

ANNEX 11 - MONITORING AND EVALUATION PLANS

The DEFIS + monitoring and evaluation system will integrate and build on the M&E system of the existing DEFIS program. A participatory approach will be adopted to have the commitment of all stakeholders in the implementation of monitoring and evaluation activities. This will involve consulting all stakeholders, including beneficiaries, in the planning processes, in the implementation of the project, in the monitoring of activities and in the evaluation of results. Such an approach will facilitate the understanding and the adoption by stakeholders of the objectives, strategies and expected results of DEFIS+.

The monitoring and evaluation system will focus on the expected results according to the results chain described in the logical framework. The application of the results-based management approach makes it possible to link the human, material and financial resources allocated to the implementation of activities and to better plan the expected results, the medium-term effects, and the impacts that DEFIS+ is expected to have on the living conditions of the community.

The DEFIS+ monitoring and evaluation system will contribute to the continuous improvement of the intervention strategies of the program and will be an adaptive management approach built on evidence-based decision making.

The DEFIS M&E unit is led by the M&E officer with support of a specialist in charge of monitoring and evaluation for the GCF. The M&E officer will be fully responsible for all M&E and knowledge management activities financed by DEFIS+. This said, it is the responsible of all members of the project management unit to support M&E processes. Two regional environment and climate officers will provide direct M&E assistance.

Based on the design and operational framework document, the monitoring and evaluation system is based on the M&E mechanisms of the technical partners and the internal M&E mechanism of the program. The UCP coordinates and consolidates the information produced by these different systems.

The M&E system will be used for: (i) continuous, systematic internal monitoring of the implementation of planned activities and progress on different levels of outcomes, assessed on a biannual and annual basis; (ii) periodic internal evaluations; (iii) specific thematic evaluations undertaken to respond to identified needs; and (v) periodic external evaluations. The latter includes baseline surveys carried out at the beginning of the program and impact assessments at program end to determine as precisely as possible the benefits generated by the program's activities.

The DEFIS + monitoring and evaluation system will integrate and triangulate the following sources of data:

- Primary project level data;
- Secondary data from national statistical surveys and evidence from other agencies and partners in the region;
- Data generated by studies and surveys to measure the changes brought about by the program at the target level.

The M&E system will track adaptation results as well as co benefits. The **assessment of the outcomes from adaptation activities** will take place using measureable and adapted indicators for each activity. For example, activity 1.1.3 regards the strengthening of capacities of water user associations to manage water and apply sustainable practices to reduce siltation. A mixture of quantitative and qualitative indicators will be used to assess this. First, the number of people trained will be monitored (short term, quantitative survey) then whether or not trainees have feel that they have learned something new (medium term, qualitative survey) and finally whether or not member of the association have changed their practices in the 12 months since the training (long term, qualitative survey). This will then be combined with information on whether or not members of the water user associations have faced less water shortages, and whether the quality of the water has changed (assessments of sediments in water).

The **quantification of adaptation beneficiaries (direct)** is based on two conditions. The first condition is that the individuals receive direct interventions from the GCF funded project. The 447,200 beneficiaries will be benefitting from the following interventions: i.) The development of efficient water management systems; ii.) Regular access to reliable-climate data; iii.) The diffusion and adoption of resilient agricultural inputs, new technologies and management practices; iv.) Improved climate resilience of basic rural infrastructure; v.) Training and capacity building services; vi.) Knowledge management on the adaptation of food production systems to climate change and on carbon sequestration.

The second condition is that these beneficiaries receive measurable adaptation benefits. All of these interventions aim to increase the beneficiaries' adaptive capacity, which is a combination of assets and abilities that can be used to "prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities" (IPCC, 2012)¹. The above interventions will directly lead to measurable adaptation benefits including: increased resilience to climate change, increased food and water security, and improved livelihoods. The ToC describes the way in which the interventions will lead to these benefits. Food security, for example, is enhanced through improved agricultural production whilst improved water security will be achieved through better water management practices.

