Implementation Monitoring and Evaluation Division
Ministry of Planning
Sher-e-Bangla Nagar, Dhaka-1207.

Monitoring and Evaluation (M&E) Guideline for (Crops, Fisheries and Livestock Sector)

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ANNEXES

ACRONYMS

AA	Approving Authority
ADB	Asian Development Bank
ADP	Annual Development Programme
AE	Assistant Engineer
AO	Authorized Officer
BDT	Bangladesh Taka
BFRI	Bangladesh Fisheries Research Institute
BLRI	Bangladesh Livestock Research Institute
CAA	Contract Approving Authority
CCGP	Cabinet Committee on Government Purchases
CIG	Common Interest Group
CIPS	The Chartered Institute of Purchasing and Supply
CPTU	Central Procurement Technical Unit
DoF	Department of Fisheries
DoFP	Delegation of Financial Power
DLS	Department of Livestock Services
DLO	District Livestock Officer
DPD	Deputy Project Director
DPM	Direct Procurement Method
DPP	Development Project Proposal
ECNEC	Executive Committee on National Economic Council
EOI	Expressions of Interest
ERD	Economic Relations Division
FMD	Foot and Mouth Diseases
GCC	General Conditions of Contract
GFR	General Financial Rules
GOB	Government of Bangladesh
HOPE	Head of Procuring Entity
HRD	Human Resource Development
ICD	Intended Completion Date
IDA	International Development Association
IFT	Invitations for Tender
IMED	Implementation Monitoring and Evaluation Division
ITT	Instructions to Tenderers
JICA	Japan International Cooperation Agency
JVCA	Joint Venture, Consortium or Association
KPI	Key Performance Indicators
LCS	Least Cost Selection
LGED	Local Government Engineering Department
LTM	Limited Tendering Method

MLGRD&C	Ministry of Local Government Rural Development& Co-operatives
MoF	Ministry of Finance
MoFL	Ministry of Fisheries and Livestock
MoP	Ministry of Planning
NOA	Notification of Award
OTM	Open Tendering Method
PCC	Particular Conditions of Contract
PD	Project Director
PE	Procuring Entity
PM	Project Manager
PO	Producer Organization
PPA	Public Procurement Act
PPR	Public Procurement Rules
PPRPII	Public Procurement Reform Project (PhaseII)
PPR	Peste Des Petits Ruminants
PWD	Public Works Department
RADP	Revised Annual Development Programme
SBCQ	Selection Based on Consultant's Qualifications
QCBS	Quality& Cost Based Selection
REB	Rural Electrification Board
RFQ	Request for Quotation
RHD	Roads and Highways Department
SFB	Selection under a Fixed Budget
SSS	Single Source Selection
SPSS	Statistical Product and Service Solutions
Sr.AE	Senior Assistant Engineer
SRGB	Survey Research Group of Bangladesh
TDS	Tender Data Sheet
TEC	Tender Evaluation Committee
TER	Tender Evaluation Report
TOC	Tender Opening Committee
TOS	Tender Opening Sheet
TSTM	Two-Stage Tendering Method
ULO	Upazila Livestock Officer
WB	World Bank
XEN	Executive Engineer

Executive Summary

The Implementation Monitoring and Evaluation Division (IMED) of the Ministry of Planning is the apex body of the Government of the People's Republic of Bangladesh to oversee, monitor and evaluate the implementation and performance of public sector development projects in the Annual Development Plan (ADP). To strengthen the capability for monitoring and evaluation of development projects, IMED intends to develop Project Monitoring and Evaluation (M&E) guideline to help proper monitoring and evaluation of development projects in crop, fisheries and livestock sectors through the support of "Strengtheneing Monitoring & Evaluation (M&E) Capabilities of IMED (SMECI, 2nd revised) Project. Strengthening M&E capabilities of IMED would facilitate data/information collection for assessing the progress of project implementation and evaluating the generated outcomes and impacts and simultaneously enable concerned Ministries and Executive Agencies to ensure proper implementation, monitoring and evaluation of development projects. This guideline/manual would promote a common understanding and reliable practice of monitoring and evaluation of development projects at all levels.

The monitoring and evaluation concepts, processes and guidelines depend on the requirements of respective projects/organizations and it may differ from one another to some extent. Accordingly, the M&E processes and guidelines of various international organizations (ADB, WB, IFAD, FAO, UNDP, JICA, IFRC, etc.), different projects (implemented in Bangladesh) as well as several other relevant publications were reviewed to develop ideas for preparing the M&E Guidelines/Mannual for IMED. The current M&E concepts, principles and practices as observed through literature review is presented in the "Review of Literature" section of this report.

In the process of developing the guideline/manual, the PPs/DPPs ofsix crop sector projects and four each of fisheries and livestock sector projects were reviewed as was indicated in the Inception Report.To assess the present status of project operation, qualitative data was collected through Key Informant Interview (KII) of high officials directly involved in project operations (Project Directors and M&E personnel) of selected projects to analyze the strengths, opportunities and weaknesses of operation of development projects under crop, fisheries and livestock sectors and the observations are incorporated in the report.

The Log frame based narrative summary (NS) and objectively verifiable indicators (OVI) of each selected project was analyzed in terms of project's goal/impact, outcomes, outputs and activities to identify generic M&E indicators of crop, fisheries and livestock sector development projects. The review indicated that though projects differed from one another by their objectives and activities,the goalsare more or less similar that focuses on increasing agricultural (crop, livestock and fish) production andfarm (family) income, as well as improvement of livelihood of the target beneficiaries.

The monitoring indicators of development projects primarily depends on the activities pursued to achieve the stated objectives and outcomes of the project and it might differ significantly from one project to another. However, in general, the major areas covered by the identified indicators are: (i) project funding i.e., financial and procurement activities, (ii) Technology development and transfer; (iii) capacity development of target beneficiaries through knowledge and skill development; (iv) institutional capacity building of service provider organizations; and (v) organizational physical facilities and technical capability development; etc.

The purpose/outcome of development/extension projects implemented in crop sector mostly concerns with promotion of modern varieties (MVs) and high value crops (HVCs), promotion of good agricultural practices (GAP) for increasing production and availability of safe food, increasing

productivity in stress environment, promotion of group approach of extension, etc. Quality seed production at seed production farms and farmers' level has been the main purpose of some projects to ensure availability of good quality seed as one of the means to increase crop productivity and that of research projects is generation of new technologies (new varieties, modern cultivation techniques).

The purpose of fisheries sector projectsas observed is to increase fish production and productivity through fish culture interventions; improve effectiveness of technology generation, extension and marketing system; increase export earnings through export of fisheries products.

Similarly, the main purpose of livestock sector projects is profitable livestock production through increasing milk and meat productivity through improved livestock management, disease control as well as improving effectiveness of livestock technology generation, extension and marketing systems.

The interventions targeted in different projects mostly concerns with increasing production and productivity; introduction of new and improved crop varieties/fish species/livestock breeds; improved management practices of crops, fisheries and livestock; capacity development of target beneficiaries; capacity and institutional efficiency enhancement of extension service provider/research organizations, etc.

The designed technical interventions are implementd by using different technology transfer/extension tools. The major tools are: (i) on-farm demonstrations of different types; (ii) technology training of farmer beneficiaries for their knowledge and skill developmentto support adoption of promoted technologies; (iii)capacity development training of personnel of extension and research organizations; (iv)organizing farmers' field days; (v) farm visit and farmers' motivational tours; (vi) upazila and district agricultural fair; workshop/seminar; farmers' group formation, mobilization and development of group's HRD and OD capacity to facilitate group extension activites, etc.

Aside from technical interventions, most of the studied projects has substantial amounts of Civil Works for physical facility development including different types of construction and refurbishment, excavation/re-excavation of pond and water body, sluices/regulators, rubber dam, land development, etc. Besides, there are substantial amount of procurement activities in each project that includes (a) procurement of laboratory and field equipment; (b) vehicles, etc.

In the light of major interventions, the key M&E indicators for developing M&E guidelines were identified for crop, fisheries and livestock sector projects seperately.The M&E guidelines provide elaborate description of activities/interventions along with alarge number of relevant data collection formats and templates to facilitate both quantitative and qualitative monitoring of project activities, outputs and outcomes. Important checklists includes Project Monitoring Checklist at Initial, Mid and Tarminal stages; Checklist for Planning Formal Training; Planning Checklist for a Field Day; Planning Checklist for Motivational Tours; Checklist for Mid Term, Terminal and Impact Evaluation of projects, etc.,

The guidelinesalso includesseparate templates for physical and financial progress monitoring of the project at overall project level as well as individual activity levels in all sectoral projects separately. Elaborate discussion and appropriate templates are provided to capture data/information on quality of implementation of project activities. These templates would also provide inputs for assessing the outcomes of project activities.

The formats for assessing the quality of manpower employed and/or deployed by consultancy firms, as well as procurement of goods, works and services are also furnished in the guideline. Besides large number of monitoring/data collection formats on each of the major M&E indicator of crop, fisheries, and livestock projects, guidelines and templates for evaluation of project investments have been incorporated in the guidelines. The formats and checklists are designed in a simple form so that all stakeholders could use them and collect the required information. The guideline also includesfood security and nutritional status assessment formats.

A third party evaluation system is recommended for recording the outcomes and impact of the project and future productive planning in development activities.Training is recommended for personnel and staff of project to utilize their best performance in project management and implementation. Besides, training on exclusive M&E at home and abroad, is also recommended for personnel of concerned Ministry and IMED engaged with project M&E.

SECTION I : INTRODUCTION

The greater agricultural sector of Bangladesh comprises of Crops, Fisheries and Livestock sub-sectors. Agriculture is the backbone of the economy and shaping the socioeconomic condition of the country as these sectors together contribute to almost 50% of the GDP. Bangladesh has already announced its Mission and Vision 2021 that aims to make Bangladesh a Middle Income Country by 2021. To achieve this goal there is a target of annual real GDP growth rate to rise 8 percent by 2015 and further it to 10 percent by 2021 that will have significant impact on living standard of the population by reducing unemployment and poverty. To attain sustainable food security for ending hunger, ensuring nutrition, and promoting sustainable agriculture as well as meeting the challenges of SDGs, the country must be able to increase agricultural productivity sustainably by about 3.0 - 3.5% annually. This has attracted greater attention of the Government and the Government has made substantial allocation of the annual development budget for the development of greater agriculture sector through undertaking a large number of Development Projects. To realize the intended outcomes and impacts, more focused and intensive quality monitoring of these development projects is imperative.

IMED is the apex body of the Government of the Peoples' Republic of Bangladesh (GoB) to monitor and evaluate the implementation of public sector development projects included in the ADP. Among many other functions, the IMED monitor and evaluate the implementation of development projects in order to enable the Ministries and Executive Agencies to ensure their proper implementation. Besides, an important function of the IMED is to carry out regular field review of development projects to keep itself abreast with the latest progress of projects in the field. It informs the relevant ministries and agencies with the impending problems as well as current problems affecting the progress of projects, for taking remedial actions at their end, so that project's physical and financial progress are accelerated.

1.1 Background

To help improve the quality and comprehensiveness of monitoring and evaluation (M&E) program, the IMED intends to develop comprehensive guidelines for assessing the progress of project implementation and evaluating the generated impacts of development projects carried out under Annual Development program (ADP) of the Government of the Peoples' Republic of Bangladesh. Therefore, the IMED has undertaken the development project entitled "Strengthening M&E Capabilities of IMED (SMECI)" funded by the GOB for developing the said Guidelines on Crop Agriculture, Fisheries and Livestock Sector projects and awarded the work to CRDS. To this effect an agreement has been signed between the Center for Resource Development Studies (CRDS) and Implementation Monitoring and Evaluation (IMED) of Ministry of Planning on 28-11-2018.

To accomplish the assigned task, an Inception Report has been prepared after an initial review of relevant documents. Here the conceptual framework for the study, the key research/evaluation questions and methodology including information on data sources and collection, sampling and key indicators has been set out. The inception report also includes a timeline for the preparation of M&E Guidelines on Crops, Fisheries and Livestock sector projects of ADP and drafts of data collection instruments.

1.2 The Objectives of the Assignment

The main objective of the assignment is to develop a set of monitoring and evaluation (M&E) guidelines covering important areas of Crops, Fisheries and Livestock sector projects that would serve as a project monitoring & evaluation tool for IMED officials.

SECTION II : REVIEW OF LITERATURE

This chapter reviews the literature pertaining to conceptual frameworks, principles and guidelines of monitoring and evaluation (M&E) of development interventions/projects with a view to develop M&E guidelines of development projects in crops, livestock and fisheries sector. It also look into design and operation of project monitoring and evaluation systems as well as to understand what elements are essential to successful M & E and what must be avoided.

2.1 Concept of Monitoring and Evaluation

Monitoring is the continuous collection of data on specified indicators to assess for a development intervention (project, program or policy), its implementation in relation to activity schedules and expenditure of allocated funds, and its progress and achievements in relation to its objectives. While evaluation is the periodic assessment of design, implementation, outcomes and impacts of a development intervention. Evaluation assesses the relevance and achievement of objectives, implementation performance in terms of effectiveness and efficiency, and the nature, distribution and sustainability of impacts. Thus, monitoring and evaluation are different and yet complementary (Casley and Kumar, 1987).

M&E is a process of continual gathering of information and assessment of it in order to determine whether progress is being made towards pre-specified goals and objectives, and to highlight whether there are any unintended (positive or negative) effects from a project and its activities. It is an integral part of the project cycle and of good management practice (FAO, M & E. pdf) for measurement and assessment of performance in order to more effectively manage the outcomes and outputs of development interventions/projects (UNDP, 2002). Monitoring and evaluation of development projects is a powerful means to measure project performance, track progress towards achieving desired goals, and learn and apply lessons learned for improvement of process, outcomes and impacts of development interventions.

2.2 Monitoring and Evaluation System of Development Projects

Project monitoring and evaluation system is made upon a set of interlinked activities that must be undertaken in a coordinated way to plan for M&E, to collect and analyze data, to report information, and to support decision-making and the implementation of improvements. The six key components of a project M&E system are: i) Clear statements of measurable objectives for the project and its components; (ii) A structured set of indicators covering: inputs, process, outputs, outcomes, impact, exogenous factors and cross-cutting factors; iii) Data collection mechanisms capable of recording progress over time, including baselines and a means to compare progress and achievements against targets;iv)Where applicable, building on data collection with an evaluation framework and methodology capable of establishing causation (attribution);v)Clear mechanisms for reporting and use of M&E results in decision making; and vi)Sustainable organizational arrangements for data collection, management, analysis and reporting (FAO, Undated).

The key design principles for project M&E is often guided by the concept of project logic and logical framework analysis. This is usually made explicit in the form of a logical hierarchy of relationships between the various project elements; progress at each level being a precondition for the achievement at the next level. That is, achievement in at one level provides the means for achievement at the next higher level, based on tried and tested processes and established technical relationships, but subject to identified key assumptions and risks. However, the causal relationships that provide the conceptual linkages between the project elements must be established in order to be able to design a sound M&E system. The M&E system and the logical framework underpinning it can also be key to communicating the project strategy to all project implementing partners and

stakeholders in a clear way. In this approach, monitoring and evaluation take place at different levels of the project cycle/narrative summary of log frame hierarchy as shown below (Sera and Beaudry, 2007).

INPUTS:	The financial, human, and material resources used for the development intervention. Ex. Technical Expertise, Equipment, Funds, etc.
ACTIVITIES:	Actions taken or work performed, e.g., Demonstration, Training Workshops conducted, etc.
OUTPUTS:	The products, capital goods, and services that result from a development intervention. Ex. Number of Demonstration conducted, Number of people trained, Number of workshops conducted, etc.
OUTCOMES:	The likely or achieved short-term and medium-term effects or changes of an intervention's outputs. Ex. Increased Yield, Increased skills, New employment opportunities, etc.
IMPACTS	The long-term consequences of the program, may be positive and negative effects. Ex. Improved standard of living

Adapted from www.M&E of World Bank.pdf.

2.3 Monitoring Development Projects

As pointed out earlier, monitoring of development interventions is a continuing function that aims primarily to provide the management and main stakeholders of an ongoing intervention with early indications of progress, or lack thereof, in the achievement of results. An ongoing intervention might be a project, program or other kind of support to an outcome. Monitoring helps organizations track achievements by a regular collection of information to assist timely decision making, ensure accountability, and provide the basis for evaluation and learning. The analysis of information/datahelp track progress against set plans and check compliance to established standard (IFRC, 2011). It involves continuous collection of data on specified indicators to assess for a development intervention (project, program or policy), its implementation in relation to activity schedules and expenditure of allocated funds, and its progress and achievements in relation to its objectives.

A project/program usually monitors a variety of things such as process (activity), compliance, financial, context (situation), beneficiary, organizationaland results, according to specific informational needs. Accordingly, several types of monitoring of development interventions can be recognized (IFRC, 2011). These includes:

Process (activity) monitoringtracks the use of inputs and resources, the progress of activities and the delivery of outputs. It examines how activities are delivered – the efficiency in time and resources. It is often conducted in conjunction with compliance monitoring and feeds into the evaluation of impact;

Compliance monitoring ensures compliance with donor regulations and expected results, grant and contract requirements, local governmental regulations and laws, and ethical standards;

Financial monitoringaccounts for costs by input and activity within predefined categories of expenditure. Generally it is conducted in conjunction with compliance and process monitoring;

Context (situation) monitoring tracks the setting in which the project/program operates, especially as it affects identified risks and assumptions, but also any unexpected considerations;

Beneficiary monitoring tracks beneficiary perceptions of a project/program. It includes beneficiary satisfaction or complaints with the project/program, including their participation, treatment, access to resources and their overall experience of change. Sometimes referred to as beneficiary contact monitoring (BCM);

Organizational monitoring tracks the sustainability, institutional development and capacity building in the project/program and with its partners. It is often done in conjunction with the monitoring processes of the larger, implementing organization; and

Results monitoring tracks effects and impacts. This is where monitoring merges with evaluation to determine if the project/program is on target towards its intended results (outputs, outcomes, impact) and whether there may be any unintended impact (positive or negative) that may arise. It includes the field as well as the larger political, institutional, funding, and policy context that affect the project/program.

It is important to remember that these monitoring types often occur simultaneously aspart of an overall monitoring system.

In the context of ***Project's Log frame objectives***, the key monitoring questions/agenda focuses more on lower-level objectives, such as inputs, activities and (to some extent) outcomes. At ***input*** level, monitoring seek to know if finance, personnel and materials are available on time and in the right quantity and quality. At ***Activity*** level, it seek to understand if the activities being implemented on schedule and within budget, as well as if the activities leading to the expected outputs. While at ***Output*** level, it examines if the outputs leading to the outcomes and how do the beneficiaries feel about the outcomes (IFRC, 2011).

2.3.1 Types of Monitoring

Monitoring is the systematic collection and analysis of information as project progresses. Project activities can be monitored in two ways: a) Desk Monitoring and b) Field Monitoring.

Desk Monitoring: Desk monitoring involves review of financial, physical and technical progress of a project with respect to periodical and annual budget, amount disbursed and expenditure incurred as well as reports produced and submitted by project managers/investigators, etc. Desk Monitoring Format need to be completed by the same members of the monitoring team who subsequently may conduct field monitoring of the project activities in order to see the relationship between the reported information and what actually happens in the field in reality.

Field Monitoring: Regular Internal field monitoring at an interval of 5-6 months, preferably during the peak season where applicable primarily by project professionals (M&E Officers). During field monitoring of projects, firsthand information/data is obtained by reviewing the record books, visiting the experimental or study sites, interviewing/consulting the accounting record keeper, scientific staff, investigators and the intended beneficiaries. During the field visits, information is collected using a given format. During field monitoring, some key environmental issues need to be monitored also by using a prescribed format. Often project monitoring is also carried out by an independent M&E team, at least once during the project implementation period.

2.4 Results-based Management (RBM) Approach of Monitoring and Evaluation

Results-based Management is an approach to project/program management based on clearly defined results, and the methodologies and tools to measure and achieve them. RBM supports better performance and greater accountability by applying a clear logical framework to plan, manage and measure an intervention with a focus on the results to be achieved. By identifying in advance

the intended results of a project/program and how to measure their progress, manage a project/program and determine whether a difference has genuinely been made for the people concerned.

Monitoring and evaluation (M&E) is a critical part of RBM and it forms the basis for clear and accurate reporting on the results achieved by an intervention (project or program) making reporting an opportunity for critical analysis and organizational learning, informing decision-making and impact assessment. Monitoring of development interventions is practically a Results-based Management (RBM) approach to project/program based on clearly defined results, and the methodologies and tools to measure and achieve them (IFRC, 2011, WB, 2004, UNDP, 2002). RBM supports better performance and greater accountability by applying a clear logical framework to plan, manage and measure an intervention with a focus on the expected/planned results (PDO). The RBM approach relies on continuous collecting and analyzing information on key indicators, and comparing actual results to the expected results.

Results-based evaluation is an assessment of a planned, ongoing, or completed intervention to determine its relevance, efficiency, and effectiveness. In most cases, an M&E system refers to all the indicators, tools and processes that are used to measure if a program has been implemented according to the plan and is having the desired result. At the program level, the purpose of monitoring and evaluation is to track implementation and outputs systematically, and measure the effectiveness of program. It helps to determine exactly when a program is on track and when changes may be needed. On the other hand, the outcome monitoring is the periodic measurement of the knowledge, behaviors, or practices that a program or intervention intends to change.

2.5 Evaluation of Development Projects

Evaluation is “an assessment, as systematic and objective as possible, of an ongoing or completed intervention, project, program or policy, its design, implementation and results. Evaluation aims to determine the relevance and fulfilment of objectives, developmental efficiency, effectiveness, impact and sustainability (IFRC, 2011). Evaluations involve identifying and reflecting upon the effects of what has been done, and judging their worth to provide opportunity for stakeholders to learn from the experience and improve future interventions.

Evaluation is a selective exercise that attempts systematically and objectively assess progress of development interventions towards achievement of an outcome. Evaluation is not a one-time event, but an exercise involving assessments of differing scope and depth carried out at several points in time in response to evolving needs for evaluative knowledge and learning during the effort to achieve an outcome. All evaluations assess relevance, performance and other criteria linked to outcomes as opposed to only implementation or immediate outputs. It compares actual project outcome/ achievement/ impact against the planned target. It can be formative (taking place during the life of a project with the intention of improving the way of functioning of the project) or summative (drawing learning from a completed project that is no longer functioning). It helps to find out the success or failure of a project with possible causes.

2.5.1 Strategic Questions of Evaluation of Development Projects

The key evaluation questions as they relate to the log frame’s objectives, focuses more on how things was performed and what difference has been made. At ***input*** level, it examines the efficiency of timely use of the stocks of items available in right quantities and quality; were the activities implemented on schedule and within budget, and outputs delivered economically. At ***Activities*** level, the **effectiveness** of achieved operation’s objectives and the outputs leading to the intended outcomes is evaluated. It also evaluates the **relevance** of operation’s objectives consistency with

beneficiaries' needs. At ***Outcomes*** level, the **impact** or the changes accrued by the project as well as any unplanned or unintended changes due to project intervention is evaluated (IFRC, 2011). At this stage, the sustainability issues for an extended period after ending the intervention period are also observed.

2.5.2 Types of Evaluation

There is a range of evaluation types and categorized broadly as (i) According to evaluation timing, (ii) According to who conducts the evaluation, and (iii) According to evaluation technicality or methodology. Evaluation categories and types are, however, not mutually exclusive and often used in combination (IFRC, 2011).

2.5.2.1 Evaluation Types According to Evaluation Timing

There are five sub-types of evaluation according to evaluation timing. These are: (i) *Formative evaluations* occurring during project/program implementation to improve performance and assess compliance. (ii) *Summative evaluations* occurring at the end of project/program implementation to assess effectiveness and impact) (iii) *Midterm evaluations* (are formative in purpose and occur midway through implementation (iv) *Final evaluations* are summative in purpose and are conducted (often externally) at the completion of project/program implementation to assess how well the project/ program achieved its intended objectives). (v) *Ex-post evaluations* conducted after implementation to assess long-term impact and sustainability.

2.5.2.2 Evaluation Types According to Who Conducts Evaluation

There are four sub-types of this category of evaluation. These includes: (i) *Internal or self-evaluations* usually conducted by those responsible for implementing a project/program. They are less expensive than external evaluations but may lack credibility as they are perceived as more subjective (biased or one-sided). (ii) *External or independent evaluations* conducted by evaluator(s) outside of the implementing team, lending it a degree of objectivity and often technical expertise. These tend to focus on accountability.(iii) *Participatory evaluations*- conducted with the beneficiaries and other key stakeholders, and can be empowering, building their capacity, ownership and support (iv) Joint evaluations- conducted collaboratively by more than one implementing partner, and can help build consensus at different levels, credibility and joint support.

2.5.2.3 Evaluation Types According to Evaluation Technicality or Methodology

There are five sub-types of this category of evaluation. (i) *Real-time evaluations (RTEs)*- are undertaken during project/program implementation to provide immediate feedback for modifications to improve ongoing implementation. Emphasis is on immediate lesson learning over impact evaluation or accountability. (ii) *Meta-evaluations*- it assess the evaluation process itself. It take inventory of evaluations to inform the selection of future evaluations; combine evaluation results; check compliance with evaluation policy and good practices; assess how well evaluations are disseminated and utilized for organizational learning and change, etc. (iii) *Thematic evaluations*- focus on one theme, such as gender or environment, typically across a number of projects, programs or the whole organization (iv) *Cluster/sector evaluations*- itfocus on a set of related activities, projects or programs, typically across sites and implemented by multiple organizations (e.g. National Societies, the United Nations and NGOs) and (v) *Impact evaluations*- focuses on the effect of a project/program, rather than on its management and delivery. Therefore, they typically occur after project/program completion during a final evaluation or an ex-post evaluation. However, impact may be measured during project/program implementation in longer projects/programs and when feasible.

2.6 M&E Standards and Ethics

M&E involves collecting, analyzing and communicating information about people – therefore, *it is especially important that M&E is conducted in an ethical and legal manner, with particular regard for the welfare of those involved in and affected by it.* The following is a list of key standards and practices for ethical and accountable M&E:

- M&E should respect the customs, culture and dignity of human subjects – this is consistent with the fifth Code of Conduct, as well as the United Nations' Universal Declaration of Human Rights. This includes differences due to religion, gender, disability, age, sexual orientation and ethnicity. Cultural sensitivity is especially important when collecting data on sensitive topics from vulnerable and marginalized groups.
- M&E practices should uphold the principle of "do no harm". Data collectors and those disseminating M&E reports should be respectful that certain information can endanger or embarrass respondents. "Under this circumstance, evaluators should seek to maximize the benefits and reduce any unnecessary harm that might occur, provided this will not compromise the integrity of the evaluation findings" (American Evaluation Association 2004). Participants in data collection have the legal and ethical responsibility to report any evidence of criminal activity or wrongdoing that may harm others.
- When feasible and appropriate, M&E should be participatory. Local involvement supports to involve beneficiaries and build local capacities. Stakeholder consultation and involvement in M&E increases the legitimacy and utility of M&E information, as well as overall cooperation and support for and ownership of the process.
- An M&E system should ensure that stakeholders can provide comment and voice any complaints about the project's work. This also includes a process for reviewing and responding concerns/grievances.

2.7 Reporting

Reporting is an integral part of monitoring and evaluation. Reporting is the systematic and timely provision of essential information at periodic intervals (UNDP, 2002). Reporting is the most visible part of the M&E system, where collected and analyzed data is presented as information for key stakeholders to use. Reporting is a critical part of M&E because no matter how well data may be collected and analyzed, if it is not well presented it cannot be well used-which can be a considerable waste of valuable time, resources and personnel. Reporting can be costly in both time and resources and should not become an end in itself, but serve a well-planned purpose.

2.7.1 Criteria of Good Reporting

To help ensure its usability, the M&E reports should be:.

1) Relevant and useful. Reporting should serve a specific purpose/use. Avoid excessive, unnecessary reporting – information overload is costly and can burden information flow and the potential of using other more relevant information.
2) Timely. Reporting should be timely for its intended use. Information is of little value if it is too late or infrequent for its intended purpose.
3) Complete. Reporting should provide a sufficient amount of information for its intended use. It is especially important that reporting content includes any specific reporting requirements.
4) Reliable. Reporting should provide an accurate representation of the facts.
5) Simple and user-friendly. Reporting should be appropriate for its intended audience. The language and reporting format used should be clear, concise and easy to understand.

6) Consistent. Reporting should adopt units and formats that allow comparison over time, enabling progress to be tracked against indicators, targets and other agreed-upon milestones.

7) Cost-effective. Reporting should warrant the time and resources devoted to it, balanced against its relevance and use.

There may be different types of M&E reports, such as *Project management reports*- it includes Evaluation reports; Program updates; Mid-year and Annual reports; Operational updates; Donor-specific reports; Situation reports, e.g. FACT reports, information bulletin, security updates, etc. *Activity/event reports:* Memos; Pictures/videos; Brochure, pamphlets, handouts, posters; Newsletters, bulletins, etc. *Professional performance reports* and *Public communication*- Press releases, Public presentations, Success stories, Case studies, Popular publications, Scientific publications in a referred article, paper or book, etc.

Aside from concept, principles and practices of M&E of development projects, the PPs/DPPs of selected projects, the existing project monitoring and evaluation forms (IMED 01/2003 (Revised), IMED 02/2003 (Revised), IMED 03/2003 (Revised), IMED 04/2003 (Revised), IMED 05/2003 (Revised), *c‡R± gwbUwis QK, 2008-09 A_eQ‡ii GWwcf-3 cK‡íi (µq msµvš AMMwZ, e¨qe×. e¨wZ‡i‡K cK‡íi ‡gqv` e×.i c¯ve)*were also reviewed. In addition, the present status of operation of development projects in crop, fisheries and livestock sectors was assessed.

SECTION III : EXISTING PROJECT OPERATION SYSTEMS IN CROP, FISHERIES AND LIVESTOCK SECTOR

3.1 Assessment of status of Porject Operation

To investigate and assess the present status of field operations and monitoring activities, a Key Informant Interview of respective Project Directors and/or Monitoring Personnel of the selected projects under present study was carried out. The study revealed the following observations:

A. Project Goal and Objectives

- All agriculture development project's goal as reported is poverty alleviation and enhancing farm income through adoption of new and improved technologies;
- The reported objectives of major interventions of crop sector projects has been achieving food and nutrition security of the country;
- Umbrella projects like NATP targeted overall agricultural development of the country as a package deal and supporting technology generation, technology transfer, production of safe food (by practicing GAP), value chain and marketing.
- Quality seed production using farmer's resources targeted in some of the projects.

B. Project Implementation Process

- The time gap from DPP approval to start of project activities was reported to be quite significant in donor assisted projects, while it is very minimal in GoB funded projects;
- Baseline survey is delayed in large donor supported projects due to very lengthy process (e.g., in NATP-2) while in GoB funded projects, baseline survey was reported to be done more or less on time. In several projects baseline survey was not done or there was no provision for conducting baseline survey;
- Recruitment of project staff and experts/specialists was done as per project provision but is generally delayed, but on time in some cases;
- Annual work plan was reported to be prepared on time in all projects;
- None reported any problem on fund availability and in smooth financial operation.

C. Monitoring and Evaluation Process

- Monitoring framework and monitoring set-up, as reported, was well designed and staffed with qualified personnel in most donor-supported projects (e.g., NATP, SCDP, SAIP, etc.). However, in GoB funded smaller projects, the monitoring framework and monitoring set-up is not reported;
- Either most of the implementing organizations except DAE, DOF, DLS, BRRI and BARI do not have institutional M&E set-up or set-up is not adequate in terms of availability of qualified personnel. In absence M&E set-up, the responsibility of M&E activities rests on the concerned Project Directors;
- It was reported that IMED officials monitored the project activities 1-3 times in a year;
- All most all projects prepared 2-3 M & E reports annually and transmitted onwards;

D. Constraints of Project Operation

- Delayed start of donor supported projects constrained completion of project activities within stipulated time schedule;
- Delayed mobilization of core human resources affected the implementation of field activities of some projects;

- Inadequate human resources at field level affected timely implementation of project activities in some cases;
- Delayed recruitment of procurement consultant affected completion of targeted procurement following all rules and regulations of GoB and donor in some donor supported large projects;
- Field implementation was not affected in GoB funded smaller projects as there was no provision of technical assistance support.

E. Major Challenges Faced

- Delayed start of project implementation also delays timely completion of the project activities. This necessitates extension of project completion time through a cumbersome process;
- Timely availability of core project staff often delays implementation of field activities and other essential aspects of project implementation including monitoring output, outcomes and impacts;
- Transfer of key staff including project director informed as number one challenge for implementation of both donor and GoB supported projects;
- Shortage of M&E manpower was reported as a major challenge in some of the larger projects;
- Development and maintenance of retrievable database regarding project's inputs, outputs, outcomes and impacts is hampered due to absence and/or inadequate MIS software/ personnel;
- Inadequacy of proper training and unavailability of appropriate equipment of field level personnel hampers proper record keeping of project activities.
- Project's outcome and impact is often confounded with non-project factors and/or influence of interventions of other projects due to lack and/or delay in conducting baseline survey.

F. Sustainability issues of Technologies Promoted by the Projects

- In addition to project supported extension activities, preparation and distribution booklet/leaflets of demonstrated technologies at field level has been the main effort made to disseminate technologies/lesson learned among stakeholders and beneficiaries;
- For sustainability of project outcome and impacts, capacity development of extension personnel and institutionalization of project activities after completion of projects in departmental core program is considered.

3.2 Assessment of Current M&E Format of IMED

To identify the adequacy and weakness of current M&E formats used by IMED (available at www.imed.gov.bd) were studied. There are 8 form/formats altogether. These are: IMED 01/2003 (Revised), IMED 02/2003 (Revised), IMED 03/2003 (Revised), IMED 04/2003 (Revised), IMED 05/2003 (Revised), *c‡R± gwbUwis QK, 2008-09 A_eQ‡ii GWwcf³ cK‡íi (µq msµvš AMMwZ, e¨qew×.e¨wZ‡i‡K cK‡íi ‡gqv` ew×.i c¯ve)|*

It was observed that the form IMED 01/2003 (revised) is a project identification form containing primary project information (Part-A), project approval (Part-B), project cost (Part-C) and Project Director's Profile (Part-D). The format IMED 02/2003 (revised) concerns with Component-wise physical and financial target (Part-A) and Upazila-wise target of current year and progress of last year (Part-B). IMED 03/2003 (Revised) concerns with quarterly financial progress report (Part-A) and Quarterly component-wise progress (Part-B), implementation problems and suggested measures (Part-C) and Contract implementation report (Part-D). The form IMED 04/2003 (revised) is PCR format concerning with project description (Part-A), implementation position (Part-B), financial and physical program (Part-C), achievement of objectives of the project (Part-D), Benefit analysis (Part-E), monitoring and auditing (Part-F), and descriptive report (Part-G). Project

Monitoring Form (*c‡R± gwbUwis QK)* deals with basic information of the project (part-A), progress of project implementation (Part-B) and observation on project inspection (*cKí cwi`kb msµvš ch‡e¶Y).*

3.2.1 Weaknesses of Current M&E format of IMED

The existing monitoring forms/formats focusses mainly on physical and financial targets and progress on quantitative basis. However, the development projects at recent times, particularly in wider agriculture sector, attaches equal importance on qualitative aspects as part of compliance;

1. The quarterly and annual progress monitoring forms focusses more on inputs and activities rather than outputs and outcomes. Provision should be made to accommodate both qualitative and quantitative aspects of output and outcome;
2. The existing M&E form/formats are largely generic. It should be aligned (at least to some extent) with the goals and objectives of the project;
3. In the existing formats, there is no provision for tracking on-going activities both in terms of quantitative (physical) and qualitative aspects of achievable targets and objectives of the projects;
4. M&E formats for periodic project review should be included;
5. With the changes of focus of agriculture sector projects from subsistence to commercial agriculture and added emphasis on climate change adaptations, etc. the project monitoring formats should incorporate appropriate indicators.

3.3 Time and Cost Overrun in Development Projects

Time and cost overrun and changes of scope are inherent issues in most development projectsdespite the much acquired knowledge in project management. *Time overrun* is the phenomenon in which the project gets delayed beyond its planned completion time due to certain difficulties i.e. more time is required to finish the project than initially planned. *Cost overrun* is the phenomenon in which the client/contractor has to spend more money for the completion of the project than that originally estimated i.e. the project goes over budget. If the contractor does not have proper technical knowledge of the jobs, cost overrun is possible.

