

Measuring sustainability as a programming tool for health sector investments: report from a pilot sustainability assessment in five Nepalese health districts[†]

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SUMMARY

Sustainability is a critical determinant of scale and impact of health sector development assistance programs. Working with USAID/Nepal implementing partners, we adapted a sustainability assessment framework to help USAID test how an evaluation tool could inform its health portfolio management. The essential first process step was to define the boundaries of the local system being examined. This local system—the unit of analysis of the study—was defined as the health district.

We developed a standardized set of assessment tools to measure 53 indicators. Data collection was carried out over 4 weeks by a Nepalese agency. Scaling and combining indicators into six component indices provided a map of progress toward sustainable maternal, child, health, and family planning results for the five districts included in this pilot study, ranked from “no sustainability” to “beginning of sustainability.”

We conclude that systematic application of the Sustainability Framework could improve the health sector investment decisions of development agencies. It could also give districts an information base on which to build autonomy and accountability. The ability to form and test hypotheses about the sustainability of outcomes under various funding strategies—made possible by this approach—will be a prerequisite for more efficiently meeting the global health agenda. Copyright © 2009 John Wiley & Sons, Ltd.

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[†]Opinions expressed here are those of the authors only; they do not represent the views of the US Agency for International Development or any of its Missions.

BACKGROUND

Sustainability and global health

Global health concerns have never been more explicitly debated by so many constituents, from governments, multilateral organizations, bilateral funding agencies, private foundations, and myriads of local and international nongovernmental groups. Global Health Partnerships and Initiatives are being set in place with more and more ambitious goals in an attempt to reach more beneficiaries more quickly than in the past (Carlson, 2004; Feachem and Sabot, 2006; Kamwi *et al.*, 2006; Lu, 2006; Garrett, 2007). Practitioners are concerned both with accelerating these efforts and sustaining them within national and local systems in developing countries (Unger *et al.*, 2003; McKinsey, 2005; Garrett, 2007).

In this context, sustainability has an intrinsic value to health programming because progress achieved today should be maintained within the beneficiary country for the sake of the next generation (Shediac-Rizkallah and Bone, 1998; Sarriot *et al.*, 2004b), and because of the detrimental effects of failing expectations when successful programs suddenly stop (Shediac-Rizkallah and Bone, 1998; Smart, 2006).

Sustainability is also a pragmatic concern. Without strengthening health systems and building capacity, large-scale efforts will meet the same end as a host of vertical programs from the past, whereby progress in one comes by detracting from the others (Unger *et al.*, 2003), and achievements erode or collapse as soon as external funding shifts to new programs, new priorities, and new countries (Bossert, 1990; Smithson, 1995).

It will be decades before developing countries can financially support conditions satisfying the Millennium Development Goals on their own (Dodd and Cassels, 2006). In the meantime, development experts continue to call for a rapid increase in external assistance for health sector programming (Sachs, 2001; Feachem and Sabot, 2006). Yet, only with actual progress toward sustainability will new amounts of funding build on previous assistance rather than merely replace it. Inasmuch as sustainability is an official concern for most donor agencies, this concern rarely translates into final decision making processes for allocating funds. Remedying this will require a practical and operational understanding of sustainability.

Defining and approaching sustainability

Different authors have tried to elevate sustainability from a conceptual discussion to one based on measurement and evaluation. The concept and definition of sustainability are constantly evolving (Lafond, 1995; Bossert, 1990; Shediac-Rizkallah and Bone, 1998), and we have reviewed this evolution in previous papers (Sarriot, 2002; Sarriot *et al.*, 2004b). The absence of measures for sustainability outcomes and determinants has led to neglect of the sustainability issue and possibly to counter-productive investments, as program managers lack the necessary tools to make informed decisions about where to focus their efforts. For example, while a correlation between length of funding and lack of sustainability is often claimed,

some authors argue that non-sustainability actually leads to longer funding rather than the opposite, i.e., long funding decreasing the prospect of sustainability (Catterson and Claes, 2003), to some extent because of the poverty of evaluation systems supporting the decision making.

On the basis of research conducted primarily with Child Survival practitioners, we proposed a definition and model of sustainability that has been implemented by different Primary Health Care projects (Sarriot *et al.*, 2004a).

Our definition, embodied by the Sustainability Framework (Sarriot *et al.*, 2004a), emphasizes sustainability as a process taking place in a local system. We posited that certain conditions should be enhanced during the life of a project in order for local stakeholders to be able to improve health outcomes beyond the project period. We proposed a method for assessment according to the following six components of evaluation, to be measured at project outset and periodically afterwards:

- (1) Health outcomes,
- (2) Characteristics of health services (quality, accessibility, and equity),
- (3) Institutional capacity of local government or civil society agencies with long-term responsibility for the outcomes,
- (4) Viability of these agencies for continued operation in service of the outcomes
- (5) Capacity of recipient communities, and
- (6) Socio-ecological conditions enabling the work of these local agencies.

The assessment tool is meant to improve long-term outcomes by guiding programmatic responses, which can range from humanitarian assistance to partial or complete phasing out of support, based on the progress observed in the six components of assessment.

Since we reported on the application of the Sustainability Framework with Concern Worldwide in Bangladesh (Sarriot *et al.*, 2004a), the tool has continued to evolve and has been applied by more than 10 nongovernmental organizations (NGOs) for different types of health projects, working from the sub-district to the regional level and in different settings, including in “fragile states” (Sarriot *et al.*, 2005). Accountability for improving sustainability prospects should increase as one moves up from grassroots project level to large-scale district or regional projects, on up to national programs. But implementation of the method at the higher (national, regional, or district) program levels has not been described until now.

