SAMA
CONSULTANCY

GROW
WITH US

GROW
SUSTAINABLY

COMPANY PROFILE

Welcome to

SAMA Consultancy SPRL - Your Hydroponics Consultancy Partner

At SAMA Consultancy, we are on a mission to transform agriculture in the region through innovative and sustainable hydroponic farming practices. We are dedicated to providing expertise and guidance in hydroponics to enable Eastern African farmers to grow more, conserve resources, and secure a brighter future for their communities.

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Our Journey

At the core of SAMA Consultancy staff is a team of agriculture enthusiasts and sustainability advocates with deep roots in Eastern Africa. We recognized the potential of hydroponics in addressing the unique challenges faced by farmers in the region, including limited arable land, water scarcity, and the need for resilient crop production.

Our Mission

Our mission is to empower individuals and communities in Eastern Africa to embrace hydroponics as a viable and eco-friendly agricultural solution. We believe that through hydroponics, we can enhance food security, reduce the environmental impact of farming, and promote economic growth.

What We Offer

SAMA Consultancy offers a comprehensive range of services to support your hydroponic farming endeavors:

1

Consulting Services

Our team of hydroponic experts provides tailored advice and support, guiding you through the entire process of setting up and managing hydroponic systems. We ensure that your venture is optimized for success.

2

Training and Workshops

We conduct hands-on training sessions and workshops designed to equip both beginners and experienced growers with the knowledge and skills needed for productive hydroponic farming.

3

Project Development

For large-scale projects, we assist in project planning, design, and construction, ensuring that your hydroponic farm is efficient and sustainable.

4

Product Sourcing

We help you source the best hydroponic equipment, quality nutrients, and supplies to ensure your system performs at its best.

Why Choose SAMA?

1

Local Expertise

We understand the unique challenges and opportunities in Eastern African agriculture and our team has hands-on experience in the region.

2

Custom Solutions

We work closely with you to develop hydroponic solutions that are tailored to your specific goals and local conditions.

3

Sustainability

SAMA Consultancy is committed to sustainable farming practices that reduce environmental impact and contribute to the long-term well-being of East African communities.

4

Ongoing Support

Our commitment to your success extends beyond initial consultations; we provide continuous support and guidance to ensure your hydroponic farm thrives.

Our Systems

We sell and install complete hydroponic vegetable systems (vertical and horizontal) to suit the needs of every individual client partner

1 Vertical Food Crop Systems

This type of system makes the most use of your space. You can place it on a rooftop, in a greenhouse, or anywhere else where there is enough light, and it has access to water.

What it is for

It is the ideal solution for small plants like lettuce, spinach, kale, cabbage, and aromatic plants. This system uses water in a very efficient way and requires little maintenance.

You can use different levels of automation like adding our RDI System or a pump and reduce the work.

Performance

On a standard system using only 9 square meters, you can accommodate 300 crops of seedlings, and you can produce 150 kg of fresh lettuce in 55 days. For this type of crop, the system will use only 10.5 litres of water and 21 grams of nutrients/day.

Design and installation

Depending on the size, our vertical systems can be produced and installed in a matter of days. Installed correctly and properly maintained, this system has a minimum of five years of shelf life.

Multi-Storey Gardens

Depending on the type of vegetable or fruit, our multi-storey gardens can hold over 100 vegetable seedlings occupying a relatively small space (140-180 cm in diameter). You can have as many as eight layers for your multi-storey garden.

2 Horizontal Food Crop Systems

These systems are designed to support tall crops. Crops grown under hydroponics are insulated from soil-borne diseases by the use of inert media. This eliminates chances of crop failure while substantially reducing costs incurred on pesticides and weeding. This system requires more horizontal and vertical space.

What it is for

It is the best solution for crops like tomatoes, cucumber, capsicum, or different varieties of kale. This system uses water in a very efficient way and requires very little maintenance. You can use different levels of automation, like adding our RDI System or a pump to reduce the amount of work.

Performance

In 120 square meters, you can plant 500 stems of tomatoes. In this setup you that can produce up to 9.000 kg of tomatoes in 9 months. This crop will use less than 150 litres of water and 143 grams of nutrients per day.

