FEED THE FUTURE INNOVATION LAB FOR COLLABORATIVE RESEARCH ON GRAIN LEGUMES

2013-2017

PERFORMANCE INDICATORS HANDBOOK

MICHIGAN STATE UNIVERSITY

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ABOUT THIS HANDBOOK

Under the Feed the Future initiative, policymakers have stressed the need for measurement of activities and accountability, so a standardized reporting systems for monitoring was developed, known as the Feed the Future Monitoring System (FTFMS). All USAID funded activities under FTF are responsible for completing annual reports for FTFMS. At the Legume Innovation Lab, we would like this to be as efficient as possible. This Handbook complements the FTFMS Performance Indicators / Target spreadsheet template distributed to all the project teams funded by the Legume Innovation Lab program. When you first look at the spreadsheet provided, you may find it intimidating. However, once initial targets are evaluated and set, researchers will see which indicators are important for their projects. In project planning, that means being sure to develop a way to track the indicators that can be verified.

The following handbook is to be used by the U.S. and / or host country (HC) principal investigators (PI) as a guideline to implement the performance and monitoring of Legume Innovation Lab activities to assess the progress toward the FTF global objectives. These guidelines were developed following the USAID 'FTF Indicator Handbook: Definition Sheets.' Here we focus on the indicators of interest for the Legume Innovation Lab project and provide guidelines to measure these indicators. Any clarification or further questions should be addressed to the Legume Innovation Lab Management Office <legumelab@anr.msu.edu> or to the Legume Innovation Lab's Impact Assessment Project Lead PI, Mywish Maredia <maredia@msu.edu>.

INSTRUCTIONS

Please keep in mind the following instructions when formulating the targets or reporting the actual realization of your performance indicators:

- Use this handbook as a guideline when filling in the required (disaggregated) information in the 'Performance Indicators / Targets Spreadsheet' template (Excel file). Pay special attention to **Legume Innovation Lab Note** for special instructions related to each indicator.
- Not all the indicators apply to all the projects. Follow the descriptions below to identify and report only those indicator(s) that is (are) relevant to your project.
- For each indicator that is relevant to your project, please disaggregate at the levels included in the corresponding indicator description (e.g. for indicator # 4.5.1(24), disaggregate by sector and stage). For projects that only provide 'total numbers,' the information <u>will not</u> be accepted and it will be required for PIs to provide disaggregated information.
- There may be many indicators that do not apply to your project(s). In this instance, please disregard (i.e. leave empty) the cells in the 'Performance Indicators / Targets Spreadsheet' template that correspond to the said indicator.
- In the 'Performance Indicators / Targets Spreadsheet' template, please report <u>numbers (in the units specified)</u>, not percentages.
- U.S. Lead PIs are required to also disaggregate the information per each institution with formal sub-contracts. Thus, the spreadsheet template provided includes seven worksheets: <u>the first sheet</u> (labeled 'Indicators overall') will be calculated automatically based on the information inserted in all other sheets to provide project-level indicators (do not enter any

information into this sheet), and six additional worksheets, one per institution (U.S. Lead Institution plus five additional institutions). If more than five institutions (excluding the U.S. Lead Institution) are sub-contracted, you can add more sheets as needed but please update the formulas in the 'Indicators overall' worksheet to account for these added institutions. This disaggregation is done to help researchers think of the various activities planned by each contracted institution and be able to track how total numbers for the whole project are derived. The information on performance indicators impacted by institutions with no formal sub-contracts can be included under the U.S. or host country institution that is responsible for direct oversight of those activities.

- In the case of activities that overlap across several institutions, when it is difficult to determine one specific institution associated with an indicator, this information could be listed under the U.S. institution or a worksheet labeled "Joint" can be established and the indicators listed under that worksheet.
- "Disaggregated by" & "Measurement Notes": As explained above, the data provided should be disaggregated at the level(s) included in the "Disaggregated by" section, as directly required by the FTFMS. However, for the internal Legume Innovation Lab system, PIs are also required to disaggregate the information as described in the first paragraph of the "Measurement Notes" section, when applicable.

