

SANREM Knowledgebase Metadata Guide

Version 5

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Background

Overview

This document describes the purpose, content, and format of the metadata that defines the contents of the SANREM Knowledge Base. The SANREM Knowledgebase (SKB) is intended to serve as a catalog of information resources specific to the SANREM CRSP project as well as catalog and archive other resources and projects that relate to sustainable agriculture and natural resource management. The “resources” cataloged in the SKB are primarily articles, papers, and reports but may include other digital resources such as presentations, images, webpages and, other materials that can be referenced. The SKB can store a full copy of digital resources; this practice is recommended unless prohibited by copyright.

The overall goal of the SKB is to make these resources readily available to facilitate the wide and effective dissemination of information, and to provide a structure for effective search and retrieval of the resources.

Terminology

Resource: the actual material (book, presentation, article, paper, image, video, etc.) being reviewed and cataloged. Resources can be in paper or digital format.

Record: the database entry for a resource; the form containing the bibliographic and descriptive metadata for the resource.

Field: the individual metadata element used to describe a resource.

User: the person or entity creating the record for a resource.

Publishing: approving a resource record and making it available for public access.

Knowledgebase and Metadata

The SANREM knowledgebase stores standard bibliographic metadata as well as information specific to SANREM. The SKB was designed to be flexible enough to catalog a wide variety of types of material. The widely accepted “Dublin Core” database elements and structure provide a standardized template for storing basic information about any resource. While all fields are not appropriate for every resource, some fields are required, and some have a predefined selection list.

Required fields

Title	Keywords	Creation Date
Creator (author)	Description	Type

Restricted fields

A list of acceptable entries has been defined for the “Restricted Keywords” and “Landscape System” fields. This restricted vocabulary is used to facilitate the search process and to minimize potential problems from mistyped or misspelled keywords.

Entry Procedure

The overall procedure for adding a resource to the SKB is a two-step process: entry of the primary information by SANREM partners and other approved users, then verification and acceptance (“publishing”) of the entry by the SKB manager.

Step 1. The user creates a record and enters data in all required fields and in other fields as appropriate. The database has been designed also to store a copy of the resource. All resources in digital format (with the exception of those with copyright restriction) should be uploaded. Storing the resources in the SKB will facilitate permanent archiving, long-term availability, and widest dissemination.

Step 2. The manager reviews the entry for basic content and format, oversees revision of the entry as required, then “publishes” the record to make it viewable to the public.

The SKB manager will create a user account for new users and provide information on accessing the database to enter records.

Support for Foreign Languages

The SKB database supports Unicode text; diacritical marks and alternate fonts can be used as necessary for entered text (e.g., “C. Turín,” or “evaluación,” or “Brüschweiler S., U. Höggel and A. Kläy”).

- Diacritical marks can be entered by:
 - using a keyboard with the necessary capabilities, or
 - entering the text in a Word document (“insert symbol” to access special characters), then copying and pasting the text into the SKB entry form.

Specific Guidelines for Entering Records

Specific guidance for entering records will be found in the following elements:

- The description of the individual metadata fields in the following section.
- **Sample entries** of different types of resources in **Appendix A**.
- **Definitions** of the different types of resources (“Product Types”) in Appendix B.
- A list of the current restricted keywords in Appendix C.
- Definitions of resource media “types” in Appendix D.

General Notes for Enterers: How to Use This Guide

The easiest place to begin your new SKB entry is by **identifying the** Product Type. In cases where you are unsure, **refer to** Appendix B to **clarify** how a resource should be classified.

Once you have identified the product type, turn to the corresponding **example for that product type** in Appendix A: Sample Entries. This will provide you with a model for proper entry procedure **specific to** that product type, **showing which** entry fields are necessary for your resource and any special requirements such as capitalization or formatting of the entry field. **To help streamline the process of creating entries,** we recommend keeping a print copy of the metadata guide on-hand for easy **reference**.

Special Considerations: Copyright Issues and Entering into the SKB

ALL research products created with SANREM CRSP funding should be entered into the SKB to promote knowledge sharing and opportunities for projects to learn from each other and for the public to learn from SANREM-funded research. This includes all presentations, posters, articles presented at academic conferences or submitted to academic journals as well as more informal field reports and extension documents developed over the course of a SANREM project. Moreover, we encourage the projects to create entries for resources which they have found helpful in doing their research.

Because most peer-reviewed academic literature is copyrighted, we ask that researchers generate their own summary for copyrighted material entered into the SKB.

Occasionally, researchers have expressed concern about uploading resources to the SKB when submitting research for publication. While we encourage our authors to pursue publication in academic journals, sharing the research on the SKB is a major responsibility to the project. Questions and concerns regarding copyright issues should be brought to the attention of the Managing Entity, with specific questions directed to skbra@vt.edu.

Revisions and Updating

Please send suggestions for correction and improvement to:
Theo Dillaha, SANREM Program Director, dillaha@vt.edu

Description of the Metadata Fields

1. **Title**

Enter the title data found on the actual resource.

Use no punctuation at the end of the title.

Capitalize as defined below.

Length is limited to 500 characters.

Book title (including conference proceedings):

- Capitalize all significant words (prepositions and articles remain lowercase).
- Include subtitles as part of the title, separated by a colon.
- Examples:
 - Between Agroecosystems and Rural Communities
 - West Africa: Civil Society Strengthening for Conflict Prevention

Journal article, paper, book section, report, presentations, other resources:

- Capitalize:
 - The first letter in the title.
 - All proper nouns (countries, names).
 - The first letter after a colon (signifies a subtitle).
- Example:
 - Assessing regional impacts of change in the Philippines: Linking economic and environmental models

2. **Alternate Title**

This can be:

- A translation of the title to a different language.
- A form of the title appearing on different parts of a resource
- An alternative form of the title that is significantly different from the entry in the "Title" field.

Use formatting guidelines from the "Title" field.

Length is limited to 500 characters.

3. **Creator (Author)**

This is the person(s) responsible for creating the resource. Use last name and initials. See below for format.

When no individual creator is listed in the resource, enter the publishing or issuing institution's name.

- If an entity is commonly known by an abbreviation of the name, it is acceptable to use the abbreviation (e.g., FAO).

For an editor or editors, add (ed.) or (eds.) after the name(s).

Format:

- For first author: <Last name>, <First Initial>.<Middle Initial(s)>.
- For additional authors: <First Initial>.<Middle Initial(s)>. <Last name>.
- Separate multiple authors with commas except the final two authors, which are separated by "and" (no comma before the word "and").
- No spacing between initials.

Examples:

- One author: Badini, O.

- Two authors: Badini, O. and R.H. Wynne
- Three or more authors: Zapata Ríos, X., R.E. Rhoades, M.C. Segovia and F. Zehetner
- Corporate author: USDA
- One editor: Moore, K.M. (ed.)
- Two or more editors: Bertelsen, M. and K.M. Moore (eds.)

4. **Contributor**

This field is for additional persons or entities that contributed to the resource. Use formatting guidelines from the “Creator” field.

5. **Contact Information**

This field is primarily intended for PES (Payments for Environmental Services) projects but may also be used with other resources if they contain relevant specific contact information. May include information such as name of contact person, e-mail address, mailing address, telephone and fax numbers

Suggested format:

Separate distinct pieces of information with a slash (/)

Example:

Cameron Odsey / Cordillera Highland Agricultural Resource Management, Sto.Tomas Road, Baguio Dairy Farm, Baguio City 2600, Philippines / Email: charm@mozcom.com

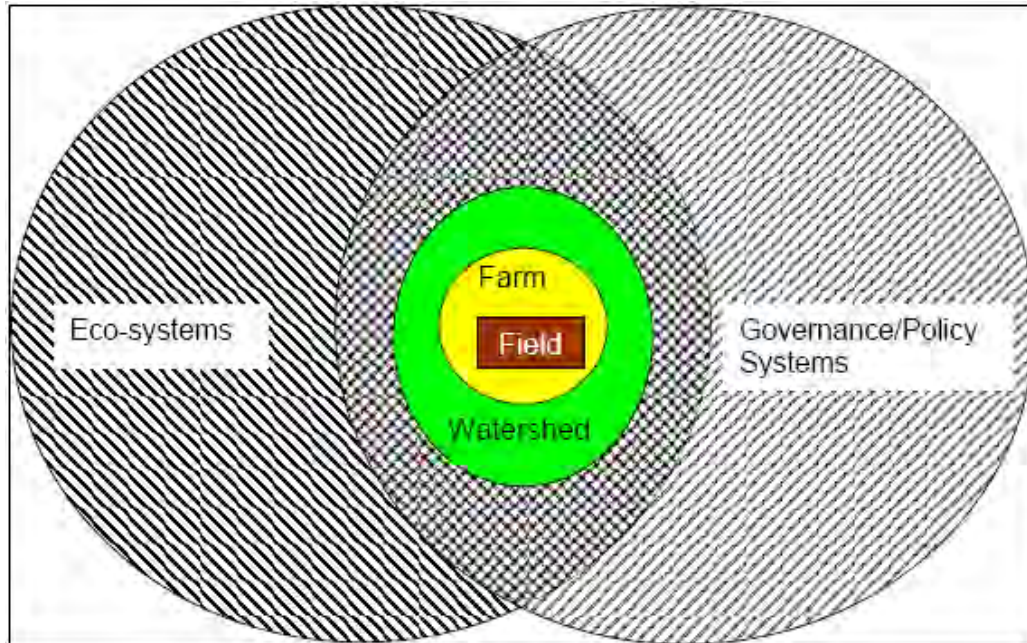
6. **Landscape System**

The landscape system description requires a selection of one or more terms from the following list to define the scale or focus of the resource content. See below for diagram of nested landscape systems.

