



SUWANU EUROPE

Deliverable 2.7

Indicators for successful implementation of SUWANU EUROPE action plans

Funding scheme:	Horizon 2020 – Coordination and Support Action (CSA)		
Project Coordinator:	BIOAZUL		
Start date of the project:	01.01.19	Duration of the project:	30 months
Contractual delivery date:	31.10.2019		
Actual delivery date:	09.06.2020		
Contributing WP:	WP2: Development of general and regional action plans		
Dissemination level:	Public		
Responsible partner:	ECOFILAE		
Version:	02		

The SuWaNu Europe project (Grant Agreement No.: 818088) has received funding from the European union' Horizon 2020 Research and Innovation Programme. The views and opinions expressed in this report does not represent the official position of the European Commission and is entirely the responsibility of the authors.

Contents

1	Executive summary	3
2	Introduction	4
3	General methodology on setting and monitoring SMART indicators	5
	Why indicators?	5
	What is a SMART indicator?	5
4	SUWANU Europe specific methodology on setting and monitoring SMART indicators.....	7
5	Indicators to monitor general and regional action plans.....	9
	Action plan performance indicators	11
6	Examples based on preliminary data	14
7	Conclusion	18

Glossary

EU	European Union
GAP	General Action Plan
GO	General Objective
RAP	Regional Action Plan
RWG	Regional Working Group
SMART	Specific Measurable Achievable Relevant and Time limited
SO	Specific Objective

1 Executive summary

One of the objectives of SUWANU EUROPE project is the definition of action plans with adapted strategies for 8 regions to extend the use of reclaimed water in agriculture. **A pool of SMART indicators has thus been defined to monitor the success to achieve the expected results and objectives.** They are specifically and directly derived from GAP and RAP general objective, specific objectives, results, and actions detailed in D2.3 and D2.6.

Data collection and monitoring will be carried out **from baseline data** by the end of SUWANU EUROPE project to **monitoring update by the trained RWG** after SUWANU EUROPE end.

Indicators needs to be **SMART** to ensure that the RWG could monitor and report after the project ends. Thus **16 common indicators** have been developed and proposed based on the GAP specific objectives and results (see Section 5). **Data need to be collected at regional scale by regional leaders and RWGs.** However, RWGs and regional leaders can develop some additional specific indicators or “adapt” the 16 proposed to be more tailored and specific to their regional context and to the actions planned in RAP, but they need to be SMART indicators.

Some examples of charts, data collection and additional indicators are also provided based on preliminary data.

2 Introduction

One of the objectives of SUWANU EUROPE project is the definition of action plans with adapted strategies to extend the use of reclaimed water in agriculture. These strategies will be defined in 8 target regions as a result of regional diagnosis and of participatory process with different key actors involved in Regional Working Groups (RWGs). It is therefore relevant to set a **monitoring process** which defines **which data shall be collected** in order to compare how well the different interventions are being implemented as well as to determine if the designed strategy is being successful to achieve the expected results and objectives.

The objective of the present document “Indicators for successful implementation of SUWANU EUROPE action plans” is to define, to list and to detail **SMART indicators that could be used to monitor and to assess the implementation of the general (GAP) and regional (RAP) action plans (T2.3 and T2.6)**. Those indicators will be monitored by SUWANU EUROPE regional partners and their RWGs along the project, and then be transferred to RWGs after the project end in order to give them the possibility **to keep SMART monitoring of water reuse for agriculture in their region**.

SUWANU EUROPE project main general objective/goal is ***“To increase the use of reclaimed water in agriculture, resulting in a more resilient agricultural sector to cope with water scarcity and climate change effects.”***

The definition of an action plan is given in Deliverables 2.3 and 2.6 of SUWANU EUROPE and can be summarized as follows: an action plan is a structured set of 1) general goal (Level 1) , 2) specific objectives (Level 2) and 3) results (Level 3) outlining the pathway to successfully implement strategies and actions (Level 4) towards the achievement of the ultimate/general goal. The SUWANU EUROPE GAP (D2.3) includes the key aspects and general guidelines for the 8 SUWANU regions. It is completed by the 8 RAP (specific, 1 per region) (D2.6).

The specific objectives and results from the SUWANU GAP are detailed in D2.3 but also in Table 3 of the present D2.7.

3 General methodology on setting and monitoring SMART indicators

Why indicators?

