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Food and Agriculture Organization of the United Nations

Forest Management Working Paper

DEVELOPMENT OF A GLOBAL KNOWLEDGE REFERENCE ON SUSTAINABLE FOREST MANAGEMENT IMPLEMENTATION

by

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A Progress Report

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Comments and feedback are welcome.

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ABBREVIATIONS

AGROVOC	Multilingual Thesaurus of Agricultural Terminology
ATO	African Timber Organization
CATIE	Centro Agronómico Tropical de Investigación y Enseñanza
CIFOR	Centre for International Forestry Research
CPF	Collaborative Partnership on Forests
EMBRAPA	Brazilian Agricultural Research Corporation
FAO	Food and Agriculture Organization of the United Nations
FO	Forestry Department
FORIS	Forest Resources Information System
FOMR	Forest Resources Development Service
FRA	Forest Resources Assessment
ICRAF	World Agroforestry Centre
IMFN	International Model Forests Network
SFM	Sustainable forest management
TOF	Trees Outside Forests

Development of a global knowledge reference on sustainable forest management implementation

I. INTRODUCTION

The sustainable forest management (SFM) knowledge reference is an effort by the Forestry Department (FO) of FAO to create a repository of information on SFM with the aim of enhancing experience-sharing and addressing the principles of SFM among countries with the intention of creating a network between different stakeholders, including forest managers, researchers and decision makers.

The SFM knowledge reference is a database composed of case studies on SFM of various sizes with a range of management objectives from all regions and biomes. These case studies may be described from FAO experiences and/or projects as well as from partner organizations.

Through this online repository, users will have the possibility of easily accessing successful and practical examples of SFM in a range of biomes, from temperate to tropical, and with a variety of management objectives, from conservation to production. Users will eventually be able to search among a variety of fields (e.g. tree taxa, land tenure, location, country, eco-zone) to narrow down case studies of interest. By making these global case studies of SFM more available and accessible, the SFM knowledge reference will not only allow for improved networking and experience-sharing, but will ultimately enhance the applicability of SFM concepts to new locations, leading to improved implementation of SFM on the ground where it counts.

This working paper represents a progress “report” since the database continues to be fed with information from other case studies as they are identified.

II. BACKGROUND

FAO has been increasingly asked to promote field implementation of SFM. The past decade has seen considerable efforts at the political and conceptual levels to define SFM and to incorporate a range of social, environmental and socio-economic principles within the designation of SFM. However, there is a prevailing view that implementation of SFM on the ground requires more attention.

A statement of the Ministerial Meeting on Forests (Rome, March 2005) urged FAO to “expand and enhance capacity building activities in developing countries and countries with economies in transition to improve implementation of sustainable forest management on the ground”.

Moreover, the statement underscores the role of SFM in overall sustainable development and poverty alleviation and requested integrated and cross-sectoral approaches by FAO to enhance the contributions of forestry to development.

FAO Forestry Department is engaged in many activities, projects and programmes that address field implementation of SFM and its role in overall development (see examples of initiatives under IV). Many of these initiatives build on collaborative efforts with partner institutions. However, it is equally clear that the knowledge generated in this work is not always representative, systematically analysed, adequately documented and widely disseminated in several languages, and that FAO is not facilitating comparisons between case studies. Further, more efforts need to be made to harmonize studies and cases across technical subjects and internal units.

As a result, efforts in generating knowledge about SFM implementation do not provide appropriate appreciation for the Organization. Additionally, FAO is sometimes perceived as slow, divided and unresponsive, at times generating knowledge that appears outdated in relation to recent and modern developments related to and/or affecting SFM.

On the other hand, FAO has an established framework for SFM, particularly the seven thematic areas (or criteria) globally recognized. There is also a strong departmental approach to information management and dissemination. FAO therefore has some major tools at its disposal to improve the situation.

For these reasons, FOMR is currently developing a ‘Knowledge reference on implementation of sustainable forest management’. Designed to contain cases of varying sizes and time frames from all regions and biomes, where the principles of SFM are addressed in real management situations, the interface will facilitate SFM implementation processes as well and serve as a tool for FO to enhance the contributions of forestry to development. It will also eventually link hundreds of studies, originating from FAO as well as partner organizations, on the subject of SFM, thereby allowing for greater accessibility and applicability of sustainable methods of forest management.

