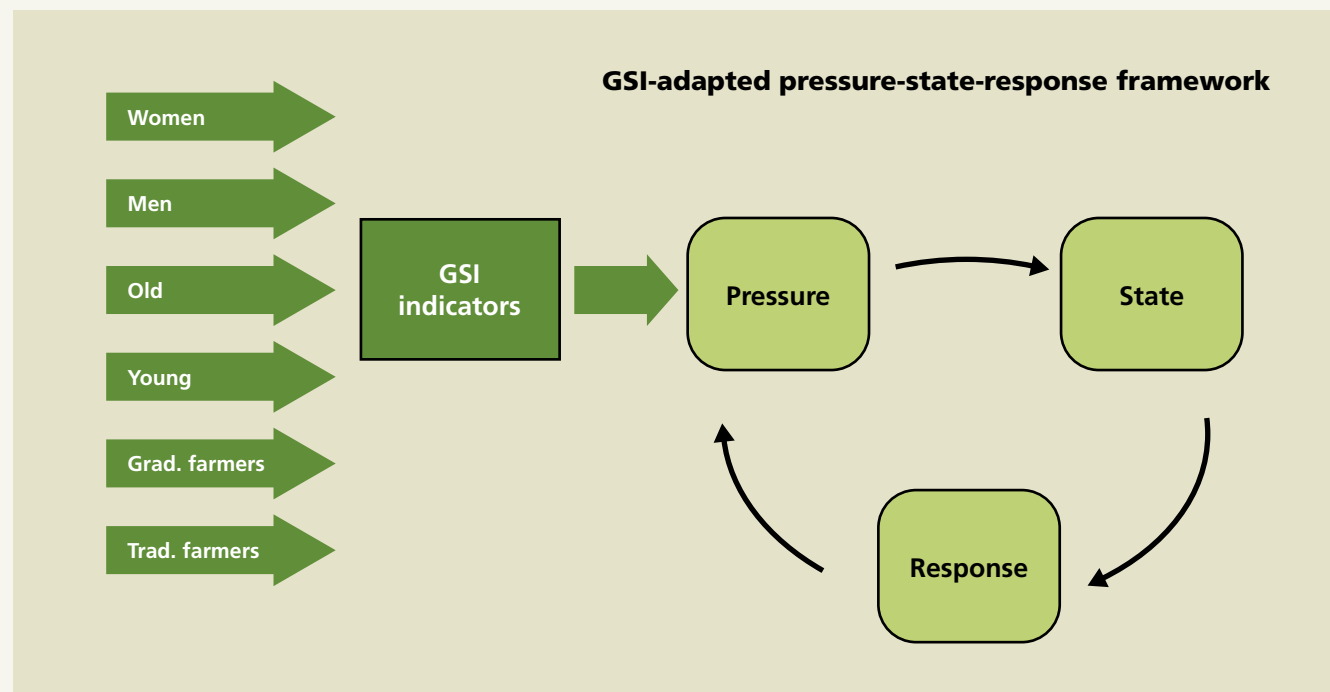




Gender-Sensitive Indicators for Natural Resources Management*

An "indicator" is:

- ✓ a pointer or sign of change
- ✓ a measurement, number, fact, opinion or perception that points at a specific condition or situation, whose change is examined over time (CIDA, 1997).



How to develop gender-sensitive indicators for natural resources management

- 1. Identify** the broad land and natural resource management issues in the area under consideration (using secondary sources of information if necessary).
- 2. Conduct** a gender analysis at the field level to find out what men and women do with the various natural resources (e.g. livestock, staple and cash crops, garden vegetables, soils, trees, water, and land). This will help establish a baseline against which change can be monitored. FAO's SEAGA Programme has produced materials that can provide guidance in conducting a gender analysis.

Basic NRM-related gender questions to answer are:

- Who does what?
- Who has what?
- Who decides? How?
- Who gains?
- Who loses?
- Which women? Which men?