Design and installation

Depending on the size, our horizontal systems can be produced and installed in a matter of days. Installed correctly and properly maintained, this type of system has a minimum of five years of shelf life.

Greenhouses

Both systems, vertical and horizontal, can be protected by greenhouses. We offer custom solutions for greenhouses to fit any requirements. We can build the structure of your greenhouse from timber or metal, and we can cover it with heavy-duty polyethylene or shade/pest net.

3 Hydroponics Fodder Systems

Affordable Healthy Food for Your Livestock

What it is

The hydroponic fodder is young tender grass grown from cereal grain, mostly barley. In essence, it replaces grains like dairy meal, pig feed, and poultry feed concentrates. Globally, hydroponic fodder is considered to be the best livestock feed. This system is a temperature and humidity-controlled growing room that is designed for sprouting grains

How it works

A selection of grains is put into treated trays without soil and sprayed with a nutrient-rich water solution at predetermined intervals. The temperature and humidity inside the hydroponic fodder system are controlled using only a hydro-net and a hydro-cloth, to ensure higher growth and the best nutritional value possible.

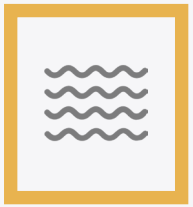
There is no need for electricity in the growing process. You only need a reliable source of potable water.

After only seven days, the fodder is removed from the tray and can be fed to the animal. The animal eats everything (i.e. roots, leaves, and nuts); therefore, the hydroponic fodder system is waste-free, 100% sustainable, and cost-effective.

Why should I get it?

Our patented fodder system is very efficient and doesn't use electricity.

Additionally, we use locally available materials to control the temperature and humidity of the room. By the use of our patented photo-chemically treated trays, we can supply an array of hydroponic fodder systems that can work in hot weather and avoid fungus and other pathogens. Due to our revolutionizing photo-chemically treating trays, our fodder systems are four times cheaper since there is no need for electricity to cool the system.



Low water usage

The hydroponic system requires a fraction of the water usage of conventional farming while still supplying high-quality stock feed. It takes between 800ml to 1 litre of water to produce one kilogram of fodder as compared with 80 – 90 litres of water to grow a kilogram of green grass.

Marginal use of land

This type of fodder production provides substantial ecological and economic advantages (For example research shows that fodder grown in a 9m x 6m shed can feed (supplement) daily, the same amount of cattle that graze on 1200 acres of pasture)

Cost-effective

Our trials so far in Eastern Africa in Kenya have concluded that the production of hydroponic fodder is exceptionally cost-effective and financially viable. A system measuring 4m by 3m by 3 m high can produce 170 kg of hydroponics fodder dairy this amount of fodder can feed 14 heads of cattle at a cost of less than USD 10.00.

Nutrition value

Hydroponic fodder is a highly effective, exceptionally nutritious feed, that produces the highest protein, and energy and is very rich in vitamins such as B-carotene, trace elements, hormones, growth factors, and enzymes.

Reduced labour

This process of growing cattle fodder requires minimal working hours per day. Depending on the size of the shed in use, research has shown that as little as 1 hour per day is needed to maintain and produce hydroponic fodder.

Constant Food supply

Farmers using this type of fodder production are guaranteed a consistent supply of quality fodder 365 days of the year irrespective of rain or sunshine.

What's included in the system?

We sell tailored hydroponic fodder packages that suit any need. We provide the services of designing, the materials and building the Hydroponics fodder production unit.

Hydroponics housing unit

This is a custom-built structure whose role is to provide a temperature-controlled environment for the growing of fodder. It is built using hydroponics cloth, and timber and has a concrete floor. Inside the housing, there is shelving upon which the trays on which fodder is grown are placed. We provide the shade netting for the structure. Locally available materials can be used to reduce costs.

Hydroponic trays

We have a patented process that produces treated trays that prevent the development of different types of fungus. Our most popular size is 110x30x5 cm, but we can also build in different sizes to match your systems.

