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The participatory design of a performance oriented monitoring and evaluation system in an international development environment

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ABSTRACT

This article illustrates the application of the impact monitoring and evaluation process for the design and development of a performance monitoring and evaluation framework in the context of human and institutional capacity development. This participative process facilitated stakeholder ownership in several areas including the design, development, and use of a new monitoring and evaluation system, as well their targeted results and accomplishments through the use of timely performance data gathered through ongoing monitoring and evaluation. The process produced a performance indicator map, a comprehensive monitoring and evaluation framework, and data collection templates to promote the development, implementation, and sustainability of the monitoring and evaluation system of a farmer's trade union in an African country.

1. Introduction

There is a growing body of literature on building performance measurement systems for human and institutional capacity development (Bamburger, 2000; Coleman, 1987, 1992; D'Ostie-Racine et al., 2013; Kumar, 1995) but scarce in its discussion of systems of monitoring and evaluation that offer continuous feedback, guidance for action, and evidence of impact on intended consequences and benefits for target populations (Bamburger, 2000). Monitoring and evaluation systems can help organizations align, communicate, and execute their strategies and plans to a vision that clearly identifies the measurable value they commit to add to their stakeholders.

Monitoring and evaluation systems, also known in the performance improvement literature as performance measurement and management systems (Guerra-López, 2010; Guerra-López, 2012), are integral tools for ensuring the effectiveness of international development efforts. International development refers to "all social and economic programs in developing countries funded by multilateral and bilateral development agencies or by international non-government organizations (NGOs)" (Bamburger, 2000) with the term development applied synonymously with growth, specifically, as the reduction of poverty and for an improved quality of life (Kelly & Novak, 2007). While the reduction of poverty and an improved quality of life are the two overarching goals of international development, little attention has been paid to measuring this level of impact on target populations (Bamburger, 2000). Evaluation studies are often sponsored by donor and other funding agencies that respond to their own information needs in order to continue, modify, or terminate programs and initiatives, leaving the real question of impact unanswered, and often, missing the opportunity to strengthen the measurable performance of the organizations they support.

Further, international development is often confronted with changing organizational structures and mandates, variables that will likely affect the evaluation results. Interventions will require alteration to align to these changes and must be supported by a monitoring and evaluation system that offers ongoing and relevant feedback. This approach allows for appropriately aligned, en-route modifications, as for example, adjusting to the unpredictability of donor budgets (Kelly, Coughlin, & Novak, 2012; Novak & Kelly, 2010). Kelly et al. (2012) note a common weakness found with organizations aimed at institutional and capacity development is the absence of an, "internal system to define, link, monitor, and evaluate organizational performance", without which development efforts are fruitless. A monitoring and evaluation process casts light on where the change is happening, in what direction it is happening, and to what level or degree. Without the measurement

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of en-route variables, it is unlikely problems can be identified as they arise, and further, provide the evidence to know how to fix them (Guerra-López, 2010; Guerra-López & Toker, 2012; Kelly and Novak, 2007; Kelly & Novak, 2007, 2012).

While historical efforts of capacity building evaluation have primarily focused on accountability for individual programs or initiatives, shifting the focus to institutional and human performance and their associated consequences (impact level results) is essential to sustainability. Measurable alignment to the overarching goals of a reduction in poverty and an improved quality of life is a prerequisite for sustainability. Economic sustainability translates to the ability to earn a wage that supports a quality of life of the population (Kaufman, 2006). Environmental sustainability may refer to the management of human consumption of land resources. These two forms of sustainability are reinforcing. For example, the lack of availability of food is recognized as the leading cause of poverty in developing countries (Comim, Kumar, & Sirven, 2009). Waiting until after a program or initiative has been implemented to determine its impact to economic and environmental sustainability may offer data that comes too late to alter the course of a program and its impact in a deliberate and proactive way.

This case study illustrates the design of a performance a monitoring and evaluation framework for a farmer's trade union in an east African country using the impact monitoring and evaluation process (Guerra-López, 2007; Guerra-López, 2010; Guerra-López, 2012; Guerra-López & Toker, 2012) systemic performance improvement framework. The process supports continuous feedback based on route variables that provide multiple opportunities for adjustment and modification during and after the implementation of capacity development initiatives. Moreover, the monitoring and evaluation framework is designed at the organizational level, which facilitates the selection, implementation, monitoring, improvement and evaluation of initiatives, in the context of the strategic plan, ensuring alignment between the organization's goals and its initiatives.

2. Conceptual framework

The approach to monitoring and evaluation presented in this article is grounded performance improvement theory. Performance improvement seeks to identify measurable performance gaps (problems or opportunities); understand its causal factors, and identify solution alternatives that address the causes of the problem; select the most effective and cost-efficient solutions; and finally monitor, evaluate, and improve those solutions, to ensure performance problems and their root causes have been resolved. Performance measurement and management is central to performance improvement. Performance management "*involves obtaining regular feedback, tracking actual performance along the measurement dimensions established in the goals, feeding back performance information to relevant subsystems, taking corrective action if performance is off target, and resetting goals so that the organization is continually adapting to external and internal reality.*" (Rummler & Brache, 1995, p. 21).

Hence, the use of performance monitoring, management, and evaluation tools can play an important role in the continued success of organizations that operate in an increasingly complex world of interdependencies. Useful monitoring and evaluation is aligned to the desired impact on society and clients to which an organization commits to deliver, where impact refers to the societal consequences of an organization's actions (Kaufman, 2006). The use of these integrated tools can provide a means for exploring the dynamic complexity of organizations, by tracking and linking performance measures, and how these are impacted by organizational initiatives that are meant to improve performance at the various levels of the organization (strategic or societal well-being; tactical or organizational sustainability, and operational or internal competence).