The **quantification of adaptation beneficiaries (indirect)** will be a combination of primary and secondary data collection and extrapolation. Primary data collection will consist of surveys, and secondary data collection will consist of reviewing and triangulating national census data and information gathered from government counterparts and other agencies in the project area. It is envisaged that the following beneficiaries will be considered indirect beneficiaries of adaptation interventions:

1. Watershed protection activities: These activities also have indirect benefits by preventing landslides that usually cause silting up of rivers downstream. The protection activities are necessary to generate a very important ecosystem service. The recharge of aquifers, the improvement of water infiltration capacity and water retention can ensure the downstream availability and quality of water for indirect beneficiaries.
2. The establishment of reforestation, agroforestry: Agroecology would allow populations to benefit from other ecosystem services of supplies such as the supply of wood, biomass and medicinal plants. There may also be improved income through the development of beekeeping following the planting of melliferous plants. Other ecosystem services such as strengthening local biodiversity could support local community members indirectly.
3. Indirect beneficiaries will also benefit from climate information through word of mouth.
4. Access to public services by rehabilitating tracks for other indirect beneficiaries: Access to other services, e.g., health, administrative services, market.
5. The indirect beneficiaries constitute the potential buyers of the agricultural products produced by the direct beneficiaries.
6. The replication of the activities carried out by the direct beneficiaries also constitutes benefits derived by the indirect beneficiaries.

In 2021, Madagascar successfully set up a transparent management system to monitor emissions and NDC activities. This national M&E system was developed with the support of the Capacity-building Initiative for Transparency (CBIT). The system is currently hosted by the National Bureau of Climate Change and REDD+

¹ IPCC (2012), Glossary of terms. In: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC). Cambridge University Press, Cambridge, UK, and New York, NY, USA, pp. 555-564. Available at: https://www.ipcc.ch/pdf/special-reports/srex/SREX-Annex_Glossary.pdf

(BNCCREDD+) within the Ministry of Environment and Sustainable Development (MEDD). DEFIS+ will use the EX-ACT toll (V9) to monitor carbon sequestration as a co benefit of the project.

During the DEFIS+ implementation, a knowledge management and M&E plan will be developed to identify the different methods of knowledge generation and sharing at the national level and to ensure that the project's activities and MRV system is in line with the national existing system in place. The Designated National Authority sits within the National Bureau of Climate Change and will be liaising between the National MRV system and the DEFIS+ project activities.

To facilitate and harmonize data entry, processing, archiving and sharing of information, an online database will be set up. It will include data entry forms corresponding to the different forms / monitoring tools and exit reports (dashboards) meeting the information needs for better management of DEFIS +.

The results communication system will allow the main conclusions from the analyses to be shared with the various stakeholders of DEFIS and DEFIS +. This would include, for example, the reports of the biannual and / or annual results of the program (technical and financial reports). The biannual and annual progress reports will present an overview of the activities carried out and their cost, the products and the results obtained. The expected outputs and outcomes of DEFIS+ will be detailed in the reports. The information produced from the M&E system will also serve as the basis for the production of communication and knowledge management material for both the DEFIS and DEFIS+ program.

Monitoring and evaluation activities and support will be provided through annual supervision missions carried out by IFAD and the GCF. Depending on the stages of implementation of the Program, the types of evaluations to be carried out are as follows:

- Mid-term review
- Completion report
- Impact assessment

DEFIS and DEFIS + will promote knowledge and learning in all investment areas, including the design and development of resilient agricultural infrastructures and production systems and efficient water management techniques.

The program will make use of already proven knowledge management methods and tools, exchange groups, communities of practice, exchange visits, learning routes, contributions to thematic networks and an eLibrary. The goal is to generate, by the end of the program, a detailed repertoire of the good practices developed by DEFIS+ in the area of climate change adaptation.

A monitoring and evaluation manual will be developed at the start of its implementation in order to provide details on the objectives, results and processes to be implemented to ensure the quality of the data and information produced by the DEFIS + monitoring and evaluation system.