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Program Element 4.5.2: Agricultural Sector Productivity
INITIATIVE AFFILIATION: FTF-IR 1: Improved Agricultural Productivity / Sub IR 1.1: Enhanced human and institutional capacity development for increased sustainable agriculture sector productivity

INDICATOR TITLE: 4.5.2(6) Number of individuals who have received USG (i.e. Legume Innovation Lab) supported long-term agricultural sector productivity or food security training

DEFINITION:
The number of people who are currently enrolled in or graduated in the current fiscal year from a bachelor's, master's or Ph.D. program or are currently participating in or have completed in the current fiscal year a long term (degree-seeking) advanced training program such as a fellowship program or a post-doctoral studies program. An example is a USDA Borlaug Leadership Enhancement Program.

A person completing one long term training program in the fiscal year and currently participating in another long term training program should be counted only once.

This indicator is to count ***individuals*** receiving training.

RATIONALE:
This indicator measures enhanced human capacity for policy formulation and implementation, which is key to transformational development.

UNIT:	**DISAGGREGATED BY:**
Number **Legume Innovation Lab Note**: Please provide additional information for each individual, as described in the 'Measurement notes' section.	*Sex*: Male, Female
TYPE: Output	**DIRECTION OF CHANGE:** Higher is better.

DATA SOURCES:
Program documents provided by PIs. These documents will contain information that allows tracking individuals in long-term training programs.

MEASUREMENT NOTES:
For Legume Innovation Lab internal recording system, please provide a Name, Last Name, gender, citizenship, Institution where degree was/is being obtained, type of degree obtained/being obtained, and status (i.e. currently enrolled or graduated).

- LEVEL OF COLLECTION: Project-level; individuals targeted by USG (i.e. Legume Innovation Lab) program.
- WHO COLLECTS DATA FOR THIS INDICATOR: All principal investigators.
- HOW SHOULD IT BE COLLECTED: Program training records, provided by all PIs.
- FREQUENCY OF REPORTING: Annually reported.

SPS LOCATION: Program Area 4.5: Agriculture
Program Element 4.5.2: Agricultural Sector Productivity
INITIATIVE AFFILIATION: FTF-IR 1: Improved Agricultural Productivity / Sub IR 1.1: Enhanced human and institutional capacity development for increased sustainable agriculture sector productivity

INDICATOR TITLE: 4.5.2(7) Number of individuals who have received USG (i.e. Legume Innovation Lab) supported short-term agricultural sector productivity or food security training

DEFINITION:
The number of individuals to whom significant knowledge or skills have been imparted through interactions that are intentional, structured, and purposed for imparting knowledge or skills should be counted. This includes farmers, ranchers, and other primary sector producers who receive training in a variety of best practices in productivity, post-harvest management, linking to markets, etc. It also includes rural entrepreneurs, processors, managers, and traders receiving training in application of new technologies, business management, linking to markets, etc, and training to extension specialists, researchers, policymakers, and others who are engaged in the food, feed, and fiber system and natural resources management. In-country and off-shore training are included. Include training on climate risk analysis, adaptation, mitigation, and vulnerability assessments, as it relates to agriculture. Delivery mechanisms can include a variety of extension methods as well as technical assistance activities. An example is a USDA Cochran Fellow.

This indicator is to count ***individuals*** receiving training.

RATIONALE:
This indicator measures enhanced human capacity for increased agriculture productivity, improved food security, policy formulation and/or implementation, which is key to transformational development.

UNIT:	**DISAGGREGATED BY:**
Number	*Type of individual*: include in one of the following types. • Producers (farmers, pastoralists, ranchers, etc.) • People in government (e.g. policy makers, extension workers) • People in private sector firms (e.g. processors, service providers, manufacturers) • People in civil society (e.g. NGOs, CBOs, CSOs, research and academic organizations) *FTF Note: while producers are included under MSMEs under indicators 4.5.2(30) and 4.5.2(37), only count them under the Producers and not the Private Sector Firms disaggregate to avoid double counting. While private sector firms are considered part of civil society more broadly, only count them under the Private Sector Firms and not the Civil Society disaggregate to avoid double counting.* *Sex*: Male, Female
TYPE:	**DIRECTION OF CHANGE:**
Output	Higher is better.

DATA SOURCES:
Since this indicator is relatively easy to record and report, the HC or US PI in charge of training could be the sole source of data. However, the PI needs to provide records that support this information (e.g. list of beneficiaries, training reports).