Barley seeds

The most productive seed for growing hydroponics fodder is barley. However, other cereals like wheat and sorghum can be used for production. We are able to supply barley to our farmers throughout Eastern Africa.

Nutrients

These are specially formulated liquid mineral nutrients required for the growth of the fodder. They help in making the fodder more nutritious. We also supply the hydroponics nutrients needed for growing the fodder.

Our hydroponics fodder systems production units.

We can design and install any fodder system.

Unit SAMA36

Measurements	Number of trays	Fodder produced *(kg per day)*	Water needed *(litres per kg)*	This unit can feed *(Animals per day)*			
4m x 3m x 3m	70	140	1.5	10 *(cows)*	70 *(pigs)*	47 *(sheep & goats)*	1,610 *(birds)*

Unit SAMA45

Measurements	Number of trays	Fodder produced *(kg per day)*	Water needed *(litres per kg)*	This unit can feed *(Animals per day)*			
5m x 3m x 3m	120	238	1.5	17 *(cows)*	119 *(pigs)*	79 *(sheep & goats)*	2,760 *(birds)*

Unit SAMA90

Measurements	Number of trays	Fodder produced *(kg per day)*	Water needed *(litres per kg)*	This unit can feed *(Animals per day)*			
5m x 6m x 3m	180	350	1.5	25 *(cows)*	175 *(pigs)*	167 *(sheep & goats)*	4,140 *(birds)*

Unit SAMA105

Measurements	Number of trays	Fodder produced *(kg per day)*	Water needed *(litres per kg)*	This unit can feed *(Animals per day)*			
7m x 5m x 3m	230	448	1.5	32 *(cows)*	224 *(pigs)*	149 *(sheep & goats)*	5,290 *(birds)*

Unit SAMA240

Measurements	Number of trays	Fodder produced *(kg per day)*	Water needed *(litres per kg)*	This unit can feed *(Animals per day)*			
8m x 10m x 3m	600	1,190	1.5	85 *(cows)*	595 *(pigs)*	396 *(sheep & goats)*	13,800 *(birds)*

Unit SAMA369

Measurements	Number of trays	Fodder produced *(kg per day)*	Water needed *(litres per kg)*	This unit can feed *(Animals per day)*			
12m x 10m x 3m	750	1,498	1.5	107 *(cows)*	749 *(pigs)*	499 *(sheep & goats)*	17,250 *(birds)*

Unit SAMA540

Measurements	Number of trays	Fodder produced *(kg per day)*	Water needed *(litres per kg)*	This unit can feed *(Animals per day)*			
18m x 10m x 3m	1,150	2,296	1.5	1,150 *(cows)*	1,198 *(pigs)*	765 *(sheep & goats)*	26,450 *(birds)*

Unit SAMA660

Measurements	Number of trays	Fodder produced *(kg per day)*	Water needed *(litres per kg)*	This unit can feed *(Animals per day)*			
22m x 10m x 3m	1600	3,192	1.5	228 *(cows)*	1,596 *(pigs)*	1,064 *(sheep & goats)*	36,800 *(birds)*