- 3. Develop** gender-sensitive indicators that are objectively (quantitative) and subjectively (qualitatively) verifiable and that meet the following SMART criteria. Establish what level of measurement is needed – Individual? Group?

Project? District? Agro-ecological zone? Global? What is the unit of observation?

- 4. Access** whether the data exists or if there is a need to collect data in order to monitor change.
- 5. Monitor** the indicator over time to see if it continues to measure the changes accurately enough and correct as needed.

Action needed

It is not enough to simply develop a set inventory of GSIs for use in natural resources management and then keep it for ever! Rather, the inventory and the GSIs themselves should be dynamic and adaptable as situations change either locally, nationally, or internationally.

Apart from supporting the various stakeholders in the development of their own GSIs, several other actions are required that would best be served by inter-institutional dialogue and collaboration. These include:

- Monitoring GSIs on a continuous basis to facilitate the design and implementation of more efficient, effective, and sustainable NRM development responses.
- Improving GSIs and further institutionalising them by ensuring that GSIs are applied, field-tested, and revised or updated as necessary.

- Encouraging holistic, cross-cutting approaches to natural resources management that embody, and indeed *value*, both biophysical and social factors and create the demand for gender-sensitive indicators.
- Facilitating, through the UN System, strengthened international collaboration in the development and promotion of the use of GSIs in natural resources management, perhaps through the creation of an "indicator platform on the internet" (UN, 1999).
- Continuing to develop GSIs in areas neglected by the work to-date (e.g. specific sectors such as water resource management, livestock production, post-harvest processes, impacts of HIV/AIDS on agriculture, etc.).

FAO, with its cross-sectoral and inter-regional expertise, is well placed to work on the development of these GSIs that will facilitate the development of NRM policies and practices that are more gender-equal, efficient and sustainable. The continuation of this work would best be served through collaborative efforts with other UN and international organisations (e.g. CIDA, IFAD, ECLAC, SIDA, IPGRI, etc).

As expressed repeatedly, developing GSIs for natural resources management requires the inputs and experience of many -- from farmers across the regions

References

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- Thomas-Slayter, B & Sodikoff, G. 2001. Sustainable investments: women's contributions to natural resource management projects in Africa, p. 45-61. in *Development in practice*. V. 11, No. 1, Feb. 2001.

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to agricultural planners and researchers at all levels, and perhaps most importantly, policy-makers. By doing so, it may then be possible to monitor, in a verifiable way, the real gender-differentiated changes in the management of natural resources across time and their contribution to sustainable development.

SMART criteria are:

- **Specific.** Indicators should be linked to the goal or objective, result from one's methods, be measurable, and be meaningful to stakeholders. One indicator per objective is useful.
- **Measurable.** Baseline data is used to measure change. This data is disaggregated by sex, socio-economic grouping, age, and ethnicity, and reveals the situation in the project area before donor (or other) intervention.
- **Achievable.** Measurements (costs, etc.) and timelines (e.g. project life) are realistic.
- **Reliable.** The same conclusion is yielded if the measurement is carried out: i.) with different tools; ii.) by different people; iii.) and in similar circumstances.
- **Time-bound.** Ideally, time frames should develop from the project and not be imposed on it.

Endnotes

- ¹ CIDA. Guide to gender-sensitive indicators, 1997.
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- ³ Curry, John. Establishment of a core set of gender-sensitive indicators for the agricultural sector: a preliminary proposal. Working paper No. 14 (Summary). Statistical Commission and Economic Commission for Europe – Conference of European Statisticians – ECE Work Session on Gender Statistics, Geneva 23-25 September 2002.
- ⁴ CIDA. Guide to gender-sensitive indicators, 1997.
- ⁵ FAO. March 2003.
- ⁶ For the full outline and details of Indicators developed, see FAO, March 2003.
- ⁷ FAO. SEAGA Intermediate Level Handbook, 2001.
- ⁸ Adapted from World Bank. Gender-sensitive HIV/AIDS indicators for monitoring & evaluation: Fact sheet. UN Inter-agency Task Team on Gender and HIV/AIDS. July 2003.
- ⁹ Kettel, B. "Gender-sensitive indicators: A key tool for gender mainstreaming." FAO, June 2001. www.fao.org/sd/2001/pe0602a_en.htm
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Overview

Decades of research and project experience have shown that addressing gender and socio-economic concerns is key to promoting sustainable agricultural development and natural resources management (NRM).

