Using the SANREM Targeting Outcomes of Programs[1] (TOP) Framework

The Targeting Outcomes of Programs (TOP) Framework is used by the SANREM CRSP as the primary tool for research proposal development, implementation, and project results monitoring and reporting. As such it is essential that all Long-Term Research Award Leaders understand and be able to apply the framework to their activities.

The initial purpose of the SANREM TOP Framework[2] was to integrate outcomes assessment into the research planning process. It provided a mechanism to recognize the difference between scientific research objectives and the development objectives the research is designed to achieve. Use of the SANREM TOP Framework ensures that Long-Term Research Award (LTRA) applications are oriented toward achieving and measuring potential and real development impacts from the beginning.

The participatory identification of output and impact indicators promotes effective monitoring and progress reporting. In particular, the framework provides a reporting structure that describes the pathway by which research outputs lead to development impact. During research activity implementation *ex ante* impacts may be estimated for changes in stakeholder practices and related social, economic and environmental (**SEE**) conditions. At the conclusion of research activity implementation, the pathway to long-term regional or national SEE impact can also be modeled.

The SANREM TOP Framework is obligatory for LTRA applications and project reporting. The following provides guidance concerning how this planning and monitoring tool is applied.

Strategy for Implementing the SANREM TOP

TOP implementation steps can be visualized as moving from left to right down the inverted pyramid during the project development phase, and back up for the project evaluation phase (Figure 1). Consequently, the process starts and ends with a consideration of the SEE Conditions, the initial conditions and ultimate changes to be brought about. Each step describes an element of program development that is to be planned and later evaluated with this ultimate goal in mind.

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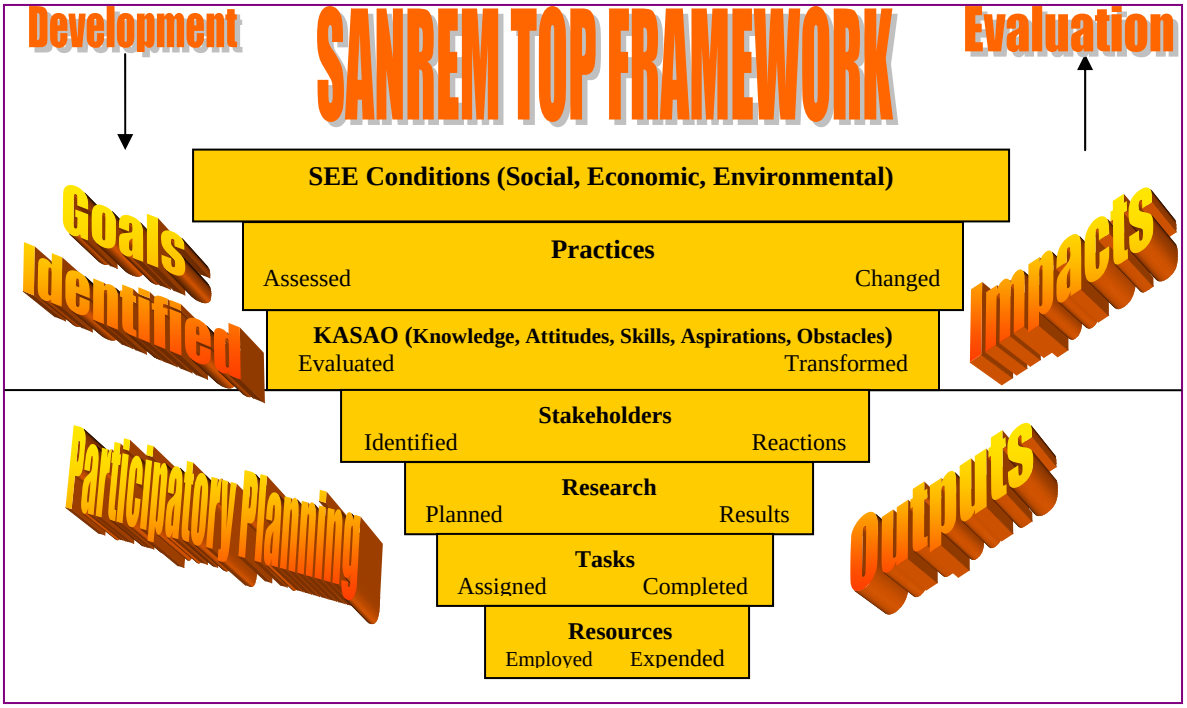
[1] **Bennett, C. & Rockwell, K. (1995, December).** *Targeting outcomes of programs (TOP): An integrated approach to planning and evaluation.* Unpublished manuscript. Lincoln, NE: University of Nebraska. (http://citnews.unl.edu/TOP/english/index.html)

