

Annual Report Horticulture Hub Niger 2021 – 2022



Alongside the river, rive gauche

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Preface

In 2018, UASTM and Synergos Communication worked on a university-affiliated incubator. The desire was to do more in the area of agriculture and entrepreneurship. The word agripreneur was dropped (inspired by Akinwuma Adesina, President of the African Development Bank). We developed it further and gave it content: guiding people to become entrepreneurs somewhere in the value chain of agriculture and horticulture. In other words: from farmer, supplier of agricultural products and irrigation equipment to marketing, (inter)national trade and sales. Together with aQysta, we started brainstorming about cooperation at the end of 2019. Discussions with RVO gave an increasingly clear direction for a project in which we could combine various ingredients: horticulture, knowledge transfer, promoting entrepreneurship, creating more opportunities for women, combining Dutch technology and knowledge with local knowledge and the Barsha pump; all with the aim of helping Nigerien farmers move forward and offering a solution to the problem of huge unemployment in Niger. There were already intensive contacts with AgriProfocus, and Holland Greentech (HGT) was recruited in the Netherlands. Rivulis joined via HGT. And the consortium was born. Early in 2020, we started working on the plan for the Horti Hub Niger. This was no easy task and many different versions were written. I would like to mention Elena Bindels of RVO, who guided us through this difficult process.

June 2021 I was walking through Bordeaux, it was holiday and I had promised my wife not to answer the phone. Unless Elena called. And so it happened. She still had some questions. After answering them, the last obstacle was gone. On 21 July 2021, the decision to grant the subsidy arrived. A few weeks later, HortiHub Niger was a fact.

We are pleased and proud to present our first annual report.

On behalf of the consortium,
Baud Schoenmaeckers,
Project leader

1: After the inception phase the start



First Kick off meeting at the Dutch Embassy, November 23, 2021

After the award, it took some searching; where to start with this project that has so many sides, so many aspects that need to be taken into account? In order to set up the structure, numerous discussions were held, both in Niamey with local partners and future participants, and with third parties. Farmers were approached along the river to ask if they wanted to participate in this project, if they had enough land and experience to become lead farmers. Most of them were eager to participate. A few passed the selection criteria drawn up later.

The inception phase was used to lay the first bricks of the project's foundation. From January 2022, the 'real metres' were made. AgriProfocus became Agrifocus (in the project referred to as Partners for Innovation (PFI)) and hired a local coordinator for the HortiHub, Idrissa Guisso Djibril. Also two Field Managers were hired, Ahmed Ibrahim Ali and Harouna Abdou. Holland Greentech hired a local representative, Hadja Mamadou. Together they form the executive HortiHub team. Synergos Communicatie engaged local communication specialist Yacouba Abdou Doudou who developed a website and logo. The HortiHub team worked on refining and expanding the right criteria for lead farmers and started the search for them. By the end of June, twelve lead farmers had been identified, two of whom were women. We would have preferred more women, but they simply could not be found. In July, criteria were drawn up for the agripreneurs and in August, recruitment at various universities began.

So after this eventful first year it is time to evaluate on what went well and what not. To what extent were targets reached and activities organized? Is the budget spent as planned? Does the business case work as foreseen, or is it too early to say something about that? What are the biggest challenges? What needs to be changed or adapted? How did the cooperation between the various cluster members go? And what lessons can be learned for Year 2? And yes, A few goals for Year 1 could not be achieved yet.

1.1 Objectives in short

Just as a reminder, hereby the objectives of the project in short.

By bringing Dutch best practices, know-how and technology into Niger, which we integrate as much as possible with local knowledge, HortiHub Niger aims to help increase horticultural productivity and climate resilience for local food and nutrition security and encourage youth employment by promoting economic perspective for youth in horticulture. Through the HortiHub Niger the cluster wants to train over 175 young aspiring agricultural entrepreneurs of whom at least 85 are woman (agripreneurs) and 325 vegetable farmers. The HortiHub will help farmers improve their business operations by trainings, means of new techniques and knowledge transfer, focussing on five horticulture crops (tomatoes, hot peppers, onions, cabbages, eggplants).