Quality Assurance & Risk Management Plan

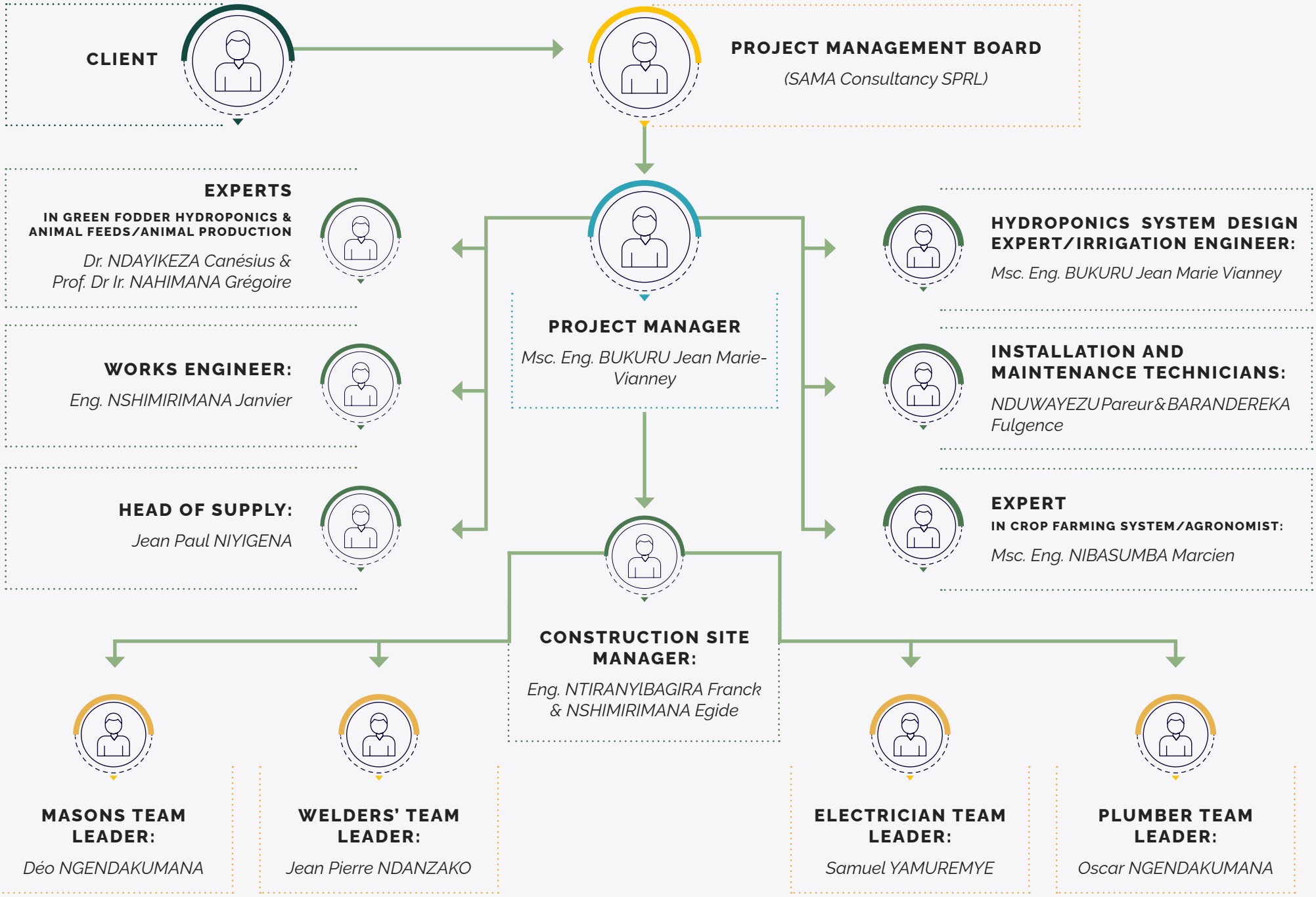
The objective of the quality assurance and risk management plan is to define the processes, plans and metrics that shall apply throughout projects undertaken by SAMA Consultancy SPRL in the years 2023 - 2025 in order to monitor the activities; to identify and eliminate potential risks; and to ensure the successful execution of its project. Deliverable review procedures and reporting timelines are also defined to guarantee the quality aspired for. These guidelines shall apply to all work packages.

Quality Assurance Action Plan

The quality assurance action plan addresses the establishment of:

I. an operational structure;
II. processes for monitoring of activities and their results; and
III. mitigation strategies of potential risks.

We have described in detail SAMA Consultancy SPRL's general project organization and management structure below. Here we first give a brief overview followed by elaboration on the operational processes and assessment of results along its main lines of center activities (referred to as *modules* in the organogram below


CLIENT
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(SAMA Consultancy SPRL)
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PROJECT MANAGER
Msc. Eng. BUKURU Jean Marie-Vianney
HYDROPONICS SYSTEM DESIGN EXPERT/IRRIGATION ENGINEER:
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Eng. NSHIMIRIMANA Janvier
INSTALLATION AND MAINTENANCE TECHNICIANS:
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MASONS TEAM LEADER:
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WELDERS' TEAM LEADER:
Jean Pierre NDANZAKO
ELECTRICIAN TEAM LEADER:
Samuel YAMUREMYE
PLUMBER TEAM LEADER:
Oscar NGENDAKUMANA