Performance within organizations occurs, and consequently must be measured, at various levels. These levels – strategic, tactical, and operational – are the building blocks toward the desired ends. The strategic level represents the long-term goals and a purposeful plan for the societal impact – the value that will be added to external clients, community, and society. The tactical level is the results that are delivered to the external client but do not necessarily, or by default, provide value added from a societal level, as in the strategic level. For example, we can help vocational training clients be placed in jobs (tactical result), but if the particular job is not helping the client earn at least what it costs them to live (strategic result), then our perception of success and impact will be different. The operational level accounts for the results that are delivered internally as a result of activities and processes undertaken by individual staff and teams. For example, increasing clients' competency and skills through vocation training. Here again, the value of training is not for the sake of training, if the aim is to enhance the quality of life of participants by helping them reach self-sufficiency, then we have to ensure that this training will allow them to be placed in the types of jobs that allow them to at a minimum make what it costs them to live. Beyond a traditional logic model that might take a "bucket" approach to placing indicators into inputs, processes/activities, outputs, outcomes, and impact categories, the IMEP seeks to understand the specific relationships among and between each configuration of indicators. It is through this understanding that we can find maximum efficiencies and understand which variables account for what portion of effectiveness.

The IMEP aims to ultimately add value at all levels of performance results by providing all levels of decision-makers with a system view of the indicators and data they are tracking. This systems approach facilitates an alignment of all elements, from adding value to all internal and external stakeholders to then linking these with the appropriate resources and methods to deliver desirable, worthy results. Such a systems approach to monitoring and evaluation accounts for the interdependencies of the relevant performance variables, rather than focusing on fragmented or isolated pieces.

The IMEP has been designed as a holistic framework that positions monitoring and evaluation as performance tools that support timely decision making about how to measurably improve performance at all levels of the organization. To strengthen utility and value, the evaluator must have an understanding of the external context and realities in which monitoring and evaluation activities will be conducted – and to which the evaluation recommendations must be aligned. This alignment contributes toward the implementation and adoption of performance-oriented solutions because it builds relevance and stakeholder buy-in. This stakeholder focus is driven by a participatory approach that ensures they own the process, the logic, and the use of their monitoring and evaluation system.

With its focus on societal value and utility, the IMEP describes an aligned set of iterative steps. The process begins with a focus on stakeholders and their needs, specifically, the types of decisions to be supported and the relevant strategic, tactical, and operational performance objectives to which they are (or should be) linked. This foundation then guides the formulation of important evaluation questions. Measurable indicators are then derived from these questions with the indicators then casting light on the data that should be collected. The process for identifying what indicators should be collected is unique to the IMEP, as it includes the participation of all relevant stakeholder groups in developing a performance indicator map (PIM) (Guerra-López, 2013). PIMS allow us to illustrate a measurable performance system and its

mapping process begins with the intended external value added which is typically identified through the organizational vision. From here, a reverse engineering approach is used to identify the hypothesized causal links between the various indicators following a systematic and dynamic dialogue process that reiteratively ask "if we were to accomplish this, what would precede it and have to be managed (in measurable terms)?" The PIM design process clarifies what indicators are to be used as evidence to answer evaluation questions, and which indicators are to be monitored on an ongoing basis for ongoing feedback, management, and improvement. As an example, the PIM formulated for this case study is presented later in this manuscript.

This clarity provides the performance-driven context and approach, in which a logical methodological plan that specifies sources, collection methods, analysis, frequencies, timelines, and reporting requirements. Finally, it provides the system view from which recommendations should be formulated and aligned.

Thus, the Impact Monitoring and Evaluation model, the conceptual framework that guided this developmental research project, is based on the alignment between various levels of performance, anchored in the organization's measurable contributions to societal well-being (Guerra-López, 2007), and the ongoing monitoring of key performance indicators for improved decision-making and continual improvement at all levels of performance, rather than an exclusive focus on accountability of summative results post-implementation of initiatives or programs. Fig. 1 briefly outlines the aligned, iterative steps of the impact monitoring and evaluation process. These steps are later described in detail in the Methods section.

3. Context

An international development organization requested a series of performance assessments to identify performance initiatives for civil society organizations (CSO) active in the agriculture sector in an African country. A civil society is defined as "a sphere of social interaction between economy and state" and the modern civil society created "through forms of self-constitution and self-mobilization" (Cohen & Arato, 1994). Active in their pursuit of these forms of democracy, many CSOs applied to be the subject of review and assessment with the hopes of securing international support in strengthening their performance. Farmer's trade union candidates submitted their demonstration of the following criteria: (a) demonstrated mission in agriculture; (b) substantial number of beneficiaries served; (c) viable potential partner to development partners in the sector; (d) capacity to deliver services; and, (e) innovation in agriculture.

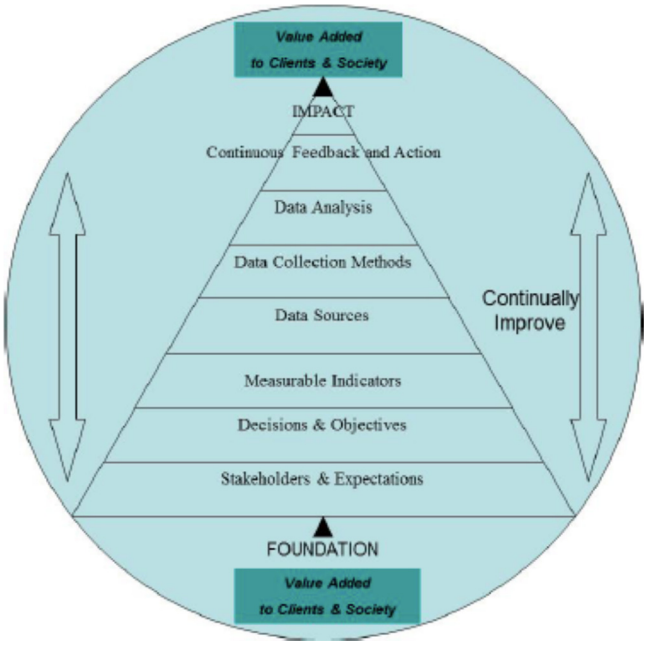

Fig. 1. Impact monitoring and evaluation process.