III. OBJECTIVES AND RATIONALE

The objective of the knowledge reference on SFM implementation is “to provide a standardized interface that displays the wealth of knowledge contained in existing FAO case studies related to SFM, and through this interface enhance knowledge-sharing on forest management between forest managers, researchers and decision makers”.

Additional objectives include:

- (a) increasing awareness at the international and national levels of the varying conditions and solutions that apply to and affect SFM;
- (b) keeping member countries informed about the latest development related to and/or affecting SFM;
- (c) enhancing the visibility and accessibility of existing cases allowing for a variety of audiences to make comparisons between various themes.

This aim involves analysing and cataloguing pre-existing SFM cases produced by the FAO Forestry Department as well as by other international forestry organizations and networks (e.g. CIFOR, IMFN, ATO, CATIE, EMBRAPA, ICRAF and others) into searchable components in order to build upon a case study database that would enable users to easily locate case studies applicable to their forest management interests, location, forest type, etc. Cutting forest management case studies across these key fields has the goal of ultimately making them more accessible to outside users and thereby allows for the concepts of SFM to be more diffused and applied.

A parallel aim is to drive a standard for future SFM case studies, so that information on key searchable fields is included. Yet another aim is to refine the definition of ‘case study’ within the Forestry Department to include studies that are more applied and hence can be reapplied in other circumstances, and to show case studies that demonstrate successful implementation of SFM techniques throughout the world, rather than more theory-based studies.

A knowledge reference of SFM cases is essential in order to make older forestry papers, working papers and reports of exemplary forest management cases¹ that have been published by FAO over the last couple of decades as well as more recent publications, much more visible and accessible to member countries, furthering the implementation of SFM concepts. It will include global examples of successful forest management from New Zealand to Rwanda. Through such a database, FAO’s work will have greater visibility amongst practitioners, researchers and decision-makers and allow for an enhanced flow of ideas and forestry practices throughout the world.

¹ Durst, Patrick, Chris Brown, Henrylito D. Tacio and Miyuki Ishikawa (Editors). 2005. *In Search of Excellence: Exemplary forest management in Asia and the Pacific*. Asia Pacific Forestry Comisión; FAO and the Regional Community Forestry Training Center for Asia and the Pacific; Bangkok 2005. RAP Publication 2005/02.

IV. APPROACH

The approach towards the SFM knowledge reference recognizes that there is a very wide range of situations in the real world affecting SFM that have different needs and priorities. Differences may be due to ecological setting, culture, land use history, economic development, ownership, policies, or simply the personal views and attitudes of key stakeholders. This diversity of forest management situations is not always acknowledged and appreciated in international dialogue and processes. However, displaying the diversity of situations is a main feature of the SFM knowledge reference.

The approach also recognizes that SFM cases can focus on specific issues. That is, there are no strict rules for describing SFM cases whereby all management objectives and all stakeholders need to be covered. Users may want to draw from experiences within a specific field, say invasive species, or more holistic cases where a full range of benefits and issues are addressed. Therefore, the case study interface will cater to cases that address specific subjects as well as holistic cases. It will, however, focus on those case studies that are more applied and practical, with less attention to case studies that are more theoretical in nature.

The building block of the knowledge reference is a 'case'. Cases are defined in space and time. That is, the geographic extent is defined, and so is the time period in which the case information and analysis was conducted. The scale, on the other hand, is open, meaning that an individual stand can be a case, as well as large model forests extending over millions of hectares. It is anticipated that the SFM knowledge reference will grow to contain a large number of cases that vary greatly in their physical dimensions.

The SFM knowledge reference is built for the internet, but takes into consideration the need to disseminate knowledge also through other media. Each SFM case is a website, not unlike the current departmental country profiles. Information ownership and maintenance would be decentralized, meaning that regional offices, for example, could manage and add cases. The FORIS system is built precisely to handle initiatives such as this, so there is little or no overhead for technology development.

