Measuring Baselines and Goals Setting for Result-based Monitoring & Evaluation System[1]

Dayo O A Phillip

[1] Paper presented at the "Training On Management Information Systems In Result-Based Project Monitoring & Evaluation", Held From Monday 12th January To Friday 23rd January 2009 At The Ghana Institute Of Management And Public Administration, (GIMPA), Accra, Ghana.

1. Introduction

Goals, Outcomes and Indicators

Government decision making process involves setting of goals.

Setting of goals is important since outcomes are derived from goals.

Goals are long term in nature e.g. MDGs.

All stakeholders must be involved in the setting of goals and outcomes: the processes must be participatory and consultative.

This is the reality of governance and globalization.

Outcomes are derived from goals.

Outcomes are intermediate in time outlook (e.g. 5-10 years).

Targets are derived from outcomes: of short term duration e.g. 1-3 years

Outcomes: give an idea or picture of what success will look like.

Outcomes, not the indicators, will produce the benefits.

So, it is important to determine the outcomes before defining the indicators.

Outcomes are important: from outcomes are derived inputs, activities, and outputs; also have implications for the performance elements – indicators, baselines and targets.

Setting and agreeing upon goals: processes / steps

1. Determine the various stakeholders (e.g NGO, government, donor, beneficiaries)

2. Identify the concerns of the various stakeholder groups (using brainstorming, interviews, focus groups, surveys or any suitable techniques)

3. Frame the problems identified as positive outcomes, e.g. “We want improved health for infants and children” vs “We want fewer infants and children to become ill”

4. Outcomes disaggregation: each outcome statement should not emphasize more than one success, in relation to – for whom? Where? How much? By when?

Example: Outcome – to increase the % of employed people

Disaggregation: to increase employment -

- among youth (target group)
- in the rural sector (sector)
- by 20% (% change)
- over the next four years (time frame)

From problem identification to positive, desirable outcome statement		
From		To
Rural crops are spoiling before getting to the market		Improve farmers access to markets
Children are dropping out of school		Create incentives for families to keep children in school
No longer safe to go out after dark		Improve community safety

From problem identification to positive, desirable outcome statement Policy area: Education		
From	To (Correct)	To (Incorrect) **
School buildings are not maintained and are made from poor materials	Improve school structures to meet standards of market economy	Improve school structures (and) (academic standards) to meet requirements of market economy
Many children of rural	Rural children gain	Rural children gain

From problem identification to positive, desirable outcome statement Policy area: Education		
families are unable to travel long distances to school	equal access to educational services	equal access to (educational) (and) medical services
Schools are not teaching our youth the content they need for the market economy	Improved curricula meet market-based economy standards	Improved curricula (and) (facilities) meet market-based economy standards
The poor and vulnerable are falling behind and not getting a decent education	Children most in need are receiving educational assistance	Children most in need are receiving educational (and) (nutritional) assistance

** must disaggregate into 2 outcome statements each ;

2. Selecting Key Performance Indicators

Indicators are relevant to the extent that there are objectives in place.

Extent of achievement of the objectives comes from measuring the indicators.

Every level of an M & E system should have indicators – inputs, activities, outputs, outcomes and goals

Outcome indicators:

- quantitative or qualitative;
- means of measuring achievements;
- helps to assess organizational performance against stated objectives
- drives all subsequent data collection, analysis and reporting
- regular measurement helps managers find out if projects, programs, policies are on track, off track, doing better than set targets;
- provides opportunity for making adjustments, if and where necessary
- increases the chances of achieving the desired outcomes

Outcomes must be translated into a set of measurable indicators.

There should be a minimum of one indicator for each stated outcome.

Also, the number of outcome indicators should be relevant to the identified concerns and interests of the various stakeholder groups.

Performance indicators should be "CREAM":

C	Clear	Precise and unambiguous
R	Relevant	Appropriate to the subject at hand
E	Economic	Available at a reasonable cost
A	Adequate	Provide a sufficient basis to assess performance
M	Monitorable	Amenable to independent validation

Indicators – quantitative or qualitative

Quantitative indicators –

- usually reported in terms of numbers (number, mean, median, percentage);
- combinations of numbers and percentages are preferred to either alone.
- Rate (%) and size (number) of success are good complements for performance assessment.

Qualitative indicators –

- capable of only qualitative assessments;
- useful, but harder to verify because it derives from subjective judgments;
- relies on perceptions about progress, not actual progress.