A trade union is a democratically operated group that is organized and owned by its members. These worker organizations represent the labor rights of its membership and promote its members' economic and business development interests (Bonner & Spooner, 2011). With such support, members are better able to influence negotiations aimed at improved quality of life of its membership. The criteria established for inclusion in the project demonstrated the trade union's reach and efforts toward fulfilling its mission, while raising several opportunities for improvement.

Many international trade unions have recognized the value in measurement and evaluation practices noting their qualities as more scientific, evidence based, stakeholder driven, and comprehensive. Her Excellency, the Commissioner of Rural Economy of the African Union Commission (Anonymous, 2013), notes the value of measurement and evaluation, "...experience has shown us that if you do not, first of all, get right the systems for monitoring, reporting and accounting on the policies, strategies and plans, all your efforts will go to waste." Moreover, monitoring and evaluation is a ubiquitous requirement of international donors who support these CSOs and who themselves are expected to demonstrate evidence of the impact of their support. In summary, monitoring and evaluation systems can help organizations align their visions with strategies and plans that measurably strengthen the capacities and systems required to support its members.

A farmer's trade union in an East African country was selected as a viable candidate for an initial performance assessment. The selected trade union has been active since 1992 with the following vision:

To improve its members' economic condition by supporting them in the production of their products, access to markets, and advocacy.

This vision is implemented with a competitive economic focus at the regional, interregional, national, and international market levels. The selected farmer's union represents approximately 10,000 members located within 25 zones across four geographic regions. Over 80% of the working population of the region serviced by the trade union earns a living from agriculture. Many of these farmers are classified as rural poor with just under 45% living below the poverty line in 2011. This data demonstrates an ongoing struggle to balance food supply, poverty, and protecting the environment with a growing need to feed the growing population as well as the need to improve the agricultural business enterprise. Progress has been made in the last ten years, however, operational efficiency and farm productivity has struggled, and, therefore, the prosperity of a very large proportion of the rural population continues to be of concern.

4. Methods and procedures

A developmental research design approach was applied to this case study. Developmental research seeks to "create knowledge grounded in data systematically derived from practice" (Richey & Klein, 2005). As such, development research produces generalizable conclusions or "producing context-specific knowledge that serves a problem solving function." Developmental research examines "our products, tools, processes, and models in order to provide reliable, useful information to both practitioners and theorists" (Richey & Klein, 2005). Specifically, this performance

improvement project for the farmer's trade union may be seen in terms of its delivery of materials, services or benefits to its target audiences, and in terms of "client satisfaction" among its target audiences.

4.1. Step 1: identification of stakeholders and their expectations

Evaluation offers evidence-based insight that gains attention for action and responds to stakeholder requirements for information (Patton, 2008). Stakeholders are those persons that can impact or may be impacted by the evaluation (Guerra-López, 2007; Guerra-López, 2012). These include those that will make decisions based on the evaluation findings and those that will be impacted by the decisions made from the findings within the evaluation.

Implicitly or explicitly, all stakeholders will have expectations of the monitoring and evaluation system. These expectations form around both the process and the utility of the findings. It is essential to determine what decisions the stakeholders are considering from the outputs of the system and to honor the legitimacies of these audiences (Stake, 1983). It is critical for the evaluator to have an understanding of who requires the information, for what purposes, and to also know the best time to inform critical decision-making. Certainly, one of the challenges of working with diverse stakeholder groups is balancing their individual expectations in a way that is responsive and feasible. Clarifying the ultimate purpose and related parameters of the monitoring and evaluation system and framing expectations in that context help clarify priorities. These stakeholder clarifications set the stage to support sustainability of the monitoring and evaluation system. Further, the monitoring and evaluation framework facilitates the connections between various stakeholder expectations and aligns them to specific project and organizational objectives. The stakeholders for this project represented many groups that impact or are impacted by the monitoring and evaluation system: the farmer's trade union members, donors, management of the union and its leadership oversight members, the human capacity and development team, the international development agency sponsoring the project, and natural resource partners (see Table 1).

The Impact and Monitoring Evaluation Process is fundamentally based on a participatory approach. This project benefited from the support of internal champions and the active involvement of all other stakeholders (see Table 1). The support of an internal champion drives the initiative as well as sees it through post implementation. For human capacity development projects it is especially important to identify someone "who understands the interaction among sectors and contractors at each field unit" (Kelly et al., 2012). Although any individual consultant could present a monitoring and evaluation model of a high performing trade union organization, it is imperative that the *implementation* recommendations be organic to the organization. This demands an understanding of the organization and how best to intervene – to make changes and respond to the client's specific needs and dynamics. This step respects and acknowledges requirements of the union's members, administration, and leadership as well as the region, and negotiates a shared understanding of the context in effort to set the stage of implementation sustainability and appropriateness of recommendations. Moreover, this particular framework, the IMEP, is as much a performance system framework as it is an evaluation model. It rests on helping stakeholders identify and align specific performance results at various levels of the organization, and the strategies, initiatives, processes, and services that help the organization achieve those results.

In addition to the support of internal champions, a team approach was applied to encourage an efficiency of effort, time, perspective, and applied expertise. Working within a team brings broader perspectives and a depth of experience and application. Sustained stakeholder involvement is critical to bolstering this implementation strategy, as for example, in increasing comfort with the data collection, analysis, and verification. Active stakeholder participation is also particularly important to transfer knowhow, expertise, and possibly funding so that the implemented interventions are sustainable, beyond specific donor intervention.

