

Environmental Monitoring and Mitigation

Feed the Future Innovation Lab for Livestock Systems

PURPOSE & TARGET AUDIENCE



Objective:

- To explain the purpose of environmental monitoring and mitigation plans (EMMPs)
- To explain the process required to create EMMPs



Target audience:

- Principal Investigator



Also appropriate for:
Co-Principal Investigators
Researchers or Post-docs

WHAT IS ENVIRONMENTAL MONITORING & MITIGATION

A process which ensures that all activities carried out by your project are done in ways which uphold the safety, health and well-being of the physical environment, animals, and the people engaged in your project

1. Categorize project activities based on USAID risk categories
2. Create mitigation plans for activities with risk
3. Monitor that the mitigation occurs

CATEGORIES OF RISK

General Risk level	Class of Activities
Low	Institutional or collective capacity building
Low	Program planning, analysis, evaluation, and meetings
Low	Applied research and capacity building that does NOT exceed 4 ha in a single location and does NOT involve support or procurement of chemical pesticide, insecticide, or fertilizer input
Moderate	Laboratory or contained greenhouse/animal holding facilities that does NOT involve infectious disease, toxins, and/or microbial or fungal contamination
Moderate	Applied research of infectious diseases and microbial and fungal contamination of animal-source foods
Moderate	Conducting applied research exceeding 4 ha in a single location
High	Laboratory research of infectious diseases and microbial and fungal contamination of animal-source foods
High	Applied research and capacity building that does NOT exceed 4 ha in a single location and DOES involve support or procurement of chemical pesticide, insecticide, or fertilizer input

AN EXAMPLE...

EMMP Topic	Example
Activity	<i>Nutrient quality of feed samples analyzed in a laboratory setting</i>
Risk category-	<i>Laboratory or contained greenhouse/animal holding facilities that does NOT involve infectious disease, toxins, and/or microbial or fungal contamination [Moderate risk]</i>
Mitigation measures	<p><i>All staff are properly trained in laboratory safety and documentation</i></p> <p><i>Written procedures exist for staff/researchers to follow protocols analyzing the samples</i></p>
Monitoring Plans	<p><i>Check that documentation exists that staff have laboratory safety training</i></p> <p><i>Check that documentation exists of the lab's standard operating procedures</i></p>

WHAT EXACTLY IS MONITORING?

Monitoring can take many forms



- Direct observation of activities in a lab or in the field
- Discussions with project personnel about how activities are carried out
- Ensuring documentation is on file and accessible

Monitoring can be carried out by team members with professional understanding of the activity



- Professional lab staff members
- PI and CoPIs of the project
- Staff, professionals, professors with the in-country institution, etc
- *No students please!*

PRACTICALITIES- SETTING UP PLAN

1. Erica drafts your project's EMMP plan
 - You have already indicated whether certain activities relevant to EMMP are part of your project in an appendix you provided during the proposal process
2. PI reviews and revises if needed
3. PI signs final plan and LSIL ME shares with USAID

WHAT DOES A PLAN LOOK LIKE?

Table 1. Subaward Activities and Risk Determination (Mark with an “X”)

**Refer to the EMMP for specified mitigation measures*

Proposed Activities	Screening result			Recommended determinations		
	Very Low Risk	Moderate Risk	Very High Risk	No significant adverse impact	With specified mitigation, no significant adverse impact*	Significant adverse impact
1. Provision of aflatoxin binder, Novasil™ Plus, to milk producing cows	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Training given to farmers on good animal husbandry practices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Feed and milk samples taken from participating farms	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Laboratory analysis of milk and feed samples to test for levels of aflatoxin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Conduct a hazard analysis for aflatoxin in dairy feed and milk	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Creation of knowledge productions, publications, and teaching materials	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Stakeholder meetings	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WHAT DOES A PLAN LOOK LIKE?

Laboratory or contained greenhouse/animal holding facilities that does NOT involve infectious disease, toxins, and/or microbial or fungal contamination						
Activity	IEE Condition	Resources	Mitigation	Monitoring	Timing	Responsibility
<p>Nutrient quality of feed samples analyzed in laboratory setting</p> <p>Conduct supplementation feeding trials using locally available ingredients.</p> <p>Registration of herds through tagging of goats.</p> <p>Conduct anthelmintic drug efficacy trials on goats.</p>	<p>The PI and all collaborating partners must be appropriately trained and follow the biosafety and biosecurity procedures and good laboratory practices outlined in Section IV of the CDC Biosafety in Microbiological and Biomedical Laboratories (BMBL 5th edition, http://www.cdc.gov/biosafety/publications/bmb15/)</p> <p>The PI and all collaborating partners must be appropriately trained and follow appropriate competent authority, OIE, and host institution biosafety and biosecurity guidelines and containment procedures.</p>	<p>http://www.cdc.gov/biosafety/publications/bmb15/</p> <p>USAID livestock Sector Environmental Guidelines http://www.usaidgems.org/sectorGuidelines.htm</p> <p>USAID agriculture Sector Environmental Guidelines http://www.usaidgems.org/Sectors/agriculture.htm</p>	<p>Animal experiments will be supervised by a veterinarian or a trained, experienced animal scientist and animals will be managed by trained personnel.</p> <p>Training of lab staff in biosafety and biosecurity and laboratory practices.</p> <p>Documentation kept on host institution and country regulations and on biosafety and biosecurity training provided to staff to ensure adherence to the regulations</p> <p>Documentation of laboratory procedures and staff training on safe handling of materials (e.g. fecal samples), as well as their storage, treatment and disposal, good hygiene, use of proper protective clothing, proper packaging and labeling, and appropriate courses of action for spills, injury and exposure.</p> <p>Obtain IACUC or equivalent ethical approval for animal research</p> <p>Written procedures are developed on animal waste disposal, as well as on necessary hygiene, inventory and storage practices. Training is provided in these areas where needed.</p>	<p>Regular monitoring of animals to confirm their welfare</p> <p>Documented experimental protocols and reports on procedures and experiments</p> <p>Documented IACUC, EHS, or equivalent approval where appropriate.</p>		<p>PI: animal management, prepare experimental protocols, ensure work is conducted by trained staff, and obtain IACUC, EHS, or equivalent approvals.</p>

PRACTICALITIES- CARRYING OUT THE PLAN

1. Note all the activities listed within your project's EMMP.
2. Note when each of these activities is planned to take place and which mitigation strategies are requested.
3. Create a plan internally to ensure that mitigation occurs prior to or at the start of the activity.
4. Make a plan to monitor each major activity at least once during the life of that activity.

See handout LSIL Quick Tips #2- Environmental Monitoring & Mitigation on Piestar dashboard for detailed descriptions on advice on how to carry out EMMP

REPORTING OF MONITORING

EMMP Task	Level of detail	Frequency
Finalize EMMP plan	Highly detailed	Within 60 days of subaward
Report all monitoring events within Piestar	Detailed	As they occur
Write annual summary of EMMP events	Less detailed, brief summary	Annually
Fill out a table of EMMP events over entire life of the project	Very brief	End of project

Disclaimer

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