water/jsp/publications/search.htm
	FAO Corporate Document Repository, Sustainable Natural Resources Management	http://www.fao.org/documents/en/Sustainable%20natural%20resources%20management/topicsearch/11
6. Policy Reforms	FAO Land Tenure series <ul style="list-style-type: none"> • FAO Land Tenure Policy Series • FAO Land Tenure Studies 	http://www.fao.org/nr/tenure/en/
	FAO Legislative Series - Water	http://www.fao.org/nr/water/jsp/publications/search.htm
	FAO Forest Tenure	http://www.fao.org/forestry/tenure/60478/en/
7. Gender	FAO Gender Publications	http://www.fao.org/gender/gender-home/gender-resources/gender-publications/en/
	Gender and equity in rural societies / FAO Corporate Document Repository	http://www.fao.org/documents/en/Gender%20and%20equity%20in%20rural%20societies/topicsearch/6
8. Global Studies	FAO Publications	http://www.fao.org/publications/en/
	FAO Corporate Document Repository	http://www.fao.org/documents/en/docrep.jsp