Table 1
Stakeholders and responsibilities.

Stakeholder	Responsibilities
Trade union member/Farmer	Provide the beneficiary as well as "report consumer" perspective Provide focus for ultimate level of accountability regarding the CSO's contributions to their well-being (impact data) Provide input regarding the relevance and use of the M&E system from their (the consumer of the reports) perspective, particularly as it relates to general assembly reports
Donor	Provide "report consumer" perspective Provide guidance, input/feedback regarding expectations and accountability for resources consumed and results delivered Provide resource support
Union management/Administration	Provide "M&E system user" perspective Provide purpose and direction for the M&E system and are accountable for its utility Actively participate in the design, implementation, use, and maintenance of the M&E system
Union leadership/Board	Provide "report consumer" perspective Participate in design, primarily with the identification of farmer impact (well-being) and services indicators. Review, provide feedback, and approve final design Commit resources for implementation and maintenance
Human capacity and development consulting team	Clarify stakeholder expectations Facilitate and guide the process in a way that builds ownership of the M&E system by CSO stakeholders Ask critical questions and provide alternatives based on stakeholder goals Share expertise and build capacity
International Development Agency	Provides guidelines for support Provides additional M&E criteria Provides financial resources for capacity building and other development and implementation support

Participatory evaluation is particularly relevant for developing countries where issues of power differentiation are of concern (Parkinson, 2009) in which the power of one stakeholder group outweighs the power of another. In participatory evaluation, the needs of benefactors are of equal concern to that of donors allowing for increased empowerment of the rural poor (Squire, 2004) and one in which both beneficiaries and other stakeholders are fully represented in development efforts. Squire (2004) notes it is particularly important for evaluators to forge this synergy among interests and expectations early in the evaluation process as it "improves the quality of information available for decision-making and strengthens stakeholders' commitment to monitoring and evaluation..." thus, enhancing intervention sustainability while alleviating power differentiation.

4.1.1. Clarifying expectations and identification of desired external impact on society

All forms of organizations exist as means toward societal ends (Kaufman, 2006). In other words, they exist to solve societal problems. As such, each organization aligns everything it does to ensure value is being delivered to internal and external members. This is no longer just good for business; societal members become benefactors of the organization. With a focus on external value and accomplishments, organizations can induce positive impact to their communities. Organizations supporting international capacity development, as in this study, can be tremendous facilitators of societal benefit. With over one-third of the Earth's land dedicated to agriculture, the farmer's union can add or subtract societal value through its efforts of, for example, advocating in farmer wages and higher quality of life, among others.

The farmer's union 2012–2014 strategic plan clearly described its valuable contribution to all societal members in strengthening the role of farmers. Specifically, their mission is to improve the lives of farmer members as demonstrated through areas such as assistance with medical insurance needs, assistance with farming supplies, and tuition costs for school aged children. To achieve these desired accomplishments, the strategic plan is used to connect the line of sight between the societal goal or vision (strategic impact level results) to the organizational (outcome) and internal work product objectives (outputs) levels (Kaufman, 2006). Indicators are first identified at the societal impact level (e.g. number of farmers with satisfactory wages; number of farmers with medical insurance coverage). This provides the basis for identifying the results and indicators at the outcomes and output levels that support those desired impact indicators, similar to a reverse engineering approach. Establishing this chain of impact among the levels of performance results prioritizes indicators, and allows us to also identify and prioritize gaps in results, pointing toward those that may have immediate or greatest impact through the chain of results. Often, these links are not readily apparent, requiring this fundamental step of identifying the linkages with stakeholders before moving to the next steps. The participatory approach is particularly critical in this step, as the mapping of indicators (described in step 4.3) should be carried out in the context of facilitated work session with stakeholders, where together they construct a performance indicator map of their own.

4.2. Step 2: determining key decisions and objectives

Clear identification of the expectations and requirements of stakeholders requires agreement for the purpose and focus of the monitoring and evaluation system (Patton, 2008). This consensus may not come readily, however, the discussion will make clear what further negotiation is required before moving toward clarification of the decisions to be made using the findings (Guba & Lincoln, 1989) as the overarching evaluation questions become more in focus. A lack of consensus of purpose is unlikely to result in consensus about the usefulness of the evaluation study or its findings (Guerra-López, 2007). The evaluation may not always start out with a clear purpose, in which case the performance-oriented evaluator may begin with the organization's vision as a guiding star. The vision is the ultimate goal of the organization focused on ideal impact on the community and society (Kaufman, 2006a; Kaufman, 2006b). This ideal vision is the commitment the organization makes to and with its shared societal members. Useful evaluations are hinged on this central, shared vision and provide an alignment framework from which future performance monitoring and evaluation efforts stem.

Key decisions and objectives are aimed at the desired performance and described in measurable terms as much as possible. Such agreement on desired performance takes into account international or national standards and the perspective of stakeholders. The description of desired performance creates a manageable set of objectives for the process that include performance indicators for measurement.

Interviews with stakeholders and document review of strategic plans, operational plans, an annual report, and a member code of conduct were reviewed to identify or validate three goals of the farmer's union and the current strategic objectives and initiatives intended to meet these goals.

The farmer's union 2012–2014 strategic plan confirmed the overarching goal, or vision, is to improve the socio-economic conditions of farmers. The three goals identified to meet the vision focus on improving farmer productivity, providing advocacy, and developing the agricultural market (see Table 2). Current strategic initiatives, specific activities aimed at achieving strategic objectives and goals, were also reviewed to analyze their alignment among and between the goals.