Indicators role is to inform on project's progress (in our case, action plans) regarding its objectives. Thus, indicators are measures of project's impacts and outcomes monitored :1) during project workflow to **assess project's progress** towards project objectives, but also 2) after project's end to **assess project's success** (Mosse and Sontheimer, 1996¹). Indicators aims to gather information and to minimize reporting burden on each project's partner (time-consuming report writing).

Moreover, elaborating a set of indicators for successful implementation helps not only to assess project's monitoring, but also project's success by giving precise quantifiable goals and objectives.

For each set of indicators, several data must be collected and analysed. For some indicators, initial state must be indicated through a baseline data.

In SUWANU EUROPE the indicators are specifically and directly derived from GAP and RAP general objective, specific objectives, results, and actions detailed in D2.3 and D2.6.

What is a SMART indicator?

SMART² indicator is an acronym standing for Specific, Measurable, Achievable, Realistic and Time-limited indicator. Those characteristics have been described as followed (Bours, 2014):

“Specific: The indicator must be able to be translated into operational terms and made visible. While the outcome/result itself can be broad, the indicator should be narrow and focus on the ‘who’ and ‘what’ of the intervention. Additionally, ‘how’ and ‘where’ the ‘who’ is doing the ‘what’ is important to include in the indicator as it provides the action for the intervention. The data collected clearly and directly relates to the achievement of an objective and not to any other objective

Measurable: An indicator is measurable and clearly defines the measurement such that 2 people would measure it in the same way. For quantitative proportions or percentages this means that both the numerator and the denominator must be clearly defined. For quantitative whole numbers and qualitative data, it means defining each term within the indicator such that there can be no misunderstanding as to the meaning of that indicator. This is critical for ensuring that the data collected by different people at different times are consistent and comparable.

¹ Mosse, R., & Sontheimer, L. E. (1996). Performance monitoring indicators handbook. In World Bank Technical Paper (Vol. 334).

² Bours, 2014, “A good start with S.M.A.R.T. indicators”

Achievable: The system [monitoring and evaluation system and related indicators] identifies what changes are anticipated as a result of the intervention and whether the results are realistic. Attribution requires that changes in the targeted developmental issue can be linked to the intervention.

Realistic: The indicators selected must be realistic in terms of their ability to collect the data with the available resources. Some indicators present major problems for data collection owing to the cost or skills required (e.g. anthropometric surveys, large-scale sample surveys). Being realistic in planning what information can be collected ensures that it will, in fact, be collected. This is an important factor to consider and may lead to compromises on other criteria.

Time limited: The indicator is time-referenced and is thus able to reflect changes. It can be reported at the requested time.”

Within Section 5 of the present D2.7 the indicators have been selected and discussed with all SUWANU EUROPE partners to make sure they are SMART. If SUWANU EUROPE regional partners and RWGs want to add or to replace any indicator (see Section 4) they must first make sure that they are also SMART indicators.

4 SUWANU Europe specific methodology on setting and monitoring SMART indicators

SMART indicators detailed in Section 5 enable to monitor and to assess GAP and RAP implementation. Data collection will be carried out in different times:

- **Baseline data:** indicators' results in May 2021 (Month 29) collected by the SUWANU EUROPE partners and the trained RWG
- Thus, **after SUWANU EUROPE ends, monitoring update** by the trained RWG on voluntary base should be:
 - 2 years (May 2023) - short-mid-term monitoring of the RAP
 - 5 years (May 2026) - long term monitoring of the RAP

The scheme in Figure 1 details the planning.