- **Field Scale**— a crop, pasture, forest plot, pond or stream with more or less uniform management practices. The field scale focuses on the soil as the fundamental management unit and generally involves the primary decision makers, or stakeholders, and their influence. Examples of field-scale topics are the effect of manure on soil fertility on a small farm or the enhancement of productivity by the strategic application of inputs.
- **Farm /Enterprise Scale** – a household or business involved in agricultural or natural resource production generating a livelihood for household or enterprise members. The farm/enterprise scale builds on the field scale by adding in the social relations, especially how they relate to the exchange value of resources, or how these are integrated into household productive or reproductive activities.
- **Watershed** – a locally sited aggregation of field systems and the associated aggregation of farm household/enterprise systems variously delimited by neighborhood, administrative, or hydrological boundaries. If the study extends beyond the household and involves the community and the cultural effects, characteristics of the area, and/or local administrative units then it would be in the watershed category. This category includes discussions of rainfall runoff and other effects, community prosperity, and collective decision-making.
- **Ecosystem** – large scale biotic and abiotic ecologies scattered across mountains, forests, deserts, plains, valleys, rivers, lakes, wetlands, estuaries, seas, and oceans. This category encompasses the overarching biophysical and landscape environment. It involves the interactions of organisms with other systems and how these relationships are shaped by variously interconnected activities, such as land use decisions. This goes one step beyond the watershed category and

evaluates the effect of surrounding areas, generally involving interaction between multiple regions and/or watersheds.

- **Governance** – the macro institutional framework involving civil society, markets, and the state setting of parameters for resource rights and conditions for exchange. Governance involves operating conditions and the rules and norms for relationships among systems and group interaction, and their impact on a given area.



For some resources, selecting a landscape system is not applicable.

7. **PES Resource/Project**

This box should be checked *only* for resources or projects related to PES (Payments for Environmental Services).

Checking this box adds the PES-specific components to the entry form.

Complete guidelines for entering PES projects and resources are available in a separate guide, available on the SANREM website as of Fall 2007.

8. **Restricted Keywords**

Restricted keywords are terms that are central ideas to the resource. They act as descriptors of the resource content and will be used by others to search for resources relevant to particular keywords.

The restricted keywords list contains common keywords that pertain to SA/NRM, organized by conceptual categories. The purpose of a restricted keyword list is to provide standardized vocabulary that will facilitate the search process and minimize potential problems from mistyped or misspelled keywords.

Select all keywords that are **central** ideas to the resource. Although the number of keywords will vary based on the depth and breadth of the resource, most resources are characterized by 5-10 keywords. Terms that are referenced in the resource but are not central to its focus should not be selected.

See **Appendix C** for keyword list.

- Suggestion: A printed copy of the keyword list makes selection of relevant keywords more efficient.

In selecting keywords, three questions should be posed concerning an information resource to help in identifying pertinent keywords:

- What natural resources are involved?
- What social (i.e., cultural, economic, and/or political) dimensions are involved?
- What transformative processes (technologies) are involved?

9. **Unrestricted Keywords**

This field is for important terms describing the resource that are *not found* in the restricted keywords list, including entries such as:

- Species' names (*Paraserianthes falcataria*) (italics appear as normal text in SKB).
- Organization names, i.e., World Agroforestry Centre (ICRAF).
- Simulation model names, i.e., Phytomass Growth Simulator (PHYGROW).
- Geographic names (Nicaragua, Andes), (only when particularly important to the research).
- Keywords in a language other than English, particularly if the resource itself is not in English (biodiversidad, mercados).

Format:

- Capitalize only proper nouns.
- Separate multiple terms with commas.

Examples:

upland agriculture, timber intercropping, Mindanao, Philippines, bioeconomic model, cost-benefit analysis

NOTE: Give priority to defining keywords using the standardized “Keywords” list to maximize searchability and access to the resource.

Length is limited to 2,000 characters.

10. **Description**

This field provides a summary description of the resource.

Three types of descriptions – abstracts, table of contents, and user-generated summaries - are most common. One or a combination of these can be used.

Also use this field to alert users that the resource is available in another format.

Examples:

- If the resource is available as both a conference paper and a presentation, catalog each resource in a separate record. At the end of the description field in the record for the presentation enter, "Also available as a conference paper."
- If a research brief is also available as a full paper or report, or a conference paper has subsequently been published in a peer-reviewed journal or in conference proceedings, add "Also available as a <type of resource>: <citation>."
- If the resource is available in multiple languages, note at the end of the description "Also available in <language>"; include translated title and pertinent information for accessing the resource (such as URL or bibliographic citation).
- If the resource has been presented on multiple occasions, (i.e. a presentation, poster, or paper presented at multiple conferences), specify with the designation: "Also presented at <name of conference>, <place>, <date[days month year]>."

Length is limited to 4,000 characters.

Use only a single space between sentences.

Abstract:

- An abstract taken directly from the resource can be used as a description if:
 - The resource is not copyrighted; OR

- The abstract of the resource is not copyrighted; OR
- The copyright holder has granted permission.
- **The "user" creating the entry is responsible for the use of copyrighted material.**
- Start the entry with "ABSTRACT:" unless the resource uses a different term (e.g., "SUMMARY"); use the term that appears on the actual resource.
- Enter the abstract as continuous text. Separate paragraphs with hard returns.
- Example:
 ABSTRACT: This brief illustrates how environmental projects can respond to donors' demands for evidence of impacts in the early stages of their implementation, before longer-term improvements in natural resource conditions have time to occur. The approach centers on a hierarchical classification of impacts that allows one to capture "intermediate" steps, that is shifts in awareness and attitude that usually precede actual changes in behavior concerning sustainable natural resource management.

Table of Contents:

- Format:
 - Begin the entry with "TABLE OF CONTENTS:" or "CONTENTS:"
 - Enter as plain text (no formatting).
 - If book sections have listed authors, include their last names after section title, separating the title and authors with a slash (/).
 - Do not include page numbers.
 - If the Table of Contents in the actual resource has numbered sections, it is acceptable to include the numbering.
- Examples:

TABLE OF CONTENTS:
 Formation, potential and challenges of a citizen volunteer water quality monitoring group in Mindanao, Philippines / Deutsch and Orprecio

The Landcare approach: Enhancing community participation in sustainable agriculture and natural resource management / Mercado and Garrity

Holistic management in West Africa: A new approach to community-based natural resource management decision making and institutional development at the decentralized commune level / Bertelsen

TABLE OF CONTENTS:
 I. Introduction
 II. Deforestation in Mexico and the environmental services
 III. The evolution of Mexico's PES program for hydrological services
 IV. Results of implementation, 2003-2004
 V. Putting the Mexican experience into perspective: A conceptual framework
 VI. Learning from the Mexican experience

User-generated summary:

- A user-generated synopsis may be required in cases where no suitable summary is included in the resource or when a copyright prohibits use of resource material. For example, most journal article abstracts ARE copyrighted and therefore require a user-generated synopsis.
- Enter as continuous text. Enter a hard return ("Enter") only when separating paragraphs.

- If relevant, include information about the source of the description.
 - Examples:
 - “derived from author’s abstract” or
 - “summary from publisher’s website; available at: <insert URL for website>”

11. **Publisher**

This field contains the location and name of the publishing house, university entity, organization, or corporate entity responsible for making the resource available.

- If the geographic location of the publisher is unknown, it is acceptable to give only the name of the publisher (this most often will occur with journal articles)

Format:

<city, state or country>: <Publisher’s name>

- Do not include a period at the end of the line.
- Common abbreviations and acronyms are acceptable.

Examples:

- Watkinsville, GA: SANREM CRSP
- Elsevier
- Madison, WI: SANREM CRSP SEA
- Makati City, Philippines: Philippine Institute for Development Studies (PIDS)
- Washington, D.C.: USAID
- Bukidnon, Philippines: International Centre for Research in Agroforestry (ICRAF)
- Blacksburg, VA.: Virginia Tech, Office of International Research, Education, and Development (OIRE)

12. **Bibliographic Citation**

This field should contain the bibliographic information that is part of a complete standard citation and not included in other fields (i.e., not in "Title," "Author," "Publisher," or "Creation Date" fields).

- Exception: For resources that are part of another resource (i.e., a chapter of a book or a paper that is published in conference proceedings), there is no bibliographic citation – the reference for the larger work should be placed in the “Is Part Of” field (see description below).

Resource types that typically require bibliographic citations include journal articles, conference papers and presentations, and series (working papers, research briefs, newsletters, other reports).

Journal articles:

- Format:
 - <Journal Title> <vol. no.>(<issue no.>): <pagination>
 - Include full journal title or the standard abbreviation for the journal.
- Examples:
 - Agricultural Systems 79(3): 261-281
 - Journal of Agricultural Economics and Development 26(1-2): 60-90

Conference papers and presentations:

- Format for conference papers (that are not published in conference proceedings):
 - Paper presented at the <name of conference>, <place>, <date[days month year]>

- Example:
Paper presented at the SANREM CRSP Research Scientific Synthesis Conference, Athens, GA, 28-30 November 2001
- Format for electronic presentations:
Presented at the <name of conference>, <place>, <date[days month year]>
- Example:
Presented at the Conference on Interfaces in the Repatriation and In Situ Conservation of Traditional Crops, University of Georgia, Athens, GA, 30 April -1 May 2004

Series (may be working papers, research briefs, newsletters, other reports):

- Use the citation found on the resource.
- Format:
<Series title> <series number>
- Examples:
 - SANREM CRSP Research Brief 2001 No. 2.
 - SANREM CRSP SEA Policy Brief 2002-3
 - SANREM CRSP Working Paper No. 01-07
 - Drylands Issue Paper No. 49
 - World Agroforestry Center NRM Policy Brief 1
 - ISPPS Working Paper No. 03-04

Thesis or dissertation:

- Format:
<Degree>. <City, State abbreviation OR City, Country>: <College/University>.
- Examples:
 - Ph.D. dissertation. Athens, GA: University of Georgia
 - MS thesis. Los Baños, Philippines: University of the Philippines

13. *Is Part Of*

This field is used for resources that come from a parent piece, such as a chapter or section from a book, and gives the bibliographic citation for the parent material.