Yet to do so requires influencing NRM policy and practice using meaningful gender-sensitive data. To produce this data, it is essential to develop appropriate gender-sensitive indicators (GSIs) and first, to establish baselines against which change can be monitored.

Recently, FAO assessed the status of GSIs in the management of natural resources¹ in Nepal and Egypt; the assessment revealed a lack of practical experience in this area and a low level of gender-sensitive monitoring of NRM projects in general.

NRM projects in Africa: a revealing study

A 2001 study reviewing more than 50 NRM projects from 20 African countries that had a focus on gender issues found that only five contained substantive gender-disaggregated data (GDD) to demonstrate "success". This typifies the state of the development and use of effective GSIs and related data in NRM projects.

(Thomas-Slayter, B. & G. Sodikoff, 2001)

Furthermore, while readily available in other sectors, there is a lack of GSIs to help analyse gender-differentiated participation in, and benefits from, agriculture at the national, regional and global level¹. In recognition of this problem, FAO has been working to develop effective and relevant GSIs for monitoring gender-related changes in natural resources management.

What are gender-sensitive indicators?

Gender sensitive indicators are developed with the aim of creating awareness of the different impacts of a development intervention on men and women, taking

into consideration their socio-economic and cultural differences.

Gender-sensitive indicators (GSIs) are used at various levels to monitor gender-related progress or change over time. They can be used at the project level to monitor change in response to project interventions. They can also be used at a regional, national, or global level to monitor broader impacts of policy and international pressures.

GSIs are important to natural resource management as they can:

- demonstrate socio-economic and gender-sensitive changes (in the management of natural resources) over a period of time;
- facilitate the formulation of efficient NRM responses (e.g. projects, programmes and policy) and thus contribute to the goals of sustainable development;
- help ensure that gender is mainstreamed throughout the monitoring and evaluation (M&E) of NRM projects or programmes and consequently;
- assess the measurement of progress made towards gender equality in the area of NRM (FAO 2003) and thus contribute to the achievement of the Millennium Development Goals (MDGs).

Indicators and the biophysical and social dimensions of development

The development of GSIs has not happened in a vacuum. Over recent decades, there has been a move to encourage more holistic, systemic and interdisciplinary approaches to the many NRM challenges facing different regions and also different development agencies. To this end, a number of organisations have looked at ways to link biophysical and social dimensions of development and develop indicators to highlight the relationship between the two.

From the mid-1980s onward, there has been a stronger international focus on women's empowerment and

Gender-sensitive indicators (GSIs) require the production of data that is disaggregated by sex, age, ethnicity, and other socio-economic variables relevant to the project or programming context. By pointing to changes in gender relations in society over time, GSIs support gender mainstreaming in planning and implementation and, more importantly, in monitoring and evaluation of activities. They also contribute to achieving the Millennium Development Goals (MDGs) of sustaining development and eliminating poverty.

participation. This has included advocating for the development and use of GSIs and the associated collection of gender-disaggregated data (GDD) to challenge gender biases in the collection of data and subsequent indicator use and policy.

In 1995, both the World Summit for Social Development (WSSD) and the Beijing Platform for Action emphasised the importance of producing and using GSIs to assess sustainability and gender equality. The World's Women 1970-1990 (UN) also addressed this issue. The 1995 United Nations Development Program (UNDP) Human Development Report focused on gender and development and expressed the need to draw GSIs to the attention of policy-makers as a first step towards changing policies that were biased against women².