U.S. agency for international development in Nepal

The health sector in Nepal has historically depended on external donor assistance (Health Economics Task Force, 1995; Smithson, 1995). For more than 50 years, the U.S. Agency for International Development (USAID) has played a major role in supporting and strengthening Primary Health Care services, with notable achievements in several areas including malaria control and treatment, increasing coverage and quality of family planning, childhood pneumonia treatment, and a nationwide Vitamin A supplementation program. Through the Nepal Family Health Program (NFHP), USAID currently supports the Government of Nepal on key

maternal and child health interventions in 41 districts, while support for family planning and Vitamin A distribution spans all 75 districts. HIV/AIDS program coverage is focused on major towns and cities and the 22 districts along the major East-West highway, and implementation occurs mainly through nongovernment partnerships.

As with all donor agencies, USAID/Nepal lacked the necessary information to decide when to disengage from specific projects or districts, and at which speed this should be done. The USAID Mission wanted a tool to determine not only when to disengage but also to guide strategic planning and identify areas of needed focus both geographically and programmatically. It decided to test a new approach for assessing its progress toward sustainability in the health sector. In essence, this exercise began with a management question from USAID/Nepal: "Could we have a tool to monitor the value of our investments in order to maximize pro-sustainability choices?"

If local ability to sustain positive health outcomes could be shown to have increased, this could signify that the benefit of investments had accrued over time (whether during progressive phasing out, or when redirecting funds toward new health concerns). Conversely, if sustainability did not exist, investments would be seen to be immediately "consumed" by current beneficiaries and would not be expected to accrue long-term benefits. For an agency with decades of investments in a particular country, the former scenario would demonstrate better use of resources than the latter, all other things being equal.¹

METHODOLOGY

On the basis of our past experience, we chose to work through a participatory, bottom-up approach in order to construct a Nepal-specific Sustainability Framework. The approach built upon the field experience of USAID's implementing partners,² thereby avoiding the *de novo* development of a theoretical model. Throughout the process, Macro worked with New ERA, a Nepalese partner with extensive survey research experience in the health sector.

Preliminary consultations

Adaptation of the Sustainability Framework to Nepal occurred in three stages: (1) application of the framework to projects by individual implementing partners; (2) developing lessons learned from these initial experiences and feeding the information into consultations with the USAID Mission as well as regional, district, and local health authorities; and (3) data collection and analysis for construction of the Nepal-specific framework. The first two stages overlapped and took place through iterative visits and discussions.

¹Of course, things are not always equal and there are emergencies and other situations that warrant investments even when sustainability is unlikely. It was never thought that sustainability should and would be the one and only reference for decision making, but simply that, all things being equal, it would represent a better condition for maximizing the value of investments.

²Implementing partners of USAID are U.S.-based NGOs and collaborating agencies.

A series of workshops, consultations, and technical assistance meetings with implementing partners and the USAID Health Team were organized in December 2004 and 2005, and March and June 2006.

Initial consultations (December 2005–June 2006) between the collaborating partners served to build capacity for the implementation of the Sustainability Framework by projects. An inductive approach was used for finding the similarities in the approaches implemented by different projects. As a result, the team was able to identify existing relevant indicators, adapt the proposed elements and indicators to the Nepalese context, and begin developing and validating the parameters for a Nepalese version of an assessment framework tool for both Maternal Child Health and Family Planning (MCH/FP), as well as HIV/AIDS programming. During these consultations, the health district was established as the appropriate primary level of assessment (more on this in the Results Section).

In June 2006, the team consulted with district-level partners¹ on the most important factors affecting the sustainability of health gains in their district, identified key elements of a draft Mission-level framework and the available data sources in the districts. This was done through three district-level consultations in Banke, Morang, and Bharatpur. Each consultation lasted a day and a half, and included representatives from the District Public Health Office (DPHO), District Development Committee (DDC), Health Facility Organization and Management Committee (HFOMC), including Female Community Health Volunteers (FCHV), and local staff from Mission-supported Implementing Partners (e.g., NFHP, Adventist Development and Relief Agency [ADRA], Save the Children, PLAN, and CARE).

In October 2006, the team formalized the final adaptation of the framework and selected the final 53 indicators. Nineteen of these indicators were not available from secondary sources and were instead collected from the five pilot districts: four districts in the Terai (Kanchanpur, Far-Western Region; Banke, Mid-Western Region; Chitwan, Central Region; and Jhapa, Eastern Region) and one in the Mountain Central Region (Rasuwa).

We referred to the tool as a “Sustainability Dashboard.” In an automobile or airplane, the dashboard is a control panel with instruments providing information about different elements of operation of the vehicle (speed, altitude, position, oil pressure, fuel reserve, wind direction, etc.). Multidimensional measurement tools called dashboards have become popular in the field of Sustainable Development, and can be compared to the concept of the Balanced Scorecard more commonly used in business management (Anderson *et al.*, 1998). These concepts have found their way in the management of health systems (Villalbi *et al.*, 2007) and we borrowed the concept and terminology.

Data collection

Because the dashboard was to be constructed at the district level, data had to be available at this level or lower (the exception being Demographic and Health Survey [DHS] data, which aggregate several districts together). To minimize data collection

efforts, “satisfactory indicators” already available from a secondary source were chosen over “preferred indicators” requiring additional primary data collection.

The secondary data sources used include the following: DHS, NFHP (sometimes simply reporting Health Management Information System (HMIS) figures), and FCHV Surveys. Four survey forms (DPHO survey, district-level implementing partner survey, HFOMC survey, and FCHV/Mother Groups’ survey) were also developed for primary data collection, translated to Nepali, tested, and then used by New ERA to collect the 19 indicators not available from secondary sources.

New ERA implemented the four surveys in each of the five districts in November 2006. Qualitative information was simultaneously gathered from implementing partners and DPHOs through structured interviews, and from HFOMCs and FCHVs through observation and interviews.

