LEAP-RE

Long-Term Joint EU-AU Research and Innovation Partnership on Renewable Energy

Research & Innovation Action

September 2021

D5.1 Monitoring, Evaluation and Learning Plan

MEL Plan Draft

(This document will remain in progress during the period of the LEAP-RE programme for developing the MEL concept for the long-term LEAP-RE Platform for Research and Innovation)

Version N° 3

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Abbreviations and Acronyms

Acronym	Description
WP	Work Package
M&E	Monitoring and Evaluation
MEL Plan	Monitoring, Evaluation and Learning Plan
CSC	Call Steering Committee
CCSE	Africa-Europe research & innovation partnership on climate change and sustainable energy
MARs	Multiannual Roadmaps
PMB	Programme Management Board
HLPD	EU-Africa High-Level Policy Dialogue on STI

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Monitoring, evaluation, self-evaluation, learning; Africa-Europe long-term partnership on renewable energy; impact creation; impact measurement

1. Context and Introduction

The **L**ong-Term **E**urope-**A**frica **P**artnership on **R**enewable **E**nergy (LEAP-RE) is a five-year programme gathering 83 partners committed to implementing an Africa-Europe joint programme addressing key renewable energy challenges and aiming to co-develop need-oriented governance options, strategies and mechanisms to build a long-term AU-EU Platform for science, technology and innovation (STI) on Renewable Energy (RE).

The programme is structured as shown in figure 1 below and is built on three pillars with specific methodological approaches:

- **Pillar 1**: Joint open calls by public funding agencies to select, fund, monitor research, innovation and capacity-building projects across the Multi-Annual Roadmaps (MARs) and TRL scale.

- **Pillar 2**: Eight R&I projects implemented by consortium members.

- **Pillar 3**: Programme coordination and all strategic actions to maximize the outputs and outcomes of LEAP-RE and set the grounds for the future long-term collaboration of the Africa-Europe partnership in RE.

Figure 1: LEAP-RE consortium structure and composition

LEAP-RE programme aligns with the specific objectives of the *Roadmap for a jointly funded AU-EU research & innovation partnership on climate change and sustainable energy* (CCSE) adopted by the EU-Africa High-Level Policy Dialogue (HLPD) on STI.

LEAP-RE has established five high-level objectives among which: to demonstrate the efficiency of LEAP-RE programme and create conditions for long-term partnership; demonstrate efficiency and attractiveness of joint programming and joint calls; contribute to the production of new knowledge, innovations, technology, products, and/or services in renewable energy topics of strategic relevance to AU-EU collaboration. The programme also intends to contribute to an AU-EU Coordination Infrastructure for the benefit of all actors in the field of Sustainable Energy (SE)

These objectives reflect the importance of creating a monitoring, evaluation and learning (MEL) plan which will inform and support the LEAP-RE partners, and the joint African and European RE community on the progress of the initiative and their actions, allowing room for adjustments in the overall long-term partnership conditions, like long-term cooperation mechanism and -infrastructure and cooperation of cluster networks in the context of a Knowledge Management and Communication Framework (KMCF).

Approach and Terminology

In order to provide a sound base for this complex exercise, in a first step a clear definition of the terms used was provided:

Monitoring can be defined as a continuing function that aims primarily to provide management and main stakeholders of an ongoing intervention with early indications of progress, or lack thereof, in the achievement of results. Monitoring should help LEAP-RE managing authorities to track achievements by a regular collection of information to assist timely decision making, ensure accountability, and provide the basis for evaluation and learning.

Evaluation is the systematic and objective assessment of an on-going or completed project, program, or policy, and its design, implementation and results. The aim is to determine the relevance and fulfilment of objectives, development efficiency, effectiveness, impact, and sustainability.

Learning aims to maximise the learning curve of LEAP-RE and to assure that LEAP-RE outcome and impact can influence decision making within and beyond LEAP-RE and to assure that feedback loops are created within and outside the LEAP-RE M&E community to encourage adoption of best practices and interventions, in order to progressively enhance efficacy and efficiency.

The MEL Plan is a concept in progress to become a part of a long-term LEAP-RE cooperation infrastructure. Therefore, the implementation of the MEL Plan serves as a pilot from which central elements will be deduced in the due of this LEAP-RE prorgamme to be integrated into a long-term cooperation approach and infrastructure.

2. Scope of the Report

The overall objective of this report is to formulate and provide a concept for the monitoring, evaluation and learning (MEL) Plan including performance indicators of the Long-Term Europe-Africa Partnership on Renewable Energy (LEAP-RE) and its actions within its three programmatic pillars. The MEL concept will allow LEAP-RE to monitor the merits of the new way of coordinating research and innovation activities thus facilitating the learning curve for increased overall performance. The Concept will furthermore feed into the methodological and operational approach of the long-term MEL practice of the cooperation infrastructure.

This report will make recommendations to the LEAP-RE consortium partners on:

- A framework for MEL Plan (objectives and expected impacts),

- Performance indicators for the three LEAP-RE pillars.

- Potential interfaces to the LEAP-RE KMCF and the LEAP-RE community building.

This concept for monitoring and evaluation will be the basis for (1) annual progress monitoring of LEAP-RE, (2) regular self-evaluation of LEAP-RE actions and (3) facilitate learning for the future.

The LEAP-RE MEL Plan aims at helping to operationalize the processes of monitoring, analysing, and evaluating progress, as well as the learning feedback at Pillar level and WP level for Pillar 1, Pillar 2 and Pillar 3.

The first part of this report (Section 1-2) focuses on monitoring and evaluation process in general and its embeddedness in a wider policy and infrastructural context in the AU-EU region and the coordination of the Partnership on SE. The second part (Section 3-4) displays the framework of the LEAP-RE monitoring and evaluation including the performance indicators.

The MEL Plan includes three dimensions where the approach is described in order to be then operationalised along the project execution.

1. **Monitoring -** Focuses on the routine collection, tracking and reporting of the full range of qualitative and quantitative indicators established for the hierarchy of intended results. The approach selected in WP5 will drive the definition of the Monitoring approach to be applied at Pillar level and WP level for Pillar 1, Pillar 2 and Pillar 3.

2. **Evaluation -** Focuses on periodic assessments of the collected indicator data according to the established metrics in the Theoretical framework.

3. **Lesson Learnt -** Maximises the learning curve of LEAP-RE and to assure that LEAP-RE output, outcome and impacts can influence decision making within and beyond LEAP-RE and to assure that feedback loops are created within and outside the LEAP-RE MEL target groups (as defined in 4.1 Target Groups). This seeks to encourage adoption of best practices and interventions, in order to progressively enhance efficacy and efficiency.

The MEL Plan is inspired from the monitoring framework of JPI Urban Europe, developed with support of the Horizon 2020 funded project EXPAND (Grant Agreement no. 726744). The MEL Plan is developed on a logical framework analysis of LEAP-RE, a methodological

approach that supports the development of a monitoring and evaluation and learning framework. The third part (Section 3) concentrates on the implementation of monitoring and evaluation in the LEAP-RE programme.

Relevance of MEL for the LEAP-RE Process

Monitoring, Evaluation and Learning (MEL) on a regular basis is relevant for all the three LEAP-RE pillars as it can:

- Generate new knowledge on the functioning of the LEAP-RE that can be used for accountability, learning, and promotion of the programme,

- Provide information on the progress of: set objectives and whether the initial objectives are still *relevant*, the *effectiveness* of the operationalisation of the programme, i.e. the design of the instruments for implementation and overall programme management, as well as the *broader impacts* of the LEAP-RE at various stakeholders' levels.

The Monitoring, Evaluation and Learning (MEL) Plan sets the ground for effective management of LEAP-RE outputs in a cyclic MEL programme mechanism in the context of an AU-EU Knowledge Management and Comunication Framework (KMCF) as well as adjusting and fine-tuning joint actions. A dedicated MEL concept enables LEAP-RE to react to requests from the European Commission (EC) and align with the specific objectives of the *Roadmap for a jointly funded AU-EU research & innovation partnership on climate change and sustainable energy* (CCSE) adopted by the EU-Africa High-Level Policy Dialogue (HLPD) on STI, but also pro-actively set positions on appropriate measures.

PRE-LEAP-RE set the foundation for the current LEAP-RE programme and established a growing community of AU and EU organisations willing to collaborate in renewable energy projects, which is meant to be expanded in the course of the LEAP-RE programme. The MEL concept for LEAP-RE needs to respect the embeddedness of the programme in a wider national, African, European and international policy and infrastructural cyclic coordination context of the Partnership in RE and SE.

3. LEAP-RE MEL Approach

LEAP-RE intends to perform monitoring and evaluation on a regular basis out of which learning lessons are drawn to further assure that LEAP-RE outputs, outcomes and impacts effectively contribute to decision making within and beyond the LEAP-RE programme. The first steps for regular MEL activities will be taken within its dedicated Task 5.1 - *MEL Concept and Impact Assessment* within Work Package 5 of Pillar 3, divided into the following two actions that aim at each specific LEAP-RE Pillar:

Action 1, **Sub-action 1** – Setting up the framework for Pillar 1 and Pillar 2, taking into account funding agencies' expectations, and priorities in Pillar 2, and research and innovation activities in Pillar 2.

Action 1, **Sub-action 2** - The theoretical framework for Pillar 3 will take into consideration the call's objectives and the **Theory of Change** at the basis of the LEAP-RE programme as well as additional LEAP-RE management rules set into WP1. In particular the results which could become basic elements of a long-term coordination infrastructure for cyclic AU-EU programmes will be taken into consideration.

Action 1, **Sub-action 3** – The MEL Plan/framework will be transferred to Pillar 1 and Pillar 2 managers in order to proceed with the Monitoring and Evaluation of the respective Pillars which will be done WP by WP and to the Co-Coordinators of LEAP-RE for Pillar 3.

Action 2, Sub-action 1 - Development of the MEL plan to help operationalize the processes of monitoring, analysing, and evaluating progress, as well as the learning feedback (**monitoring and self-evaluation concept**).

Action 2, Sub-action 2 - Sharing and adjustment of the monitoring level, together with the three Pillars coordinators with focus on evaluation. Evaluations will systematically and objectively assess progress towards and achievement of LEAP-RE's intended results and contribution to eventual impact (**demonstrate progress**).

Action 2, Sub-action 3 - The two sub-actions above will provide the basis for feedback and lesson learning, informing decision making, thus will be conducted at strategically important points in the LEAP-RE programme timeline and the envisaged long-term LEAP-RE coordination infrastructure for the AU-EU partnership (**facilitate learning**).