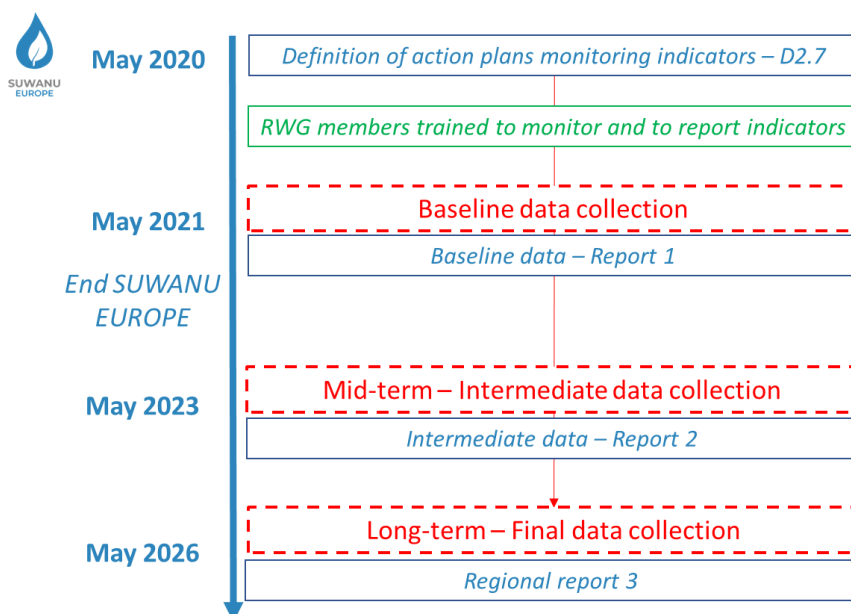


Figure 1 : SUWANU action plan for indicators' strategy, workflow and deadlines

Indicators needs to be:

- **Able to target general objective, specific objectives, results, and planned actions from the GAP and from the RAP**
- **As much as possible common for each of the 8 regions** to enable regions comparison and to sum results to get a general overview/trend at EU scale.
Indicators proposed below in Section 5 are **based on the GAP specific objectives and results BUT they are focusing on regional scale.**
- **Very SMART** (not too many and not too complicated) to ensure that the RWG could monitor and report after the project ends. Therefore, it has been chosen not to add indicators related to “each” of the GAP results (level 3) : that would have led to too

numerous indicators that RWGs could not monitor (not REALISTIC as the “R” of SMART) as the exercise would most likely be too complicated or too expensive for RWGs.³

Thus **16 common indicators** have been developed and proposed **based on the GAP specific objectives and results** (see Section 5). **Data need to be collected at regional scale by regional leaders and RWGs.**

This approach implies a limitation in the methodology. The GAP only covers the first three levels of the action plan, namely general objective (level 1), specific objectives (level 2), and results (level 3). RAP will include a fourth level referred to “steps to implementation” (= actions) which means that specific actions to achieve the objectives and results of the GAP will be developed in each target region according to their specific regional context.

Therefore, this monitoring plan in Section 5 does not set indicators for the fourth level, “steps to implementation”. From a methodological point of view, this limitation does not invalidate the monitoring. GAPs are defined as a common strategy for the 8 regions. Therefore, indicators proposed in Section 5 will help regions to monitor their progress in the implementation of action plans.

However, **RWGs and regional leaders can develop some additional specific indicators or “adapt” the 16 proposed** to be more tailored to their regional context and to the actions planned in RAP, **BUT THEY NEED TO BE SMART INDICATORS**. Examples with some indicators for “steps to implementation” level (level 4) are also provided in Section 6 in order to support those regions that opt for extending the monitoring plan and define a more complete set of indicators covering all levels of the RAP. Each Regional leader and its associated RWG will thus check and evaluate considering their RAP if they need to add additional indicators specific to the region, or to modify those already proposed. Nevertheless, SUWANU EUROPE partners general recommendation is to stay at the proposed level of indicators (in Section 5).

Indicators results will be presented in graphics to show their evolution trend (see Section 6). Some indicators are quantitative (number or %) while other are binary (yes/no) or a choice list. Thus, the graphic representation may not be identical for all the indicators.

³ Indicators “should be few and meaningful [...] no more than a dozen indicators” (Mosse and Sontheimer, 1996).

5 Indicators to monitor general and regional action plans

The Table 1 below detail the proposed SMART indicators to monitor GAP and RAP at regional level.

IDs have been defined for each indicator in Table 1 : “GO” for general transversal indicators referring to SUWANU EUROPE general objective (level 1) and “SO” for indicators referring to SUWANU EUROPE specific objectives (level 2) and/or results (level 3). As there are 6 specific objectives in the GAP then the mentioned numbers are related to the SO number (see SO1, SO2, SO3, SO4, SO5 and SO6 in Table 3).