- This field is NOT for series – the series that a resource is part of is included in the bibliographic citation field.
- If the resource is part of a collection or broader series that is not named in the bibliographic citation field, this information can be noted in the “Description” field.

Format:

In: <Author(s)/editor(s) of parent resource>. <Title of parent resource>, <pagination of book section>

- Do NOT include the creation date or publisher in the “is part of” citation; these metadata should be placed only in their respective fields.
- The format for the elements of this citation follows the same format given for the separate “title” and “creator” fields.
- If the author/editor of the parent resource is not known, it is acceptable to either use the responsible corporate entity or not enter anything for “author/editor.”

Examples:

- In: Coxhead, I. and G. Buenavista (eds.). Seeking Sustainability: Challenges of Agricultural Development and Environmental Management in a Philippine Watershed, 138-152

- In: Cason, K. (ed.). *Cultivating Community Capital for Sustainable Natural Resource Management: Experiences from the SANREM CRSP*, 27-37
- In: *Proceedings of the 12th International Soil Conservation Organization Conference, Vol. III: Technology and Method of Soil and Water Conservation*, 277-281

14. **Creation Date**

This field is for the reference date when the resource was published/presented/created (YYYY).

- For presentations, enter the year of the presentation (date of conference).
- For presentations published in conference proceedings, enter the year of publication.

15. **Type**

This is the type of material the resource represents.

Check the type that best applies:

- Text
- Collection
- Dataset
- Event
- Image
- Interactive Source
- Moving Image
- Physical Object
- Project
- Service
- Software
- Sound
- Still image

The two most commonly entered categories are text and images.

- Text - contains words to be read (includes images of readable text).
- Image - symbolic visual representation other than text.
 - Examples: images and photographs of physical objects, graphics, drawings, graphs, maps.
 - Text resources will often contain images; however, select “image” only if the resource is solely an image (or images) and does not contain text.
- Project - actual, attempted, or proposed implementation of a specific activity (or activities).
 - This type is primarily used for PES (Payments for Environmental Services) projects.
 - Note the distinction between a project and a resource (text, image) that provides information *about* a project. Multiple resources can be referenced in a project description.

See **Appendix D** for descriptions of all resource types.

16. **Product Type**

This is the type of product the resource represents, e.g., book, book section, conference paper, journal, presentation, report, thesis.

Select the “product type” that most specifically applies to the resource.

- All resources entered into the SKB should have a product type designated

See **Appendix B** for definitions of the Product Types.

17. **Format**

The format is the physical or digital manifestation of the resource; this field indicates the specific program needed to display the resource.

- Paper (not digital)
- Acrobat Reader
- Image Viewer
- Microsoft PowerPoint
- Microsoft Word
- Movie Viewer
- HTML viewer

If a resource is available in both digital and paper formats, select the digital format of the resource. The “paper” format should be selected only for resources that are not available in any digital formats.

18. **Identifier**

This includes all ISBN and ISSN numbers associated with the resource.

This field also indicates if a resource is available in the SANREM CRSP management office and whether it is in electronic storage (ES) or file storage (FS).

Electronic/online ISSN numbers are designated as “EISSN.”

Format and examples:

- ISBN: 0385424728
- ISSN: 1234-4487
- ISSN: 0002-9602; available in SANREM office, FS
- ISSN: 1234-4487 / EISSN: 1244-4488
- ISBN: 1-904035-72-8 / ISSN: 1605-2293
- ISBN-13: 978-2-8317-0881-2 / ISBN-10: 2-8317-0881-8

Length limit is 100 characters.

19. **URL (type of identifier)**

If available, enter a URL that goes directly to the resource or to a site that gives information on acquiring the resource.

It is possible to enter multiple URLs (e.g., one linking directly to the resource and one linking to a website with publication details).

Examples:

- Journal:
[http://dx.doi.org/10.1016/S0308-521X\(03\)00087-8](http://dx.doi.org/10.1016/S0308-521X(03)00087-8)
- NOTE: a URL can be entered for most journal articles using the URL “<http://dx.doi.org/>” followed by the article DOI. The DOI citation creates a stable URL that should be used over other URL designations to ensure continued access to the resource.
- “Other report”:
<http://www.iied.org/pubs/display.php?o=6348IIED&n=2&l=2&a=alam&s=SGK>
(Publication information) and
<http://www.iied.org/pubs/pdf/full/6348IIED.pdf> (direct link to pdf of resource)
- SANREM-specific publication:
http://www.oired.vt.edu/sanremcrsp/documents/WorkingPapers/Final.Strzepek_Final_Report-Working.pdf
- NOTE: SANREM-produced resources should also be uploaded to the SKB.

20. **Language**

Select the primary language of the resource from the drop-down list; if the language is not listed, enter in the "Other" field.

- If the resource is available in multiple languages, select the primary language from the list (if available). Enter the other languages in the "Other" field, separated by semicolons.

Note: If a translation of the title is provided, it should be entered in the "Alternate Title" field.

21. **Spatial**

This field describes the geographic coverage of the resource.

Enter geographic areas/regions described in the resource (free text).

Format:

- Separate geographic scales of a location (region, province, country) with commas.
Examples:
 - Cotacachi Cayapas Ecological Reserve, Ecuador
 - Manupali watershed, Mindanao, Philippines
- Separate different geographic locations (i.e., two countries) with semicolons.
 - Cotacachi, Imbabura, Ecuador; Peru, South America

22. **Temporal**

Enter the time period covered in the resource (period during which the research occurred or covers) by entering the beginning and ending years in the format YYYY.

If only the beginning or ending year is known, it is acceptable to enter only one.

The time period may project into the future (e.g., a paper about a project that has a time frame of 1997-2017).

The temporal field will not be applicable to every resource entry.

23. **Rights**

Statement of rights should be what appears on the actual resource.

This could be a textual statement or a URL pointing to a rights statement.

- Exception: "Copyright" should be written out, even if a symbol is used on the actual resource.

Examples:

- Copyright 2000 by the SANREM CRSP. All rights reserved.
- Copyright 2001 by SANREM CRSP and CARE-SUBIR. All rights reserved.
- Copyright Inter-Research 1999
- Copyright 2004 IIED. The material in this paper may be reproduced for non-commercial purposes provided full credit is given to the authors and to IIED.

Length is limited to 4,000 characters.

24. **Upload Resource**

Upload resources only if they are not copyrighted, you own the copyright, or you have been given permission to upload the resource.

If a file contains multiple resources and has already been uploaded (i.e., a newsletter containing multiple articles or research briefs), use the "associate existing resource" option and locate the correct file.

Uploaded files cannot include any special characters, such as accents, in the filename.

25. SANREM Project ID

SANREM Project IDs are only for resources that are produced as a result of SANREM funding.

If the resource is a product of a SANREM project, select the ID that corresponds to the specific project responsible for the development of the resource

Appendix A: Example Entries for the Metadata Guide

The following examples show only the specific fields used for these entries. While these fields are typical of the different resources included here, your entries may also include metadata in additional SKB fields as appropriate.

Article Published in Refereed journal

Title: Economic potential of biomass based fuels for greenhouse gas emission mitigation

Creator (Authors): Schneider, U. and B. McCarl

Keywords: Biomass energy, Afforestation, Carbon Sequestration, Markets, Economic Analyses, Government Policy, Environmental Impacts, Agriculture, Livestock, Economic Policy

Landscape System: Ecosystem

Unrestricted Keywords: agricultural sector model, ASMGHG, alternative energy, biofuel economics, biomass power plants, greenhouse gas emission mitigation, short rotation woody crops, switchgrass¹

Description: This paper examines the role biofuels could potentially fill in reducing greenhouse gas emissions by decreasing combustion of fossil fuels. Currently, biofuels are not economically viable if not subsidized. The authors apply a US Agricultural sector model (ASM) to assess how the production and processing of biofuels could be incorporated into a greenhouse gas mitigation market. Emission coefficients for agricultural practices are estimated with crop growth simulation models and hypothetical carbon prices are used to simulate markets and policies. The model results suggest that if carbon prices are at or below \$40 / ton, there is no incentive for biofuels; soil tillage and afforestation are more economic mitigation approaches. If carbon prices exceed \$70, biofuels become the most viable agricultural mitigation option². [summary by the record creator]

Publisher: Netherlands: Kluwer Academic Publishers³

Bibliographic Citation: Environmental and Resource Economics 24(4): 291-312

Creation Date (YYYY): 2003

Type: Text

SANREM Product Type: Article Published in Refereed Journal

Identifier: ISSN: 0924-6460 / EISSN: 1573-1502

Language: English

Spatial: United States

Rights: Copyright 2003 Kluwer Academic Publishers

¹ Regarding the capitalization of key words: Although all keywords in the restricted keywords list are capitalized, keywords entered as “unrestricted keywords” should only be capitalized if they are proper nouns (i.e. Madagascar, Wildlife Conservation Society, Kyoto Protocol)

² The description must be generated by the record creator if the author’s abstract is copyrighted.

³ Note: The publisher will not appear in a citation for a peer-reviewed journal article; entering the publisher is optional for journal articles.

Book⁴

Title: Agroecological Innovations: Increasing Food Production with Participatory Development

Creator: Uphoff, N. (ed.)

Keywords: Sustainable Development, Community Participation, Agriculture

Landscape System: Ecosystem; Farm/Enterprise Scale; Field Scale

Unrestricted Keywords: agricultural development, case studies, Africa, Asia, Latin America

Description:

ABSTRACT: This book presents a collection of innovative, successful and diverse approaches to agricultural development. Documented in 12 case studies, these approaches draw upon greater knowledge, skill and labour input, rather than on larger, unsustainable capital expenditure, and are shown to increase yields substantially. Part 1 of the book (chapters 1-6) deals with issues for analysis and evaluation concerning sustainable agricultural development. Part 2 (chapters 7-18) presents the case studies from Africa, Latin America, and Asia. Part 3 (chapters 19-22) focuses on advancing agroecological agriculture with participatory approaches. The book has a subject index.