It is important to note that physical and economic scale of projects today is such that it is driven under the platform of benefits and national interests by the degree of success defined within the Iron triangle of cost, time, and scope. Some of the reasons of time and cost overrun and scope in project and Methods to control is shown below:

Causes of Time Overrun	Causes Cost Overrun	Project Scope & External Factors	Methods to control Overruns
Project design are not proper	Time over run leads to cost increase	External factors such as new and un-skilled vendors	Identification of the overrun
Organizational weakness, lack of committed and capable human resources	Organizational weakness, lack of committed and capable human resources		Right sizing and capacity building of the project team
Frequent transfer of key project personnel	Frequent transfer of key project personnel		Key personnel should be retained in the project till the end
Lack of skill resourceful contractors, deficient	Lack of skilled labor and availably of labor during	Condition imposed on source of	Procurement cost control

Causes of Time Overrun	Causes Cost Overrun	Project Scope & External Factors	Methods to control Overruns
contract management	vacation & harvesting period	goods/services	
Change of project scope/design at middle stage	Increasing cost of goods and services over time. This is more significant in long duration projects.	Lack of clarification of the Specification, external influence and intervention	Optimum utilization of resources
Lack of project management during execution	Sometimes interruption of syndicates	Project resourcing pattern changes (supply and demand)	Increase the speed of implementation activity
Inadequate monitoring particularly in the field level	Deficient Institutional structure	Nature of demands/ requirement shifted	.
Delay on decision making	Improper management and wastage of available resources	Requirements are not aligned with project scope	Reduction in wastage
Natural calamities and disaster	Un-realistic cost estimate often cause cost overrun. Lack of co-ordination. Lack of Contingency plan		Improvement in the method (CPM) and approaches
Extra work has to be carried out.	Slow progress increase cost due to price escalation		
Wrong or faulty initial planning.	Adverse weather conditions and natural calamities can damage to existing work, leading to rework and increase		

SECTION IV: METHODOLOGY

The study primarily included desk investigation and secondarily key informant interview of relevant officials to identify indicators for monitoring and evaluation of public sector development projects under crop, fisheries and livestock sectors. For successful completion and fulfilment of the requirements of the assignment, six development projects from crop sector, four from fisheries and four from livestock sectors wasselectedand reviewed (**Table-4.1**). Among the projects studied included one research project from each of crop and fisheries sectors and two from livestock sector. Primarily the on-going projects listed in the Annual Development Plan (2018-19) of the Government of the Peoples' Republic of Bangladesh (GoB)wasselected for the study. However, one project on seed production and two completed projects were included according to the suggestion of the Steering Committee following presentation of Inception Report in a meeting at IMED.

Table-4.1: List of Development/Extension Projects Reviewed Crop, Fisheries and Livestock Sector

Sl #	Projects Studied	Organization	Status
Crop SectorProjects			
1.	National Agricultural Technology Program-2nd Phase (NATP-2) (DAE Part).	DAE	On-going
2.	Second Crop Diversification Project (SCDP) DAE 2010-2017	DAE	Completed
3.	Smallholder Agriculture Improvement Project (DAE) 2001 - 2008	DAE	Completed
4.	Quality Seed Production, Distribution &Farmer's Training for Crop Production.	BMDA	On-going
5.	Production and Development of High Quality seed of Rice, wheat and maize.	BADC	On-going
6.	Strengthening Research on Horticultural Crops and Dissemination Horticulturaland Field Crop Technologies at Charland Areas	BARI	On-going
Fisheries Sector Projects			
7.	National Agricultural Technology Program-2nd Phase (NATP-2) (DoF Part).	DoF	On-going
8.	Enhancement of Fish Production Through Restoration of Water bodies Project.	DoF	On-going
9.	Culture of Cuchia and Crab in the Selected Areas of Bangladesh and Research Project (Component-A: DoF)	DoF	On-going
10.	Development and Dissemination of Pearl Culture Technology.	BFRI	On-going
Livestock Sector Projects			
10.	National Agricultural Technology Program-2nd Phase (NATP-2) (Department of Livestock Part).	DLS	On-going
11.	South-West Region Livestock Development Project.	DLS	On-going
12	Dairy Development Research	BLRI	On-going
13	Research on Foot and Mouth Disease (FMD) and Peste Des Petits Ruminants PPR in Bangladesh.	BLRI	On-going

4.1 Collection of PPs/DPPs of Selected Projects and other Relevant Documents

With the support of the client, the concerned personnel of implementing agencies of selected projects were contacted andthe objectives of the study was discussed and explained the need of their cooperation in order to help develop M&E guidelines and templates for effective monitoring and evaluation of Development Projects in crop, fisheries and livestock sectors. The consultants collected relevant project documents (PPs/DPPs, various reports, relevant monitoring formats as well as other relevant documents and information. The existing M&E guidelines and other relevant documents of various international organizations (FAO, UNDP, IFAD, ADB, WB, etc.) as well as other publications were collected/ downloaded by searching internet.

4.2 Review of PP/DPPs of Sampled Projects

Log frame based narrative summary (NS) and objectively verifiable indicators (OVI) of each selected project was reviewed in terms of project's goal/impact, outcomes, outputs and activities to identify generic M&E indicators of crop, fisheries and livestock sector development projects. The NSs and OVIs of all reviewed projects was summarized and a common set of monitoring indicators was identified against project goal/impact, outcomes, outputs and activities for crop, fisheries and livestock sectors.Besides, the existing monitoring and evaluation framework and other relevant aspects of all projects wasassessed through Key Informant Interview (KII)of respective Project Directors and/or M&E personnel.

During the review ofPPs/DPPs, it was observed that most of the development projects in crop, fisheries and livestock sector has substantial amount civil work component. Accordingly, all items of civil work component was identified each project and a separate of summary tableof log frame based narrative summary and objectively verifiable indicators for civil works component has been developed.

4.3 Review of M&E Processes and Guidelines of Different Organizations and Projects

The monitoring and evaluation concepts, processes and guidelines depend on the requirements of respective projects/organizations and it may differ from one another to some extent. Accordingly, the M&E processes and guidelines of various international organizations (ADB, WB, IFAD, FAO, UNDP, JICA, IFRC, etc.)as well as different projects (implemented in Bangladesh and elsewhere) has been collected and reviewed. The review findings have presented separately in "Review of Literature" chapter as well as cited in the text. The review findings and observations has been taken in to account to help develop the contents of M&E indicators, guidelines and templates for the current assignment.

4.4 Review of Log Frames of Selected Projects

To identify the project interventions/activities as well as M&E indicators, the project's log frames were studied. The log frame of development project uses a 4x4 matrix format. The project impact (Project Goal), outcome (Project Purpose), output and input (Activity) are shown in rows while narrative summary (NS), objectively verifiable indicator (OVI), means of verification (MV) and important assumptions (IA) are shown in columns. To identify important interventions and indicators, the NSs and OVIs of the log frames of individual project is summarized (collated). For convenience, other two columns (MVs and IAs) are not included in the summary tables. Hence, the 1st column of the summary log frame shows narrative summary that elaborates each of the steps (goal, outcome, output and input) while the 2nd column describes project interventions and indicators under those steps.

In the crop sector component, the log frames of five extension/technology transfer projects and one research project was studied and the Narrative Summary and Objectively Verifiable Indicators are collated.The summary of the project goals/impacts, project purpose/outcome, project outputs and project inputs is discussed below:

Project Goal/Impact: In-depth study of the narrative summary and verifiable indicators of selected crop development/extension projects revealed that achieving food and nutrition security of the vast population of the country and poverty alleviation through increased crop production and productivity is the major goal of the projects.

Project Purpose (Outcome): The purpose/outcome of development/extension projects implemented by agencies like DAE, BADC and BMDA mostly concerns with promotion of modern varieties (MVs) and high value crops (HVCs) promotion of good agricultural practices (GAP) for increasing production and availability of safe food, increasing productivity in stress environment, promotion of group approach ofextension, etc. Quality seed production at seed production farm and farmers' level has been the main purpose of some projects to ensure availability of good quality seed as one of the means to increase crop productivity. While the main purpose of research projects is generation of new technologies (new varieties, modern cultivation techniques).

Project Output: The outputs are the results of inputs/activities of the project. It is the tangible achievements of activities. As such, outputs are the products of inputs of the development projects. Thusthe indicators of outputs are more or less similar to that of input. When input is provided (set in the field, collected or purchased), it is seen as outputs (e.g., when X number of demonstrations are set in the field, the output would be X number of demonstrations are conducted).

Project Input: It may be monetary input (cash resources) or material input (physical resources, skilled human resources, etc.). In case of technology transfer projects, demonstration of product/technologies; skill development training for target beneficiaries (farmers)and staff of project implementing organizations; other extension activities such as organizing agricultural fair, motivational tours, farmers' field days, workshop/seminar; quality seed production, etc. has been identified/determined according to the project development objectives (PDOs) of each project. The relevant M&E indicators and monitoring templates of crop-sector project activities and outcomes are described in subsequent sections.

4.5 Assessment of Interventions and M&E Indicators of Crop Sector Projects

To identify the project interventions and M&E indicators, the log frames of selected development projects were reviewed. The review indicated that though projects differed from one another by their objectives and activities but the goal was more or less similar that focuses on increasing agricultural (crop, livestock fish) production and farm (family) income.

The interventions targeted in different projects are mostly concerned with increasing production and productivity; introduction of new and improved crop varieties/fish species/livestock breeds; improved management practices of crops, fisheries and livestock; capacity development of target beneficiaries; capacity and institutional efficiency enhancement of extension service provider/research organizations, etc.

Targeted interventions are being made by using different extension/technology transfer tools and techniques. The major tools and techniques includes a) on-farm demonstrations of different types; b) technology training of beneficiary for knowledge and skill development; c) capacity development training of personnel of extension service provider and research organizations; d) farmers' field days; e) farm visit (motivational tour); f) technology fair; g) workshop/seminar; h) farmers' group formation, mobilization and development of group's HRD and OD capacity, etc. The following sections summarizes the major indicators of monitoring and evaluation of development project in crop, fisheries and livestock sectors.

Aside from technical interventions, most of these projects has substantial amounts of Civil Works components for physical facility development. The Civil Works component included a) construction and refurbishment of building (office and laboratory); b) construction of road, boundary walls and fish landing station; c) external electrification; d) re-excavation of water body; d) construction of culverts; e) procurement of laboratory and field equipment; f) construction of hatchery and bio-gas

digester; g) construction of water tank and installation of water distribution line; h) Installation of pipe irrigation system; i) construction of sluices/regulator, rubber dam and different types of shed; and j) land development.

4.6 Identification of Monitoring Indicators of Selected Projects

The DPPs of all selected projects were collected from the respective Agencies/Departments. The DPPs were thoroughly reviewed to identify the indicators used in achieving the objectives of agricultural development projects. The monitoring indicators of development projects primarily depends on the activities pursued to achieve the stated objectives and outcomes of the project and it might differ significantly from one project to another. However, for the present assignment, the monitoring indicators for crop, fisheries and livestock sector projects have been identified on the basis of collated narrative summary and objectively verifiable indicators in the log frames of all projects under each sector. The major areas covered by the identified indicators are: (i) project funding i.e., financial and procurement activities, (ii) Technology development and transfer; (iii) capacity development of target beneficiaries through knowledge and skill development; (iv) institutional capacity building of service provider organizations; and (v) organizational physical facilities and technical capability development; etc. Besides, the study made KII exercises mostly with the Project Directors of several on-going and completed projects to investigate the status of field operations of those projects. The results of KII used in designing the various kinds of monitoring formats.

4.7 Assessing Strengths and Limitations/Weaknesses of Reviewed Projects

Assessing weaknesses and limitations of monitoring and evaluation of selected projects is critical to develop a comprehensive M&E guideline of development projects. The limitations and weaknesses of monitoring and evaluation of development projects in crop, fisheries and livestock sector was assessed through evaluating the time taken in establishing project implementation and monitoring set-up, deployment of properly trained human resources for M&E activities, existing M&E framework and monitoring arrangement of each project. These observations and findings was substantiated by the comments and observations of Key Informant Interview of respective project directors and/or M&E personnel and that of Focused Group Discussion (FGD) with policy level (IMED and Ministry) M&E personnel.

SECTION V: CROP AGRICULTURE SECTOR PROJECTS

5.1 Overview of Crop Agriculture Sector

Bangladesh economy draws its main strength from agriculture sector. As of Fiscal Year 2015, the sector contributes 8.8% to GDP and employs about 50.28% of the labor force. Despite increase in the shares of fisheries, livestock, and forestry, crop sub-sector alone accounts for over 60% share of agricultural GDP (GED, 2015). Despite a declining trend in GDP contribution in Crop agriculture, growth in agriculture has accelerated from less than 2.0% per year during the first two decades after independence to around 3.0% during the last decade (FY2000-FY2010). Sound agricultural performance of the past decade has contributed greatly in raising farm incomes and increasing real agricultural wages, thereby contributing to rural poverty reduction.

This steady growth in crop agriculture along with a strong thrust in staple food production has enabled Bangladesh to achieve near self-sufficiency in cereal production. To attain sustainable food security for ending hunger, ensuring nutrition, and promoting sustainable agriculture as well as meeting other challenges of SDGs, the country must be able to increase agricultural productivity sustainably by about 3.0 - 3.5% annually.

5.1.1 Constraints of Crop Agriculture Sector

Crop agriculture in Bangladesh is constrained by a number of challenges every year. Major challenges include Loss of Arable Land; Population Growth; Climate Changes Adversities; Inadequate Crop Management Practices (Fertilizer, Water, and Pests & Diseases); Lack of Quality Seeds; and Inadequate Credit Support to Farmers, Unfair Price of Produces, and Insufficient Investment in Research and Technology Transfer capacity development.

In Bangladesh, about 80,000 ha of arable land are going out of production every year for alternate uses. The loss is alarming and needs to be addressed immediately. Continued population growth poses another great threat to crop productivity. The twin problem of arable land loss and population growth needs to be addressed simultaneously to ensure sustainable crop production. Besides, crop agriculture in Bangladesh has become regularly vulnerable to the hazards of climate change–flood, drought, and salinity in particular. In addition, poor management practices, especially those of fertilizer, water and irrigation, pests and diseases also stands as significant hurdle for sustaining higher rate crop productivity for sustainable food security.

5.1.2 Challenges

The major issues and challenges facing Crop Agriculture sub-sector are maintaining food security by raising productivity, profitability and higher growth in crop sector. These are needs to come from increasing agriculture-product diversification and consumption for improving nutrition; increasing resource use efficiency and judicious use of agricultural inputs; promoting science-led agricultural technology systems and dissemination of improved technology; reducing loss of arable land; minimizing yield gap; production, distribution and preservation of quality seeds; shifting where feasible to higher-value crops for commercialization including increasing quality horticultural crop production; reducing instability and production costs; popularizing of good agricultural and IPM practices; linking farm-produces with market so as to overcome the issue of low price of products at farm level, facilitating increased private investments in agriculture and agro-processing value chains alongside public investments, and more public private partnerships; ensuring safety and quality agro-produces; expanding irrigation and farm mechanization with appropriate technology.

5.1.3 Policies and Strategies to Overcome Challenges

The strategies to overcome challenges facing crop agriculture sector during 7th FYP will be to accelerate the process of transformation from already existing semi-subsistence farming to commercialization of agriculture. This will require achieving productivity gains, diversification and value addition commensurate with national environmental protection and climate change adaptation strategies. Encouraging agricultural growth will require various policy changes/ adjustments ranging from applying new technology and extension services to providing credit to small farmers. All out support will be provided to yield gap minimization, expansion of irrigation facilities, quality seed production & distribution, Good Agricultural Practices (GAP), farm mechanization, and quality horticultural crop production.

5.1.4 Identified Monitoring and Evaluation Indicators of Crop Sector Projects

Activity Level M&E Indicators

- Conduction of crop technology demonstrations
- Conduction of validation trials of new crop production technologies;
- Conduction of farmer field days at demo and validation trial sites;
- Establishing fruit orchards at farm level;
- Conduction of adaptive/validation trials of new crop technologies;
- Conduction of seed production demonstrations;
- Conduction of skill development training of farmers on interventions;
- Conduction ToT courses for extension personnel/staff on modern crop production and nursery management technologies;
- Implementation of HRD Training (Short-term training, study visit, degree programs);
- Organizing farmers'/ SAAO's Motivational Tours;
- Holding agricultural fairs;
- Formation, mobilization farmer groups and group extension of crop technologies achieved;
- Initiating implementation of GAP in crop production;
- Organizing project review workshops/seminar/ consultation meetings;
- Mid-term and project completion survey conducted
- Rehabilitation of DAE's offices and HDTCs
- Implementing Technology Adoption Sub-projects (matching grants support);
- Supporting Value Chain and marketing sub-projects
- Supporting seed production facilities/infrastructures development of BADC;
- Civil works (Construction/Renovation/Refurbishment/Installation, etc.);
- Various procurement (Field and Lab equipment/Vehicles/Training and ICT equipment, etc.).

5.2 Monitoring and Evaluation of Crop Sector Development Project Activities

As discussed earlier, monitoring is periodic tracking (for example, daily, weekly, monthly, quarterly, and annually) of progress of project activities by systematically gathering and analyzing data and information to track changes in program outputs and performance over time. It helps management and stakeholders to make informed decisions regarding the effectiveness of programs and the efficient use of resources. In monitoring and evaluation of development projects in agriculture sector, different types of monitoring could be done including a)Process Monitoring (Real Time Monitoring), b)Progress Tracking, c)Progress Validation and d)Performance Monitoring.

5.2.1 Process monitoring

Projects are mainly designed and funded to achieve desired outcomes. Assessing those outcomes and changes are the key functions of M&E Unit. 'Value for Money' of a project is assessed through assessment of performance indicators.Process monitoring is a key component of any M&E system of agriculture development projects. It informs management/donor about the actual status of implementation of project activities in the field. At the same time process monitoring let the project staff on the ground know how well they implements the project and what improvement they can bring to the work they are doing in field. In Process Monitoring, checklists and guidelines developed jointly with project staff are used. The following checklists may be used for tracking performance of the project at different stages:

A: Checklist for Project Monitoring: Initial/early stage

- Appointment of project director, if appointed when
- Establishment of office of the project, if set when
- Manpower mobilization as per project provision
    - departmental staff, if done when
    - Project staff, if done when
- Project inception workshop organized or not
- Recruitment of consultant/consulting firm done or not
- Preparation of annual work plan and budget done or not
- Status of baseline survey planning/commissioning
- Status mobilization outreach sites (district/Upazila)
- Progress of procurement process of civil works/equipment/ machineries vehicles, etc. as per project provision (preparation RFQ/Tender documents, etc.)
- Status of targeting and mobilization of target beneficiaries
- Progress of implementation of technical interventions (e.g. demonstration, beneficiary training, training of trainers and other extension activities)

B: Checklist for Project Monitoring: Mid stage

- Progress of overall physical and financial progress of the project
- Progress in recruiting manpower (as per DPP; number and quality)
- Progress in deploying of consulting firm/consultants
- Progress in setting extension tools
    - Field demonstration
    - Field days
    - Motivational tours
    - Upazila and district agricultural fairs
    - Review workshops, etc.
- Initial and intermediate outcomes of technical interventions
- Progress in imparting training

- Training of Trainers
- Skill development Training of departmental staff
- Beneficiary training

- Status of commissioning/completion of Baseline Survey
- Status of planning and commissioning of Mid-term survey
- Status of procurement of machinery and equipment (number or percent)
- Status of procurement of vehicles by items (number or percent)
- Progress in civil works by items (percent).

C: Checklist for Project Monitoring: Terminal stage

- Total physical target of project achieved (%) or not, if not why (explain)
- Total financial target of project achieved (%) or not, if not why (explain)
- Total project target of demonstration achieved (%) or not if not why (explain)
- Total project target of training achieved (%) or not if not why (explain)
    - Training of Trainers
    - Skill development Training of departmental staff
    - Beneficiary training
- Other targeted extension activities achieved fully or not if not why (explain)
- Mid-term survey commissioned or not if done when?
- Terminal impact survey commissioned or not
- Total planned machinery/equipment procured (%) or not, if not why (explain)
- Total planned civil works completed (%) or not, if not why (explain)
- Progress in targeted technology adoption (%), if not why (explain)
- Progress in disbursement of credit/innovative fund (%), if not why (explain).

Reference templates have been designed for tracking the progress of earlier/inial project monitoring, mid stage project monitoring and late/terminal stage project monitoring. As far as possible the templates are made general, so that projects under crop, fisheries and livestock sectores can be monitored by usig these templates. The templates are shown in the **Annex 3.**

5.2.2 Progress Monitoring

One of the key functions of M&E system is to capture progress against output targets set to be achieved. For Progress Tracking, a tracking sheet is required to outline all output indicators for key activities along with target values for those output indicators. The targets could be logically divided into quarters/years according to annual work plan. Progress achieved is entered against those targets and the trackers automatically calculate deviation against the targets. The progress is tracked to a) see whether the project is on-track or off-track and b) assess whether time-critical activities are taking place as per the calendar or not. The monitoring personnel may collect data on progress of set indicators of project activities quarterly and/or annually. Progress of the year against the target may divide by quarters or by seasons depending upon the nature of the indicators being measured. The designed Templates are shown in **Annex 4**.

5.2.3 MonitoringProduction Process before Establishing Crops

For successful crop production, it is important that the pre production processes are crrefully followed for appropriate crop establishment and achieving desired yield and productivity. Some of the important pre-production activities are given in Template 5.1.

Template 5.1: Monitoring of production process used before establishing crops

Production Process Before Establishing Crops	Responsibility
1. Selection of appropriate crop/variety as recommended for the ecological situation for desired yield and productivity;	Upazila/Union Ag. office/Farmer
2. Selection of land and soil type suitable/recommended for the crop in question	Upazila/Union Ag. office/Farmer
3. Collection of good quality seed from authentic sources (BADC/Seed Dealer)	Upazila/Union Ag. office
4. Seed treatment with recommended chemicals	Farmer (supervised by SAAO)
5. Raising healthy seedlings at optimum time in ideal and properly managed seedbed	Farmer (supervised by SAAO)
6. Ensuring the availability of sufficient quantities of healthy seed/seedlings before planting	Farmer (supervised by SAAO)
7. Collection of required quantities of other critical inputs (fertilizer/pesticides /PGR) from authentic sources (Registered Dealers)	Upazila/Union Ag. office/Farmer
8. Preperation of all inputs at appropriate time and in right quantities	SAAO/Farmer
9. Identification and selection of appropriate farmer – experienced in growing the crop in question	SAAO

5.3 Outcome Monitoring

At the mid and later stage of project implementation one can monitor the outcome of the interventions. It could be done by assessing the project progress in the field. It is important to know how many beneficiaries are producing the demo technology and how much area being covered by the technology. Yield of the targeted crop or variety could also be assessed by asking the farmers. The following template is designed to track the outcome of the project.

Template 5.2: Progress monitoring of crop sector development project activities

Indicator (reference)	Output Target	Progress				
		1st Qtr./Yr.	2nd Qtr./Yr.	3rd Qtr/Yr.	4thQtr. /Yr.	Annual/End
Adoption of demo technology (#)						
Area coverage of demo technology (ha)						
Yield of boro rice (Kg/ha)						
Yield of wheat (Kg/ha)						
Yield of maize (Kg/ha)						
Yield of tomato (Kg/ha)						
Adoption of hybrid variety (%)						
Production of target commodity (MT)						

5.4 Monitoring of Development Activities and Output of Crop Sector Projects

5.4.1 Demonstration

The term demonstration in agriculture refers to publicly showing by reason or proof, explaining or making clear by use of examples or experiments of technology or products to convince and motivate the target community to adopt it to their benefit. Demonstration is an extension tool to teach skills that are accessible to the target groups/community. Form demonstrations, the farmers/target groups can pick up new knowledge and skills that is either not available or difficult to learn from just being told verbally. A demonstration always has a finished product. The key to a good demonstration is for the audience to be able to do what have been taught and how to do. In fact, demonstration is a "learning by doing" process. In agricultural extension, there are two general types of demonstrations – "Result demonstration" and "Method Demonstration".

5.4.1.1 Result Demonstration

It is a method of motivating the people for adoption of a new practice by showing its distinctly superior result while a***Method Demonstration*** is a teaching method used to communicate an idea with the aid of visuals such as flip charts, posters, power point, or by practically doing in the field, etc. It is the process of teaching someone how to make or do something in a step-by-step process.
In crop sector development projects often a wide range of on-farm demonstrations is conducted such as (i) Cropping Pattern (growing crops in specific sequence on a particular piece of land throughout the year); (ii) Modern Production Technology Packages of various crops; (iii) Component Technology (a new variety/a range of cultural practices); (iv) Special Technology (Alternate Wetting and Drying (AWD) method of irrigation in Boro rice); (v) Seed Production, Processing and Preservation**;**(vi) High Value and Off-season crop production**;** (vii) Soil Health and Fertilizer management; (viii) Crop pest and Disease management; etc. Besides, "Block Demonstrations"in a large contiguous area involving a group of farmers for wide scale adoption of proven technologies is also conducted.Block Demonstrations may involve a cropping pattern, packages of technologies, a single variety/component technology, and the like.Demonstrations may also be classified as (i) single season demonstrations; (ii) single intervention demonstrations; and (iii) package demonstrations.These are described with guidance on planning, implementing and monitoring demonstrations in this section.

a) Cropping Pattern Demonstrations: Cropping pattern demonstrations are conducted on a particular piece of land throughout the year.Crops are grown sequentially covering all the three growing seasons. For example,a pulse or an oilseed crop is grown in the Rabi season followed by T. Aus rice in Kharif-I and T. Aman rice in the Kharif-II season. The advantage of a cropping pattern demonstration is that farmers can learn how to integrate a new crop into their cropping system. Cropping pattern demonstrations may be used to demonstrate principles of integrated plant nutrition, for example by applying full fertilizer to the Rabi crop, and allowing crops in the other two seasons to take advantage of residual effects. In the latter case, cropping pattern demonstrations are based on the normal cropping patterns in the area, and only show adjusted fertilizer doses. All other operations remain the same as the farmers' usual practices.

b) Block Demonstrations: Block demonstrations are planned and implemented in a contiguous land area with a group of farmers who operate land next to one another. In this way, the area of the demonstration can be quite large. Block demonstrations present a strong visual impact, and involve working with a group of 10 to 15 farmers. A block demonstration is simply a large demonstration. This means that they can be cropping pattern demonstrations, single season demonstrations, single intervention demonstrations or package demonstrations.

c) Single Season Demonstrations: Single season demonstrations last for only one cropping season, Rabi, Kharif-I orKharif-II. They are usually conducted with a single crop, unless the demonstration involves intercropping. Single season demonstrations are used to demonstrate a single aspect of crop production such as a new crop variety or an improved crop management practice. A single season demonstration can be any size, so it could be a block demonstration as well.

d) Single Intervention Demonstrations: Single intervention demonstrations are conducted on a crop which is already being grown in an area. They show only one adjustment to the farmers practice. A single intervention demonstration has two plots, one control plot which is the farmers normal practice (variety, fertilizer, water management, or pest and disease management), and one plot with accommodating intervention being demonstrated. There is only one difference between the control and the demonstration plot such as a different timing to fertilizer applications, or the use of a different water management practice. This helps farmers to clearly understand the precise benefits of a single change.

e) Package Demonstrations: Package demonstrations involve multiple interventions in the form of component technology packages such as Rice Yield Gap Minimization technology packages. The component technology packages may involve showing which variety to plant and when, what fertilizer to useand when, what water management procedures to use, how to control weeds, pests and diseasesand all other aspects of production. In these demonstrations, the performance of demonstrated packages of technologies may be compared with farmers' practices when the crop is the same as that of demonstration package. In such cases, farmers' practice stands as control. A package demonstration could be of any size or duration, so it could form part of a croppingpattern demonstration, be a single season demonstration, or a block demonstration.

5.4.1.2 Planning Result Demonstration

Result demonstrationis planned on the basis of farmers' location specific needs as reflected in Extension Micro Plans (e.g. Union/Upazila Extension Plan). The time and the types of demonstration to be conducted is decided during Upazila planning workshop. This planning determines and chooses the best demonstration to be conducted from among single season demonstrations or cropping patterns, block demonstrations or single technology demonstrations. Then it proceeds to decide the schedule of the demonstration chosen through preparation of demonstration guideline for each demonstration events. The demonstration guidelines describes the materials needed and elaborate procedure of establishing and managing the demonstration plot.

Selecting the demonstration site andfarmer cooperator:The site of the demonstration should be easily visible and easily accessible, and should be situated on a representative land type. A demonstration farmer or farmers in the case of blockdemonstrations should be selected based on their interest and willingness to cooperate and participate in implementation of the demonstration. Demonstration farmers should berepresentative of the target group identifying the need or the problem on which the demonstration is being conducted. If it is with an individual farmer then they should be a member of the originalProblem Census Group.

Planning the inputs required*:*On the basis of the plot size and technology used, plans are madefor timely availability ofrequired materials and inputs that are required. The materials and inputs may include quality seeds of desired variety, types and quantities of fertilizer, pesticides, labor, etc. on the basis of mutual agreement with the cooperator farmer and a decision is made on who willprovide them. Wherever possible, demonstration farmers should provide some or all of theinputs. Plot sizes are variable, depending on technology and type of demonstration. However, the plots should be large enough to be believable e.g., minimum 10 m x 10 m.A signboard should be present containing the purpose of the demonstration, description of the technology, the schedule of the field days and who can be contacted for further information.

Training the farmer cooperators: farmers who host demonstrations need to understand clearly whatthe demonstration is designed to achieve, and how it will be implemented. This can beachieved in Upazila level briefing sessions, or one-on-one visits by Sub Assistant Agriculture Officers (SAAOs).

5.4.1.3 Implementation of Result Demonstration

Inputs should be organized, and farmers trained, before the demonstration is established. After the demonstration has been established, a number of activities should be completed to ensure successful implementation. These include:

- visiting the demonstration plot regularly and meeting the demonstration farmer(s);
- conducting regular group extension events at the demonstration site; and
- monitoring and evaluating the demonstration.

Visiting the demonstration plot regularly and meeting the demonstration farmer(s):The SAAOs should visit the demonstration regularly, and record progress and observations. This could include, watching for pest and diseases, making sure that the planned implementation management operations isdone properly at appropriate times.Any problem observed should be discussed with the farmers and unresolved problems should be referred to the immediate higherechy of concerned implementing organization.

Conducting regular group extension events at the demonstration site:demonstrations are usually quite costly. To get the best value for money from a demonstration, other farmers should be encouraged to participate in the learning process. Field days and other group extension events organized at the site are examples of ways to do this, helping to improve cost effectiveness. Field days and other events are best implemented when there is something important to be done in the field, or where there is a clear visible benefit from the technology being shown.

5.4.1.4 Method Demonstration

Method demonstrations are group extension events conducted over one to two hours to demonstrate and practice a specific skill, step by step. Method demonstrations are low cost and relatively efficient as they involve one extension worker and several farmers. They are participatory and enable farmers to learn by doing.

5.4.1.5 Planning Method Demonstration

Topics for method demonstrations should be identified on the basis of farmers' needs orproblems and are shown in the Upazila Extension Plans. They are defined in detail in consultation withfarmers. When a specific topic is agreed, a *task analysis*is conducted. A taskanalysis is a breakdown of the method into a series of small steps, and a summary of themain learning points for each step. The task analysis provides the format for thedemonstration.

Doing a task analysis in consultation with farmers can be useful as it helps to identify what farmers already know. It may also show that one of the farmers knows enough to demonstrate the method to the other farmers in their own words, with the concerned demonstrator adding further explanation where necessary.

Once a task analysis has been prepared, an appropriate venue and time is arranged. This should be done in consultation with the farmers group. A day and time which is convenient for farmers, and a location near to their homes should be chosen. Ideally not more than 20 farmers should attend otherwise it is difficult for everybody to see what is happening, or difficult for everybody to practice some of the stages.

5.4.1.6 Planning checklist for a method demonstration includes:

- identifying the need or problem, and defining a topic for the method demonstration;
- conducting a task analysis in consultation with farmers, including an assessment of farmers current knowledge;
- identifying an appropriate venue (field or homestead), day and time;
- practicing the task and demonstrating the task;
- collecting any materials required (flip chart, flash cards, live samples, tools, pen and paper). Real objects and live samples are particularly important;
- briefing and training farmers who will help in the method demonstration;
- Visiting the venue to make sure it is appropriate.

5.4.1.7 Implementation of Method Demonstration

The extension agent responsible for organizing the demonstration should arrive early with all the necessary materials and ensure everything is in order. Successful implementation requires:

- an informal atmosphere where people feel free to raise questions;
- an introduction to the session where the purpose of the method demonstration is explained;
- an overview of the materials that will be used (live samples, tools etc.);
- that the method demonstration is followed according to the task analysis;
- that each of the important learning points in each step are explained;
- a summary at the end of the session;
- time for farmers to practice the method;
- that each participant is confident enough to use the method on their own farm or homestead after the event;
- that a Seasonal Extension Monitoring System form (SEMS Form 1) is completed;
- participants and the extension agent agree any follow-up actions that may have arisen.

Achieving the objectives of both Result and Method demonstrations largely depends on how well the demonstrations are conducted, the need or demand of particular technologies among the target farmers, as well as the expected benefits of the demonstrated technologies over farmers' practice, technical feasibility, economic viability and social acceptability of the technologies, etc. Proper follow-ups and supervision are also important factors successful conduction of demonstrations.

5.4.1.8 Monitoring and Evaluation of Demonstration

On-farm demonstration of improved technologies among the target beneficiaries is the key tools for technology transfer in crop agriculture. Most agricultural development projects allocate adequate resources for this extensively used event. It is important to monitor the demonstration activity of the project for assessing the performance of technology and progress toward achieving intended outcome as per project's log frame. The monitoring templates for different types of crop demonstrated are ellustrated in **Annex 5.**

5.4.2 Training

Training is the organized procedure by which people learn knowledge and/or skill for a definite purpose. Simply speaking, training is the act of imparting knowledge, information and skills to the target audience for desired change in behavior and act for doing a particular job better. It is teaching and learning activities to help trainees acquire and apply the knowledge, skills, abilities and attitude needed by a particular job and organization. Training is needed for (i) enhancing knowledge and skills; (ii) technology update; (iii) higher productivity ;(iv) quality and outputs improvement ofhuman resources, etc.

Agriculture development projects often keep provision for training of (i) primary stakeholders, e.g., target farmers/farmer groups, relevant entrepreneurs and (ii) service providers/implementing agency personnel responsible for execution of project activities.

5.4.2.1 Training of Farmers/Primary Stakeholders

Training of farmers is another key tool used for technology transfer and most of the agriculture development project allocate sufficient financial resources for the event. There are various forms of formal and informal training for farmers to impart knowledge and develop their skills on technical knowhow of modern production technologies. Broadly, farmers' training aims at developing farmer's

skills and competencies in farming activities/business while improving their knowledge, changing their attitudes towards farming as abusiness and producing for the market (FAO, 2011).

In agriculture development projects in crop sector, generally farmers is given formal training on technical knowhow of the technologies promoted by a particular project for capacity building of the farmers in terms of knowledge and skills to facilitate technology adoption. The subject matter focus of the training thus varies according to the technologies promoted.

Farmers' knowledge and skill development is an integral part of successful technology transfer and adoption in all agriculture development interventions. Generally, a one-day formal training is imparted to target farmers for their knowledge and skill development on the technology being demonstrated. However, in case of group approach of extension, different types of Organization Development (OD) and Human Resource Development (HRD) trainings are often organized.

5.4.2.2 Formal Training of Farmers

Farmers' formal training is a group extension event. It is a structured, planned event with objectives and a written training plan, which involves training materials and trainers. Farmers' formal training usually last for one whole day, generally catering for approximately 20-30 farmers.

5.4.2.3 Basic Principles of Formal Training

Three basic principles apply to formal training events. These areinvolvement of participants; relevance and practicality; and feedback.

Involvement of Participants:Farmers should be 'active' in the process of learning, and are a resource themselves.Training is a two-way process where in information flows from trainer to farmer and vice versa. In the process, farmers will gain moreby being actively involved. Farmers' active involvement can be achieved by allowing discussion, by askingquestions, by encouraging people to ask questions, and by constantly relating the subjectmatter to the farmers' interests and circumstances. Farmers should be given as manyopportunities as possible to contribute to training sessions by giving opinions, makingsuggestions, sharing experiences, asking questions and demonstrating abilities.

Relevance and Practicality:The subject matter should be problem orientated, and related to every-day farmingsituations. In agricultural technology transfer projects, the target farmers are trained primarily to improve their knowledge and enhance skills for implementation/adoption of technologies promoted by the project. Thus, the subject matter of the training should be based on a sound understanding of the participants' skills, capacity, experience, knowledge and learning needs in terms of knowledge and skill gaps. This makes the training useful for the trainees and target farming community. This caninvolve learning what not to do as well as what to do.

Feedback:The training methods used should encourage a response from farmers. By askingquestions, and inviting farmers to comment on the subject matter, it will be possible to judgehow well they understand the subject, and how relevant the information is. In this way, theevent can be adjusted to make sure that people are learning, and that what theyare learning is useful to them.

5.4.2.4 Planning Farmers' Formal Training

Topics for formal trainingshould be identified on the basis of farmers' needs or problems, which should be identified and defined in detail in consultation with relevant stakeholders and farmers. The planning of formal training involves:

- Preparing a training plan;
- Identifying an appropriate trainer;
- Preparing appropriate materials;
- Selecting venue and defining the date and time; and
- Preparing a budget and securing funds.

Preparing a Training Plan: The essence of a formal training is the preparation of objectives and a written training plan. The steps are as follows:

- Establishing educational objectives for the event. The objectives should define exact measurable learning results which are expected;
- Selecting relevant subject matter which is required to achieve the objectives;
- Selecting training methods which are appropriate to the achievement of the objectives or the selected subject matter, and which encourage farmer participation;
- Deciding on what equipment and materials will be needed to carry out the event;
- Allocating the time required to carry out the event.

Identifying an Appropriate Trainer: A person, or a group of people with a good technical understanding of the topic, and training and facilitation skills should be identified. Any member of staff in the Upazila, at block or Upazila level, as well as staff members of partner organizations could act as a trainer.