3.1 Approach and steps to develop the MEL concept for LEAP-RE

For the development of the MEL Plan a participatory approach has been followed as it was defined and accepted by all LEAP-RE consortium partners. The approach to Action 1 and its respective sub-actions is described in the following.

Step 1: Analysis of existing approaches and information sources towards MEL (07/2021- 09/2021). Sources and approaches of information that inform the LEAP-RE MEL concept are:

1. **PRE-LEAP-RE work plans, and deliverables**

PRE-LEAP-RE Task 2.4 developed a MEL framework for LEAP-RE based on the EU-AU HLPD CCSE roadmap, together with the PRE-LEAP-RE vision for LEAP-RE. It embedded the HLPD's high-level vision, derived from the JAES, for enhanced bi-regional STI cooperation via the CCSE Partnership. The developed MEL framework by PRE-LEAP-RE integrated a broad landscape of initiatives that respond to a diversity of related high-level ambitions in various policy spheres at the global, international, and regional levels.

The task's deliverable noted that the activities of LEAP-RE should aim to contribute indirectly to the high-level policies and objectives of the CCSE and SDGs, more specifically SDG7. It is therefore reasonable to expect the LEAP-RE MEL framework to assess LEAP-RE relation to its effect on and contribution to the more prominent of these high-level policies and objectives.

PRE-LEAP-RE developed furthermore under T2.3 a deliverable on the potential framework on organisational and funding principles and highlighted the need for a cyclic programming approach in the AU-EU partnership, so that monitoring and evaluation could feed into a successive and inclusive learning process in the networks of actors in RE and SE in the AU-EU region.

2. **LEAP-RE work plans, and deliverables**

The Multiannual Roadmaps (MARs), Task 5.1 and Work Package 4 as per the LEAP-RE proposal

3. **Analysis of JPI Urban Europe monitoring and evaluation framework and exchanges with other programmes.**

The analysis of the existing monitoring and evaluation frameworks and approaches helps to build and align the LEAP-RE MEL Plan towards the framework of other similar initiatives. At the same time, this analysis can enable the consideration of evaluation areas that are important to the EC, CCSE and to all stakeholders involved in the AU-EU collaboration in RE.

Step 2: Development of the MEL concept including indicators for LEAP-RE using a participatory approach (08/2021-09/2021)

The development of the MEL concept included the following sub-steps:

1. **Definition of the theoretical framework for the MEL concept**

This included the creation of a common understanding and a formulation of objectives and expected impact of the LEAP-RE based on the analysis performed in Step 1. This step happened from 05/2021 to 08/2021.

2. Definition of indicators

The defined indicators will enable the monitoring of LEAP-RE progress along the objectives and expected impacts as well as the instruments for the LEAP-RE implementation. This step happened from 07/2021 to 09/2021.

For both steps 1 and 2 above, different groups and bodies of LEAP-RE were involved with the aim to:

- Deliver input for the MEL Plan concept based on their own experience. The main contributors were the funding partners on Pillar 1 joint co-funded Call Steering Committee given their wealth of experience with similar activities

- Develop a common understanding for the objectives, expected outputs, outcomes and impacts and indicators of the LEAP-RE MEL Plan, and

- Generate commitment for the MEL Plan of the LEAP-RE programme and its implementation.

As such, the following groups and bodies have been involved in the development of the MEL Plan:

1. The LEAP-RE coordinators and Work Package leaders

Presentation of the aims, activities, and progress of the development of MEL was regularly done at WP5 meetings which happened monthly until 09/2021. This included:

- Consultation meeting on the MEL concept for monitoring and self-evaluation which happened on 07/2021

- Exchange with FNSSA regarding their MEL lessons learnt which happened on 09/2021

2. Involvement of the Joint Co-Funded Call Steering Committee (CSC)

- Consultation of the CSC and Joint Call Secretariat of the LEAP-RE call during the development process of the LEAP-RE MEL Plan

- Dedicated presentation on the objectives and expected impacts of the MEL Plan at the level of Pillar 1 on 09/2021

3. Dedicated communication with Pillars representatives and partners

- Meetings on the indicators to be included in the MEL Plan of LEAP-RE happened with different pillar leaders on 09/2021.

- Dedicated online communication on aims and development process of the LEAP-RE MEL Plan happened between 07/2021 to 09/2021

Step 3: Elaboration of the MEL Plan (09/2021)

In the final step, the first version of the LEAP-RE MEL Plan was developed as a deliverable/report for the LEAP-RE consortium and the European Commission.

3.2 Generic logic frame for LEAP-RE MEL Plan

One of the most useful tools for monitoring and self-evaluation of a public policy intervention or programme such as LEAP-RE, is a logic frame or logic model (ERA-LEARN 2020, 2016). A logic frame outlines the connection between the ends and the means of a programme given that it:

- Comprises of the underlying rationales of a programme (a specific challenge to be addressed)

- Formulates specific objectives that should be achieved by the programme, and

- Provides an overall roadmap on how specific activities of the programme can; be expected to produce immediate outputs connected to outcomes/intermediate impacts and eventually, the realisation of the objectives (the long-term impacts)

- Allows to develop long-term mechanisms and a coordination infrastructure in cyclic programmes.

Although we can establish logical links between activities and outputs, measuring this is extremely difficult due to attribution challenges, particularly in complex research and innovation environments as found in LEAP-RE. To deal with this challenges, the concrete model of the monitoring framework for JPI Urban Europe, developed with the support of the Horizon 2020 funded project EXPAND (Grant Agreement no. 726744) provided the necessary background for this report.

The LEAP-RE logic framework is made up of the steps outlined in Figure 3 below.
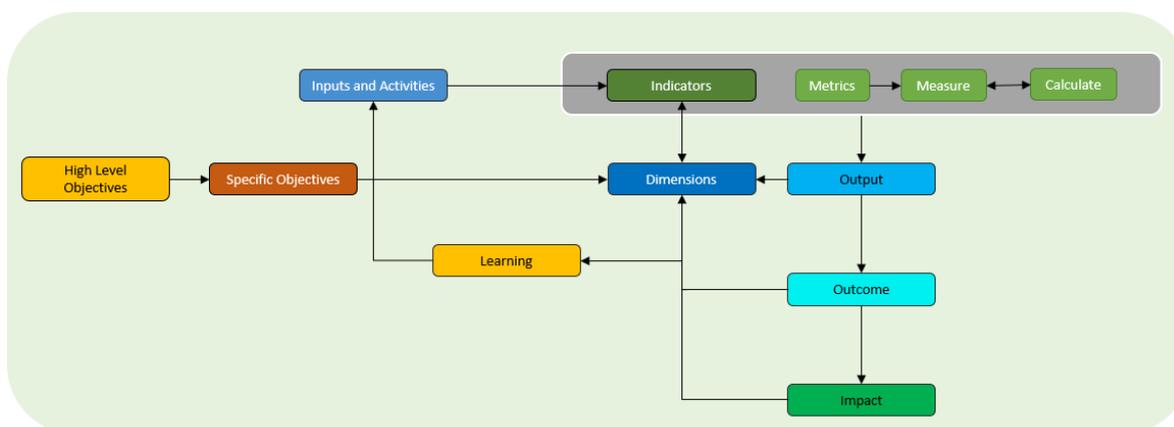
Figure 2: Basic elements of the logic frame for LEAP-RE

The LEAP-RE logic framework was developed based on a Theory of Change and Impact Pathway (TCIP) approach and using the theoretical framework commonly used for JPIs which is outlined below:

- An analysis of the societal challenges needs or issues that need policy intervention is done, assuming that markets and other social processes will not lead to improvements. These societal problems are translated into rationales or reasons for policy intervention.

- For existing initiatives, a first step is to revisit the rationale for their existence – i.e. to consider the reasons for which the initiative was established, and the problems, situations or challenges it aims to tackle.

- Following this, in order to establish the LEAP-RE logic frame, the rationale for the LEAP-RE programme was revisited.

- This analysis of problems and associated policy reasons provides a set of objectives, with the aim to address and ideally solve the defined (societal) problems.

- In turn, this leads to the main actions that should be undertaken to best address these objectives, which need input. This input is typically time and human or financial resources, although political and infrastructural preconditions may also have to be met. The inputs enable activities that are expected to lead to outputs which are the immediate results of the work enabled by the inputs.

- The outputs enable wider results or outcomes to be created. It is expected that the outcome of such initiatives primarily affect the change of behaviour of the direct beneficiaries of the R&I activity. In this sense, the general society has not yet received a payback on its investments.

- The results or outcomes enable wider (economic or societal) impacts that also affect society at large or enable system change and contribute to the tackling of a societal challenge.

To set up the logic framework, according to the sampled inspirational models, LEAP-RE is considered to follow three types of objectives from the Theory of Change and Impact Pathways (TCIP) approach (output, outcome impact) as shown in figure 3. These objectives place the programme and its existing activities within a broader policy context as follows:

- Societal, Policy and specific objectives of the *Roadmap for a jointly funded AU-EU research & innovation partnership on climate change and sustainable energy* (CCSE Roadmap) adopted by the EU-AU High-Level Policy Dialogue (HLPD) on Science Technology and Innovation (STI)

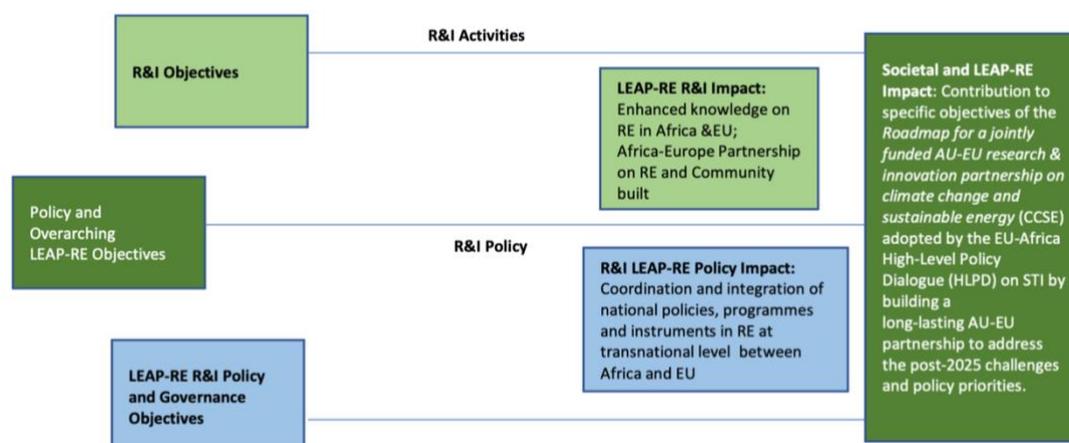- R&I Objectives

- R&I Policy and Governance Objectives

Figure 3: Link between LEAP-RE Objectives and Broader Policy Context

The LEAP-RE objectives that address society and renewable energy relate to specific objectives of the *CCSE Roadmap* adopted by the EU-AU High-Level Policy Dialogue (HLPD) on STI. The LEAP-RE objectives that address renewable energy research and innovation (R&I) and the respective R&I policy and governance derive from the core ambitions of the LEAP-RE and PRE-LEAP-RE consortia as in figure 4. These objectives were:

- To empower local research through Europe-Africa cooperation while fostering the conditions for transforming research into effective innovation.