Publisher: London, UK: Earthscan

Creation Date (YYYY): 2002

Types: Text

Text Type (If Applicable): Books/Book Chapters

Formats: Paper

Identifier: ISBN: 1-85383-857-8

URL: <http://styluspub.com/books/BookDetail.aspx?productID=49068>

Language: English

Spatial: Africa; Asia; Latin America

Rights: Copyright 2002 Earthscan Publications Ltd.

⁴ Entries for books typically do not contain any metadata in the bibliographic citation field; nothing entered in this field will appear in a generated bibliography.

Book Chapter (or section)⁵

Title: The Landcare approach: Enhancing community participation in sustainable agriculture and natural resource management in the uplands

Creator: Mercado, Jr., A. and D. Garrity

Keywords: Soil Erosion, Stakeholders, Community Participation, Sustainable Agriculture, Natural Resource Management

Landscape System: Governance; Farm/Enterprise Scale

Unrestricted Keywords: uplands, Landcare approach, land husbandry, land degradation, farmer groups, local government units, technical facilitation organizations, the Philippines

Description:

Three factors are increasingly fundamental to successful natural resource management in the uplands. First, there is a need for improved land husbandry practices that enable farmers to sustain food production on sloping lands. Such practices would help farmers change gradually from a monoculture system to mixed tree, crop and/or livestock-based systems that provide increased income and environmental protection. Second, there must be real and effective participation by the rural population, through their own local institutions, in the decisions that impinge upon their livelihoods. Third, there must be an effective partnership among service providers and stakeholders. This paper describes the evolution of Landcare, a farmer-led movement in the Philippines that has emerged as an approach to successful natural resource management in the uplands.

Publisher: Watkinsville, GA: SANREM CRSP⁶

Is Part Of: In: Cason, K. (ed.). Cultivating Community Capital for Sustainable Natural Resource Management: Experiences from the SANREM CRSP, 21-28

Creation Date (YYYY): 2000

Types: Text

Text Type (If Applicable): Books/Book Chapters

Formats: Acrobat Reader

Language: English

Spatial: Philippines

Rights: Copyright 2000 by the SANREM CRSP. All rights reserved.

⁵ Book sections are distinguished from books by the “is part of” field, which contains the reference for the parent resource.

⁶ The book publisher should be in the “publisher” field, and not in the “is part of” field.

Papers/Seminars Presented

Example 1: Unpublished conference paper⁷

Title: Technical innovations and institution-building for upland development: The case of Landcare in the Philippines

Creator: Catacutan, D.C. and A.R. Mercado, Jr.

Contributor: SANREM (Sustainable Agriculture and Natural Resources Management) and ICRAF (The International Centre for Research in Agroforestry)

Keywords: Soil Conservation, Soil Management, Soil Erosion, Community Participation, Local Knowledge, Adoption of Innovations, Social Learning, Farmer to Farmer, Agroforestry, Ecoagriculture, Watershed Management

Landscape System: Farm/Enterprise Scale

Unrestricted Keywords: conservation farming, natural vegetative filler strips (NVS), farm productivity, technical appropriateness, grassroots institutional structure, appropriate policies, upland development, tree species evaluation, sloping agriculture land technology (SALT), trash bunds, Landcare approach, vegetative buffer strips, contour farming, hedgerows, technology dissemination

Description:^{8,9}

ICRAF has been conducting research on contour hedgerow systems for the past decade in ... the Philippines. . . . We concluded that low adoption of the conventional hedgerow system was not only due to some technical constraints but largely to socio-economic and institutional constraints faced by poor farmers in the uplands. . . . In view of this we refocused our efforts toward finding alternative systems that address the technical and institutional issues of conservation farming. We found that natural vegetative filler strips (NVS) provide simple solution to the technical constraints of soil conservation on sloping farms. . . . NVS also provide the foundation for farmers to evolve into complex agroforestry systems with fruit and timber trees and other perennials -- thus, improve total farm productivity. (Excerpt from authors' abstract)¹⁰

Publisher: Bukidnon, Philippines: International Center for Research in Agroforestry (ICRAF)

Bibliographic Citation: Paper presented at the International Conference on Sustaining Upland Development in Southeast Asia: Issues, Tools, and Institutions for Local Natural Resources Management, ACCEED, Makati City, Philippines, 27-30 May 2001

Creation Date (YYYY):¹¹ 2001

Types: Text

Text Type (If Applicable): Papers/Seminars Presented

⁷ Unpublished conference papers typically have a citation for the conference/event in the "bibliographic citation" field and nothing entered in the "publisher" or "is part of" fields.

⁸ If a conference paper has subsequently been published in a peer-reviewed journal or in conference proceedings, add "Also available as a <type of resource>: <citation>" after the description.

⁹ If a conference paper has been presented on multiple occasions, add "Also presented at <conference name>, <place> ,<date[day month year]>

¹⁰ The description has been shortened in this example; the actual SKB entry contains the full description.

¹¹ For unpublished conference papers, the creation date is the year of the event where the paper was presented

Formats: Acrobat Reader

Language: English

Spatial: Misamis Oriental and Bukidon Provinces, Mindanao, Philippines

Temporal (YYYY): From 1994 To 2000

Resource Filename: Filename: technicalNovInstBuilding.pdf

Example 2: Paper published in Conference Proceedings¹²

Title: Creating an economic linkage between fossil fuel burning, climate change, and rangeland restoration

Creator: Squires, V.R. and E.P. Glenn

Keywords: Climate Control, Environmental Impacts, Rangelands, Land Use Management

Landscape System: Ecosystem

Description:

ABSTRACT: Rangelands have the potential to be a sink for significant amounts of carbon, especially if they are restored to their ecological potential. Rangeland restoration would have a major impact on global climates since the world's drylands (excluding the hyperarid regions) cover 5.2 X 10⁹ ha. The huge cost range rehabilitation could be provided via privately funded carbon offset programmes and special efforts to sequester C in the world's drylands. The challenge for rangeland scientists is to devise ways to raise biomass levels to trap and store C in the long-term. (CAB Abstract)

Publisher Denver, CO: Society for Range Management

Bibliographic citation:

Is part of: In: West, N.E. (ed.). Rangelands in a Sustainable Biosphere. Proceedings of the Fifth International Rangeland Congress, Salt Lake City, Utah, USA, 23-28 July 1995. Volume 1: Contributed presentations, 531-532¹³

Creation Date (YYYY):¹⁴ 1995

Types: text

Text Type (If Applicable): Papers/Seminars Presented

Formats: Paper

Language: English

¹² Entries for papers published in conference proceedings should have the citation for the entire conference proceedings in the "is part of" field and the publishing entity in the "publisher" field.

¹³ If the citation for the original conference/event is not incorporated in the title of the proceedings, this information may be added to the "description" field ("This paper was presented at <conference citation>."); it should NOT go in the "bibliographic citation" field

¹⁴ The creation date for papers published in conference proceedings or journals is the year of publication, not the year the paper was presented.

Electronic Presentations

Title: Climate change: Why worry?

Alternate Title: Cambio climático: ¿Por qué preocuparse?

Creator: Seth, A.

Restricted Keywords: Tropical Zones, Semiarid Zones, Subhumid Zones, Environmental Impacts

Landscape System: Ecosystem

Unrestricted Keywords: climate change, global warming, carbon cycle, precipitation, temperature

Description:¹⁵¹⁶

ABSTRACT: This presentation reviewed the current state of knowledge related to anthropogenically forced global climate change and projections from climate model simulations performed for the IPCC fourth assessment. While the global projections consistently describe a continued and enhanced warming trend in the 21st century, the models are less consistent in their representation of South American precipitation trends in the Amazon basin and monsoon regions. In addition, a review of recent published literature related to observed climate variability and trends in the Altiplano was presented. There is clear observational evidence of an increasing temperature trend and the effects on receding glaciers in the region. With respect to variability, recent studies suggest that reduced (enhanced) rainfall in the Altiplano is associated with enhanced (reduced) westerly winds, i.e., low level winds and moisture flow from the east are related to wet conditions during the rainy season.

Publisher:¹⁷

Bibliographic Citation: Presented at the First Scientific Team Retreat of SANREM CRSP Adapting to Change in Andean Ecosystems, Batallas, Bolivia, 26-27 April 2006

Creation Date (YYYY): 2006

Types: Text

Text Type (If Applicable): Electronic Presentations

Formats: Microsoft Powerpoint

Identifier: available in SANREM office, ES

URL:

Language: English

Spatial: La Paz, Bolivia

Resource Filename: Filename: SethAltiplano-Modeling-Variability-Trends.ppt

Project ID: LTR-4 - Practices and Strategies for Vulnerable Agro-Ecosystems

¹⁵ If the resource is available as both a conference paper and a presentation, catalog each resource in a separate record. At the end of the description field in the record for the presentation enter, "Also available as a conference paper."

¹⁶ If a presentation has been given on multiple occasions, add "Also presented at <conference name>, <place> ,<date[day month year]>

¹⁷ Electronic presentations typically do not have anything entered in the "publisher" field.