Why are GSIs important for the sustainable management of natural resources?

Throughout the world, women and men in rural households carry out different tasks in their use and management of natural resources for agricultural production and food security. Because of these different roles, women and men also have different knowledge related to the management of natural resources.

Different roles, different experiences

In Nepal, women have almost full responsibility for seed selection and management of rice in the mountain area; women and men select seed together in the mid-hills; and men dominate seed selection in the hinterland (FAO, 2003).

In parts of Mali, women cultivated 30 traditional varieties of rice while men did not cultivate any; men cultivate three out of four modern varieties and women only one (Huvio & Synnevag, 1999).

They also have differential access to and control over resources (land, time use, family income, decision-making in land use) depending on their sex, age, socio-economic group, level of formal education, ethnicity, agro-ecosystem and customary norms. It has been shown that women and men also participate differently in community-based organisations and have different access to skills and knowledge (extension services, formal education, farmer training, etc.).

Women and men's different NRM roles, responsibilities, knowledge, and decision-making authorities are impacted by many factors including:

- environmental change (e.g. drought, disease);
- economic forces (e.g. policies that favour cash cropping, globalisation);
- cultural pressures (e.g. taboos, customary law);
- demographic change (e.g. out-migration, HIV/AIDS) and;
- institutional initiatives (e.g. access to services and inputs, projects, etc.).

To assess the gender-differentiated impacts of these and other factors over time and to identify potential constraints to sustainability, it is crucial to develop and apply a GSI inventory for natural resources management and revise this as needed.

FAO and Gender-sensitive indicators' development

For over a decade, FAO's Gender and Population Division has worked with the Statistics Division and member nations to stimulate the production and use of gender-disaggregated data (GDD) and gender-sensitive indicators in agriculture and NRM initiatives, including agricultural surveys and censuses.

FAO adapted the widely popular P-S-R (Pressure-State-Response) Indicator Framework³ developed by the Organisation of Economic Cooperation and Development (OECD) in 1993, to consider potential GSIs in the gender-differential use and management of natural resources.

The P-S-R framework was originally designed to understand the **pressures** of human activities on the changing **state** of the environment and the societal **response** to this that could then be fed back to mitigate the pressure. Similarly, responses can be developed to deal with gender-based management pressures.

To date, FAO has developed an inventory of NRM-related gender-sensitive indicators (GSIs)⁴ within the domains shown in Table 1. These were developed through the identification of GSI factors that put differential pressure on the management and use of natural resources and are broad in scope and possible application.

The core inventory of GSIs, based on field verification of agro-biodiversity management initiatives in the global IPGRI project on *in-situ* conservation of genetic resources in Nepal and FAO land reclamation projects in Egypt, combined both qualitative and quantitative data sources.

The GSI inventory that is presented in the table is not intended as immutable but rather as a catalyst in the further development, field-testing, and refinement of GSIs for use in natural resources management at the project and policy levels.

While a standard GSI inventory would be useful for comparison across regions and between countries, more flexible and situation-specific GSIs must also be adapted to local contexts to assess gender-related change in the overall community management of natural resources and for use in monitoring gender-related change in natural resource management projects.

Developing gender-sensitive indicators for NRM

Selecting gender-sensitive indicators for use in natural resources management (NRM) depends on various factors that include considering specific data requirements⁵, identifying the most relevant gender and NRM issues,⁶ and working with the resources available for data collection (human, financial, organisational). To a large extent, the choice and development of indicators will be determined by user demands (whether the user be a community itself, NRM planners, policy-makers, technical specialists or other).

Developing GSIs for monitoring gender-related change arising from NRM policy, projects, or even community/household practice begins with formulating "specific, realistic objectives that are people-relevant, as well as technically and environmentally sound."⁷ It is crucial to remember that NRM policies or projects will undoubtedly have different impacts on women's and men's perceived benefits and constraints, as well as on their participation, labour, time-use, access to, and control over natural resources.