Operational Structure(s) and Processes

The main driving body of the center's activities is the *Project Management Board* team. It is composed of a *Project Supervisory Board* (that has representation from the client partner); the *Project Office* (seconded from SAMA Consultancy's administrative and finance departments); the *Project Manager* designate; and the *Lead Scientist(s)*. In order to ensure appropriate involvement and communication channels, all *project implementation modules* are represented through their team leaders designate.

Project Management Board meetings are organized weekly. During the meetings, each *project implementation module* leader (or deputy in his absence) presents the status of ongoing activitiesand the plans for future ones. The *Project Management Board* members ensure that those activities are towards objectives described in the specific project's *terms of reference* or *project contract*. The *Project Manager* is responsible for monitoring and meeting the metrics (Table 2 below); the milestones; preparing the deliverables; and managing potential risks (Table 3).

Each *project implementation module* leader submits project internal weekly reports to the *Project Manager*. The reports include:

I. description of accomplishments along the tasks assigned to the particular module;
II. issues that are being observed;
III. recommendation for the improvement of the operations; and
IV. consumed effort during the reporting period.

Issues that cannot be resolved at the *project implementation module* such as insufficient staff, consistent under-performance of personnel, imminent dangers for the success ofthe project, etc., are brought up to the *Project Supervisory Board*. The project manager and the project office analyze the consumed effort and in the case of discrepancies the issue is promptly escalated to the *Project Management Board*.

In the following sections, we elaborate on some of the main procedures that have been established to ensure the success of projects to be undertaken by SAMA Consultancy SPRL during the years 2023 – 2025.

Project Implementation Module Review Process

Every *project implementation module* has a designated person responsible for its preparation. The rest of the staff with effort in the given *project implementation module* provide input to the leader for preparation of the document. The draft document is reviewed by at least two different senior SAMA Consultancy staff who have little or no effort in the given *project implementation module* while having related competency.

The review process is as follows:

Project Implementation Module leaders collect material from their respective staff partners and provide the first draft for review within an agreed timeframe before submission deadline;

The iterative **reviewing** process continues within the agreed timeframe;

The second draft is submitted to the *Project Management Board* **two weeks** before the submission deadline;

Comments are addressed and the final version is ready **1 week** before the submission deadline. The last week is used for final formatting changes and the document is submitted to the client partner.

Important issues with deliverable preparation and submission are discussed within or raised to the *Project Management Board*, if needed.

Periodic Reports and Milestones

In addition to the main deliverables, each project produces the following outcomes following outcomes:

I. Weekly reports - internal
II. Monthly reports – to be submitted to the *Project Supervisory Board*
III. Financial reports – internal, twice per year
IV. Milestones

Weekly reports are submitted by each *Project Implementation Module* leader and serve as a base for deliverables as well as monthly reports.

Monthly reports are prepared according to the same process for the deliverables described above.

Financial reports are prepared by the Project Office. The bi-annual reports are used for internal monitoring of effort expenditure.

Milestones have clearly identified due dates in the project's *terms of reference* or *project contract* and responsible personnel. When a milestone has been reached, the personnel responsible needs to inform the *Project Supervisory Board* and provide sufficient documentation that proves that the milestone has been reached. This documentation will subsequently be included in the next periodic report.

User Engagement

User engagement is an important but challenging task. In order to ensure success SAMA Consultancy has:

I. defined a list of recommended actions to follow as means for interactions and stimulating activity with the communities; and
II. provided a rich set of tools for communication and engagement including discussion forums. The action lists and tools selection will be updated and expanded if necessary.

The *Project Manager* organizes regular meetings with the *Project Implementation Module* leaders during which the latter present the current activities in the module, levels of engagement, future planned activities, etc. The "*health*" of the module is assessed and, if necessary, alternative engagement actions are taken.