REPUBLIC OF MADAGASCAR
 INCREASE RESILIENCE TO CLIMATE CHANGE OF SMALLHOLDERS RECEIVING THE SERVICES OF THE INCLUSIVE AGRICULTURAL VALUE CHAINS PROGRAMME (DEFIS +)
 Annex 11 – Monitoring and evaluation Plans

M&E Operational Plan

Output/Activity	Indicator	Means of Verification (MoV)	Baseline	Target	
				Mid-term	Final
Output 1.1. Improved water management for sustainable agriculture	Area of land with improved water management systems	Monitoring and supervision reports; District Development and Economic reports; Basin Management Regulations	0	8 500	15 000
	Protected areas through the implementation of anti-erosion measures, protection of watersheds and reforestation	Monitoring and supervision reports; District Development and Economic reports; Basin Management Regulations	0	5 000	8 100
	Number of farmers engaged in the effective management of connects sub-watersheds and irrigated perimeters and adopting improved water management techniques and adopting improved water management techniques	Monitoring and supervision reports; District Development and Economic reports; Field surveys	0	107 328	268 321
Output 1.2. Enhanced agro-climatic information systems new technologies and initiatives	Number of farmers with access to agro-climate data	Monitoring and Supervision Reports; District Development and Economic reports; Field surveys	0	71 552	178 881
	Areas covered by climate smart agricultural and agroforestry systems	Monitoring and Supervision Reports; District Development and Economic Reports	0	6 000	10 000
	Number of farmers reporting the adoption of new/improved technologies, practices or inputs	Monitoring and supervision reports; District Development and Economic reports; Field surveys	0	107 328	268 321
	Number of farmers using renewable energy and energy efficient and water efficient technologies	Monitoring and supervision reports; District Development and Economic reports; Field surveys	0	107 328	268 321
Output 2.1. Reinforced rural access roads	Kilometres of unpaved rural access roads in good condition all year	Monitoring and Supervision Reports; District Development and Economic reports	0	300	540
	% of ground water recharge at specific sites along the greened roads	Monitoring and recording of hydrological data	0-1% (average)	2.5% increase	5% increase
Output 2.2. Improved capacity to build and maintain rural infrastructure	Number of trainers, actors and professionals trained on new standards	Monitoring and Supervision Reports; Field Surveys; Training Reports; Follow up tests on trainings	0	71 552	178 881

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Output/Activity	Indicator	Means of Verification (MoV)	Baseline	Target	
				Mid-term	Final
	and whose maintenance capacity has improved as a result				
Output 3.1. Knowledge on climate change adaptation and mitigation generated and shared	Number of studies carried out	Capitalization reports; Baseline study; Mid-term study	0	8	20
	Number of knowledge products produced		0	10	20
	Number of awareness events		0	5	10
	Number of exchange visits		0	15	30
	Number of farmers trained in climate-resilient agricultural production technologies and practices and indicating that their knowledge of climate adaptive practices has increased	Monitoring and supervision reports; Field Surveys; Follow up tests on trainings	0	178 880	447 201
Activity 1.1.1. Protection of irrigation schemes against climate change impacts	Areas protected against of the water erosion	Monitoring and supervision reports	0	8 500 ha	15 000 ha
Activity 1.1.2. Sustainable sub-watersheds (adjacent to irrigated schemes) management and restoration of landscape	Areas protected with biological and mechanical protection of sub-watersheds	Monitoring and supervision reports	0	5 000 ha	8 100 ha
Activity 1.1.3. Strengthening capacities of Water Users Associations to manage water and apply sustainable water management practices	Number of training sessions and number of technicians trained	Monitoring and supervision reports; Field Surveys	0	15 sessions for 450 technicians trained	30 sessions for 900 technicians trained
Activity 1.1.4. Construction of climate smart water tanks for drip-irrigation and for small livestock	Number of water tanks for irrigation installed	Monitoring and supervision reports	0	100	150
Activity 1.2.1. Installation of automated agro-meteorological stations and development of flood and drought monitoring and forecasting system	Number of automated agrometeorological stations installed	Monitoring and supervision reports	0	6	6