4.2.1. Goal 1 – increase agricultural production

Increasing the agricultural production of its member farmers was of primary concern for the union. The majority of union activity aimed toward this goal supports stakeholder understanding that this strong focus on increased production would also impact the second goal of member productivity as well. Objectives aimed at the attainment of this goal include:

a. Increase production at value chain level
b. Increase milk production at cooperative and farmer group level
c. Support member dairy farms' effective functioning
d. Improve member cattle herds

The farmer's union had several programs already in place to support these objectives:

a. Program for strengthening producers' economic power through different value chains
b. Supporting dairy cattle development within the farmer's union

4.2.2. Goal 2 – provide advocacy to farmers

While this goal initially seems to focus on a service—providing advocacy—our discussions were able to help them identify the end result they were seeking. This goal is really about ensuring fair prices, which directly relates to sales, revenue, profitability, and finally, self-sufficiency of farmers. The farmer's union offers a network of support to farmers. This advocacy may come in the form of helping farmer's navigate the complications of finances and regulations to develop their businesses, help with business planning to develop long-term plans of sustainability, fairness in land consolidation policies, or negotiating payment arrangements, to name a few. The purpose is to leverage the collective support

Table 2
Aligning multi-level expectations and objectives.*

	Socio-economic farmer conditions
Goal	[a]At least 70% of farmer's union members make a minimum of $400/annually
Actual	80% of surveyed members identified themselves as "poor middle level" (defined as those that can produce enough to eat, but not sell, nor consistently pay for school or health insurance)
Causal factors identified during performance needs assessment	•The majority of the 30% that received training are old members who benefited greatly when the union had significant donor support in the late nineties •Many members have stopped receiving direct services from the union due to significantly reduced income previously provided by donors •Much of the services e.g. (training and farming inputs) provided are focused on productivity, but very little is being done about access to markets and lobbying on behalf of farmers within government and market Member farmers will see an average increase of 10% in annual income from the previous year
Measurable targets (short term)	Revise the union's 'business model' so that it is able to generate revenue without solely depending on donor funding Diversify support provide to farmers based on prioritized needs (e.g. production needs, access to market needs, representation in government policies affecting their livelihood, for example, land consolidation policies) Number of members receiving services (disaggregated by demographic variables and by service) Production volume (disaggregated per crop, season, as well as volume consumed, stored, and sold) Sales volume per member Income from sales Net profit from sales

* Due to space limitations, only one example is presented here.
[a] A truly visionary goal of 100% of self-sufficient farmers is recommended, in this case, self-sufficiency is defined as $400.00 per year.

offered by the union. Strategic initiatives aimed at the goal of advocacy include:

a. Represent farmer interests with government in order to influence fair policies
b. Represent farmer in land consolidation policy planning
c. Improve knowledge of relevant national laws, policies, and regulations so that members can exercise their rights
d. Raise awareness in variable pricing so as to enhance their negotiation power and prices

While members of the farmer's trade union acknowledged the union's strength in areas of farming production, they felt the union could make more strides in their efforts of government, land, and pricing advocacy. Interviews with stakeholders and document review highlighted an unclear definition and shared understanding of what 'advocacy' accomplishments look like. As such, no strategic initiatives aimed at advocacy were identified.

4.2.3. Goal 3 – develop the agricultural market

Cooperative associations, such as the farmer's union, can play a key role in the agricultural negotiations necessary for new markets. Emerging agricultural market systems present unique challenges to stakeholders in issues such as competition, differentiation, market assessment, and policies and regulations, to name a few. This goal is critical in developing areas where issues of food supply, land conservation, and alleviation of poverty are particularly relevant. Strategic objectives aimed at goal attainment include:

a. Establish sustainable land use management practices that mitigate land degradation
b. Develop service systems supporting agricultural value chains
c. Enhance capacity building and organization development of project stakeholders

The farmer's union had a current program in place aimed at these strategic objectives:

a. Support project for integrated management of sector watershed

In some cases goals, such as in the goal of increasing farmer productivity, blended into other goals. It was important to clarify each of the project's intended strategic objectives so that the project goals of the evaluation may be confirmed as the goals of the project will be the basis for the evaluation questions that are asked, and in turn drive the evaluation process, findings, and recommendations. Further, terminology such as "sustainable," "supporting agricultural value chains," and "enhancing capacity building" may become more precise, mitigating potential for misunderstandings later in the evaluation process.

4.3. Step 3: deriving measureable indicators

Performance indicators illustrate the vital signs of performance. Lagging indicators describe performance after the initiative or program, while leading indicators (also known as key performance indicators) are monitored to describe en route performance and what the likely impact can be on ultimate impact results tomorrow. In this sense, leading or key indicators provide feedback about what we should be doing now to impact performance results later, and also why we are doing it and how these are related and affect each other. For example, a trade union member's total volume of crop production has a direct relationship to the total revenue. In other words, the total volume of crop production (leading indicator) may be monitored en route and serve as a lever that may be used to modify the impact on sales revenue (lagging indicator). If we explore and test further relationships, we might find that the quantity and quality of farming inputs (e.g. fertilizers) and planting techniques (e.g. facilitated by farmer training provided by the CSO) can have a direct impact on crop production, and in turn, farmer revenue, and profitability. Rather than waiting for a summative report in which the outcome may be unknown until it is too late, we can proactively design prompts (feedback messages) that guide our decisions along the way so that there is time and space for en route modifications that lead to the desired impact.