Organizationally, there should be a reference group representing all other forestry units in Headquarters and Regional and Sub-Regional offices. The hands-on work to initially develop the SFM knowledge reference would fall largely on FOMR, but the integrated reference group is necessary to facilitate department-wide acceptance and participation.

Examples of initiatives from which to draw

FO is engaged in many activities, projects and programmes that address field implementation of SFM and its role in overall development. The following is a list of initiatives and publications that include SFM case studies and with little effort have been incorporated into the knowledge reference described above.

In search of excellence initiative (Africa and Asia publications)

Planted forest cases (Working Papers)

International model forest networks

Forest management working papers

Community forestry case studies; Community Forestry Case Study Notes

Reduced impact logging

Bioenergy news

Wildlife and protected area management

Watershed/mountain management

Forests and climate change – clean development mechanism

Trees outside forests (TOF) and agroforestry

Urban forestry

Non-wood forest products

V. DEVELOPMENT OF KNOWLEDGE REFERENCE WEBSITE

Over the last year, the concept of a case study “gateway” has evolved and simplified at the same time. Originally seeking to cut across many conceptual themes including socio-economic and cross-sectoral issues as well as SFM planning processes, the gateway was seen as a means to facilitate the search of information and hence usable with more stringent metadata, using pre-established FRA definitions wherever possible followed by an annotated bibliography covering the essence of the study. The annotated bibliography could be searched via keywords. After reading the annotated bibliography and field entries, users could then choose to visit the original source.

The definition of a case study has also gone through some transitions, since not all are spatially-oriented to one particular site. Some case studies produced by FAO are more conceptual than technical. While other publications that call themselves ‘case-studies’ discuss processes and ideas that have yet to be applied in the field, in effect serving to measure the *likelihood* of SFM in a particular region of the world. These particular publications, which read more like outlook studies, are not included in the SFM knowledge reference since they provide information on future possibility rather than learned experience applying SFM techniques on the ground. For FAO purposes, interest is primarily in the latter.

As stated, some of the above FAO initiatives have already been mined for SFM material considered useful to practitioners and then added to the temporary knowledge reference site, which currently exists in browse format (www.fao.org/forestry/site/35107/en) within FORIS. So far, it consists of a series of common information properties (fields), including a summary (annotated bibliography) of the individual case study, as well as a link to the original source. In the future, however, users will be able to both *browse* and *search* those case studies that best match their needs and interests. In addition, FAO hopes to eventually include an interactive interface with outside contributors who can offer successful examples of SFM direct to the knowledge reference. This would allow for case studies to be posted in real time and would entail very few direct costs. It would also more quickly and efficiently link practitioners and decision-makers who would like to share ideas and experiences regarding SFM.

A set of common information properties (fields) was narrowed down in order to facilitate searching for particular case studies between regions, subjects and management priorities. For the time being, 14 fields have been identified and are listed in Table 1. Narrowing down the fields was based on finding a happy medium between *inclusion* and *function*; the objective is to include as much useful information as possible within the interface while at the same time streamlining those fields in order to make a functional search mechanism that focuses on user interest. Each case study on the site was then re-classified following the pre-set list of FRA descriptions as well as keywords pertaining to each field.

The various fields, classifications and vocabulary are described below. In the case of ‘free text’ and AGROVOC fields, examples have been provided. For those fields with FRA definitions, all possible FRA definitions are listed.

Clarification of fields and entries

For some case studies (particularly those not produced by FAO) other classification systems to describe ecological characteristics may be used or one of the fields may be completely ignored depending on the topic at hand in the publication. Additionally, forest-related definitions diverge within and between nations and between international conventions. These differing definitions on the same term can obviously create misunderstandings and lingering ambiguities.

For these reasons, an attempt was made to apply FRA terminology wherever and whenever possible in order to keep the search as homogenous and clearly-defined as possible. This means that for the purpose of creating the SFM knowledge reference, FRA terms have been assigned to case studies that do not necessarily use FRA-specific terminology in the first place. Applying these definitions has an added benefit of clarifying the subject matter so that there is no doubt about what is being discussed. It is important to note that this is merely re-cataloguing the topics of the case study and not changing the nature of the study itself.