Table 1: SMART indicators for SUWANU EUROPE GAP and RAP

Indicator ID	SMART indicators	Measure
GO-a	Number of operational and on-going water reuse projects in agriculture: ONLY pilot scale OR demonstration scale OR research purposes	Number
GO -b	Among 0-a: Number of projects that have emerged over the last 2 years (= last reporting period)?	Number
GO -c	Number of operational and on-going water reuse projects in agriculture: all types of projects (including 0a projects + FULL-SCALE projects)	Number
GO -d	Among 0-c: Number of projects that have emerged over the last 2 years?	Number
SO1-a	Regulation framework	Y/N
SO1-b	IF YES in 1-a: Regulation framework enforced in the whole region	1: Fully enforced in the region. 2: Fully enforced in some areas of the region 3: Relatively enforced in the region 4: Relatively enforced in some areas of the region 5: Not enforced
SO1-c	IF YES in 1-a: Scope / Level of the regulation framework?	▪ UE regulation ▪ National regulation ▪ Regional regulation
SO2-a	Administrative and regulatory procedures: Average time to achieve full legal and administrative project authorizations (<u>from</u> the start of building administrative and regulatory folders <u>to</u> the grant of final authorization by local authorities)	Number (Month)

SO2-b	Administrative and regulatory procedures: Average total cost for project leader to achieve full legal and administrative project authorizations (from the start of building administrative and regulatory folders <u>to</u> the grant of final authorization by local authorities)	€
SO3-a	Among 0-d water reuse projects: Average total cost of investment in water reuse projects (financed both by public and private entities) (from reclamation infrastructures to distribution network delivery point to farmers) (not including operational and maintenance cost)	€
SO3-b	Among 3-a € value: Percentage supplied, financed, or subsidized by public entities	% of €
SO3-c	Among 0d water reuse projects: Direct financial support (or incentives) to farmers (direct financial support not included to 3-a)	▪ Yes ▪ Yes but under conditions ▪ No
SO3-d	IF YES in 3c: Average direct financial support to farmers	€/Ha irrigated with reclaimed water
SO4	Regional supervisory board or network for water reuse with representatives of all the stakeholders including farmers or farmers advisers	Y/N
SO5	IF YES in 4: This regional board or network is connected to European network	Y/N
SO6	Based on recent and updated regional survey: % of interviewed people willing to buy and to eat agricultural products irrigated with reclaimed water that respect the EU regulation	%

The above indicators have been elaborated following SMART characteristics:

Table 2: SMART characteristics of SUWANU GAP and RAP indicators

SMART	Details
Specific	Indicators are specific : ▪ To the general objective of SUWANU EUROPE ▪ And to the specific objectives and results of the GAP and the RAP ▪ To planned actions in the RAP
Measurable	Y/N - € value – Number – Defined list
Achievable	Indicators have been selected because of their potential to track and to monitor changes in the region situation that are related to SUWANU EUROPE project, GAP and RAP actions.
Realistic	Indicators seem realistic: based on SUWANU EUROPE deliverables some baseline information is already available for some regions, it shall then be available to all RWGs.
Time limited	Reporting periods for the indicators is defined in Figure 1

Action plan performance indicators

The SMART indicators with SO ID proposed in the Table 1 to monitor GAP at regional level are attached to one specific objective (level 2) from the GAP (D 2.3 – see Table 3). Even if they do not have their “own specific” indicator all results (level 3) from the GAP (D 2.3 – see Table 3) indicator are related to at least one indicator through its specific objective (level 2).

Table 3 : General action plan performance indicators

GAP - Specific Objectives	GAP - Results	Related SO indicator ID
SO1 - The European and national legal framework encourages the use of reclaimed water in agriculture	1.1. National legislation complies with the European legislation regarding wastewater treatment and reuse of reclaimed water.	SO1a SO1b SO1c
	1.2. National legislation unifies the regional policies, avoiding fragmentation.	
	1.3. The legislation allows the use of reclaimed water throughout the year for agricultural irrigation.	
	1.4. Strict regulations among European and National legislative frameworks regarding reclaimed water quality standards are enforced.	
	1.5. The legal framework must facilitate all procedures required for agricultural irrigation with reclaimed water.	
	1.6. Stakeholders participate in legislation discussion at the EU level.	
SO2 - The administrative procedures are adequate for the implementation of reclaimed water for irrigation in agriculture	2.2. Harmonized standards for administrative requirements of water reuse are enforced at national level.	SO2-a SO2-b
	2.3. The bureaucratic procedures to acquire the licence for reuse in agriculture are brief and inexpensive.	
SO3 - There are financial incentives through public and private policy measures to support reclaimed water reuse for irrigation.	3.1. Public administration invests in infrastructure for the treatment and distribution of reclaimed water.	SO3a SO3b SO3c SO3d
	3.2. Public and private stakeholders agree to reduce the cost of energy for the production of reclaimed water.	
	3.3. Public authorities and reclaimed water operators and administration provide direct economic incentives to farmers that use reclaimed water for irrigation.	
	3.4. Subsidies are provided to farmers willing to irrigate their fields with reclaimed water.	
SO4 - Public and private stakeholders invest in research and technology to improve and expand the use of reclaimed water in agriculture.	4.1. The cooperation networks between the public sector are established, and the private sector invests in research to increase water quality, distribution, and overall use of reclaimed water.	SO4
	4.2. A supervisory board, with representatives of all the stakeholders, has been established to expand and monitor the know - how and the technology for reclaimed water.	
	4.3. Farmers are informed and advised about the new water treatment technologies and their application in agriculture.	
SO5 - There is a European network of dissemination of existing results and exchange	5.1. European countries promote international exchange and dialogue to expand the use of reclaimed water.	SO5
	5.2. European based scientists and private companies have a specific network to share and exchange results and practices.	