These relationships were visually represented in the PIM that was created for this case study, following the process described earlier in this manuscript, to illustrate a focused and clear line of sight. During the design, they helped us navigate from the impact or vision level to outcomes, and then to outputs, and then services and inputs or resources. While many data may be not be currently available to illustrate this path, we must first clarify the logic and hypothesized relationships among relevant indicators, and secondly

develop a methodology for prioritization, collection, analysis, use, and maintenance of those data. Sometimes mechanisms will already exist to collect some of the data and other times new methods and procedures will have to be created. One must consider the potential cost and consequences of developing new methods and procedures, versus ignoring the need for them, especially if they have been identified as critical measures of the organization's strategic aims and performance.

A common mistake made is to consider only the data already available and to force connections between them and strategic aims and evaluation needs, or worse, to design the monitoring and evaluation system only around the data that are currently and easily available (Guerra-López, 2007). That is not to say that we should not leverage current useful practices and existing data, rather, that it is critical that we have holistic map of performance indicators if we are going to have an accurate picture of their performance reality.

Performance indicators describe evidence points on a shared road map, and therefore, should be designed and identified in collaboration with stakeholders. Stakeholders discuss the appropriateness of the measures, given the impact they have committed to deliver through their vision and organizational objectives. It is important to find a balance between the value that measures all relevant performance indicators of a given objective and the potential cost of measuring them. More indicators do not equal more value, and the participatory discussion of which indicators will form the basis for a performance driven monitoring and evaluation system should use this as a key guideline.

In this case, we began by clearly defining the organizational vision, that is, the impact level of results and indicators. The union ultimately wanted to support the self-sufficiency of farmers, and as we defined what self sufficiency meant, three key indicator areas, or branches, were identified: (a) revenue which then drove, (b) assets, and (c) expenses. For each of the indicators we then asked "how can we measure them or how can we know how our farmers are doing in each of these areas?" Subsequently, we identified the following indicators:

a. *Revenue*: Sales revenue from crops; and crop volume sold
b. *Asset*: Total amount in savings; livestock ownership; and whether they owned their own hosing.
c. *Expenses*: Could they afford to pay for medical insurance (if so, how much); whether they could afford their childrens' school fees (if so, how much); amount of sales expenses (what did it cost them to sell their crops, for example, transportation, storage, etc.).

We then proceeded to link these impact indicators toward outcome indicators, in a reverse engineering approach, to identify the main areas that drive (or are hypothesized to drive) in great part of these indicators. In this case, volume sold and sales revenue, and we then asked stakeholders, "what indicators drive these indicators?" In great part, (a) member crop productivity and (b) access to market the two critical indicator branches were identified. We followed the same process for each of these two areas by identifying specific indicators for each:

a. *Member Productivity*: Total production volume; volume consumed; volume stored; cost of production
b. *Access to Market*: Number of members using processing centers; number of strategic partnerships (partnering with others provides for greater negotiation power); member sales pricing; market sales pricing

The same process was followed with each of the main indicator branches to identify output level indicators. Fig. 2 provides an example that illustrates the performance indicator map that aligns various levels of results and their hypothesized relationships in a way that traditional logic models do not always portray.

4.4. Step 4: identification of appropriate data sources

Data sources identify where to obtain the data to inform the evaluation questions. Sources of data are numerous and often, but not always, found within the organization. Locating existing sources of data can save valuable time and money, but again, must be data that informs the evaluation questions. The performance indicators established in the step before provide the direct guidance to the data source as data required drives the collection process. For example, using the objective of increasing farmer income, we determined a relevant indicator as the amount of income from strictly farming activity, and from there, identified trade union members as appropriate sources for securing data

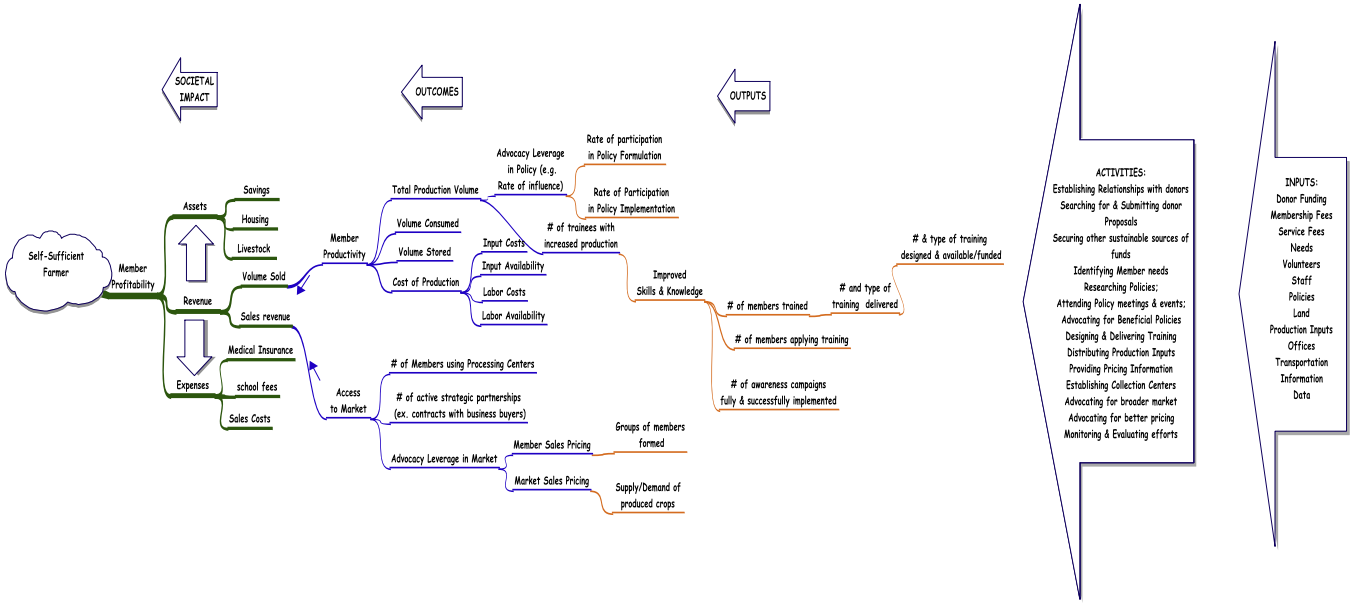

Fig. 2. Sample performance indicator map.

specific to this indicator. Trade union members were able to provide details specific to their farming as well as non-farming income-generated activity, allowing for a precise and nuanced measurement of this indicator.