Conference Proceedings

Title: 21st century watershed technology: Improving water quality and environment conference proceedings¹⁸

Creator: ASABE

Creator: Coxhead, I. and A. Rola

Restricted Keywords: Water, Water Quality, Biological Assessment, Environmental Impacts, Watershed Management

Landscape System: watershed

Unrestricted Keywords: conference proceedings, agricultural best management practices, BMPs, monitoring

Description: These proceedings are from the conference, "21st century watershed technology: Improving water quality and environment" held in Concepción, Chile, 29 March - 3 April 2008. The conference focused on issues such as water quality and monitoring, watershed management, effectiveness of agricultural best management practices (BMPs), political ramifications of water conservation, biological monitoring, and stakeholder involvement in water quality. This resource contains over 60 papers presented at the conference, and covers all the topics listed above, as well as many others.⁻¹⁹

Publisher: St. Joseph, MI: American Society of Agricultural and Biological Engineers (ASABE)

Bibliographic Citation: CD-ROM²⁰

Creation Date (YYYY): 2008

Types: Text

Text Type (If Applicable): Conference Proceedings

Formats: HTML Viewer

Identifier: available in SANREM office, FS

Language: English

Rights: Copyright 2008 American Society of Agricultural and Biological Engineers.

¹⁸ Some proceedings have a descriptive title followed by "Proceedings of ..."; this subtitle can be included in the title field. Example: Institutions for Sustainable Forest Management: Proceedings of the 2nd biennial meeting of the International Forestry Resources & Institutions (IFRI) Research Network

¹⁹ If the conference date and location are not part of the published title, that information should be included in the description field; NOT in the bibliographic citation field.

²⁰ Many entries for proceedings will not have any metadata in the "bibliographic citation" field.

SANREM CRSP Research Brief

Title: Reconciling livelihoods and landscapes: Trade policies, labor markets, and land use in the Philippines

Creator: Coxhead, I. and A. Rola

Restricted Keywords: Soil Conservation, Rural Development, Economic Growth, Trade Policy, Economic Analyses, Conservation Incentives, Agricultural Law, Government Policy, Land Tenure, Economic Impacts, Environmental Impacts, Sustainable Agriculture, Land Use Planning, Income Generation

Landscape System: Farm/Enterprise scale, Governance

Unrestricted Keywords: Mindanao, Philippines, non-farm employment, upland farming, labor markets, commodity markets, environmental degradation, incentives

Description:²¹

The authors addressed the contribution of national economic development policies to natural resource management and the possibility of achieving higher incomes for rural households while sustaining the productivity of the resource base in a five year research project in the Philippine island of Mindanao.

Their research demonstrates that crop prices and non-farm employment opportunities influence upland farmers' land use and cropping decisions. ... Therefore policies affecting the profitability of various crops or the availability and attractiveness of non-farm employment can help curtail rates of deforestation, soil erosion, and water pollution.

This brief draws from the following article²²: Coxhead, I., A. Rola and K. Kim. 2001. Philippine development strategies, price policies and national markets: Growth, policies and upland resource use. In: Coxhead I. and G. Buenavista (eds.). Seeking Sustainability: Challenges of Agricultural Development and Environmental Management in a Philippine Watershed. Los Banos, Laguna, Philippines: PCARRD.

Publisher: Watkinsville, GA: SANREM CRSP

Bibliographic Citation: SANREM CRSP Research Brief 2001 No. 3

Creation Date (YYYY): 2001

Types: Text

Text Type (If Applicable): SANREM CRSP Research Brief

Formats: Acrobat Reader

URL: <http://www.sanrem.uga.edu/sanrem/database/pdf/coxhead.pdf>

Language: English

Spatial: Mindanao, Philippines

Temporal: 1994-1999

²¹ The description may be the author's abstract from the actual resource when there are no copyright restrictions.

²² If a research brief is also available as a full paper or report, add the citation to the end of the description field; example: "Also available as a <type of resource>: <citation>."

SANREM CRSP Working Papers

Title: Agro-climatic assessment (description and analysis) of Madiama Commune in Mopti region, Mali (West Africa)

Creator: Badini, O.

Keywords: Soil, Agricultural Ecosystems, Arid Zones, Environmental Impacts, Water Management

Landscape System: Ecosystem

Unrestricted Keywords: agro-ecological characteristics, climatic characteristics, rainfall variability

Description:

To understand and characterize the agro-climatic conditions in Madiama, first, the physiogeography of the area as well as the general climatic patterns of the Sahel region influencing the local climate of Madiama are introduced. Then, local rainfall amounts and variability are described and assessed through the analysis of long-term (30 years at least) annual, monthly, seasonal and decadal (every ten-day) totals. Through the probability analysis of the rainfall carried out on a decadal basis, the seasonality of rainfall and its reliability are described. Also, temperature, potential evapotranspiration, and length of growing season have been analyzed. Finally, the application of this agro-climatic analysis to crop suitability analysis as well as crop improvement and planning useful to Madiama and the region are introduced. (Excerpt from Introduction)

TABLE OF CONTENTS:

Introduction

I. Agro-ecological Characteristics

II. General Climatic Characteristics

III. Agro-climatic Description and Analysis

Conclusion

Publisher: Blacksburg, VA: Office of International Research and Development, Virginia Tech

Bibliographic citation: SANREM CRSP Working Paper No. 02-01

Creation Date (YYYY): 2001

Types: Text

Text Type (If Applicable): SANREM CRSP Working Papers

Formats: Acrobat Reader

Language: English

Spatial: Mopti Region, Mali, West Africa

Resource Filename: Filename: agro0201E.pdf

Annual Report / SANREM CRSP Annual Report²³

Title: Advancing Conservation and Use of Natural Resources: SANREM CRSP 2003-2004 Annual Report

Creator: Miller, K. (ed.)

Keywords: Soil Fertility, Water Quality, Stakeholders, Social Impacts, Economic Impacts, Environmental Impacts, Health Impacts, Adoption Of Innovations, Training, GIS

Landscape System: Governance; Watershed; Farm/Enterprise Scale; Field Scale; Ecosystem

Unrestricted Keywords: integration, problem solving, institution strengthening, up scaling, water quantity, Andes, Southeast Asia, West Africa

Description:

EXCERPT: This annual report marks the conclusion of SANREM's second phase (1998-2004). The year was enthusiastically devoted to synthesizing information and making it available to stakeholders. All projects organized and conducted synthesis conferences, often in different formats depending on the stakeholders that SANREM researchers wanted to reach. SANREM SE Asia launched the first synthesis conference on January 13-14, 2004 ("Land Use Change in Tropical Watersheds", Manila, Philippines). SANREM Andes organized its conference in Cotacachi, Ecuador ("Sustainability of Landscapes and Livelihoods in the Andes," January 15-17). SANREM's West Africa's conference was one month later (February 24-26) and titled "Institutional Innovations and Technological Development for a Decentralized and Sustainable NRM". The DSS project, for its part, organized a workshop in Nairobi, Kenya integrating data, research results and analysis at farm, subnational and national levels (May 4, 2004).

TABLE OF CONTENTS:

Introduction

SANREM Andes

SANREM Decision Support System

SANREM Global Impacts and Information Exchange

SANREM Southeast Asia

SANREM West Africa

Publisher: Watkinsville, GA: SANREM CRSP

Creation Date (YYYY): 2004

Types: Text

Text Type (If Applicable): SANREM CRSP Annual Reports

Formats: Acrobat Reader

Language: English

Spatial: Andes; Southeast Asia; West Africa

Temporal (YYYY): From 2003 To 2004

Resource Filename: Filename: webY6AR.pdf

Rights: Copyright 2000 by the SANREM CRSP. All rights reserved.

²³ Annual Progress Reports from SANREM CRSP projects will also have metadata in the bibliographic citation field. Example: "LTRA-5 Progress Report"

Abstracts²⁴

Title: Natural resource conflicts in the Western Amazon: Implications for community management of non-timber forest products

Creator: Duchelle, A., P. Cronkleton and K. Kainer

Keywords: Rural Development, Livelihoods, Land Tenure, Tree Tenure, Non-Wood Forest Products

Landscape System: Farm/Enterprise Scale, Governance, Field Scale

Unrestricted Keywords: Brazil nut

Description:

Abstract of a presentation at the Association of Tropical Biology and Conservation (ATBC) Conference in Mexico (in English) outlining preliminary research results as an invited speaker in a Symposium entitled "Natural Services in local contexts: Opportunities and barriers to uptake." This abstract is also the basis for poster presentations at the Federal University of Acre and four presentations given to regional research organizations (in Portuguese and Spanish).

Bibliographic Citation: Presented at the Association of Tropical Biology and Conservation (ATBC) Conference, Morelia, Mexico, 15-19 July 2007

Creation Date (YYYY): 2007

Types: Text

Text Type (If Applicable): Abstracts

Formats: Microsoft Word

Language: English

Spatial: Brazil, Peru, Bolivia

Resource Filename: Duchelle_ATBC_abstract_July2007.doc

Project ID: LTR-1 - Decentralization Reforms and Property Rights

²⁴ An entry may be created for an abstract when the original resource (i.e. presentation, poster, or conference paper) is not available. If the original resource is available, create an entry only for the original resource; if the abstract has a unique published citation, include the citation in the "description" field (Example: "Abstract published in...").

Thesis / Dissertation

Title: Intercropping timber with food crops: A bioeconomic assessment of smallholder management options in the Philippine uplands

Creator: Nissen, T.

Keywords: Economic Impacts, Environmental Impacts, Integrated Crop Management, Tree Crops

Landscape System: Watershed; Farm/Enterprise Scale

Unrestricted Keywords: intercropping, timber farming, small farmers, species selection, planting density and geometry, branch pruning

Description:

ABSTRACT: As the area under vegetable cultivation on the steep slopes of Mt. Kitanglad in the Philippines increases, so does concern about the future economic and ecological health of the farms and watershed. But vegetable farming, because of its intense management demands and returns to land, also provides farmers with distinct opportunities for moving towards profitable and lower-risk perennial-based systems. Experiments were conducted on farms to evaluate under what conditions timber farming would be attractive to small farmers, and the tradeoffs associated with different management decisions, including intercropping, species selection, planting density and geometry, and branch pruning ... More research is needed to quantify the value of non-merchantable timber products, soil fertility effects of short-rotation timber, and the marginal gains to extended periods of intercropping.

[The description has been shortened in this example; the actual SKB entry contains the full abstract.]