MEASUREMENT NOTES:

- LEVEL OF COLLECTION: Project-level; individuals targeted by USG (i.e. Legume Innovation Lab) program.
- WHO COLLECTS DATA FOR THIS INDICATOR: HC PIs, implementing partners, with supporting documentation.
- HOW SHOULD IT BE COLLECTED: Program training records, provided by HC PIs and implementing partners.
- FREQUENCY OF REPORTING: Annually reported.

SPS LOCATION: Program Area 4.5: Agriculture
Program Element 4.5.2: Agricultural Sector Productivity
INITIATIVE AFFILIATION: FTF-IR 1: Improve agricultural productivity / Sub IR 1.2: Enhanced Technology Development, Dissemination, Management and Innovation

INDICATOR TITLE: 4.5.2(13) Number of rural households benefiting directly from USG (i.e. Legume Innovation Lab) interventions

DEFINITION:
A household is a beneficiary if it contains at least one individual who is a beneficiary. An individual is a beneficiary if s/he is engaged with a project activity or s/he comes into direct contact with the set of interventions (goods or services) provided by the project. Individuals merely contacted or involved in an activity through brief attendance (i.e. non-recurrent participation) do not count as a beneficiary.

Beneficiaries also include the households of people who receive the goods and services of an implementing partner or participate in training, in which "training" is defined as individuals to whom knowledge or skills have been imparted through interactions that are intentional, structured, and purposed for imparting knowledge or skills.

The definition of "rural" should be the definition used by the respective national statistical service. This indicator can include vulnerable households if they are in rural areas.

RATIONALE:
This indicator tracks access and equitable access to goods and services in targeted areas.

UNIT:	**DISAGGREGATED BY:**
Number of households **Legume Innovation Lab Note**: If more than one member of the same household are beneficiaries, count only as one household. Please provide additional information, as described in the 'Measurement notes' section.	*Duration*: Continuing, New Rural households reported as benefiting should be those benefiting in the current reporting year. Any household that benefited in a previous year but were not benefiting in the reporting year should not be included. • Continuing: Any household that benefited in the previous year and continues to benefit in the reporting year should be counted under 'Continuing.' • New: Any household that benefited for the first time during the current reporting year should be counted under 'New.' No household should be counted under both 'Continuing' and 'New.' *Gendered Household type*: Each household should be categorized in one of the following: • Adult Female no Adult Male (FNM) • Adult Male no Adult Female (MNF) • Male and Female Adults (M&F) • Child No Adults (CNA)
TYPE: Output	**DIRECTION OF CHANGE:** Higher is better.

DATA SOURCES:
It is very important to collect accurate data for this indicator since these data will be useful for measuring indicator 4.5.2(2). The HC PI will be the sole source of data. However, since it is likely that the HC PI will collaborate with partners in implementing the project activities, each partner should be responsible for providing this information to the HC PI who in turn consolidates all the information and reports it. Further, the HC PI needs to corroborate that the information provided by its partners is accurate and reliable. These partners should provide records that support this information (e.g. list of project beneficiaries, training participant lists, reports, publications).

MEASUREMENT NOTES:
For Legume Innovation Lab internal recording system, for each direct beneficiary household the following information needs to be provided: place of residence (i.e. Department, Municipality, Village), Name, Last Name, cell phone (if available/possible) and gender of each household member that benefited, gendered household type (as described above), household size, type of beneficiary (i.e. new, continuing; as described above), and type of benefits received from the Legume Innovation Lab program. If multiple partners are operating in the same country, please be sure that they do not double count the number of beneficiary households.

- LEVEL OF COLLECTION: Project-level, attributable to USG (i.e. Legume Innovation Lab) investment.
- WHO COLLECTS DATA FOR THIS INDICATOR: Host Country Partner/PI, with supporting documentation.
- HOW SHOULD IT BE COLLECTED: Project records, surveys, training participant registration lists, etc.
- FREQUENCY OF REPORTING: Annually reported.