- To tailor LEAP-RE activities to specific societal needs while acknowledging regional discrepancies in terms of funding, facilities, and social and environmental challenges.

- To respond to societal challenges through targeted research and innovation strategies, programmes and activities (R&I Objective).

- To develop successfully elements for a long-term coordination infrastructure, cooperation mechanism and a cluster network approach.

- To better coordinate the integration of national R&I policies and programmes (R&I Policy and Governance Objective) through its three programmatic pillars listed below:

Pillar 1: External research funding and capacity-building

Pillar 1 focuses on external research funding and capacity-building implemented through open calls for proposals. The calls for proposals are addressed to research and innovation operators (academic teams, companies, etc.) and will focus on the themes identified in 6 roadmaps developed in the programme preparatory phase (https://www.leap-re.eu/pillar-1/)

Pillar 2: Internal Consortium Research and Innovation Projects and Capacity Building Activities

Pillar 2 brings together European and African operators in 8 research and/or innovation projects. The projects were selected in early 2020 by the consortium before submission to the European Commission and will be carried out by members of the consortium (https://www.leap-re.eu/pillar-2/).

Pillar 3: Management, Coordination, Monitoring and Evaluation and development of the future long-term partnership

Pillar 3 covers the management, coordination, monitoring and evaluation of the overall LEAP-RE programme, and is dedicated to the development of the future long-term collaboration model of the AU-EU partnership in renewable energy.

The LEAP-RE programme is designed as a pilot for the future long-term partnership. Building a community, a strategy, a coordination infrastructure approach, methodological assets and tools to set the foundations of a long-lasting AU-EU partnership to address the post-2025 challenges and policy priorities is therefore the ambition of LEAP-RE. Pillar 3 will promote cooperation and systemic change through building a long-lasting partnership beyond the LEAP-RE programme implementation

3.2.1   Objectives

The LEAP-RE MEL plan presented here as a framework will support and operationalize the processes of monitoring, and evaluating progress, as well as the learning feedback. The MEL Plan translates the theoretic concepts above into operational practice. This includes supporting the timely collection of data by documenting and stating the frequency and schedule of data collection. The MEL Plan also assigns responsibilities of relevant LEAP-RE personnel.

The current version of the MEL Plan includes a description of the indicators and the more qualitative processes of change and progress arising from programme results that contribute to LEAP-RE's high-level and specific objectives shown in figure 5.
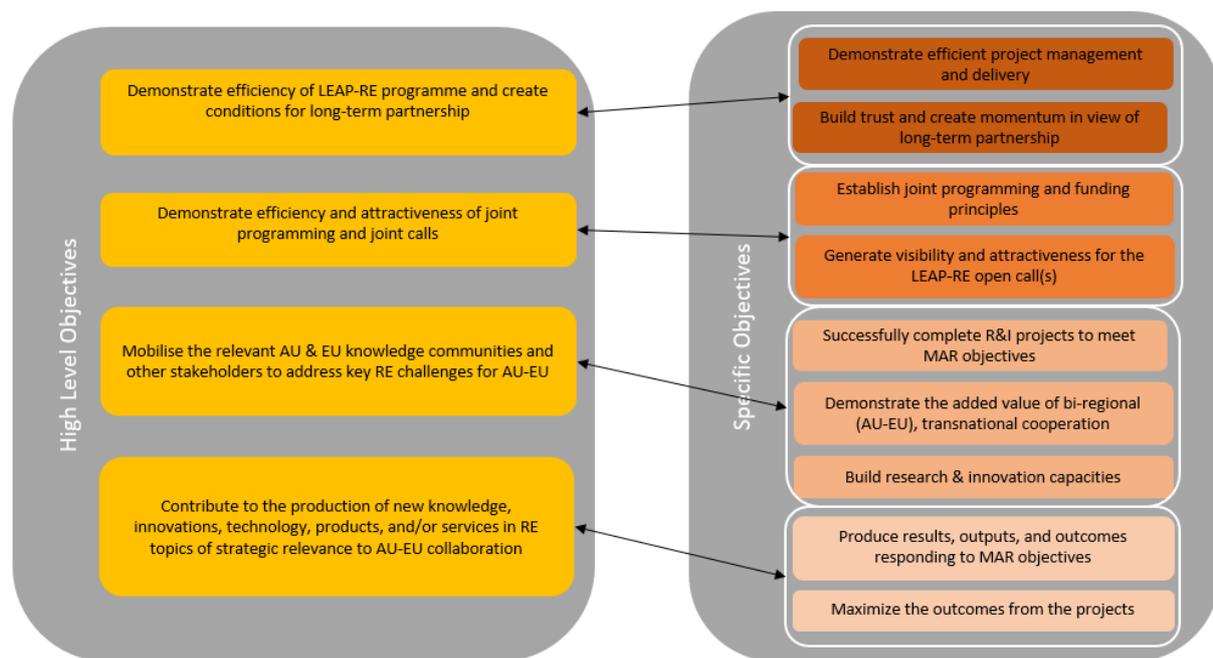

Figure 4: LEAP-RE High Level and Specific Objectives

Although required to be simple in its approach, the LEAP-RE MEL framework aims to be more than a results' monitoring tool. A core additional purpose of the LEAP-RE MEL framework is to assure that the lessons learned through the monitoring and evaluation processes are able, where relevant, to influence decision making within and beyond LEAP-RE programme lifetime as well as a future AU-EU coordination infrastructure for cyclic programmes.

The MEL Plan therefore provides 8 broad dimensions (presented in figure 5 below and reflected in Annex 1) that cluster the aim and objectives of LEAP-RE. This clustering enables the grouping of proposed sets of indicators and their respective outputs, outcomes and impacts into similar and common pools. This strategy is beneficial as it gives all the 3 pillars common goals while keeping their distinct features and preestablished KPIs as shown in figure 6 below.
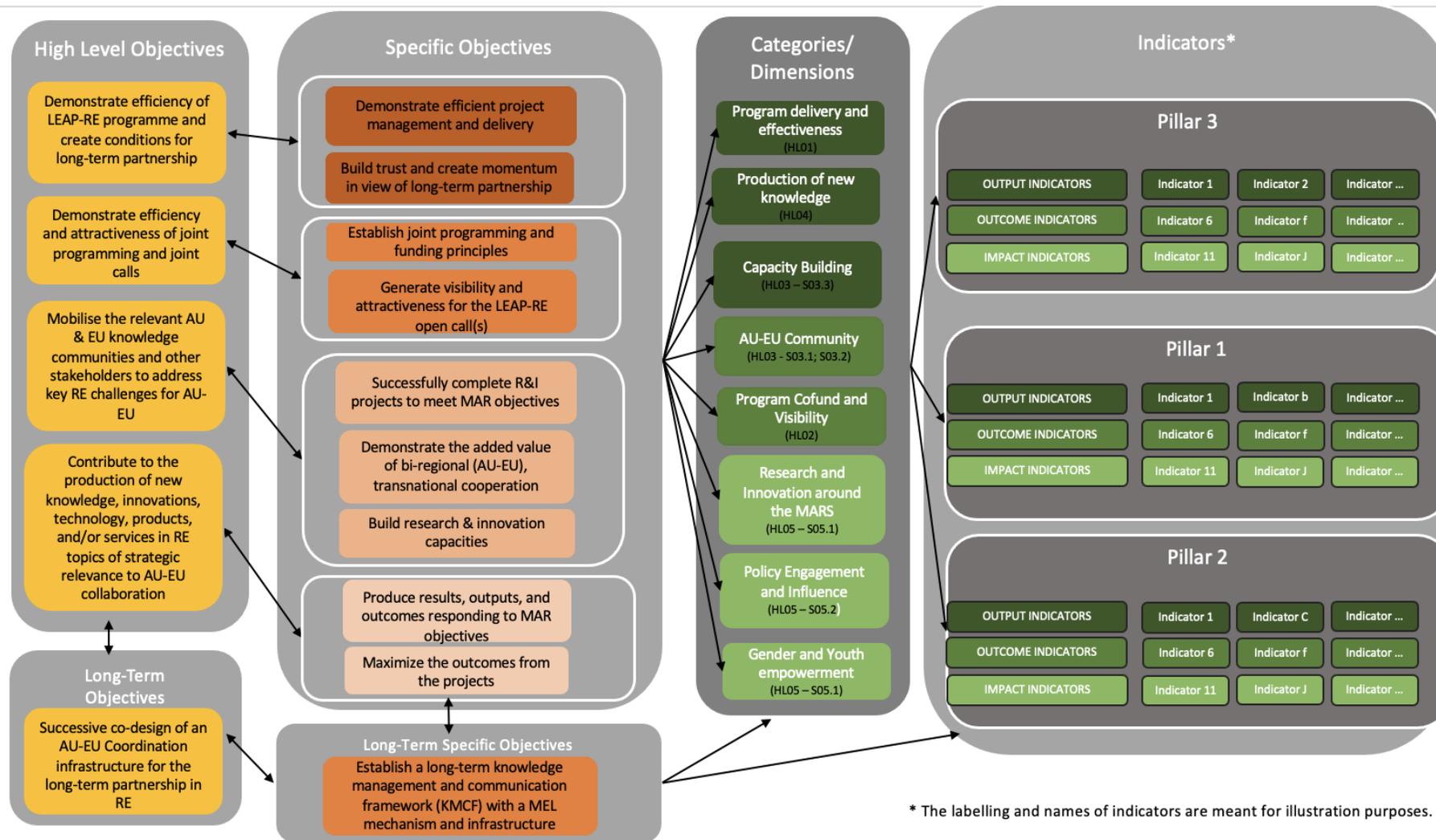
Figure 5: Conceptual Framework for the MEL Plan with the Dimensions

3.2.2 Proposed set of indicators

The conceptual framework of LEAP-RE as per figure 6, has guided the development of different sets of indicators for all the three Pillars. The framework provides a formal way of thinking about the initiative and is a tool for building a coherent set of indicators across the pillars and work packages in the programme.