of best practices regarding the use of reclaimed water.	5.3. Farmer's organizations across Europe communicate effectively and compare their experience with the implementation of reclaimed water for irrigation.	
SO6 - Communities accept agricultural products irrigated with reclaimed water.	6.1. The general public is informed and aware of the benefits regarding the use of reclaimed water in agriculture.	SO6
	6.2. Through awareness and education, the general public accepts and consumes products irrigated with reclaimed water.	
	6.3. The public opinion becomes highly aware of the benefits of water reuse to face water scarcity and protect the environment.	

6 Examples based on preliminary data

In this Section 6 are provided examples based on preliminary data:

- Of charts for **2 indicators** among the 16 (Table 1) **from each of the 8 regions**: a quantitative one (GO-c) and a qualitative one (SO1-a),
- For the **16 indicators** (Table 1) from the **Occitanie region** (France)

2 examples of additional indicators (a quantitative one and a qualitative one) related to and **specific to some planned actions from the Occitanie RAP** are also given in Table 5.

In May 2021 baseline data will be collected for every indicator in every region by regional leader and their RWGs. Here in this Section 6 preliminary data are no baseline data: they are based on the results from a questionnaire sent among SUWANU EUROPE partners in December 2019 for similar indicators (but different and less SMART) to get a preliminary overview. This explains why results are uncompleted here in this Section 6. Preliminary data are thus used here as examples on:

- 1) How to draw relevant chart to compare regions (Figure 2),
- 2) Data that should be collected at regional level (Table 4),
- 3) Proposed additional indicators related to and specific to the planned actions from the RAP (Table 5).