For those case studies that cover more than one classification within a field, both descriptions have been included. For example, if a case study examines a forest where both conservation and production objectives are taking place, both ‘conservation’ and ‘production’ will be included under the ‘designated function’ field.

Table 1. Information fields for the inclusion of case data

Field	Classification	Vocabulary
Country	(ex/Cambodia)	<i>FORIS Geo code</i>
Forest name	(ex/Kompong Phluk Flood Forest)	<i>Free text</i>
Land tenure	(private/public/other)	<i>FRA definition</i>
Ecozone	(tropical rainforest, tropical moist deciduous forest, tropical dry forest, tropical shrubland, tropical desert, tropical mountain, subtropical humid forest, subtropical dry forest, subtropical steppe, subtropical desert, subtropical mountain, temperate oceanic forest, temperate continental forest, temperate steppe/prairie, temperate desert, temperate mountain, boreal coniferous forest, boreal tundra woodland, boreal mountain, polar)	<i>FRA definition</i>
Forest type	(modified natural, primary forest, productive plantation, protective plantation, protective plantation, semi-natural forest)	<i>FRA definition</i>
Designated functions	(conservation, multiple purpose, primary function, production, protection of soil and water, social services, total area with function, unknown function)	<i>FRA definition</i>
Tree taxa	(ex/Barringtonia acutangula, Diospyros cambodiana and Coccoceras anisopodum)	<i>AGROVOC definition (latin nomenclature)</i>
Other taxa	(ex/Lagerstroemia spp. and Dipterocarpus spp.)	<i>AGROVOC definition (latin nomenclature)</i>
Location	(ex/Siem Reap Province 13° 22' 0 N, 103° 50' 60 E)	<i>Free text</i>
Area	(ex/8 864 ha)	<i>Number (in hectares)</i>
Year established	(ex/1998)	<i>Number (year SFM was initiated)</i>
URL	(ex/ http://www.fao.org/docrep/007/ae542e/ae542e04.htm#bm04.4)	<i>Free text</i>
Contact organization	(ex/Community Resource Management Committee in Kompong Phluk)	<i>Free text</i>
Summary	(annotated bibliography)	<i>Free text</i>

Free text fields are those that are open and case-specific (such as forest name, location, country, etc). Each document can be tagged with one or more keywords of a given type. In the case of ‘location’, city and state (or region) as well as latitude and longitude are entered. For the ‘area’ field, the unit hectares are used. The ‘year established’ field refers to the year in which the notable SFM technique was applied. If this is unknown, or unmentioned in the original document, the publication date is entered instead. The ‘URL’ is the electronic address of the original source. The ‘contact organization’ refers to the management organization involved in implementing the highlighted SFM. Usually it appears as a website where one can gain more information on those who carried out the case study.

Lastly, in the summary field (or annotated bibliography) a synopsis is given of what the case study is all about. Primarily, it discusses the management objectives and addresses the points that the other 13 fields do not directly cover. Free text is also listed here. The summary helps the user to understand if the

source is a relevant study and whether they would like to visit the original publication in detail. In the future, the case study search mechanism will not only capture those words entered into each field, but will also harvest words from the annotated bibliographies.

AGROVOC, FAO's vocabulary designed to cover the terminology of all subject fields in agriculture, forestry, fisheries, food and related domains, is used for both tree taxa and other taxa fields. In this case, it refers to the taxonomic names. It serves to standardize the indexing process in order to make searching simpler and more efficient and to provide users with the most relevant search resources.

VI. ISSUES TO BE ADDRESSED

Definition of a case study

In the process of sorting out appropriate case studies for the knowledge reference site, scores of SFM-related publications produced by FAO were scanned for possible material. What was found was that there are many publications entitled 'case study'; however, they lack practical field information for the purposes of gathering data on successful, hands-on SFM. In fact, many serve to predict future trends rather than describe a scenario of applied forestry, in which case they would be more appropriately deemed 'outlook study' rather than 'case study'. Others were more description/observation based, describing field conditions and not a change made on those conditions. Moreover, others analyse policy and planning aspects of SFM, rather than focusing on SFM methodology. Naturally, much "teasing-apart" was done in order to ascertain the utility of a case study. The aim was to address successful methods of SFM and *how* they have been implemented.