Selecting relevant subject matter required to achieve the objectives: The subject matter of the training should focus on the issues directly relevant to the training objectives. For example, in production technology training, various aspects of production of target crops, such as selection of suitable variety, cultural requirements and practices, fertilization, insect pests and disease control, weed and water management, etc. are included.

Selecting appropriate training methods: Selection of appropriate training method is very important for effective learning by the participants and thereby achieving the training objectives. Some of the important methods used in formal training of farmers are:

Discussions: Discussions involve two-way communication between the trainer and the trainees, and between the trainees themselves. This gives opportunities for misunderstandings to be cleared; further information to be added; opinions to be shared; and implications to be explored. There are many ways to facilitate discussions such as Question and Answer Session; *Brain-storming; Reaction Groups; etc.*

Group Exercises: Exercises, like discussion, require exchanges of information between trainees. In addition,exercises give the trainees an opportunity to apply information, which leads to thereinforcement of the trainee's knowledge; a greater understanding of the relevance of thisknowledge; and the ability to put this knowledge to practical use. Group exercises provide all trainees agreater chance to participate and a sense of competition can be developed between groups.As a result, the trainees are collectively more active, maintain more interest, produce moreinformation and complete more tasks.

Preparing Appropriate Materials: The training materials are identified in the training plan. These should be located or prepared well in advance. In the IPM example, flash cards, an insect box and a flip chart are required. Maximum advantage must be taken of available materials in order to keep costs low.

5.4.2.5 Checklist for Planning Formal Training

- Preparing written objectives which match farmers information needs and address farmers problems;
- Preparing a training plan;
- Making sure the length of time required has been assessed, and is not too long;
- Making sure that training events are related to real situations, and do not contain more information than is necessary;
- Identifying whether participating farmers have experiences and ideas which could be useful during the event, and planning how to incorporate these;
- Planning how to motivate participants by involving them right from the start of the event;
- Planning to use a range of visual aids or handouts to increase farmers interest;
- Writing down questions for participants during the event to check that they are understanding the subject matter;
- Checking the venue before the event, and checking that any visual aids, objects or samples are ready, available and working, and that they can be clearly seen from all parts of the room.

After the Training: In the short term, it is important to find out about participants intentions. This can be done by conducting a survey or feedback session with participants about their knowledge and intentions after the training has finished.

5.4.2.6 Progress Monitoring of Farmers' Training

Monitoring Physical and Financial Progress of Farmer Training is practically a desk exercise that takes the account of progress of implementation of demonstrations against the planned target as shown in **Annex 6.**

5.4.2.7 Monitoring Progress of HRD Training

It is recognized that both crop extension and crop research organizations are manned by a large number of technical, administrative and support personnel at various tires requires continuous training and career development of both technical and support personnel to maintain and improve the organizational efficiency and cater the need of the development projects' services. To support the human resource development and render specific services deemed by the development projects, often adequate financial allocation is made to support various training of service provider organizations at the grassroots as well as upper tires. The various HRD training includes relevant (target) technology, farmers' group mobilization process and various IT Apps and data management training for the front line technical personnel;financial/accounts management and procurement procedure for accounts personnel, etc. More or less, similar provision oftraining is kept for the higher-ups of the command chain matching with the need of the project.

The Human Resource Development trainings often arranged to bring qualitative improvement in the capacity of service delivery of the technical personnel through the chain of command of the service providing organization. The training agenda often include (i) Training of Trainers (TOTs) on various subject matter to develop Master Trainers to improve the quality of training at different levels, improve support, supervision, monitoring and implementation abilities and skills of officers at organization and primary stakeholder levels.The monitoring templates are shown in **Annex 7**.

5.4.3 Monitoring Farmers' Group Mobilization and Group Activities

The group approach in agricultural extension is participatory approach in which the farmers' groups are primary stakeholders. This approach often focuses on theexpressed needs of farmers' groups and its goal is to increased production and an improved quality of rural life. Implementation is often decentralized and flexible.Participatory extension is a learning approach for strengthening individual and organizational capacities of rural people and their livelihoods to enable them to better cope with development in a self-reliant way.

In many agricultural development projects in Bangladesh Farmer Group Approach have been adopted as a vital component of decentralized extension services, which involves *group formation* by the target farmers, *group mobilization* through a set of selected group activities*, groups' capacity building* in planning for development and *participatory implementation* of extension activities. Thus, farmers' Group Approach has now become an integral part of agricultural extension wherein the groups serves as the vehicle of technology transfer to common farmers. Therefore, monitoring of farmer group activities is very important. The templates for monitoring the group status is shown in **Annex 8**.

5.4.4 Monitoring Farmers' Field Days

A field day is a group extension event conducted at the site of any type of result demonstration to promote "farmer to farmer" mass dissemination of demonstrated technologies; "Farmers' Field Days" are organized at demonstration sites at appropriate crop stages in most agriculture development projects. Generally, 30-50 target farmers attend the occasion. The results of demonstrations is shown to thevisiting farmers and briefed on the technologies. Often, leaflets on the technology are distributed among the participants with a view to motivate them to adopt the technology.

With single farmer result demonstrations, the field day is important to improve the cost-effectiveness of the demonstration. Field days provide the opportunity for the participants to visit a demonstration site, learn about what is being demonstrated, ask questions, and encourage them to try new ideas themselves on their own farms. A series of field days, especially those that last for a year and show a cropping pattern, provide an ideal opportunity for farmers to meet again.

5.4.4.1 Planning Checklist for a Field Day

- Fixing an appropriate date and time in consultation with the farmer cooperator(s);
- Checking for availability of materials which could be useful during the field day;
- Advertising the field day to nearby farmers and people who participated in earlier field days at the site. Where possible, farmers from similar socio-economic background should be invited;
- Ensuring that the farmer hosting the demonstration can correctly explain the objective of the demonstration, what has been done, and the expected benefits, including costs and returns;
- Visiting the demonstration site to ensure that access is easy, movement through the field is possible, that there is a clear visual impact for the field day.

5.4.4.2 Planning Field Days

Field days are arranged at key stages during the demonstration, when particular management activities are implemented, or when the benefits of the demonstration are most visible. For crop production demonstrations, appropriate times could be:

- At the time of planting;
- When fertilizers or other inputs are provided;
- At mid-season when differences in crop growth are apparent;
- At harvest when yields, costs and benefits can be compared.

A minimum of two field days for a single season demonstration is recommended. For cropping pattern demonstrations, which involve three consecutive seasons, two field days in each season, or a total of six during the year, are recommended.

Date and time of Field Day needs to be fixed in advanceand advertised. The field day schedule should be placed alongside demonstration signboard. The same group of farmers should be encouraged to attend consecutive field days at specific sites. However, the number of participants should not exceed 20 to 25 farmers. Smaller groups will have a better opportunity to see what is being demonstrated, and hear the explanations of farmers and extension staff. With fewer people, a greater proportion of participants will have the opportunity to ask questions and participate in interactive discussion.

Wherever possible, audio-visual aids or printed material should be used to improve the quality of the field day. This could include flash cards, flip charts, or leaflets summarizing the technology. For monitoring the field days, templates are shown in **Annex 9**.

5.4.5 Monitoring Farmers' Motivational Tours

A motivational tour involves taking a group of up to 30 farmers from their village or block to another area. Motivational tours usually last a day. Motivational tours expose farmers to developments and new technologies which are being used by farmers in another area, or are being developed at research stations, horticultural base nurseries, or activities being implemented by other extension organizations such as NGOs. Hence the "Motivational Tours" are organizedto different research stations, horticulture centres, BADC and private farms as well as other places of interest for target farmers (mainly innovative farmers and early adopters) and front line extension personnel. The visitors are shown new/improved technologies and successful (farmer's) practices in the field/laboratory conditions to introduce the technologies/practices and motivate them for adoption. Tours present a good opportunity for farmers from different areas to exchange ideas with one another.

5.4.5.1 Planning Motivational Tours

The content of motivational tours is defined in relation to the problems that farmers are facing, and the information needs that they have. Once a need has been identified, extension staff can search for information and sources of information. A motivational tour carries quite a high cost, so they should only be used when farmer's information needs cannot be met locally.For monitoring the motivational tours, templates are shown in **Annex 10**.

i) Planning Checklist for Motivational Tours:

i) Defining the technical content and sites to be visited.A tour event should cover a few subjects and sites to allow participants greater opportunity to see, learn, practice and try new ideas;

ii) If an organization such as a research institute is involved, the event should be planned in consultation with appropriate personnel of the organization;

iii) If farmers in another area are involved, the event can be planned with them. For example, by visiting them, maintaining contact with them via local extension staff, and ensuring that they are capable and prepared to show visiting farmers around their land;

iv) Visiting the area beforehand to ensure it is appropriate and accessible, becoming familiar with local conditions and visiting other people who may be involved. For example, staff from partner organizations;

v) Defining the route, day, duration and timetable of the tour tomake sure that the day and duration are appropriate to all involved;

vi) Arranging transport for the travel;

vii) Arranging refreshments and accommodation if appropriate; and

viii) Making arrangements to meet or collect the farmers at a convenient time and place.

5.4.6 Monitoring Workshops

A workshop is a period of discussion or practical work on a particular subject in which a group of people share their knowledge or experience.Among many different kinds ofworkshops organized in different agriculture development projects, “Annual Progress Review Workshop” is of paramount importance as it reviews the progress of implementation of project activities as well as discusses on the forthcoming annual program of activities of the project. Project personnel at different implementation and policy levels as well as other stakeholders attend these workshops. Templates are shown in **Annex 10.**

5.4.7 District and Upazila Agricultural Fairs

A fair can be an effective way to create awareness about improved technologies to a large number of people within a short time and to stimulate general motivation for agricultural and rural development in the area. It can also play a valuable role in strengthening relationships between extension partners. Farmers are able to see a range of technologies and ideas displayed by non-government organizations, other government agencies and dealers and discuss them in a lively and informal way.

5.4.7.1 Planning Agricultural Fair

Fairs take a long time to plan. Ideally they should be discussed during the UACCs and DECCs so that ideas can be shared. As an extension event, fairs are expensive. It may be necessary to generate some income locally to help cover the cost. This might include for example, sponsorship or producing a program where advertising space has been charged. Planning includes:

- Sharing ideas during the UECC and DECCmeetings about the content, schedule and logistical arrangements;
- Deciding responsibilities for each participating extension organization;
- Inviting other interested parties to sponsor an exhibition stand. For example a fertilizer dealer or seed supplier;
- Deciding the physical layout of the venue; decoration of stalls; collection of exhibits;
- Arrangements for demonstration of exhibits and technologies; publicity; opening and closing ceremonies and prizes;
- Ensuring wide publicity throughout the Upazila or District, for example, by word of mouth, posters and announcements on regional radio stations;
- Collecting good quality vegetables, fruits and other agricultural commodities from the different parts of the Upazila or district to show as exhibits;
- Considering demonstrating examples of local farmer innovations;
- In consultation with other extension providers carefully selecting improved technologies which are relevant to farmers in the area, and arranging for their proper demonstration at the fair;

- Organizing any award ceremonies, prizes and special guests;
- Preparing adequate number of leaflets and instruction sheets about the demonstrated technologies for distribution to those attending the fair.

5.4.7.2 Implementation of Agricultural Fairs

There are no set formats for organizing or implementing fairs. It should be planned and implemented locally in partnership with other extension service providers as well as other participating enterprises. Fairs are usually held over a week long period, hence it is important that displays and stands are properly cared for so that they always look appealing to the visitors.Fairs tend to appeal to a wide audience and are likely to attract wide media coverage.For monitoring the agricultural fair, templates are shown in **Annex 11**.

SECTION VI : FISHERIES SECTOR PROJECTS

6.1 Overview of Fisheries Sector

Bangladesh has endowed with potential resources of inland culture fisheries, inland capture fisheries and marine fisheries with a production contribution of 56%, 29% and 15% respectively. It is one of the world's leading fish producing countries with a total production of 42.77 lakh MT in 2017-18. Average growth performance of this sector is 5.26% for last 10 years. Bangladesh becomes a self-sufficient country in fish production, with a per capita consumption of 62.58 g/day against set target of 60g/day. According to FAO report 'The state of World Fisheries and Aquaculture 2018' Bangladesh ranked 3rd in inland open water capture fish production and 5th in world aquaculture production. Geographical Indication (GI) Registration Certificate has been achieved for our national fish hilsa. This sector contributes 3.57%to the national GDP and more than one fourth (25.30%) to the agricultural GDP in 2017-18. More than 11% of total population is engaged in this sector on full time and part time basis for their livelihoods. In 2017-18, the country earns BDT 4309.94 lakh by exporting almost 68.94 thousand MT of fish and fishery products (DoF. 2018).There are 3 organizations in public sector namely Department of Fisheries Bangladesh (DoF), Bangladesh Fisheries Development Corporation (BFDC) and Bangladesh Fisheries Research institute (BFRI). Besides, there are quite large numbers of national and local NGOs working in fisheries sector. International development partners like FAO, World Bank, Asian Development Bank, DFID, DANIDA,European Union, World Fish Center has extended their cooperation in fisheries development in Bangladesh.

6.1.1 Challenges Facing Fisheries Sector -Degradation of Natural Resources

Encroachment and degradation of natural resources like river, canal, beel, haor, baor, floodplain, pond etc, rapid urbanization, increased pollution and infrastructure investments have emerged as challenges that have negatively impacted fisheries.

6.1.2 Inland Capture Fisheries: Conservation and Sustainable Management

The production of fish from inland capture fisheries remained on declining trend due to overfishing, use of destructive gears, silting up of water bodies, closure of natural fish passes, and pollution of water bodies by agro-chemicals, industrial wastes and urban sewers etc. The challenge of declining capture fishery could be reversed with right policies, regulations, investments and management. The key elements of such strategies would be to enhance the current good practices of open water fisheries management, like the recent success in Hilsa management program. In this program, enhancing social safety nets support to fisher folk will be required**.**

6.1.3 Inland aquaculture

Among various segments of the sector, the inland aquaculture experienced fastest growth mainly through the introduction of new technologies, species and intensification and improvement of farming particularly in pond aquaculture all over the country. This has been accompanied by some new challenges like poor brood stock management, low availability of reliable and quality fish feed at reasonable cost, lack of institutional capacity to assist with the needed extension service, ensure supply of quality inputs and quality of the produce and supply chain development.

Marine Fisheries Resource Management – conserving marine fishery resources and expanding marine fishing zone: The proper harvesting of marine fishing is important. A number of confronting issues like overcapacity of fishing effort, entry of illegal vessels and pouching in the Bangladesh Exclusive Economic Zone(EEZ), long gap exploratory survey on stock assessment, shift in climate change paradigm, illegal , unreported and unregulated(IUU) fishing , destructive

fishing , pollution , catching of juveniles , degradation of highly productive coastal and near shore marine habitats seriously impacts over marine fisheries productivity disrupting ecosystem function. In order to establish a comprehensive plan for sustainable conservation, management and exploitation of resources, the present status of fisheries resources and its future potential for the national economy needs to be framed out.

Shrimp and Brackish water aquaculture and sustainable development of shrimp and prawn: Shrimp and prawn aquaculture involves manufacture of numerous inputs such as feed, fertilizers, pesticides and veterinary drugs as well as technical devices for water treatment and pond operation. In past years there were problems with shrimp cultivation and processing which affected export. Laboratory facilities for microbiological, residual and chemical testing have been raised up to the European Standard and sustained successfully during 6th FY plan. The implementation of National Shrimp policy 2014 will ensure right strategies and policies to be undertaken for helping the potential sector to grow in a sustainable way. While our processors and hatcheries have created excess capacity, shrimp production could not reach the desired and potential level due to the use of very traditional and extensive method of aquaculture which is only about 200 kg /ha.

Marketing: The role of Bangladesh Fisheries Development Corporation (BFDC) in the processing, transportation and marketing of fish and fish produce is now decreasing with the private sector expanding fast and has substantially taken over the role.

Climate change: Global climate change is the most serious issue likely to affect Bangladesh over the coming decades. Both coastal and fresh water fisheries are likely to be adversely affected by changing temperature, siltation, and inundation and salinity regimes.

Research: Fisheries research need to be upgraded to continue the flow of technology generation in inland, brackish and marine waters.

6.1.4 Goals and Strategies for Fisheries Sub-sector during 7thFYP period

The vision 2021of the government targeted to achieve its goal of self-sufficiency in food and thus increased food security , which includes attaining self-sufficiency in production of fish and shrimp and generate surplus for export, along with improvement in food safety standard of fish production. The 7th FYP will also promote increased participation of women in fish culture. These require achieving a dual objective of enhancing productivity, livelihood security and equitable distribution of benefits side by side with the conservation of potential fisheries resources and aquatic biodiversity of rivers, beels, haor, baor, flood plains and other water bodies.

6.2 Identified Monitoring and Evaluation Indicators of Fisheries Sector Projects

Activity Level M&E Indicators

- Conduction of fish culture demonstrations;
- Conduction of validation trials of new fisheries technologies;
- Providing technology and skill training to target beneficiaries/fish farmers;
- Organizing Field days at demo/validation trial sites;
- Organizing study/exposure visits of fish farmers;
- Providing TOT and other capacity development training to fisheries extension personnel and staff;
- Implementation of HRD Training (Short-term training, study visit, degree programs);
- Fisheries farmer group formation, mobilization and supporting group extension activities;

- Implementing fisheries technology adoption sub-projects (matching grant);
- Implementing fisheries value chain and marketing sub-projects (grants);
- Establishing fish sanctuaries stocking fish fry/fingerlings in selected beels;
- Adoption of demonstrated fish culture technologies by target farmers;
- Increasing fish production and productivity;
- Organizing various workshops/seminar /consultation meeting;
- Re-excavation of water bodies for fish culture;
- Procurement of office equipment and accessories
- Strengthening fisheries research activities;
- Various procurement (Field and Lab equipment/Vehicles/Training and ICT equipment, etc.)

6.3 Monitoring and Evaluation of Fisheries Development Project Activities

As discussed earlier, monitoring is periodic tracking (for example, daily, weekly, monthly, quarterly, and annually) of progress of project activities by systematically gathering and analyzing data and information to track changes in program outputs and performance over time. It helps management and stakeholders to make informed decisions regarding the effectiveness of programs and the efficient use of resources. In monitoring and evaluation of development projects in fisheries sector, different types of monitoring could be done including a)Process Monitoring (Real Time Monitoring), b)Progress Tracking, c)Progress Validation and d)Performance Monitoring.

6.3.1 Process monitoring

Projects are mainly designed and funded to achieve desired outcomes. Assessing those outcomes and changes are the key functions of M&E Unit. 'Value for Money' of a project is assessed through assessment of performance indicators. Process monitoring is a key component of any M&E system of agriculture development projects. It informs management/donor about the actual status of implementation of project activities in the field. At the same time process monitoring let the project staff on the ground know how well they implements the project and what improvement they can bring to the work they are doing in field. In Process Monitoring, checklists and guidelines developed jointly with project staff are used. The following checklist would help to track the performance of the project at different stages:

A. Checklist for Project Monitoring: Initial/early Stage

Sl #	Description	Yes/No	Remarks
1.	Appointment of Project Director, if appointed when?		
2	Establishment of office of the project, if set when?		
3.	Manpower Mobilization -Departmental staff, if done when? -Project staff, if done when?		
4.	Recruitment of consultant/consulting firm done or not, if done when?		
5.	Preparation of annual work plan and budget done or not		
6.	Baseline Survey planned or not, if plan when?		
7.	RFQ of Equipment and machineries prepared or not?		
8.	Vehicle for office (tender document prepared or not) o Jeep o Micro-bus o Motorcycle o Bi-cycle		

B. Checklist for Project Monitoring: Mid-term Stage

Sl #	Description	Yes/No	Remarks
1.	Progress in setting demonstration		
2	Progress in imparting training o Training of Trainers(ToT),% achieved o Skill development Training of departmental staff,% achieved o Beneficiary, % achieved		
3.	Baseline survey commissioned or not, if yes when?		
4.	Mid-term survey commissioned or not, if yes when?		
5.	Purchase of machinery and equipment (number or percent)		
6.	Purchase of vehicles (number or percent)		
7.	Progress in civil works (percent)		
8.	Progress in procuring/hiring consultant/Consulting Firm		

C. Checklist for Project Monitoring: Terminal Stage

Sl #	Description	Yes/No	Remarks
1.	Total project target of demonstration achieved (%) or not, if not why (explain)?		
2	Total project target of training achieved (%) or not, if not why (explain)? o Training of Trainers(ToT) o Skill development Training of departmental staff o Beneficiary training		
3.	Mid-term survey commissioned or not, if done when?		
4.	Terminal impact survey commissioned or not?		
5.	Total physical target of project achieved (%) or not, if not why (explain)?		
6.	Total financial target of project achieved (%) or not, if not why (explain)?		
7.	Total planned machinery/equipment procured (%) or not, if not why (explain)?		
8.	Total planned civil works completed (%) or not, if not why (explain)?		
9.	Progress in targeted technology adoption (%), if not why (explain)?		
10.	Progress in disbursement of credit/innovative fund (%), if not why (explain)?		

6.3.2 Progress Monitoring

One of the key functions of M&E system is to capture progress against output targets set to be achieved. For Progress Tracking, a tracking sheet is required to outline all output indicators for key activities along with target values for those output indicators. The targets could be logically divided into quarters/years according to annual work plan. Progress achieved is entered against those targets and the trackers automatically calculate deviation against the targets. The progress is tracked to; a) see whether the project is on-track or off-track and b) assess whether time-critical activities are taking place as per the calendar or not. The monitoring personnel may collect data on progress of set indicators of project activities quarterly and/or annually. Progress of the year against the target may divide by quarters (livestock or fish) or by seasons depending upon the nature of the indicators being measured. The Templates for progress tracking are shown in **Annex 12.**

6.3.3 Progress Validation

Progress validation is another important type of monitoring. Progress of key project activities are usually reported by the field staff. In order to validate the output progress reported, the M&E staff collect the Output Tracker and identify output indicators to be validated. Validation/verification is

initiated by collecting of Means of Verification (MoV). Once MoV are collected, the M&E staff takes a sample out of those and physically verifies the activities. This is followed by assessing and verifying thoroughly the process being adopted by field staff while conducting that specific activity. At the same time, if the activity has been undertaken a while ago, performance and outcomes of the intervention is also assessed. The monitoring format for pre-stage activities of the project is shown below:

Checklist for Pre-stage Monitoring of Fish Production Process

Production process before establishing fish culture	Responsibilities
1) Pond selection	SUFO
2) Pond preparation - Pond drying or use of Rotenone powder/ Phostoxin/selphos 3) Pond dyke repair	SUFO/AFO/Farmer
4) Supply of water(DTW/STW/Rainwater)	Farmer
5) Application of lime (Kg)	Farmer
6) Manuring - Organic manure(cow dung /compost)(Kg) - Inorganic fertilizer(Urea, TSP,Potash) (Kg)	Farmer
7) Collection of quality fish fingerling (Nos.)(Govt.FSMF/hatchery/certified nursery , Length - 10-15cm	SUFO/AFO/Farmer
8) Periodical manuring - Organic manure(cow dung)/compost (Kg) - Inorganic fertilizer(Urea, TSP,Potash) (Kg)	
9) Collection and application of quality fish feed/day (Homemade , Mixture of Ricebran, wheat bran and mustard oil cake)/commercial feed) (Kg), If commercial fish feed is used, then collection from a certified company	SUFO/AFO/Farmer
10) Sampling/netting of fish (Once in every 3 months)	SUFO/AFO/Farmer
11) Partial harvest of fish & re-stocking of fish fingerlings (Nos)	SUFO/AFO/Farmer
12) Final harvest	SUFO/AFO/Farmer

6.3.4 Outcome Monitoring

At the mid and later stage of project implementation one can monitor the outcome of the interventions. It could be done by assessing the project progress in the field. It is important to know how many beneficiaries are producing the demo technology and how much area being covered by the technology. Yield of the targeted crop or variety could also be assessed by asking the farmers. The following template is designed to track the outcome of the project.

Template 6.1: Progress monitoring of fisheries sector development project activities

Indicator (reference)	Output Target	Current Yield/ha				
		1st Qtr./Yr.	2nd Qtr./Yr.	3rd Qtr./Yr.	4th Qtr./Yr.	Annual/ End
Pangus production/decimal						
Tilapia production/decimal						
Fish production/HH						
Fish consumption/HH						
Fish sale (Tk.)/HH						

6.4 Monitoring Development Activities and Output of Fisheries Sector Projects

Study of selected projects and other literature indicated that most of the development/extension projects in fisheries sector supported transfer of modern/improved technologies to the intended beneficiaries. Several extension tools/methods areusedinmost fisheries development projects to promote technology transfer and adoption of technologies by the target beneficiaries and attain the project development objectives. The most commonly used promotional tools and techniques includes conducting on-farm demonstrations of various types, providing knowledge and skill development training to the farmers, capacity development training to extension personnel, organizing field days and farmers' motivational tours, review workshops, etc. Various extension tools/methods used in the fisheries sector and relevant templates for their monitoring is presented below:

6.4.1 Demonstration

In transferring fisheries technologies/practices and products, on-farm demonstration is a powerful extension method that shows the performance of the technologies and products to motivate the target community toward adoption of demonstrated technologies. Demonstration is a very convenient and efficient way of mitigating the knowledge and skill gaps of the target farmers while showing the advantages of the technologies demonstrated. It is a cost effective method and increases the pace of technology and adoption as well as fosters increased trust between extension workers and farmers. However, demonstration of fisheries technologies often takes long time, needs specialized skills of extension workers. Due long time requirement, sometimes the demonstration may fall under risk of extreme weather events such as excessive rainfall, flood, and prolong drought with other natural calamities.

In fisheries sector *Result Demonstration* is conducted to show to the potential adopters how a practice, fish/shrimp species or management technologies work to the benefit of farmers. Result demonstrations are often participatory in nature in which demonstration activities is carried out by one or a group of farmers under direct supervision of extension workers. To be effective, the demonstrations be carefully planned considering the potential of the technologies in the context of farmers' needs and be implemented in such that the superiority of the demonstrated practices over farmers' existing practices becomes clearly visible to the target audience. Result demonstration often compares a new technology (new species/new production package, etc.) with the current technologies being used by the farmers.

On the other hand, *Method Demonstration* shows the systematic procedure of practicing certain methods and/or skills to train the target audience on demonstrated methods/techniques and practices. This helps the audience to learn and adopt the practices being demonstrated such as making fish feed using local ingredients, supply of fish feed in culture ponds, application of compost and lime in the fish ponds, etc.

In general, most fisheries development projects allocate adequate financial and technical resources for demonstration of improved technologies and practices to help achieve the project objectives. Therefore, it is important to monitor the demonstration activities for assessing the performance of technology and progress toward achieving intended outcome as specified in project development objectives (PDOs). The templates for the purposes are shown in the **Annex 13**.

6.4.2 Training

Training is an organized activity aimed at imparting information and/or instructions to improve the recipient's performance or to help attain a required level of knowledge and/or skill. Fisheries development projects often keep provision for training of primary stakeholders (e.g., target

farmers/farmer groups, fishermen, and relevant entrepreneurs) as well as personnel responsible for execution of project activities of service provider/implementing agencies.

6.4.2.1 Training of Fish Farmers/Fishers and other Primary Stakeholders

Training of fish farmers is one of the most important tool used for technology transfer and most of the fisheries development project allocates sufficient financial resources for the event. There are various forms of formal and informal training for farmers to impart knowledge and develop their skills on technical knowhow of modern production technologies. Broadly, farmers' training aims at developing farmer's skills and competencies in farming activities/business while improving their knowledge, changing their attitudes towards farming as a business and producing for the market (FAO, 2011).

In fisheries development projects, the subject matter focus of beneficiary training varies according to the technologies promoted. Generally, a one-two day of formal training is organized for target beneficiaries to enhance their knowledge and skills so that they can adopt the technologies in question. However, in case of group approach of extension, different types of Organization Development (OD) and Human Resource Development (HRD) trainings are often organized. Monitoring Formats are shown in **Annex 14.**

6.4.2.2 Monitoring Progress of HRD Training

Human resource development is a critical issue for improving organizational capacity and efficiency of project implementing organizations. Both fisheries extension and research organizations employ a large number of technical, administrative and support personnel at various tires.To improve organizational capacity for efficiency in project implementation, the organizational personnel require continuous short and long-term training for upgrading their knowledge and skills and cater the services needed for the development projects in fisheries sector. Accordingly, provision of providing HRD training is kept in most of the development/research projects to support successful implementation of the project of project activities.

The HRD training includes (i) Training of Trainers (TOTs) on various subject matter to develop Master Trainers to improve the quality of training at different levels, improve support, supervision, monitoring and implementation abilities and skills of officers at organization and primary stakeholder levels. Besides, career development training and higher study programs at home and abroad is alsosupported in some projects. The templates for the purpose shown in **Annex 15.**

6.4.3 Field day

A field day is a group extension event conducted at result demonstrationsites. Field days offer the opportunity for 20 or more framers to visit a demonstration site and learn about the technologies being demonstrated. The purpose is to show the performance of the technologies to the visiting farmers and encourage them to adopt the technologies/new ideas on their own farms.

Field days are arranged at appropriate times during the demonstration, when particular management activities are implemented, or when the benefits of the demonstration are most visible. For fish production demonstrations, the appropriate times could be:

- at the time of fish fingerling stocking
- at mid-season when sampling / partial harvesting of fish is done
- at final harvest time when yields, costs, and benefits can be compared.

For a cycle of fish culture demonstration, minimum of two field days is recommended.

Template 6.2: Monitoring of Field Day

Demonstration/ Technology	Location of Demonstration	Number of participant attended/event		Number of Farmer Motivated for Adoption	
		Male	Female	Male	Female

6.4.4 Motivational Tour /Exchange Visit

A motivational tour/exchange visit is an organized trip by a group to observe results or situations related to specific problems. Special tours relate to one project or to demonstration of one improved farm or home practice. A tour, well planned and conducted in a businesslike manner, can be a highly effective teaching method.Motivational tour involves taking a group up to 30 farmers from their village to another developed area of interest. Motivational tours expose farmers to developments and new technologies being used by farmers in another area, or are being developed at research stations; govt. farms or private farms or activities being implemented by other extension organizations such as NGOs. Seeing new methods and talking to those who are using them often convinces farm people of the value of a practice. Then they are ready to try it- "Seeing is believing." Tours present a good opportunity for farmers from different areas to exchange and share ideas with one another.

Template 6.3: Monitoring of Motivational Tour

Location ofMotivational Tour	Technologies Observed	Number of Participant/Event		Number of Farmer adopted observedtechnology		Farmer's opinion
		Male	Female	Male	Female	

6.4.5 Workshop/seminars

Workshop is a period of discussion or practical work on a particular subject in which a group of people share their knowledge and experience. Among many different kinds of workshops organized in different agricultural development projects, "Annual Progress Review Workshop" is of paramount importance as it reviews the progress of implementation of project activities, reviews the results of interventions as well as discusses on the forthcoming annual program of activities of the project. The problems faced in implementation of project activities, means of handling the problems faced and lessons learned are also discussed. Project personnel at policy and different tires of implementation levels as well as other stakeholders attend these workshops.

Template 6.4: Monitoring of Workshops/Seminars

Name ofProject	Title of Workshop/Seminar	Location of Workshop/ Seminar	Attendance (No.)			Number of Report Presented & Discussed	Proceedings Prepared & Circulated
			Implemen-tation Level	Policy Level	Others		

6.4.6 Farmers Rallies

Farmers' rallies are large extension events which usually involve a combination of activities centered around a main theme (e.g. savings of jatka, savings of broodhilsa, savings of fry of indigenous SIS, culture of cuchia and crab, culture of pearl etc.). Since multiple activities are included and a large number of participants attend a single event, it is organized outdoors. Rallies may be organized jointly with other extension service providers to foster partnership among the extension providers.

Preparation for farmers' rallies often includes an agreed program of activities (e.g. formal opening, participatory presentation of folk songs and drama, presentation of awards to innovative farmers) and preparation of supporting materials (e.g. banners, leaflets, etc.). The venue should be selected carefully and where possible, other partner agencies should be involved. The content of the rally is such planned that the participants are kept interested through lively presentations of simple messages. In most cases, local people's representatives are invited to participate in the rally.

Rallies are normally used as an event for raising awareness rather than providing details of a specific technology. It has the advantage of attracting a large numbers of beneficiaries/fishers/ farmers from a wide range of backgrounds. Extension staff can also follow up rallies by sending a report to local radio stations and newspapers; discussing their main messages from the rally during normal contact with farmers and stimulating their interest in new ideas that were presented.

Template 6.5: Monitoring of Farmers rally

Technologies/Massages/Subject Matter	Location of Implementation	Attendance/Event (No.)	
		Male	Female

6.4.7 Posters

A poster is a sheet of paper or cardboard with an illustration, usually in a few words. It is designed to catch the attention of the passerby, impress on him a fact or an idea and stimulate him to support the idea, get more information or take some kind of action. It is widely used to disseminate innovative idea or message to the clientele. Moreover, it has long lasting effect on the clientele. Most agricultural development projects allocate money for preparation and distribution of posters to disseminate the technology or messages to the clientele. It is widely used extension tools in our country.

6.4.8 Folders, Leaflets and Pamphlets

Simple folders, leaflets and pamphlets is used in many ways in extension programs. Folders, leaflets and pamphlets may be used in coordination with other visuals in long range campaigns. Because of their low cost, they can be given away at meetings and fairs and offered on radio programs. They are useful to supplement larger publications when new information is available and when reprinting the whole publication is not practical. Besides, cost-effectiveness and short preparation time, folders, leaflets and pamphlets take less time to get their message across.Their smaller size makes it necessary for the author to eliminate non-essentials from his messagekeeping the audience in mind. Illustrations reduce the risk of misunderstandings; help make message clear and more attractive and induce learning by the audience.

Template 6.7: Monitoring of Print media

Items	Subject Matter/Technology Focus	No. of Copies	
		Printed	Distributed
Poster			
Folders			
Leaflet			
Pamphlet			

SECTION VII: LIVESTOCK SECTOR PROJECTS

7.1 Overview of Livestock Sector

In Bangladesh, livestock is an important socio-economic component and accounts for 1.7 percent of the economy's Gross Domestic Products. Over 70 percent of rural households are engaged in ivestockproduction, which contributes a large share of the smallholder and landless farmers' livelihoods. The rural poor communities are associated in livestock farming. Livestock are used for different purposes, such as - they provide power for cropping, transport, threshing and oilseed crushing; manure as source of fertilizer and fuel; a ready source of cash; and milk, meat and eggs for human consumption. Livestock provides business opportunities for Producer Organizations (POs); Micro, Small and Mid-Sized Enterprises (MSMEs); and service providers (World Bank, 2018).

According to 7th Five Year Plan, the rapid population growth, urbanization and the associated increase in the demand for animal products have presented golden opportunities to the livestock industry. While Bangladesh has a high cattle density, yet the current production of milk and meat are quite inadequate to meet the current requirement, and the deficits are estimated to be 57% and 33% respectively. The average weight of local cattle are also low and ranges from 100 to 150 kg for cows and from 150 to 250 kg for bulls that are approximately 25-35% less than that of Indian cattle. Milk yields are also extremely low: 200-250 litre during a 10-month lactation period in contrast to 800 litre for Pakistan, 500 litre for India and 700 litre for all Asia. Besides, on the poultry side a huge deficiency exist in egg production in the country. Livestock population (2014-15) are: (i) Cattle- 23.64 million; (ii) Buffalo- 1.46 million; (iii) Goat- 25.60 million; (iv) Sheep- 3.27 million; (v) Chicken- 261.77 million; and (vi) Duck- 50.52 Million (Source: DLS and BBS). Demand and deficiency (2014-15) of milk (Million ton), meat (Million ton) and eggs (Million numbers) are 14.48 and 7.51 for milk, 6.95 and 1.09 for meat and 16504.8 and 5509.6 for eggs, respectively (Source: DLS and BBS).

7.1.1 Problems in Livestock Sector

The major constraints for livestock production in Bangladesh are: (i) limited knowledge and technical skills of smallholder dairy farmers; (ii) scarcity of feeds and fodder; (iii) poor quality of feeds; (iv) frequent occurrence of diseases; (v) limited coverage of veterinary services including poor diagnostic facilities; (vi) lack of credit support; (vii) limited milk collection and processing facilities; (viii) absence of market information; (ix) lack of appropriate breeds and (x) absence of a regulatory body.

Native chicken are low producer but higher in disease resistance. Mortality is less as compared to higher productive chicken reared in the country. Commercial production systems use birds of improved genetic stock and reared under semi intensive or intensive management. There are currently an estimated 1, 35,000 commercial poultry farms in Bangladesh, supported by 08 Grand Parent Farms and 205 Parent Stock Farms. The constraints facing the sector in general include: (i) lack of infrastructure beyond the Upazila Head Quarters for providing services to poultry farmers; (ii) shortage of skilled manpower; (iii) shortage of duality chicks and breeding materials; (iv) shortage of poultry feed/feed ingredients and high prices; (v) poor quality of inputs; (vi) lack of quality control facilities for medicine, vaccines and biological products, feed and feed ingredients, chicks, eggs and birds; (vii) drug and vaccine residues in poultry meat; (viii) shortage of vaccines; (ix) lack of organized marketing systems; (x) poor provision of veterinary services and (xi) insufficient credit and capital especially for the poor.

