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ABOUT SANREM CRSP

SANREM's mission is to assist in the analysis, creation and successful application of decision support methods, institutional innovations and local capacity approaches to support participatory sustainable agriculture and natural resource planning, management and policy analysis at local, municipal, provincial and national levels.

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FROM AWARENESS TO ATTITUDE TO ACTION: AN ITERATIVE APPROACH TO EVALUATING IMPACTS OF NRM PROJECTS

How can we assess progress towards the goals of NRM projects before completion of their typically long-term project cycle? What is the relationship between the degree of involvement of community members in NRM projects and their perceptions and practices concerning sustainable agriculture and environmental conservation?

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 to capture '*intermediate*' steps, that is shifts in awareness and attitude that usually precede actual changes in behavior concerning sustainable natural resource management.

Originally developed by Bennett and Rockwell (1995), this framework was adapted and applied by University of Wisconsin scientists Gladys Buenavista, Ian Coxhead and Kwansoo Kim at the end of the first phase (1993-1998) of the Sustainable Agriculture and Natural Resource Management program in the Philippines (SANREM CRSP). The resulting case study is presented in ways that will enable readers to replicate the methodology in accordance to specific needs and contexts.

BACKGROUND

The research setting is the Manupali watershed in Central Mindanao. In recent decades, the area has experienced a rapid pace of agricultural intensification, facilitated by road development and price policies that favor annual crops for urban markets. Expansion of areas planted with sugar and corn at low altitudes and vegetables and corn at higher altitudes, has led to conversion of forest to farmland and to a decrease in cultivation of tree crops, such as coffee. Deforestation has resulted in increasing loss of biodiversity, soil erosion, and

water quality degradation, also exacerbated by heavy use of chemical inputs. Yet few farmers invest in soil conservation technologies, and most farmers fallow land or rotate crops only when crop yields decline to the point of economic loss.

The SANREM CRSP has applied a multi-disciplinary, participatory approach to seeking solutions to these problems. Its first phase was largely devoted to a baseline characterization of natural resources in the watershed and testing of available technologies. The program has worked closely with farmers in designing, testing, and demonstrating appropriate interventions that can enhance sustainability. It has also involved watershed residents, students and teachers, community-based organizations, local government officials, and other relevant institutions in workshops, trainings, and other capacity building activities.

CONCEPTUAL FRAMEWORK

The SANREM CRSP defines as *impact* a change in the behavior of project participants or target population that results in enhanced quality of life or improvement of environmental conditions, such as the quality or quantity of natural resources. Defined as such, an impact is the culmination of a process that entails at least two preliminary stages. These include 'first-order' changes (people's involvement in or reaction to NRM activities), that may induce 'second-order' changes (peoples' knowledge, attitudes, skills, or aspirations concerning NRM). Ultimately, these second-order changes must lead to tangible changes in behavior regarding NRM to produce a long-term impact.

Accordingly, SANREM has adopted an iterative approach to formulating its goals and evaluating its achievements that hinges on:

- promoting *awareness* of natural resource issues and environmental linkages (within communities and relevant agencies);
- influencing *attitudes* of natural resource managers (including willingness to make sacrifices to maintain environmental quality);
- encouraging *actions* (by individuals or institutions) that are likely to have beneficial effects on natural resources.

METHODOLOGY

An evaluation methodology was developed to assess how the program was performing in reference to this multi-tiered set of objectives at the end of its first five years of implementation.

Social distance as key variable

The analytical frame revolved around the concept of *social distance,* a multivariate concept that takes into account geographical location, involvement in community life, and proximity to the project.

a) *Geographical distance* = distance from a) residence to road and to village center and b) from residence to further field;

b) *Institutional distance* = frequency and intensity of interactions with the community (i.e. village meetings, organizations, visits to markets);

c) *Project distance* = type, frequency, and intensity of exposure to SANREM activities.

Sampling frame

Using a) and b) as controls, this technique yielded a pool of respondents differently located with respect to the project. It included two samples:

a) 120 respondents randomly selected from village resident lists, stratified according to village population;
b) 30 respondents purposively selected among community leaders, government officials, teachers and other key informants;

Measuring project distance

Respondents were asked: *Do you know about SANREM?* If the answer was affirmative, they were asked to specify the nature of their involvement. Responses were coded as follow:

a) employed by SANREM;
b) held field trials or SANREM activity;
c) participated in seminar, workshop, field days;
d) attended village meeting about SANREM;
e) responded to SANREM survey;
f) discussed SANREM with family, friends.;
g) know about SANREM but no involvement
h) do not know about SANREM

Among the random sample respondents, about *half* were acquainted with SANREM by means of village meetings (d). One *fourth* was more closely involved (a-c), another *fourth* was marginally or not at all involved (e-g). Only a few had never heard of SANREM (h).