A first tentative indicator framework has been established by the pillars and will include:

- The instruments under consideration

- Their implementation (inputs and activities) and desired results (outputs, outcomes and impacts)

- Tentative sources of information

- Suggestions for the main and secondary stakeholder groups responsible for providing the information,

- the desired frequency and format for the measurement, and

- the indicator's use for monitoring, evaluation or learning purposes.

Strategic Goal	Instrument	Related operational Objective	Indicator	Data source	Main Stakeholder Group	Secondary Stakeholder Group	Format	Frequency	M, E or L levels
Which strategic goal of LEAP-RE is observed?	Which instrument will allow to reach the goal?	Which objective will be met by the instrument?		Where shall the data be collected describing this indicator?	Providing information (active actors) Who provides the data?	Providing information (addressed actors) Who else provides the data?	In which format are the data collected?	What's the frequency of the data collection?	Shall data be used for M, E or L?

Figure 6: Concept for indicator development

To select the core set of indicators for the three pillars of LEAP-RE, based on the existing KPIs as shown in Annex 1, the 'RACER' criteria was applied. RACER stands for relevant, accepted, credible, easy and robust and has been recommended by the European Commission in policy making. Specifically, this means that indicators should be:

- 'Relevant, i.e. closely linked to the objectives to be reached. They should not be overambitious and should measure the right thing;

- Accepted (e.g. by staff, stakeholders). The role and responsibilities for the indicator need to be well defined (e.g. if the indicator is the handling time for a grant application and the administrative process is partly controlled by Member States and partly by the EU then both sides would assume only partial responsibility).

- Credible for non-experts, unambiguous and easy to interpret. Indicators should be simple and robust as possible. If necessary, composite indicators (i.e. indicators that summarise multiple performance dimensions) might need to be used instead – such as country ratings, well-being indicators, but also ratings of financial institutions and instruments. As they may be difficult to interpret, they should be used to assess broad context only.

- Easy to monitor (e.g. quantitative and qualitative data collection should be possible at low cost).

- Robust against manipulation (e.g. administrative burden: If the target is to reduce administrative burdens to businesses, the burdens might not be reduced, but just shifted from businesses to public administration) (ERA-Learn 2020 (2016b), p.19)

In particular, the following questions were answered for each indicator during the selection process:

1. Is the indicator relevant for potential users?

2. Does the indicator reflect the correct moment in the performance process (i.e. input, activity, output etc.)?

3. What strategic goals and operational objectives are addressed by the indicator?

4. What is the format the data should be provided in depending on each pillar's specificities (a list, a report, collected online in a platform etc.)?

5. Does this indicator link the previous moment in the performance process correctly with the next one, i.e. are the results to this indicator suitable as input for the next phase?

6. Who is the main stakeholder group being able to provide the data characterising this indicator? Who is – if appropriate – a second stakeholder group being able to provide (more) data characterising this indicator?

7. Is the reporting burden proportionate to the needs of the users and is not excessive for respondents?

8. What is an appropriate frequency to collect the data for this indicator?

9. Is this indicator in the first place interesting for monitoring purposes of the addressed pillar or is it more/also appropriate to evaluate a certain aspect in the performance of the LEAP-RE?

A preliminary set of indicators were developed for monitoring and evaluation purposes of the three pillars and are provided in Annex 2 and their development followed the format shown in figure 7. The indicators provide a view of the instruments, addressed objectives and measures that should be undertaken across the 8 dimensions that cluster the aims and objectives of LEAP-RE enabling the grouping of proposed sets of indicators and their respective outputs, outcomes and impacts into similar and common pools, as presented in figure 6.

All objectives and most of the instruments are equipped with input, activity, output and outcome/impact indicators, which are linked to the SDGs which LEAP-RE is contributing to as shown below in figure 7.
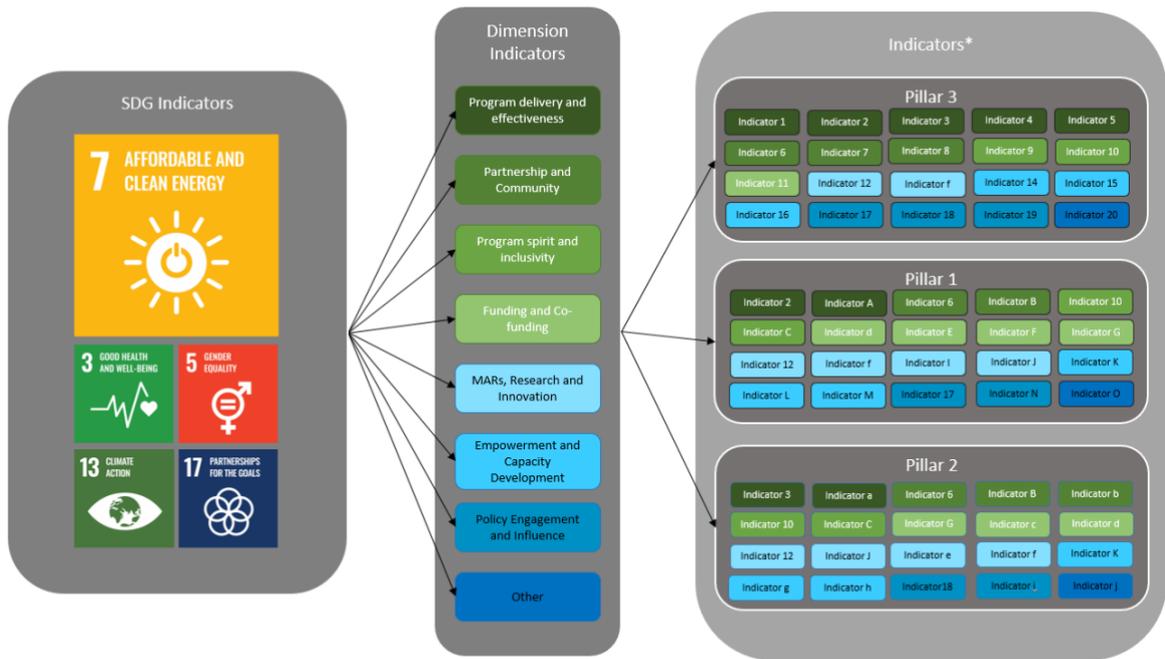
* The labelling and names of indicators are meant for illustration purposes.

Figure 7: LEAP-RE indicators relationship with SDG indicators

This set of indicators is likely going to be subject to change over time and further indicators might need to be set up in accordance with the future development of the LEAP-RE programme.

3.2.3   Expected Outputs, Outcomes and Impact

Evaluations, which try to capture the outputs, outcomes and impacts of an intervention, need to take into account the type of intervention, the targeted beneficiaries and the contexts in which the intervention takes place. For LEAP-RE, the long-term impact should become evident at the level of society and renewable energy policies after a learning exercise of 10 years. This is because the programme is established to ultimately tackle societal challenges and the future long-term collaboration model and coordination infrastructure of the AU-EU partnership in RE and SE.

The outputs and outcomes or intermediate impacts of LEAP-RE are expected to accrue at the level of R&I for renewable energy and the respective R&I policies and governance. These outputs, outcomes and impacts have been formulated already in Pre-LEAP-RE in the Theory of Change and Impact Pathway (TCIP), in the respective Multi-Annual Roadmaps (MARs) (see Annex 3). Impacts reached on this level can be considered as the enabler and pre-condition for achieving the desired wider socio-economic impacts. At the same time, the expected impacts of the LEAP-RE programme can be linked to the outputs and outcomes as shown in the summarizing figure 8.
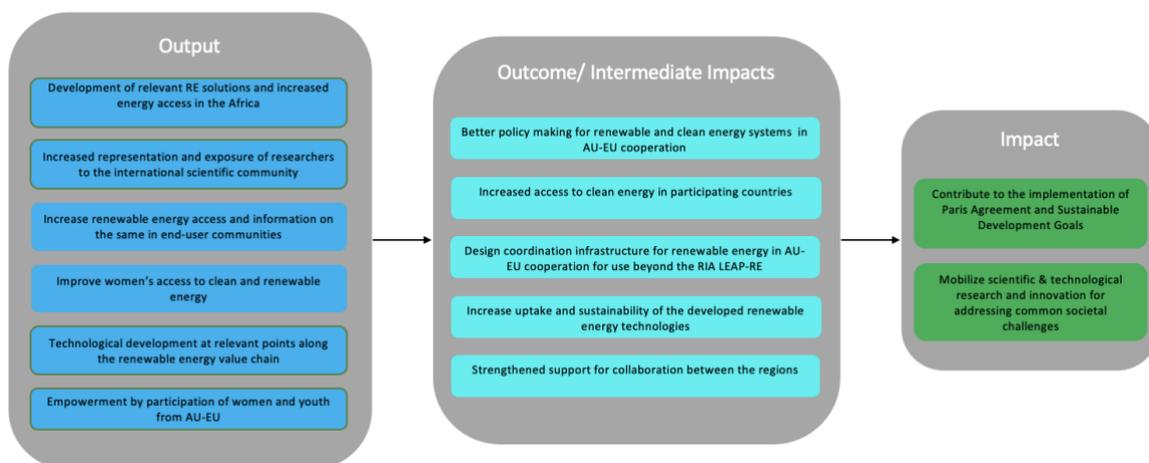
Figure 8: Outputs, Outcomes and Impacts of LEAP-RE