Architecture of the district sustainability dashboard

The logic of the sustainability dashboard is simply to measure and examine together multiple dimensions of the performance of a system. We applied this to the measurement of identified determinants of the sustainability of defined health outcomes at the district level. The mechanics of the construction of the dashboard and of the computation of indices are described elsewhere (Yourkavitch *et al.*, 2004), but the following is a summary of the main steps in the process.

Indicators are organized through a hierarchy of “domains,” “areas,” and finally, the six “components” of the sustainability framework. Domains and areas represent coherent and concentrated areas of focus. For instance, the areas of Child Preventive Health, Child Curative Health, and Child Well-Being are grouped together to form the Child Health domain. (The indicators chosen for the analysis and architecture of the sustainability framework that was developed are shown in Table 1.)

Most components, areas, and domains provided district-specific information. We also identified a range of central functions (e.g., budgeting, planning, policymaking, establishing standards and protocols, human resources allocation) outside the control of the districts. For this reason, it made sense to distinguish central-level functions and capacity (Component 6) from district-specific functions and capacity (Component 3).

A component index value is built by combining (“rolling up”) area scores into domain scores, and domain scores into a component index. For example, the Component 1 (MCH/FP Outcomes) Index is computed from the Child Health, Maternal and Neonatal Health, and the Family Planning domain scores. The Child Health domain score is based on scores from Child Well-Being, Child Preventive Health, and Child Curative Health area scores.

Combining indicators together to produce score and index values requires that all measures be based on a common metric by transforming the measured value of indicators into a standard score. Indicator scores aim to consistently describe progress from minimal to optimal conditions. Scores are scaled from 0 to 100 points, with a definition of progress ranging from “Poor” (0–20 points), “Emerging” (>20–40 points), “Intermediary” (>40–60 points), “Promising” (>60–80 points), to “Strong” (>80–100 points).

Table 1. Final selection of indicators (%), dashboard architecture and measured values for five districts

Domain	Area	Indicator	ST	R	J	C	B	K		
Child Health	Child well-being	Component 1: health outcomes (proxies)								
		% children aged 6–59 months underweight (Z score ≤ 2)	RV	41.8	43.4	18.1	40.8	46.0		
		% children 0–59 month with cough or difficult breathing in last 2 weeks	RV	47.6	33.5	22.8	22.2	14.7		
		% children 0–59 months with diarrhea in last 2 weeks	RV	81.1	78.1	77.6	84.1	85.8		
		% children aged 12–23 months fully immunized by first birthday	S	76.8	72.9	53.2	66.7	81.1		
Child curative health	Child curative health	% children aged 0–5 month exclusively breastfed	S	3.5	5.1	4.5	8.3	3.4		
		% children aged 6–59 month who received Vitamin A supplementation in last 6 months	S	81.1	78.1	77.6	84.1	85.8		
		% children 0–59 months with diarrhea in last 2 weeks who received ORT	S	43.6	45.3	33.3	38.5	67.7		
		% children aged 0–59 month with pneumonia and/or fever; treatment sought from health facility/provider	S	19.7	29.8	15.9	28.4	26.5		
		% mothers of 0–59 months child whose last delivery was attended by skilled health personnel	S	6.3	20.1	12.1	14.5	14.5		
Maternal-neonatal health	Delivery services	% mothers who received postpartum Vitamin A within 12 months of last delivery	S	0.9	14.7	8.9	9.4	30.4		
		% mothers who had 2 TT injections during last pregnancy	S	28.3	63.5	56.5	58.2	56.8		
		% mothers who received PNC services within 42 days of their last delivery	S	2.4	27.8	63.7	9.7	7.4		
		% mothers who received ANC at least one time by a trained provider during last pregnancy (live births)	S	44.0	56.0	53.1	64.9	54.5		
		Contraceptive prevalence rate (CPR)	L	35.9	42.1	31.3	48.9	45.0		

		Component 2: health service delivery						
Health facility quality of care	Health facility (HF) quality	L	93.0	75.0	94.0	82.0	85.0	
	% HF clients satisfied with health services							
	% Dalit households utilizing any health service in last 12 months	L	100.0	84.0	100.0	94.0	97.0	
	% HF opened during regular hours the day before the survey	VS	50.0	70.0	100.0	50.0	100.0	
	% HF with all basic infrastructure (4 criteria)	VS	0.0	71.0	29.0	38.0	43.0	
	% HF without stock-out of seven key commodities in last 12 months	VS	82.0	90.0	68.0	81.0	48.0	
	% of pneumonia cases treated by community health workers (FCHV, VHW, MCHW)	S	87.0	76.0	92.0	95.0	93.0	
	% six quality tasks observed during ANC encounters	S	0.0	55.6	78.6	80.0	63.0	
	% MWRAs currently using temporary FP method who were informed at the time of obtaining it of alternative methods	S	56.3	24.7	14.0	29.6	23.6	
	% MWRAs currently using temporary FP method who were informed at the time of obtaining it of its side effects	S	66.7	32.9	22.4	22.5	34.3	
FCHV quality of care	FCHV overall quality	S	50.5	83.8	82.5	53.5	72.9	
	FCHV child health services	S	86.2	100.0	94.2	96.2	91.9	
	FCHV MNC services	S	91.6	96.0	99.0	66.7	17.7	
	FCHV FP services	S	46.3	88.9	74.2	66.7	77.1	
	% FCHVs doing community based distribution of OCPs							
DPHO supervision	Supervision	S	52.3	42.3	30.0	51.1	100.0	
	% HF visited for supervision at least once in last 90 days which received quality supervision from DPHO							

(Continues)

Table 1. (Continued)