Data on other key variables, such as age, gender, ethnicity, education, wealth, and income sources were also collected. These data allow to disaggregate impacts for a better understanding of how individuals who are differently positioned in society respond to and act upon environmental information. Respondents who were 'closer' to the project scored higher for wealth, education, and community involvement.

Perceptions of project goals

The survey also elicited respondents' perceptions of SANREM's goals, by asking: *What do you think the main goals of the SANREM project are ?*

Coding of responses yielded three broad categories:

- development = teach, assist, promote, educate;
- stewardship = protect, preserve, restore;
- research = survey, monitor, study, collect data.

Among the random sample respondents, most (almost two thirds) mentioned *development,* while *stewardship* and *research* were mentioned respectively by one third and one fourth of them. Less than one fifth did not know.

Among purposive sample respondents, most (almost two thirds) mentioned *stewardship*, and more than half mentioned *research*, while less than one fourth mentioned *development*. A small proportion did not know.

RESEARCH FINDINGS

Awareness of NRM issues

To test respondents' understanding of environmental issues and linkages, the survey asked them to react to the following statement: *Agricultural expansion in upland areas is a major cause of deforestation.*

Respondents were to select one of four answers: usually true, unable to judge, usually not true, do not understand.

The survey also asked to state when (what year) respondents first became aware of this issue and to identify and rank sources of information on NRM.

The large majority of respondent found the statement to be 'usually true'. But there was significant variation in how information sources were ranked:

- Among respondents 'close' to the project, SANREM is ranked 3rd after media and family/friends. As proximity diminishes, so does SANREM's importance as an information source.

- Informants in the purposive sample ranked SANREM 1st as source of information for issues such as soil erosion, water quality, and deforestation.

Attitudes towards NRM

The survey sought to elicit attitudes towards NRM by proposing 3 statements, asking respondents to rate them on a scale of 1-9, with 1 = strongly disagree and 9 = strongly agree).

People around here think it is very important to:

a) take steps to prevent soil erosion … even if this means lower incomes …

b) take steps to protect forest lands . . . even if this means lower incomes . . .

c) preserve the quality of water … even if the community must pay …

Questions pertained to generally held attitudes in the community rather than respondents personal views because experience shows that individuals are more straight-forward about other people's opinions than about their own.

Results indicate a strong association between proximity to project and willingness to make sacrifices to maintain environmental quality.

Actions in favor of sustainable NRM

The survey elicited information about rates of adoption of sustainable agriculture practices that were classified in three categories according to the levels of knowledge, investment, and risk entailed:

a) relatively easy and cheap (i.e. contour plowing, tree planting on field borders);

b) some skill and loss of income (i.e. land fallowing, crop rotation);

c) more knowledge, greater investments, and risk of failure (i.e. IMP, vegetative strips).

For a) adoption rates were uniform, but evidence showed that respondents closer to the project adopted them earlier. On the other hand, adoption correlates highly with proximity for more complex, expensive, risky practices (c).

While it is possible to infer from these data that SANREM positively influences farmers' awareness of and willingness to invest in NRM practices, it may also be that the project attracts those farmers who are already sensitized to the issues. The adoption of costlier and riskier technologies may also be facilitated by the greater wealth and education of farmers closer to the project.

This survey made no attempt to evaluate the performance of these practices (as other SANREM research activities did). By identifying key variables associated with rates of adoption (i.e. project proximity), the survey can provide a basis for the design of subsequent systematic impact evaluation.

CONCLUSION

Policies of decentralized governance and responsibility over natural resources have been promoted by donor agencies and international organizations worldwide as a key to environmental sustainability. With the passage of the 1991Local Government Code, the Philippines are among the countries that have devolved certain responsibilities and resources power to the local level. It is therefore imperative to track how NRM projects, such as SANREM, influence environmental thinking among local policymakers and community leaders as well as among the watershed residents that form their constituencies.

The iterative approach to impact assessment presented here provides tools that allow to quantify the project's effect on community awareness and attitudes concerning sustainable NRM, even before those crystallize into behavioral or decisional shifts among individual or institutional natural resource managers.

References

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