Livestock Extension and research activities are not strong enough for livestock development in the country. Several problems accompanied by the Department of Livestock Services (DLS) and Bangladesh Livestock Research Institute (BLRI). Such as- (i) Inappropriate mandate and functions;

(ii) Structural and Organizational deficiencies; (iii) Thin and weak frontline services at the upazila; (iv) Weak linkage between them; (v) Weak management system and MIS (management information system); (vi) Slow recruitment and absence of performance based promotion system; (vii) Shortage of skilled manpower; (viii) Lack of regular skill development

7.1.2 Strategies for the Development of Livestock Sector

For dairy development in the country, promotion of supply chain based production, processing and marketing of milk and milk products would be emphasized. Cooperative dairy development activities (like Milk Vita) would be promoted. Besides, dairy development projects would be undertaken with the assistance of different national/international donors' agencies. For meeting up the demand-supply gap in meat production better beef breed production is needed. Besides, more development project should be undertaken to strengthen of cattle fattening system and more breeding of the "Black Bengal Goat" with necessary knowledge transfer for increased productivity at farm level. Conservation, multiplication and utilization programme of potential indigenous breeds for subsistence semi-commercial farming would be a priority.

Private sector poultry production is progressing with positive results in the country and this should be continued. Policy support will also be provided to help small commercial farms to convert into profit oriented bigger farms following cooperative system. For technology transfer, poultry farms of the DLS would be utilized as breeding and multiplication farms/centres for smallholder training, technology testing and demonstration. Private and NGO initiatives in livestock research would be encouraged and supported. Linkage between BLRI and DLS would be strengthened for transferring developed technologies properly and timely.

To minimize the scarcity of feeds and fodder in the country, long term fodder development programme would be taken throughout the country, including large scale private sector participation. A strategy would be developed for community- based fodder cultivation along roads and highways, rivers and embankments, in Khas lands and in combinations with crops. It is noted that, if the initiatives mentioned above are addressed properly, the current production of livestock commodities might be increased at least 2 times by the year 2030 to feed the growing population in the country.

7.1.3 Identified Monitoring and Evaluation Indicators of Livestock Sector Projects

Activity Level M&E Indicators

- Conduction of various livestock production technology demonstration;
- Conduction of validation trials of new technologies;
- Implementation of technology adoption sub-projects with AIF-2 matching grants
- Implementation of value chain and marketing sub-projects (AIF- 3 matching grants) to support various livestock related entrepreneurship;
- Conduction of livestock owner/farmers' skill development training on technological interventions;
- Conduction ToT courses for organizational personnel/staff of DLS demonstrated technologies;
- Providing HRD training to organizational personnel (short-term training, study visit, degree program).

7.2 Monitoring and Evaluation ofLivestock Sector Development Project Activities

As discussed earlier, monitoring is periodic tracking (for example, daily, weekly, monthly, quarterly, and annually) of progress of project activities by systematically gathering and analyzing data and information to track changes in program outputs and performance over time. It helps management and stakeholders to make informed decisions regarding the effectiveness of programs and the

efficient use of resources. In monitoring and evaluation of development projects in fisheries sector, different types of monitoring could be done including a)Process Monitoring(Real Time Monitoring), b)Progress Tracking, c)Progress Validation and d)Performance Monitoring.

7.2.1 Process monitoring

Process monitoring is a key component of any M&E system of agriculture development projects. It informs management/donor about the actual status of implementation of project activities in the field. At the same time process monitoring let the project staff on the ground know how well they implements the project and what improvement they can bring to the work they are doing in field. In Process Monitoring, checklists and guidelines developed jointly with project staff are used. The checklists are as follows:

A. Checklist for Project Monitoring: Initial/early stage

- Appointment of project director, if appointed when
- Establishment of office of the project, if set when
- Manpower mobilization as per project provision
    - departmental staff, if done when
    - Project staff, if done when
- Project inception workshop organized or not
- Recruitment of consultant/consulting firm done or not
- Preparation of annual work plan and budget done or not
- Status of baseline survey planning/commissioning
- Status mobilization outreach sites (district/Upazila)
- Progress of procurement process of civil works/equipment/ machineries vehicles/animals/semen/poultry, etc. as per project provision (preparation RFQ/Tender documents, etc.)
- Status of targeting and mobilization of target beneficiaries
- Progress of implementation of technical interventions (e.g. demonstration, beneficiary training, training of trainers and other extension activities)

B. Checklist for Project Monitoring: Mid-term Stage

- Progress of overall physical and financial progress of the project
- Progress in recruiting manpower (as per DPP; number and quality)
- Progress in deploying of consulting firm/consultants
- Progress in setting extension tools
    - Field demonstration
    - Field days
    - Motivational tours
    - Upazila and district agricultural fairs
    - Review workshops, etc.
- Initial and intermediate outcomes of technical interventions
- Progress in imparting training

- Training of Trainers
- Skill development Training of departmental staff
- Beneficiary training

- Status of commissioning/completion of Baseline Survey
- Status of planning and commissioning of Mid-term survey
- Status of procurement of machinery and equipment (number or percent)
- Status of procurement of vehicles by items (number or percent)
- Status of procurement of animals/semen/poultry (number or percent)
- Progress in civil works by items (percent).

C. Checklist for Project Monitoring: Terminal Stage

- Total physical target of project achieved (%) or not, if not why (explain)
- Total financial target of project achieved (%) or not, if not why (explain)
- Total project target of demonstration achieved (%) or not if not why (explain)
- Total project target of training achieved (%) or not if not why (explain)
    - Training of Trainers
    - Skill development Training of departmental staff
    - Beneficiary training
- Other targeted extension activities achieved fully or not if not why (explain)
- Mid-term survey commissioned or not if done when?
- Terminal impact survey commissioned or not
- Total planned machinery/equipment procured (%) or not, if not why (explain)
- Total planned civil works completed (%) or not, if not why (explain)
- Progress in targeted technology adoption (%), if not why (explain)
- Progress in disbursement of credit/innovative fund (%), if not why (explain).

7.2.2 Progress Validation:

Progress validation is another important type of monitoring. Progress of key project activities are usually reported by the field staff. In order to validate the output progress reported, the M&E staff collect the Output Tracker and identify output indicators to be validated. Validation/verification is initiated by collecting of Means of Verification (MoV). Once MoV are collected, the M&E staff takes a sample out of those and physically verifies the activities. This is followed by assessing and verifying thoroughly the process being adopted by field staff while conducting that specific activity. At the same time, if the activity has been undertaken a while ago, performance and outcomes of the intervention is also assessed. The monitoring format for pre-stage activities of the project is shown below:

Checklist for Pre-stage Monitoring of poultry production process

Production process followed in poultry farming	Responsibility
Cleaning and Disinfection of Poultry Houses - Selection and collection of Insect control materials - Discussion about operations prior to cleaning and disinfection with staffs - Sanitary precaution	Production Officer/ Asstt. Manager and attendents
Flock management during the rearing period - Fixed stocking density, drinker & feeder space - Management of temperature during the rearing period - Arrangement of necessary equipment for health programmes	Production Officer/ Asstt. Manager, Technician and attendents
Lighting programme - Arrangement of lighting programme in light-controlled, semi-dark or open	Production Officer/ Technicians

Production process followed in poultry farming	Responsibility
rearing houses	
Flock management during the production period - Necessary steps to be taken to transfer birds from rearing to laying house - Necessary steps for lighting programme with light intensity management during production period	Production Officer/ Asstt. Manager, Technician and attendents
Water supply -Necessary steps for supply of germfree water in the poultry house	Production Officer and Technicians
Nutrition - Necessary steps to be taken to supply recommended ration to the birds	Production Officer and Technicians

7.2.3 Progress Monitoring

One of the key functions of M&E system is to capture progress against output targets set to be achieved. For Progress Tracking, a tracking sheet is required to outline all output indicators for key activities along with target values for those output indicators. The targets could be logically divided into quarters/years according to annual work plan. Progress achieved is entered against those targets and the trackers automatically calculate deviation against the targets. The progress is tracked to; a) see whether the project is on-track or off-track and b) assess whether time-critical activities are taking place as per the calendar or not. The monitoring personnel may collect data on progress of set indicators of project activities quarterly and/or annually. Progress of the year against the target may divide by quarters (livestock or fish) or by seasons depending upon the nature of the indicators being measured. The Templates are shown in **Annex 16**.

7.2.4 Outcome Monitoring

At the mid and later stage of project implementation one can monitor the outcome of the interventions. It could be done by assessing the project progress in the field. It is important to know how many beneficiaries are producing the demo technology and how much area being covered by the technology. Yield of the targeted crop or variety could also be assessed by asking the farmers. The following template is designed to track the outcome of the project.

Template 7.1: Progress monitoring of livestock sector development project activities

Indicator (reference)	Output Target	Current Yield/ha or hh				
		1st Qtr./Yr.	2nd Qtr./Yr.	3rd Qtr./Yr.	4th Qtr./Yr.	Annual /End
Milk production/cow						
Number of cow/hh						
Number of goat/sheep per hh						
Milk production/hh						
Fodder production/hh						

7.2.5 Monitoring Development Activities and Outputs of Livestock Sector Projects

Livestocksectordevelopment/technology transfer projects also include more or less similar extension/technology transfer activities but involving different kinds of livestock. The commonly observed extension activities includes various types of, demonstrations, different types of training for farmer beneficiaries and extension personnel, farmers' field days, motivational tours, workshops, etc. The extension activities commonly usedis discussed below along with monitoring and evaluation templates for each activity.

7.2.5.1 Demonstration

Farmers are keen on seeing how a new idea and technologies works and how it might affect their crop/livestock production in the context of their existing practices. The major extension tool to exhibit the performance of new ideas and technologies is conduction of farmer participatory demonstrations. The demonstration should be simple and it should illustrate the procedure of using/implementing the demonstrated technologies so that farmers can learn and practice the technologies on their own. In livestock technology transfer, both result and method demonstration techniques are used. Both of these require a great deal of thought, planning and competent implementation (FAO, 2012).

In livestock technology transfer, *Result Demonstration* is conducted mostly in transferring research-based technologies to the target beneficiaries. A result demonstration is a simple trial or exercise to show how a practice performs under farmers' condition. In livestock development projects, the commonly used result demonstration includes livestock production and management technologies, new livestock breed/species, production of forages, preparation of silage/hay, etc. Result demonstrations often compares farmers' existing technologies/practices with the new technologies/practices. Result demonstration for livestock technologies may be of different types (DPP, NATP-2, 2016), such as:

(i) *Productivity enhancing technology demonstration* e.g., cattle fattening, modern management of dairy farming, production and management of high yielding green fodder, silage and hay production, vaccination and de-worming, etc.);

(iii) Post-harvest loss reducing technology demonstration (e.g., chilling and preservation of milk, preparation of improved and indigenous dairy products, liming and cold storage for egg preservation etc.);

(iv) Agro-food processing technology demonstration (e.g., milk pasteurization, cream separation and preparation of milk products, meat processing for domestic and export market etc.);

(v) Technologies for adaptation to climate change demonstration (e.g., promotion of salinity tolerant fodder production in coastal areas, introduction of duck and buffalo rearing in low lying areas, introduction of sheep production in delta region, etc.).

However, most of the livestock technologies demonstrated to the farmers takes a long time. It is a costly method and may be prone to risk of failure due to extreme climatic events as well as the ideal situation needed for the success of the technologies demonstrated.

Since on-farm demonstration of improved technologies among the target beneficiaries is a critical issue, most livestock development projects allocate adequate financial and other resources for this extensively used event. It is important to monitor the demonstration activity of the project for assessing the performance of technology and progress toward achieving intended outcome as per project's log frame. The templaes of demonstrations for livestock projects are shown in **Annex 17.**

7.2.5.2 Training

Training programs in livestock sector are conducted for enhancing working capacity and skill & knowledge development of the participants. Usually, scientists, extension officers, staffs, livestock owners, farmers and NGO workers are selected as training participants. Training programs are categorized in (1) long term (MS/PhD) and (2) short term training. In long term training programs scientists/officers are enrolled in different universities at home and abroad for pursuing their MS/PhD degree, with the financial assistance of different national and international organization. Usually, 1-8 weeks duration courses are included in short term training programs.

7.3.6.1.1 Training of Livestock Farmers

Generally, short term training courses (3-5 days) are conducted for the livestock farmers to develop their skill and efficiency/knowledge in livestock rearing. It can also be entitled as “hands on training” on different developed technologies. These are participatory types training with two-way approach of communication (from facilitator to farmer and vice versa). Participants (farmers, livestock owner, service provider, etc.) can learn much more efficiently if they participate actively. Knowledge can be gained through discussing, encouraging the participants to ask questions and always relating the topics to the participants’ interests. They should be given the opportunity to play a role as much as possible by giving opinions, advices, sharing experiences, asking questions and showing their capabilities. The following courses (technologies) are few examples of this category of training:

1. Cattle Fatting;
2. Dairy Farming;
3. Black Bengal Goat Rearing Under Stall Feeding System;
4. Bio-security in Commercial Poultry Farms, etc.

Cattle fattening: It is a four-steps rearing program of male/or female emaciated cattle for harvesting their compensatory growth within a period of 60 to 120 days. Collection of animals considering their body characteristics followed by de-worming and feeding cost effectively up to a profitable rate of live weight gain and marketing them readily are the four major factors to make the fattening program profitable. It is an easy and profitable system of cattle rearing to alleviate poverty, unemployment and generate income for the rural women and youth.

Dairy farming: High yielding dairy cows of both native origin and or/crossbred types are reared under intensive or semi-intensive system through proper feeding, management and health care to produce milk. Milk is usually sold in nearby markets or to middle man or to dairy cooperatives in certain areas of the country and makes profit out of it.

Black Bengal Goat Rearing under Stall Feeding System: In Bangladesh, most of the goats are Black Bengal and being kept by the rural people in traditional husbandry system. The landless and marginal farmers rear the majority of the goats. Tethering along with the occasional free ranging are the general means of goat production in Bangladesh. With increasing population and decreasing arable land traditional goat farming by free ranging or even tethering opportunity is reducing day by day. This has led to develop ‘Stall Feeding System’ of goat production. Goat rearing by ensuring of proper management i. e. proper housing, feeding health care and other related management facilities of goats under complete confinement is termed here as stall-feeding system. Therefore, this technology can be effective weapon for poverty alleviation in Bangladesh.

Bio-security in commercial poultry farms: It is very important subject for running a commercial poultry farm. The key characteristics of the technology are good quality feed, pure drinking water, hygienic accommodation, restricted entrance, sanitary environment and effective vaccination schedule. Safety measures from transmissible infectious diseases, parasites and pets can prevent viruses, bacteria, fungi, protozoa, parasites, insects, rodents and wild birds from entering or surviving and infecting or endangering the well-being of the flock. Successful implementation of the technology will help disease free poultry even meat and egg production. The templates of training are shown in **Annex 18.**

7.2.5.3 Monitoring of Farmer Group

Farmers’ group formation is very effective (with regular group meeting) to transfer different developed livestock technologies to farmers/end users. The groups are trained on different

technologies in the fields. Monitoring is very necessary to keep the group active for dissemination of the livestock technologies. Template is shown in **Annex 19.**

7.2.6 Monitoring of Field Day

Field days are conducted at result demonstration sites of the projects with 20 or more farmers in a group with a view to show the performance of the technologies to the visiting farmers and encourages them to adopt the technologies/new ideas on their own farms. The monitoring templates are shown in **Annex 20.**

7.2.7 Monitoring of Motivational Tour/Farm Visit

A motivational tour/farm visit is an organized trip by a group of farmers to observe results or situations related to specific problems. It is a highly effective learning method for the farmers and an opportunity to exchange and share ideas with one another. In a motivational tour, a group comprises up to 30 farmers from an area visit to another developed area of interest. It exposes farmers to developments and new technologies being used in another area, government farms, private enterprises and different NGOs. Seeing new technologies/practices/methods and talking to those who are using them often convinces farm people of the value of a practice. Then they are ready to try it- “Seeing is believing”. The template for monitoring of motivational tour is given in **Annex20**.

7.2.8 Monitoring of Workshop

Workshop is a period of discussion or practical work on a particular subject in which a group of people share their knowledge and experiences. Every year one or more workshops are organized by different agricultural research and development organizations. “Annual Research Review Workshop” is an example of workshop organized by different research institutes. It reviews the progress of implementation of project activities and the results of interventions. It recommends the forthcoming annual research programs of the institutes. It is an effective forum for discussion of problems during implementation and also a means of handling problem faced. The template for monitoring of workshop is given in **Annex20**.

7.3 Monitoring Commercial Layer Farm

Several general farm rules are maintained for running a commercial chicken farm effectively. The golden rule of management is to have one age and one breed per site to ensure the “all-in, all-out” principle is followed at all time. The choice of the site for the farm, including the lay out of the houses, must priorities the elimination of all possible sources of contamination. Biosecurity protection is reinforced by hygiene controls. A changing room should be made available at entrance of the site. It must be used by everybody entering the farm (incorporating both a shower and a change of clothes). When the old flock is removed and before the arrival of the new flock, all houses and equipment must be thoroughly cleaned and disinfected according to strict procedures and protocols. This should be followed by a rest period of at least 10 days. Between each flock, cleaning and disinfection of the houses, their annexes, surroundings and access ways are essential to ensure the optimal health conditions required for the incoming flock to maximize its profitability. The following programs are necessary for running a commercial poultry farm, effectively:

7.3.1 Cleaning and Disinfection of Poultry Houses

Under this program, the activities such as (a) Insect control, (b) Operations prior to cleaning, (c) Washing, d) Placing equipment back into the house, (e) Disinfection, (f) Sanitary precautions, (i) Rodent control, (j) Assessing disinfection effectiveness, (k) Resting period, and (l) Before the new flock arrives are very important for commercial poultry enterprise.Among the above-mentioned activities some are described briefly bellow.

7.3.1.1 Disinfection

Usually disinfection are done for different farm equipment, house, feed silos, etc. Such as a) Water pipes: Highly concentrated chlorine solution (200 ppm) are prepared in a water tank. The tank is opened to fill the pipes with this solution and leave for 24 hours. Afterwards, the water circuit is drained. It should not forgotten to seal the water tank to protect it from dust, b) House: House and equipment disinfection is achieved using a homologous bactericidal, virucidal and fungicidal disinfectant, applied with a hand held or low pressure sprayer or a foam-producing machine. An approved disinfectant with required concentration may be used for poultry applications, c) Feed Storage Silos: Feed silos are scrape, brush wash and after drying, fumigate using fungicidal candles following manufacturers guidelines, d)Heating and ventilation ducts (if they are present): Disinfection using fungicidal, virucidal and bactericidal candles following manufacturers guidelines, e) House surroundings and road and path access ways: A disinfecting product, such as: caustic soda (50 to 100Kg/1000 m^2) or quicklime (400 Kg/1000 m^2) are spread.

7.3.1.2 Assessing disinfection effectiveness

It is very needful to assess the effectiveness of disinfection done for biosecurity of the farm. It is done in two ways- such as a) Visual examination: Check for dirt stains in the house and on the equipment, and b) Bacteriological analysis: Contact plates or swabs are applied to equipment and to different places in the house. These are rapidly forwarded to a laboratory for bacteriological assessment following an agreed protocol with the laboratory. Template for this purpose is given in **Annex 21.**

7.3.1.3 Health program for farm birds

For this activity, it is recommended that a concerned specialist be consulted to help in producing a prevention program adapted to the farm. As a rule, a scheduled vaccination program is very essential to keep the farm disease free. The choosing of right products (vaccines) is the prime responsibility to make the program a successful one. Staff should be properly trained to carry out veterinary operations. All the necessary equipment (sprayers, syringes, etc.) must be correctly maintained and checked before each use. Vaccines and treatments should be stored in appropriate conditions, in suitable quantities considering the requirements and supply time. Finally, it is useful to have the help of a laboratory in order to assess the efficiency of the operations, such as – a) Control of disinfection, water and feed quality, b) Serological monitoring, c) Post mortem examination, routine parasite checks. Template for monitoring health program of a commercial layer farm is showed in **Annex 21**.

7.3.2 Flock Management during the Rearing Period (0 – 17 weeks)

The activities such as a)Stocking density, drinker space and feeding space from day old to 2 weeks old, b) Management of the temperature during the rearing period, c) Stocking density, drinker space and feeding space from 2 to 5 weeks old, d) Stocking density, drinker space and feeding space between 5 weeks old and transfer, e) Beak trimming, f) Monitoring body weight and uniformity, g) Health program, and h) Grit and grain are included under this program and should be followed strictly for better management of a commercial poultry farm**.**

Not all activities mentioned above, but two of them are described below:

7.3.2.1 Stocking density, drinker space and feeding space from 2 to 5 weeks old

It is very important activity for a commercial poultry farm**,** as if the stocking density, and feeder and drinker space are not in required level, growth of the birds decreased and mortality is increased. As a result, farm productivity is hampered. Usually, in a hot climate country, like Bangladesh, stocking

density for floor and cage system rearing are maintained as 15 birds/m2 and 30 birds/m2, respectively. One hanging drinker is used for 75 birds in floor rearing system but in case of nipple drinker one drinker is used for 10 birds in both floor and cage system of rearing. For feeding space, in case of linear chain feeders 4 cm per bird is used in both the systems and in case of pan feeders, one feeder is used for 25 birds in both system of rearing (Template 7.2).

Template 7.2: Monitoring stocking density, drinker space and feeding space

Indicators	Floor system	Cage system	Remarks
Stoking density (bird/m2)			
Hanging drinker(no. of birds for one drinker)			
Nipple drinker(no. of birds for one drinker)			
Linear chain feeder (cm/bird)			
Pan feeder (cm/bird)			

7.3.3 Lighting Program

It is a very important program for a commercial poultry farm. The activities under this program, such as a) General rules for lighting (lighting program during first week of age, lighting program between 8 weeks old till the age at which light stimulation is targeted, increasing day length to stimulate egg production, lighting program during production and light intensity), b) Various housing and lighting situations to be considered (light controlled rearing house, open or semi-dark rearing house, lighting in a hot climate, midnight lighting, etc.) are maintained regularly.

7.3.3.1 Lighting program in a hot climate

In a hot climate condition, a slow step down lighting program (starting from first week with 22 hours light) until 12 weeks of age (12:30 hours) is to be used. A constant natural day length (12:00 hours) from 12 weeks of age to 2-5% of production is maintained. Lighting duration is increased by 1 hour and/or 30 minutes from 2-5% of production in the morning. Lighting duration of 1 hour and/or 30 minutes per week will be added until 15.30 hours or 16 hours total light is obtained at 29-30 weeks of age (peak production). The light on should be adapted to allow the birds to eat during the cooler part of the day. Lighting program is given below (Template 7.3).

Template 7.3 Monitoring lighting program in a hot climate

Age	Lighting duration	Increasing rate of duration
First week		
12 weeks to 2-5 % egg production		
29-30 weeks (peak production)		

7.3.4 Flock Management during the Production Period

This program is also important for keeping egg production performance of birds in highest level, as per targeted. The activities, such as- a)Transfer of pullets from rearing house/cage to laying house/cages, b) Lighting program, c) Light intensity management and d) Management of the egg weight should be maintained very carefully.

7.3.4.1 Transfer of pullets from rearing house/cage to laying house/cages

Timely transfer of pullets from rearing house/cage to laying house/cages is very essential to increase the egg production as per targeted schedule. It is advised to transfer the birds a) at 16 to 17 weeks of age, b) Before the appearance of the 1st eggs, c) After a last vaccine planned 1 week before the transfer, and d) After de-worming of the flock (3 days prior the transfer). In order to minimize the stress at transfer time, it is important to: a) Rear the birds with similar drinking system

as they will encounter after transfer, b) Increase light intensity to encourage water consumption, and c) Maintain temperature as close as temperature experienced by the pullets at the end of the rearing period. The activity can be monitored using the following template (Template 7.4).

Template 7.4: Monitoring transfer of pullets from rearing house/cage to laying house/cages

Indicators	Days/weeks	Remarks
Transfer age of pullets		
Vaccination before transfer		
De-worming before transfer		

7.3.5 Water Quality

Supply of quality water to the birds reared in a commercial farm is the prime responsibility of the farmers to keep the farm disease free. For this purpose, the major two activities are- a) Lab test of water supplied to the birds, and b) Cleaning of pipe system and drinkers used in the farms.

7.3.5.1 Laboratory test of water supplied to the birds

In a commercial layer farm test of water must be done on a regular basis, at least twice a year. It is recommended to equipping each farm with a system to control the bacteriological quality of water (chlorination for instance). Some microbial and chemical standards showed that, total flora contents (number/ml) of very pure and drinkable water varies from 0 to 10 and 10 to 100, respectively. Salmonella and E. coli content (number/ml) were found nil in both very pure and drinkable water. Ammonia (mg/l) was also found nil in very pure and drinkable water pH was observed 7 and 7-8.5 in very pure and drinkable water, respectively. It is advisable that, a water sample for analysis should be taken at the entry point of the house and/or at the end of the system. Water quality monitoring template is mentioned below (Template 7.5).

Template 7.5: Monitoring water quality

Pathogen	Units	Very pure water	Drinkable water
Total Flora	Number/ml		
Salmonella	Number/ml		
E. coli	Number/ml		
Ammonia	mg/l		
pH			

7.3.6 Nutrition

In a commercial farm, nutrition program is usually given top priority, as feed cost is ranking highest position in farm management system. The activities, such as – a) Preparation/collection of diet/ration with recommended nutrients for rearing and production period, b) Preservation of feeds/feed ingredients and vitamin and mineral premix properly are badly needed for commercial chicken farm management.

7.3.6.1 Preparation/collection of diet/ration with recommended nutrients

In a standard layer ration usually the nutrient contents are found as a) Metabolizable Energy (ME Kcal/Kg)- 2750, Crude Protein (CP %)- 17.5- 18, Crude Fat (%)- 3.5-4.5, and Crude Fibre (%) – 4.0-6.0. The nutrient concentration may vary according to the ingredients available locally and their cost. The activity can be monitored using the following template (Template 7.6).

Template 7.6 Monitoring preparation/collection of diet/ration with recommended nutrients

Nutrients	Unit	Layer ration	Remarks	
Metabolizable energy (ME)	Kcal/Kg			
Crude Protein	%			
Crude Fat	%			
Crude Fibre	%			

SECTION VIII: MONITORING AND EVELUATION OF CIVIL WORKS IN CROP, FISHERIES AND LIVESTOCK SECTOR PROJECTS

Field monitoring gives an on the spot monitory of projects performances in its implementation period. Since most of the development projects have civil construction/physical work component, the overall physical & financial progress of work of any project can only be assessing through site monitoring. Since monitoring is a continuous process of collecting data, it gives an opportunity to see whether the works are being carried out as per approved plan & design or there are deviations from the approved DPP. Besides, the rate of progress of work vis-a-vis the utilization of fund can also be assessed as to whether there are possibility of time and cost overruns. Through project monitoring and evaluation early forecast of time and cost overrun can be made in advance and at the same time remedial measures can be suggested.

Inspection and quality assurance of project implementation is the ultimate responsibility of the respective implementing agency/Ministry, though it is contractors responsibly to guarantee quality of works as per terms and condition of the contract. However, in order to have an impartial view of the project performance by the independent and higher body like IMED becomes pertinent.

8.1 Performance Indicator-wise Target and Achievement of Civil Works

The following templates have been derived to address the items of civil works in cluster based on the appropriate unit as simple tools for monitoring the target and corresponding progress. IMED monitoring officer responsible for filling up the templates (8.1 to 8.5) will follow the instructions below:

- During the field visit the monitoring officers will take all necessary monitoring templates with them
- It is the responsibility of the monitoring officer to collect the monthly/bi- monthly/Quarterly/annual progress report from the respective project officials before the visit for in depth study.
- During filling up the templates, the monitoring officers will take assistance of the engineering in-charge (E/C) or his representatives.
- To cross-check or verify the progress given by the engineering in-charge (E/C) or his representatives, the monitoring officer should visit the working side for spot checking.

All the item of works having measurement unit (performance indicator) in hectare are to be recorded in this following template. This template will entail output in hectare as a result of giving input such as money (cost) and time along with to track progress in compared with the target.

Template 8.1: Item of civil work vis-a-vis performance indicator measuring unit (ha)

Item of civil work	Target of Work			Progress of Work			Remark
	Area to be Excavated (ha)	Time Allocated	Estimated cost (BDT)	Actual Area Excavated (ha)	Time Spent (Months)	Cost Incurred (BDT)	
Waterbody to be Re-excavated							

All the item of works having measurement unit (performance indicator) in sqm are to be recorded in this following template. This template will entail output in sqm as a result of giving input such as money (cost) and time along with to track progress in compared with the target.

Template 8.2: Item of civil work vis-a-vis performance indicator measuring unit (Sqm.)

Item of civil work	Target of Work			Progress of Work			Remark
	Targeted Area of Civil Work (sqm.)	Time Allocated (Mo./Yr.)	Estimated cost (BDT)	Actual Area of Civil Work (sqm.)	Actual Time Spent (Months)	Cost Incurred (BDT)	
Refurbishment of building-I							
Construction of Building							
Construction of hatchery							
Land development							

All the item of works having measurement unit (performance indicator) in meter(m) are to be recorded in this following template. This template will provide output in meter(m) as a result of giving input such as money (cost) and time along with to track progress in compared with the target.

Template 8.3: Item of civil work vis-a-vis performance indicator measuring unit (m)

Item of civil work	Target of work			Progress of work			Remark
	Length to be developed (m)	Time Allocated (Mo./Yr.)	Estimated cost (BDT)	Actual length developed (m)	Time Spent (Months)	Cost Incurred (BDT)	
Construction of road (Flexible pavement, Rigid pavement,HBB, etc.)							
Construction of culvert (Pipe culvert, Box culvert etc.)							
Construction of boundary wall							
External electrification							
Water distribution line							
Buried Pipe Irrigation							
Construction of rubber-dam							

All the item of works having measurement unit (performance indicator) in number are to be recorded in this following template. This template will entail output in number as a result of giving input such as money (cost) and time along with to track progress in compared with the target.

Template 8.4: Item of civil work vis-a-vis performance indicator by numbers

Item of civil work	Target of Work			Progress of Work			Remark
	Items constructed /procured (No.)	Time Allocated	Estimated cost (BDT)	Actual Items Constructed /procured (No.)	Time Spent (Months)	Cost Incurred (BDT)	
Construction of bio-digester							
Fish landing ghat							
Construction of regulator/Sluice							
Construction of shed							
Procurement of vehicle/equipment							

All the item of works having measurement unit (performance indicator) in $m^3$are to be recorded in this following template. This template will deliver output in m^3 as a result of giving input such as money (cost) and time along with to track progress in compared with the target.

Template 8.5: Item of civil work vis-a-vis performance indicator by volume of work (m^3)

Item of civil work	Target of Work			Progress of Work			Remark
	Volume to be constructed (m3)	Time Allocated	Estimated cost (BDT)	Actual volume constructed(m3)	Time Spent (Months)	Cost Incurred (BDT)	
Construction of water tank							

8.2 Monitoringfor Tracking of Physical and Financial Progress of Civil Works

The physical progress monitoring reveals the performance and efficiency of input delivery and financial progress monitoring accounts for costs by input and activity within predefined categories of expenditure. It is often conducted in conjunction with compliance monitoring. Process monitoring ensure implementation according to the budget and allocated time. Contribution of any input in regards to the civil works is also quantified against total cost of the construction. The monitoring templates are shown in **Annex 22.**

8.3 Monitoring of Manpower

The project will be implemented under the administrative control of Ministry of Agriculture, Fisheries and Livestock. Each project will have to set up a Project Management Unit(PMU). Project Management Unit will be headed by an experienced and dynamic Project Director who will administer all activities and functions of the project professionally. PMU is responsible for recruiting the experienced and qualified man power as envisaged in the DPP. To ensure the recruitment of quality manpower, there should have an arrangement for monitoring the recruitment process. To address this purpose, the following template has been developed to collect data from the field to monitor and evaluate whether the concerned PMU has recruited and deployed the desired manpower as per DPP or not.

Template 8.9: Monitoring of Recruitment of Experienced and Qualified Manpower

Provision of manpower as per DPP				Actual recruited manpower					
Name of the post	Number of post	Qualifications & recruitment method	Experience in Years	Name of the post	Number of post	Qualifications & recruitment method	Experience Years	Date of Joining	Date of Transfer

8.4 Performance Monitoring of Contractor/Consulting Farm

a) Monitoring Appropriateness of Personnel Deployment

PMU is responsible for inviting tender for works, goods and services aiming to select experienced consulting farm and contractor in a view to implement the project efficiently and effectively ensuring quality works in the stipulated time.

Contractor/Consulting farm has a binding to deploy qualified, experienced, and competent personnel for specific position to undertake assigned tasks efficiently and effectively. Template 8.10 and 8.11 would help in tracking whether the contractor/consulting firm has deployed personnel and equipment according to requirements as specified in bidding document.IMED monitoring officer will follow the instructions below during filling up the templates 8.10 and 8.11.

- During the field visit the monitoring officers will have to take all necessary monitoring templates and bidding documents of the respective package.
- During filling up the templates, the monitoring officers will take assistance of the engineering in-charge (E/C) or his representatives.
- The IMED personnel should also visit the contractor's/consultant's office/site office to cross-check and verify the number of manpower deployed, their experiences and date of joining including the deployment of equipment as mentioned in the bidding documents.

Template 8.10: Monitoring quality of personnel deployed by Consulting Farm/Contractor

Name of Staff	Position as per		Qualification as per		Experience (Years) as per		Date of Joining	Remarks
	Bidding Document	Actual	Bidding Document	Actual	Bidding Document	Actual		

b) Monitoring of Contractor's Equipment

The quality output or works depends on the use of proper and specified equipment at the proper time during the construction phase. Hence, as per bidding document, the Contractor must have all the specified equipment of his own to deploy at the construction site and use during the construction.Whether proper or specified equipment has been deployed may be ensured with the help of Template 8.11.

This template would help in monitoring the actual deployment of equipment by the contractor and actual provision as per bidding documents.

Template 8.11: Monitoring Contractor's equipment

Sl.No.	Name of Equipment	As per bidding	Actual Found at Work Site	Remarks

8.5 Compliance Monitoring

Compliance monitoring is a critical issue in Civil Works to deliver quality output and outcome to ensure the sustainability of the work accomplished. This compliance also ensures the achievement of expected result through applying the regulation, national and international standard codes in practice including contract requirements and quality assurance. The following templates would help in evaluating the set compliances of the project.IMED monitoring officer will follow the instructions below during filling up the templates 8.12:

- During the field visit the monitoring officers will have to take the respective monitoring templates and bidding documents of the respective package
- During filling up the templates, the monitoring officers will take assistance of the engineering in-charge (E/C) or his representatives.

The implementation of the civil work component is undertaken as per design and drawing furnished in the bidding documents. Each structure is designed following standard code practice. This template would assist in monitoring whether the works are undertaking following approved design and drawing.

Template 8.12: Monitoring design and drawing of the civil work

Item of Work Design/Drawing	Standard Code Followed			Remarks
	Yes	No.	If not, give reasons	

8.6 Quality control of civil works

Sustainability and durability of structure depends on the quality.To ensure the quality, it is necessary to monitor the work frequently. In practice, the quality of works is assessed by specified tests (Laboratory and Field Test) following the specified frequency. IMED monitoring officer will follow the instructions below during filling up the templates 8.13:

- During the field visit the monitoring officers will have to take the respective monitoring templates and bidding documents of the respective package
- During filling up the templates, the monitoring officers will take assistance of the engineering in-charge (E/C) or his representatives.

The sustainability and durability of structures depends on the quality of works. The quality of work is ensured through testing of work in the field and laboratory. Each test has unique testing procedure, specification, standard and frequency. This template would assist in monitoring whether the works are doing following approved specified standard test maintaining frequency.

Template 8.13: Monitoring quality of civil works

Quality Test as per Specification	Standard Followed		Frequency followed		Result of test			Remarks
	Yes	No	Yes	No	Acceptable	Not acceptable	If not, what action taken	

SECTION IX : PROCUREMENT PROCESS MONITORING IN CROP, FISHERIES AND LIVESTOCK SECTOR DEVELOPMENT PROJECTS

The purpose of these templates areintended to collect data from the field to monitor the procurement of works, goods and services for ADP Projects by the procuring entity of Crops, Fishery & Livestock. The result reveals through processing of the data captured from the field will help to ascertain whether procuring entity adhered with the procurement plan provided in the DPP/RDPP.

9.1 Procurement monitoring of Civil Works, Goods and Services

Monitoring officer will follow the instructions below during filling up the templates (9.1 to 9.3):

During the field visit the monitoring officers will have to take the respective DPP, monitoring templates, and bidding documents of the respective tendered package

i) At the time of filling up the templates, the monitoring officers will take assistance of the engineering in-charge (E/C) or his representatives.

ii) The monitoring personnel may ask for project relevant information from the engineering in-charge (E/C) or his representatives during consultation.

Each DPP includes format on civil work procurement plan. It is necessary to monitor the procurement of civil work whether the procurement has been done as per plan given in the DPP/RDPP or not. The template is shown **in Annex 23**.

9.2 Evaluation of Civil Work Components (Crops, Fisheries and Livestock):

The key evaluation questions as they relate to the log frame's objectives, focuses more on how things was performed and what difference has been made. At ***input*** level, it examines the efficiency of timely use of the stocks of items available in right quantities and quality; were the activities implemented on schedule and within budget, and outputs delivered economically. At ***Activities*** level, the **effectiveness** of achieved operation's objectives and the outputs leading to the intended outcomes is evaluated. It also evaluate the **relevance** of operation's objectives consistency with beneficiaries' needs. At ***Outcomes*** level, the **impact** or the changes accrued by the project as well as any unplanned or unintended changes due to project intervention is evaluated (IFRC, 2011). At this stage, the sustainability issues for an extended period after ending the intervention period are also observed. Templates are shown in **Annex 24**.