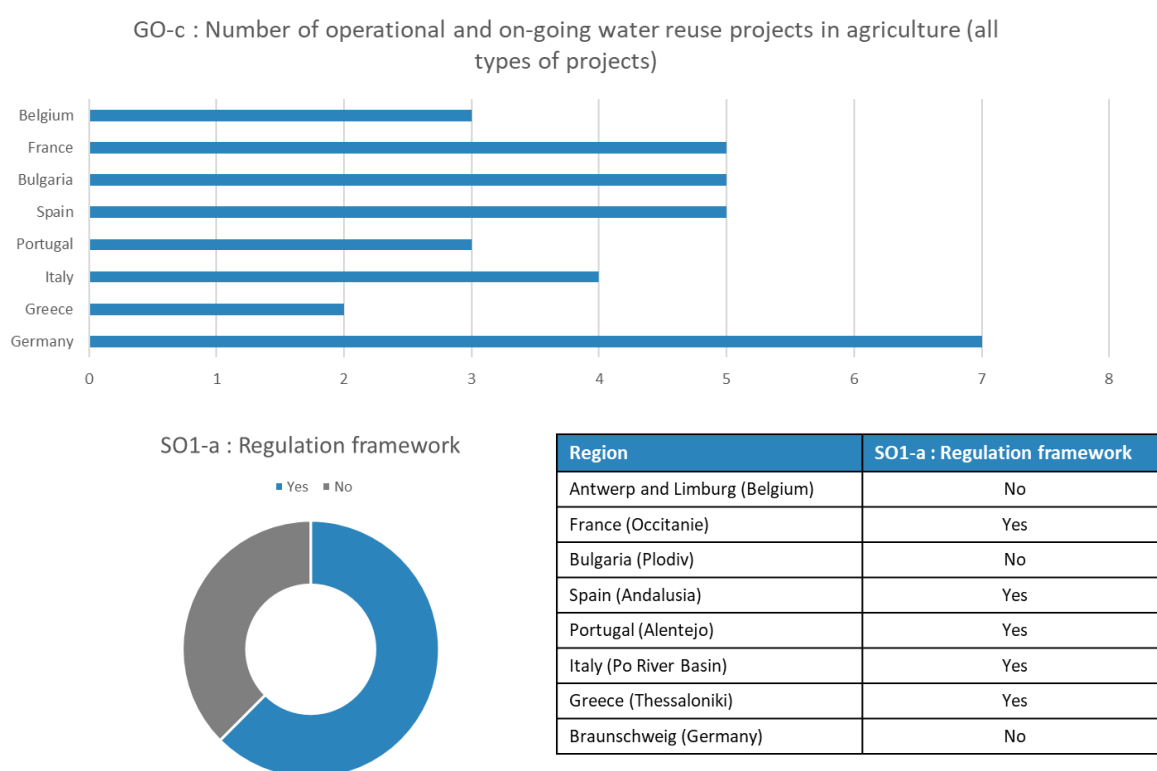


Figure 2: GO-c and SO1-a indicators charts - Example for preliminary data

Table 4: Common indicators from Table 1 - Example for preliminary data from Occitanie region in France (December 2019)

Indicator ID	SMART indicators	Results
GO-a	Number of operational and on-going water reuse projects in agriculture: ONLY pilot scale OR demonstration scale OR research purposes	3
GO -b	Among 0-a: Number of projects that have emerged over the last 2 years (= last reporting period)?	2
GO -c	Number of operational and on-going water reuse projects in agriculture: all types of projects (including 0a projects + FULL-SCALE projects)	5
GO -d	Among 0-c: Number of projects that have emerged over the last 2 years?	3
SO1-a	Regulation framework	Y
SO1-b	IF YES in 1-a: Regulation framework enforced in the whole region	1: Fully enforced in the region.
SO1-c	IF YES in 1-a: Scope / Level of the regulation framework?	National regulation
SO2-a	Administrative and regulatory procedures: Average time to achieve full legal and administrative project authorizations (<u>from</u> the start of building administrative and regulatory folders <u>to</u> the grant of final authorization by local authorities)	6 months
SO2-b	Administrative and regulatory procedures: Average total cost for project leader to achieve full legal and administrative project authorizations (<u>from</u> the start of building administrative and regulatory folders <u>to</u> the grant of final authorization by local authorities)	40 000 €
SO3-a	Among 0-d water reuse projects: Average total cost of investment in water reuse projects	Unknown €

	(financed both by public and private entities) (from reclamation infrastructures to distribution network delivery point to farmers) (not including operational and maintenance cost)	
SO3-b	Among 3-a € value: Percentage supplied, financed, or subsidized by public entities	Unknown %
SO3-c	Among 0d water reuse projects: Direct financial support (or incentives) to farmers (direct financial support not included to 3-a)	No
SO3-d	IF YES in 3c: Average direct financial support to farmers	/
SO4	Regional supervisory board or network for water reuse with representatives of all the stakeholders including farmers or farmers advisers	Yes
SO5	IF YES in 4: This regional board or network is connected to European network	Yes
SO6	Based on recent and updated regional survey: % of interviewed people willing to buy and to eat agricultural products irrigated with reclaimed water that respect the EU regulation	69 % ⁴

⁴ Noury, B et al (2019). Wastewater reuse project's exposure: from non-communication to participatory communication.

Table 5: Example for RAP specific indicators (inspired by Occitanie France case study)

Indicator ID	SMART indicators	Measure
A-a	Launching a study at regional scale to assess water reuse in agriculture potential and opportunities	Yes / No
A-b	Among GO-c: Number of projects where reclaimed water salinity is an issue	Number
A-c	Among A-b: Number of projects where salinity issue was solved	Number

7 Conclusion

16 SMART and common indicators to monitor GAP and RAP have been proposed in this document. Some regional specific indicators can also be developed by regional leaders and RWGs but they need to be SMART.

A **baseline data collection will be carried out by the end of the SUWANU EUROPE** project, and then, after project end, **the RWGs will monitor by themselves the RAP using the same indicators**. It is therefore important that **SUWANU EUROPE regional partners train the RWGs** to carry out this monitoring. It is important that RWGs members understand why and how this monitoring will help them in assessing the performances of all the actions they have implemented.

Results shared at EU scale would also enable regions comparison and give a general trend in EU in the upcoming context of changes in regulation framework and of increase of the market of water reuse in agriculture.