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Output/Activity	Indicator	Means of Verification (MoV)	Baseline	Target	
				Mid-term	Final
Activity 1.2.2. Capacity building of decentralised government (SRM & DRAEP)	Number of DRAEP and SRM trained and involved in processing and disseminating agrometeorological data	Monitoring and supervision reports; Field Surveys	0	24	24
Activity 1.2.3 Promotion and dissemination of meteorological and climate smart agriculture practices	Area restored with the adoption of intelligent agriculture	Monitoring and supervision reports	0	8 500	10 000
	New methods of integrated pest management disseminated	Monitoring and supervision reports	0	2	3
	Quantity of additional seeds produced by the CPSA per year (tons)	Monitoring and supervision reports	0	10	20
	Numbers of farmers benefiting from improved climate-resilient species and varieties of seeds	Monitoring and supervision reports; Field Surveys	0	25 000	45 000
	Number of REEPS built	Monitoring and supervision reports	0	35	50
	Area with resilient fodder production	Monitoring and supervision reports	0	8 000	1 500
Activity 1.2.4. Promotion and dissemination of sustainable home technologies and social initiatives	Number of farmers using renewable energy and energy efficient and water efficient technologies	Monitoring and supervision reports; Field Surveys	0	107 328	268 320
Activity 2.1.1. Reinforcement of unpaved rural access roads to reduce climate change impacts and water collection along these roadways for agricultural use	KM of roads repaired	Monitoring and supervision reports	0	300	540
Activity 2.1.2. Training on construction standards related to climate change	Number of technicians trained on construction standards related to climate change	Monitoring and supervision reports; Field Surveys	0	1 000	2 000
Activity 3.1.1. Training rural development actors on climate change and food production systems for enhanced nutrition	Number of rural actors trained on climate change impacts and measures	Monitoring and supervision reports; Field Surveys	0	178 880	447 201
Activity 3.1.2. Exchange visits on climate resilient food systems	Number of people involved in exchange visits and indicating that their knowledge of climate adaptive practices has increased	Monitoring and supervision reports; Field Surveys	0	180	360

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Output/Activity	Indicator	Means of Verification (MoV)	Baseline	Target	
				Mid-term	Final
Activity 3.1.3. Capitalization of best practices and knowledge on food and nutrition security measures	Number of best practises products	Monitoring and supervision reports; Field Surveys	0	10	20

Monitoring				
Data/Source	Collection Tool	Frequency	Indicator	Indicative Budget
Monitoring and supervision reports	Document review	Twice a year	Area of land with improved practices (ha) Farmers engaged in project activities (n) Roads (km) in good conditions Actors, DRAEP and SRM trained (n) Training sessions (n) Climate-resilient methods and varieties adopted (n) Water tanks (n) Automated agrometeorological stations (n) REEPS (n)	USD 200,000
Monitoring and evaluation tools	Monitoring and evaluation tools	Twice a year	Area of land with improved practices (ha) Farmers engaged in project activities (n) Roads (km) in good conditions	USD 100,000
Development and economic reports	Document review	Twice a year	Area of land with improved practices (ha) Farmers engaged in project activities (n)	USD 50,000

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			Roads (km) in good conditions	
Basin management regulations	Government data/records	Annual	Area of land with improved practices (ha)	n/a
Field surveys	Survey/questionnaire	Twice a year	Number of farmers engaged in project activities (n) Actors, DRAEP and SRM trained (n) Training sessions (n)	USD 100,000
Training reports	Document review	Annual	Actors trained (n) Training sessions (n)	Part of the training package
Follow up tests on trainings	Survey/questionnaire	Annual	Actors trained (n) with improved capacity	USD 25,000
Monitoring and recording of hydrological data	Government data/records	Annual	Water recharge levels (%)	n/a
KM Products and events	Public expenditure reporting	Annual	KM products/events (n)	USD 40 000

Evaluation			
Type	Timing	Independent/Self-evaluation	Indicative Budget
Participatory	At the beginning of the project (baseline)	Independent	USD 60,000
Process	Midterm	Independent	USD 60,000
Impact	Year 6 (DEFIS+)	Independent	USD 400,000