9.3 Monitoring and Evaluation of Earthwork for an individual footing of a building:

Foundation is an important component of a building or any infrastructure. So, intensive monitoring is necessary during construction of the foundation. This check list will enable to monitor the quantity and quality of earthwork excavated and back filled.Templates are shown in **Annex 25.**

Template 9.9: Checklist for monitoring of earthwork:

1.	Whether foundation is excavated to the design depth or level with reference to the bench mark	Yes	No
2.	Is the width of foundation accord with the design width	Yes	No
3.	Is the length of foundation accord with the design length		
4.	Whether all measures have been taken to protect the sides of foundation from collapse or sliding during excavation?	Yes	No
5.	Whether the back filling of foundation trench is done with specified earth?	Yes	No
6.	Whether the large size clod (Greater than 25mm) has broken to a size of less than 25mm?	Yes	No
7.	Whether the backfilling earth work in the trench has been compacted properly	Yes	No
8.	Whether all arrangement have made for bailing out of water if necessary	Yes	No
9.	What is the excavated volume of earthwork in cubic meter?	Yes	No
10.	Whether the foundation trench has been excavated within the stipulated time-frame?	Yes	No

9.4 Monitoring of ongoing project at the Initial, Mid and Terminal Stages

As discussed earlier in crop, fisheries and livestock sectors the projects are to be monitored in different stages like early, mid and late stages. For monitoring of civil works and procurement templates have been developed and shown in the **Annnex 26**.

9.5 Checklist for Procurement Process as Per PPA-2006 and PPR-2008

Proper data collection at appropriate time from the field plays an important role evaluate the appropriateness of procurement made by the procuring entities of development projects. The result reveals through processing of the data captured from the field help to ascertain whether procuring entity adhered with the act, rules, guidelines, regulation and other norms in managing the procurement. The Template for data collection on procurement is shown in **Annex 27**.

SECTION X : EVALUATION OF CROP, FISHERIES AND LIVESTOCK SECTOR DEVELOPMENT PROJECTS

The present day agriculture of the country faces the challenge of how to feed its huge population in an equitable manner by protecting the environment from irreversible negative changes. In its attempt to address the multidisciplinary challenges, agriculture must span the biological and the social sciences. This means that any given agricultural development project may include planning, target group inclusion, research, management, soil enhancement, agronomic practices, field operations, storage, processing, and distribution, as well as policy and regulatory demands. Besides all these issues agriculture projects also targets to improve food security, the reduction of hunger, enhanced nutrition, incomes and living standards, the status and role of women, fair access to suitable agricultural land and the food harvested from it, and the protection of that land, water and other natural resources, and the broader environment.

In addition to the adoption of more generic evaluation approaches of the social sciences, evaluation practice applied to agricultural research and development has also required the adaptation and development of more closely-tailored options and tools to meet its needs.

Considering the above factors, evaluation of agricultural development projects may attempt to:

- Re-examine, in the light of project development objectives, the adequacy of the project logic laid out in planning and appraisal documents;
- Determine the adequacy of the project to address and overcome the situational constraints and thereby promote the desired results;
- Determine deficiencies in results - and the reasons for them - by comparing actual achievements with those expected;
- Assess the efficiency and effectiveness of project activities and how these were managed;
- Determine the impacts of the project - both intended and unintended;
- Examine the results of the project by comparing winners and losers;
- Determine production increases and the reasons for these;
- Examine the economic efficiency of the project;
- Present the lessons learned from project implementation and the recommendations that follow from them.

In conducting a Project Evaluation, the following steps are followed:

- Know Why Organization Needs Evaluation
- Define Scope of the Evaluation Exercise
- Consult Planning Documents
- Determine Evaluation Questions
- Identify Skillset Required
- Develop Terms of References (ToRs) and Selection Criteria for the Consultant
- Define Roles and Responsibilities for the Evaluation
- Fix Timelines
- Budget the Evaluation
- Plan Utilization of Findings

10.1 Evaluation Methods

An evaluation can use quantitative or qualitative data, and often includes both. Both methods provide important information for evaluation, and both can improve community engagement. These methods are rarely used alone; combined, they generally provide the best overview of the project.

10.1.1 Quantitative Methods

Quantitative data provide information that can be counted to answer such questions as “How many?”, “Who was involved?”, “What were the outcomes?”, and “How much did it cost?” Quantitative data can be collected by surveys or questionnaires, pretests and posttests, observation, or review of existing documents and databases or by gathering clinical data. Surveys may be self- or interviewer-administered and conducted face-to-face or by telephone, by mail, or online. Analysis of quantitative data involves statistical analysis, from basic descriptive statistics to complex analyses.

Quantitative data measure the depth and breadth of an implementation (e.g., the number of people who participated, the number of people who completed the program). Quantitative data collected before and after an intervention can show its outcomes and impact. The strengths of quantitative data for evaluation purposes include their generalizability, the ease of analysis, and their consistency and precision (if collected reliably). The limitations of using quantitative data for evaluation can include poor response rates from surveys, difficulty obtaining documents, and difficulties in valid measurement.

10.1.2 Qualitative Methods

Qualitative data answer such questions as “What is the value added?”, “Who was responsible?”, and “When did something happen?’’ Qualitative data are collected through direct or participant observation, interviews, focus groups, and case studies and from written documents. Analyses of qualitative data include examining, comparing and contrasting, and interpreting patterns. Analysis will likely include the identification of themes, coding, clustering similar data, and reducing data to meaningful and important points, such as in grounded theory-building or other approaches to qualitative analysis.

Interviews may be conducted with individuals alone or with groups of people and are especially useful for exploring complex issues. Interviews may be structured and conducted under controlled conditions, or they may be conducted with a loose set of questions asked in an open-ended manner. It may be helpful to tape-record interviews, with appropriate permissions, to facilitate the analysis of themes or content. Some interviews have a specific focus, such as a critical incident that an individual recalls and describes in detail. Another type of interview focuses on a person’s perceptions and motivations.

Focus groups are run by a facilitator who leads a discussion among a group of people who have been chosen because they have specific characteristics. Focus group participants discuss their ideas and insights in response to open-ended questions from the facilitator. The strength of this method is that group discussion can provide ideas and stimulate memories with topics cascading as discussion.

10.1.3 Mixed Methods

The evaluation of community engagement may need both qualitative and quantitative methods because of the diversity of issues addressed (e.g., population, type of project, and goals). The choice of methods should fit the need for the evaluation, its timeline, and available resources (Holland et al., 2005; Steckler et al., 1992).

10.2 Evaluation Phases and Processes

The program evaluation process goes through four phases - planning, implementation, completion, and dissemination and reporting - that complement the phases of program development and implementation.

10.2.1 Planning

The relevant questions during evaluation planning and implementation involve determining the feasibility of the evaluation, identifying stakeholders, and specifying short- and long-term goals. For example, does the program have the clarity of objectives or transparency in its methods required for evaluation? What criteria were used to determine the need for the program? Questions asked during evaluation planning also should consider the program's conceptual framework or underpinnings. For example, does a proposed community-engaged research program draw on "best practices" of other programs, including the characteristics of successful researcher-community partnerships? Is the program gathering information to ensure that it works in the current community context?

10.2.2 Implementation - Formative and Process Evaluation

Evaluation during a program's implementation may examine whether the program is successfully recruiting and retaining its intended participants, using training materials that meet standards for accuracy and clarity, maintaining its projected timelines, coordinating efficiently with other ongoing programs and activities, and meeting applicable legal standards. Evaluation during program implementation could be used to inform mid-course corrections to program implementation (formative evaluation) or to shed light on implementation processes (process evaluation). For community-engaged initiatives, formative and process evaluation can include evaluation of the process by which partnerships are created and maintained and ultimately succeed in functioning.

10.2.3 Completion - Summative, Outcome, and Impact Evaluation

Following completion of the program, evaluation may examine its immediate outcomes or long-term impact or summarize its overall performance, including, for example, its efficiency and sustainability. A program's outcome can be defined as "the state of the target population or the social conditions that a program is expected to have changed," (Rossi et al., 2004, p. 204. The number of elderly housebound people receiving meals would not be considered a program outcome, but the nutritional benefits of the meals actually consumed for the health of the elderly, as well as improvements in their perceived quality of life, would be appropriate program outcomes (Rossi et al., 2004).

Once the positive outcome of a program is confirmed, subsequent program evaluation may examine the long-term impact the program hopes to have. For example, the outcome of a program designed to increase farm income and poverty reduction, the number of farmers attended skill development training would not be the project impact but the family income/year from farm products would have to be counted for impact analysis.

The following section furnished the checklists are to be used during project evaluation. The checklist are divided into three sections like mid term evaluation, terminal evaluation and impact evaluation.

10.3 Checklist for Project Evaluation

10.3.1 Mid Term Evaluation of Project

i) Evaluate the progress of major interventions of the project as per result framework or log-frame

ii) Check the status (number and quality) of manpower as per DPP target

a. Departmental
b. Project recruited
c. Outsourcing

iii) Check the procurement status (number and quality) of the project as per DPP

a. Goods
b. Works
c. Services

iv) Identify the activities of the project not achievable under present conditions

v) Measure the progress of identified activities mentioned in the result frameworks or log-frame

vi) Identify the gaps and report it for further inclusion in RDPP

vii) Identify alternative activities for RDPP to consume the total resources within project period

viii) Measure the progress of reaching the target beneficiaries of the project through

a. Demonstration
b. Farmers Field Day
c. Technology (agricultural) fair
d. Workshop/seminar
e. Skill Development Training
    i. farmers training
    ii. Staff training

ix) Measure the progress of physical and financial activities as per project's investment

x) Check the number of Producer of intended technology (summer tomato, summer bean, Production of quality seed etc.) targeted to be transferred

xi) Check the Production (quantity) level of intended technology (summer tomato, summer bean, Production of quality seed etc.) targeted to be transferred

xii) Check the Production area of intended technology (summer tomato, summer bean, Production of quality seed etc.) targeted to be transferred

10.3.2 Terminal Evaluation

i) Measure the total physical achievement of the project by investment plan

ii) Measure the total financial achievement of the project by investment plan

iii) Check the procurement status (number and quality) of the project as per DPP

- Goods
- Works
- Services

iv) Measure the changes achieved in number of Producer of intended technology (summer tomato, summer bean, Production of quality seed etc.)

v) Measure the changes in volume of Production (quantity) of intended technology (summer tomato, summer bean, Production of quality seed etc.)

vi) Measure the changes in area coverage of intended technology (summer tomato, summer bean, Production of quality seed etc.)

vii) Measure the benefits of adopted technology (s) among the farming community

viii) Measure the production costs of adopted technology for the farmers
ix) Measure increase or decrease of labor requirement to adopt the technology (s)
x) Check the Production level major crops per household in project area from beneficiaries
xi) Check the Food Security status (Production, consumption, surplus or shortage of staple food) of project beneficiaries
xii) Check the access of beneficiaries to pure drinking water
xiii) Check the accessibility of beneficiaries to sanitation facilities
xiv) Check the accessibility of beneficiaries to banking facilities

10.3.3 Impact Evaluation

i) Identification of Demographic characteristics (Sex, age, family size, education, social status (married/un-married etc.) of Respondent
ii) Changes in ownership of Land Resources of the respondents
iii) Changes in Annual Income by Sources
iv) Annual Expenditure by Items (Service, crops, livestock/poultry, fisheries, business/small trades, day laborer, remittance etc.)
v) Changes in Producer of intended technology (summer tomato, summer bean, Production of quality seed etc.)
vi) Changes in Production (quantity) of intended technology (summer tomato, summer bean, Production of quality seed etc.)
vii) Changes in Production by crop area of intended technology (summer tomato, summer bean, Production of quality seed etc.)
viii) Changes in Employment Generation: Increase or Decrease if increase, fill up following table
ix) Changes in Production of major crops per household in project area
x) Changes in yield of major crops of the project areas
xi) Changes in total Cultivation cost of major crops
xii) Changes in status of Food Security (Production, consumption, surplus or shortage of staple food)
xiii) Changes in access to Drinking Water by the participants
xiv) Changes in access to Sanitation of respondents
xv) Changes in access to banking by respondents

10.4 Dissemination and Reporting

To ensure that the dissemination and reporting of results to all appropriate audiences is accomplished in a comprehensive and systematic manner, one needs to develop a dissemination plan during the planning stage of the evaluation. This plan should include guidelines on who will present results, which audiences will receive the results, and who will be included as a coauthor on manuscripts and presentations.

10.5 Outcome/Impact Evaluation by Household Survey

Generally, project evaluation is done once during middle of the implementation tenure to evaluate the outcomes of set indicators and another after one or two years of its completion year. For specific purposes (extension of project duration or starting another phase, etc.) evaluation of development projects may be done by commissioning household survey or by following FGD (Focused Group Discussion) in limited scale. Large numbers of indicators those were identified to monitor the project interventions are to be considered carefully to evaluate the project impact as those are the actions of the intervention. Training is one of the most useful tool used in most of the agricultural development project to transfer valuable information/knowledge into the farming community. As for example, after imparting quality seed production training to producers, if significant portion of the target beneficiaries started using quality seed, either purchased or self-produced, then it could be concluded that the project has achieved outcome/impact on training event. Similarly, intensity of users of intended

technology (summer tomato, summer bean, cage culture of fish etc.) would associate with the crop yield, farm income and livelihood improvement (housing, clothing, education, nutrition, mobility, social connection etc.) could be assessed as impact of large numbers of demonstrations executed during the tenure of the project and so on for other input/activity. Some necessary format of Household Survey/Special purpose Survey for assessing the outcome/impact of agricultural development projects for crop sector projects is shown in **Annex 28.**

10.6 Assessment of Nutrition Status of Farm Households

Nutritional status can be assessed in terms of food consumption/capita/day and determining the energy and nutrient output of the consumed food. However, collecting information on food consumption is a difficult task. There are reports that evaluated nutrition status by recording twenty-four hour food intake of the family and converting the data on per capita per day basis and comparing it with desirable dietary pattern (BIRDEM.2013) in terms of items of food consumed and estimating corresponding energy and nutrient value. For assessment of food consumption, the following Templates are shown in **Annex 29**.

10.7 Writing Project Evaluation Report

An evaluation report is a document that reports the results, findings, interpretations, conclusions and/or recommendations derived through an evaluation. The report contains an executive summary of the points covered by the evaluation. It also presents an overview of the evaluation process. It is a formal documentation thatmeasures how well project has performed, while also contributing to how their performance could be improved.

An evaluation report evaluate the data gathered by comparing it to either the baseline data or the standards set by the management. Depending on the performance, the result of the evaluation could be either positive or negative. The report make recommendations on how to improve the performance if the need calls for it. Even if the results of the evaluation was good, recommendations are still needed since there will always be room for improvement, and it can help in providing an idea on how to maintain a good performance.

An evaluation report is an essential way of presenting an evaluation to a certain audience. It intends to promote awareness on how the evaluation reached its outcomes and conclusions. It is an effective way to disseminate findings of an evaluation to the people concerned. It is essential to report the conclusions derived from a specific evaluation to ensure its transparency.An evaluation report also determines if the time and resources allocated for such evaluation were used accordingly.

10.7.1 Key Components of an Evaluation Report

The following are the key components commonly discussed in an evaluation report.

- **Cover page/Title or Header:** This includes a clear and concise title, the authors' names, date of preparation, etc.;
- **Executive Summary:** This should contain a brief summary of the subject of the report.
- **Table of Contents:** This includes an overview of the contents of the report and their respective pages.
- **Introduction:** Mainly a short report introduction on the purpose, and target of the evaluation.

- **Background:** Includes rational, purpose and evaluation questions, decisions – taken from the evaluation plan – generally write in past tense and third person. Include a description about what will be covered in the report.
- **Scope.** This discusses the evaluation focus.
- **Resources and methods:** Materials, equipment, and methods involved in the evaluation that includes evaluation design, i.e. type of evaluation – formative, summative etc., sampling tools i.e. questionnaire etc., participants. This information is contained in the evaluation plan. Additional information to be included is the methods of data analysis and interpretation of results.
- **Results:** Typically includes findings, conclusions, and interpretations derived from the evaluation exercise.
- Describe the key findings from analysis of the data using tables and/or graphs to illustrate and explain the key features of the tables or graphs.

- **Discussion:** This is where the main findings and unusual findings are presented in relation to the evaluation questions and the methods used. It discusses what the results demonstrated in terms of the decisions to be made, and the expectations of the evaluation. It include references to other studies – how the study was similar or different, or provided new information in the field of evaluation and mention any unexpected findings, what worked and what did not, limitations to the study and ideas for further investigation.

- **Findings:** Discuss whether the project has adequate number of qualified and experienced staff and whether they are performing their roles to the required performance level or not. Details about individual staff members involved in the project can be included either as part of this section or in the appendix, depending on the length and importance of this information. It examines the a) relevance, b) Effectiveness, c) Efficiency, d) Impact and e) Sustainability.
- **Conclusion and Recommendations:**This provides an idea on informationdissemination and intended use of the evaluation's findings and conclusions. Key points about the evaluation for the readers and a list of recommendations.
- **References.** This contains the references used by the authors upon report writing the evaluation.

Sample showed in **Annex 30.**

10.8 Measuring Cost Effectiveness of Project Components

Cost effectiveness of the project and/or project components is popularly determined using discounted measures in which the projected future cash flows are discounted by a certain ratecalled cost of capital. The second main feature of these methods is that they take intoaccount all the benefits and costs accruing during the life time of the project. Discountedcash flow method are briefly described as follow:

10.8.1 Net Present Value Method (NPV)

The net present value, or NPV, is one of the most common methods used to evaluate investments. At its simplest, NPV is the present value computed by using the cost of capital as the discount rate of cash inflows, minus the present value of cash outflows, including the initial investment.

In this method, present value of cash flow is calculated for which cash flows are discounted. The rate of discount is called cost of capital and is equal to the minimum rate of return, which must accrue from the project/specific component of the project. Thus, NPV is the difference between present value of cash inflows and present value of cash outflows. NPV can be calculated as under:

$$NPV = \frac{CF_1}{(1+K)^1} + \frac{CF_2}{(1+K)^2} + \frac{CF_3}{(1+K)^3} + \cdots + \frac{CF_n}{(1+K)^n} - C$$

Where CF1, CF2 .... represent cash inflows, k is the project's costofcapital, C is cost outlay of the investment proposal and n, is the expected life of theproposal. If the project has salvage value also it should be added in the cash inflow ofthe last year. Similarly, if some working capital is also needed it will be added to theinitial cost of the project and to the cash flow's of the last year. If the NPV of a projectis more than zero, the project should be accepted and if NPV is less than zero it shouldbe rejected. When NPV of two more projects under consideration is more than zero,the project whose NPV is the highest should be accepted.

10.8.2 Internal rate of return method (IRR)

The IRR is the discount rate that makes the present value of the cash inflows equal to the present value of the cash outflows. This is the same as saying that the IRR is the discount rate that makes the net present value equal to zero.

Under this method initial cost and annual cash inflows are given. The unknown rate of return is ascertained. In other words "The internal rate of return is that rate which equates the present value of cash inflows withthe present value of cash outflows of an investment project." At the internal rate ofreturn NPV of a project is zero. Like NPV method IRR method also considers timevalue of money. In IRR method, the discount rate (r) depends upon initial investment expenditure and the future cash inflows. IRR is calculated as follows:

$$C = \frac{A_1}{(1+r)^1} + \frac{A_2}{(1+r)^2} + \frac{A_3}{(1+r)^3} + \cdots + \frac{A_n}{(1+r)^n} - C$$

C = initial cash outflow
n = number of years
r = rate of return which is to be calculated.A1 A2 A3.....An are cash inflows in various years.

10.8.3 Benefit-cost ratio/Profitability index

It is the ratio of value of future cash benefits discounted at some required rate of return to the initial cash outflows of the investment PI method should be adopted when the initial costs of projects are different. NPV method is considered good when the initial cost of different projects is the same. PI can be calculated as under:-

$$\frac{\text{PI = Present value of Cash inflows}}{\text{Present value of Cash outflows}}$$

If PI>1 the project will be accepted. If PI<1 the project will be rejected. When PI>1,NPV will be positive, when PI<1 NPV will be negative. In case, more than one projecthave PI>1 then the project whose PI is the highest will be given last preference.

An example of calculation of discounted measures of project worth (NPV, IRR, and BCR)

Year	Cash Inflow	Cash Out Flow	Labor cost	Total Cost	Net Cash Flow
	Total Income	Oper. Cost			
1	4579	5265	12255	17520	-12941
2	23978	11242	12255	23497	481
3	25226	7483	12255	19738	5487
4	26672	7526	12255	19782	6890
5	28355	7470	12255	19725	8630
Total	108810	38986		100262	8548
			NPV@10%		2820.6 (Cr. Tk.)
			IRR		0.2
			BCR		1.1
			PBP		4.8

SECTION XI : LIMITATION OF THE STUDY

The following issues/factors appeared to affect the natural progrseeion of the study:

1) The study is based on mostly review of project documents and M&E guidelines of various national and international organizations as well as other related publications. The process involved collection of various project documents and reports from respective implementing organizations. It was difficult to meet relevant officials of project implementing agencies, who are involved in the project implementation. Repeated visits was needed for the purpose;

2) A completed project was included in the review process. For completed projects, it was very difficult to access to the project document and discuss with the PD or other M&E officials;

3) The collection of DPP from concerned organizations was not easy as some of the concerned project personnel hesitated to extend cooperation even after submission of request letter from IMED. Accordingly relatively longer time was needed to collect relevanr documents of the selected projects;

4) The PD and other officials of on-going projects were found to be extremely busy, hence long time was needed for conducting their interviews/meeting than expected;

5) The overall time allocated should have been longer.

SECTION XII : RECOMMENDATIONAND CONCLUSION

12.1 Recommendation

There are no alternative to effective monitoring for successful implementation of development projects and realization of project development objectives from the investment. This warrants for strengthening project M&E activities at Policy and Implemetation levels. In this perspectives, the following recommendations are made:

1. Monitoring and evaluation of ADP projects should be guided by a well structured and well recognized M&E Policy Guidelines. The M&E functions and responsibility of at different levels (Policy and Implementation) needs to be clearly delineated;

2. Being the apex body for M&E of ADP projects, the M&E capability of IMED needs to be strengthened to be able to oversee and monitor progressively increasing volume and number of ADP projects each year;

3. For capacity development, concerned monitoring personnel at policy levels (IMED & Ministry) should adequately trained;

4. Since project implementing agencies and line ministries play an important role in M&E process, a strong M&E unit should be established at major implementing agencies and line ministries with adequate manpower and facilities;

5. Delay in project approval is oftenimpeding progress of implementation of project activites, which may lead to time and cost overrun. To avoid such possibilities, approval time of new projects should be shortened as much as possible;

6. In existing M&E form/formats there is no provision for tracking on-going activities and real time monitoring but focuses more on inputs and activities. With the changes of focus of agriculture sector projects from subsistence to commercial agriculture and added emphasis on climate change adaptations, etc. the project monitoring formats should incorporate appropriate indicators to adequately cover these issues;

7. Mid Term and Terminal Evaluation should be conducted for selected projects by IMED as well as qualified and experienced independent firms;

8. ICT based project wide (grassroots to the top level) M&E system should be developed and put in place to facilitate realtime monitoring of all quantitative and qualitative aspects of development projects.

12.2 Conclusion

To achieve the goal of transforming Bangladesh a Middle Income Country by 2021 (Mission and Vision 2021) the Government of the People's Republic of Bangladesh has attached top priority to attain sustainable food security for ending hunger, ensuring nutrition, and promoting sustainable agriculture as well as meeting other challenges of SDGs. This has attracted greater attention of the Government and the Government is increasing the volume of investment progressively in annual development budget for the development of greater agriculture sectorthrough undertaking a large number of Development Projects. To realize the intended outcomes and impacts, more focused and intensive quality monitoring of these development projects is imperative.

Accordingly, IMED has taken initiative to develop M&E guidelines of development projects in crop, fisheries and livestock sectors. The M&E tools (checklists, formats/templates) designed and described in the M&E guidelines would help effective monitoring and evaluation of ADP projects. The designedM&E checklists, formats and templates would help assess the physical and financial progress as well as outputs and outcomes of the development projects and help realize the project development objectives.

12.3 Accomplishment of ToR

The M & E Guideline is prepared as per ToR given by the IMED. The directions of ToR have properly been complied and stated/discussed in the manual in appropriate sections to make the document reader friendly. The detailed compliance of ToR has been shown in the **Annex 1**.

12.4 Measures Taken on observations of Steering Committee Meeting

The observations made during the presentation sessions of three steering committee meetings including the comments on the inception report have been well taken care in the current version of the manual. The manual addressed the comments of all meeting minutes provided by the IMED. Detailed of the inclusion of sections/paragraph as per observations of Steering Committee meeting presented in Chapter-XIII.

SECTION XIII : ACCOMPLISHMENT OF ToR AND MEASURES TAKEN ON MEETING MINUTES OF STEERING COMMITTEE

13.1 Accomplishment of Terms of Reference

ToR for Consultants	Accomplishment
To review the existing available relevant documents/guidelines on project review;	▪ The DPPs of selected completed and on-going projects. Furnished in page no. 13.
To review the existing available relevant documents/guidelines of other similar countries and Development Partner agencies;	▪ During preparing the M&E guideline the team reviewed M&E Guidelines of ADB, WB, IFAD, FAO, UNDP, JICA, IFRC, etc. Furnished in page no. 2.
To analyze objectives of the assignments thoroughly;	▪ The main objectives of the assignment is to prepare guideline for IMED to monitor major activities of agricultural development projects including progress monitoring and evaluation. The guideline is prepared analyzing the stated objectives thoroughly. Furnished in page no. 74.
To develop a guideline that can be effectively used by the IMED officers during project monitoring and evaluation;	▪ As per ToR a detailed guidelines has been prepared with large numbers of activity monitoring formats those are self-explanatory.
To develop an identical M&E template for relevant sector;	▪ Virtually four sectors are considered in the guidelines i.e. crop, fisheries, livestock and procurement of civil works and others. These sections are described separately in the guideline. Furnished in page nos. 17-69.
To guide the officers of the IMED in building systematic approach to field visit through use of the Guideline;	▪ The templates included and elaborated in the guidelines are designed and placed systematically for crop, fisheries and livestock. The templates are very simple and explanatory so that one can use it in the field and for assessing the Upazila or district levels progress. Furnished in page nos. 17-69.
To ensure the project management knowledge areas (such as scope, time, cost, procurement, quality, integration, human resource, stakeholders, communication and risk);	▪ The templates of guideline covered physical and financial monitoring, activity (demo, training, workshop, farmer's field day, goods, works, and services). It also included evaluation templates like mid-term, terminal and impact evaluation. Furnished in page nos. 17-69.
To help accelerate progress of the development projects.	▪ The guideline will help to track updated progress of the development projects.

13.2 Actions Taken on Minutes of Steering Committee Meetings

11 GwcÖj 2019 Lvt ZwiLv †÷s‡`wbs gwbUwis GÛ Bfvjøqkb K¨vcweÁvwUR Ae AvBGgBwW (GmGgBwmAvB) (2q ms‡kwaZ) cK‡íi AvIZvq* Crops, Fisheries & Livestock *wel‡q gwbUwis I Bfvjøqkb MvBWjvBb cYq‡bi Rb¨ civgkK cwZôvb KZK.cYxZ 1g Wvd‡U wi‡cv‡Ui Ici Abyôv‡Z 2q w÷qwis Kwgw‡Ui mfvi wm×vš—mgn- I civgkK dvg KZK.Mp,xZ e¨e¯v

wm×vš	*civgkK dvg KZK.Mp,xZ e¨e¯v*
K) mvaviY wb‡`kvejxt	
1) cwZ‡e`b cYqb ms‡µvšÍt	
• *we`¨gvb gwbUwis I BWvjøqkY di‡g‡Ui `ejZv Ges cK‡íi mgq, e¨q I cwiwa e„×i KviY MvBWjvBb/ g¨vbøq‡j D‡jL Ki‡Z n‡e;*	*MvBWjvB‡b AvBGgBwWÔi we`¨gvb di‡g‡Ui `ejZv Ges cK‡íi mgq, e¨q I cwiwa e„×i KviY D‡jL Kiv n‡q‡Q (cô,v 11 I 12)|*
• *†m±iwfwIK MvBWjvBb/g¨vbøq‡j gwbUwis I Bfvjøqkb †Ug‡cU c„ôKfv‡e cYqb Ki‡Z n‡e;*	*MvBWjvB‡b †m±iwfwËK gwbUwis I Bfvjøqkb †Ug‡cU c„ôKfv‡e c`vb Kiv n‡q‡Q (cô,v µc-19, wdmwiR-34 I jvBf÷K-45)|*
• *gwbUwis †Ug‡c‡U/ ‡PKwj‡÷ Pjgvb cK‡íi cviw¤K chvq, ga¨eZx chvq I †kl chvq we‡ePbvcwK c„ôK wk‡ivbv‡g ckmgn/ AvB‡Ugmgn-Ašfz³ Ki‡Z n‡e;*	*Pjgvb cK‡íi cviw¤K, ga¨eZx I †kl chvq we‡ePbvcwK c„ôK wk‡ivbv‡g AvB‡Ugmgn-Ašfz³ Kiv n‡q‡Q (cô,v µc-19, wdmwiR-35, jvBf÷K-45 I wmwfj IqvKm-127)|*
• *Bfvjøqkb †Ug‡c‡U cwšK I cfve gj¨vq‡bi Rb¨ c„ôK wk‡ivbv‡g ckmgn/ †PKwj÷ Ašfz³ Ki‡Z n‡e;*	*Bfvjøqkb †Ug‡c‡U cfve gj¨vq‡bi Rb¨ c„ôK wk‡ivbv‡g ckmgn/ †PKwj÷ Ašfz³ Kiv n‡q‡Q (cô,v 65, 125-126 I 132-134)|*
• *cKí `wjj Dwjøwa KgcwiKíbv Abyôvqx cK‡íi Kv‡Ri AMMwZ n‡"Q wKbv, cK‡í AwfÁ I `ÿ Rbejwb‡qvwRZ Av‡Q wKbv, Rbejwb‡qvM mwVK n‡q‡Q wKbv Ges cK‡íi AvB‡Ug Iqvwi †Kvqvwjøwa e¨q n‡"Q wKbv Zv cwiexÿ‡Yi Rb¨ c„ôK QK/ ‡PKwj÷ gwbUwis †Ug‡c‡U/ ‡PKwj‡÷ D‡jL Ki‡Z n‡e;*	*cKí `wjj †gvZv‡eK cK‡íi Kv‡Ri AMMwZ, AwfÁ I `ÿ Rbej wb‡qvM Ges cK‡íi AvB‡Ug Iqvwi †Kvqvwjøwa e¨q wbð‡Zi wel‡q cwiexÿ‡Yi Rb¨ gwbUwis †Ug‡c‡U D‡jL Kiv n‡q‡Q (cô,v 57-59 I 123-125)|*
• *c‡Z¨K gwbUwis I BWvjøqkb †Ug‡c‡U b¤^bZg 3 wU K‡i AvDUcÿ I AvDUKvg BwÛ‡KUi Ašfz³ Ki‡Z n‡e;*	*gwbUwis I BWvjøqkb †Ug‡c‡U AvDUcÿ I AvDUKvg BwÛ‡KUi Ašfz³ Kiv n‡q‡Q (cô,v 21, 37 I 47)|*
• *gwbUwis †Ug‡c‡U Aww_K I ev¯—e AMMwZi mv‡_ †fŠZ Kv‡Ri ¸YMZgvb cwigv‡bi cÖwZ Ašfz³ Ki‡Z n‡e;*	*gwbUwis †Ug‡c‡U Aww_K I ev¯—e AMMwZi mv‡_ †fŠZ Kv‡Ri ¸YMZgvb cwigv‡ci cÖwZ Ašfz³ Kiv n‡q‡Q (cô,v 59 I 123)|*
• *cwZwU Lmov/ Pvwš MvBWjvBb/ g¨vbøq‡j ÔUvgm Ae †idv‡iÝÕ Ašfy³ Ki‡Z n‡e Ges G‡Z D‡jøwLZ Kgcwiwa Abyôvqx MvBWjvBb/ cYqb Ki‡Z n‡e| Uvgm Ae †idv‡iÝ Abyôvqx KvR n‡q‡Q wKbv Zv mybw`ó Q‡K Kv‡Ri †¯—vcI cô,v D‡jLcwK MvBWjvBb/ g¨vbøq‡j Ašfz³ Ki‡Z n‡e;*	*Uvgm Ae †idv‡iÝ Abyôvqx mybw`ó Q‡K Kv‡Ri cwiwa Abyôvqx MvBWjvBb c¯—Z Kiv n‡q‡Q| Uvgm Ae †idv‡iÝ Abyôvqx KvR n‡q‡Q Ges Zv mybw`ó Q‡K Kv‡Ri †¯—vcI Uvgm Ae †idv‡iÝ (cô,v 74) D‡jL Kiv n‡q‡Q |*
• *Lmov/ Pvwš MvBWjvBb/ g¨vbøq‡j ÔwjUv‡iPvi wiwfDÕ c„ôK Aa¨vq wnmv‡e Ašfz³ Ki‡Z n‡e Ges ÔwjUv‡iPvi wiwfDÕ Aa¨v‡q AvBGgBwWÔi gwbUwis di‡gUmn Ab¨vb¨ Kx Kx WKøgv›U wiwfD Kiv n‡"Q Zv ¯úófv‡e D‡jL Ki‡Z n‡e;*	*AvBGgBwWÔi wm×vš †gvZv‡eK wjUv‡iPvi wiwfD c„ôK Aa¨v‡q c`vb Kiv n‡q‡Q (cô,v 2)| AvBGgBwWÔi gwbUwis di‡gUmn Ab¨vb¨ WKøgv›U wiwfD Kiv n‡q‡Q (cô,v 2-8, AvBGgBwW di‡gU 01, 02, 03, 04 I 05, cwiexÿY QK 2003 [ms‡kwaZ, AvšRwZK ms¯—vi QK])|*

wm×vš	civgkK dvg KZK.Mnxz e¨e¯v
• cK‡íi/ wbw`ó K‡¤úv‡b‡›Ui K÷ B‡dKwUf‡bm cwigvc Kivi Uz‡j †m±iwfwlK MvBWjvBb/ g¨vbyqj Ašfz³ Ki‡Z n‡e;	cK‡íi K÷ B‡dKwUf‡bm cwigvc Kivi Uz‡j MvBWjvB‡b Ašfz³ Kiv n‡q‡Q (cô¨v 68-70)|
• Lmov/ Povš MvBWjvBb/ g¨vbyqj Ô‡idv‡iÝÕ c„K Aa¨vq wnmv‡e Ašfz³ Ki‡Z n‡e Ges †mLv‡b e¨eýZ c‡Z¨KwU Z‡_¨i Drm c`vb Ki‡Z n‡e| gwbUwis I Bfvjyqkb msµvš †idv‡iÝ Ašfz³ Ki‡Z n‡e;	gwbUwis I Bfvjyqkb msµvš ‡idv‡iÝ MvBWjvB‡b Ašfz³ Kiv n‡q‡Q (cô¨v 81-82)|
• Lmov/ Povš MvBWjvBb/ g¨vbyqj AvBGgBwW‡Z †hŠw³KZv we‡ePbvq †UKwbK¨vj BDwbU MV‡bi wel‡q mycwik c`vb Ki‡Z n‡e;	
• Lmov/ Povš MvBWjvBb/ g¨vbyqj wbevnx mvi-ms‡ÿc, †g_‡WvjwR, mxgve×Zv, mycwik I Dcmsnvi Ašfz³ Ki‡Z n‡e;	MvBWjvB‡b wbevnx mvi-ms‡ÿc †g_‡WvjwR, mxgve×Zv, mycwik I Dcmsnvi Ašfz³ Kiv n‡q‡Q (cô¨v 72-73)|
• Lmov/ Povš MvBWjvBb/ g¨vbyqj I gwbUwis-Bfvjyqkb cwjwm‡Z fvlv mnR, cvÄj, †evaMg¨ I myL cvV¨ n‡Z n‡e Ges cwZ‡e`‡bi Ašt I Avšt Abyô¨Q‡`i (inter and intra paragraphs) g‡a¨ ms‡hvM/‡hvMmn¡ _vK‡Z n‡e; evK¨ MVb I k‡ãi evbvb ï×fv‡e wjL‡Z n‡e;	wm×vš †gvZv‡eK c‡qvRbxq e¨e¯v †bIqv n‡q‡Q|
• ÒGmGgBwmAvBÓ (2q ms‡kwaZ)Ó cK‡íi A_vq‡b MvBWjvBb/ g¨vbyqj cYxZ n‡q‡Q Zv ïaygvÎ MvBWjvBb/ g¨vbyqj e¨vK Kvfv‡i D‡jL Ki‡Z n‡e;	wm×vš †gvZv‡eK MvBWjvB‡b D‡jL Kiv n‡q‡Q|
• µq msµvš †PKwj‡÷ mvaviY I welqwfwËK ckvejx c„Kfv‡e D‡jL Ki‡Z n‡e;	µq msµvš †PKwj‡÷ mvaviY I welqwfwËK ckvejx c„Kfv‡e D‡jL Kiv n‡q‡Q (cô¨v 129-131)|
• MvBWjvBb/g¨vbyqj wewfb M‡ei Rb¨ cYxZ ckgvjv Ašfz³ Ki‡Z n‡e;	MvBWjvB‡b wewfb M‡ei Rb¨ ckgvjv Ašfy³ Kiv n‡q‡Q (cô¨v 61)|
• cieZx© ÷qwis Kwgwdi mfvq evsjv cwZ‡e`‡bi Lmov c`vb Ki‡Z n‡e|	wm×vš †gvZv‡eK evsjv Lmov `wLj Kiv n‡e|
L) civgkK cwZôvbwfwËK mybw`ó wb‡`kvejxt	
• cyó I Lv`¨ msµvš welqw` gwbUi I Bfvjyqu Kivi Rb¨ c„K di‡gU cYqb Ki‡Z n‡e;	cyó I Lv`¨ msµvš welqw` gwbUi I Bfvjyqu Kivi Rb¨ c„K di‡gU cYqb Kiv n‡q‡Q (cô¨v 67 I 134-135)|
• dmj Drcv`‡bi c‡ei chvqmgn¨ wKfv‡e gwbUi I Bfvjyqu Ki‡Z n‡e Zv g¨vbyqj/ MvBWjvB‡b D‡jL Ki‡Z n‡e;	dmj Drcv`‡bi c‡ei chvqmgn¨ gwbUi I Bfvjyqu Kivi c×wZ MvBWjvB‡b D‡jL Kiv n‡q‡Q (cô¨v µc-21, wdmwiR-37 I jvBf÷K-46)|
• wbgvYagx K‡¤úv‡b‡›U Av_-IqvK wKfv‡e gwbUi I Bfvjyqu Ki‡Z n‡e Zv g¨vbyqj/ MvBWjvB‡b D‡jL Ki‡Z n‡e|	wm×vš †gvZv‡eK Av_-IqvK gwbUi I Bfvjyqu Kivi Rb¨ c×wZ MvBWjvB‡b D‡jL Kiv n‡q‡Q (cô¨v 126-127)|