Training

Quality assurance in the training activities requires success in:

I. Understanding the needs of the community;
II. Development of relevant training material to address those needs;
III. Establishment of wide dissemination channels with the wide community;
IV. Delivery of a quality training program

To understand the needs, SAMA Consultancy will survey the user base of the project and update its knowledge resource center, and customize its training materials accordingly.

We have compiled a database of contacts and dissemination channels to be used for advertisement of our training (as well as promotion) activities (internal). The database includes a range of organizations that represent the broad user communities in projects previously undertaken by SAMA Consultancy or its external consultants.

Assessment of the success of the training events is done via a template for standardized surveys with slight modifications for each event.

Dissemination and Outreach

Adequate dissemination of the results and outreach to the communities is of vital importance. The process for ensuring success includes:

Compiling a database of dissemination channels to other organizations

- ☐ Each channel has a designated contact point both from SAMA Consultancy's side and the client and from the client partner organization's side.

Social media strategy:

- ☐ Establishment of selected channels (*Twitter*, *LinkedIn*, *Facebook*). Putting in place an automated system for submission of newly addedwebsite content to those channels and
- ☐ A dedicated person is responsible for monitoring the website content and the status of the social media channel engagement anddevelopment.

Web content

- ☐ Web content creation is divided into several topical categories, in general, corresponding to the core modules of each project. The *Lead Scientist* and the *Project Manager* are responsible for planning what content should be created in what given category; assigning people to create it; monitoring the execution; and
- ☐ Web content addition is overseen by SAMA Consultancy's web curator who is also responsible for monitoring of its social media channel activities.

Promotional material

- ☐ promotion material (flyers, posters, roll-up) shall be created and distributed to the client partner's target audience.

Success metrics and KPIs

Achievement of scientific excellence and impact are the core goals of SAMA Consultancy and as such they underlie the performance indicators that will be used to monitor the success of each project. Three pillars form the basis of our approach for achieving this excellence and impact

To assess the impact of the projects, *Key Performance Indicators* (KPIs) will be defined, monitored and reported in the management reports.

A **Excellence in software**

B **Excellence in usability**

C **Excellence in consultancy**

Risk Management

Each project is unique and has its own complexities which carries risks not only associated with the execution of the project but also ones that are related to achieving the ultimate goal of a sustainable project. SAMA Consultancy will put in place methodologies for monitoring, analysis, and action plans regarding those risks and potential risks,both for the execution of the project and the longer-term success of the completed project as follows:

Project Managers are responsible for continuously monitoring the progress along the objectives in their work packages. The monitoring relies on sufficient communication with other corresponding *project implementation module* leaders. Identified issues are brought up at the *Project Management Board* meeting.

1

During *Project Management Board* meetings, the issues are brought up, and their scope, severity of impact, priority for resolving and suggested action plan are discussed. If the risk concerns a single *project implementation module*, its leader will be in charge of executing actions, as agreed by the board. If the scope covers more than a single work package, leaders of all affected ones are required to implement coordinated efforts and the necessary actions for resolving them.

2

In case of conflicts, the issues are raised to the *Project Management Board* and dealt with according to the conflict resolution strategy, as outlined in SAMA Consultancy's "*Management Plan*".

3

Risks with high rating (= Likelihood x Impact), are noted as "*high-risk factors*" and are given special attention for monitoring and implementation of preventive or counteractive measures.

4

Risks will be evaluated at all regular reporting periods.

5

The risk management plan thus ensures that risks are identified, and brought to the attention of concerned personnel and countermeasures are put in place. Close interactions between *project implementation module* leaders, as well as at the higher management level of the *Project Management Board*, will guarantee that mitigation strategies are executed in due time. Monitoring and planning are supported by the roadmap (based on the *description of work*) of milestones and deliverables, as well as the internal periodic reporting. SAMA Consultancy will also set up a database for tracking issues that have arisen and the actions taken and their outcome.

Cultivating innovation from root to fruition: Hydroponics, where nature and technology embrace to redefine sustainable farming.

Contact us today to explore the potential of hydroponic farming with SAMA Consultancy.

Contact us.

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Monday – Friday:
08:30 – 17:00

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