[2] The SANREM TOP Framework is an adaptation of the TOP Framework that was developed by Kay Rockwell (University of Nebraska) and Claude Bennett (USDA-CSREES) to design and assess the outcomes of educational and training programs. We have adapted the method so that it is applicable to applied research programs dealing with sustainable agriculture and natural resource management problems in developing countries.

Indicators for the evaluation are developed during the planning phase (the left side) and monitored during implementation (on the right side).

Referring to Figure 1, the long-term goal of the SANREM CRSP is to develop and make accessible research-based knowledge to improve the sustainability of agriculture as a management strategy for a healthy natural resource base. Ultimately, sustainability will depend upon achieving long-run **Social, Economic, and Environmental (SEE) Conditions**. The LTRA applications and subsequent project reporting must demonstrate results that will lead along a pathway to development impact involving significant changes in these conditions.

Figure 1: SANREM TOP Framework



In the short and medium term (during the course of the research projects), reporting must persuasively demonstrate that research results will positively impact sustainable agriculture and natural resources management **Practices**. As appropriate, research methodology should be designed to measure expected changes in these **Practices** during the life of the project. In some cases, however, medium term impact will occur beyond the project cycle. Appropriate movement along the development impact pathway in these cases is measured by significant changes in the preconditions to changing practices: related changes in the underlying **Knowledge, Attitudes, Skills, Aspirations, and Obstacles (KASAO)**[3] of the target population (i.e., resource users, development agents, policy makers, scientists, women, men, children, etc.).

[3] In an earlier version "Capabilities" had been used as the label to describe tenure rights, difficulties of access, and/or other socio-institutional factors not explicitly addressed in project design that impede empowerment of stakeholders to accomplish their objectives. This caused confusion among some users so the label was changed to "Obstacles" as being more intuitive.

Although implicit during the goal identification phase, **Participatory Planning** begins in earnest during the development of the LTRA applications. Participatory planning requires the identification of specific **stakeholders** with whom project PIs will negotiate the goals and research activity design. This participatory collaboration leads to the development of a consensus **Research Strategy** and **Task** assignments, enabling preparation of a realistic and meaningful budget for **Resources**.

In most cases, SANREM project objectives should be to affect stakeholder **Practices** and **KASAO** through completion of assigned **Tasks** and production of **Results** as measured by the **indicators** developed through the planning process. Keep in mind that while the overall goal of SANREM and the individual projects is to ultimately impact/improve **Social, Economic and Environmental** (**SEE) Conditions**, the research activities may not do this directly or at a large scale.

In order to achieve broad-based changes in SEE conditions, the scaling of research findings up and out in the long term is critical. Consequently, projects need to be structured to account for multiple sites and stakeholder groups to provide the comparative foundation for extension of the SANREM research knowledge generated. Research implementation will become an iterative process across sites and groups, and the **Practices** and **KASAO** related tasks and results will need to be aggregated and communicated to a wide regional or national/international audience.

If individual projects are conducted at a higher system level (e.g., with national and/or institutions and stakeholders, rather than with local communities), the researchers will need to involve stakeholders at this level in the initial application planning process and later assess **Conditions**, **Practices** and **KASAO** changes at the higher level.

Research Project Formulation: Goals and Methodology

The following is specific guidance details for using the SANREM TOP framework.

1.0 Goals Identification

The TOP Framework structures the participatory process through which LTRA applications are prepared. The following lists and comments provide suggestions for what to look for and points to consider. Going over these with local partners will provide the multiple perspectives needed for a holistic assessment of SEE, Practices, KASAO, stakeholder identification, research strategies, task specification, and needed resources.