Proxy indicators – useful when outcome indicator cannot be measured directly or measurable with high costs or not measurable at regular intervals.

Example: if regular household survey is dangerous in some areas:

- proxies for income could include number of zinc roofs or number of television antennas.
- Caution: other factors might cause these numbers to change e.g. sudden rural electrification or non-project earnings.

Pre-designed Indicators – usually established outside the control of a country, organization or program. Example: MDGs (8 total)

Each of the 8 MDGs have its targets and indicators e.g. MDG 4

MDG 4	Target	Indicators
- to reduce child mortality	- to reduce by two-thirds the under five mortality rate between the years 1990 and 2015	- under five mortality rate - infant mortality rate - proportion of one-year old immunized against measles

Constructing indicators:

- must be done to meet specific needs; there are no all-purpose indicators
- must bear relevance to the outcomes they seek to measure
- recommended to take at least three measurements per indicator to establish a baseline or trend over time
- indicators must be changed with caution; changing an indicator also changes the baseline for measuring progress; a new indicator calls for own baseline

3. Setting Baselines and Gathering Data on Indicators

Establishment of baseline data: this is the establishment of what exists relative to the outcome(s) to be achieved.

Target setting: Projection of performance into the future

Baseline: this is the first critical measurement of an indicator. The baseline sets the current condition against which to track future changes.

The performance framework: consists of outcomes, indicators and baselines, in that order. So, one can refer to baseline establishment as the third part of the performance framework.

The challenge:

- Each outcome will have its own performance indicators.
- Each PI will require its own baseline info. Thus,
- Advisable to be judicious about the number of PIs defined.
- Each will require data collection, analysis and reporting.

Building baseline information: 8 key issues

1. What are the sources of data?
2. What are the data collection methods?
3. Who will collect the data?
4. How often will the data be collected?
5. What is the cost and difficulty to collect the data?
6. Who will analyze the data?
7. Who will report the data?
8. Who will use the data?

Data sources: issues

- Collect only data that will be used, especially for performance indication
- Data sources can be primary or secondary
- Secondary data: cost effective; but there may be problems about validity, reliability and differences in the goals for collecting the data vis-à-vis goals of the present program

Data collection methods:

There is no ‘most correct’ approach to data collection; it will depend on available resources, access, needs and time constraints.