SPS LOCATION: Program Area 4.5: Agriculture
Program Element 4.5.2: Agricultural Sector Productivity
INITIATIVE AFFILIATION: FTF-IR 1: Improved Agricultural Productivity / Sub IR 1.1: Enhanced human and institutional capacity development for increased sustainable agriculture sector productivity

INDICATOR TITLE: 4.5.2(11) Numbers of food security private enterprises (for profit), producers organizations, water users associations, women's groups, trade and business associations, and community-based organizations (CBOs) receiving USG (i.e. Legume Innovation Lab) assistance

DEFINITION:
Total number of private enterprises, producers' associations, cooperatives, producer organizations, women's groups, trade and business associations, and community-based organizations, including those focused on natural resource management, that received USG assistance related to food security during the reporting year. This assistance includes support that aims at organization functions, such as member services, storage, processing and other downstream techniques, and management, marketing and accounting. "Organizations assisted" should only include those organizations for which implementing partners have made a targeted effort to build their capacity or enhance their organizational functions.

In the case of training or assistance to farmer's association or cooperatives, individual farmers are not counted separately, but as one entity. That is, when training/assisting groups of farmers, count the groups, not the farmers (but keep a record of the number of farmers per group since you will need this for other indicators).

RATIONALE:
This indicator tracks civil society capacity building that is essential to building agricultural sector productivity.

UNIT:
Number of groups

Legume Innovation Lab Note:
Please provide additional information for each group, as described in the 'Measurement notes' section.

DISAGGREGATED BY:
Type of organization: choose from the following seven types: private enterprises, producers' associations, cooperatives, producer organizations, women's groups, trade and business associations, and community-based organizations.

New/Continuing:
- New = the group is receiving USG assistance for the first time during the reporting year.
- Continuing = the group received USG assistance in the previous year and continues to receive it in the reporting year.

TYPE:
Output

DIRECTION OF CHANGE:
Over time, it is expected that the number of groups will increase. Therefore, higher is better.

DATA SOURCES:
Since this indicator is relatively easy to record and report, the HC PI could be the sole source of data. However, the PI needs to provide records that support this information (e.g., meeting minutes, meeting program, list of meeting participants, reports, briefs, publications).

MEASUREMENT NOTES:
For Legume Innovation Lab internal recording system, each organization / association / group should have a name. Each group should be categorized in one of the seven types of organizations included in the 'Disaggregated by' section. Further, each group should also be categorized as new or continuing, as described in the 'Disaggregated by' section. The Legume Innovation Lab template will automatically aggregate the total number of groups in each type of organization. The PI should also include the type of assistance provided or nature of collaboration with each organization / group reported.

If multiple partners are operating in the same country, please provide a clear name of the group to avoid double counting.

- LEVEL OF COLLECTION: Project-level.
- WHO COLLECTS DATA FOR THIS INDICATOR: Host Country Partner/PI, with supporting documentation.
- HOW SHOULD IT BE COLLECTED: Project records of training and various USG assistance for these specific types of organizations / associations / groups.
- FREQUENCY OF REPORTING: Annually reported.

SPS LOCATION: Program Area 4.5: Agriculture
Program Element 4.5.2: Agricultural Sector Productivity
INITIATIVE AFFILIATION: FTF-IR 3: Increased investment in agriculture and nutrition related activities

INDICATOR TITLE: 4.5.2(12) Number of public-private partnerships formed as a result of FTF (i.e. Legume Innovation Lab) assistance

DEFINITION:
Total number of public-private partnerships in agriculture or nutrition formed during the reporting year due to Legume Innovation Lab intervention (i.e. agricultural or nutrition activity, as described below). Private partnerships can be long or short in duration (length is not a criteria for measurement). Partnerships with multiple partners should only be counted once. A public-private partnership is considered formed when there is a clear agreement, usually (but not exclusively) written, to work together to achieve a common objective. There must be either a cash or in-kind significant contribution to the effort by both the public and the private entity. USAID must be one of the public partners. USAID is almost always represented in the partnership by its implementing partner. For-profit enterprises and NGOs are considered private. A public entity can be national or sub-national government as well as a donor-funded implementing partner. It could include state enterprises that are non-profit. A private entity can be a private company, a community group, or a state-owned enterprise that seeks to make a profit (even if unsuccessfully).

A mission or a project may form more than one partnership with the same entity, but this is likely to be rare and must be well justified to count it as a separate partnership. In counting partnerships we are not counting transactions with a partner entity; we are counting the number of partnerships formed during the reporting year. Public-private partnerships counted should be only those formed during the current reporting year. Any partnership that was formed in a previous year should not be counted.