1.1 Social, Economic, and Environmental (SEE) Conditions

What are the social, economic and environmental conditions that the LTRA will address? What are the hypotheses concerning how these **Conditions** will change as a result of the research? What are the indicators against which change will be measured? The following list of potential **indicators** is not exhaustive:

Social Condition Indicators

- Education of boys and girls
- Health – freedom from disease, sufficient nutrition, avoiding HIV infection
- Women's rights to land and to carrying out productive activities
- Safety – from natural and man-made disasters, such as earthquakes, hurricanes, war, and domestic violence
- Community level social capital, trust,
- Access to agricultural inputs, information (e.g., technology transfer, etc.)
- Empowerment of men, women, children, community and producer groups
- Political issues – type of government, support for the least privileged and most discriminated against (e.g., ethnic groups, women).
- Intellectual property issues (international policy issues)
- Levels of corruption

Economic Condition Indicators

- Access to basic necessities of life – food, shelter, clothing
- Adequate incomes from formal employment and from informal sources
- Income diversification
- Functioning markets for inputs and outputs
- Affordable costs for basic necessities, food and shelter, etc.
- Affordable costs of productive inputs, information, etc.
- Risk reduction
- Investment in agricultural research
- Balance of trade
- Support for crop export
- Taxes and subsidies

Environment Condition Indicators

- Soil fertility
- Biodiversity
- Water and wind erosion
- Carbon sequestration
- Climate change
- Vegetative cover
- Ready availability of (renewable) energy sources
- Access to sufficient potable water
- Sacred forests and endangered species protected
- Seasonal temperatures and rainfall
- Water quality

1.2 Practices

At this stage in the development of the research methodology, how impacts on project beneficiaries will be assessed in terms of stakeholder livelihoods and the environment. What **Practices** will the project change? How will these **Practice** changes impact stakeholders and the environment? A few examples of potential **Practices** and **Indicators** of changes in Practices are listed below. **Practices** and **Indicators** that are specific for monitoring and assessing the impact of the particular research activity must be developed.

Practices

- Current land use and cover management practices
- Community-based governance of local resources

- Gendered access to land, labor, and inputs
- Eco-friendly businesses
- Tillage practices
- Use of external inputs/use of local inputs
- Watershed management
- Use of decision support tools (modeling, GIS, etc.) in planning and decision making
- Local or national government changes to policies that impact any of the above

Indicators of Changes in Practices (Impacts)

- Bio-diversity increased
- Food security improved
- Soil fertility improvements
- Productivity and incomes increased
- Disaster vulnerability reduced
- Agro-ecological landscape mosaics and buffer zones enhanced
- Environmental services increased
- Improved health
- New policies impacting any of the above

1.3 Knowledge, Attitudes, Skills, Aspirations, and Obstacles – KASAO

The next step down in the SANREM TOP framework is to evaluate stakeholder **Knowledge, Attitudes, Skills, Aspirations, and/or Obstacles (KASAO)** at research activity sites and determine how **KASAO** can be measured. The major objectives of the research activity should be to change stakeholder **KASAO** since this is the foundation for producing long-term, enduring changes at the **Practices** and subsequent **SEE** levels. The **KASAO** step is clearly suited for research projects that impact and measure changes at grassroots stakeholder levels (farmers, fishermen, tour guides, etc.). However, it is also appropriate and can be applied at higher levels to assess changes in policy and/or market level decision-makers. In this step, the previously identified **Practices** are examined with respect to the stakeholder **KASAO,** which sustain them. Part of the research task will be to design a participatory assessment system to measure these impacts/changes.

The units of analysis for data collection will depend on the research problem and the system level at which it is posed. Data collection may be at the individual and/or group level involving sustainable agriculture producers, natural resource users and other stakeholders. Data collection may also be conducted at higher system levels involving policy makers, development agents in NGOs, local government, or government NRM/AG ministries, and private sector actors in trade or value added production transformation.

An existing source of **KASAO** data that may serve as baseline data may be identified at this stage and could be used as a basis for identifying and refining research issues for the application. If not, then plans should be made for carrying out a **KASAO** baseline study at the outset of the long-term project.