Domain	Area	Indicator	ST	R	J	C	B	K
DPHO management	DPHO HMIS	% HMIS monthly reports filled out and sent on time in last 12 months	S	100.0	100.0	98.0	97.0	95.0
	DPHO coordination	% Effectiveness score for DPHO coordination with IP organizational members of RHCC	L	90.0	93.0	100.0	80.0	91.0
	DPHO planning	% RHCC organizational members with whom work plan was shared in a timely manner	L	50.0	0.0	0.0	33.0	29.0
	DPHO financial management	% previous year's DPHO budget spent	L	76.0	83.0	85.0	87.0	70.0
DPHO/DDC viability	DPHO budget from DDC	Component 4: organizational viability % DPHO budget covered by DDC	R	0.4	0.0	0.0	0.0	0.0
	DPHO staff	% sanctioned DPHO staff positions with a person present on day of survey	S	50.0	94.0	67.0	95.0	97.0
	DPHO infrastructure	% basic physical infrastructure available to DPHO/DPHO on day of survey (7 elements)	VS	50.0	100.0	67.0	67.0	100.0
	HFMC support from VDC	% HFMC that received in-cash or in-kind support of a value of at least Rs 1,000 from VDC in the last 12 months	L	67.0	71.0	92.0	88.0	81.0
Health facility financial viability	HFMC fundraising	% HFMC with any cash or in-kind support from outside or local sources in last 12 months	L	11.0	4.0	29.0	0.0	33.0
	FCHV endowment	% VDCs with FCHV endowment fund	L	6.3	72.7	92.8	22.2	35.1
MG incentives and support	MG with health fund	% mothers groups in which all members have access to a community fund for health problems (e.g. emergency obstetric care)	L	25.0	23.0	52.0	42.0	81.0

Component 5: community capacity								
Community health competency	Child health competency score	% mothers of 0–59 months children who know about ORS packet for treatment of diarrhea	S	99.1	97.3	98.5	99.3	99.3
	MNC competency score	% WRA who know where to go for treatment	S	43.3	26.4	16.1	34.0	18.2
	FP competency	% ever married women who recalled hearing or seeing at least one family planning message in radio or television or newspaper in the last several months	S	77.2	61.5	27.2	75.4	58.9
Mothers' group (MG) capacity	MG functioning	% mothers' groups which held at least one meeting in the past three months	S	80.0	98.0	97.9	96.0	100.0
	MG acting on community health issues	% mothers' groups that discussed at least one community health issue and acted upon it in their last meeting	S	97.0	98.0	88.0	88.0	100.0
HFMC capacity	HFMC formed per MOH guidelines	% HFMCs formed according to MOH guidelines (participation of at least one Dalit member and one Mothers' Group representative in last meeting)	L	67.0	67.0	63.0	67.0	67.0
	HFMC functioning	% HFMCs that held a meeting at least once in last three months	L	56.0	96.0	88.0	71.0	95.0
	FCHV supervised	% FCHV supervised in last one month by HF staff	L	41.1	41.4	34.0	37.4	28.1
	FCHV attend HF meeting	% FCHV attending meeting in the HF's at least once in a month in last 12 months	L	54.7	99.0	95.9	84.8	100.0

(Continues)

Table 1. (Continued)

Domain	Area	Indicator	ST	R	J	C	B	K
Health system environment	PHC national commitment score	Government spending per capita on primary health care in district	L	\$4.09	\$0.61	\$0.69	\$0.96	\$0.61
	Central MOH effectiveness	% HF sanctioned personnel positions filled on day of survey	VS	41.0	81.0	70.0	79.0	75.0
District Human Development	Conflict disruption	% work days disrupted by conflict in the district in last 12 months	RV	0.6	0.4	0.3	1.4	1.0
	District Human Development	District Human Development Index	L	0.394	0.494	0.518	0.497	0.463

Districts: R, Rasuwa; J, Jhapa; C, Chitwan; B, Banke; and K, Kanchanpur.
 ST, Score Transformation; RV, Reverse Very Stringent; S, Stringent; L, Linear; L', Linear modified; VS, Very Stringent; and R, Relaxed.

This transformation is necessary, not only so as to compute scores and indices, but also because the measured values of different indicators do not always reflect the same level of progress. For example, the relative achievements of districts in varying areas would be judged differently for the following: 60 per cent of children with difficulty breathing would be assessed as a “Poor” situation (15 points); while 60 per cent of children 0–6 months exclusively breastfed would be considered as “Intermediate” (45 points); and a Contraceptive Prevalence Rate (CPR) of 60 per cent would be considered to be a “Strong” level and optimal (100 points). Comparisons can now be made based on the consensus definition of a comparable scale of progress.

Although there is some subjectivity in the building of transformation scales, gaining consensus for them was not overly difficult and differences of opinion proved to be marginal. Apart from ordinal variables, we used six transformation scales for continuous indicators: (1) linear (direct equivalence between measured value in percentage and score in points; in the case of the CPR indicator, the transformation was linear but the optimal [100 points] was set at 60 per cent); (2) stringent (where points are harder to obtain; this is the case for immunization, for example, where the “Promising” band starts at 75 per cent coverage); (3) very stringent; (4) relaxed (where requirement for a “Strong” level was lessened); (5) reverse linear; and (6) reverse very stringent (for variables where progress correlates with a decreasing measured value of the indicators).³

Data processing and analysis

Summary statistics were checked in SPSS and the data set was cleaned. The cleaned data set was then re-imported into Excel for construction of scores and indices.

There was also structured discussion among survey staff with regards to the qualitative data from each of the districts. As a validity check, the scores produced by the quantitative data were compared with the results from the discussions using qualitative data. No serious discrepancy was identified.