This will foster:

- a stronger agripreneurship educational ecosystem
- improved knowledge and collaboration among current and future vegetable farmers
- increased awareness regarding Dutch horti solutions (inputs, irrigation, agritech, know-how) among farmers and
- an assessment of the sales market and a network for the four Dutch cluster partners.

In the end, the cluster aims to contribute to increased local vegetable production in amount and quality, more employment opportunities by more agribusiness, better nutrition and food safety, and a bigger market for Dutch enterprises that contribute to the horticulture solutions (e.g. via quality inputs and technology). If we translate to the SDG's we can state

1.2 The impact cluster and the SDG's

The impact cluster also strives to contribute to the fulfilment of the Sustainable Development Goals. At least six SDGs can be contributed to

- SDG 02 | Zero Hunger: We guide the local community in improving the local production of vegetables, using innovations and sustainable solutions;
- SDG 03 | Good Health and Well-being: The aim of the impact cluster is to increase the availability of fresh, healthy and locally produced food in Niger;
- SDG 04 | Quality education: The aim of the impact cluster is to transfer knowledge of horticultural production and technology through its trainings;
- SDG 08 | Decent Work and Economic Growth: Encouraging work opportunities and involvement of the local community should promote economic growth;
- SDG 11 | Sustainable Cities and Communities: The impact cluster stimulates local and sustainable production through Dutch technology and knowledge transfer;
- SDG 17 | Partnerships for the goals: Partnerships between the private and public sector are key for success. By working together, we can accelerate the transition to more sustainable horticulture and increased food safety and food security in Niger.

1.3 Some highlight and events

Much has happened in the past year. The most important highlights are listed below.

- 21 July 2021: Decision, grant award
- 23 November 2021: first Kick-off meeting at the Embassy in Niamey;
- January 2022: PFI puts out the advertisement widely for the various employees - the coordinator and two field managers;
 - The advertisement appears in various media and specialised channels;
 - More than 70 people responded.
- Late January - early March: various meetings with partners individually and collectively.
 - Several reports were made of these meetings;

- The importance of the meetings was (also) that we were able to make a first translation of the theoretical project proposal into practice. And, as expected, this is more difficult than described on paper in the original plan;
- 22 February 2022: second kick-off meeting at Agrifocus
 - With representatives from all partners and various guests.
 - 34 participants were present, 26 of whom were outsiders
 - Local press present, both national and Bonferay
 - Many questions and suggestions from the field
 - Presentation of website and logo
 - Official launch of coordination team (Idrissa, Ali, Bawa. Hadja will be added later)
- 8 April 2022: Positioning session with the communications team of RVO and all HortiHub partners.
 - Based on the meeting and the input of all participants, RVO drew up a communication strategy;
- 21 June 2022: various pieces of furniture are transported from the Netherlands to Niamey, among other things for the purpose of furnishing the physical Hub itself;
- 24 June 2022: Contact workshop with Lead Farmers;
- July 7, 2022: coordination team shares the overview they made of all the needs of the lead farmers; start ordering seeds, fertilizer, irrigation.
 - Beginning of August, the first kilos of seeds are being sent from the Netherlands
- 1 August 2022: Selection of agripreneurs has started;
- 17 and 18 August: meeting of all team members on site including the project leader.
 - Annual plan 2 drawn up
- 29 August 2022: Completion of annual report & Year plan 2 and submission to RVO

2: Activities, milestones and results

In Year 1, a number of important milestones were achieved, and activities implemented. Please find an overview below:

1. Delivery of the market study
2. Criteria for selection of lead farmers
3. Selection of lead farmers
4. Criteria for selection of agripreneurs and the selection

2.1 Delivery of the market study

One of the first things worked on is the market study. This is a reference study, a zero situation, necessary to know where we want to go. It shows the situation of horticulture in the Niamey region. The study favoured an analysis by species so that physical, economic and organisational factors could be better taken into account. The study uses a number of indicators for the five HortiHub products - onions, tomatoes, aubergine, cabbage and red pepper. In general, it can be said that vegetable cultivation is the core of horticultural activities in the Niamey region. But: the study also shows that the area of available horticultural land in the Niamey region is far from meeting the consumption needs of the growing population of the expanding city.

One of the conclusions is that through the study, new questions arose. Therefore, an extension of the study with some new aspects is planned for Year 2 (see Year Plan 2).