This caused FOMR/FO to reflect on its own definition of a case study and what constitutes a true 'case study' for the purposes of the exercise. What information would be useful to present to a potential user? Criteria were established for those case studies that were considered would be ideal to present within the knowledge reference site. Although a list of stringent guidelines was initially established, they were not strictly adhered to given the very diverse nature of the case studies and a desire to include as many useful examples as possible. The exercise of ascertaining the relevance of any given case study is also very qualitative in nature. For example, if a limit were set on the size of a case study, it might unintentionally eliminate some worthy case studies that cover a vast amount of land area but that target a particularly useful method of forest inventory. In this case, if limits were set for land area, an informative case study on a successful method of inventory would be eliminated.

Therefore, an attempt was made to have a more qualitative eye for case studies using *usefulness* and *applicability* as the basis of inclusion into the database, but this should be further fine-tuned, given that the sorting process will be done by any number of individuals and a standard should exist. Criteria that were eventually used include:

1. Is the location known (or does the write-up cover a known area)?
2. Are the years of the project known?
3. Applicability (were any practical conclusions drawn?)

As stated above, the third criterion, *applicability*, ultimately is a difficult element to objectively judge and should be further analyzed. It is, however, the most crucial criterion since it represents the very purpose of the SFM knowledge reference, with an emphasis on methodology and *how* SFM techniques were implemented.

Translation into other languages

Given that the goal of the SFM knowledge reference is to accumulate scores of constructive examples of SFM, it would follow that *search* and *browse* features should ideally be available in other languages, in order to make the gateway as useful and accessible as possible to a variety of users. Currently the SFM knowledge reference site is only in English, since all original documents catalogued were in that language. However, the goal is to include case studies in French and Spanish as well.

While the original sources may not be available in more than one language, the goal of the SFM knowledge reference is to eventually make the case study descriptions (fields and summaries) available in English, French and Spanish. This means that although the publication may be in Spanish, the SFM knowledge reference site will ultimately be in all three languages. The idea being to point interested parties in the right direction where they can then decide which sources to access.

VII. PRESENT STATUS AND AMBITIONS: *The way forward*

The SFM knowledge reference exists in a temporary *browse* form on the FO Department website (www.fao.org/forestry/site/35107/en) (Figure 1), but a comprehensive database is underway that involves cataloguing hundreds of SFM-related case studies from all over the world. At present, the knowledge reference web page lists 115 case studies from 47 countries. Listings of cases by region are shown in Figures 2–6. These figures show very preliminary results and at this time are only indicative. Great efforts are being devoted to feed in more cases, especially those in Spanish and French.

In the near future, FAO expects to also produce a *search* engine to easily access the SFM case study database, using key word searches as well as categorical searches for those case studies that fall under a specific FRA classification (for example, “subtropical dry forest” under the eco-zone category or “protection of soil and water” under the designated function category).

Eventually, the gateway will house not only FO-specific case studies, but also examples of SFM unrelated to FAO, in order to provide users with as much relevant information as possible. This may include partnering with organizations such as the International Model Forests Network (IMFN), thereby providing the gateway with a much bigger library of case studies as well as greater dispersal of information on the IMFN to a broader audience, again with very few added costs.