09 †g 2019 Lxt Zwi‡L †÷s‡`wbs gwbUwis GÛ Bfvjøqkb K¨vcwewjwUR Ae AvBGgBwW (GmGgBwmAvB) (2q ms‡kwaZ) cK‡íi AvIZvq Crops, Fisheries & Livestock wel‡q gwbUwis I Bfvjøqkb MvBWjvBb cYq‡bi Rb¨ civgkK cwZôvb KZK.cYxZ 2q WvdU wi‡cv‡Ui Ici Abyôv‡Z 3q w÷qwis KwgwUÛi mfvi wm×všmgn‡ I civgkK dvg KZK.Mnxn‡Z e¨e¯v

wm×vš	civgkK dvg KZK.Mnxn‡Z e¨e¯v
K) mwaviY wb‡`kvejxt	
1) cwZ‡e`b cYqb msµvšt	
• gwbUwis †Ug‡c‡U/ †PKwj‡÷ Pjgvb cK‡íi cvi¤¤K chvq, ga¨eZx chvq I †kl chvq we‡ePbvcewK c„_K wk‡ivbv‡g ckmgn‡/ AvB‡Ugmgn‡ Ašfz³ Ki‡Z n‡e;	Pjgvb cK‡íi cvi¤¤K, ga¨eZx I †kl chvq we‡ePbvcewK c„_K wk‡ivbv‡g AvB‡Ugmgn‡ Ašfz³ Kiv n‡q‡Q (cô¨v µc-19, wdmwiR-35, jvBf÷K-45 I wmwfj IqvKm-127)|
• Bfvjøqkb †Ug‡c‡U ga¨eZx, cwšK I cfve gj¨vq‡bi Rb¨ c„_K wk‡ivbv‡g ckmgn‡/ †PKwj÷ Ašfz³ Ki‡Z n‡e;	Bfvjøqkb †Ug‡c‡U cfve gj¨vq‡bi Rb¨ c„_K wk‡ivbv‡g ckmgn‡/ †PKwj÷ Ašfz³ Kiv n‡q‡Q (cô¨v 125-126 I 132-134)|
• cKí `wj‡j Dwjwl‡Z Kgcwi‡Kíbv Abyôvqx cK‡íi Kv‡Ri AMMwZ n‡”Q wKbv, cK‡í AwfÁ I `ÿ Rbej wb‡qwRZ Av‡Q wKbv, Rbej wb‡qvM mwVK n‡q‡Q wKbv Ges cK‡íi AvB‡Ug Iqvwi †Kvqwjwl e¨q n‡”Q wKbv Zv cwiexÿ‡Yi Rb¨ c„_K QK/ †PKwj÷ gwbUwis †Ug‡c‡U/ †PKwj‡÷ D‡jL Ki‡Z n‡e;	cKí `wjj †gvZv‡eK cK‡íi Kv‡Ri AMMwZ, AwfÁ I `ÿ Rbej wb‡qvM Ges cK‡íi AvB‡Ug Iqvwi †Kvqwjwl e¨q wbwð‡Zi wel‡q cwiexÿ‡Yi Rb¨ gwbUwis †Ug‡c‡U D‡jL Kiv n‡q‡Q (cô¨v 57-59 I 123-125)|
• cK‡íi/ wbw`ó K‡¤úv‡b‡›Ui K÷ B‡dKwUf‡bm cwigvc Kivi Uz‡j †m±iwfwËK MvBWjvBb/ g¨vbyqj Ašfz³ Ki‡Z n‡e;	cK‡íi K÷ B‡dKwUf‡bm cwigvc Kivi Uz‡j MvBWjvB‡b Ašfz³ Kiv n‡q‡Q (cô¨v 68-70)|
• Lmov/ Pe›vš MvBWjvBb/ g¨vbyqj wbevnx mvi-ms‡ÿc, †g_‡WvjwR, mxgve×Zv, mgvwik I Dcmsnvi Ašfz³ Ki‡Z n‡e;	MvBWjvB‡b wbevnx mvi-ms‡ÿc †g_‡WvjwR, mxgve×Zv, mgvwik I Dcmsnvi Ašfz³ Kiv n‡q‡Q (cô¨v 72-73)|
• Bb‡mckb, 1g I 2q Lmov cwZ‡e`‡bi Ici Abyôv‡Z w÷qwis KwgwUÛi mfvmg‡ni wm×vš Abyôvqx Mnxn‡Z e¨e¯vejx c„_K Aa¨vq wn‡m‡e g¨vbyqj/ MvBWjvB‡b mwb‡ek Ki‡Z n‡e;	1g I 2q Lmov cwZ‡e`‡bi Ici Abyôv‡Z w÷qwis KwgwUÛi mfvi wm×vš †gvZv‡eK Mnxn‡Z e¨e¯v MvBWjvB‡bi c„_K Aa¨vq mwb‡ewkZ Kiv n‡q‡Q (cô¨v 74-80)|
• cieZx w÷qwis KwgwUi mfvq Kgkvjv gva¨‡g Pe›všKZ. cwZ‡e`‡bi Bs‡iwR I evsjv fvmb c`vb Ki‡Z n‡e|	Kgkvjvici Pe›vš cwZ‡e`‡bi Bs‡iwR I evsjv fvmb c`vb Kiv n‡e|

wm×vš	civgkK dvg KZK.Mnxe¨e¯v
L) civgkK cwZôvbwfwËK mybw`ó wb‡`kvejxt	
• cyó I Lv`¨ msµvš welqw` cwiexÿY I gj¨vqb Kivi Rb¨ c„_K di‡gU cYqb Ki‡Z n‡e;	cyó I Lv`¨ msµvš welqw` gwbUi I Bfvjyqv‡qU Kivi Rb¨ c„_K di‡gU cYqb Kiv n‡q‡Q (cô v 67 I 134-135)|
• dmj Drcv`‡bi c‡ei chvqmgn¨ wKfv‡e cwiexÿY I gj¨vqb Ki‡Z n‡e Zv g¨vbyqj/ MvBWjvB‡b D‡jL Ki‡Z n‡e;	dmj Drcv`‡bi c‡ei chvqmgn¨ gwbUi I Bfvjyqv‡qU Kivi c×wZ MvBWjvB‡b D‡jL Kiv n‡q‡Q (cô v µc-21, wdmwiR-37, jvBf÷K-46)|
• wbgvYagx K‡¤úv‡b‡›U Av_-IqvK wKfv‡e cwiexÿY I gj¨vqb Ki‡Z n‡e Zv g¨vbyqj/ MvBWjvB‡b D‡jL Ki‡Z n‡e|	wm×vš †gvZv‡eK Av_-IqvK gwbUi I Bfvjyqv‡qU Kivi Rb¨ c×wZ MvBWjvB‡b D‡jL Kiv n‡q‡Q (cô v 126-127)|

28 †g 2019 Lxt Zwi‡L †÷s‡`wbs gwbUwis GÛ Bfvjyqkb K¨vcwewjwUR Ae AvBGgBwW (GmGgBwmAvB)(2q ms‡kvwaZ) cK‡íi AvIZvq Crops, Fisheries & Livestock †m±i cK‡íi gwbUwis I Bfvjyqkb MvBWjvBb cYq‡bi Rb¨ civgkK cwZôvb KZK.cYxZ 3q WvdU wi‡cv‡Ui Ici Abyôv Z Kgkvjvi wm×všmgn I civgkK dvg KZK.Mp,xZ e¨e¯v

wm×vš	civgkK dvg KZK.Mp,xZ e¨e¯v
K) mvaviYwb‡`kvejxt	
1) cwZ‡e`bcYqbmsµvšt	
• cK‡íi cvi¥K, ga¨eZx I mgwß chv‡q cwiexÿ‡Yi Rb¨ †Ug‡cU wWRvBb Ki‡Z n‡e Ges Zv MvBWjvB‡b h_vh_fv‡e mwb‡ewkZ Ki‡Z n‡e;	ev¯evqbvaxb Dbqb cK‡íi KvR cv_wgK, ga¨eZx I mgwß chv‡q cwiexÿ‡Yi Rb¨ †Ug‡cU wWRvBb ceK cô,v µc-19, wdmwiR-35, jvBf÷K-45 G Av‡jvPbv Kiv n‡q‡Q| Kwl, grm¨ Ges cïcvjb †m±‡ii cKí cwiexÿ‡Yi Rb¨ mswkó †Ug‡cU (cô,v 98-99, 107-108, 114-115 I 127-128)|
• cwiexÿY Ges gÿ¨vqb MvBWjvBb Ggb fv‡e c¥web¨vm Ki‡Z n‡e †hb Bnv cvVK evÜe nq;	MvBWjvBb c¥web¨vm K‡i gÿ¨ †U·U Ges †Ug‡cU c„K Kiv n‡q‡Q| mg¯ †Ug‡cU (G¨v‡b· 3-27, cô,v 91-121) G †`Lv‡bv n‡q‡Q|
• MvBWjvB‡bi AvKvi †QvU Kivi Rb¨ eZgvb G¨v‡b·-Gi msL¨v Kgv‡Z n‡e †hb Bnv cvVK evÜe nq;	mg¯ Ac‡qvRbxq G¨v‡b· ev` †`qv n‡q‡Q|
• ÒUvgm Ae †idv‡iÝÓ Ges w÷qwis KwgwUi wm×v‡ši †cwÿ‡Z MÖnZ e¨e¯w` gÿ¨ †U·U Gi cwie‡Z G¨v‡b‡· †`Lv‡Z n‡e;	ÒUvgm Ae †idv‡iÝÓ Ges w÷qwis KwgwUi mfvi wm×v‡ši †cwÿ‡Z MÖnZ e¨e¯w` gÿ¨ †U·U Gi cwie‡Z (G¨v‡b‡· 01, cô,v 85) G †`Lv‡bv n‡q‡Q|
• ZZxq Aa¨v‡qi †mKkb-we †Z D‡jL Kiv n‡qwQj †h, †ewki fvM cK‡íi cvi¥K cwZ‡e`b ^Zwi Kiv nq.....;	Bnv GKwU Awb”QvKZ.fÿ¨ hv †U·U n‡Z ev` †`qv n‡q‡Q|
• cwiexÿY Ges gÿ¨vqb MvBWjvB‡b cwó msµvš welq Ašf¨³ Kiv hv‡e bv g‡g gše¨ Kiv nq|	cwó msµvš gÿ¨vq‡bi welqwU w÷qwis KwgwUi 2q mfvi wm×v‡ši †cwÿ‡Z MvBWjvB‡b Ašf¨³ Kiv n‡q‡Q|

12 Rbx 2019 Lxt Zwi‡L †÷s‡`wbs gwbUwis GÛ Bfvjtqkb K¨vcwewjwUR Ae AvBGgBwW (GmGgBwmAvB) (2q ms‡kwaZ) cK‡íi AvIZvq Crops, Fisheries & Livestock †m±i cK‡íi gwbUwis I Bfvjtqkb MvBWjvBb cYq‡bi Rb¨ civgkK cwZôvb KZK.cYxZ Pøvš Lmov wi‡cv‡Ui Ici Abyôv 4_ wU÷qwis KwgwUÛi mfvi wm×všmgn- I civgkK dvg KZK.MnxZ e¨e¯vKgkvjvi wm×všmgn- I civgkK dvg KZK.MnxZ e¨e¯v

wm×vš	civgkK dvg KZK.MnxZ e¨e¯v
K) mvaviY wb‡`kvejxt	
1) cwZ‡e`b cYqb ms‡µvšt	
gwbUwis †Ug‡c‡U wb‡¤v³ welq¸‡jv Avewk¨Kfv‡e _vK‡Z n‡e: - KZ evi e„× †c‡q‡Q? wK cwigvY mgq e„× †c‡q‡Q? - KZ evi Ges wK cwigvY cKí e¨q e„× †c‡q‡Q? - UvBg evDÛ GKkb c¨vb Abyôvqx cK‡íi KvR m¤úv`b Kiv n‡”Q wKbv? - ewlK µq cwiKíbv Abyôvqx µq Kvhm¤úv`b Kiv n‡”Q wKbv? - cKí cwiPvjK Nb Nb cwievwZZ n‡”Q wKbv? - mgqg‡Zv A_© Qvo n‡”Q wKbv? - fwg AwaMnY ms‡µvš †Kvb mgm¨v Av‡Q wKbv?	mswkó welq m¤wjZ ‡Ug‡cU (cô.v.99, 109 Ges 116 I 124-125) G Aš—f©³ Kiv n‡q‡Q|
Lmov/Pøvš MvBWjvBb/g¨vbyqj wbevnx mvi-ms‡ÿc, †g_‡Wvjv‡R, mxgve×Zv, mycwik I Dcmsnvi Aš—f©³ Ki‡Z n‡e;	Lmov/Pøvš MvBWjvBb/g¨vbyqj wbevnx mvi-ms‡ÿc, †g_‡Wvjv‡R, mxgve×Zv, mycwik I Dcmsnvi Aš—f©³ Kiv n‡q‡Q|
Abyôv 1g, 2q, 3q wU÷qwis KwgwU, IqvKkc I 4_ wU÷qwis KwgwUÛi mfvi wm×všmgn- Abyôvqx M„nxZ e¨e¯vejx c„ôK Aa¨vq wn‡m‡e g¨vbyqj/MvBWjvB‡b mwb‡ek Ki‡Z n‡e;	Abyôv 1g, 2q, 3q wU÷qwis KwgwU, Kgkvjv I 4_ ÷qwis KwgwU'i wm×vš Abyôvqx mswkó welq¸wj c_ôK Aa¨vq wnmv‡e Aš—f©³ Kiv n‡q‡Q (†mKkb 13, cô.v.74-80)|
MvBWjvBb/g¨vbyqj‡ji Kvfvi cô¯vq MvBWjvBb/g¨vbyqj‡ji welq Ges ev¯evqb cwiexÿY I gj¨vqb wefv‡Mi bvg c`vb Ki‡Z n‡e| civgkK cwZôv‡bi bvg Ges ÒGmGgBwmAvBÓ (2q ms‡kwaZ)Ó cK‡íi bvg †`qv hv‡e bv|	h_vh_ e¨e¯v MnY Kiv n‡q‡Q|
civgkK cwZôv‡bi bvg Ges Ges ÒGmGgBwmAvBÓ (2q ms‡kwaZ)Ó cK‡íi A_vq‡b MvBWjvBb/g¨vbyqj cYxZ n‡q‡Q Zv ïaygvÎ MvBWjvBb/g¨vbyqj‡ji e¨vK D‡jL Ki‡Z n‡e|	h_vh_ e¨e¯v MnY Kiv n‡q‡Q|
L) civgkK cwZôvbwfwËK mybw`ó wb‡`kvejxt	
mycwik Askwu cwieZb Ki‡Z n‡e;	4_ wU÷qwis KwgwUi wm×vš Abyôvqx cwieZb Kiv n‡q‡Q|
G wefv‡Mi KgkZvM‡Yi Rb¨ Bb‡mbwUf c`v‡bi welqwU mycwik Ask †_‡K ev` w`‡Z n‡e|	welqwU mycwikgvjvq Aš—f©³ Kiv nq wb|

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Annex 1: Term of Reference (ToR)

Preparation of M & E Guideline on Crops, Fisheries and Livestock

1. Background of the study:

I. Implementation Monitoring and Evaluation Division IMED) is the apex body of the Government of Bangladesh to monitor and evaluate the implementation of the public sector development projects included in the Annual Development program (ADP). The prime function of the IMED is to monitor and evaluate the implementation of development projects in order to enable the Ministries and Executive Agencies to ensure their proper implementation. Through monitoring and evaluation, it points out to the project implementing ministries and other appropriate authorities the progress of implementation and problems encountered, if any, in the field relating to the quality, time, cost etc. for taking remedial measures. For timely and proper management of these activities along with the main functions a comprehensive strengthening program has been gravely felt for long time. Therefore, IMED has undertaken the development project, entitled "Strengthening M&E Capabilities of IMED (SMECI)" funded by the GOB.

II. Beside many other functions that are performed by the IMED, an important function is to carry out regular field review of development projects to keep itself abreast with the latest progress of projects in the field. It informs the relevant ministries and agencies with the impending problems as well as current problems affecting the progress of projects, for taking remedial actions at their end, so that project's physical and financial progress are accelerated.

III. For the purpose of carrying out field review a comprehensive guideline is necessary. Therefore, IMED intends to develop a Monitoring & Evaluation Guideline on agriculture, Fisheries and Livestock sector projects. Since these sectors are considered the main stay of the Bangladesh economy, contributing almost 50% of the GDP and spending substantial allocation of the annual development budget, its development activities have attracted greater attention of the government and that demands more focused and intensive quality monitoring by the IMED.

2. Objective of the assignment:

The main objective of the assignment is to engage an experienced Consulting Firm for preparing an M & E Guideline covering all important areas of **Crops, Fisheries and Livestock** (To address Agriculture, Fisheries and Livestock sector related projects of Annual Development Program) sector projects, which will helps as toll of monitor for IMED officials.

The specific objectives of the assignment are the following:

2.1 To review the existing available relevant documents/guidelines on project review;

2.2 To review the existing available relevant documents/guidelines of other similar countries and Development Partner agencies;

2.3 To analyze objectives of the assignments thoroughly;

2.4 To develop a guideline that can be effectively used by the IMED officers during project monitoring and evaluation;

2.5 To develop on identical ME template for relevant sector;

2.6 To guide the officers of the IMED in building systematic approach to field visit through use of the Guideline;

2.7 To ensure the project management knowledge areas (such as scope, time, cost, procurement, quality, integration, human resource, stakeholders, communication and risk);

2.8 To help accelerate progress of the development projects.

3. Scope of Services:

Consultancy services shall broadly include:

3.1 Prepare a study design to carry out interviews of the stakeholders to know the actual requirement of **Crops, Fisheries and Livestock** (To address Agriculture, Fisheries and Livestock sector related projects of Annual Development Program) related projects for preparation of the guideline;

3.2 Identify weaknesses and limitations in the monitoring and evaluation process of the related projects;

3.3 Identify key areas of project development activities, and also identify/ select smart indicators for effectively monitoring and evaluating related projects;

3.4 Identify the components of different development projects, and describe the parts of each component for effective monitoring and evaluation;

3.5 Study monitoring and evaluation reports, in-depth study reports and other related reports of the projects of the concerned sector and identify monitoring and evaluation weaknesses etc.;

3.6 Study other relevant documents and M & E procedure of **Crops, Fisheries and Livestock** (To address Agriculture, Fisheries and Livestock sector related projects of Annual Development Program) projects/ program of in country and other countries that can be helpful in preparing ME Guidelines;

3.7 Consultant/s will interact with the relevant ministries, agencies, projects and identify areas of interest that can be helpful in carrying out the assignment;

3.8 Consultant will deliver comprehensive M & E guideline and ME templates for **Crops, Fisheries and Livestock** (To address Agriculture, Fisheries and Livestock sector related projects of Annual Development Program) in English and Bangla;

3.9 Any other related works assigned by the client.

4. Qualifications and experience of Firm and Team:

4.1 **Firm:** The assignment will be undertaken by a firm having similar experience in development of guidelines, and having adequate staff with appropriate professional qualifications and suitable experience:

a. Firm registered with the Government of Bangladesh;

b. At least 3 years' working experience in conducting similar type ofassignments;

c. Demonstrated capability in monitoring and evaluation of projects as evidenced by the qualifications and experience of the professional staff;

d. Excellent understanding and knowledge of project implementation procedures;

e. Proven track record of data/Information collection, compilation, analysis and analytical report generation;

f. Advantage will be given for experiences of preparation guideline (s) in public sector;

g. Skills in translation of documents/Guideline in English to Bengali.

4.2 Team:

No.	Type of professionals	Educational qualifications	Experience required
1.	Team Leader	At least Masters degree in Forestry or in any Agricultural discipline. Ph.D. degree will be preferred.	• At least 15 years' of experience in relevant project/ program monitoring and evaluation field. • Must have experience on developing guidelines/ manuals. • Demonstrated team leadership experience in similar/comparable position for 2 years. • Required organizational, communication and report writing skills; • Preferably have working experiences with government-executed donor-funded projects in Bangladesh. • Experience can be relaxed in case of exceptionally qualified candidate.
2.	Agronomist/ Horticultural	Minimum B.Sc. in Agriculture and Masters in Agronomy/Horticulture/ Genetics & Plant Breeding	• At least 5 years' experience in relevant field. • Project/program monitoring and evaluation experience will be given advantage. • Preferably have working experiences with government-executed donor-funded projects in Bangladesh.
3.	Aqua Culturist	Minimum B.Sc. (Honors) in Fisheries (MS in Aquaculture/ Fisheries management will be given advantage)	• At least 5 years' experience in relevant field. • Project/program monitoring and evaluation experience will be given advantage. • Preferably have working experiences with government-executed donor-funded projects in Bangladesh.
4.	Livestock Expert	Minimum B.Sc. in Animal Husbandry. (Higher educational qualification will be given advantage)	• At least 5 years' experience in the relevant field; • Project/program monitoring and evaluation experience will be given advantage; • Preferably have working experiences with government-executed donor-funded projects in Bangladesh.
5.	Civil Engineer	B.Sc. in Civil Engineering Expertise in farm power machinery/ irrigation and water management will be given advantage)	• At least 5 years' experience in relevant field. • Project/program monitoring and evaluation experience will be given advantage. • Preferably have working experiences with government-executed donor-funded projects in Bangladesh.

5. Duration of assignment:

Duration of assignment shall be 04 (four) months from the date of signing the contract.

6. Consulting Firm Responsibilities:

a. The Consulting Firm must propose services of consultants having good academic background and knowledge of the subject (assignment), so that quality M & E Guidelines and templates can be prepared and delivered within the stipulated time frame;

b. Consulting firm shall propose an appropriate methodology for the study in the context of objective of the assignment and scope of services;

c. Prepare and finalize M & E Guideline based on the study of documents, objective of the assignment and the data/information collected from various internal and external sources. M & E Guideline should cover maximum areas of monitoring activities / components of specific item;

d. Arrange a Workshop/Seminar for dissemination of the study findings and finalizing the guideline incorporating comments/observations of the participants.

7. Expected Deliverables/ Reporting

The following deliverables are expected from the date of contract signing:

Sl.	Deliverables	Number of reports	Delivery timeline (Weeks after signing contract)
1.	Inception report (Inclusive of detailed work plan, methodology, sample size, questionnaire and strategy)	10	3
2.	Submission and finalizing the data collection instruments after field testing	-	4
3.	Information collection from stakeholders and preparation of draft report (Guideline)	-	8
4.	Submission of 1st draft report	10	8
5.	Submission of 2nd draft report	10	12
6.	Workshop with stakeholder for finalization of draft report (Guideline)	50 copies in English	13
7.	Submission of final report (Guideline) incorporating feedback from stakeholders.	40 copies in English, 10 copies in Bangla (Unicode) & soft copies	15

***** *Cost of deliverables shall be borne by the consulting firm.*

8. Client's Input, Logistics and Support Arrangements:

8.1 Project Director, Strengthening Monitoring and Evaluation Capabilities of IMED (SMECI) will be the Client, and will make available all relevant reports, documents, information for the Consultant and designate counterpart personnel, if available;

8.2 The client will facilitate the consultancy activities like data collection, meeting/seminar arrangement and other arrangement related to the proposed assignment;

8.3 The Consultant will make own arrangement for necessary equipment (Desktop/Laptop, Printer, Scanner etc.) and facilities (home office space with telephone, fax, internet connectivity etc.) essential for providing the services. The client will arrange temporary necessary working space when required to review the documents at client premises. The Consultant will make own arrangement for all sorts of transportation.

9. Contents of Guideline:

The Guideline will, be user friendly. Illustrative example/ Case study and images might include for better understanding for the users. Page size: A4.

Annex 2: Glossary ofConceptsand Terms

Terms	Definitions Used
Accountability:	Obligation of government, public services or funding agencies to demonstrate to citizens that contracted work has been conducted in compliance with agreed rules and standards.
Activity:	Actions taken or work performed in a project to produce specific outputs by using inputs, such as funds, technical assistance and other types of resources.
Appraisal report:	The document that results from the appraisal mission and serves as the basis for project operational planning and annual planning. It is the overall framework (but not a blueprint) for the project strategy.
Appraisal:	Assessment, in accordance with established decision criteria, of the feasibility and acceptability of a project or programmme prior to a funding commitment. Criteria commonly include relevance and sustainability. An appraisal may also relate to the examination of opinions as part of the process for selecting which project to fund.
Aquaculture:	Also known as aqua farming; it is the controlled cultivation and harvest of aquatic plants and animals.
Assessment:	A process (which may or may not be systematic) of gathering information, analyzing it, then making a judgment on the basis of the information.
Assumption:	External factors (i.e. events, conditions or decisions) that could affect the progress or success of a project or programme. They are necessary to achieve the project objectives, but are largely or completely beyond the control of the project management.
Attribution:	The causal link of one thing to another; e.g. the extent to which observed (or expected to be observed) changes can be linked to a specific intervention in view of the effects of other interventions or confounding factors.
Audit:	Verification of the legality and regularity of the implementation of resources, carried out by independent auditors. An audit determines whether, and to what extent, the activities and organizational procedures conform to norms and criteria set out in advance.
Baseline information:	Information – usually consisting of facts and figures collected at the initial stages of a project – that provides a basis for measuring progress in achieving project objectives and outputs.
Baselines survey/study:	An analysis describing the situation in a project area – including data on individual primary stake-holders – prior to a development intervention. Progress (results and accomplishments) can be assessed and comparisons made against it. It also serves as an important reference for the completion evaluation.
Beel:	Natural depression areas. The water level increases during rainy season and decreases during dry seasons of the year in beels.
Benchmark:	Reference point or standard against which performance or achievements can be compared. A benchmark might refer to what has been achieved in the past, by other comparable organizations, or what could reasonably have been achieved under the circumstances.
Beneficiaries:	The individuals, groups or organizations who, in their own view and whether targeted or not, benefit directly or indirectly from the development intervention. In this guide, they are referred toas the primary stakeholders of a project.
Biogas digester:	A biogas digester (also known as a biogas plant) is a large tank where inside Biogas is produced through the decomposition/breakdown of organic matter through a process called anaerobic digestion. It's called a digester

Terms	Definitions Used
	because organic material is eaten and digested by bacteria to produce biogas.
Breed:	A stock of animals within a species having a distinctive appearance and typically having been developed by deliberate selection
Budget plan schedule:	Plan assigning the quarterly cost to be incurred by the different activities as well as subdividing these costs on the basis of the source of finance.
Budget plan summary:	Summary of the budget information according to output, project component, district and facilitation units, and national and overall project level.
Buried Pipe:	The conduit surrounded by soil is both loaded and supported by the earth and pore water.
Capacity-building:	The processes through which capacity is created. This is an increasingly key crosscutting issue in poverty alleviation projects.
Causal relationship:	A logical connection or cause-and-effect linkage existing in the achievement of related, interdependent results. Generally the term refers to plausible linkages, not statistically accurate relationships.
Causality analysis:	The study of cause-and-effect relations that link an intervention to its impacts.
Community:	A group of people living in the same locality and sharing some common characteristics.
Completion evaluation:	An external evaluation that occurs after project completion.
Completion:	The final phase in the project cycle, when a project completion report is produced. “Lessons learned” are identified and the various project completion activities take place. It can include anend-of-project evaluation.
Consultant:	Consultant" means a Person under contract with a Procuring Entity for providing intellectual and professional se
Cost effectiveness:	Comparison of the relative costs of achieving a given result or output by different means (employed where benefits are difficult to determine).
Cost-benefit analysis:	The comparison of investment and operating costs with the direct benefits or impact generated by the investment in a given intervention. It uses a variety of methods and means of expressing results.
Cultured pearl:	A pearl induced to form by placement of a grain of sand or another irritating object within the shell of a pearl mussel and reared in pond or sea till harvest.
Effect:	Intended or unintended change resulting directly or indirectly from a development intervention.
Effectiveness:	A measure of the extent to which a project attains its objectives at the goal or purpose level; i.e. the extent to which a development intervention has attained, or is expected to attain, its relevant objectives efficiently and in a sustainable way.
Efficiency:	A measure of how economically inputs (funds, expertise, time, etc.) are converted into outputs.
Evaluation Committee:	"Evaluation Committee" means a Tender or a Proposal Evaluation Committee constituted under Section 7 of the Act;
Evaluation:	A systematic (and as objective as possible) examination of a planned, ongoing or completed project. It aims to answer specific management questions and to judge the overall value of an endeavour and supply

Terms	Definitions Used
	lessons learned to improve future actions, planning and decision-making. Evaluations commonly seek to determine the efficiency, effectiveness, impact, sustainability and the relevance of the project objectives.
External evaluation:	Evaluation of a project carried out by IFAD's Office of Evaluation and Studies and implementing partners.
Feedback:	The transmission of evaluation findings to parties for whom it is relevant and useful so as tofacil-itate learning. This may involve the collection and dissemination of findings, conclusions, recommendations and lessons learned from experience. Specifically in the context of evaluation, to return and share the evaluation results with those who participated in theevaluation.
Fish Fingerling:	A young fish especially one less than a year old and about the size of a human finger.
Fish hatchery:	A fish hatchery is a place for artificial breeding, hatching and rearing through the early life stages of finfish and shell fish in particular.
Fish landing Ghat/Centre:	Fish landing ghat/center is a place where the number or poundage of fish unloaded by commercial fishermen or brought to shore by recreational fishermen for personal use. Landings are reported at the locations at which fish are brought to shore. The fish-landing center is facilitated with platform for enhancing concerned activities. There is an ice mill attached to the fish-landing center. The facility of storing fish is also available in this fish-landing center. (NOAA, 2006).May 5, 2011
Flexible Pavement:	The flexible pavement, having less flexural strength, acts like a flexible sheet (e.g. bituminous road).
Forage:	Herbaceous plants or plant parts fed to domestic animals
Formative evaluation:	Evaluation conducted during implementation to improve performance. It is intended for anagersand direct supporters of a project.
Fry:	A ‘baby’ fish.Fish in the early stages of development, usually less than one year old.
Goal:	The higher-order programme or sector objective to which a development intervention, such as a project, is intended to contribute. Thus it is a statement of intent.
Grassroots organizations:	The organizations based in communities that (may) represent the primary stakeholders vis-à-vis the project and can be implementing partners.
Herd:	A group of a single species of animal (cattle, horses, swine, goats)
HOPE:	‘Head of the Procuring Entity’ means the Secretary of a Ministry or a Division, the Head of a Government Department or Directorate; or the Chief Executive, by whatever designation called, of a local Government agency, an autonomous or semi-autonomous body or a corporation, or a corporate body established under the Companies Act;
Impact:	The changes in the lives of rural people, as perceived by them and their partners at the time of evaluation, plus sustainability-enhancing change in their environment to which the project has contributed. Changes can be positive or negative, intended or unintended. In the logframe terminology these “perceived changes in the lives of the people” may correspond either to the purpose level or to the goal level of a project intervention.
Implementing partners :	Those organizations either sub-contracted by the Project Management Unit or those organizations officially identified in the loan agreement as responsible for implementing a defined aspect of the project. Also known as

Terms	Definitions Used
	"co-implementing partners".
Independent evaluation:	An evaluation carried out by entities and persons free of control by those responsible for the design and implementation of the development intervention.
Indicator:	Quantitative or qualitative factor or variable that provides a simple and reliable basis for assessing achievement, change or performance. A unit of information measured over time that can help show changes in a specific condition. A given goal or objective can have multiple indicators.
Inputs:	The financial, human and material resources necessary to produce the intended outputs of a project.
Interim evaluation:	A project evaluation undertaken by IFAD's Office of Evaluation and Studies toward the end of the project implementation period (about one year before the loan closing date) when IFAD is considering a request to finance a second phase or a new project in the same area. An interim evaluation is a key opportunity for IFAD, the government, implementing partners and primary stakeholders to learn together from experience before embarking on the design of a follow-up project.
Joint evaluation:	An evaluation to which different institutions and/or partners contribute.
Lessons learned:	Knowledge generated by reflecting on experience that has the potential to improve future actions. A lesson learned summarises knowledge at a point in time, while learning is an ongoing process.
Livestock:	Domestic farm animals kept for productive purposes (meat, milk, work, wool)
Logical framework approach:	An analytical, presentational and management tool that involves problem analysis, stakeholder (LFA) analysis, developing a hierarchy of objectives and selecting a preferred implementation strategy. It helps to identify strategic elements (inputs, outputs, purpose, goal) and their causal relationships, as well as the external assumptions (risks) that may influence success and failure. It thus facilitates planning, execution and evaluation of a project.
Logical framework matrix:	Also known as "log frame" or "log frame matrix". A table, usually consisting of four rows and four columns, that summarises what the project intends to do and how (necessary inputs, outputs, purpose, objectives), what the key assumptions are, and how outputs and outcomes will be monitored and evaluated.
M&E (learning) plan:	An overall framework of performance and learning questions, information gathering requirements (including indicators), reflection and review events with stakeholders, and resources and activities required to implement a functional M&E system.
M&E (learning) system:	The set of planning, information gathering and synthesis, and reflection and reporting processes, along with the necessary supporting conditions and capacities required for the M&E outputs to make a valuable contribution to project decision-making and learning.
M&E framework:	An overview of the M&E system developed during the design phase of a project and included in the project appraisal report.
M&E matrix:	A table describing the performance questions, information gathering requirements (including indicators), reflection and review events with stakeholders, and resources and activities required to implement a functional M&E system. This matrix lists how data will be collected, when, by whomand where.
M&E unit:	The generic title used for units at both the project and sectoral levels

Terms	Definitions Used
	responsible for M&E.
Means of verification:	The expected source(s) of information that can help answer the performance question or indicators. This is found in the third column of the standard logframe. It is detailed further in the M&E matrix.
Mid-term evaluation:	An external evaluation performed towards the middle of the period of implementation of the project, whose principal goal is to draw conclusions for reorienting the project strategy.
Mid-term review (MTR):	An elaborate version of a supervision mission, with the same actors, that sometimes questions the design of the project. There is no standardized format and so can range from a supervision mission to a full-scale mid-term evaluation-like exercise.
Monitoring and evaluation:	The combination of monitoring and evaluation which together provide the knowledge required for: (M&E) a) effective project management and b) reporting and accountability responsibilities.
Monitoring:	The regular collection and analysis of information to assist timely decision-making, ensure accountability and provide the basis for evaluation and learning. It is a continuing function that uses methodical collection of data to provide management and the main stakeholders of an ongoing project or programme with early indications of progress and achievement of objectives.
Narrative summary:	The first column of the log frame matrix in which the inputs, outputs, purpose and goal are formulated. See “Objective Hierarchy”.
Objective hierarchy:	The different levels of objectives, from activities up to goal, as specified in the first column of the log frame. If the project is designed well, realisation of each level of objectives in the hierarchy should lead to fulfilment of the project goal.
Objective:	A specific statement detailing the desired accomplishments or outcomes of a project at different levels (short to long term). A good objective meets the criteria of being impact oriented, measurable, time limited, specific and practical. Objectives can be arranged in a hierarchy of two or more levels (see “Objective hierarchy”).
Objectively verifiable indicators:	A group of criteria (not necessarily measurable) used to verify the degree of accomplishment (foreseen or actual) of the sectoral purpose, the objective, and the inputs and outputs of a project. They can be quantitative, and therefore both verifiable and measurable, or qualitative, and therefore only verifiable.
Outcome:	The results achieved at the level of “purpose” in the objective hierarchy. In IFAD's terminology, outcome is part of impact (result at purpose and goal level).
Output indicators:	Indicator at the output level of the objective hierarchy, usually the quantity and quality of outputs and the timing of their delivery.
Outputs:	The tangible (easily measurable, practical), immediate and intended results to be produced through sound management of the agreed inputs. Examples of outputs include goods, services or infrastructure produced by a project and meant to help realise its purpose. These may also include changes, resulting from the intervention, that are needed to achieve the outcomes at the purpose level.
Participatory evaluation:	A broad term for the involvement of primary and other stakeholders in evaluation. The primary focus may be the information needs of stakeholders rather than the donor.
Participatory	A continual immediate assessment of the impact, used to control and steer

Terms	Definitions Used
impact monitoring:	purposes. It is characterized by the way actors at various levels attempt to collaborate in order to reflect on the impacts.
Perennial pond:	The pond that retain water throughout the year.
Performance Security:	"Performance Security" means security provided by a contractor solely for the protection of the purchasing agency or using agency receiving the materials, services, or construction, conditioned upon the faithful performance of the contract in accordance with plans, specifications, and conditions of the contract;
Performance:	The degree to which a development intervention or a development partner operates according to specific criteria/standards/guidelines or achieves results in accordance with stated goals or plans.
Pipe Culvert:	When a pipe is placed in an excavated trench to move water away, it is known as pipe culvert. It is the most commonly used drainage feature. Economy and ease of installation have made this type of culvert very popular. Pipe culverts are found in different shapes such as circular, elliptical, pipe arch etc. Generally, the shape depends on site conditions and constraints.
Primary stakeholders:	The main intended beneficiaries of a project.
Process evaluation:	An evaluation aimed at describing and understanding the internal dynamics and relationships of a project, programme or institution.
Process monitoring:	The activities of consciously selecting processes, selectively and systematically observing them to compare them with others, and communicating about what has been observed to learn how to steer and shape the processes.
Procure Entity:	"Procuring Entity" means a Procuring Entity having administrative and financial powers to undertake Procurement of Goods, Works or Services using public funds;
Project completion report:	The report that describes the situation at the end of a develop nt intervention, including lessons learned. The project completion report (PCR) is the responsibility of the borrower (i.e. the government).
Project evaluation:	Evaluation of an individually planned development intervention designed to achieve specific objectives within a given budget and time period.
Project impacts:	The changes in a situation that arise from the combined effects of project activities, or the extent to which the goal or highest-level project objectives are achieved. Impact also refers to any unintended positive or negative changes that result from a project. Impact sometimes means anything achieved by the project beyond direct outputs.
Project implementation manual:	A project-specific document that sets out the project strategy, operational activities, steps and procedures, and responsibilities of key stakeholders. This often includes a detailed M&E operational plan.
Project management:	The process of leading, planning, organizing, staffing and controlling activities, people and other resources in order to achieve particular objectives.
Project performance:	The overall quality of a project in terms of its impact, value to beneficiaries, implementation effectiveness, and efficiency and sustainability.
Project strategy:	An overall framework of what a project will achieve and how it will be implemented.