- An agricultural activity is any activity related to the supply of agricultural inputs, production methods, agricultural processing or transportation.
- A nutritional activity includes any activity focused on attempting to improve the nutritional content of agricultural products as provided to consumers, develop improved nutritional products, increase support for nutrition service delivery, etc.

FTF Note: Each partnership's formation should only be reported **once** in order to add the total number across years.

RATIONALE:
The assumption of this indicator is that if more partnerships are formed it is likely that there will be more investment in agriculture or nutrition-related activities. This will help achieve IR3, which then contributes to the Key Objective of agriculture sector growth. The improvement in growth will increase the incomes of all, but because the focus of project work is on the vulnerable (women, children, and the poor), there will be a reduction in poverty.

UNIT:	**DISAGGREGATED BY:**
Number of partnerships **Legume Innovation Lab Note**: To be able to enter this information in the FTFMS, please provide a name for each partnership, label it for its focus (i.e. see right), and the system will aggregate the total number for this indicator.	Partnership focus (refer to the ***primary focus*** of the partnership): • Agricultural production • Agricultural post harvest transformation • Nutrition • Multi-focus (use this if there are several components of the above sectors in the partnership such as agricultural production + nutrition) • Other (do not use this for multi-focus partnerships)
TYPE: Output	**DIRECTION OF CHANGE:** Higher is better.

DATA SOURCES:
Since this indicator is relatively easy to record and report, the HC PI could be the sole source of data. However, the PI needs to provide records that support this information (e.g. any formal sub-contracts or awards, meeting minutes, reports, briefs, publications).

MEASUREMENT NOTES:
For Legume Innovation Lab internal recording system, each partnership should have a name and be categorized in one of the five focus categories included in the 'Disaggregated by' section. The Legume Innovation Lab template will automatically aggregate the total number of partnerships in each focus and across years. If multiple partners are operating in the same country, please provide a clear name of the partnership to avoid double counting.

- LEVEL OF COLLECTION: Project-level, but only attributable to USG (i.e. Legume Innovation Lab) investment.
- WHO COLLECTS DATA FOR THIS INDICATOR: Host Country Partner/PI, with supporting documentation.
- HOW SHOULD IT BE COLLECTED: Observation and records of partnerships created.
- FREQUENCY OF REPORTING: Annually reported.

SPS LOCATION: Program Area 4.5: Agriculture
Program Element 4.5.2: Agricultural Sector Productivity
INITIATIVE AFFILIATION: FTF-IR 1: Improve agricultural productivity / Sub IR 1.2: Enhanced Technology Development, Dissemination, Management and Innovation

INDICATOR TITLE: 4.5.2(2) Number of hectares under improved technologies or management practices as a result of USG (i.e. Legume Innovation Lab) assistance

DEFINITION:
This indicator measures the new and continuing area (in hectares) of land under new technology during the current reporting year. Any technology that was first adopted in a previous reporting year and continues to be applied should be marked as 'Continuing' (see disaggregation notes below).

Technologies to be counted here are agriculture-related technologies and innovations including those that address climate change adaptation and mitigation (e.g. carbon sequestration, clean energy, and energy efficiency as related to agriculture). Relevant technologies include:

- Mechanical and physical: irrigation, new land preparation, harvesting, processing and product handling technologies, including biodegradable packaging;
- Biological: new germplasm (varieties, breeds, etc.) that could be higher-yielding or higher in nutritional content and/or more resilient to climate impacts (e.g. drought tolerance); affordable food-based nutritional supplementation such as vitamin A-rich sweet potatoes or rice, or high-protein maize; and soil management practices that increase biotic activity and soil organic matter levels;
- Chemical: fertilizers, insecticides, and pesticides safe storage application and disposal of agricultural chemicals, effluent and wastes, and soil amendments that increase fertilizer-use efficiency (e.g. soil organic matter);
- Management and cultural practices: information technology, conservation agriculture, improved/sustainable agricultural production and marketing practices, increased use of climate information for planning disaster risk strategies in place, climate change mitigation and energy efficiency and natural resource management practices that increase productivity (e.g. upstream watershed conservation or bio-diesel fueled farm equipment) and/or resilience to climate change including soil and water conservation and management practices (e.g. erosion control, water harvesting, low or no-till); Integrated Pest Management (IPM), and Integrated Soil Fertility Management (ISFM), and Post-Harvest Handling (PHH) related to agriculture should all be included as improved technologies or management practices. Significant improvements to existing technologies should be counted.