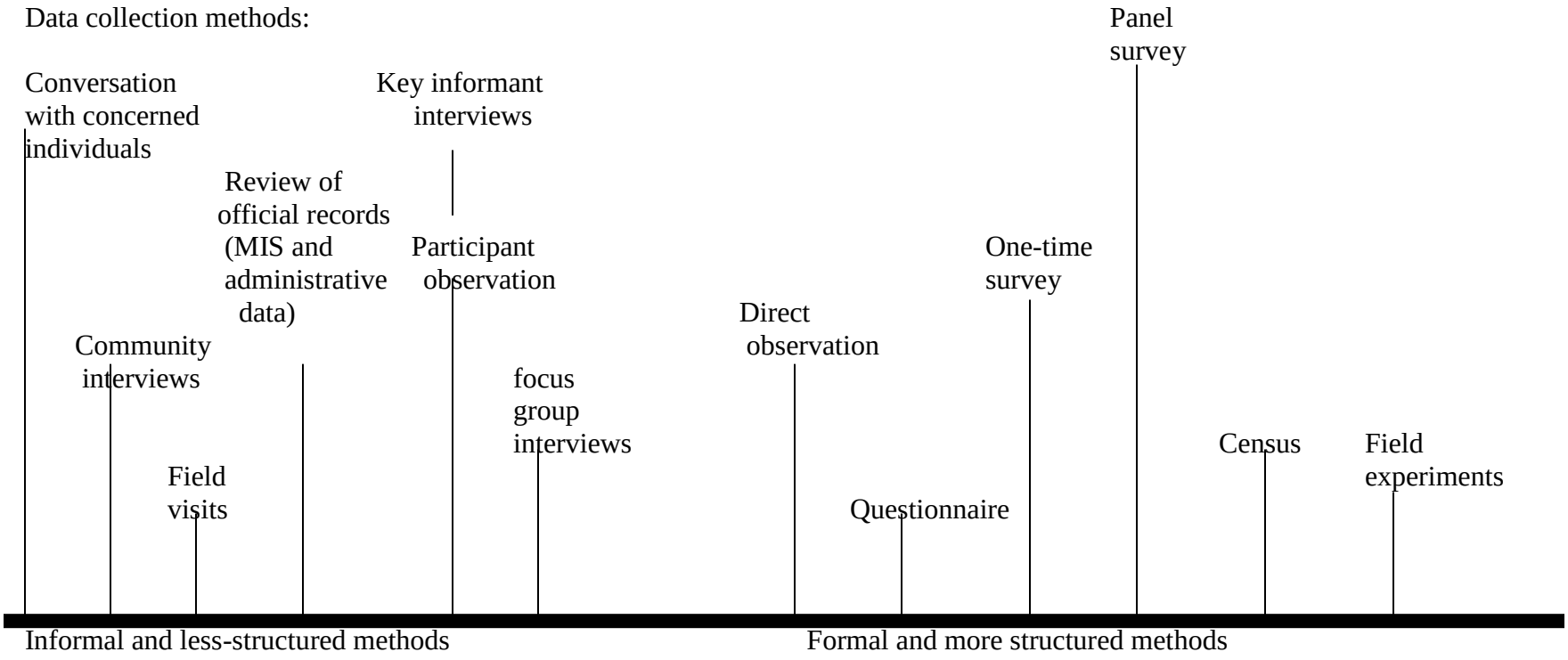
Conducting pilot

- Data collection, analysis and reporting on indicators should start on a pilot basis.
- This will enable assessment of what works and what does not.

- It enables early detection of what would have amounted to huge error later.

Developing Baseline Data for Education			
Outcomes	Indicators	Baselines	Targets
Nation's children have better access to preschool programs	Percent of eligible urban children enrolled in preschool education	In 1999, 75% of children ages 3-5	
	Percent of eligible urban children enrolled in preschool education	In 2000, 40% of children ages 3-5	
Primary school learning outcomes for children are improved	Percent of primary 6 students scoring 70% or better on standardized math and science tests	In 2002, 75% scored 70% or better in math, and 61% scored 70% or better in science	

Considerations in building baseline information								
Indicator	Data source	Data collection method	Who will collect data?	Frequency of data collection	Cost and difficulty to collect	Who will analyze data ?	Who will report data?	Who will use data?
1								
2								
3								



Example xx: <u>Second National Fadama Dev Project (Fadama II)</u>

The results provided in this section of the paper are not intended to pass judgments on the outcomes of Fadama II. They are provided strictly for illustrations of what project impact variables and values might look like.

Table xx: Major Sources of Income for Fadama II beneficiaries and non-beneficiaries.

Source	% contribution to total income before project (Oct. 2004 to Sept. 2005)			% contribution to total income after project started (Oct. 2005 to Sept. 2006)		
		Non beneficiaries FII			Non-beneficiaries FII	
	Beneficiaries	Within FII LGAs	Outside FII LGAs	Beneficiaries	Within FII LGAs	Outside FII LGAs
Crop production	46.60	53.80	46.90	56.80	56.50	60.20
Nonfarm activities	48.50	38.70	43.30	41.10	39.90	39.30
Livestock production	4.90	7.43	9.70	2.10	3.50	0.05
Other activities	0.00	0.13	0.19	0.00	0.14	0.54

Source: Nkonya et al (2008).

Table xx: Impact of Fadama II on household income across agro-ecological zones and genders

Treatment type	Net real income (Naira/household)		% net change due to participation in project
	Before project[1]	After project[1]	
Agro-ecological zones			
Humid forest			
FII beneficiaries (n=176)	**87,431** (292,102)	**112,626** (299,102)	17.1
All non-beneficiaries (n=282)	**12,307** (257,170)	**31,343** (276530)	
Moist savannah			
FII beneficiaries (n=118)	**70,578** (203,342)	**74,295** (280,596)	47.5
All non-beneficiaries (n=251)	**96,498** (256,137)	**77,384** (271,796)	
Dry savannah			
FII beneficiaries (n=205)	**79,113** (255,967)	**124,458** (225,341)	79.2
All non-beneficiaries (n=335)	**106,066** (255,201)	**142,708** (254,173)	
Gender			
Women only FII beneficiaries (n=198)	**74,326** (217,819)	**110,383** (239,400)	69.1
Non-beneficiaries (n=178)	**35,414** (210,009)	**48,346** (219474)	
Men only FII beneficiaries (n=674)	**83,701** (281,080)	**107,495** (282,132)	101.3
Non-beneficiaries (n=267)	**86,261** (269,010)	**98,249** (281,306)	

Source: Nkonya et al (2008)

Notes: FII = Fadama II. Numbers in brackets are standard deviations of the corresponding mean.

* Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level

References

World Bank. 2004. A Handbook for Development Practitioners: Ten Steps to a Results-Based Monitoring and Evaluation System

BREAK FOR AN EXERCISE AT THIS POINT -------

TAKE THE LOGFRAME AFTER THE EXERCISE----------!!!!!!!!

COMPRESSED LOGFRAME FOR MONITORING AND EVALUATION UNDER FADAMA II

Level of objective	Indicators	Baseline value	Target values	Frequency & reports	Data instruments	Data collection responsibility
Project Dev Outcome						
Increased Fadama users' income	- Agricultural income of FUG members - Non-agricultural income of FUG members - Total Income (including transfers) of FUG members - Consumption expenditures of FUG members			Bi-annual Bi-annual Bi-annual Bi-annual	Survey Survey Survey Survey	NFDO/State MARD/LFDOs NFDO/State MARD/ LFDOs NFDO/State MARD/ LFDOs NFDO/State MARD/ LFDOs
Reduced conflicts among Fadama users	- Percentage reduction in the number of conflicts - Number of times conflict resolution committees are solicited - Percentage of FUG members directly benefiting from subprojects - Number of LDPs fully owned by all FUG members			Quarterly Bi-Annual Bi-Annual Bi-Annual	Survey Survey Survey Survey	Consultants Consultants Consultants Consultants

Source: Second National Fadama Development Project (Fadama II) Monitoring formats (2006)

COMPRESSED LOGFRAME FOR MONITORING AND EVALUATION UNDER FADAMA II

Level of objective	Indicators	Baseline value	Target values	Frequency & reports	Data instruments	Data collection responsibility
Intermediate outcome						
Component 1: Capacity building						
	No of environmentally friendly LDPs implemented					
Strengthened capacity to apply good procurement procedures	(i) No. of bids successfully tendered (ii) No. of contracts successfully processed (ii) No of service providers completing jobs for which they were contracted			Quarterly	Survey	
	(ii). percentage. of loans received (iii) percentage of loans repaid (iv) size of loans received (v) size of savings established					
Component 2: Rural Infrastructure Investment						
1. Improved access to rural infrastructure	No. of FADAMA participants using built rural infrastructure, No. of RI subprojects implemented with adequate design			Annually	Survey	SFDO/LFDO
2. Reduced transaction costs	(i) percentage reduction in transport costs borne by different FUG member (ii) percentage increase in profit margins			Bi-annual	Survey	SFDO/LFDO
3. Increased establishment of rural non-farm enterprises	Number of hours worked by Fadama resource users in their principal occupation by type			Quarterly	Survey	SFDOs/LFDOs
	Number of rural non-farm businesses generated by Fadama asset acquisitions within FCAs			Quarterly	Reports	SFDO/FCAs/FUGs
	Number of FUG members working full-time in non-farm enterprises operating an acquired Fadama asset			Quarterly	Report	SFDO/FCAs/FUGs
	Number of FUG members working part-time in non-farm enterprises operating a Fadama acquired asset.			Biannually	Periodic survey	SFDO/FCAs/FUGs

COMPRESSED LOGFRAME FOR MONITORING AND EVALUATION UNDER FADAMA II

Level of objective	Indicators	Baseline value	Target values	Frequency & reports	Data instruments	Data collection responsibility
Intermediate outcome						
Component 4: Demand-responsive Advisory Services						
- Increased use of output enhancing technologies	- Percentage reduction in post-harvest losses			Bi-Annual	Survey	NFDO/SFDO/SMARD/ LFDOs/Consultants
- Increased use of effective marketing practices	- Percentage increase in marketed surplus - Percentage increase in use of market information for better product pricing			Bi- Annual	Survey	NFDO/SFDO/SMARD/ LFDOs/Consultants
- Increased business management skills	- Percentage increase in the number of FUGs developing business plans for their sub-projects			Bi-Annual	Survey	NFDO/SFDO/SMARD/ LFDOs/Consultants
Component 5: Project management						

Source: Second National Fadama Development Project (Fadama II) Monitoring formats (2006)