A few examples of **KASAO** issues that may be relevant at this step include:

Knowledge

- What information does each stakeholder group have about the issues the research is dealing with?

- Is this information used in support of production or resource management practices?
- What are the key precepts or axioms in their knowledge concerning production or resource management practices?
- What is the source of their knowledge? (local, traditional, development agents, government policy, scientists)
- Are there relevant areas of knowledge for which information or concepts are missing?

Attitudes

What are stakeholder attitudes toward specific:

- productive activities (farming, fishing, herding, forestry, etc.)?
- productive practices (no-till, slash and burn, grazing, etc.)?
- natural resources (air, water, soil, landscapes, crops, forests, animals, etc.)?
- other groups (identified by ethnicity, sex, occupation, etc.)?
- government policies (forestry, marketing, etc.)?
- community governance (village, local, etc.) ?
- ways of doing things (traditional, modern, etc.)?
- belief systems (religious, cultural, scientific, etc.)?

Skills

- What are stakeholder technical capacities and know-how with respect to:
    - controlling water runoff?
    - gully management?
    - techniques for reforestation?
    - species preservation?
- How is technical capacity and know-how distributed within the community? (by ethnicity, gender, age, occupation, etc.)
- What are the sources of training for new skills (NGOs, local schools, extension service, etc.)?

Aspirations

- What type of environment do stakeholders desire?
- How would they like to live and work?
- How would they like for their children to live?
- Where would they like their children to live?
- What would they like to do that they can not do now?

Obstacles

Obstacles refer difficulties of access, tenure rights, and/or other socio-institutional factors not explicitly addressed in project design that impede being empowered to accomplish one's objectives. For example:

- Do women or men have access to land, water, credit, and/or other inputs?
- Do target groups have effective decision making authority over the territories and resources within their management domain?
- Are there conditions which differentiate between user groups?

2.0 Participatory Planning

2.1 Stakeholders Identified

Stakeholders should be identified and involved in project formulation and negotiation at all relevant levels. Depending on the system addressed, appropriate stakeholders may include men and women farmers, herders, fishermen, hunter-gatherers, and other pertinent community-level

occupational groups, ethnic groups, as well as local institutional partners (local government officials, research institute personnel, university agriculture departments, extension services) and relevant international and local NGOs and IARCs active in the region. The extent to which producer, women's and other organizations, management committees, and community representatives are actually inclusive – that is, that they include all local ethnic/religious and occupational groups, as well as representatives of both sexes will need to determined. If not, strategies to ensure that the project accommodates all stakeholders must be developed.

2.2 Research Strategies Planned

Once you're the SEE Conditions, Practices, Stakeholder KASAO, key Stakeholders, and associated indicators have been identified. The research team should be in an excellent position to develop detailed research goals, objectives, and methodologies to accomplish the research objectives and measure indicators. Ideally, all stakeholders will be involved in each step. Be aware that aggregation of stakeholder priorities can often lead to distortions. Identifying creative local solutions that find ways to link long-term and short-term benefits for various stakeholders and resources are needed to ensure long-term impact. Bring participants together in ways that allow the least powerful a voice and that do not over-privilege the voice of outsiders. By including local stakeholders as equal partners, sustainable agriculture and natural resource management research goals are more likely to be achieved, and research findings are more likely up scalable in future development interventions.

For each research objective, a research methodology and specific indicators and measurement techniques for these indicators will need to be developed to demonstrate achievement of each objective. Continuous assessment of research progress should be built into and compatible with the overall research activity.

2.3 Tasks Assigned

Once research objectives and methodologies are defined, specific tasks should be developed to achieve each objective. Each task should clearly identify the persons/organizations responsible for accomplishing the task and the time frame and milestones necessary to accomplish the task. Tasks should be assigned in consideration of the needs for their long-term sustainability, building skills, and capabilities where necessary (e.g., among the illiterate, women, etc.) Task responsibilities should be agreed upon by all relevant stakeholders, including local producers (men and women farmers, foresters, etc.) and other members of rural communities, where appropriate.

