# Monitoring and Evaluation (M&E) Framework

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| **HIERARCHY OF RESULTS** | **RESULT STATEMENT(S)** | **OBJECTIVELY VERIFIABLE INDICATORS (OVIs)** | **DEFINITION** | **BASELINE** | **TARGET** | **DATA SOURCE / MEANS OF VERIFICATION** | **FREQUENCY** | **RESPONSIBLE** | **REPORTING** |
| How is it calculated? | What is the current value? | What is the target value? | How will it be measured? | How often will it be measured? | Who will measure it? | Where will it be reported? |
| **Impacts** | Biodiversity and soil quality of rice farms improved | Biodiversity improvement of soil arthropods  Soil quality improvement. | Measurement of Simpson diversity index.  Measurement of soil chemical, physical properties. | n/a | Improved simpson biodiversity index and soil chemical, physical properties of 3 - 5%. | Field sample analysis- | At baseline and after intervention. | Field experiment team. | Year 3 annual and final report |
| Increased rice income | % increased income (disaggregated by sex, input to product, location) | Farmer cost and return analysis | $US 500-1,000 | At least 5% income increase | Impact assessment report | Twice at baseline and after intervention | MEL team and field staff | Year 3 annual and final report |
| Carbon footprint from rice production reduced | kgCO2 equivalent per kg rice produced | Life cycle analysis | 1-2 kgCO2-eq/ kg rice | Reduced 10-20% compared to the traditional practices | Life cycle analysis report | Twice at baseline and after intervention | Rice-straw specialists | Year 3 annual and final report |
| **Outcomes** | Rice-straw practices of farmers improved | # of farmers are benefited from rice straw added value and capacity building on sustainable rice straw management  # of farmers adopting rice-straw practices (disaggregated by sex, input to product, location)  % reduced rice straw burning from adopters  % of rice straw waste recycled from adopters (disaggregated by sex, input to product, location) | Implementation record keeping  Adoption surveys/records  Farmer surveys/demonstration records  Farmer surveys/demonstration records | n/a  n/a  n/a  n/a | At least 5,000 farmers  At least 1,000 farmers  At least 20%  At least 20% | Adoption survey as component of the impact assessment  At baseline and after intervention  At baseline and after intervention | Twice at baseline and after intervention | MEL team and field staff  MEL team and field staff  MEL team and field staff  MEL team and field staff | Year 2 and Year 3 Progress to be reported in the annual report  Year 3 annual and final report  Year 2 and Year 3 Progress to be reported in the annual report  Year 2 and Year 3 Progress to be reported in the annual report |
| Enabling environment and market for rice-straw management improved | # of stakeholders adopt/promote rice-straw technologies and business models  Reduced rice straw logistics costs  Volume of sales (in USD) from rice straw products (disaggregated by type, location) | Implementation records keeping/ stakeholder survey  Market/cost benefit analysis  Market sruvey | n/a  n/a  n/a | 10  Up to 20% (in comparison with the existing practices)  US$ 500,000 | Monitoring data  Market/cost benefit analysis  Monitoring data | Annually  Year ⅔  Year 2 and Year 3 | MEL team and field staff  Rice straw specialists  Market analysis and field staff | Year 2 and Year 3 Progress to be reported in the annual report  Year 2 and Year 3 Progress to be reported in the annual report  Year 2 and Year 3 Progress to be reported in the annual report |
| **Outputs** | Scientific based evidence on biodiversity improvements and climate mitigation from elimination or reduction of burning the straw | # of field trials    # of published scientific papers | Record keeping  Record keeping | n/a  n/a | At least 2 field trials conducted in Cambodia and Vietnam  At least 2 scientific publications (peer reviewed journal papers) | Technical report    Scientific publications (peer reviewed journal papers) | Annually | Research Implementing team | Progress to be reported in the annual report |
| Value chain analysis, scale-appropriate technologies, and business models for the CE | # of surveys  # of workshops  # of adopted technologies  ICT tool for optimizing rice straw logistics  # of piloted business models | Record keeping  Record keeping  Record keeping  Record keeping  Record keeping | n/a | At least 2 surveys conducted  At least 2 value chain workshops organized  At least 3 technologies included will be adopted  The ICT tool including database for improving rice straw logistics piloted  At least 3 business models will be successfully piloted | Technical report | Annually | Research Implementing team | Progress to be reported in the annual report |
| Capacity building on rice straw management and circular economy | # of farmers and related stakeholders are trained on sustainable rice straw management | Training record keeping | n/a | At least 1000 farmers and related stakeholders are trained on sustainable rice straw management | Technical report | Annually | Research Implementing team | Progress to be reported in the annual report |
| Evidence-based policy analysis and recommendations for scaling rice-straw management conducted | # policy briefs produced and communicated to stakeholders    # of policy and stakeholder engagement activities trainings and/or demonstrations | Record keeping  Record keeping | n/a  n/a | At least 2 policy briefs produced      At least 4 engagements | Technical report  Policy documents | Annually | MEL Team | Progress to be reported in the annual report |
| Cross-country cooperation framework and learning alliance to exchange knowledge and build capacity on rice-based CE | # of learning alliances organized  # of participants involved in the learning alliance | Record keeping  Record keeping | n/a  n/a | At least 2 policy briefs produced      At least 4 engagements | At least 4 learning alliance organized  At least 500 participants | Annually | Research Implementing team | Progress to be reported in the annual report |