Publisher: Athens, GA: University of Georgia²⁵

Bibliographic Citation: PhD diss. Athens, GA: University of Georgia

Creation Date (YYYY): 1998

Types: Text

Text Type (If Applicable): Theses and Dissertations

Formats: Acrobat Reader

URL: <http://www.aae.wisc.edu/sanrem-sea/Publications/Abstracts/IntercropTimberFoodCrops.html>

Language: English

Spatial: Mt. Kitanglad, Philippines

Resource Filename: Filename: Nissen.pdf

Rights: Copyright 2000 by the SANREM CRSP. All rights reserved.

²⁵ It is not necessary to use the “publisher” field for thesis/dissertations because the publishing entity is included in the “bibliographic citation” field; a generated bibliography citation will not include content from the “publisher” field.

Extension Publication (large)

Title: Goat management and health: A guide to raising healthy goats

Creator: Lewis, T.

Restricted Keywords: Training, Livestock, Goats

Landscape System: Ecosystem, Field Scale, Farm/Enterprise Scale

Unrestricted Keywords: COMACO, Zambia, goat management, goat health

Description:

CONTENTS:

Introduction

Basic Husbandry, Nutrition and Management

Assessing Goat Health

Goat Disease

Glossary

Appendix 1 - Basic External Anatomy of the Goat

Appendix 2 - Nutrition

Appendix 3 - Weight Estimation Using Heart Girth

Appendix 4 - Physical Exam Checklist for Goats

Appendix 5 - Tips for Leading Training Sessions

References

Ms. Lewis performed research regarding the live goat market conditions in Lusaka and in different regions of Zambia neighboring countries, and government requirements for animal health and travel certifications. She and Dr. Alice Pell, an expert in both small ruminant husbandry and nutrition, then assessed the Feira CTC's potential to incorporate goats and cattle into their product line. They surveyed farms for local disease conditions and husbandry practices.

Publisher: Zambia: COMACO, Wildlife Conservation Society

Creation Date (YYYY): 2007

Types: Text

Text Type (If Applicable): Extension Publications (large)

Formats: Acrobat Reader

Identifier:

URL:

Language: English

Spatial: Lundazi, Zambia

Resource Filename: Goat Production Manual Revised.pdf

Project ID: LTR-2 - An Agricultural Markets Model for Biodiversity Conservation

Fact Sheet

Title: Know your IVs: Moringa

Creator: Engle, L.M.

Keywords: Poverty, Local Knowledge, Experiential Learning

Unrestricted Keywords: indigenous vegetables, local, nutrition, Moringa

Description:

The brochure, one in a series on local Southeast Asian vegetables, describes Moringa. It gives the name in different languages of the region, suggested ways of preparation as a food, nutritional value, other uses, local names and cultivation tips.

Publisher: Tainan, Taiwan: Genetic Resources and Seed Unit of World Vegetable Center (AVRDC)

Bibliographic Citation: Know Your Indigenous Vegetables brochure No. 5

Creation Date (YYYY): 2008

Types: Text

Text Type (If Applicable): Fact Sheets (Small Ext. Pubs)

Formats: Acrobat Reader

URL: http://203.64.245.173/iv_sea/publications.asp

Language: English

Resource Filename: [moringa.pdf](#)

Project ID: LTR-5 – Agroforestry and Sustainable Vegetable Production

Newsletters

Title: Focus on: Mainstreaming gender, population and the environment

Creator InterCoast Network

Keywords: Gender, Women

Unrestricted Keywords: gendered division of labor, natural disasters, women's knowledge

Description:

HIGHLIGHTS: Page 4, "Mainstreaming gender: Understanding the steps for change" Murray points out that despite the 20 years of literature on gender and environment, there is still the need to move towards a more visible and measurable approach. The author presents an action-oriented model to help practitioners assess their projects and communities.

Page 5, the Newsletter presents a table with statistics and trends in population, coasts, and agriculture & food security.

Page 24, we are reminded that even though disasters are a global phenomenon its impacts are felt differently due to vulnerability and coping strategies of the targeted areas. Women and children tend to be the most vulnerable group affected by them. Gendered division of labor and occupation can equip women with local fundamental knowledge to help face such natural disasters. For these reasons, the author recommends that women's knowledge become visible in policymaking.

Publisher: Narragansett, RI: Coastal Resources Center, University of Rhode Island InterCoast Network

Bibliographic Citation: InterCoast Network: An International Newsletter of Coastal Management No. 41

Creation Date (YYYY): 2002

Types: Text

Text Type (If Applicable): Newsletters

Formats: Acrobat Reader

URL: http://www.crc.uri.edu/download/2002_41_CRC_GenderPopulationEnvironment.pdf

Language: English

Resource Filename: [\(InterCoast Network\) Newsletter 41.pdf](#)

Magazine and Newspaper Article

Title: Profits, not poaching, is message Cornell scientists are aiming at Zambian farmers

Creator: Ramanujan, K.

Keywords: Wildlife, Conservation, Agribusiness, Joint Enterprise, Income Generation, Niche Markets, Agriculture, Alternative Farming

Landscape System: Field Scale, Farm/Enterprise Scale, Ecosystem

Unrestricted Keywords: COMACO (Community Markets for Conservation), Zambia

Description:

"In an effort to improve lives and at the same time save African wildlife, Cornell researchers are helping farmers in Zambia, Southern Africa, develop such products as peanut butter and tofu under the It's Wild! brand name. The goal? Enabling farmers to reap more financial rewards from the food they grow so they won't poach threatened wildlife or destroy forests.

The effort is part of a partnership between Cornell and the Wildlife Conservation Society to support the Community Markets for Conservation (COMACO), a Zambian organization with a vision to save wildlife by addressing human poverty and hunger that forces farmers into poaching and cutting forests down for farm fields."

(Excerpt from article)

Publisher: Ithaca, NY: Cornell University

Bibliographic Citation: Cornell Chronicle 16 October 2007

Creation Date (YYYY): 2007

Types: Text

Text Type (If Applicable): Magazine and Newspaper Articles

Formats: Acrobat Reader

URL: <http://www.news.cornell.edu/stories/Oct07/FoodHygiene.kr.html> http://www.news.cornell.edu/Chronicle/07/10_19_07.pdf

Language: English

Spatial Lundazi, Zambia, Southern Africa

Project ID: LTR-2 – An Agricultural Markets Model for Biodiversity Conservation

Other Report

Title: Conservation agriculture: Case studies in Latin America and Africa

Creator: FAO

Restricted Keywords: Soil Conservation, Soil Fertility, Soil Organic Matter, Agricultural Ecosystems, Soil Erosion, Conservation Tillage, Green Manure Crops

Landscape System: Ecosystem

Unrestricted Keywords: no-till, cover cropping

Description:

ABSTRACT: The purpose of this publication is to show how conservation agriculture can increase crop production while reducing erosion and reversing soil fertility decline, improving rural livelihoods and restoring the environment in developing countries. Soil organic matter and biological activity in the rooting zone, stimulated by continual additions of fresh organic material (crop residues and cover crops) are the basis of conservation agriculture, as described in the first chapter.

Publisher: FAO (Food and Agriculture Organization of the United Nations)

Bibliographic Citation: FAO Soils Bulletins 78

Creation Date (YYYY): 2001

Types: Text

Text Type (If Applicable): Other Report

Formats: HTML viewer

Identifier: ISSN: 0253-2050

URL: <http://www.fao.org/docrep/003/y1730e/y1730e00.htm>

Language: English

Spatial: Latin America; the Caribbean; Africa

Rights: Copyright 2001 FAO

Poster

Title: Changing climate in the Bolivian Altiplano: CMIP3 projections for extremes of temperature and precipitation

Alternate Title: Clima cambiante en el Altiplano de Bolivia: Proyecciones CMIP3 para extrema temperatura y precipitación

Creator: Thibeault, J., A. Seth and M. Garcia

Restricted Keywords: Modeling

Landscape System: Ecosystem

Unrestricted Keywords: temperature, precipitation, extremes, climate change, CMIP3

Description:

This research compares projected changes in mean temperature and precipitation with projected changes in temperature and precipitation based extreme indices for the Altiplano using several global climate models from the fourth assessment report (AR4) of the Intergovernmental Panel on Climate Change (IPCC). It also examines how changes in the annual distribution of temperature and precipitation may result in higher frequencies of extreme events in the future.

Bibliographic Citation: Presented at the Association of American Geographers Annual Meeting, Boston, MA, 15-19 April 2008

Creation Date (YYYY): 2008

Types: Text

Text Type (If Applicable): Posters

Formats: Microsoft Powerpoint

Language: English

Spatial: La Paz, Bolivia

Resource Filename: [AAG2008ExtInd.ppt](#)

Project ID: LTR-4: Practices and Strategies for Vulnerable Agro-Ecosystems

Videotape/DVD

Title: Taming the land, the wind and the sun: The story of the Binahon Agroforestry Farm

Creator: Espaldon, M.V

Keywords: Ecosystem, Agricultural Ecosystems, Forest Ecosystems, Humid Zones, Deforestation, Soil Erosion, Agriculture, Agroforestry, Forestry, Agroforestry, Natural Resource Management, Ecosystem Management, Forest Management, Farming Systems, Agroforestry

Landscape System: Field Scale

Description:

A short film just released by SANREM documents how a family applied sustainable agriculture practices to establish a highly successful business in Lantapan, Bukidnon, Philippines.

Publisher: Laguna, Philippines: University of the Philippines at Los Baños College

Bibliographic Citation: Windows Media Video²⁶

Creation Date (YYYY): 2007

Types: Moving Image

Text Type (If Applicable): Videotapes/DVDs

Formats: Movie Viewer

URL: http://www.oired.vt.edu/sanremcrsp/AM_2007/Movie.wmv

Language: English

Resource Filename: [binahon1.wmv](#)

Project ID: LTR-5: Agroforestry and Sustainable Vegetable Production

²⁶ Bibliographic citation field should include the format of the film and any additional metadata that should appear in the citation.