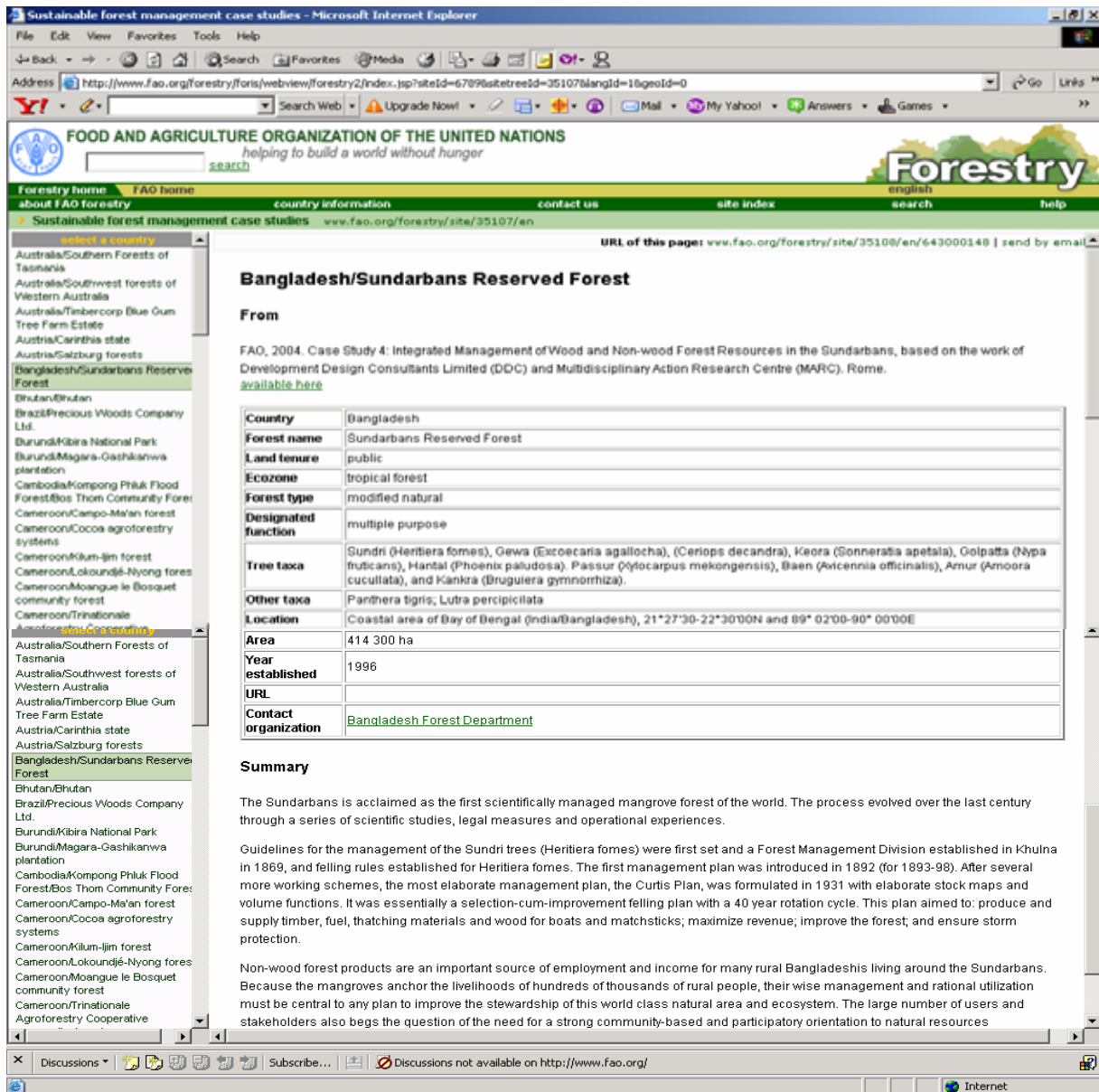
Indicative steps to be taken, aimed for delivery at COFO 2007:

- establish reference group;
- agree on initial structure and design for the SFM knowledge reference, including common elements between cases;
- agree on procedures for accepting, developing and reviewing cases;
- draw from, and complement, existing case studies and publish these in the knowledge reference;
- translate cases into at least three of FAO’s official languages;
- involving external partners, notably from CPF and national/regional institutions;
- COFO 2007 delivery, including at least 150 cases in three languages.

In addition, FAO seeks to eventually include an interactive interface with outside contributors who can offer successful examples of SFM direct to the knowledge reference. This would allow for case studies to be posted in real time and would entail very few direct costs. It would also more quickly and efficiently link practitioners and decision-makers who would like to share ideas and experiences regarding SFM.