There are different types of gender-sensitive indicators including:

- *Gender-sensitive impact indicators* (e.g. describe actual gender-related change arising from a NRM project or community practice);
- *Gender-sensitive output indicators* (e.g. describe the actual NRM project in a gender-sensitive way, such as the number of men versus women trained in a specific NRM technique)

GSIs can be **qualitative or quantitative** in nature; both are valuable and valid in monitoring gendered changes in the management of natural resources.

Quantitative GSIs typically use number/ratios/percentages to measure change, and are easy to quantify, for example:

- **Quantitative:** ratio of number of preferred traits used by women and men in livestock selection;
- Number of women versus men using a specific landrace of rice.

Qualitative GSIs use more sociological information that can be derived from more qualitative processes of investigation (e.g. focus group discussions, participatory learning approaches, observation, etc.). For example:

- **Qualitative:** the nature of women and men's (by sex, age, socio-economic background) participation in an NRM initiative; (under what social/cultural conditions were they able to participate; what personal challenges, obstacles, did they overcome to do so)
- What benefit did women and men derive from their participation in NRM initiative (it could be prestige, respect, time off, acquired knowledge, etc.)

It is recommended that both types of indicators be used; that they be relevant, technically sound, measurable over time, and above all developed in a participatory manner⁸. While quantitative GSIs will provide specifically numerically measurable data, qualitative GSIs will facilitate the collection of information that gives more meaning in terms of the views or perceptions of those experiencing change.

The following chart proposes one way to develop gender-sensitive indicators for natural resource management. Used together with the table "Examples of GSIs for NRM" as a guide, the chart will be useful in developing situation-specific GSIs.

Table 1 — Example for GSIs for natural resources management

Indicator domain	Baseline	Gender-sensitive data required	GSI
Indicator 1: Women & men's preferred traits of a given natural resource	Quantity & quality of preferred traits for a given natural resource by women & men in period 0	<ul style="list-style-type: none"> ■ Type & number of preferred traits for a given resource by women, compared to baseline ■ Type & number of preferred traits for a resource by men, compared to baseline 	Ratio <i>between</i> number of preferred traits used by women and men for a given resource, compared to baseline (comparative information, no ultimate desired change expected)
Indicator 2: Women & men's access to agricultural inputs	Amount & type of agricultural inputs by women & men in period 0	Amount & type of agricultural inputs used by women Amount & type of agricultural inputs used by men	Ratio <i>between</i> the amount and type of agricultural inputs that women and men use, compared to baseline
Indicator 3: Women & men's access to land	Quality & quantity of land accessed by women and men in period 0	Quality & quantity of land accessed by women Quality & quantity of land accessed by men	Ratio in volume of land as accessed by women and men, compared to baseline
Indicator 4: Women & men's time dedicated to sustainable management of natural resources	Number of working hours applied to the management of a given natural resource in period 0	Number of working hours women apply to the management of a given natural resource Number of working hours men apply to the management of a given natural resource	Ratio <i>between</i> the number of hours women and men apply to the management of given natural resource, compared to baseline
Indicator 5: Women & men's indigenous knowledge associated with the management of natural resources	Women & men's indigenous knowledge associated with the management of traditional (crop) varieties in period 0	Women's indigenous knowledge associated with the management of traditional varieties Men's indigenous knowledge associated with the management of traditional varieties	Ratio of change in the quantity and quality of women & men's indigenous knowledge associated with the management of traditional varieties, compared to baseline
Indicator 6: Women & men's participation in development response strategies (including decision-making opportunities)	Number & socio-economic level of women and men participating in response strategies in period 0	Number & socio-economic level of women participating in response strategies Number & socio-economic level of men participating in response strategies	Ratio <i>between</i> number of women & men participating in response strategies compared to baseline Ratio of level of women & men participating in response strategies compared to baseline