If a hectare is under more than one improved technology type (e.g. improved seed (crop genetics) and IPM (pest management)), count the hectare under each technology type (i.e. double count). In addition, count the hectare under the 'total w/one or more improved technology' category. Since it is very common that more than one improved technology is disseminated and applied, this approach allows FTF to accurately count the uptake of different technology types, and to accurately count the total number of hectares under improved technologies.

If a hectare is under more than one improved technology, some of which continue to be applied from the previous year and some of which were newly applied in the reporting year, count the hectare under the relevant technology type as new or continuing, depending on the technology, and under new for the 'total w/one or more improved technology' category (i.e. any new application of an improved technology categorizes a hectare as new, even if other technologies being applied are continuing).

RATIONALE:
This indicator tracks successful adoption of technologies and management practices in an effort to improve agricultural productivity, agricultural water productivity, sustainability, and resilience to climate impacts.

UNIT:	**DISAGGREGATED BY:**
Number of hectares	*Technology type*: Include the technologies in one of the following types: Crop genetics (including nutritional enhancement), pest management, soil-related (fertility and conservation, including tillage), post-harvest handling and storage, processing, climate mitigation or adaptation, other, total w/one or more improved technology. *Duration*: New, Continuing • New = this is the first year the hectare came under improved technologies or management practices. If the technology type is in the 'total w/one or more improved technology' category, and one of the technologies being applied in the hectare is new (while others are continuing), count this hectare as new. • Continuing = the hectare being counted continues to be under improved technologies or management practices from the previous year.

	Sex of person managing the hectare: • Male • Female • Association-applied (when the land is owned by groups of farmers / associations / organizations rather than individual households)
TYPE: Outcome	**DIRECTION OF CHANGE:** Higher is better.

DATA SOURCES:
Implementing partners will collect these data through census (small projects) or survey (large projects) of program participants, direct observations of land, and report into program documents. The HC PI will be responsible for providing this information in a consolidated way. The partners should provide records that support this information (e.g. field visits schedules/plans, reports, publications). In addition to this, some projects will be selected to collaborate with the Legume Innovation Lab's Impact Assessment project to conduct baseline and end line primary data collection to statistically estimate this outcome indicator.

MEASUREMENT NOTES:
Legume Innovation Lab Note: The data needs to be collected at the field (or plot) level but the data could be aggregated at the household level if desired (so proper identifiers for each field/plot are needed).

- LEVEL OF COLLECTION: Project-level; only those hectares affected by USG (i.e. Legume Innovation Lab) assistance, and only those brought or continuing under new technologies/management during the current reporting year.
- WHO COLLECTS DATA FOR THIS INDICATOR: Host Country Partner/PI, implementing partners, with supporting documentation. Appropriate resources should be budgeted for data collection by the projects that will have impact on this indicator and will be reporting it. The Legume Innovation Lab's Impact Assessment project will provide technical input and assist the projects with data collection, data analysis and reporting of this indicator.
- HOW SHOULD IT BE COLLECTED: Household surveys, key informant interviews, or other novelty and applicable methods.
- FREQUENCY OF REPORTING: Annually reported.

SPS LOCATION: Program Area 4.5: Agriculture
Program Element 4.5.2: Agricultural Sector Productivity
INITIATIVE AFFILIATION: FTF-IR 1: Improve agricultural productivity / Sub IR 1.2: Enhanced Technology Development, Dissemination, Management and Innovation

INDICATOR TITLE: 4.5.2(39) Number of technologies or management practices in one of the following phases of development:

- **…*in Phase I*: under research as a result of USG (i.e. Legume Innovation Lab) assistance**
- **…*in Phase II*: under field testing as a result of USG (i.e. Legume Innovation Lab) assistance**
- **…*in Phase III*: made available for transfer as a result of USG (i.e. Legume Innovation Lab) assistance**

DEFINITION:

Technologies to be counted here are agriculture-related technologies and innovations including those that address climate change adaptation and mitigation (including carbon sequestration, clean energy, and energy efficiency as related to agriculture), and may relate to any of the products at any point on the supply chain.