FINDINGS

Three types of findings are described as follows: (1) the lessons learned from the development and implementation of the assessment; (2) the results obtained by the five pilot districts; and (3) the results of a portfolio-level analysis, considering the five districts as a proxy of a USAID program portfolio of investments in the health sector.

Lessons learned from development and implementation of the tool with partners

Three main questions were answered during the preparation phase: (1) What should the proper level of assessment be for appropriate data collection and effective

³During the first period, civil unrest in Nepal prevented travel to districts and, therefore, extensive consultation of local partners. This was partially remedied during the June visit.

management response? (2) What level of buy-in could be attained from implementing and local partners, or how meaningful was the proposed tool to those partners making management decisions geared toward the sustainability of health achievements? (3) What essential assumptions supported the sustainability assessment that was applied to answer USAID's initial question?

Level of assessment. Defining the relevant level of assessment is a key step in the Sustainability Assessment (Sarriot *et al.*, 2004a). The preliminary consultation phase served to establish the health district as the appropriate primary level of assessment for the following reasons:

- The national policy of Nepal focuses on the district level. Donor agency decision making for investment or introducing new technical interventions generally focuses on the district level. Management support to health facilities, training and support of FCHVs, procurement and distribution of commodities, and coordination with NGOs all take place at the district level.
- Implementation of the assessment at other levels served the purpose of the implementers (e.g., at community and Ilaka levels by Plan International, or at a regional level for ADRA's expanded family planning program), but it did not meet our need for providing guidance on program-level decisions. For our purpose, those experiences provided either too much detail or too much aggregation and dilution of the information.

As our tool distinguishes between central Ministry of Health (MOH) functions, district capacity, and service delivery performance, we established that projects operating at a central level, notably those focused on policy and health sector reform, should provide information about this specific component of USAID strategy, largely included in the *Sustainability Framework* Component 6.

All the work in the preliminary consultation phase was conducted on projects addressing MCH/FP and HIV/AIDS. While MCH/FP programming appeared to possess similar capabilities, the institutions involved in addressing HIV/AIDS and the types of processes to be assessed differed enough that we chose to limit our pilot assessment to MCH/FP because of time and resource constraints.

Buy-in from stakeholders. Implementing partners offered constructive criticism to the proposed approach. Through a series of workshops, some partners retrofitted their project strategies and evaluation plans into the Sustainability Framework. Discussions were of two natures: regarding the value of the approach to designing or rethinking interventions where quasi unanimous support was reached; and regarding measurement challenges, where discussion is expected to be ongoing. In the end, implementing partners played a highly supportive role in the consultation process, both with local partners and in the assessment itself.

Nepalese partners responded constructively to the rationale of the Sustainability Framework and the questions it raised for their district. Discussions revealed the general lack of relevant information currently available to district managers in support of their management decisions. A district sustainability assessment,

therefore, offered the promise of filling some of these gaps. Their buy-in was essential to performing the assessment.

Assumptions regarding the district sustainability assessment. It was necessary to articulate the assumptions or principles behind the method before finalizing the list of indicators for the assessment. The assumptions are summarized as follows.

The assessment seeks to capture necessary and common elements, which are valid for all districts, in pursuit of a common MCH/FP “good.” The assessment indicates, but does not describe nor comprehensively diagnose, the situation in individual districts. A local model developed without the constraints of being shared by other districts could be more descriptive and have more predictive value for long-term success than one focusing on the common denominators among the various districts.

Our model and the following selected indicators imply a vision narrative, formed in large part through the consultations:

- An essential package of MCH/FP benefits to populations
- Delivered in facilities and through FCHVs
- Supported by DPHO through a national policy of decentralization
- Where DDC/DPHOs (district structures) have the long-term task of resourcing health providers
- Requiring health-competent communities, particularly mothers
- With communities organized through HFOMCs to demand better health services and to manage Health Posts (HP) and Sub-Health Posts (SHP) in coordination with the DPHO.

Overall reporting on sustainability at the USAID Mission level should not be based on an average (aggregation of all district assessments) but on the distribution of probabilities for success (sustainability) determined for each district, as shown in the portfolio-level analysis.

Results of district sustainability analysis

Three profiles emerged from the compilation and mapping of indices in the six components of assessment. (Table 1 provides the measured value of all indicators for all five districts. Figure 1 provides the profile of sustainability for the five districts, based on the computed component indices.)

Profile 1—beginning of sustainability potential: Kanchanpur district. As seen in the dashboard for Kanchanpur (see Figure 1), three components are assessed as *promising*!:

- DPHO capacity
- Organizational viability in performing the DPHO role
- Community capacity.

But both the health services and the environment components are assessed in the *intermediate* category, along with health outcomes.

Beginning of sustainability – Kanchanpur district



No sustainability – Rasuwa district



Low sustainability – Jhapa, Chitwan, and Banke districts

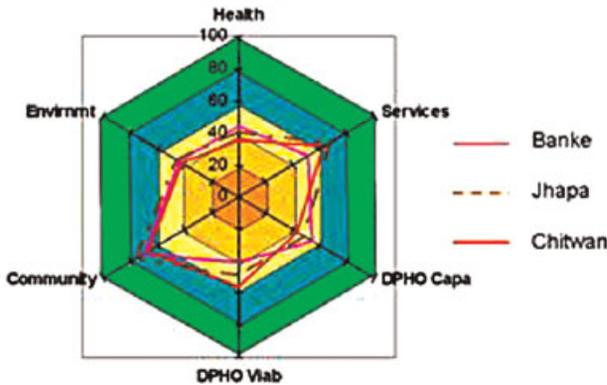


Figure 1. Progress toward sustainable MCH/FP outcomes of five districts

Table 1 shows the variation in indicator performance within each component, which is important to examine. It suggests that the DPHO should actively revitalize reproductive health efforts and remedy important gaps in quality of services. For the donor and supporting agencies, it is time to place some emphasis on the viability of

local organizational functions. If these steps can be implemented, health outcomes will likely improve and investments should be able to shift to a maintenance level in the not too distant future.