Table 1: Partial Log frame of Fadama II project performance indicators:

Indicator	Means of verification	Variables to measure
Indicators of Outcomes / impact:		
(a) By end of year six, 50 percent of fadama resource users benefiting from the Project have increased their average real incomes by 20 percent compared to the baseline income of Naira 16,091.	This indicator will quantify the increase in real income of fadama resource users resulting from the project	• Price data by product type • The quantity (in tons) of fadama agricultural produce • Production data by output type • The price index (inflation) • The number of people benefiting from project activities • Income data for fadama users.
(b) By end of year six, 60 percent of estimated 1,000 FCAs have successfully implemented their LDPs and other Project-funded activities, using environmentally sustainable and socially inclusive practices.	The progress towards building the capacity of FCAs to formulate and implement their LDPs	• The number of FCAs organized, registered and trained; • Number of gender related and other training, workshops and seminars implemented**;** • Number of women user groups (WUGS) who benefited from each training, workshops and seminars; • The number of LDPs prepared by FCAs and approved by the local fadama development committees (LFDCs); • The number of LDPs and associated sub-projects under effective implementation; • Number of women user groups' (LDPs) submitted to the FCA, and number of WUGs' LDPs approved.

Indicator	Means of verification	Variables to measure
Indicators of Outcomes / impact:		
(c) By year six, conflict between fadama users has been reduced by 75 percent compared to baseline..	The effectiveness of the Project in reducing conflicts among fadama users	• Number of reported conflicts by FUGs; • Number of conflict management committees in place;

Indicator	Means of verification	Variables to measure
		• Conflict management instruments; • Number of conflicts resolved by conflict management committees.
Indicators of Outputs		
(a) By year six, at least 50 percent of the FCAs participating in the project are successfully managing the participatory planning process and the demands of Project implementation.	How effectively the FCAs are engaging in participatory processes	• The number of FCAs established through participatory approaches; • The number of FCAs engaged in participatory planning processes; • The number of FCAs that are managing participatory planning processes; • The number of requests made on Project implementation entities/agencies; • Number of women FUGs registered.
(b) By year six, at least 70 percent of total number of subprojects of various types started under the Project has been completed		• Number of subprojects initiated/started under the Project; • Number of projects completed by type; • Number of subprojects started by fadama user groups by type; • Number of subprojects by size.

Indicator	Means of verification	Variables to measure
Indicators of Outputs		
(c) By year six, fadama users have increased benefits/returns from those fadama enterprises for which they utilized advisory services by 20 percent.	The effectiveness of advisory services, from both public and private service providers, in increasing the productivity of FUGs and enhancing their access to different marketing channels for their products	• Percentage of male and female Fadama Users (of all users who utilized advisory services) who have changed production or marketing practices as a consequence of the advisory services received; • Percentage of male and female Fadama Users who consider access to input and output marketing chain

Indicator	Means of verification	Variables to measure
		improved; • Average productivity/output increase of Fadama enterprises on which production related advisory services were provided; • Average increase in monetary benefits/returns of Fadama enterprises on which marketing related advisory services were provided; • Percentage of private and public advisory service providers (male and female) in register that are engaged following supply chain development support activities.

Indicator	Means of verification	Variables to measure
Indicators of Outputs		
(d) By year six, total asset holdings by participating FUGs have increased.	How well the matching grant facilitates the ability of fadama users to acquire different types of productive assets	• Number of eligible assets acquired by FCA members by type and groups; • Number of eligible FCA members that received matching grants; • Number of eligible FCA members that did not receive matching grants; • Cost of acquired assets by type and groups; • Amount of grant fund disbursed; • Sources FCA members counterpart funding; and • Types and number of labor saving devises or post-harvest equipment acquired by women user groups.
(e) Implementation	The progress in Project	Number of Project evaluation reports

Indicator	Means of verification	Variables to measure
progress consistently receives satisfactory or better rating in Project supervision reports.	implementation.	that rated Project implementation as satisfactory.
(f) Monitoring and Evaluation systems are producing useful MIS reports on quarterly basis.	How well the M&E systems are functioning.	Timely rendition of quality reports to decision makers.
(g) Impact data are collected and analyzed by autonomous and independent agencies and presented to decision makers on timely basis.	Timely collection and evaluation of data, including how they are used in Project implementation.	Timely completion of impact studies.

Source: World Bank (2003)