2.4 Resources Budgeted

At this stage there should be a good understanding of the research objectives, methodologies, and tasks, who is responsible for them, and when they must be completed. This knowledge will be valuable for developing the project budget, allocating resources to achieve each task/objective. While international travel and graduate student training may consume a major portion of the budget, sufficient support must be allocated to assure the maintenance of activities and monitoring in each research site. Once task budgets are developed, they can be aggregated into the formal budget template for submission in the application.

Project Implementation and Quality Assurance

3.0 Outputs

Funded research activities must be implemented according to the research plan. This will require periodically assessment of research activities to document progress, and identify and address challenges encountered. Identified indicators will need to be monitored at each step while moving back up the TOP pyramid through the production of research **Outputs** leading to project **Impacts**.

3.1 Resources Allocated

Resource allocations should be made according to the research plan and resource use carefully monitored.

3.2 Tasks Completed

Continuously assess progress toward task accomplishment. Timely feedback from project partners on their progress will assure quality execution and the ability to address problems as they are encountered, particularly those related to dependent tasks. It may be necessary to occasionally modify and revise tasks in order to achieve research objectives.

3.3 Research Results

Research results should begin to indicate substantial progress toward achievement of the development objectives. Review collected data and determine if they are providing the desired quality of information. Respond to unexpected findings by modifying and/or developing new research objectives, methodologies, tasks, and resource allocations to address unexpected research findings and/or unanticipated research questions if applicable and feasible. These modifications should be included in the annual work plans.

3.4 Stakeholders Reactions

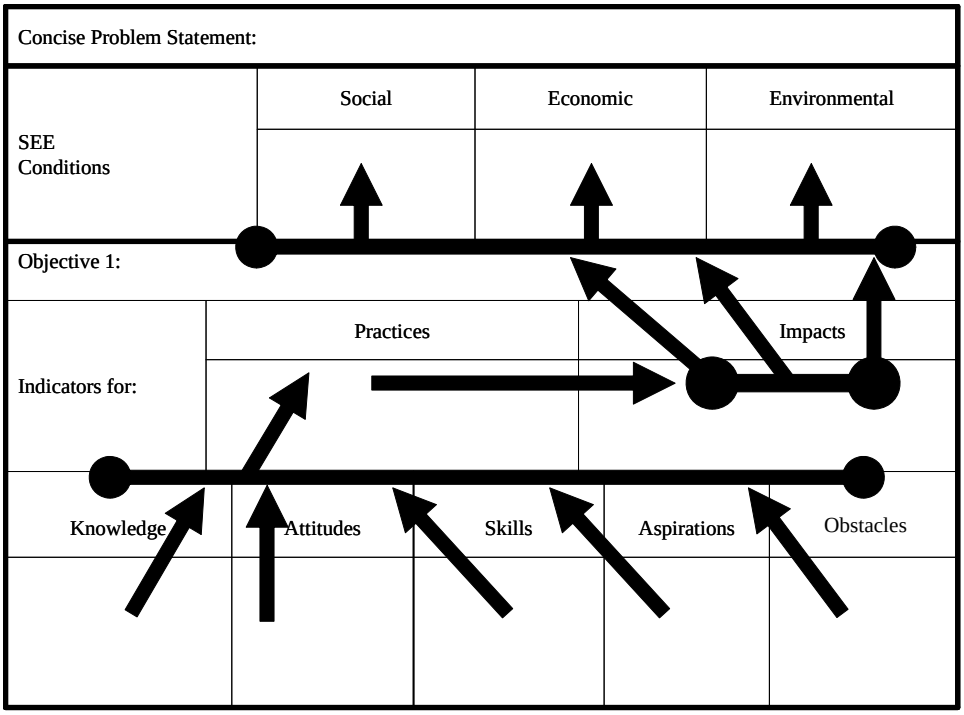
Involve relevant stakeholders in on-going assessment activities, interpretation of findings, and in decisions concerning the need for modification of research objectives, tasks, etc. Be sure to ascertain if there are unintended consequences that go beyond the scope of pre-determined indicators.