Relevant technologies include:

- Mechanical and physical: irrigation, new land preparation, harvesting, processing and product handling technologies; sustainable land management practices;
- Biological: new germplasm (varieties, breeds, etc.) that could be higher-yielding or higher in nutritional content and/or more resilient to climate impacts; biofortified crops such as vitamin A-rich sweet potatoes or rice, or high-protein maize; and soil management practices that increase biotic activity and soil organic matter levels;
- Chemical: fertilizers, insecticides, and pesticides sustainably and environmentally applied, and soil amendments that increase fertilizer-use efficiency;
- Management and cultural practices: information technology, conservation agriculture, improved/sustainable agricultural production and marketing practices, increased use of climate information for planning disaster risk management strategies, climate change mitigation and energy efficiency, and natural resource management practices that increase productivity and/or resilience to climate change. Integrated Pest Management (IPM), Integrated Soil Fertility Management (ISFM), and Post-Harvest Handling (PHH) as related to agriculture should all be included as improved technologies or management practices.

Significant improvements to existing technologies should also be counted; an improvement would be significant if, among other reasons, it served a new purpose or allowed a new class of users to employ it. Examples include a new blend of fertilizer for a particular soil, tools modified to suit a particular management practice.

❖ …*in Phase I*: under research as a result of USG (i.e. Legume Innovation Lab) assistance

New technologies or management practices under research counted should be only those under research in the current reporting year. Any new technology or management practice under research in a previous year but not under research in the reporting year should not be included. Technologies under research are as follows:

a. For biotech crop research: when technologies are under research, the process is contained in a laboratory or greenhouse; once the possibility of success is judged high enough, a permit is required to move to field testing. The change of location from a contained laboratory or greenhouse to a confined field and the receipt of a permit indicate that the research has completed the "under research" stage.
b. For non-biotech crop research: when technologies are under research, plant breeders work on developing new lines on research plots under controlled conditions. All research should have a target, often expressed in terms of traits to be combined into a specific cultivar or breed. When the research achieves "proof of concept" (by accumulating technical information and tests results that indicate that the target is achievable), the "under research" phase is completed. Note that for crops, much or all of this phase might be conducted outdoors and in soil; these attributes do not make this work "field testing."
c. For non-crop research: "under research" signifies similarly research conducted under ideal conditions to develop or support the development of the product or process.

❖ …*in Phase II*: under field testing as a result of USG (i.e. Legume Innovation Lab) assistance

"Under field testing" means that research has moved from focused development to broader testing and this testing is underway under conditions intended to duplicate those encountered by potential users of the new technology. This might be in the actual facilities (fields) of potential users, or it might be in a facility set up to duplicate those conditions. More specifically:

a. For biotech crop research: once a permit has been obtained and the research moves to a confined field, the research is said to be "under field testing."
b. For non-biotech crop research: during this phase the development of the product or technology continues under end-user conditions in multi-location trials, which might be conducted at a research station or on farmers'/producers' fields or both. Note that for crops, all of this phase would be conducted outdoors and in soil,

but this is not what makes this work "field testing."

c. For non-crop research: "under field testing" signifies similarly research conducted under user conditions to further test the product, process, or practice. In other cases, the endpoint of field testing could be the distribution of designs (when the tester is a noncommercial entity) and also distribution of publications or other information (on the force of the good results of field testing).

❖ …*in Phase III*: made available for transfer as a result of USG (i.e. Legume Innovation Lab) assistance

Note that completing a research activity does not in itself constitute having made a technology available. In the case of crop research that developed a new variety, e.g., the variety must have passed through any required approval process, and seed of the new variety should be available for multiplication. The technology should have proven benefits and be as ready for use as it can be as it emerges from the research and testing process. In some cases more than one operating unit may count the same technology. This would occur if the technology were developed, for instance, in collaboration with a U.S. university and passed through regional collaboration to other countries. Technologies made available for transfer should be only those made available in the current reporting year. Any technology made available in a previous year should not be included.

RATIONALE:
This indicator tracks the three stages in research and technology investments and progress towards dissemination.

UNIT:	**DISAGGREGATED BY:**
Number **Legume Innovation Lab Note**: Please provide additional information, as described in the 'Measurement notes' section.	*Phase of development*: Include the technologies in one of the following phases of development: • …*in Phase I*: under research as a result of USG (i.e. Legume Innovation Lab) assistance • …*in Phase II*: under field testing as a result of USG (i.e. Legume Innovation Lab) assistance • …*in Phase III*: made available for transfer as a result of USG (i.e. Legume Innovation Lab) assistance
TYPE: Output	**DIRECTION OF CHANGE:** Higher is better.