WWW sites and documents

Title: SANREM CRSP Website

Creator: SANREM CRSP

Keywords: Sustainable Development, Globalization, Government Institutions, Stakeholders, Universities, Sustainable Agriculture, Natural Resource Management

Unrestricted Keywords: website, SANREM CRSP

Description: This website is the home of the Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program (SANREM CRSP), which promotes stakeholder empowerment and improved livelihoods through knowledge-based sustainable agriculture and natural resource management systems. The program is managed by the Office of International Research, Education and Development at Virginia Tech, and supported through the United States Agency for International Development (USAID). This website links scholars, researchers, students and the public through information on the program, publications concerning SA & NRM, and SANREM CRSP projects conducted throughout the world.

Publisher: Blacksburg, VA: SANREM CRSP, OIRED, Virginia Tech

Bibliographic Citation:²⁷

Creation Date (YYYY): 2005

Types: Text

Text Type (If Applicable): WWW Sites and Documents

Formats: HTML Viewer

URL: <http://www.oired.vt.edu/sanremcrsp/>

Language: English

Spatial: Global

Temporal (YYYY): From 2005

Project ID: ME – Management Entity

²⁷ Note that the URL does not go in the bibliographic citation field; this field could contain the name of the website if the title is a specific section or page of the website. A generated bibliography citation for a website will include the URL from the “URL” field.

Other

Example 1: Survey Instrument

Title: Encuesta nacional de comunidades forestales en México

Alternate Title: National Community Forest Survey Form for Mexico

Creator: Merino, L., A.E. Martinez, A. Arias and A. Garcia

Keywords: Community Institutions, Community Management, Forestry, Forest Management

Landscape System: Governance

Unrestricted Keywords: manejo forestal, comunidad, ejido

Description:

This survey form was developed by the SANREM-Mexico team to be used in a national survey of forest-dependent communities.

CONTENIDOS:

1. Datos Generales
2. Características generales ejido/comunidad
3. Pobreza
4. Tenencia
5. Migración
6. Uso del territorio y sus recursos
7. Conservación/Deterioro
8. Manejo Forestal
9. Evaluación PROCYMAF
10. Organización social
11. Reglas
12. Sanciones
13. Contactos con el Gobierno
14. Monitoreo
15. Promoción
16. Conflictos

Publisher: Mexico City, Mexico: Universidad Nacional Autonoma de Mexico

Creation Date (YYYY): 2007

Types: Text

Text Type (If Applicable): Other

Formats: Microsoft Word

Language: Spanish

Spatial: Mexico

Rights: Copyright 2007 UNAM

Resource Filename: [Master Survey from Mexico 082306\[1\].doc](#)

Project ID: LTR-1 – Decentralization Reforms and Property Rights

Example 2: Podcast

Title: The "One World, One Health" entry point to conservation and development success: Case studies from Africa

Creator: Osofsky, S.

Keywords: Wildlife, Conservation, Livelihoods, Health, Livestock, Land Use Management

Landscape System: Ecosystem

Unrestricted Keywords AHEAD, WCS

Description:

"If local people whose very livelihoods are often closely linked to livestock-keeping, for example, see expanding contact with wildlife as a threat to the health of their animals, or even to their own health in the case of zoonotic diseases, what hope do we have for building strong local constituencies for conservation, something the last several decades have hopefully taught us is sorely needed for sustained success? We obviously ignore local needs and perceptions at our conservation mission's peril.

Addressing human health (and livelihood) concerns in the context of conservation work should not be seen as diminishing the importance of critical conservation issues, but rather can actually be utilized to reinforce the value of maintaining biodiversity and the importance of respecting wildlife and wild places. Done thoughtfully, linking human health with wildlife and environmental health can enhance the relevance of nature to a much broader constituency. Cross-sectoral approaches are essential: too frequently, decisions focused on single resources have had multiple adverse resource and economic consequences in the places we care about. This video slideshow podcast will highlight programs, partners and other colleagues from around the world collaborating on efforts very much reinforcing the "One World, One Health" paradigm, and the success this multidisciplinary, collaborative approach has been fostering to date. For further information on examples of consortia active in this arena, please see www.wcs-ahead.org , www.gains.org and www.oneworldonehealth.org."
(Description from podcast website)

Bibliographic Citation: Slideshow podcast. AHEAD (Animal Health for the Environment And Development), 6 August 2007. Available:
<http://web.mac.com/sosofsky/iWeb/Site/Podcast/Podcast.html>²⁸

Creation Date (YYYY): 2007

Types: Sound

Text Type (If Applicable): Other

Formats: Movie Viewer

URL: <http://web.mac.com/sosofsky/iWeb/Site/Podcast/Podcast.html>

Language: English

Spatial: Africa

Project ID: LTR2: An Agricultural Markets Model for Biodiversity Conservation

²⁸ Any entries that should have the URL in a bibliography citation and are a product type other than "WWW sites" should include the URL in the "bibliographic citation" field, as in this example.

Appendix B: Product Types, Definitions

Article Published in Refereed Publication: articles published in scientific journals and other media that undergo peer review for selection and editing

Books/Book Chapters: formally bound publications with an ISBN number and the distinctly authored sections of such publications

Papers/Seminars Presented: a written paper presented at a meeting or containing the material presented in a seminar/workshop; may be an unpublished conference paper or a paper published in conference proceedings

Electronic Presentations: a presentation in electronic format; typically contains text and graphics/images. Example: a PowerPoint presentation that can be saved as either a PowerPoint (.ppt) or Acrobat Reader (.pdf) file

Conference Proceedings: the published proceedings of a meeting or conference; may be in paper or digital (i.e. CD-ROM) format

SANREM CRSP Research Briefs: a resource published by the SANREM CRSP highlighting policy-relevant findings from a refereed research publication(s)

SANREM CRSP Working Papers: papers sponsored by SANREM CRSP that are works in progress

SANREM CRSP Annual Reports: an annual report issued by the SANREM CRSP Management Entity and submitted to USAID documenting progress and results of program activities during the designated year OR an annual progress report produced by a SANREM CRSP project

Reports – Annual: an annual report of an organization documenting activities and results during the designated year

Abstracts: a summary of a research article or other research-based information source

Theses and Dissertations: manuscripts submitted and accepted in order to receive a master's or doctoral degree

Extension Publications (large): resources published by university or government outreach ("Extension") divisions, typically focusing on public education and on practical application of knowledge, e.g., a publication on how to implement a best management practice (BMP)

Fact Sheets (Small Extension Publications): a brief document (one or two pages) designed to convey critical information about an important or more extensive topic in a brief, easily reproducible, and easy-to-read format (often will include photos, graphics, or tables)

Newsletters: an information resource that is sent out periodically to keep readers up to date on recent events, publications, research, perspectives

Magazine and Newspaper Article: a resource from a periodical publication

Other Reports: all types of reports from scientists, consultants, government organizations, NGOs (e.g., FAO Soil Bulletin)

Posters: posters presented at formal meetings, conferences, symposiums, workshops, or seminars. The "poster" can be a digital image (e.g., pdf file) of the actual printed poster.

Videotapes/DVDs: moving-image resources in any medium including films, videos

World Wide Web Sites and Documents: Web pages or web-based documents

Bibliographic Databases: a database or document that compiles citations on resources in a focused subject area

Dataset: information encoded in a defined structure (e.g., lists, tables, and databases)

Germplasm Releases: an announcement of a new species or genetic variety

Other: any resources that do not fit into any of the above "type" categories

Appendix C: Restricted Keyword List

Climatic Zones

- |----Arid Zones
- |----Cold Zones
- |----Humid Zones
- |----Semiarid Zones
- |----Subhumid Zones
- |----Subtropics
- |----Temperate Zones
- |----Tropical Zones

Community

- |----Community Development
- |----Community Institutions
- |----Culture
- |----Ethnicity/Race
- |----Indigenous Community
- Local Governance
 - | |----Collective Action
 - | |----Community Management
 - | |----Community Participation
 - | |----Community Rights
 - | |----Empowerment
 - | |----Leadership Development
 - | |----Social Movements
- |----Local Knowledge
- |----Quality Of Life
- |----Religion
- |----Sedentarization
- |----Social Capital
- |----Stakeholders

Conflict

- |----Conflict
- |----Conflict Resolution
- |----Crisis Intervention
- |----Security
- Wars
 - |----Civil War
 - |----Inter-state War

Conservation

- |----Afforestation
- |----Biodiversity Conservation
- Biological Assessment
 - | |----Biological Indicators
 - | |----Indicator Species
 - | |----Keystone Species
- |----Conservation
- |----Conservation Planning
- |----Conservation Strategy
- |----Ecological Restoration
- |----Environmental Services
- |----Ex Situ Conservation

- |----Germplasm Conservation
- |----In Situ Conservation
- |----Reforestation
- |----Sustainability
- |----Wetlands Conservation

Disasters

- |----Disaster Assistance
- |----Disaster Preparedness
- |----Disaster Recovery
- |----Drought
- |----Earthquakes
- |----Fire
- |----Floods

Ecological Services

- |----Biodiversity
- |----Carbon Sequestration
- |----Climate Control
- |----Disease Control
- |----Flood Control
- |----Nutrient Recycling
- |----Pest Control
- Pollution Control
 - |----Air Purification
 - |----Water Purification

Economic Development

- |----Common Markets
- Credit
 - | |----Agricultural Credit
 - | |----Short-term Credit
- Economic Analyses
 - | |----Economic Modeling and Analysis
 - | |----Economic Statistics and Indicators
- |----Economic Growth
- |----Economic Policy
- |----Enterprise Development
- Enterprise Types
 - | |----Agribusiness
 - | |----Common Enterprise
 - | |----Household Enterprise
 - | |----Joint Enterprise
 - | |----Natural Resource-based Enterprise
 - | |----Small Holder Enterprise
- |----Food Aid
- |----Globalization
- Livelihoods
 - | |----Commercialization
 - | |----Income Diversification
 - | |----Income Generation