Example of how a case study appears within the FAO forestry interface

Figure 1: Sample of the temporary browse of the knowledge reference on the FO website



VIII. CONCLUSIONS

The initial establishment of an online repository of SFM case studies has highlighted some important issues regarding the usefulness and applicability of some of the studies and publications that are produced here at FAO. Given the significant role of SFM in overall sustainable development and poverty alleviation, field implementation must be further addressed and access to field information further facilitated. The SFM knowledge reference takes a step forward in providing that access. It is a tool that has the ability to enhance the contributions of forestry to development by providing a vast variety of examples of successful management of forests throughout the world. The use of this SFM knowledge reference can improve networking and experience-sharing between by the various stakeholders, as well as enhancing the applicability of SFM concepts to new locations, leading to improved implementation of SFM in the field.

IX. REFERENCES

- FAO, 2006. Global Forest Resources Assessment 2005. Progress towards sustainable forest management. FAO Forestry Paper 147. Rome, Italy.
<http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?siteId=101&sitetreeId=16807&langId=1&geoId=0>
- FAO, 2005. Ministerial Statement on Forests. Rome, Italy.
http://www.fao.org/newsroom/common/ecg/100228/en/Ministerial_Statement_on_Forests.doc
- FAO, 2002. Expert meeting on harmonizing forest-related definitions for use by various stakeholders. Rome, Italy. <http://www.fao.org/DOCREP/005/Y4171E/y4171e00.htm#TopOfPage>

Figure 2: Number of case studies listed for Africa

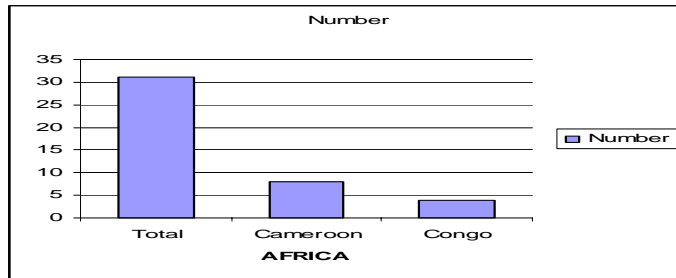


Figure 3: Number of case studies listed for Asia

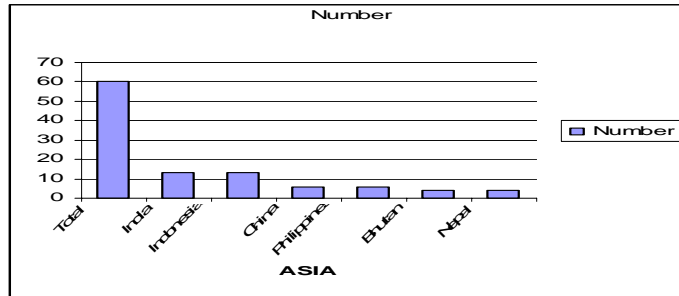


Figure 4: Number of case studies listed for Central and South America

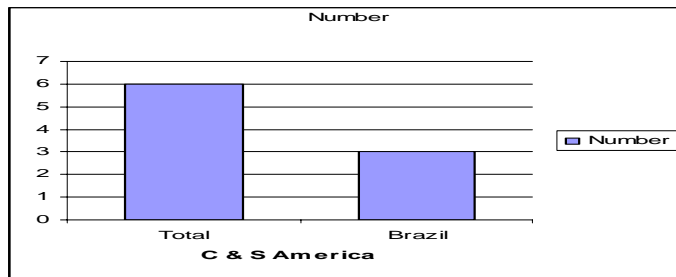


Figure 5: Number of case studies listed for other more developed countries

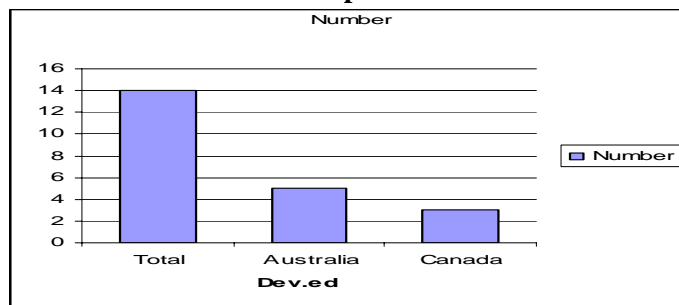


Figure 6: Summary of the number of case studies currently registered in the knowledge reference