LEAP-RE seeks to tackle renewable energy challenges and contribute to a long-lasting AU-EU partnership to address the post-2025 challenges and policy priorities as follows:
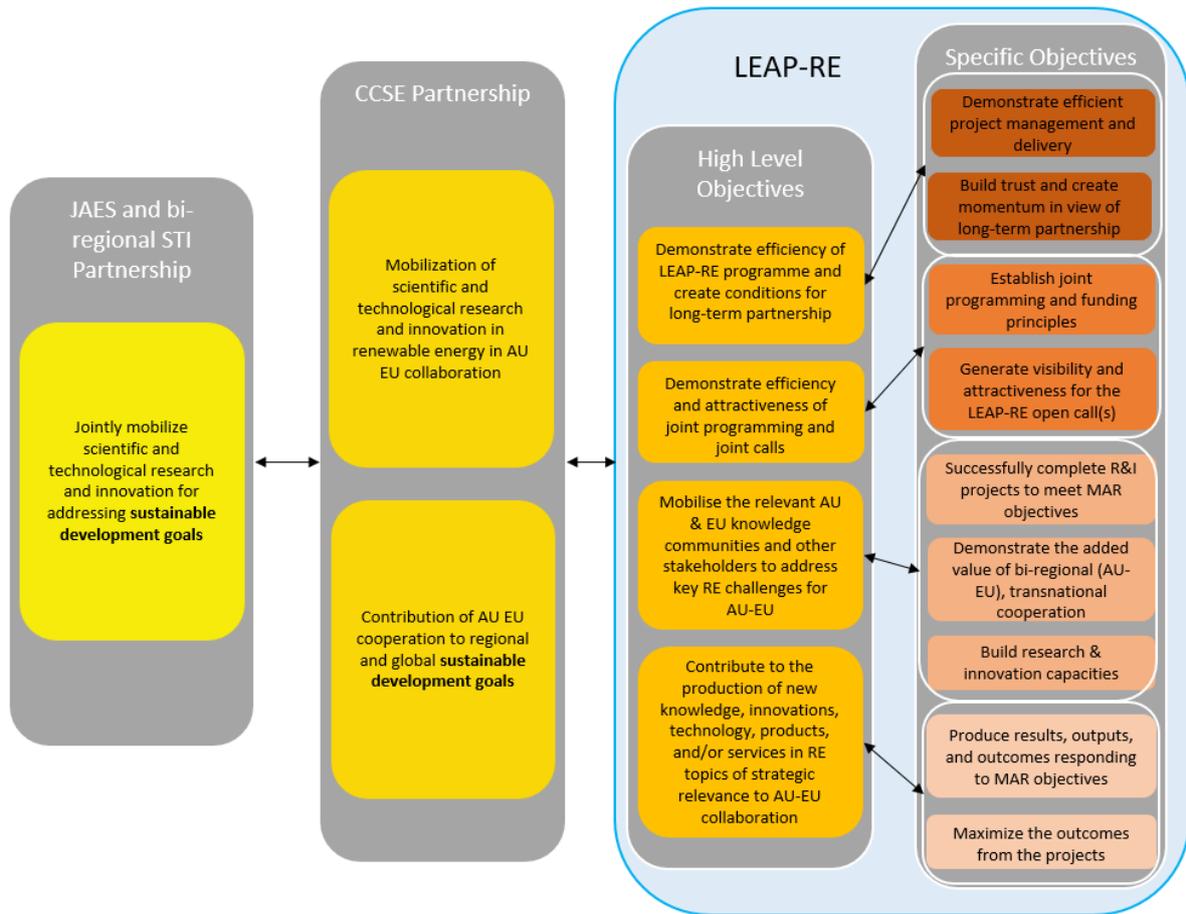
Figure 9: LEAP-RE relationship with AU EU Partnership vehicles

Whereas outputs, outcomes and impacts of certain interventions in the programme might be measured quite accurately in the format shown in figure 9 (The Impact Chain), the overall contribution of the programme might only be traced once a coherent set of measures has been set up and is fully active. It should be considered that: a) there is no linear cause-effect relationship, and b) that the long-term socio-economic impact is dependent upon many external factors.

Figure 10: The impact chain during the lifespan of LEAP-RE projects

4. Implementation of the MEL Plan

Since the MEL concept, including the MEL Plan of LEAP-RE is an ambitious and complex approach, it has been designed to adapt the concept according to actual needs and emerging findings. It will help to sharpen the operationalisation and thus help to save on resources. The aim is to create a concept which enables all bodies of the LEAP-RE to increase their efficiency, enhance their performance, deepen the impact of their work, and achieve the strategic goals of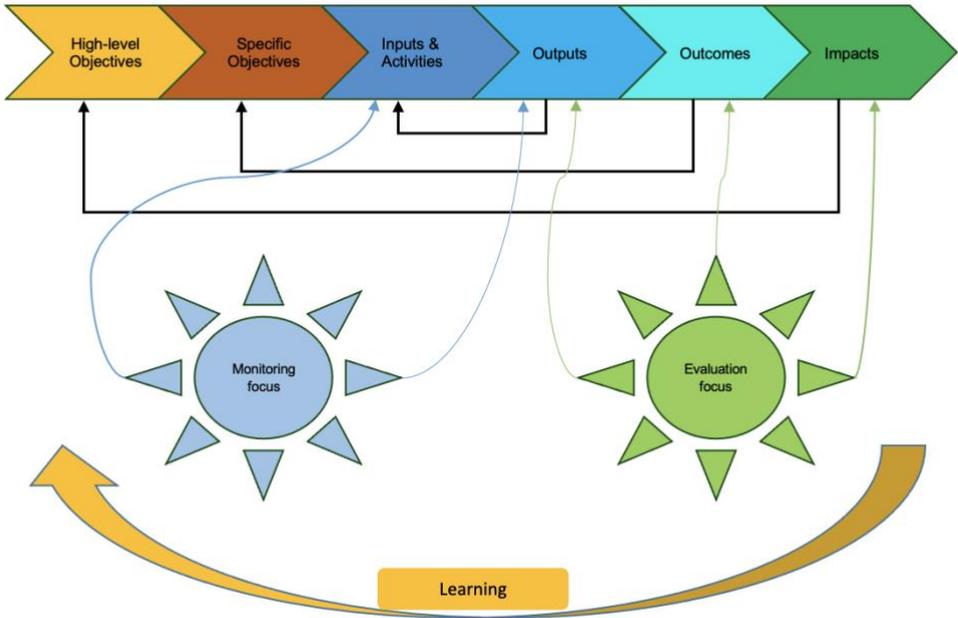 the LEAP-RE in the long run. In figure 9, the timeline for further development of the MEL Plan is displayed alongside an outlook of the timelines of Action 1 and 2 as described in section 3.
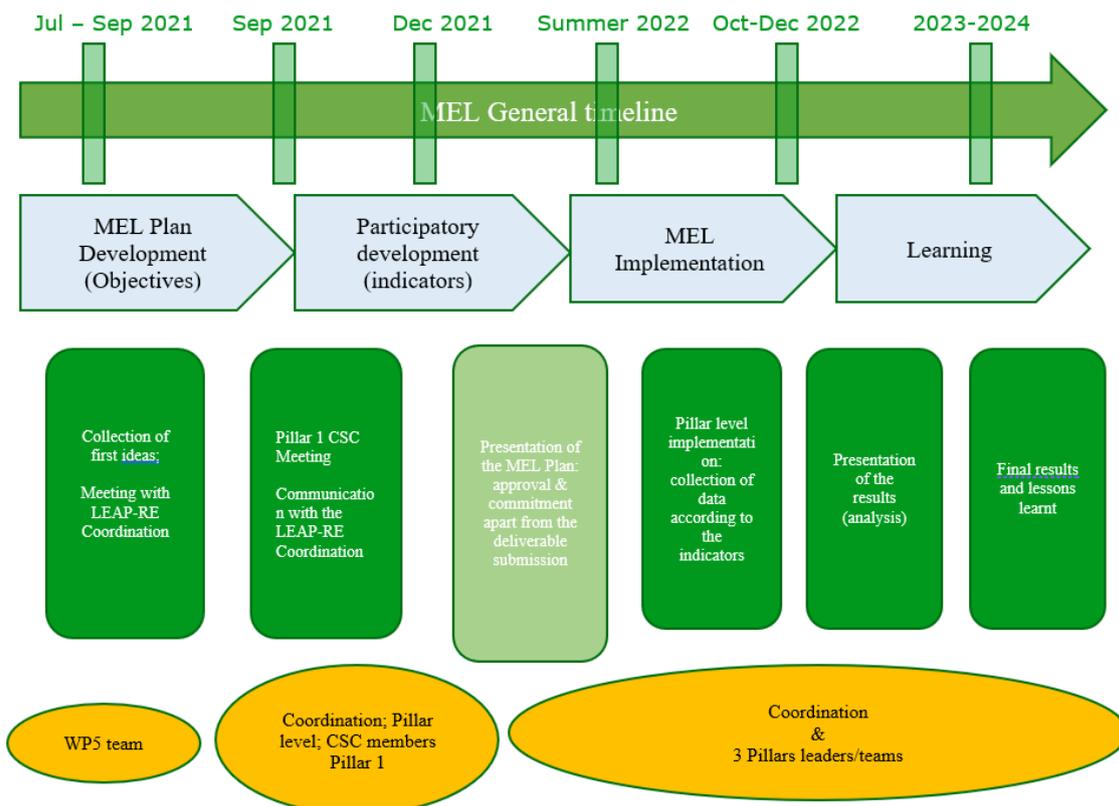
Figure 11: General timeline for the MEL Plan development and implementation

In the first phase of the MEL Plan (Dec 2021 to Oct 2022), the focus will be on the monitoring indicators for the three pillars. In the second phase, a short evaluation focusing on one specific impact dimension of LEAP-RE will be conducted in 2022.

The results of this data collection and analysis are planned to be presented to the PMB in 2022. Additionally, they will serve as input for "Learning Workshops" executed in 2022 with different stakeholder groups, in which focus will be given to the impact dimension of LEAP-RE (self-evaluation). Final insights from all these activities will be added to the MEL concept and will lead to a finalised concept that will feed into a draft AU-EU coordination infrastructure, developed by Wp4 and WP5 and WP6 together. Hence, step by step, the entire MEL Plan concept will be tested, adapted and operationalised.

The monitoring actions will result in a) a report comprising the main findings on the status of LEAP-RE and its results, b) contributions to the updates of the LEAP-RE MARs (Annex 3) and c) detailed recommendations for the future implementation of MEL in the LEAP-RE Platform. For the monitoring report, the format of the resulting analysis needs to be defined

in advance. The recommendations will provide details on what is deemed to be essential for the future success of the monitoring and evaluation efforts.

4.1 Target groups

In general, there are five main groups with an interest in MEL Plan's results:

1. Foremost, the LEAP-RE programme consortium and its working groups which will be able to work efficiently and focused-based on the knowledge about their performance. Steering the operational work as well as strategic thinking as supported with facts and updated information.

2. A second important group are RTI policy makers at the national level, the AU-EU HLPD, including the HLPD working Group on Climate Change and Sustainable Energies, the African Union Commission (AUC) and the European Commission (EC). Information based on the MEL efforts performed in LEAP-RE will help to increase transparency and better justify national and African and European investments geared towards LEAP-RE. Mobilizing funding agencies and development banks would also help achieve this objective.

3. Further stakeholders are research associations or organisations and institutions of the education systems. Information on LEAP-RE's progress and activities by means of a monitoring report can provide them with orientation for their related activities.

4. Civil society as the vehicle to involve the end-users addressed by the LEAP-RE programme, the citizens and their communities.

5. Industry representatives which take part in the LEAP-RE R&I funded projects and that can be further involved in the scale-up of the LEAP-RE projects' results. Private sector and investors that could contribute to the co-financing of actions and ensure the sustainability of the model.

The set of suggested indicators includes measures which provide added value for a differentiated view on the progress made in LEAP-RE, according to its main objectives as well as more canonical measures which can demonstrate progress in comparison to other initiatives and third parties (e.g. AU-EU HLPD Working Group, European Commission).