Terms	Definitions Used
Project:	An intervention that consists of a set of planned, interrelated activities designed to achieve defined objectives within a given budget and a specified period of time.
Purpose:	The positive improved situation that a project or programme is accountable for achieving.
Qualitative:	Something that is not summarised in numerical form, such as minutes from community meetings and general notes from observations. Qualitative data normally describe people's knowledge, attitudes or behaviours.
Quantitative:	Something measured or measurable by, or concerned with, quantity and expressed in numbers or quantities.
Refurbish in Construction:	To decorate and repair something such as a building or office in order to improve its appearance (Longman Dictionary of Contemporary).
Regulator:	It is a hydraulic structure constructed across the canal to regulate the irrigation water supplies. It may be constructed across any type of canal main, branch or a distributary.
Relevance:	The extent to which the objectives of a project are consistent with the target group's priorities and the recipient and donors' policies.
Reliability:	Consistency or dependability of data and evaluation judgements, with reference to the quality of the instruments, procedures and analyses used to collect and interpret evaluation data. Information is reliable when repeated observations using the same instrument under identical conditions produce similar results.
Resources:	Items that a project has or needs in order to operate, such as staff time, managerial time, local knowledge, money, equipment, trained personnel and socio-political opportunities.
Responsive:	"Responsive" means qualified for consideration on the basis of evaluation criteria so declared and specified in the Tender Document or in the request for Proposal Document;
Result:	The measurable output, outcome or impact (intended or unintended, positive or negative) of a development intervention.
Review:	An assessment of the performance of a project or programme, periodically or on an as-needed basis. A review is more extensive than monitoring, but less so than evaluation.
Rigid Pavement:	In rigid pavements, wheel loads are transferred to sub-grade soil by flexural strength of the pavement and the pavement acts like a rigid plate (e.g. cement concrete roads).
Risk:	Possible negative external factors, i.e. events, conditions or decisions, which are expected to seriously delay or prevent the achievement of the project objectives and outputs (and which are normally largely or completely beyond the control of the project management).
Rubber Dam:	Inflatable rubber dams are cylindrical rubber fabrics placed across channels, streams and weir or dam crests to raise the upstream water level when inflated. The membrane is a multi-layer fabric made of synthetic fibre (usually nylon) and rubberized on one or both sides.
Sample:	The selection of a representative part of a population in order to determine parameters or characteristics of the whole population.
Seasonal pond:	The pond that retain water during rainy seasons of the year.
Self- evaluation:	An evaluation by those who are administering or participating in a programme or project in the field and/or by those who are entrusted with the

Terms	Definitions Used
	design and delivery of (part of) a development intervention. As with any evaluation, a self-evaluation focuses on overall impact and performance, or specific aspects thereof.
Silage:	A crop that has been preserved in a moist, succulent condition by partial fermentation in a tight container (silo) above or below ground. The chief crops stored in this way are corn (the whole plant), sorghum, and various legumes and grasses. The main use of silage is in cattle feed.
Situation analysis:	The process of understanding the status, condition, trends and key issues affecting people, ecosystems and institutions in a given geographic context at any level (local, national, regional, international).
Sluice Gate:	A sluice gate is traditionally a wood or metal barrier sliding in grooves that are set in the sides of the waterway. Sluice gates commonly control water levels and flow rates in rivers and canals.
Stakeholder participation:	Active involvement by stakeholders in the design, management and monitoring of the project. Full participation means all representatives of key stakeholder groups at the project site become involved in mutually agreed, appropriate ways.
Stakeholders:	An agency, organization, group or individual who has a direct or indirect interest in the project/programme, or who affects or is affected positively or negatively by the implementation and outcome of it. In this Guide, primary stakeholders is the term used for the main intended beneficiaries of a project.
Sustainability:	The likelihood that the positive effects of a project (such as assets, skills, facilities or improved services) will persist for an extended period after the external assistance ends.
Target group:	The specific group for whose benefit the project or programme is undertaken, closely related to impact and relevance.
Target:	A specified objective that indicates the number, timing and location of that which is to be realized.
Tender Opening Committee:	"Opening Committee" means a Tender Opening Committee (TOC) or a Proposal Opening Committee (POC) constituted under Section 6 of the Act;
Tender Security:	"Tender Security" means an acceptable form of security conditioned upon the successful Tenderer's execution of a contract in accordance with the terms and conditions of the invitation for tenders and receipt of acceptable performance security, if required. Such security is solely for the protection of the agency requesting tenders
Tenderer:	"Tenderer" means a Person who submits a Tender;
Validation:	The process of cross-checking to ensure that the data obtained from one monitoring method are confirmed by the data obtained from a different method.
Water color:	Plankton is the minute floating forms of microscopic plants and animals in water which cannot get about to any extent under their own power. Plankton forms the important beginnings of food chains for larger animals including fish in aquatic environment. Water color is derived from the plankton grown in the pond water. Light green to light brown is the preferred water color in fish pond.
Work plan:	A detailed document stating which activities are going to be carried out in a given time period, how the activities will be carried out and how the activities relate to the common objectives and vision. The work plan is designed according to the logical framework and contains a description in each cell of the work plan table of each activity and output, its verifiable indicators, the means of verification and its assumptions.

Annex 3: Templates for Monitoring of Project Progress at different Stages (initial, mid and terminal)

The following templates are designed in general format so that these could be used in monitoring of crop, fisheries and livestock projects. The parameters/indicators generally slightly varied by objectives and investment plan of the development projects, so during monitoring in the field or in project office (desk monitoring) parameters to be choosen as per DPP plan of investment.

A: Template for Project M&E at Initial/early stage

Parameter/Indicator	DPP Target	Current Status (Yes)	Current Status (No)
Appointment of project director			
Establishment of project office			
Manpower mobilization as per DPP			
Departmental staff (#)			
Project staff (#)			
Project inception workshop organized or not			
Recruitment of consultant/consulting firm done or not			
Preparation of annual work plan and budget done or not			
Baseline survey planned/commissioned			
Mobilization made for outreach sites (district/Upazila)			
Planned for procurement of civil works/equipment/ machineries vehicles, etc. as per DPP (preparation of RFQ/Tender documents, etc.)			
Targeting and mobilization of target beneficiaries started			
Implementation of technical interventions (e.g. demonstration, beneficiary training, training of trainers and other extension activities) started			

B: Template for Project M&E at Mid stage

Parameter/Indicator	DPP Target		Current Progress		Current Progress (%)	
	Phy	Fin	Phy	Fin	Phy	Fin
Overall physical and financial progress of the project						
Progress in recruiting manpower						
Progress in deploying of consulting firm/consultants						
Progress in setting extension tools						
Field demonstration						
Field days						
Motivational tours						
Upazila/district agricultural fairs						
Review workshops, etc.						
Progress in imparting training						
Training of Trainers						
Skill development Training of departmental staff						

Parameter/Indicator	DPP Target		Current Progress		Current Progress (%)	
	Phy	Fin	Phy	Fin	Phy	Fin
Beneficiary training						
Commissioning/completion of Baseline Survey						
Commissioning of Mid-term survey						
Procurement of machinery and equipment						
Status of procurement of vehicles by items						
Progress in civil works by items						

C: Template for Project M&E at Terminal stage

Parameter/Indicator	DPP Target		Current Progress		Current Progress (%)	
	Phy	Fin	Phy	Fin	Phy	Fin
Achievement of total physical and Financial target of project						
Achievement in total project target of demonstration						
Achievement in total project target of training						
Training of Trainers						
Skill development Training of departmental staff						
Beneficiary training						
Other targeted extension activities						
Field day						
Motivational tour						
Agricultural fair						
Workshop/seminar						
Baseline survey						
Mid-term survey						
Terminal impact survey						
Total planned machinery/equipment						
Total planned civil works						
Disbursement of credit/innovative fund						

D: Template for Process Monitoring of the Project

Parameter/Indicator	Status	
Extension of project duration	No. of Times:	Total (Mo./Yr.):
Cost escalation of project	No. of Times:	Total Amt. (Tk.):
Implementation of time bound action plan	Yes/No:	If No, reasons:
Procurement done as per annual procurement plan	Yes/No:	If No, reasons:
Changes/transfer of Project Director	No. of Times:	Reasons:
Release of Project fund (Regular/Irregular)	Status:	Remarks:
Problems of land acquisition (if any)		

Annex 4: Templates for Physical and Financial Monitoring of on-going projects under Crop Sector

Projects are mainly designed and funded to achieve desired output/outcomes. Assessing those output/outcomes and changes are the key functions of M&E Unit. 'Value for Money' of a project is assessed through assessment of performance indicators. Performance or outcome indicators are usually outlined from the project proposals (PP) and these are inserted into an M&E plan. The M&E plan also provides information about frequency/timeline for each performance indicator to be assessed over a period of time. Periodic assessments are conducted using the same methodology and tools of the baseline survey to track performance indicators. The following templates are to be used for tracking the performance of the project at different quarter/years:

Template 4.1: Physical Progress monitoring of development project

Major Activities	DPP Target	Annual Target	Annual Progress (%)	Cumulative Progress (%)
Manpower				
Advertisement/publicity				
Demonstration				
Field day				
Motivational tour				
Workshop				
Agricultural fair				
Staff training				
Farmers training				
International consultant				
National consultant				
Survey				
Miscellaneous				
Civil works				
Machinery & Equipment				
Vehicle				
Others				
Total				

Template 4.2: Financial Progress monitoring of development project

Major Activities	DPP Target (Tk.)	Annual Target (Tk.)	Annual Progress (%)	Cumulative Progress (%)
Manpower				
Advertisement/publicity				
Demonstration				
Field day				
Motivational tour				
Workshop				
Agricultural fair				
Staff training				
Farmers training				
International consultant				
National consultant				
Survey				
Miscellaneous				
Civil works				

Major Activities	DPP Target (Tk.)	Annual Target (Tk.)	Annual Progress (%)	Cumulative Progress (%)
Machinery & Equipment				
Vehicle				
Others				
Total				

Annex 5: Monitoring format for different types Demonstrations implemented in the filed

Physical and Financial Progress Monitoring

The physical progress monitoring indicate the performance and efficiency of input delivery and financial progress monitoring accounts for costs by input and activity within predefined categories of expenditure. It is often conducted in conjunction with compliance and process monitoring and ensure implementation according to the budget and time-frame. Farmers' contribution of any input of demonstration is also quantified against total costing of the demonstration. Generic monitoring formats for physical and financial progress monitoring of demonstrations at farm, Upazila, district and project levelsis given below:

Template 5.1: Physical and Financial Progress Monitoring of Demonstration

Demonstration/Technology	Level (Upazila/ District/ Project)	Physical Progress (#)				Financial Progress (Tk.)			
		Project Target	Annual Target	Annual Progress	Cumulative Progress	Project Target	Annual Target	Annual Progress	Cumulative Progress

Implementation Quality Monitoring

The quality of demonstration largely depends on how elaborately the demonstration guidelines is prepared and followed in conducting the demonstration by the farmer cooperators. The demonstration guidelines includes description of all technical aspects (crop variety, quality of seed to be used, level and time of different operations essential for proper establishment, crop management practices, rates of use of critical inputs, etc. The demonstrations conducted following the guidelines leads to the achievement of the objectives of the demonstrations. Demonstration implementation quality monitoring template is given below:

Template 5.2: Monitoring Quality of Implementation of Demonstration

Demonstration/ Technology	Level (Upazila/ District/ Project)	Demo Guideline Prepared, Supplied and Discussed with Cooperator Farmer/Group	Demo Site Selection Criteria followed	Demo Established According to Guidelines	Critical Inputs Supplied (Name of Inputs)	Remarks

Monitoring Performance of Demonstration

Technology adoption demonstrations are diverse in design, purpose, content, and execution. The performance of demonstrations are typically evaluated against a common set of criteria or standards, using a set of scoring guidelines, to ensure consistency during the evaluation process from demonstration to demonstration to determine whether and to what extent expected objectives have

been achieved in terms of output and outcome level targets of a particular project. Demonstrations are generally evaluated at primary stakeholder, project and policy level perspectives to determine how well the goals are met. Performance monitoring Template is given below:

Template 5.3: Monitoring the Performance of Demonstration

Demonstration/ Technology	Level (Upazila/ District/ Project)	Demonstration Performance (Per Unit)					Gender Participation (%)		Farmer's reaction/ opinion
		Baseline	PDO Target	Demo	Control	Change	Male	Female	

Field Monitoring of Demonstration

While visiting demonstration sites at farmer's field, the implementation status of the demonstration at field level should be monitored in terms of appropriateness of location of demonstration and various site qualification criteria (e.g., well communicated, sunny place, easily visible by target people, etc.) would be graded by eye estimation and expressed as percentage value. Similarly, whether signboard with required information (name of farmer, crop, variety, objective, planting date,size of the demo plot as per departmental guideline, etc.) is placed timely, crop condition by physical appearance (disease/pest infestation level, crop condition relative to nearby plots, etc.) should be graded. The generic field monitoring format is given below.

Template 5.4: Field Monitoring of Demonstration

Demonstration / Technology	Location	Qualitative performance of demonstration visited				
		Appropriateness of demo site	Appropriateness of signboard	Appropriateness of demo size (m2)	Appropriateness of physical appearance	Satisfaction level of farmer

Annex 6: Templates for Monitoring of Training Activities of the Project

Monitoring Physical and Financial Progress of Farmer Training is practically a desk exercise that takes the account of progress of implementation of demonstrations against the planned target.

Template 6.1 Monitoring Physical and Financial Progress of Farmer Training

Training (Technology/	Upazila/ District/ Project	Implementation Progress (#)				Expenditure Progress (Lakh Tk.)			
		Project Target	Annual Target	Annual Progress	Cumulative Progress	Project Allocation	Annual Target	Annual Progress	Cumulative Progress

Performance Monitoring of Farmer/Beneficiary Training

Assessing the effectiveness of training toward attaining the objectives is very critical as the knowledge learnt and skills gained by the trainees largely determines how well the trainees (farmers) can apply the technologies taught in their own situation. In performance monitoring farmer/beneficiary training, the subject matter content, percent increase of knowledge and skills as well as the level of use of the knowledge and skill by the trainees is important.

Template 6.2 Performance Monitoring of Farmer/Beneficiary Training

Training (Technology)	Upazila/ District/ Project)	Subject Matter Focus	Output/Outcome (% Trainees)		Use of skill/knowledge (%)		Farmer's reaction/ opinion
			Increased Knowledge	Improved Skill	Own Farm	Neighbor Farm	

Quality Monitoring of Farmer/Beneficiary Training

Monitoring the qualityof farmer/beneficiary training involves as to how well the training is being organized and implemented. It looks in to state of preparation training schedule/handouts and its distribution among the trainees, number of classes accommodated, level of resource speakers drawn, etc. as shown in Template 6.3.

Template 6.3: Quality Monitoring of Farmer/Beneficiary Training

Training (Technology)	Level (Upazila/ District/ Project)	Training Schedule/Handouts (Verify Physically)		No. of Classes/Day	Level of Resource Speaker Drawn			Gender Participation (%)	
		Prepared	Distributed (#)		District	Upazila	Block	Male	Female

Annex 7: Templates for Monitoring of HRD Training of the Project

Template 7.1: Monitoring Physical and Financial Progress of HRD Training

Title of Training	Category of Participant	Implementation Progress (#)				Expenditure Progress (Lakh Tk.)			
		Project Target	Annual Target	Annual Progress	Cumulative Progress	Project Allocation	Annual Target	Annual Progress	Cumulative Progress

Template 7.2: Performance Monitoring of HRD Training

Title of Training Course	Category of Participant	Subject Matter Focus	Output/Outcome (% Trainees)		Use of skill/knowledge (%)		Trainees reaction/ opinion
			Increased Knowledge	Improved Skill	Farmers' Training	Advisory	

Template 7.3: Field/Quality Monitoring of HRD Training

Title of Training Course	Category of Participant	Venue (Location)	Qualitative performance of Training course observed					
			Training Module Prepared	Handout supplied	# Lectures planned	# Lecturer taught the course	Training Allowance Given	Satisfaction level of Trainees

Annex 8: Templates for Farmers' Group Mobilization status of the Projects

Template 8.1: Monitoring Status of Farmer Group Formation

Name of Project	Group Name & Location	Date of Group Formation	Legal Status (Registered /Unregistered)	No of Group Members		Farmer Category Represented (%)			
				Male	Female	Marginal	Small	Medium	Large

Template 8.2: Monitoring Status of Farmer Group Mobilization and Group Activities

Name of Project	Group Name & Location	General Meeting Held Regularly	EC Meeting Held Regularly	Keeping Meeting Minutes	Members received training (No.)	Members received demo (No.)	Members adopted demo tech (%)	Demo Tech. Transferred to Non-Members (No.)

Annex 9: Templates for Monitoring of Field Day

Implementation of Field Days

The SAAO, or other member of staff responsible, should arrive early with all the necessary materials and ensure everything is in order. Successful implementation requires:

- An informal atmosphere where people feel free to raise questions;
- An introduction where the purpose of the field day is explained and farmers are reminded of the original problem or need which the demonstration was designed to address;
- That the farmer hosting the demonstration is encouraged to take an active role in the field day, explaining the demonstration objective, what has been done, and their impressionof the costs and benefits of the technology;
- That farmers are able to walk around the demonstration, and to take a close look at the crop. Where there is a demonstration and a control plot, farmers can be encouraged to look at the differences between them;

- Extension staff to talk informally with the farmers to find out whether they understood the demonstration clearly, their impressions of the technology and whether they will try the technology on their own farm;
- Recording the names of participating farmers; and
- Concluding the field day by bringing participants together, reviewing the proceedings, and explaining any follow-up activities.

Template 9.1: Monitoring of Field Day

Name of Project	Demonstration/Technology (on which field day observed)	Implementation Location	Number of Participant (According to Register)		# Farmer Motivated on the technology	
			Male	Female	Male	Female

Annex 10: Monitoring of Motivational Tour and Workshop/seminar

Implementation of Motivational Tour

If well planned, a motivational tour should be easy to implement. Consideration should be given to the following when conducting tours:

- Making sure farmers are collected on time as planned, and sticking to the schedule and route;
- Encouraging hosts (farmers or staff from other organizations) to do all the explaining and allowing them to answer visitor's questions;
- Summarizing the event, and answering any final questions on the journey home, as well as discussing possible follow-up activities.

Template 10.1: Monitoring farmers' Motivational Tours

Name of Project	Location of MFM Tour	Technologies Observed	Number of Participant		Participants' Remarks
			Farmer	Officials	

Monitoring Workshops/Seminar

A workshop is a period of discussion or practical work on a particular subject in which a group of people share their knowledge or experience. Among many different kinds ofworkshops organized in different agriculture development projects, "Annual Progress Review Workshop" is of paramount importance as it reviews the progress of implementation of project activities as well as discusses on the forthcoming annual program of activities of the project. Project personnel at different implementation and policy levels as well as other stakeholders attend these workshops.

Template 10.2: Monitoring Workshops/Seminars

Project Name	Title of Workshop	Location of Workshop	Attendance (No.)			# Report Presented & Discussed	Proceedings Prepared & Circulated
			Implementation Level	Policy Level	Others		

Annex 11: Templates for Monitoring of Agricultural fair of the project

Monitoring and Evaluation and Follow Up of Agricultural Fairs

Fairs are not as easy to monitor as face to face extension events. They are very fluid with many people attending for an uncontrolled period of time. As a result, it is difficult to use standard toolto monitor District and Upazila fairs. However, because fairs are expensive and require a large amount of resource to organize and implement, they do need to be monitored. Some ideas for monitoring fairs include:

- Having a book available to register attendance. This could simply be a record of the number of people who visited the fair;
- Asking the person organizing each stand to record basic information about the types of people that showed interest in the technologies that were on display;
- Making a “comments/suggestions” book available for people to sign as they leave the fair. This could then be used for making improvements to next year’s fair. Some farmers may comment on useful technologies which could be promoted further. These types of comments could also be considered for the next year’s annual plan;
- Conducting a brief questionnaire survey with a random selection of people attending the fair.

Template 11.1: Monitoring Technology Fair

Name of Project	Location of Fair	Technologies displayed	Number of Participant		Participants’ Remarks
			Farmer	Officials	

Annex 12: Templates for Physical and Financial Monitoring of Project

Performance or output or outcome indicators are usually outlined from the project proposals and these are inserted into an M&E plan. The M&E plan also provides information about frequency/timeline for each performance indicator to be assessed over a period of time. Periodic assessments are conducted using the same methodology and tools of the baseline survey to track performance indicators. The templates are as follows:

A: Template for Project M&E at Initial/early stage

Parameter/Indicator	DPP Target	Current Status (Yes)	Current Status (No)
Appointment of project director			
Establishment of project office			
Manpower mobilization as per DPP			
Departmental staff (#)			
Project staff (#)			
Project inception workshop organized or not			
Recruitment of consultant/consulting firm done or not			
Preparation of annual work plan and budget done or not			
Baseline survey planned/commissioned			
Mobilization made for outreach sites (district/Upazila)			
Planned for procurement of civil works/equipment/ machineries vehicles, etc. as per DPP (preparation of RFQ/Tender documents, etc.)			
Targeting and mobilization of target beneficiaries started			
Implementation of technical interventions (e.g. demonstration, beneficiary training, training of trainers and other extension activities) started			
Possession of project site (e.g. govt.khas pond, canal, water body,jalmohal, training centers, FSMF, fish hatchery) /site hand over completed			
Collection of fish culture ingredients(Collection of brood fish, fish fry/fingerlings, young crablet,mussel etc)			

B: Template for Project M&E at Mid stage

Parameter/Indicator	DPP Target		Current Progress		Cumulative Progress (%)	
	Phy	Fin	Phy	Fin	Phy	Fin
Overall physical and financial progress of the project						
Progress in recruiting manpower						
Progress in deploying of consulting firm/consultants						
Progress in setting extension tools						
Field demonstration						
Field days						
Motivational tours						
Upazila/district agricultural fairs						
Review workshops/seminar/consultation						

Parameter/Indicator	DPP Target		Current Progress		Cumulative Progress (%)	
	Phy	Fin	Phy	Fin	Phy	Fin
meeting etc.						
Progress in imparting training						
Training of Trainers						
Skill development Training of departmental staff						
Beneficiary training						
Commissioning/completion of Baseline Survey						
Commissioning of Mid-term survey						
Procurement of machinery and equipment						
Status of procurement of vehicles by items						
Progress in civil works by items						
Re-excavation of water bodies for fish culture						
Establishing fish sanctuaries						
Stocking of fish fry/fish fingerlings						
Fisheries farmer group formation, mobilization and supporting group extension activities						
Implementing fisheries technology adoption						
Implementing fisheries value chain and marketing						
Increasing fish production and productivity						
Strengthening fisheries research activities						

C: Template for Project M&E at Terminal stage

Parameter/Indicator	DPP Target		Current Progress		Cumulative Progress (%)	
	Phy	Fin	Phy	Fin	Phy	Fin
Achievement of total physical and Financial target of project						
Achievement in total project target of demonstration						
Achievement in total project target of training						
Training of Trainers						
Skill development Training of departmental staff						
Beneficiary training						
Fish culture Demonstration/Technology adoption/Fish sanctuary/Fish fingerling stocking						
Field day						
Motivational tour						
Agricultural fair						
Workshop/seminar/consultation meeting etc						
Baseline survey						
Mid-term survey						
Terminal impact survey						
Total planned machinery/equipment						
Total planned civil works						

Parameter/Indicator	DPP Target		Current Progress		Cumulative Progress (%)	
	Phy	Fin	Phy	Fin	Phy	Fin
Disbursement of credit/innovative fund						
Fisheries farmer group formation, mobilization and supporting group extension activities						
Implementing fisheries value chain and marketing						
Increasing fish production and productivity						
Strengthening fisheries research activities						
Implementing fisheries value chain and marketing						

D: Template for Process Monitoring of the Project

Parameter/Indicator	Status	
Extension of project duration	No. of Times:	Total (Mo./Yr.):
Cost escalation of project	No. of Times:	Total Amt. (Tk.):
Implementation of time bound action plan	Yes/No:	If No, reasons:
Procurement done as per annual procurement plan	Yes/No:	If No, reasons:
Changes/transfer of Project Director	No. of Times:	Reasons:
Release of Project fund (Regular/Irregular)	Status:	Remarks:
Problems of land acquisition (if any)		

Template 12.1: Physical Progress Monitoring of Development Project

Major Activities	DPP Target	Annual Target	Annual Progress (%)	Cumulative Progress (%)
Manpower recruitment				
Advertisement/publicity/TV film				
Demonstration established				
Field day observed				
Motivational tour				
Workshop				
Fisheries fair organized				
Staff training				
Farmers/Beneficiry training				
International consultant (MM)				
National consultant(MM)				
Survey (Baseline/ Mid-term)				
Civil works (Quantity)				
Machinery & Equipment (Nos)				
Vehicle				
Miscellaneous				
Total				

Template 12.2: Financial Progress monitoring of development project

Major Activities	DPP Target	Annual Target	Annual Progress (%)	Cumulative Progress (%)
Manpower				
Advertisement/publicity				
Demonstration				
Field day				
Motivational tour				
Workshop				
Fisheries fair				
Staff training				
Farmers training				
International consultant				
National consultant				
Survey				
Civil works				
Machinery & Equipment				
Vehicle				
Miscellaneous				
Total				

Annex13: Templates for Fisheries Demonstration of Development Projects

Physical and Financial Progress Monitoring of Fisheries Demonstration

The physical progress monitoring indicate the performance and efficiency of input delivery and financial progress monitoring accounts for costs by input and activity within predefined categories of expenditure. It is often conducted in conjunction with compliance monitoring and ensure implementation according to the budget and timeframe. Farmers' contribution for any kind is also quantified against total costing of the demonstration. The monitoring format for physical and financial progress monitoring of demonstrations at farm, Upazila, district and project levels is given below:

Template 13.1: Physical and financial progress monitoring of fisheries demonstration

Demonstration/ Technology	Level (Upazila/ District/Project)	Physical Progress (#)				Financial Progress (Tk. in lakh)				
		Project Target	Annual Target	Annual Progress	Cumulative Progress	Cost/ Demo	Project Target	Annual Target	Annual Progress	Cumulative Progress

Implementation Quality Monitoring of Fisheries Demonstration

The quality of demonstration largely depends on how elaborately the demonstration guidelines is prepared and followed in conducting the demonstration. The demonstration guidelines includes description of all technical aspects (fish/shrimp species, quality of fish fingerlings to be used, fertilization and feeding rates, partial harvest and restocking of fingerlings, rates of use of other critical inputs, etc.). The demonstrations conducted following the guidelines leads to the achievement of the objectives of the demonstrations. Implementation quality monitoring format is given in Template 13.2.

In implementation quality monitoring, the following pond selection checklist should be observed and rated accordingly.

- Location of Pond/ Water body: *Should be in sunny place, no shading is desired*;
- Distance from home: *Should be close to the homestead of demo farmer;*
- Dyke height of pond/water body: *Should be above flood level and strong enough to resist* flash flooding;
- Condition of dyke: *Repaired/Not repaired;*
- Soil quality: *Clay to sandy loam soil is most suitable;*
- Slope of pond dyke: *Gentle slope most desired;*
- Water retention capacity: *Should be good. Poor water retention capacity is not desired;*
- Water depth of pond/water body: *1.50 m – 2.00 m during dry season;*
- Thickness of pond mud: *Should be 10-15 cm*
- Age of the pond: *Aged pond without reclamation (new pond is undesired)*
- Source of water supply: *Rain/DTW/STW/canal*
- Pond/water body category: *Perennial/Seasonal*
- water color: Light green to brownish

Template 13.2:Implementation quality monitoring of fisheries demonstration

Demonstration/ Technology	Demo Guidelines Prepared, Supplied and Discussed with Demo Farmer/Group	Demo Site Selection Criteria followed	Demo Established According to Guidelines	Critical Inputs Supplied on time from the project (Name of Inputs)	Remarks

Performance Monitoring of Fisheries Demonstration

Technology adoption demonstrations are diverse in design, purpose, content, and method of execution. The performance of demonstrations are typically evaluated against a common set of criteria or standards to determine whether and to what extent expected objectives have been achieved in terms of output and outcome level targets of a particular project. Demonstration performance may be evaluated at primary stakeholder, project and policy level perspectives to determine how well the goals are met. Performance monitoring template of demonstration is given below:

Template 13.3: Performance Monitoring of Fisheries Demonstration

Demonstration/ Technology	Level (Upazila/ District/ Project)	Demonstration Performance (Per Unit)					Gender Participation (%)		Farmer's reaction/ opinion
		Baseline	PDO Target	Demo	Control	Change	Male	Female	

Field Monitoring of Fisheries Demonstration

While visiting fisheries demonstration at farmers' field, the implementation status of the demonstration should be monitored in terms of appropriateness of location of demonstration and various site qualification criteria (e.g., well communicated, sunny place, easily visible by target audience, etc.) would be graded by eye estimation and expressed as percentage value. Similarly, whether signboard with required information (name of farmer, name of fish species stocked, objectives, stocking date of fish fingerlings, size of the demonstration pond as per departmental guideline, name of project etc.) is placed timely and in a befitted manner. Physical appearance of pond water (productive- green to light

green) and growth rate of fish (through sampling of fishes by cast net) should be graded. The typical field monitoring Template is given below:

Template 13.4: Field Monitoring of Fisheries Demonstration

Demonstration/ Technology	Location	Quality/appropriateness of demonstration visited							Farmers' Opinion
		Demo pond quality	Signboard	Size of pond (ha)	Water depth (m)	Water color of pond	Availability of fertilizer and feed	Growth rate of fish*	

* Every 3 months

Annex 14: Templates for Monitoring of Training activities under Fisheries Agriculture

Progress Monitoring of Fisheries Farmers' Training

Similar to other projects, Physical and Financial Progress Monitoring is done as a desk exercise to take account of progress of implementation of farmers' training against the planned target and allocated budget (Template 14.1).

Template 14.1:Monitoring Physical and Financial Progress of Farmer Training

Training (Technology)	Upazila/ District/ Project	Implementation Progress (#)				Expenditure Progress (Lakh Tk.)			
		Project Target	Annual Target	Annual Progress	Cumulative Progress	Project Allocation	Annual Target	Annual Progress	Cumulative Progress

Performance Monitoring of Farmers' Training

Performance monitoring of farmers' training is conducted to assess the subject matter focus of training events and its consequent output and outcome (Template 14.2).

Template 14.2: Performance Monitoring of Farmers' Training

Training (Technology)	Upazila/ District/ Project)	Subject Matter Focus	Output/Outcome % Trainees)		Use of skill/knowledge (%)		Farmer's reaction/ opinion
			Increased Knowledge	Improved Skill	Own pond	Neighbor pond	

Quality Monitoring of Fisheries Farmer/Beneficiary Training

The qualityof farmer/beneficiary trainingis monitored to assess how well the training is planned, organized and implemented (Template 14.3).

Template 14.3: Quality Monitoring of Farmer/Beneficiary Training

Training (Technology)	Level (Upazila/ District/ Project)	Training Schedule/Handouts (Verify Physically)		No. of Classes/ Day	Level of Resource Speaker Drawn			Gender Participation (%)	
		Prepared	Distributed (#)		District	Upazila	Block	Male	Female

Field Monitoring of Fishery Farmer/Beneficiary Training

The details of the qualitative aspects of the training course are during field monitoring of beneficiary training. The major qualitative parameters to be assessed includes training module, number of topics covered, number of resource speakers used, handouts given, payment of training allowance, etc. (Template 14.4).

Template 14.4: Field Monitoring of Training Course

Name of Training Course	Location of Training	Qualitative performance of Training course observed						
		Training module	Handout supplied	Training allowance	# of Topics planned	# of Resource Speaker Taught	Live exhibits/replica used (Y/N)	Satisfaction level of farmer

Annex 15: Templates for Monitoring of HRD Training of Fisheries Projects

Monitoring Physical and Financial Progress of HRD Training

In monitoring physical and financial progress of the project the template below should be used.

Template 15.1: Monitoring Physical and Financial Progress of HRD Training

Title of Training	Category of Participant	Implementation Progress (#)				Expenditure Progress (Lakh Tk.)			
		Project Target	Annual Target	Annual Progress	Cumulative Progress	Project Allocation	Annual Target	Annual Progress	Cumulative Progress

Performance Monitoring of HRD Training

In monitoring Performance of Human Resource Development Training of the project the template below may be used.

Template 15.2: Performance Monitoring of HRD Training

Title of Training Course	Category of Participant	Subject Matter Focus	Output/Outcome (% Trainees)		Use of skill/knowledge (%)		Trainees reaction/ opinion
			Increased Knowledge	Improved Skill	Farmers' Training	Advisory	

Field/Quality Monitoring of HRD Training

In monitoring Performance of Human Resource Development Training of the project the template below may be used.