The “scan” offered by the sustainability assessment is limited to a few common indicators for each component. Qualitative information and field experience will suggest other areas for improvement and possible tactical approaches.

Profile 2—absence of sustainable achievements: Rasuwa district. As seen in the dashboard for Rasuwa, only the community capacity component is classified in the *promising* band. Services and DPHO capacity are only *intermediate* and three components, including health outcomes, viability, and environment, are in the second to lowest *emerging* band.

Program evaluation questions should be based on a dynamic view of the situation, starting with the questions: What projects have been implemented in the district and for how long? However, in spite of the static aspect of this five-district assessment, the concern for this district is obviously for the achievement of results, while at the same time building capacity.

Profile 3—low sustainability potential: Jhapa, Chitwan, and Banke districts. As seen in Figure 1, in these districts, the components of health services and community capacity are *promising*, but all others—including health outcomes—are still in the *intermediate* and *emerging* range.

The dashboard presentation suggests critical questions, which can be answered by looking at the indicators (see Table 1). It is obvious that key areas of health services (Vitamin A supplementation, family planning)⁴ still require much effort, along with improvements in breastfeeding and care seeking for sick child. Existing community capacity should facilitate the latter, while other areas of relative strength in service delivery should provide a basis on which to minimize the gaps. But, as illustrated by the poor scores in supervision and coordination, district capacity is still weak and it is certainly premature to expect sustained benefits.

Portfolio analysis

The purpose of this section is to treat the five districts as a proxy of a full portfolio of districts receiving donor investments, and to describe the type of analysis which the Sustainability Assessment could provide to program-level decision makers. Assuming one can speak of a portfolio of only five districts supported through USAID-funded projects, some trends can be described.

The three profiles of sustainability described are more similar than dissimilar. As shown in Table 2, the portfolio of districts supported by USAID falls nearly uniformly around the *intermediate* band for most components of assessment. *Promising* levels are only reached in three components and a *strong* level of performance for a component index is only achieved once—for DPHO capacity. The

⁴Visual representation of similar transformation scales is available elsewhere. (Yourkavitch *et al.*, 2004)

Table 2. Distribution of component indices in a pilot portfolio of five districts

	Poor	Emerging	Intermediate	Promising	Strong
Health		2	3		
Services			3	2	
DPHO capacity			4		1
DPHO viability		1	3	1	
Community capacity				5	
Environment		1	4		

strongest component scores across the portfolio are community capacity and health services. The competency achieved in mothers' groups is what drives this relatively high-scoring community capacity. The overall health services component index is positively influenced by scores for community-based services. These findings are not surprising given Nepal's history of investing in FCHV and community approaches.

The DPHO capacity index is composed of two main scores, both of which perform very differently from each other across the portfolio. General management/administration capacity by the DPHO is assessed by four indicators and usually scores twice that of quality supervision, which remains at the *emerging* level for all districts except Kanchanpur.

Table 3 provides another way to summarize the findings at the portfolio level, and would provide helpful summary information about a larger portfolio of districts. It shows in summary that—!

- Immediate prospects for sustainability measured low across the portfolio—no district has more than four component indices in the *promising* band or higher.
- Four of the five districts remain in a relatively poor situation in terms of sustainability, having four or more components in the *intermediate* band or lower.
- No district qualified as being in an overall very poor situation—defined by having four or more components at *emerging* level or below.

Table 3. Cross district summary table

Median value for component indices	(1) Health	41 = Intermediate
	(2) Services	51 = Intermediate
	(3) DPHO capacity	54 = Intermediate
	(4) DPHO viability	49 = Intermediate
	(5) Community capacity	70 = Promising
	(6) Environment	42 = Intermediate
Number of districts with Index Score Promising or higher	In 4 components or more: 0 districts/5	
Number of districts with Index Score Intermediate or lower	In 4 components or more: 4 districts/5	
Number of districts with Index Score Emerging or lower	In 4 components or more: 0 districts/5	

More specific portfolio-wide strengths and weaknesses can be identified through disaggregating component indices into domain and area scores, and finally indicators, as reflected in Table 1. The analysis begins to reveal both exceptions and trends within the portfolio: issues affecting all districts, and issues where some districts under-perform or over-perform the others. For example, improving effective supervision capacity for better quality of facility-based services emerges as a portfolio-wide need. In spite of historical strengths in community-based programming, gaps are also visible across the portfolio in areas such as care seeking for the sick child as well as breastfeeding.

DISCUSSION

Feasibility and practicality

The commitment of USAID was key in carrying out this work. The natural question with regards to the value of the assessment tool is one of feasibility at a reasonable cost. We have concluded that application of the assessment on a larger scale is feasible as well as practical, and would be of considerable value to donors, implementing partners, the MOH, and especially district officers.

Our assessment relied to a large extent on secondary data, which are generally collected by USAID implementing partners. With a marginal additional effort by implementing partners in monitoring and evaluation (M&E), a consistent set of indicators could then be produced to inform USAID's strategy. Appropriate communication would minimize the natural resistance to collection of additional indicators not directly linked to partners' contracted objectives, but nevertheless helpful to guide USAID's allocation decisions.

For primary data collection for all five districts, we assigned five teams of three surveyors and three New ERA supervisors during a 4 week span of time. When compared with the cost of large surveys, which usually produce national or regional data and none at district level, we believe this represents a nominal cost for information directly supporting management decisions. Most of these data could be collected by grantees or even district teams themselves. Very few indicators would require a totally independent assessment effort, in which case they could be collected by a local research center.