4.5. Step 5: selecting data collection instruments

The data required drives the data collection methods forming the chain from performance indicator, to data source, data collection tools, and data analysis; thus, in the next step, the evaluator considers the selection of the best suited data collection instruments for the purposes and type of data sought. Appropriately aligned instrumentation informs the validity and reliability of the study. For example, trade union farmers were identified as a key source of data to measure the selected indicators related to farming activity, productivity, revenue, and profitability. A seasonal socioeconomic questionnaire was developed to collect data from the farmers about these key dimensions. Following a participatory approach, procedures were identified to track data from individual farmer level, to farming group or cell, to the zone level, to an economic group coordinator who began to enter the data for the various zones and then provided to the district level administrator who was in charge of various zones, and finally to the farmer union's headquarters where the M&E administrator stored and analyzed the data, as well as provided various types of reports to various stakeholders for performance improvement and accountability purposes.

A second example of a new data collection approach and procedure included the weekly reviews of market website by the Advocacy Officer. He produced regular market reports for famers and the union administration as a way to monitor the fluctuation in crop pricing, which was also reflective of farmer access to market and had a direct impact on sales prices, revenue, and profitability.

4.6. Step 6: selecting data analysis approaches

Data analysis generates a summary of the findings, identifies relationships, and offer narratives and interpretations of the data. In other words, it is the process of making meaning from the data. Data analysis is the effort made to organize the data in such a way that reveals patterns that inform claims of performance. The choice of analysis approach employed is directly related to the evaluation questions and the type of data collected, fulfilling the requirement to use the right tool for the job (Guerra-López, 2007). Just as data analysis techniques are considered in the context of the type of data to be analyzed, it is just as important for stakeholders to have an understanding (and agreement) about how the data will be analyzed, reported, and represented. Using these stakeholder requirements as a guide, evaluators identify if the stakeholders are seeking evidence in terms of gaps and trends, comparisons, impact or the results of initiatives, or a look at the evidence over time, as examples.

Learning about the collective and individual income levels of farmers was important to the trade union stakeholders; therefore, data specific to the income from farming activity indicator was analyzed by the total amounts of income from (and not from) farming activities. Further analysis was applied to disaggregate the percentage and proportion by demographics. Disaggregation allows us to conduct a deeper analysis of data by seeking information about how specific subgroups perform. For example, a school may report one figure (e.g. 90% of students scored 80% or higher) of how all students performed on a standardized test. Disaggregation allows evaluators to break this percentage down by specific group (e.g. morning testers performed better than afternoon testers) to further understand achievement gaps. In this case, demographics were applied to break down subgroups to further refine analysis procedures.

Table 3 provides an example of how the level, goals, relevant indicators, data sources, data collection methods, and data analysis procedures align together to form a comprehensive story of goal performance.

4.7. Step 7: continuous feedback and action

In collaboration with stakeholders, evaluators support sustainability of the monitoring and evaluation efforts and provide a system for keeping track of ongoing progress (Brinkerhoff, 1989) through the use of continuous feedback and action plans. Such plans not only enhance project support or serve as impetus for action (Guba & Lincoln, 1989), they also build a sense of project ownership (Phillips & Phillips, 2007) and supply evidence for continuous decision-making needs. For evaluators, this means situating continuous feedback and action specific to the context and requirements of the internal and external factors impacting performance. In addition to identifying the methodology for collection and analysis (as illustrated in Table 3), we also identified for each indicator who would use the data, the frequency with which it should be collected and reported, to whom, and for what performance support purposes.

Moreover, expectations for ongoing system maintenance and improvement were established. For example, the design of the performance indicator map became instrumental in a review of their current strategic plan, resulting in both modifications to their strategic objectives to better reflect the logic of the performance indicator map, as well as further discussions about the prioritization of indicators that would begin to be monitored and used immediately, and those that would begin to be monitored and used in a second stage, once the monitoring and evaluation systems had been fully adopted by users in a way that became integral to their

Table 3
Aligning level, goals, indicators, data sources, data collection vehicles, and data analysis: a few examples.

Level	Goals	Indicators	Data sources	Data collection vehicles	Data analysis procedures
Societal impact (beneficiaries)	Increase farmer income	Income from farming activityIncome from non-farming activity	Trade union members	SurveySocialEconomicQuestionnaireFocus groups	TotalsPercentage/ Proportion (disaggregated by demographics)
Farmer's Union	Improve access to market through government policies	Crop pricing# policy articles successfully changed# articles not successfully changed	Market survey reports	Website reviews by Advocacy Officer	Total prices (disaggregated by crop and by zone)
Team/Staff	Increase participation in policy formation and implementation	# of Meetings held with decision-makers	CEOActual written reports	Advocacy Officer will review written reports and interview CEO	Count total number of reports submitted

carrying out their current job, rather than as a separate task of "extra chore".

5. Implementation and piloting

With a systematically designed performance monitoring and evaluation framework, a pilot plan was created listing the implementation activities and deliverables, dates, and stakeholders responsible. Two local consultants who had existing experience with farmer trade unions supported the implementation, which was led by the farmer union's technical team (the new M&E professional, the national coordinator, and a couple of field agronomists whose job was closely linked with every aspect of the farmer's value chain).