Template 15.3: Field/Quality Monitoring of HRD Training

Title of Training Course	Category of Participant	Venue (Location)	Qualitative performance of Training course observed					
			Training Module Prepared	Handout supplied	# Lectures planned	# Lecturer taught the course	Training Allowance Given	Satisfaction level of Trainees

Livestock Sector Project

Annex 16: Templates for Physical and Financial Monitoring of Project

Performance or output or outcome indicators are usually outlined from the project proposals and these are inserted into an M&E plan. The M&E plan also provides information about frequency/timeline for each performance indicator to be assessed over a period of time. Periodic assessments are conducted using the same methodology and tools of the baseline survey to track performance indicators. The templates are as follows:

A: Template for Project M&Eat Initial/early stage

Parameter/Indicator	DPP Target	Current Status (Yes)	Current Status (No)
Appointment of project director			
Establishment of project office			
Manpower mobilization as per DPP			
Departmental staff (#)			
Project staff (#)			
Project inception workshop organized or not			
Recruitment of consultant/consulting firm done or not			
Preparation of annual work plan and budget done or not			
Baseline survey planned/commissioned			
Mobilization made for outreach sites (district/Upazila)			
Planned for procurement of civil works/equipment/ machineries vehicles/animals/birds/semen, etc. as per DPP (preparation of RFQ/Tender documents, etc.)			
Targeting and mobilization of target beneficiaries started			
Implementation of technical interventions (e.g. demonstration, beneficiary training, training of trainers and other extension activities) started			

B: Template for Project M&E at Mid stage

Parameter/Indicator	DPP Target		Current Progress		Current Progress (%)	
	Phy	Fin	Phy	Fin	Phy	Fin
Overall physical and financial progress of the project						
Progress in recruiting manpower						
Progress in deploying of consulting firm/consultants						
Progress in setting extension tools						
Field demonstration						
Field days						
Motivational tours						
Upazila/district agricultural fairs						
Review workshops, etc.						
Progress in imparting training						
Training of Trainers						
Skill development Training of departmental staff						
Beneficiary training						
Commissioning/completion of Baseline Survey						
Commissioning of Mid-term survey						
Procurement of machinery and equipment						
Status of procurement of vehicles by items						
Progress in civil works by items						

C: Template for Project M&E at Terminal stage

Parameter/Indicator	DPP Target		Current Progress		Current Progress (%)	
	Phy	Fin	Phy	Fin	Phy	Fin
Achievement of total physical and Financial target of project						
Achievement in total project target of demonstration						
Achievement in total project target of training						
Training of Trainers						
Skill development Training of departmental staff						
Beneficiary training						
Other targeted extension activities						
Field day						
Motivational tour						
Agricultural fair						
Workshop/seminar						
Baseline survey						
Mid-term survey						
Terminal impact survey						
Total planned machinery/equipment						
Total planned civil works						
Disbursement of credit/innovative fund						

D: Template for Process Monitoring of the Project

Parameter/Indicator	Status	
Extension of project duration	No. of Times:	Total (Mo./Yr.):
Cost escalation of project	No. of Times:	Total Amt. (Tk.):
Implementation of time bound action plan	Yes/No:	If No, reasons:
Procurement done as per annual procurement plan	Yes/No:	If No, reasons:
Changes/transfer of Project Director	No. of Times:	Reasons:
Release of Project fund (Regular/Irregular)	Status:	Remarks:
Problems of land acquisition (if any)		

Template 16.1: Physical Progress Monitoring of Development Project

Major Activities	DPP Target	Annual Target	Annual Progress (%)	Cumulative Progress (%)
Manpower recruitment				
Advertisement/publicity/TV film				
Demonstration established				
Field day observed				
Motivational tour				
Workshop				
Fisheries fair organized				
Staff training				
Farmers/Beneficiary training				
International consultant (MM)				
National consultant(MM)				
Survey (Baseline/ Mid-term)				
Civil works (Quantity)				
Machinery & Equipment (#)				
Vehicle				
Miscellaneous				
Total				

Template 16.2: Financial Progress monitoring of development project

Major Activities	DPP Target	Annual Target	Annual Progress (%)	Cumulative Progress (%)
Manpower				
Advertisement/publicity				
Demonstration				
Field day				
Motivational tour				
Workshop				
Fisheries fair				
Staff training				
Farmers training				
International consultant				
National consultant				
Survey				

Major Activities	DPP Target	Annual Target	Annual Progress (%)	Cumulative Progress (%)
Civil works				
Machinery & Equipment				
Vehicle				
Miscellaneous				
Total				

Annex 17: Demonstration Monitoring Templates of Livestock Projects

Physical and Financial Progress Monitoring of Demonstration

In general, physical progress monitoring indicate the performance and efficiency of input delivery and financial progress monitoring accounts for costs by input and activity within predefined categories of expenditure. It simultaneously monitors compliance and process to ensure implementation according to the timeline and budgetary provision. Farmers' contribution of any kind is also accounted for and compared against total costing of the demonstration. The Template for physical and financial monitoring of demonstration is given below:

Template 17.1: Physical and Financial Progress Monitoring of Demonstration

Demonstration /Technology	Level (Upazila/ District/ Project)	Physical Progress (#)				Financial Progress (Tk.)			
		Project Target	Annual Target	Annual Progress	Cumulative Progress	Project Target	Annual Target	Annual Progress	Cumulative Progress

Monitoring Implementation Status of Demonstration

The quality of demonstration largely depends on following the elaborate guidelines of the demonstration prepared in advance by the project implementation authority. A well prepared demonstration guideline includes description of all technical aspects and step-by step procedure of setting and maintaining the demonstration. In case of livestock sector demonstrations, major technical issues includes breeds of animals/poultry, feeding and management of farm animals, prevention and control of different types diseases and bio-security maintenance of the farms. The demonstrations conducted following the guidelines leads to the achievement of the objectives of the demonstrations. Implementation quality monitoring involves among others, the following major issues, which, however, is described in the detailed demonstration guidelines: Siting Livestock Demonstration; Selection of animals/poultry birds; Demo farm management practices; Hygiene and Bio-safety management; Feeds and feeding practices, etc. Suggested quality monitoring format is given in Template 17.2.

Template 17.2: Implementation quality monitoring of livestock demonstration

Demonstration/ Technology	Demo Guidelines Prepared, Supplied and Discussed with Demo Farmer/Group	Demo Site Selection Criteria followed	Demo Established According to Guidelines	Critical Inputs Supplied on time from the project (Name of Inputs)	Remarks

Performance Monitoring of Livestock Demonstration

In livestock sector, technology adoption demonstrations are very different in design, purpose, content and method of execution from those of crops and fisheries sector. A common set of criteria or standard is followed for evaluating the performance of livestock demonstrations. These criteria enable to determine whether and to what extent the expected objectives of the demonstration is achieved in terms of output and outcome level targets. Evaluation of demonstration performance may be conducted at primary stakeholder, project and policy level perspectives to determine how well the goals are met.Performance monitoring template of demonstration is given below:

Template 17.3: Performance Monitoring of Livestock Demonstration

Demonstration/ Technology	Level (Upazila/ District/ Project)	Demonstration Performance (Per Unit)					Gender Participation (%)		Farmer's reaction/ opinion
		Baseline	PDO Target	Demo	Control	Change	Male	Female	

Field Monitoring of Livestock Demonstration

The implementation status of the field level demonstration should be monitored during visits to the sites, in terms of appropriateness of location of demonstration and various site criteria (e. g. open place, well communicated but not very close to a public road, etc.) would be graded by eye estimation and expressed as percentage value. Similarly, whether signboard with required information (name of farmer, no. of duck/chicken/goat with variety, objective, commencement date, size of the demo farm as per departmental guideline, etc.) is placed timely, animal condition by physical appearance (disease infection level, animal health condition relative to nearby farms, etc.) should be graded. The template for field monitoring demonstration is given below (Template 17.4):

Template 17.4: Field Monitoring of Demonstration

Demonstration/ Technology	Location	Qualitative performance of demonstration visited				
		Appropriateness of demo site	Appropriateness of signboard	Appropriateness of demo farm size (animal/bird no./acre)	Appropriateness of physical appearance	Satisfaction level of farmer

Annex 18: Monitoring of Training under Livestock development project

Progress Monitoring of Livestock Farmers' Training

Similar to other projects, Physical and Financial Progress Monitoring is done as a desk exercise to take account of progress of implementation of farmers' training against the planned target and allocated budget (Template 18.1).

Template 18.1: Monitoring Physical and Financial Progress of Farmer Training

Training (Technology)	Upazila/ District/ Project	General Progress (#)				Financial Progress (Tk.)			
		Project Target	Annual Target	Annual Progress	Cumulative Progress	Project Target	Annual Target	Annual Progress	Cumulative Progress

Performance Monitoring of Livestock Farmer' Training

Performance monitoring of farmers' training is conducted for assessing subject matter focused in different events of the training course and its subsequent output and outcomes. Farmer's opinions regarding training courses are also be assessed during performance monitoring of training. The template for performance monitoring of the farmers training is given below (Template 18.2).

Template 18.2: Performance Monitoring of Farmer' Training

Training (Technology)	Upazila/ District/ Project)	Subject Matter Focus	Output/Outcome % Trainees)		Use of skill/knowledge (%)		Farmer's reaction/ opinion
			Increased Knowledge	Improved Skill	Own livestock farm	Neighbor livestock farm	

Quality Monitoring of Livestock Farmers Training

The quality monitoring of farmer's training is conducted with a view to assess how well the training program is planned, organized and implemented. Information regarding gender participation (%) in the training courses is also assessed in quality monitoring of farmers training (Template 18.3)

Template 18.3: Quality Monitoring of Farmers Training

Training (Technology)	Level (Upazila/ District/ Project)	Training Schedule/Handouts (Verify Physically)		No. of Classes/Day	Level of Resource Speaker Drawn			Gender Participation (%)	
		Prepared	Distributed (#)		District	Upazila	Block	Male	Female

Monitoring of Officer/Staff Training

Human resource development is very essential for improving organizational capacity and efficiency of project implementing organizations. Both extension and research organizations employ a large number of technical, administrative and support personnel at various tires. To improve organizational capacity for efficiency in project implementation, the organizational personnel require continuous short and long-term training for upgrading their knowledge and skills and cater the services needed for the development projects in Livestock sector. Monitoring of officer/staff training is necessary for showing the progress achieved in different stages of project implementation (Template 18.4).

Template 18.4: Progress monitoring of officer/staff training

Training (Technology/ Upazila/ District)	General progress (#)				Participation (#)		Use of skill/knowledge (%)		Farmer's reaction/ opinion
	Project target	Project progress	Annual Target	Annual progress	Male	Female	To colleague	To farmer	

Financial Monitoring of Training (Farmer & Staff)

The financial progress monitoring accounts for costs by input and activity within predefined categories of training expenditure. It is often conducted in conjunction with compliance and process monitoring and ensure implementation according to the budget and time-frame. The template for financial monitoring of farmer and staff are given below (Template 18.5).

Template 18.5: Financial Monitoring of Training (Farmer & Staff)

Training (Technology/ Upazila/ District)	Farmer Training						Staff Training					
	Allocation/Budget (Tk. in lakh)				Progress (%)		Allocation/Budget (Tk. in lakh)				Progress (%)	
	Project target	Project progress	Annual Target	Annual progress	Project	Annual	Project target	Project progress	Annual Target	Annual progress	Project	Annual

Field Monitoring of Training Courses

Generally farmers training courses on livestock production and health are conducted in different field locations of the organizations. To observe the effectiveness of the training courses regular field monitoring are conducted (Template 18.6)

Template 18.6: Field Monitoring of Training Courses

Name of Training Course	Implementation Location	Qualitative performance of Training course observed					
		Training module	Handout supplied	Training allowance	# Lectures planned	# Lecturer taught the course	Satisfaction level of farmer

Annex 19: Monitoring of farmers' Group

Farmers' group formation is very effective (with regular group meeting) to transfer different developed livestock technologies to farmers/end users. The groups are trained on different technologies in the fields.Monitoring is very necessary to keep the group active for dissemination of the livestock technologies.

Template 19.1: Monitoring of Farmer Group

Name of Location (Project/District/Upazila)	# Group formed		# Member		# Member attended weekly meeting		# Member received training		# Member received demo		# Member adopted demo technology		# Member attended weekly meeting	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female

Annex 20: Monitoring Templates of Field day, Motivational Tour and Workshop/ seminar

Field days are arranged at appropriate times during demonstration, when particular management activities are implemented. For a fodder development project, the appropriate times for arranging field days could be:

- at the time transplantation of fodder cuttings;
- at harvesting time when yields, costs, and benefits can be compared.

The template for monitoring field day is given below (Template 20.1).

Template 20.1: Monitoring of Field Day

Demonstration/ Technology	Location of Demonstration	Number of participant attended/event		Number of Farmer Motivated for Adoption	
		Male	Female	Male	Female

It exposes farmers to developments and new technologies being used in another area, government farms, private enterprises and different NGOs. Seeing new technologies/practices/methods and talking to those who are using them often convinces farm people of the value of a practice. Then they are ready to try it- "Seeing is believing". The template for monitoring of motivational tour is given below (Template 20.2).

Template 20.2: Monitoring of Motivational Tour

Location of Motivational Tour	Technologies Observed	Number of Participant/Event		Number of Farmer adopted observed technology		Farmer's opinion
		Male	Female	Male	Female	

Every year one or more workshops are organized by different agricultural research and development organizations."Annual Research Review Workshop" is an example of workshop organized by different research institutes. It reviews the progress of implementation of project activities and the results of interventions. It recommends the forthcoming annual research programs of the institutes. It is an effective forum for discussion of problems during implementation and also a means of handling problem faced. The template for monitoring is as follows:

Template 20.3: Monitoring of Workshops

Name of Project	Title of Workshop/Seminar	Location of Workshop/ Seminar	Attendance (No.)			Number of Report Presented & Discussed	Proceedings Prepared & Circulated
			Implementation Level	Policy Level	Others		

Annex 21: Monitoring of disinfection activities and health programs

The template for monitoring disinfection activities of a commercial poultry farm is given below (Template 21.1)

Template 21.1: Monitoring of disinfection of farm equipment, house, feed silos, and road and path access ways

Item	Is Disinfection Done (Yes/No)	Name of Disinfectant used	Disinfectant Composition	Remarks (if any)
Farm equipment				
House				
Feed silos				
Road and path access ways				

Template 21.2: Monitoring assessing disinfection effectiveness

Way of assessing effectiveness	Is assessment done (Yes/No)	Result of assessment	Remarks (if any)
Visual examination			
Bacteriological analysis			

Template 21.3: Monitoring health program

Indicators	Vaccination/De-worming/post mortem test age of birds			
	Day-old	7 days	8 weeks	16 weeks
Vaccines name				
Ranikhet Disease (doses)				
Fowl Pox Disease (doses)				
FoWl Cholera Disease (doses)				
Gumboro Disease (doses)				
De-worming medicine (doses)				
Post Mortem Test (no.)				

Annex 22: Monitoring Templates for Tracking of Physical and Financial Progress of Civil Works

These templatesare intended to monitor and check the physical progress of the project as per set total and annual target in the DPP. This template will also reveal the status of physical progress annually. The IMED monitoring officer will follow the instructions below during filling up the templates:

- During the field visit the monitoring officers will have to bring all necessary monitoring templates and DPP with them;
- It is the responsibility of the monitoring officer to collect the monthly/bi-monthly//Quarterly/annual progress report from the respective project officials before the visit to meticulously study the progress reports;
- During filling up the templates, the monitoring officers will take assistance of the engineering in-charge (E/C) or his representatives;
- To cross check or verify the progress given by the engineering in-charge (E/C) or his representatives, the monitoring officer should visit the working side also.

Template 22.1: Physical progress monitoring of civil works

Sl. No	Item of work	Location of the project	Physical Progress									
			Physical Target as per DPP		Progress During Visit				Cumulative Progress			
			Total	Annual	Annual Target		As per total DPP Target		Annual Target		As per DPP	
					Qty.	%	Qty.	%	Qty.	%	Qty.	%

This template intended to monitor and check the financial progress of the project as per set total and annual target in the DPP. This template will also reveal the status of financial progress annually.

Template 22.2: Financial progress monitoring of civil works

SL. No	Location of project	Financial Target as per DPP		Financial Progress							
				Progress During Visit				Cumulative Progress			
		Total	Annual	As per Annual Target		As per DPP Target		As per Annual Target		As per DPP Target	
				Lakh	%	Lakh	%	Lakh	%	Lakh	%

Each project deals with numerous transactions for getting the output and outcome. There remain always scope for misappropriation and irregularities. To check this there should have scope for financial audit from the beginning of project. This template will help in tracking the actual expenditure with the plan along with the comments provided by the audit team.

Annex 23: Templates for Monitoring of Works, Goods and Services with Quality Monitoring

Procurement monitoring of Civil Works, Goods and Services

IMED monitoring officer will follow the instructions below during filling up the templates (23.1 to 23.4):

During the field visit the monitoring officers will have to take the respective DPP, monitoring templates, and bidding documents of the respective tendered package

iii) At the time of filling up the templates, the monitoring officers will take assistance of the engineering in-charge (E/C) or his representatives.

iv) The IMED personnel may ask for project relevant information from the engineering in-charge (E/C) or his representatives during consultation.

Each DPP includes format on civil work procurement plan. It is necessary to monitor the procurement of civil work whether the procurement has been done as per plan given in the DPP/RDPP or not. This template would help in tracking the procurement process.

Template 23.1: Procurement monitoring of Civil Works

Package No.	Description of procurement Package as per DPP/RDPP (Works)	Unit	Quantity	Procurement Method and (Type)		Mode of Tender Invitation		Estimated Cost		Contract Amount (Taka)	Tender invitation Date		Contract signing Date		Date of Completion of Contract	
				DPP/ RDPP	Actual	Online (e-GP)	Off-line	DPP/ RDPP	Actual		DPP/RDPP	Actual	DPP/RDPP	Actual	DPP/ RDPP	Actual
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

Each DPP includes format on goods procurement plan. It is necessary to monitor the procurement of goods whether the procurement has been done as per plan given in the DPP/RDPP or not. This template would help in tracking the procurement process.

Template 23.2: Procurement Monitoring of Goods

Package No.	Description of procurement Package as per DPP/RDPP (Goods)	Unit	Quantity	Procurement Method and (Type)		Mode of Tender Invitation		Estimated Cost		Contract Amount (Taka)	Tender invitation Date		Contract signing Date		Date of Completion of Contract	
				DPP/RDPP	Actual	Online (e-GP)	Off-line	DPP /RDPP	Actual		DPP/RDPP	Actual	DPP /RDPP	Actual	DPP/ RDPP	Actual
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

Each DPP includes format on service procurement plan. It is necessary to monitor the procurement of service whether the procurement has been done as per plan given in the DPP/RDPP or not. This template would help in tracking the procurement process.

Template 23.3: Procurement Monitoring of Services

Package No.	Description of procurement Package as per DPP/RDPP (Services)	Procurement Method and (Type)		Mode of Tender Invitation		Estimated Cost		Contract Amount (Taka)	Invitation Date RFP		Contract signing Date		Date of Completion of Contract	
		DPP/RDPP	Actual	Online (e-GP)	Off-line	DPP/RDPP	Actual		DPP/RDPP	Actual	DPP/RDPP	Actual	DPP/RDPP	Actual
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Template 23.4: Template for monitoring of quality expenditure

Total project cost as per DPP (Tk.)	Total expenditure from financial progress report (Tk.)	Whether any irregularities or audit objection found on procurement process		Remarks
		Yes	No	
				If there is no irregularities or audit objections found during the procurement process, then it can be assumed that quality expenditure is ensured. But if yes then quality expenditure is not ensued.

Annex 24: Templates for Evaluation of Civil Work Components (Crops, Fisheries and Livestock)

Template 24.1: Efficiency: The following templates will have to be filled up in consultation with the project stakeholders (Project director, consultant, contractor, beneficiaries)

SL. No.	Points to be considered	Yes	No	Remark
1	Were all inputs available on time with right quantity?			
2	Were activities implemented as schedule?			
	Were activities accomplished within set budget?			
3	Were intended output delivered economically?			

Template 24.2: Effectiveness

SL. No.	Points to be considered	Yes	No	Remark
1	Were the objectives achieved?			
2	Did the output lead to the intended outcome?			

Template 24.3: Relevance

SL #	Points to be considered	Yes	No	Remark
1	Were the intended objectives consistent with the needs of stakeholder?			
2	Were the intended objectives consistent with the policies, rules, regulations of the government?			

Template 24.4: Impact: (a).

SL. No.	Points to be considered	Provide Description on changes occurred	Remark
1	What changes did the project bring about?		

(b).

Sl #	Points to be considered	Yes	No	Provide some description
1	Were there any unplanned or unintended changes made?			

Template 24.5: Sustainability

SL. No.	Points to be considered	Yes	NO	Provide, how sustainability will be established
1	Are the benefits likely to be maintained for considerable extended period after the end of the project?			

Annex 25: Template for Monitoring and Evaluation of Earthwork for an individual footing of a building

The proper time of earthwork monitoring is during the excavation of foundation trench. Design and drawing of the foundation should be available at the construction site and consulted during monitoring of the earthwork of the foundation. The measurements of earthwork have to be taken from the given reference point on the design and drawing. If possible to monitor earthwork during excavation, then all the dimensions of the trench are to be recorded taking direct measurements. But if the monitoring is done after the excavation of the trench then all the dimensions are to be recorded discussing with the technical person present on the site. To monitor the earthwork of an individual footing, a simple template is furnished below:

Template 25.1: Earthwork volume calculation of an individual Footing

L=Length of footing (m)	B=Breadth of footing (m)	D=Depth of foundation(m)	V=Volume of earth work=LXBXD=Volume(m^3)	Remark
1	2	3	3=(1x2X3)	5
Example: L=10	B=8	D=7	V=LXBXD=10X8X7=560	

Template 25.2: Earthwork volume calculation of a Spread Footing

Total length(m)=L	B=Breadth(m)	Area (sq.m)=A	D=Depth (m)	Volume (m^3)	Remark
1	2	3=(1X2+2X2)	4	5=(3X4)	6
Example: 5	3	LXB=5X3=15	3	AXD=15X3=45	

Earthwork volume calculation of a Pond:

Template 25.3: Prismoidal Formula=d/3(A1+A2+4ak)

Length of Top of pond(m)	Width of top of pond (m)	Area of Top of pond (m^2)	Length of bottom of pond (m)	Width of bottom of pond(m)	Area of bottom of pond (m^2)	Average of top and bottom length of pond(k)	Average of top and bottom width of pond(m)=a	Depth of pond (m)	Volume of earth(m^3)	Remark
1	2	3	4	5	6	7	8	9	10	11
Example; 20	15	20X15 =300	15	10	15X10 =150	(20+15)/2= 17.5	(15+10)/2=12 .5	3	=3/3[(300+15 0)+4x17.5X12 .5)]=1325	

Annex 26: Templates for Project Monitoring at Initial, Mid and Terminal Stages

Template 26.1: Project monitoring of ongoing project at the Initial stage (Tk. in Lakh)

Sl. No.	Project activities and input/output	Measuring unit	Total project target	Target for the year	Achieved up to the last FY.	Achieved this yr. up to the reporting month	Cumulative progress	DPP provision	ADP FY.	Financial progress up to the last FY.	Financial progress up to the reporting month	% achieved (Financial)	Remarks Reason for shortfall/Suggestion
	1	2	3	4	5	6	7	8	9	10	11	12	13
	Works												
1.	Construction of Building												
2.	Refurbishment of Building												
3.	Construction of Road												
4.	Construction of Boundary wall												
5.	Construction of fish landing ghat												
6.	External electrification												
7.	etc.												
	Goods												
1.	Jeep/ M. Bus												
2.	Motor cycle												
3.	By cycle												
4.	Digital camera												
5.	Office Furniture												
6.	Lab equipment/ machineries												
7.	Computer and accessories												
	Services												
1.	Engineering consultant												
2.	Medicine/Vaccine												
3.	Repair & maintenance												
4.	Training												
5.	Ph.D Scholarship												
6.	Fuel/oil												
7.	Telephone bill												
8.	TA/DA												
9.	Chemical reagents												
10.	Miscellaneous												

Template 26.2: Project monitoring of ongoing project at the middle stage

Sl. No.	Project activities and input/output	Measuring unit	Total project target	Target for the year	Achieved up to the last FY.	Achieved this yr. up to the reporting month	Cumulative progress	DPP provision	ADP FY.	Financial progress up to the last FY.	Financial progress up to the reporting month	% achieved (Financial)	Remarks Reason for shortfall/Suggestion
	1	2	3	4	5	6	7	8	9	10	11	12	13
	Works												
1.	Construction of Building												
2.	Refurbishment of Building												
3.	Construction of Road												
4.	Construction of Boundary wall												
5.	Construction of fish landing ghat												
6.	External electrification												
7.	etc.												
	Goods												
8.	Jeep/ M. Bus												
9.	Motor cycle												
10.	By cycle												
11.	Digital camera												
12.	Office Furniture												
13.	Lab equipment/ machineries												
14.	Computer and accessories												
	Services												
11.	Engineering consultant												
12.	Medicine/Vaccine												
13.	Repair & maintenance												
14.	Training												
15.	Ph.D. Scholarship												
16.	Fuel/oil												
17.	Telephone bill												
18.	TA/DA												
19.	Chemical reagents												
20.	Miscellaneous												

Template 26.3: Project monitoring of ongoing project at the terminal stage

Sl. No	Project outcome	Measuring unit	Total project target	% Achieved	Remarks/Reason for shortfall/ suggestions
1.	Building construction				
2.	Refurbishment works				
3.	Road				
4.	Boundary wall				
5.	Lab. equipment				
6.	Office & Lab Furniture				
7.	Diff. types of transport				
8.	Land hand over				
9.	etc.				

Annex 27: Templates for data collection on procurement

The IMED monitoring officer will follow the instructions below during filling up the following templates.

i) During the field visit the monitoring officers will have to take the PPA-2006, PPR-2008, monitoring templates, and bidding documents of the respective package

ii) During filling up the templates, the monitoring officers will take assistance of the engineering in-charge (E/C) or his representatives.

iii) The IMED personnel may ask for project tender related information from the engineering in-charge (E/C) or his representative's during consultation.

Template 27.1: Checklist on Data Collection for the Monitoring & Evaluation of Procurement Process as Per PPA and PPR-2008

PART-A: Procuring Entity and Description of Procurement

1.	Ministry / Division							
2.	Agency							
3.	Procuring Entity							
4.	Name of the Project	(if applicable)						
5.	Source of Funds (Tick relevant boxes)	Government		Development		Revenue		
		Project Aid		Own Funds				
6.	Procurement Plan	Status of Annual Procurement Plan (APP)						
		Approved O				Unapproved O		
		Short Description (if necessary):						
7.	Brief Description of Works							
8.	Procurement Method (as in DPP or otherwise)							
9.	Procurement Value (Estimated Cost)							
10.	Type of Tender Document (Tick Relevant one)	SRFQ (PW 1) STD (PW 2/PW 3/PW 4/PW 5) SPD (PQW 4/PQW 5)						
11.	Formation of TOC/POC and TEC/PEC	No of members in TOC/POC No of members from TEC/PEC No of members in TEC/PEC No of external members in TEC/PEC Authority approved TEC/PEC						

PART-B: Schedule of Activities (Pre-Qualification)

SN	Activity (If not applicable indicate N/A)	Planned Date (As per procurement plan/ Flow Chart)	Actual Date	Remarks
1.	**Pre-Qualification**			
	1.1 Date of advertisement of invitation 1.1.1 Advertisement in Newspaper Published 1.1.2 Advertisement in CPTU Website Published 1.1.3 Advertisement published in own website 1.1.4 Tenders /Proposals followed PPA-2006/PPR,2008 1.1.5 Tenders /Proposals followed DPP`s Guidelines			
	1.1.6 No of sale/Issuance of Tender/Proposal Documents 1.1.7 No of Tenderer/Consultant participated 1.1.8 Days allowed per Rule for preparation and Submission 1.1.9 Date of Submission of Tender Doc./Applications			

SN	Activity (If not applicable indicate N/A)	Planned Date (As per procurement plan/ Flow Chart)	Actual Date	Remarks
	1.2 Date of Pre-Qualification Meeting(if any)			
2.	**Tenders/Proposals Evaluation**			
	2.1 Days allowed as per Rule between opening and completion/submission of evaluation			
	2.2 Days actual between opening and completion/submission of evaluation 2.3 Responsiveness of Tender/Proposal 2.4 Re-invitation of Tenders/Proposals recommended by TEC/PEC 2.5 Procurement proceedings annulled/cancelled 2.6 Date of Submission of Evaluation Report with Recommended List			
	2.7 Approving Authority (AA) as per Delegation of Financial Power (DoFP) 2.8 Date of Approval of List 2.9 Authority approval date 2.10 Evaluation report was sent directly to the AA			

PART-C: Schedule of Activities

SN	Activity (If not applicable indicate N/A)	Planned Date (As per procurement plan/ Flow Chart)	Actual Date	Remarks
1.	**Tender for Works**			
	1.1 Date of advertisement of invitation for Tenders 1.1.1 Advertisement in Newspaper Published 1.1.2 Advertisement in CPTU Website Published 1.1.3 Advertisement published in agency's own website, 1.1.4 Tenders /Proposals followed PPA-2006/PPR-2008 1.1.5 Tenders /Proposals followed Dev. Partner`s Guidelines			
	1.2 Date of Issue of Tender Document 1.2.1 No of Sale/Issuance of Tender/ Proposal Documents 1.2.2 No of Tenderer/Consultant participated			
	1.3 Date of Pre-Tender (Pre-Bid) meeting 1.3.1 Days allowed as per rules for preparation and Submission 1.3.2 Date of Submission of Tenders			
	1.4 Date of Opening of Tenders			
	1.5 Date of Submission of Technical Sub-Committee Report (if applicable)			
	1.6 Date of Submission of Evaluation Report			
	1.7 Procurement processing lead-time i.e. days actual between opening and issuance of NOA/PO/Contract signing/LOI			
	1.8 Days actual between IFT/RFP and issuance of NOA/PO/Contract signing/LOI			

SN	Activity (If not applicable indicate N/A)	Planned Date (As per procurement plan/ Flow Chart)	Actual Date	Remarks
	1.9 Publication of award in CPTUs website/PE's website/others			
	1.10 Contract award made within the initial Tender/ Proposal validity period			
	1.11 Date of Approval for Award of Contract			

PART-D: Individual Contract Review

S N	Contract Implementation:	Planned Date (As per procurement plan/ Flow Chart)	Actual Date
1.	1.1 Contract Reference		
	1.2 Contract Amount/ Value		
	1.3 Contract Signing Date		
	1.4 General Conditions of Contract (GCC) should be specific		
	1.5 Particular Conditions of Contract (PCC) should be specific		
	1.6 Terms of Reference/ Activities (Item by item)		
	1.7 Work plan		
2.	**Completion of Contract**		
	2.1 Days per original contract time specified for supply/ Execution/Delivery		
	2.2 Days actual for supply/ Execution/Delivery		
	2.3 Amount of LD imposed		
3.	**Complaints and Appeal**		
	3.1 Complaint, if any, lodged and reasons thereof		
	3.2 Resolution of complaints per Rules		
	3.3 Modifications resulting from resolution of complaints		
	3.4 Appeal of Independent Review Panel		
	3.5 Review Panel's decision and follow-on		
4.	**Contract Amendment**		
	4.1 No of times contract time extended and days		
	4.2 Variation/ Extra Work/ Repeat/ Addl. Delivery Orders etc. made		
	4.3 No and amount of such orders		
5.	**Contract Disputes unresolved**		
6.	**Fraudulence and Corruption**		
7.	**Procurement Management Capacity**		
	7.1 HRD facilities		
	7.2 No of Staff trained in procurement		

The purpose of this template is to evaluate whether tender procurement process has followedthe rules and regulations.

Annex 28: Evaluation of Development Projects (Crop, Fisheries and Livestock)

Some necessary format of Household Survey/Special purpose Survey for assessing the outcome/impact of agricultural development projects for crop sector projects is given below:

Template 28.1: Area coverage of crops promoted (Outcome/Impact level)

Name of reference crop	Baseline/Before project (Unit)	After project (Unit)	Change (%)

Template 28.2: Yield of Major crops (Outcome/Impact level)

Name of Crops	Yield (Kg/t/unit area)		
	Baseline/Before project	After project	Change (%)

Template 28.3: Production status of promoted technology (Outcome/impact)

Name of Reference Technology	Baseline/Before project Value	After project Value	Change (%)

Template 28.4: Producer of quality seed (Outcome level)

Name of reference crop	Baseline/Before project (#)	After project (#)	Change (%)

Template 28.5: User of quality seed by crops (Outcome level)

Name of reference crop	Baseline/Before project (#)	After project (#)	Change (%)

Template 28.6: Production of major crops per household in project area (Impact level)

Name of Crops	Baseline/Before project (Kg/t)	After project (Kg/t)	Change (%)

Template 28.7: Total cost of Crop Cultivation (Outcome/Impact Level)

Name of Crops	Total Cost (Tk) of cultivation/unit area)		
	Baseline/Before project	After project	Change (%)

Template 28.8: Annual Income by Sources (Impact level)

Source of Income	Total Amount (Tk.)		
	Baseline/Before project	After project	Change (%)
1. Service			
2. Crops			
3. Livestock including poultry			
4. Fish culture			
5. Business/small trade			
7. Day labor			
8. Remittance			
9. Others			

Template 28.9: Annual Expenditure by Items (Impact level)

Particulars of Expenditures	Total Amount (Tk)		
	Baseline/Before project	After project	Change (%)
1. Food			
2. Health care			
3. Clothing			
4. Housing			
5. Education			
6. Furniture Purchase			
7. Crop Production			
8. Conveyance			
9. Festival			
10. Loan repayment			
11. Others			

Template 28.10: Impact on Household Food Availability/Food security

Parameter	Baseline/Before project	After project	Change (%)
Total household paddy production (kg)			
Total household consumption (kg)			
Total annual surplus (kg)			
Total annual shortage (kg)			

Template 28.11: Ownership of Land Resources (Impact level)

Particulars of land	Land area (Unit) (baseline/before project)	Land area (Unit) After project	Change (%)
1. Homestead			
2. Own cultivated land			
3. Share in cultivated land			
4. Lease in cultivated land			

Template 28.12: Access to Safe Drinking Water

Sources of drinking water	Code #	Write appropriate code #		
		Baseline/Before project	After project	Change (%)
Activated DTW water	1			
Own hand tube well	2			
Others hand tube well	3			
Others	4			

Template 28.13: Access to Sanitation

Type of sanitation facility	Code #	Write appropriate code #		
		Baseline/Before project	After project	Change (%)
Sanitary latrine	1			
Ring slab latrine	2			
Ring (uncovered) latrine	3			
Others	4			

Annex 29: Assessment of Food Consumption, Energy and Nutrients Intake

Nutritional status can be assessed in terms of food consumption/capita/day and determining the energy and nutrient output of the consumed food. However, collecting information on food consumption is a difficult task. There are reports that evaluated nutrition status by recording twenty-four hour food intake of the family and converting the data on per capita per day basis and comparing it with desirable dietary pattern (BIRDEM.2013) in terms of items of food consumed and estimating corresponding energy and nutrient value.Forassessment of food consumption, the following Template may be used.

Template 29.1: Assessment of Food Consumption of Farm Households

Food item	Desirable Dietary Pattern (g/capita/day)	Baseline/Control (g/capita/day)	Observed Intake (g/capita/day)	Change (+)
Rice	350			
Bread	50			
Potato	100			
Vegetables	300			
Fats/Oil	30			
Fish	60			
Meat (Beef/chicken)	40			
Egg	30			
Milk	130			
Pulse	50			
Fruits	100			
Spices	20			
Total	1260			

Assessment of Energy and Nutrients Intake

Each food item contains energy and nutrients but values of different items varies from each other. Total energy and nutrients intake may be computed with the help of standard Food Consumption Table.The outcome of average per capita energy and major nutrients may be expressed as shown in Template 29.2.

Template 29.2: Assessment of Energy and Nutrients Intake

Parameter	Energy and Nutrients Intake (per Capita/Day)			
	RDA[1]	Baseline/Control	Observed Intake	Change (±)
Energy (kcal)	2430			
Protein (gm)	100[2]			
Vitamin A (mg)	600			
Vitamin C (mg)	45			
Iron (mg)	30			
Calcium (mg)	1000			

[1]Recommended Daily Allowance; [2]Protein requirement is 1 gm/kg of body weight/day but in case of dominant plant sources of protein, requirement may be increased to 1.5 gm/kg of body weight/day.

Annex 30: Sample Reporting Template

Types of Monitoring Reports

a) Project Progress Reports: is a record and communication of the results of project activities: the degree to which objectives are or have been reached; reasons why: assessment of factors; and recommendations. It is usually a narrative report and can include information about events and inputs (what actions were undertaken) but should emphasize outputs (the results of those actions in so much as they lead to achieving the stated objectives). Apart from narrative reporting, there is also the financial reporting. A detailed financial report should include what funds were received, what funds were expended to reachthe stated objectives of the project. At times, financial reporting also becomes part of monthly progress reports. The Project Progress Reports could be: Monthly, Bimonthly, Quarterly, Half-yearly or Annual.

b) Field Trip Reports: Each field visit should have a short report with purpose to justify making the trip. Technical details can be listed in any orderly fashion, dates and locations of travel, persons met (with their titles, agencies' names, times of meeting, venue, and so on), sites seen, meetings attended. A field trip report should emphasize on the results of that trip. These should be communicated to the concerned authorities to avoid their repetition in the future. The Field Monitoring report should make comparisons between the most recent findings and those of earlier visits, requiring a certain degree of consistency between the different reports.

c) Meeting Reports: Also known as the minutes of the meeting, this kind of report captures the essence of discussions and decisions taken in meetings. All meetings should have a purpose related to achieving the objectives of the project. Reports on those meetings, therefore, should concentrate on the purpose and indicate the result of the meeting in terms of progress towards meeting those objectives.

Reporting Matrix - Sample Format

Verbal presentation, backed up by summarized document, using appropriate tables, charts, visuals and audio-visuals. This is particularly important if the organization or project is contemplating a major change that will impact on beneficiaries.

A Sample Reporting Matrix

Target Readers	Stage of Project Cycle	Appropriate Format
Board of Directors	• Interim Report based on monitoring • Evaluation	• Written report • Written report with an Executive summary, and verbal presentation from the evaluation team.
Management Team, Project Manager, M&E Manager, Program Manager etc.	• Interim, based on monitoring analysis • Evaluation	• Written report, presented verbally by evaluation team • Written report discussed at management team meeting
Field Staff	• Interim, based on monitoring • Evaluation	• Written and verbal presentation at department and team levels. • Written report presented verbally by evaluation team
Beneficiaries	• Interim, but only at significant points, and • Evaluation	• Verbal presentation, backed up by summarized document, using appropriate tables, charts, visuals and audio –visuals. This is particularly important if the organization or project is contemplating a major change that will impact on beneficiaries.
Donors	• Interim, based on monitoring • Evaluation	• Summarized in a written report. • Full written report with executive summary or a special version, focused on donor concern and interest.
Wider development community	• Evaluation	• Journal articles seminars, conferences, and website.

Conducted by

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