Based on monitoring data and its analysis, bottlenecks, risks, challenges, opportunities, success factors, good practices, obstacles, and time to manoeuvre can be identified. This may help to move from reacting to problems to anticipating and preventing them. Hence, monitoring data will enable LEAP-RE bodies to identify trends faster and respond to them as early as possible, thus increasing the impact of their work.

The decision to make information publicly available or handle it internally will need to be made on a case-by-case basis, conditional on a pre-defined purpose. Some information will be solely used to feed the internal learning processes and the development of elements for the AU-EU coordination infrastructure, while other reports or data may also inform external stakeholder groups.

4.2 Frequency of the data collection and analysis process

The frequency of data collection will differ from pillar to pillar and from indicator to indicator. Frequency will depend on its main purpose, lags until effects are materialised, ease of data collection and variability of the measure. While it is reasonable to count projects implemented under the roof of LEAP-RE on an annual basis, policy impacts related to the performance of the whole programme will need sufficiently longer periods to show their successes. An activity indicator like 'number of meetings held in a certain geographical region' is simple to report, whereas behavioural changes in a specific target group will manifest over longer periods and not necessarily on an annual base. An approach for the monitoring of outcomes and impact and its analysis, feeding into a learning process in a long-term procramme cycle mechanism after the LEAP-RE programme, will be developed in cooperation with WP4 and WP5 and WP6.

Based on the findings from the first data collection exercise which will focus on the retrieval of monitoring indicators, a useful frequency for data collection and analysis can be suggested. For indicators that serve the purpose of evaluation, a first self-evaluation exercise will be performed in 2022. During the first phases of the MEL implementation, the timing for future impact evaluations focusing on certain objectives will be specified.

4.3 Identifying data requirements for data collection and analysis

Different requirements will guide the appropriate way of collection and best use of data. An important yet often underestimated aspect is comparability of data. An intuitive example for comparability is presenting different project partners or projects on a map. Here, all relevant data can be availed with the respective format of the coordinates to enable their addition into a given format on a map. On the contrary, an indicator such as 'cash flow' might not be considered sufficiently specified unless the accounting period and currency are fixed. Consequently, the data format for each indicator has to be defined before starting the MEL activity. A table of proposed preliminary indicators in the Annex 2 suggests a format for each of the indicators which is directly linked to the data source, for which data quality checks are performed.

MEL activities are subject to change over time, as the LEAP-RE programme might be under the effect of the broader context dynamics. Some instruments are currently being developed and new instruments might emerge in the future through e.g. dialogues among the stakeholders in D4.3, or D5.10 Strategy guidelines and plan for the design of the long-term partnership. For these instruments, indicators for expected outputs, outcomes and impacts cannot be defined in advance, but they need to be co-developed and agreed upon in the planning phase of the new instrument.

Although some instruments are not yet completely designed, the MEL Plan already highlights some potential indicators for new instruments, according to their presumed main objectives. For implementing a monitoring system, the project team suggests to first focus on the collective progress made (inputs, activities, and outputs) of existing instruments (e.g.: projects in Pillar 2).

4.4 Future responsibility for data collection

Besides the frequency and format, the sets of proposed indicators in Annex 2 to this document suggest other important aspects for equipping indicators with data, namely the key contact point for collection and the responsible entity. Currently, this responsibility is given to the management of each pillar. In the future, clear responsibility has to be given to an institution or group that is infrastructure-wise equipped or that will have to develop such a MEL infrastructure for conducting the next round of data collection, analysis, reporting and dissemination.

The LEAP-RE programme has to ensure at its end in 2025, that the MEL process will be maintained, so that in ~2030, at the end of a 10-years programme cycle, an impact analysis (which addresses also the outcomes) and a learning process will be possible.

Data collection and management is detailed into the D1.11 Data Management Plan, this report will adress issues of data generation, collection, storage and access and will include compliance with General Data Protection Regulation (GDPR) and oversight for funded projects.

5. Co-creation and further development envisaging the long-term MEL mechanism

The current version of the MEL Plan aims to be a "living document", providing a flexible framework to start the MEL implementation process and opening the way for adjustments and learning towards a long-term LEAP-RE MEL mechanism as a part of a long-term AU-EU coordination infrastructure for the cooperation in R&I on RE.

Addresing the long-term MEL mechanism, the partners involved in Task 5.1 – *M&E Concept and Impact Assessment*: DLR, SU, UEFISCDI, MESRS and ZSI will organise further co-creation activites, using a participatory approach, involving the Pillar leaders and funding partners in order to:

- Establish a common understanding of the long-term MEL mechanism and the role of the TCIP and related monitoring indicators

- Identify and agree potential metrics for the LEAP-RE long-term perspective

- Identify collaborative ways to address the LEAP-RE long-term outcomes and impact

Beyond LEAP-RE's 5 year lifetime, the MEL process covering projects funded under Pillar 1 and Pillar 2 can be performed under the partnership vehicles within which LEAP-RE exists, as shown in the summarizing Figure 8. Recommendations on how this long-term MEL process can be performed and what it should seek to assess will be compiled by LEAP-RE Task 5.1 alongside the learning report.

References

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High Level Group for Joint Programming (2016): Final Report of the GPC Implementation Group 3 "Monitoring and evaluating JPIs", ERAC-GPC 1310/16.

D7.1 Monitoring and Evaluation Concept of the Joint Programming Initiative Urban Europe developed with the support of Horizon 2020 project EXPAND (no. 726744)

http://pre.leap-re.eu/project-results/ accessed 23 September 2021.

6. Annexes

6.1 Annex 1

High Level Objective	Specific Objective	KPIs
1: Demonstrate efficiency of LEAP-RE programme and create conditions for long-term partnership	1.1: Demonstrate efficient project management and delivery	1.1.1: Percentage of deliverables submitted in time and quality (target: 100%)
		1.1.2: Percentage of project milestones passed successfully (target: 100%)
		1.1.3: Successful risk management (% of risks avoided or mitigated) (target: 100%)
		1.1.4: Carbon footprint: estimated emissions savings by project travel policy (virtual vs. physical meetings) (*)
		1.1.5: Percentage of indicators satisfactorily addressed in Monitoring, Evaluation and Learning (MEL) Plan (*)
	1.2: Build trust and create momentum in view of long-term partnership	1.2.1: Number of new organisations joining the LEAP-RE Community (at least 100)
		1.2.2: Number of individuals joining the LEAP-RE Community (at least 500)
		1.2.3: Number of respondents in stakeholder surveys (at least 100)
		1.2.4: Timely agreement on a model, strategy, and governance structure for a long-term partnership (including financial, structural, methodological & relational contributions) (M60)
		1.2.5: Number of organizations committing or expressing interest in a long-term partnership after the completion of LEAP-RE (at least 50)
2: Demonstrate efficiency and attractiveness of joint programming and joint calls	2.1: Establish joint programming and funding principles	2.1.1: Number of funding organizations committed in each joint LEAP-RE open call (>10)

High Level Objective	Specific Objective	KPIs
		2.1.2: Regional coverage and distribution of amounts committed in each LEAP-RE open call (at least 30% in each continent)
		2.1.3: Thematic coverage of MARs by the R&I projects (% of MAR topics covered)
	2.2: Generate visibility and attractiveness for the LEAP-RE open call(s)	2.2.1: Number of R&I project proposals (submitted / selected) in the LEAP-RE open call(s) (at least 50 submitted proposals and 20 funded projects, incl. 5 coordinated by African organisations)
		2.2.2: Number and regional distribution of applicant organisations in LEAP-RE open call(s)
3: Mobilise the relevant AU & EU knowledge communities and other stakeholders to address key RE challenges for AU-EU	3.1: Successfully complete R&I projects to meet MAR objectives	3.1.1: Successful completion of individual R&I projects (compliance with quality, scheduling and cost) under the LEAP-RE programme (target: 95% of EU reported costs accepted)
		3.1.2: Measurable advancement of the state of the art in the 6 MARs (TRL progress) (*)
		3.1.3: Percentage of outputs and outcomes met for each MAR (*)
	3.2: Demonstrate the added value of bi-regional (AU-EU), transnational cooperation	3.2.1: Amount of co-funding invested by R&I project participants in LEAP-RE (*)
		3.2.2: Respective shares of stakeholder types involved or associated to LEAP-RE R&I projects (quadruple helix: research & academia / private sector / government / civil society) (*)
		3.2.2: Additional funding raised during LEAP-RE to support innovation upscaling, exchange of researchers, or additional activities (at least 200k EUR)

High Level Objective	Specific Objective	KPIs
		3.2.3: Number of new collaboration projects launched by the partners outside the LEAP-RE programme (measuring the multiplier effect of the LEAP-RE Community) (at least 5)
	3.3: Build research & innovation capacities	3.3.1: Number of capacity-building actions in LEAP-RE R&I projects (*)
		3.3.2: Number of online training modules deployed (at least 5)
		3.3.3: Number of participants in LEAP-RE Summer/Winter Schools (at least 15 per school)
		3.3.4: Number of organisations endorsing future strategy for capacity-building (at least 50)
		3.3.5: Number of African professionals having accessed capacity-building in LEAP-RE in terms of scientific publication, innovation, and capacity to undertake joint projects (at least 100)
		3.3.6 Number of exchanges / visiting researchers between AU and EU organisations (>10)
4: Contribute to the production of new knowledge, innovations, technology, products, and/or services in RE topics of strategic relevance to AU-EU collaboration	4.1: Produce results, outputs, and outcomes responding to MAR objectives	4.1.1: Number of co-authored papers resulting from the LEAP-RE R&I projects (>30)
		4.1.2: Number of patents filed as a result the LEAP-RE R&I projects (>5)
		4.1.3: Number of service or product launches resulting from the LEAP-RE projects (>5)
	4.2: Maximize the outcomes from the projects	4.2.1: Number of thematic project clusters formed (at least 6)

High Level Objective	Specific Objective	KPIs
		4.2.2: Successful revision and state of the art update of the MARs (before M60)
		4.2.3: Number of participants in LEAP-RE General Workshops (at least 150)
		4.2.4: Number of individual visitors on LEAP-RE website (at least 30k by M60)