As part of the development and implementation plan, a database consultant was also hired to develop the database that translated the performance monitoring and evaluation framework into a functional web-based interface that allowed the system users various degrees of access and functions based on their job role and the data required to fulfill their roles, responsibilities, and decisions. The database development was also participatory with stakeholders, specifically system users, making decisions about design and functionality. Finally, they were trained on how to use the system through an applied process that required them to "do" as they learned.

In order to strengthen the sustainability of the system, instead of using a traditional approach to training stakeholders on how to apply or use what an 'external expert' team had created, we used "work" sessions to actively engage all relevant stakeholder representatives, from the farmer level to the district level as well as headquarters. Together, we designed the entire data flow process and collaboratively and reiteratively designed job aids that illustrated the process, and everyone's complimentary roles in that process. This also included discussions of how to identify and communicate opportunities for improving any aspect of the M&E process not only during the pilot phase, but on an on-going basis. Final versions of job aids were then provided and stakeholders' representatives who had been involved in the work sessions trained their constituents on their role in the data flow process under the M&E team's supervision. For example, farmers' group leaders were instructed on their role in the process, specifically with regards to communicating to the farmers the new data tracking procedures, and ensuring everyone was tracking their data accordingly, and providing it to the next level up within the set timelines. The farmer leaders would then train their farmer groups on the process.

Initial pilot results with an entire zone (made up several farmer groups) were very positive from the standpoint of participation and positive perceptions of the process. The M&E team made site visits to monitor progress through observations and interviews. The M&E team then met to discuss their interviews and independent observations from site visits. They concluded that every member of each group of the zone participated in tracking farming inputs and services received for that season, as well as the productivity, revenue, profitability, and savings. One farmer shared "For the first time I can see clearly my real profits, and what crops are more favorable for me. I can see that producing more of what doesn't sell well does not help me."

From a process level, interviews with farmer leaders revealed issues with specific questions in the data collection instruments, primarily around unclear questions, but also around indicators that were problematic to track. Accordingly, we were able to shorten the original questionnaire to focus on the most important indicators and clarify other questions that were consistently ignored or misinterpreted. Observations and interviews also revealed that additional resources, such as paper and pencils, were necessary to facilitate data documentation and tracking by farmers and group leaders. Finally the M&E team also found that there were still knowledge gaps at the district level, as far as how to enter the data into the new system as well as aggregation and management. Consequently, additional training for managing the data was provided at the district level.

6. Discussion and lessons learned

This developmental research study illustrated the application of a performance oriented monitoring and evaluation model for the design, development, implementation, and sustainability of a monitoring and evaluation system in a CSO.

A performance indicator map (PIM), a visual representation that depicts how their organizational indicators relate to one another and why they are important, was collaboratively developed with the participants and it is a fundamental part of a sustainability strategy. For all participants, this was the first time they had considered "how their organization really worked and what results they were really after" which allowed for a natural emergence of indicators at the Impact, Outcome, and Output levels. This helped them clarify for themselves the indicators that were relevant and useful for leading and managing their own institution, beyond what data were being requested of them from external donors as a condition of project funding. This changed the perception of monitoring and evaluation as an additional 'chore', distraction, and cost unrelated to their central line of work, to a support tool integral to effectively, and efficiently, carrying out their central line of work.

The performance monitoring and evaluation experts merely facilitated the process while the content came from the CSO participants. One of the challenges encountered at the beginning of the process was their prior experiences with more conventional donor-supported capacity development initiatives that consisted either of conventional training of subject matter that was not always followed with implementation coaching and support. They had also been previously exposed to conventional "expert assistance" approaches where a team of experts come into an organization to develop processes and systems independently, and then "hand over" the ready-made tools to users. We took the time to articulate and reiterate the notion that our team was not there to do things 'for' them, but rather 'with' them, and that their capacity would be developed not through traditional classroom training, but rather as active team members who would participate in the planning, design, development, implementation, and sustainable use.

This then became the basis for developing a comprehensive M&E methodological plan that made sense to them and for which they felt a sense of ownership. Building this foundation is critical from a sustainability and change management perspective. The sustainability of the M&E system is directly related to the perceived value of using it; the capacity to use it; and desirable consequences for using it.

It is important to highlight that this approach is consistent with a performance improvement orientation and added significant value to the support provided to the CSO, whose members had no previous system, mechanisms, standard tools, or experience using data to manage and improve. This is different than a purely "accountability" approach to designing M&E systems, which typically does not begin with an organizational system view of performance indicators and their relationships, relying on a "bucket" approach to generating indicators at the Output, Outcome, and Impact levels. This seldom helps participants with limited M&E exposure to ever truly understand what differentiates indicators at any of these levels or why they are important or useful other than to meet a donor request for data. This, in turn, limits or

sub-optimizes the utility of M&E systems and the data they produce to mere instruments of compliance rather than instruments to support and improve competence or performance.

The performance-driven design and use of M&E systems can have a significant and positive impact on the leadership and management of the organization since the M&E system is meant to function as a leadership and management tool. As an example, the performance indicator map was used to improve the current strategic plan and actions by clarifying their aims and how their previously chosen activities were either directly supporting those aims or misaligned.

Among the critical discussions that emerged from the participatory work sessions with the CSO was the participants themselves identified that updates to their strategic plans should trigger updates of the M&E system to ensure alignment and relevance of the indicators being tracked. The CSO participants also demonstrated they were making links between the performance indicator map, strategic plan, and their business models, by asking questions and pausing to consider the implications of one over the other and vice versa. This is a strong indication that they were internalizing the process and developing a performance alignment orientation.

It is important to continue to deliver the message that the M&E system is a supporting tool that allows for the communication, tracking, and management of the organizational strategy, as well as provides evidence of the organizations' success and challenges in meeting their strategic objectives.

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