DATA SOURCES:
Since this indicator is relatively easy to record and report, the HC PI could be the sole source of data. However, the PI needs to provide records that support this information.

MEASUREMENT NOTES:
For Legume Innovation Lab internal recording system, for each technology or practice the following information needs to be provided: name of the technology, description of the technology/practice, and the country (or specific location) where the technology is undergoing Phase I, Phase II or Phase III (in addition to the levels required in the "Disaggregated by" section).

- LEVEL OF COLLECTION: Project-level; only those technologies made available as a result of the USG (i.e. Legume Innovation Lab) project.
- WHO COLLECTS DATA FOR THIS INDICATOR: Host Country Partner/PI, implementing partners, with supporting documentation.
- HOW SHOULD IT BE COLLECTED: Project records or surveys.
- FREQUENCY OF REPORTING: Annually reported.

SPS LOCATION: Program Area 4.5: Agriculture
Program Element 4.5.1: Agricultural Enabling Environment
INITIATIVE AFFILIATION: FTF-IR 1: Improved Agriculture Productivity / Sub IR 1.3: Improved Agricultural Policy Environment

INDICATOR TITLE: 4.5.1(24) Numbers of Policies / Regulations / Administrative Procedures in each of the following stages of development as a result of USG (i.e. Legume Innovation Lab) assistance in each case (Stages 1 / 2)

DEFINITION:
Number of agricultural enabling environment policies / regulations / administrative procedures in the areas of crop genetics, pest management, soil management, post-harvest handling and storage, processing, and climate mitigation or adaptation that:
Stage 1: …underwent the first stage of the policy reform process, i.e. analysis (review of existing policy / regulation / administrative procedure and/or proposal of new policy / regulation / administrative procedure).
Stage 2: …underwent the second stage of the policy reform process. This stage includes public debate and/or consultation with stakeholders on the proposed new or revised policy / regulation / administrative procedure.

Since Stage 2 implies Stage 1 has been met, please count the highest stage completed during the reporting year.

RATIONALE:
This indicator measures the number of policies / regulations / administrative procedures in the various stages of progress towards an enhanced enabling environment for agriculture whose sub-elements are specific policy sectors. This indicator should be aggregated upward from all operating units.

UNIT:	**DISAGGREGATED BY:**
Number **Legume Innovation Lab Note**: Please provide a name for each policy / regulation / administrative procedure and a description, since this will be needed for the FTF system	*Sector:* All policies / regulations / administrative procedures will be under the 'Agricultural sector-wide' sector. *Stage:* 1. Analyzed 2. Drafted and presented for public/stakeholder consultation
TYPE: Stages 1 & 2 = Output	**DIRECTION OF CHANGE:** Over time, it is expected that the number of policies / regulations / administrative procedures in Stage 1 will decrease and the number of policies / regulations / administrative procedures in Stage 2 will increase.

DATA SOURCES:
Since this indicator is relatively easy to record and report, the HC PI could be the solely source of data. However, any records that support this information (e.g. meeting minutes about discussions related to this indicator, reports, briefs, publications) should be included.

MEASUREMENT NOTES:
In accordance with the FTF Monitoring System, each policy should have a title/name. Since it is expected that all policies affected by the Legume Innovation Lab activities will be related to only one sector, for all policies write 'Agricultural sector-wide' sector. However, for each policy, please provide a description and the stage of development during the reporting year (which will change over time). The Legume Innovation Lab template will automatically aggregate the total number of policies at each stage of development for the said sector.

If multiple partners are operating in the same country, please clearly describe each policy/regulation in the title/description to avoid double counting. If this is the case, it is recommended to assign this indicator to the partner best positioned to track this indicator.

- LEVEL OF COLLECTION: Project-level; policies/regulations specifically (or partially) addressed with USG assistance.
- WHO COLLECTS DATA FOR THIS INDICATOR: Host Country Partner/PI, with supporting documentation.
- HOW SHOULD IT BE COLLECTED: Observation and analysis of host government legal status of the various policies being addressed.
- FREQUENCY OF REPORTING: Annually reported.