4.0 Impacts

Development impacts will appear in the form of new or modified **Practices** that change **Social, Economic and/or Environmental Conditions** (see Figure 2). The development impact pathway will be marked by milestone indicators that demonstrate changes in **Knowledge, Attitude, Skills, and Aspiration** Outcomes. Changes in **Obstacles** outside the direct influence of the research activity may also have an impact. The LTRA application provides the initial preliminary narrative about how the research activities will change **KASAO** and ultimately lead to new or improved **Practices** and their consequent **Impacts**. Progress reports describing

milestones passed along the **Development Impact Pathway** will articulate the relationship between the **KASAO** indicators, changes in **Practices** and their consequent **Impacts**, and how this leads to improvements in overall **SEE Conditions**.

Figure 2: Development Impact Pathway



4.2 Practices

Based on measures of **Practices**, assess success or show progress along the **Development Impact Pathway** in implementing desired **Practices** and in achieving desired impacts on targeted stakeholders and the environment. Involve all stakeholders in **Practices** assessment and link these findings with those of stakeholder **KASAO**.

4.3 Social, Economic, and Environmental (SEE) Conditions)

The last step in the SANREM TOP framework assesses the potential and likelihood of the project achieving its objectives in terms of projected impacts on or changes in social, economic and environmental conditions. What has been learned about the Research Problem Statement?

5.0 EXAMPLE

To ensure that SANREM CRSP LTRA applicants have employed the SANREM TOP framework in the development of their research application, applicants must include SANREM TOP Framework Reporting Tables with their application (in an appendix). The first table includes the **Research Problem Statement** and **SEE Conditions** and then the key indicators for **Practices**, **Impacts**, and **KASAO** elements **by objective**. The second table lists the stakeholders involved

in RFA development and the nature of their involvement (check off participation in each role). See following example tables.

Table 1. SANREM TOP Framework Reporting Table

Concise Problem Statement:
Forest communities are destroying neighboring forests which is reducing the quality of rural livelihoods and the viability of the forest as a local resource and habitat for wildlife.

	Social	Economic	Environmental
SEE Conditions	*- level of social capital in forest communities* *- access to information on market opportunities for non-timber forest products (NTFPs)* *- women's empowerment*	*- household livelihoods* *- market infrastructure* *- diversification of production and income*	*- biodiversity levels* *- soil fertility* *- vegetative cover* *- potable water* *- carbon sequestration*

Objective 1: *increase and rationalize production of NTFPs*

	Practices	Impacts
Indicators for:	*- Improved harvesting techniques* *- community management of forest resources* *- use of GIS to improve decision making*	*- increased incomes* *- increased food security through diversification of production* *- science-based decision making*

Knowledge	Attitudes	Skills	Aspirations	Obstacles
- market opportunities *- tree management*	*- feeling of pride of in local forest*	*- techniques for encouraging tree productivity*	*- increasing management of other forest resources*	*- increased access to forest resources*

Objective 2: *increase biodiversity in targeted forest zones*

	Practices	Impacts
Indicators for:	*- set up and maintain protected zones* *- institute local game warden system* *- eco-tourism development*	*- increased vegetative cover* *- increased wildlife habitat* *- reduced unsustainable extraction of forest resources*

Knowledge	Attitudes	Skills	Aspirations	Obstacles
- value of biodiversity *- interdependence of community and forest*	*- value of wildlife preservation*	*- conflict management*	*- viable ecotourism industry*	*- increased authority for collecting fines*

Table 2: Stakeholder Participation Form

List of Stakeholders	Role in Research Application Development (check all that apply for each stakeholder)				
	Problem Formulation	Research Design	Task Assignment	Resource Contribution	Drafting Proposal
Keith Moore, VT	X	X	X	X	X
SK De Datta, VT	X	X		X	
Jessie Borown, WWF	X	X	X	X	X
Village Hunters Assn.	X		X	X	
Women's Assn., Village A	X	X		X	
Women's Assn., Village B	X	X	X	X	
Mubato Forestry Service		X	X	X	X
USAID/Mubato	X	X			
Mubatos for Democracy (local NGO)	X	X	X	X	X
Abu Cuna, Mubato Polytechnique			X	X	
Kabera Motu, Village A leader			X	X	
Barry Shapiro, ICRAF	X	X	X	X	X
Assn. of Wild Meat Traders		X	X	X	