There is a strong case to be made for the value of providing district managers with information captured in the sustainability assessment:

- Depending on whether anthropometry and anemia testing are included or not and the complexity of the survey design, a district-level Knowledge Practice and Coverage survey (CSTS 2000) can cost between \$10 000 and \$20 000. For an MCH/FP strategy that targets health districts often operating almost exclusively on very poor quality service indicators, this is a reasonable cost for substantially better information.
- Projects increasingly carry out systematic health facility assessments, and the concept of a scorecard (Anderson *et al.*, 1998) is being used increasingly to support accountability and quality management. Data collection can and should be

integrated into proper monitoring and management of facilities. Thus, district capacity building efforts need to focus on skills such as data processing and analysis.

Implementing a sustainability assessment in a systematic manner for all districts would be useful at many levels. Implementation is feasible and only represents a marginal cost beyond already existing M&E efforts, even less so if those efforts were consistent (i.e., if systems were in place to measure the same things at regular intervals). It could also provide a tool for local managers supported by their central structures, to encourage more alignment from donors.

An assessment tool that maximizes pro-sustainability choices

The initial research question posited was whether a sustainability dashboard tool could be developed that would maximize pro-sustainability choices in USAID health programming.

We have concluded that—to the degree that its assumptions are respected—the standardized sustainability assessment is reasonably valid in terms of evaluating prospects for maintaining positive health outcomes in MCH/FP. Although the assessment was a one-time measure, the three profiles described previously allow for an evaluation not simply of which district is further on the road to sustaining key MCH/FP benefits, but also of where specific gaps remain and which targeted programmatic responses could be proposed.

Consistently measuring specific indicators—whether traditional proxies for MCH health outcomes or pertinent processes at different levels of assessment—is a first step toward institutionalizing a measure of accountability and improving decision making processes. Conversely, absence of consistent monitoring is a fairly good indication that sustainability of key processes and results is not of serious interest to anyone. Other authors have recommend that an M&E system be not only more consistent over time (Kruse, 2003), but also that it broaden its focus outside of health metrics. (De Winter, 1993; Jones, 2006).

Based on our initial consultations with projects working in Nepal, we attempted to measure elements of community capacity, which proved to be the relative driver of performance toward sustainability at the district level. Whether it be at community or institutional levels, measuring capacity remains challenging (Roche and Kelly, 2003). Despite this, most Nepalese health programmers recognize the tremendous value of past investments in community processes. Our assessment approach only formalizes the significant role of community capacity in the long-term performance of the overall Nepalese health system, and its measurement provides policy makers with a viable tool to aid their decision making process.

Without the accountability of measurement, progress will certainly continue to be affected by such factors as competing funding and programs, local governance issues, and possible donor fatigue. For example, the coverage for exclusive breastfeeding—a strong determinant of child mortality (Black *et al.*, 2003)—continues to remain low in all five districts despite Nepal's recognized success in

community health. One can reasonably expect that systematically repeating this measure in district assessments would ultimately put pressure on programmatic responses. The same logic would apply to anthropometric measures of child growth, a true health outcome indicator. The decision of which indicators to measure is the necessary first step for an informed dialogue about priorities, itself a necessary step for local ownership and institutionalization.

Shifting concerns from the international community, availability of funds, and country foreign policies can lead to changes in donor priorities. In recent years, multilateral and bilateral agencies have increasingly focused their attention on achieving large-scale impact, programming in fragile states, and—particularly for USAID—a renewed and almost exclusive emphasis on governance.

A sustainability assessment is infused with elements of governance. It starts with the definition of the local system of actors who need to be brought together and who must negotiate their role. It continues with the assessment of key institutional capabilities, community processes, political-environmental changes, not the least of which being the quality of key services and their accessibility by community members (including disadvantaged ones, such as the Dalits in our assessment). Governance efforts will receive more support from the population if they focus on the ability to achieve and sustain recognized social goods—such as health outcomes. A well-governed state mired in sickness and poverty should not be expected to gain or maintain much needed support from its population constituents. Thus, one could argue that a systematic assessment of progress toward sustainable health outcomes and other social goods would generate demand for better governance from both national authorities and donors.

The multi dimensional nature of the sustainability assessment framework can enable donors and program implementers, to explicitly monitor processes and results, which do not necessarily evolve in the same direction or at the same pace. Without this tool, a donor might be tempted to fully disengage based solely on achievements of one set of outcomes. If funds are withdrawn before there is a viable organizational capacity or functioning community capacity, the gains are too frequently lost. Systematic implementation of the tool could allow a better management response, for example through gradual disengagement, by negotiating and targeting remaining investments on the basis of continued progress on essential benefits to the population. Phasing out of funds in this case is simply a final and perhaps better-timed step in an overall portfolio management approach, which maximizes long-term impact.

This relates to the question of thresholds and signals for decision making, and the formulating of informed hypothesis about speed of change and optimal timing of devolution processes (discussed below in ‘next steps.’)

Limitations of the methodology

The purpose of the assessment is not to create a cookie-cutter project response based on measuring 53 indicators. Nor is it a comprehensive sustainability assessment of any single district. It is, instead, a common-denominator assessment of progress across districts supported by USAID and its implementing partners. To the extent

that USAID-funded projects share similar interventions (e.g., the Nepal version of community-based IMCI; building district capacity; improving availability and accessibility of FP services), these projects will observe their own performance M&E plans largely reflected in the district sustainability assessments. To the extent that they have additional or idiosyncratic intervention areas, a generalized multi-district assessment will fail to capture those elements, which are nonetheless relevant to them.

We posit that countries would benefit from more standard approaches (for example the consistent community-based IMCI approach promoted by Nepal) and that standardized measures would allow more informative benchmarking of performance.