- Marketing and Trade
 - |-----Common Trade Policy
 - |-----Exports
 - |-----Imports
 - |-----International Trade
 - |-----Tariffs
 - |-----Trade Barriers
 - |-----Trade Policy

-----Markets

- |-----Local Markets
- |-----Market Demand
- |-----Market Supply
- |-----Niche Markets
- |-----World Markets

-----Payments for Environmental Services

- |-----Conservation Easements
- |-----Conservation Incentives
- |-----Cost Sharing

-----Poverty

- |-----Rural Development
- |-----Sustainable Development
- |-----Transfer Payments
- |-----Vulnerability And Risk

Environmental Degradation

- |-----Deforestation
- |-----Desertification
- |-----Eutrophication
- Habitat Destruction
 - |-----Endangered Species
 - |-----Forest Fragmentation
 - |-----Invasive Species
- |-----Over Grazing
- |-----Salinization
- |-----Soil Erosion
- |-----Waterlogging

Food Security

- |-----Famine
- |-----Food Consumption
- |-----Food Safety
- |-----Food Security
- |-----Food Strategy

Government

- |-----Administration
- |-----Agencies
- |-----Democratization
- |-----Fragile States
- |-----Government
- |-----Government Institutions
- Government Policy
 - |-----Decentralization
 - |-----Economic Policy
 - |-----Local Policy

-----Laws and Regulations

- |-----Agricultural Law
- |-----Consumer Protection
- |-----Deregulation And Liberalization
- |-----Environmental Law
- |-----Intellectual Property Rights
- |-----Plant Variety Protection
- |-----Resource Law
- |-----Trade Regulations
- |-----Trusts

Households

-----Family

- |-----Extended
- |-----Nuclear
- |-----Polygamous

-----Gender

- |-----Boys
- |-----Girls
- |-----Men
- |-----Women

Human Health and Well-Being

- |-----Aflatoxins
- |-----HIV/AIDS
- |-----Health
- |-----Health Education
- |-----Malnutrition
- |-----Medical Services
- Mortality
 - |-----Child Mortality
 - |-----Infant Mortality
 - |-----Maternal Mortality
 - |-----Morbidity
- |-----Pesticide Poisoning
- |-----Quality Of Care

Human Settlements

- |-----Concentrated-Dispersed
- |-----Settlement Displacement
- |-----Settlement Relocation
- |-----Village-Town

Impact

- |-----Economic Impacts
- |-----Environmental Impacts
- |-----Health Impacts
- |-----Social Impacts

Migration

- |-----International Migration
- |-----International Remittances
- |-----Rural-Rural Migration
- |-----Rural-Urban Migration

Natural Resources

- Air
 - |-----Air Pollution
 - |-----Air Quality
- Biodiversity
 - |-----Agrobiodiversity
 - |-----Aquatic Resources
 - |-----Fisheries
 - |-----Forests
 - |-----Germplasm
 - |-----Grasslands
 - |-----Marine Resources
 - |-----Plants
 - |-----Rainforest
 - |-----Savannah
 - |-----Wildlife
- Ecosystem
 - |-----Agricultural Ecosystems
 - |-----Aquatic Ecosystems
 - |-----Desert Ecosystems
 - |-----Forest Ecosystems
 - |-----Riparian Ecosystems
- Non-renewable Resources
 - |-----Mineral Resources
 - |-----Oil
- Renewable Energy
 - |-----Biomass Energy
 - |-----Geothermal Energy
 - |-----Hydropower
 - |-----Solar Energy
 - |-----Tidal Energy
 - |-----Wind Energy
- Soil
 - |-----Salinization
 - |-----Soil Conservation
 - |-----Soil Degradation
 - |-----Soil Fertility
 - |-----Soil Management
 - |-----Soil Organic Matter
 - |-----Soil Quality
 - |-----Waterlogging
- Water
 - |-----Flooding
 - |-----Groundwater
 - |-----Sedimentation
 - |-----Surface Water
 - |-----Water Policy
 - |-----Water Pollution
 - |-----Water Quality
 - |-----Water Use
 - |-----Wetlands

Organizations

- |-----Associations
- |-----Civil Society Organizations (CSOs)
- |-----Community-Based Organizations
- |-----Cooperatives
- Nongovernmental Organizations (NGOs)
 - |-----International NGOs
 - |-----Local NGOs
 - |-----National NGOs
- |-----Universities

Resource Management

- Agriculture
 - |-----Agroforestry
 - |-----Cash Crops
 - |-----Commodity Crops
 - |-----Conservation Tillage
 - |-----Ecoagriculture
 - |-----Integrated Crop Management
 - |-----Irrigation
 - |-----Organic Farming
 - |-----Rainfed Agriculture
 - |-----Row Crops
 - |-----Subsistence Production
 - |-----Sustainable Agriculture
 - |-----Tree Crops
- Aquaculture
 - |-----Freshwater Aquaculture
 - |-----Marine Aquaculture
- Farming Systems
 - |-----Agroforestry
 - |-----Alternative Farming
 - |-----Dryland Farming
 - |-----Intensive Farming
 - |-----Irrigated Farming
 - |-----Low Input Agriculture
 - |-----Organic Production
 - |-----Permaculture
 - |-----Shifting Cultivation
 - |-----Small-Scale Farming
 - |-----Traditional Farming
- Fertilization
 - |-----Carbon Sequestration
 - |-----Green Manure Crops
 - |-----Manure
 - |-----Soil Nutrients
- Forestry
 - |-----Agroforestry
 - |-----Non-Wood Forest Products
 - |-----Sustainable Forestry

- Livestock
 - |-----Cattle
 - |-----Controlled Grazing
 - |-----Forage
 - |-----Goats
 - |-----Grazing
 - |-----Grazing Systems
 - |-----Livestock Carrying Capacity
 - |-----Livestock Fattening
 - |-----Pastoralism
 - |-----Poultry
 - |-----Ranching
 - |-----Rangelands
 - |-----Rotational Grazing
 - |-----Sheep
 - |-----Transhumance
- Natural Resource Management
 - |-----Ecosystem Management
 - |-----Forest Management
 - |-----Land Use Management
 - |-----Livestock Management
 - |-----Nutrient Management
 - |-----Pasture Management
 - |-----Pest Management
 - |-----Range Management
 - |-----Water Management
 - |-----Watershed Management
 - |-----Wildlife Management
- Parks
 - |-----Bioreserves
 - |-----Ecotourism
 - |-----National Parks
 - |-----Park Buffer Zone
 - |-----Park Transition Zone
 - |-----Tourism
 - |-----Wildlife
- Planning
 - |-----Farm Planning
 - |-----Land Use Planning
 - |-----National Planning
 - |-----Program Planning
 - |-----Research Planning
 - |-----Rural Planning
 - |-----Urban Planning

- Resource Management Tools
 - |-----Best Management Practices
 - |-----Biotechnology
 - |-----GAP Analysis
 - |-----GIS
 - |-----Land Use Planning
 - |-----Modeling
 - |-----Remote Sensing
 - |-----Survey Research Methods
 - |-----Zoning

Rural Infrastructure

- |-----Storage Infrastructure
- |-----Transportation Infrastructure

Technology Transfer

- |-----Adoption Of Innovations
- |-----Adult Education
- |-----Demonstrations
- |-----Experiential Learning
- |-----Extension Service
- |-----Farmer Field Schools
- |-----Farmer To Farmer
- |-----Field Days
- |-----Institutional Capacity Building
- |-----Participatory Processes
- |-----Social Learning
- |-----Social Marketing
- |-----Training

Tenure Systems

- |-----Animal Tenure
- Common Property Resources
 - | |-----Communal Pastures
 - | |-----Community Forests
 - | |-----Community Gardens
- |-----Land Tenure
- |-----Tenancy
- |-----Tenure System
- Traditional Tenure Systems
 - |-----Tree Tenure
 - |-----Water Rights
 - |-----Water Tenure

Appendix D: Other Resource Types

Collection: an aggregation of items. The term collection means that the resource is described as a group; its parts may be separately described and navigated.

Dataset: information encoded in a defined structure (e.g., lists, tables, databases) intended to be useful for direct machine processing.

Event: a non-persistent, time-based occurrence. Metadata for an event provides descriptive information that is the basis for discovery of the purpose, location, duration, responsible agents, and links to related events and resources. The resource of type event may not be retrievable if the described instantiation has expired or is yet to occur. Examples: exhibition, web-cast, conference, workshop, open-day, performance, battle, trial, wedding, tea party, conflagration.

Image: symbolic visual representation other than text. Examples: images and photographs of physical objects, paintings, prints, drawings, other images and graphics, animations and moving pictures, film, diagrams, maps, musical notation

Interactive Source: a resource that requires interaction from the user to be understood, executed, or experienced. Examples: forms on web pages, applets, multimedia learning objects, chat services, virtual reality.

Moving Image: series of visual representations that, when shown in succession, impart an impression of motion. Examples: animations, movies, television programs, videos, zoetropes, or visual output from a simulation.

Physical Object: inanimate, three-dimensional object or substance. Examples: a computer, the great pyramid, a sculpture. Note that digital representations of, or surrogates for, these things should use Image, Text or one of the other types.

Service: a system that provides one or more functions of value to the end-user. Examples: a photocopying service, a banking service, an authentication service, interlibrary loans, a Z39.50 or Web server.

Software: computer program in source or compiled form that may be available for installation non-transiently on another machine. For software that exists only to create an interactive environment, use interactive instead.

Sound: a resource whose content is primarily intended to be rendered as audio. Examples: a music playback file format, an audio compact disc, recorded speech or sounds.

Still image: static visual representation. Examples: paintings, drawings, graphic designs, plans, maps.