High Level Objective	Specific Objective	KPIs

6.2 Annex 2

		Monitoring Indicator			**Implementation**						
No	Intervention logic	Level/ Stakeholder Group	Indicator	Calculation	Dimension	Source of information	Tool	Call I	Call II	Callx
1	1 Inputs for the cofunded call of Pillar 1	Funding partners commitment	Participating Funding Partners in the call	1. Number and type of funding partner participating in the call from Europe 2. Number and type of funding partner participating in the call from Africa 3. Participating countries beyond Africa and Europe in the call	Program delivery and effectiveness	Call Text	Spreadsheet or Online Tool	yes	yes	yes
2	1 Inputs for the cofunded call of Pillar 1	Funding partners commitment	Budget allocated for projects in the call	Amount of budget in EUR allocated for the call (in total and by country incl. EC Cofunds)	Program Cofund and visibility	Call Text	Spreadsheet or Online Platform	yes	yes	yes
3	1 Inputs for the cofunded call of Pillar 1	Funding partners commitment	Budget allocated for joint coordination activities in the call	Amount and share of budget in EUR allocated for joint coordination activities (e.g. call secretariat, project monitoring, communication&dissemination) of the call (in total and by country)	AU-EU Community	Call Manual/LEAP-RE Cofund Grant Agreement	Spreadsheet or Online Platform	yes	yes	yes
4	1 Inputs for the cofunded call of Pillar 1	Reaching target group	Type of R&I supported in the call	1. Types of R&I supported in the call (not mutually exclusive) a. Fundamental research / basic research b. Industrial research / applied research c. Experimental development	Research and Innovation around the MARs	Call Text, FP survey	Spreadsheet or Online Platform	yes	yes	yes

				projects (covering all innovation steps) 2. Types of R&I supported by each funding partner						
5	2 Joint call activities of CSC	Funding partners commitment	Participating FP taking over joint coordination activities in the call	Number and country of FP actively taking over joint coordination activities in the call (related to No 3)	Program Cofund and visibility	Call Manual/LEAP-RE Cofund Grant Agreement	Spreadsheet or Online Platform	yes	yes	yes
6	2 Joint call activities of CSC	Reaching target group	Balance of reviewer panel for proposal evaluation	Reviewers (anonymously) of proposals according to a. country where the reviewer is based b. gender c. type of affiliation (e.g. research organisation, business)	Gender and Youth Empowerment	Joint Call Secretariat	Spreadsheet or Online Platform	yes	yes	yes
7	2 Joint call activities of CSC	Efficiency of CSC	Efficiency in funding operations in CSC	Number of months from proposal submission to last national contract concluded 1. Time in days from submission of full proposal to communication of project acceptance (TTD – Time to Decision) 2. Time in days from submission of full proposal to conclusion of last national funding contract (TTC – Time to Contract)	Program delivery and effectiveness	Currently, time to decision is covered by the call secretariat. Time to contract will be possible to compute	LEAP-RE Project Platform for TTD. Potentially also for TTC and TTM	yes	yes	yes

				3. Time in days from submission of final LEAP-RE report to transfer of final national funding rate (TTM – Time to Money)		based on project monitoring. Time to Money is not yet planned to be collected				
8	2 Joint call activities of CSC	Reaching target group	Number and type of call information support services	Number and type of call information support services used (per project or by type) a. Project search forms b. Project Match Making c. Webinars d. ….	AU-EU Community	Call Secretariat, Call Text, FA Survey	Spreadsheet or Online Platform	yes	yes	yes
9	2 Joint call activities of CSC	Reaching target group	Measures to support exploitation and upscaling/replication to increase impact	Measures by FPs and LEAP-RE to increase project impact (e.g. demand for innovation brief, policy briefs, business plans, plan for upscaling/replicating, follow-up financial support for projects for market application)	AU-EU Community	Call Text Joint Call Secretariat	Spreadsheet or Online Platform	yes	yes	yes
10	3 Outputs of the joint call activities of the CSC	Reaching target group	Number of applications and rate of acceptance	1. Number of project applications (1st stage, 2nd stage) and No of contracted projects 2. Share of contracted projects in project applications (oversubscription)	Program delivery and effectiveness	Joint Call Secretariat	Spreadsheet or Online Platform	yes	yes	yes

				3. Share of contracted projects in project applications above threshold 4. Share of rejected projects in project applications due to non-eligibility						
11	3 Outputs of the joint call activities of the CSC	Efficiency of CSC	Contracted budget for projects and oversubscription	1. Share of applied project budget in allocated project budget in the call (in total and by country/funding partner) 2. Share of contracted project budget in allocated project budget in the call (in total and by country)	Program delivery and effectiveness	Joint Call Secretariat	Spreadsheet or Online Platform	yes	yes	yes
12	3 Outputs of the joint call activities of the CSC	Efficiency of CSC	Distribution of EC Cofund by country	1. Distribution of contracted EC Cofund by country 2.Distribution of contracted EC Cofund by funding partner 3. Share of EC Cofund in total contracted project budget by country 4. Share of EC Cofund contracted in total EC Cofund allocated for the call	Program Cofund and visibility	Joint Call Secretariat	Spreadsheet or Online Platform	yes	yes	yes
13	3 Outputs of the joint call activities of the CSC	Quality of achievements of target group	Thematic orientation of project portfolio for the call (MARs)	Number and share of contracted project funding according to call topics (MARs)	Research and Innovation around the MARs	Joint Call Secretariat Project Proposals	Spreadsheet or Online Platform	yes	yes	yes

14	3 Outputs of the joint call activities of the CSC	Reaching target group	"First time" beneficiaries	1. Number and share of funded "first time" LEAP-RE project beneficiaries according to type 2. Share of funded "first time" LEAP-RE project beneficiaries in "first time" applicants according to type	Program delivery and effectiveness	Project Proposals	Spreadsheet or Online Platform	yes	yes	yes
15	3 Outputs of the joint call activities of the CSC	Quality of cooperation	Number of formal project changes per project	Number and type of changes in the project 1. Drop/exchange of project partner 2. Substantial delays 3. Budget exchanges	Program delivery and effectiveness	annual LEAP-RE Pillar 1 and Pillar 2 reports	Spreadsheet or Online Platform	yes	yes	yes

16	4 Project beneficiaries	Reaching target group	Beneficiaries of projects according to type and countries and cooperation along the R&I cycle (Transdisciplinarity in projects)	1. Number & share of project beneficiaries according to type (in total and by country):
				    a. universities and other educational institutions
				    b. public and private research organisations
				    c. business: thereof e.g. SME, industry, consultants
				    d. public authorities
				    e. other governmental institutions (e.g. other public utilities)
				    f. non-commercial/non-profit organisations
				    g. private-non-profit organisations
					Program delivery and effectiveness	Project Proposals	LEAP-RE Template Reports or Online Platform	yes	yes	yes

				2. Funding according to beneficiary type (in total and by country)
				3. Number and share of projects involving the following type of stakeholders/applicants
				   a. private sector
				   b. public sector
				   c. societal stakeholders
				4. Partners participating with own funds						

17	4 Project beneficiaries	Reaching target group	R&I types in project portfolio	R&I types in contracted projects
				   a. Fundamental research / basic research
				   b. Industrial research
				   c. Applied research
					Program delivery and effectiveness	Project Proposals	Spreadsheet or Online Platform	yes	yes	yes

18	4 Project beneficiaries	Reaching target group	Interdisciplinarity in projects	1. Number of scientific disciplines involved in the project 2. Disciplines involved in the project	Program delivery and effectiveness	Project Proposals	Spreadsheet or Online Platform	yes	yes	yes

19	4 Project beneficiaries	Reaching target group	Gender balance within projects	Number and share of employed persons in the project according to function and sex:
				   a. Coordinator (m/f)
				   b. (Research) supporter (m/f)
				   c. Technician (m/f)
					Gender and Youth Empowerment	Project Proposals	Spreadsheet or Online Platform	yes	yes	yes

20	4 Project beneficiaries	Reaching target group	Balance in the consortium	Number of partners from Europe and from Africa	Gender and Youth	Project Proposals	Spreadsheet or Online Platform	yes	yes	yes

			between African and European partners			Empowerme nt					
21	4 Project beneficiari es	Reaching target group	Engagement of stakeholders/ applicants within the project	1. Number and type/modes of interaction/integration with stakeholders 2. Number and type of stakeholders reached within the project (e.g. key R&I actors and stakeholders for future joint Europe/Africa future initiatives)		AU-EU Community	Project survey/fin al report	Spreadsheet or Online Platform	yes	yes	yes
22	4 Project beneficiari es	Implementati on/Risks	Use of innovative formats in project for real life testing	1. # and type innovative formats used in project (e.g. type: living labs, demonstration, regulatory innovation zones) 2. Geographical distribution of innovative formats		PRogram delivery and effectiveness	Project survey/fin al report	Spreadsheet or Online Platform	yes	yes	yes
23	4 Project beneficiari es	Implementati on/Risks	Type of innovation envisaged in the project	1. Type of innovation envisaged by the project: …a. product innovation …b. process innovation …c. service innovation …d. organisational innovation …e. social innovation 2. Is the envisaged innovation: ... new to the involved African application partner (business, governmental institution, NGO		Program delivery and effectiveness	Project proposal, Project survey	Spreadsheet or Online Platform	yes	yes	yes

				etc.) … new to European application partner in general ("European market") … new to all application partners worldwide ("African-European market")						
24	5 Tangible project outputs/outcomes	Implementation/Risks	Project has successfully reached its objectives	Project has its objectives ….a. fully reached ….b. predominantly reached ….c. partly reached ….d. almost not reached	Program delivery and effectiveness	Project survey/final report	Spreadsheet or Online Platform	yes	yes	yes
25	5 Tangible project outputs/outcomes	Results (scientific)	Publications in the area of renewable energy based on LEAP-RE project findings	1. Number of accepted publications in the area of renewable energy in peer-reviewed high impact journals (in open access format) 2. Number of publications in popular science in the area of renewable energy (in open access format)	Production of new knowledge	Project survey/final report	Project Monitoring templates; Online Platform databases for publicaton networks in the area of renewable energy of LEAP-RE project partners (e.g. to compare to project networks)	yes	yes	yes
26	5 Tangible project outputs/outcomes	Results (technological)	Patents in the area of renewable energy based on LEAP-RE project findings	1. Number of patent applications and patents awarded in the area of renewable energy based on LEAP-RE project findings	Program delivery and effectiveness	Project survey/final report	Project Monitoring templates; Online Platform databases for publicaton networks in the area of renewable energy of	yes	yes	yes