The selection of indicators was based on feasibility within a constricted timeframe. We opted for using available secondary indicators whenever possible rather than creating a new tool. Some issues (e.g., those regarding MOH policies and capacity) would deserve inclusion but were not captured by our assessment tool. Some dimensions, notably some elements of capacity (DPHO, community) are more difficult to assess and lend themselves to semi-quantitative approaches in which assessors rate capacity based on consensus after a thorough review of qualitative and quantitative information. We limited ourselves to more quantitative and immediately verifiable indicators, focusing on elements of capacity considered essential during the preliminary consultations. In some cases, we may not have set the parameters of the assessment high enough (e.g., when measuring whether mothers' groups held a meeting in the past 3 months, rather than assessing what mothers' groups were able to achieve). In future applications, both the indicators and data collection tools should be improved.

The tool is based on information actionable at the district level; thus precluding the use of true impact data (IMR, TFR, MMR) which cannot be collected in a timely fashion at this level. Such measures could however be used for research and validation purposes in the future.

To be fully effective, the connection between assessment and the practice of sustainability programming will require much more local involvement and ownership. There is also a learning curve inherent to the ability of framing decisions based on a consistent examination of sustainability determinants. Time and consistency of purpose would be required to have the full involvement of local partners, not only at the district level but also at facility, regional, and central levels.

Questions were raised about the manner in which progress is described, insofar as mapping the indicators and scaling them on the sustainability dashboard. While we are confident about the face- and construct-validity of our transformation scales, further research would likely lead to an evolution of those scales and improve the predictive value of the framework. (At this stage, however, consistency in implementation of a tool as part of a management approach, would yield greater benefits and lessons than isolated efforts to improve the tool itself.)

This was a static exercise, providing a cross-sectional pilot assessment of five districts. A longitudinal approach would be required to gain a more complete understanding of the way in which increases in capacity and viability of local agents are able to affect outcomes and their continued improvement.

Next steps: statement of hypotheses

We believe that one main benefit of institutionalizing this type of assessment lies within the newfound ability it can offer all agents to postulate hypotheses with regards to the possible long-term effects of their resource allocation and to make management decisions on the basis of compound data.

Some of the metrics for key elements of the sustainability assessment should be improved upon. But they will not improve without commitment to the systematic application of what knowledge we have to the rigorous process of assessment and measurement. We suggest that application of the Sustainability Framework allows us to enter into the kind of heuristic process—where theory improves practice, and practice improves theory—needed to achieve progress on complex issues.

Should we do so, we will be brought to the stage of hypotheses formulation: How large or how small must an investment be to maintain positive health outcomes in districts that have achieved a given level? Which capacity building investments best produce benefits across the system—as opposed to having a narrow benefit with little impact on sustainability? At which threshold in measured capacity is there an acceleration of the gains? Is it necessary to raise all components to their best performance to achieve enduring benefits, or do they all have different thresholds? Are some of the presumed elements contributing to sustainability not playing such an important role, and are some creating a “tipping point” for prospects of maintaining achievements? Consistent data collection and analysis, as proposed here, would allow for the forming and testing of such hypotheses.

Because the tool is multidimensional and states the question of sustainability in terms of processes and stages of progress, it offers options for testing more complex and strategic responses through evaluation research. The following are suggested directions worth exploring:

- Delay fund withdrawals in districts showing progress until other satisfactory thresholds have been reached, or redirect funds for humanitarian assistance in districts showing a lack of progress.
- Progressively reduce funding but maintain limited funding to key areas requiring support, basing future funding on local commitment for maintaining key results.
- For high performing districts, trade direct operations funding for support toward high-end capacity building and a role in dissemination of optimal practices to other districts.
- Add new funding to address new health interventions (e.g., broader patient-centered care) as advocated by some (Unger *et al.*, 2003), only in districts who have maintained achievements in core, basic interventions while working with reduced or no funding for these core interventions. In this case, capacity building investments should be shown to be cross-sectional (for both old and new health interventions).

The benefits of such an approach could be found by most if not all stakeholders.

For implementing partners, there is immediate benefit in terms of building consensus and ownership, involving local partners, and improving project designs.

Requirements for information should be adjusted depending on the scale and nature of the projects, but all should be required to demonstrate causing no harm to the common denominator of both the donor's and the country's sustainability strategies.

For local partners, particularly MOH and DPHO, it would be essential for the next step to be more inclusive and reach full ownership at the national and local levels. Repeated implementation of the assessment would equip districts with information to negotiate with donors and new potential external partners eager to get involved in their district. Alignment would be encouraged by a locally owned assessment methodology focused on long-term progress.

For a donor agency such as USAID, the main benefit of institutionalizing a sustainability assessment would be to have a basis for testing the effectiveness of management and funding decisions in the long term, based on a systematic assessment of results and processes considered key to the country's development objectives.

There is also a cost for not using such an approach. We need to remember that the default mode of development assistance is by nature non or low-sustainability (Catterson and Claes, 2003). In industrialized nations, various interest groups constantly highlight the benefits of services they want to see maintained, and frequently emphasize their fragility in public discourse. Developing a sustainability dashboard might be the development equivalent of this natural logic. Without attention (a.k.a., measurement), processes falter and benefits wither. Consistency in evaluation methodology is the way to draw more robust lessons and to engage in a learning process.

New global health efforts will succeed or fail at the local level (Platteau, 2003). Consistent implementation of a sustainability assessment and its application to evaluation research will be needed in different settings in order to accelerate learning and increase our chances for success.

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It is hoped that this exercise will facilitate the supporting institutions, planners, program managers, M&E officers, and respective government institutions, in improving the country's quality of public health in a sustainable manner.

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