								LEAP-RE project partners (e.g. to compare to project networks)			
27	5 Tangible project outputs/outcomes	Results	Number and type of experimental projects and other tested outputs	1. Number and type of experimental projects 2. Number and type of other tested outputs: a. guidelines b. prototypes c. methodologies d. models e. blueprints f. frameworks g. IT applications h. data sets i. observatories	Program delivery and effectiveness	Project survey/final report	Spreadsheet or Online Platform	yes	yes	yes
28	5 Tangible project outputs/outcomes	Capacity building	Number of involved Master & PhD students (gender dimension included)	Number of involved Master & PhD students from Africa and Europe and their disciplines in project	Capacity building	Project survey/final report	Spreadsheet or Online Platform	yes	yes	yes
29	6 Impact on the target group	Capacity building	Exploited/utilised output at the end of the project and capacity building	a) Number of outputs applied/exploited in (1) policy and (2) practice at the end of the project to contribute to renewable energies as a result of granted LEAP-RE Africa-Europe supported	Capacity building	Grant agreement Project survey/final report	Project Monitoring templates; Online Platform	yes	yes	yes

				projects. Planned outputs as proxy measure if data is not available. b) Number of projects that have used LEAP-RE support measures to reach stakeholders (e.g. innovation brief, policy briefs, business plans, plan for upscaling/replicating, follow-up financial support for projects for market application)						
30	6 Impact on the target group	Enhanced cooperation Africa - Europe (capacity building)	Follow-up project activities exists to strengthen knowledge transfer, cooperation or investments in innovations between Africa and Europe	1. Type of follow-up activities the beneficiaries are engaged in: a. Investments received for follow-on innovation activities based on project results b. Follow-up R&I projects d. Sustainability of collaborations of Africa – Europe partners with stakeholders/applicants in research, development, and piloting activities e. Sustainability of collaborations among R&I partners from Africa and Europe	Policy engagement and influence	Project survey/final report	Project Monitoring templates; Online Platform	yes	yes	yes
31	6 Impact on the target group	Upscaling/Replication	Renewable energy (outputs) that have been	Number of outputs that have been upscaled and replicated at the end of the project (already RE innovations).	Policy engagement and influence	Grant agreement Project	Project Monitoring templates; Online Platform	yes	yes	yes

			upscaled and replicated at the end of the project	Planned outputs as proxy measure if data is not available.		survey/fin al report				

6.3 Annex 3

Theory of Change and Impact Pathways (TCIP) and the Multi-Annual Roadmaps (MAR) | Indicators for the short- and long-term MEL process

The current indicators are matched from the baseline (Annex 2), the implementation of the data collection and the monitoring exercises together with the activities carried out for the long-term perspective will add to and update this first version.

MAR	Outputs	Outcomes	Impact
#1 MAR: Mapping joint research and innovation actions for next-step development of RES Specific Challenges			
	• a global reference of the huge amount of literature and science and joint projects that have been undertaken in the last decade as far as R&I on RES in Africa will be updated	• Updated knowledge and base data on the scenario and progress of EU-AU R&I cooperation on RES	• Closer long-term oriented collaboration between African and European funders of R&I and H&ICB
Indicator	➔ 8, 9	➔ 29	➔ 30, 31
	• KPIs, Categorisations and prioritization of REs will be set in a consistent way with the literature (scientific and grey) in order to align our work to that of the international community	• Increased awareness of existing networks in RE in AU -EU by researchers on both continents	• Closer collaboration between researchers, innovators and funders of innovations through the systemic development of innovation hubs
Indicator	➔ 13, 16	➔ 20-26	➔ 31
	• A methodology for measuring technology readiness levels and the identification of TRLs of different RE technologies in different African countries	• Information from this Mapping can be used as a starting point by RE researchers	
Indicator	➔ 4, 9	➔ 13	
	• A precise map of RES components and systems dedicated to African needs		
Indicator	➔ 16, 17		
	• Identification of key R&I actors and stakeholders for joint Europe/Africa future initiatives;		
Indicator	➔ 16, 20		
	• Identification of key parameters for feasibility of RE projects and the mapping of RE resources;		
Indicator	➔ 17, 18, 19, 20		
	• Identification of areas of profitability and limits of projects according to the RE availability.		

MAR	Outputs	Outcomes	Impact
Indicator	→ 22, 23		

#2 MAR: End-of-life and second-life management and environmental impact of RE components		
• Map of the EoL/OoS component value chain, identification of key stakeholders & business models	• Promotion of environmental and ecological sustainability of renewable energy systems	• Creation of jobs through use and reuse of EoL/OoS components management e.g. creation of jobs through repair of systems and proper collection of EoL/OoS components

Indicator	→ 4, 13, 16	→ 21, 25	→ 28, 30
	• Creation of categories of components found in EoL/OoS components and proposed safe methods of handling	• Increase in innovation around the use and reuse of EoL/OoS components before disposal	• Creation of policy incentives towards RE production, including handling and disposal at EoL/OoS component stage e.g. financial incentives to encourage manufacturing of easily repairable systems
Indicator	→ 27	→ 29	→ 27, 30
	• Development of comprehensive models and standard operating procedures for EoL/OoS component management	• Increased awareness among researchers on the importance of accounting for EoL/OoS components in RE research work.	• Reduced materials used for new products and thus cost and environmental impact reduction
Indicator	→ 27	→ 28,29	→ 27
	• Proposal of methods for EoL/OoS component recycling which address local environmental impact through effective management		
Indicator	→ 27		
	• Identification of second life components with a benefit for African countries: lower cost; higher reliability, less environmental impact		
Indicator	→ 22, 23, 24		
	• Dissemination of acquired knowledge, among the African and European community to extend support for sustainable EoL/OoS component management		
Indicator	→ 24, 25, 29		

#3 Smart stand-alone systems		
• To provide avenues for the development of RE-SAS demonstrator(s), considering the diversity of potential local RE sources and the local effective environment	• The development of reliable stand-alone system architecture that can be easily and widely deployed in off-grid African rural and remote areas	• The creation of jobs in RE production and uses through RE-SAS systems installation, management and maintenance

Indicator	→ 16, 17, 18, 27	→ 24	→ 19, 20, 28
	• To develop tools for RE-SAS design	• Sharing acquired knowledge to develop a sustainable RE-SAS	• To give access to affordable energies to the largest number

MAR	Outputs	Outcomes	Impact
		systems deployment	of beneficiaries and to maximise the socio-economic impact.
Indicator	→ 17, 18	→ 24, 25, 26	→ 30, 31
		• Stakeholders and business model are identified	• To promote income generating activities
Indicator		→ 17-21	→ 31
		• To increase the share of renewables and reliability	
Indicator		→ 23, 24	
		• To promote environmental sustainability of renewable energy systems	
Indicator	→	→ 30, 31	

#4 Smart grid (different scale) for off grid application

MAR	Outputs	Outcomes	Impact
	• Development of new tools for optimizing capacity in planning and dispatching strategies based on people's needs	• Researcher capacity will be strengthened with holistic and multidisciplinary thinking and needed technical competences through capacity building. Additionally, increased awareness of people's needs will support longer-term behaviour change	• Increased energy access in rural areas and use of REs
Indicator	→ 21-23	24, 28	→ 29, 30, 31
	• Reduction of energy dependence on fossil fuel and increase in the share of RES	• Research and related capacity building will be valorised as instrumental to the creation of native and local innovation and behavioural change	• Improved living conditions and social inclusive growth in the local context
Indicator	→ 27	→ 27, 28	→ 30, 31
	• New open-source code access for researchers worldwide	• Technologies design will be increasingly people-driven, increasing efficiency	• Improved economic development and promoting job creation in the local context
Indicator	→ 27	→ 27, 28	→ 31
		• Local people and civil society will feel more engaged in the research-innovation process	• Behavioural change as far as energy usages
Indicator		→ 21, 22, 28	→ 31
		• Private players will benefit from a new instrument for supporting sustainable business.	
Indicator		→ 29, 30	

#5 Processes and appliances for productive uses

MAR	Outputs	Outcomes	Impact
	• Categories of IGAs performed by off grid communities, existing PRODUSE appliances supporting these IGAs and IGA categories and existing gaps that RE PRODUSE appliances can	• Understanding of opportunities for PRODUSE appliances to address IGA related challenges by researchers	• Increase in productivity of the informal sector such rural industries

MAR	Outputs	Outcomes	Impact
	fill		
Indicator	→ 21, 22	→ 25, 28	→ 30, 31
	• Existing PRODUSE appliances in small and large scale agriculture (livestock, fisheries and farming) and proposed RE appliances that can be improved or developed	• Reduction of post-harvest losses especially in the agricultural sector	• Improved socio-economic development of off-grid communities due to support of their IGAs
Indicator	→ 27	→ 30	→ 30
	• Cold chain and thermal PRODUSE appliances in different sectors such as healthcare and agriculture	• Adoption of energy efficiency measures by industries	• Creation of jobs and improved energy access through support of IGAs in off grid communities
Indicator	→ 27	→ 29	→ 31
	• PRODUSE appliances used by industries, alternative appliances that can be used and energy efficiency measures that can be taken to improve the energy consumption of existing ones	• Improved partnerships and joint research opportunties between European and African researchers	• Reduced GHGs, local pollution and deforestation due to improvement in energy efficiency in industries
Indicator	→ 27	→ 28	→ 30
	• PRODUSE appliances available to on-grid consumers vs off grid consumers to assist with assessment of levels of service expected from RE PRODUSE appliances by off grid consumers		
Indicator	→ 27		
	• Existing business models used to sell PRODUSE appliances and quality issues related to PRODUSE appliances in on grid and off grid markets		
Indicator	→ 27		

#6 MAR: Innovative solutions for priority domestic uses (clean cooking and cold chain)

MAR	Outputs	Outcomes	Impact
	• Innovative cooking device design	• Researchers provided with capabilities for lab and field testing of cooking stoves	• GHGs, local pollution, land degradation and deforestation reduced
Indicator	→ 22, 23, 27	→ 21-26	→ 30, 31
	• New and appropriate modern cooking systems	• Use of modern fuels promoted and its required skills	• Medicines and vaccines in remote areas better preserved
Indicator	22	→ 24, 27	→ N/A
	• Local and low-cost materials used for stove construction	• Sustainable fuel supply chains promoted	• Social conditions of local stakeholders as well as job creation improved
Indicator	→ 22	→ 24	→ 31
	• Technical improvements in fuel processing or fuel production technologies, and the technical and managerial capacities related to these improved processes and production technologies	• Effective and low-cost food preservation promoted	• Drudgery for girls and women reduced and their social power and health conditions (female empowerment) improved

MAR	Outputs	Outcomes	Impact
Indicator	→ 27	→ 27	→ 19, 20
	• Improvements to existing technologies, and new technologies for cold chains, including refrigeration units based on solar or biomass resources, as well as long-term sustainability and management capacities	• Efficient air conditioning promoted	• Food and nutrition security strengthened
Indicator	→ 27	→ 23	→ 30, 31
		• Greenhouse gas (GHG) emissions due to lower power consumption from the grid or diesel generators reduced	• Individual health, and public healthcare improved
Indicator		→ 22, 23	→ 30, 31