2.1.1 Indicators and some conclusions

A. Land ownership. 80% of farmers inherit their land. Due to urbanisation and increasing demand for more vegetables and greater diversity, more people see opportunities

in growing vegetables and more and more people borrow money to buy land or rent (lease) it.

Outside the study: In the process of forming the right criteria and the final selection, this aspect took a lot of time because it has to be prevented through two ways: the lead farmer has to sign a contract that the owner cannot expropriate during the project. Sealed by the mayor.

The other way is that the owner himself has to sign a letter that he is committed to the project. If the owner refuses, another lead farmer is sought. This also has the consequence that the lead farmer will do his best towards the owner.

B. Cultivation systems. Certified seed is used most often. This creates inequality because not all growers have access to hybrid seeds and seeds that are more resistant to the changing climate conditions, for example. As a result, not every farmer can produce all year round. Costs are 3 to 4 times higher than non-hybrids. Hybrid varieties are species that have been crossed. With different disease tolerance, heat tolerance etc. 5 grams of seed for tomatoes cost 600 francs, 3250 CFA for hybrid varieties. In the period between November and the end of February all products can be sown and harvested. After February it gets too hot.

Hybrid seeds are available from Sahelia Technisem as the main (and often the only) supplier.

C: Fertiliser and pesticides The study found that the use of fertilisers and phytosanitary products is strongly dominated at the expense of organic products. Farmers tend to apply these inputs a lot, with all the associated health risks, increased pressure on the environment and a waste of the often limited cultivation budget; the inputs are expensive. A lot of manure, a lot of yield is often thought. But this is temporary because the soil is being exhausted.

The use of organic products is recommended, but the preparation takes a lot; you have to count two weeks to make compost. The farmer says, why wait two weeks? Fertiliser can be used immediately

D: Irrigation system The study distinguishes three systems: the river, boreholes and some semi-permanent ponds. Depending on their individual possibilities, gardeners diversify to compensate for shortages in the dry periods of the year. For water collection and distribution, gardeners often resort to motor pumps with hoses/pipes. The study makes it unequivocally clear that the market gardeners do not have access to technological innovations in the field of irrigation systems. However, there is a potential of surface and groundwater.

E: Sorts. The analysis of vegetable cultivation has shown that tomatoes, peppers, onions, aubergines and cabbages are the main fruit vegetables grown in the areas studied. As regards leafy vegetables, lettuce is by far the most important crop. In this sense, the choice of these crops as a subject for the Horticulture Hub is a correct one.

F: The market: trade. The study went beyond analysing vegetable cultivation, the sector and producers. Attention has also been paid to traders, processors and final consumers. This shows that the market for horticultural products is developing as an oligopoly, i.e. there are a relatively small number of wholesalers who dominate and control the market, compared to a multitude of horticultural producers. This situation gives the traders a power to influence the market, especially in setting the prices of horticultural products.

From the project we are looking at how the farmers can be better organised. Now it is the wholesalers who pay the producer. The producer is becoming more and more dependent and yields are decreasing. Strategies are being developed on how the farmers can get a better position in this.

G: The market: transformation. Most of the processing of the horticultural produce is done by women. But here too, it is the traders who determine the market and the prices; they stand between the producers and the women processors. The result is that few women processors buy directly from the farmers and the price is higher. An example: a box of 40 kilos of tomatoes costs 3000 CFA. For the same box, the processor must pay 7500 CFA on the

market. This is an undesirable situation that will be addressed by the project.

F: Consumer needs. The study shows that the area of available horticultural land in the Niamey region is far from meeting the consumption needs of the growing population of the expanding city.

2.1.2 Recommendations

The study revealed a number of weaknesses and threats in the horticultural sector. For that reason, a number of recommendations were formulated. Many of them are part of the project. Other will be looked at to incorporate. Some of the recommendations will be looked at in the coming months (see also the Yearplan2).

Recommendations regarding production and producers:

More and better training of farmers so that they can better identify which (hybrid) quality seeds and seed varieties can be used, which appropriate phytosanitary products and fertilizers are suitable;

- Strengthening the capacities of producers in terms of production planning, making an exploitation calculation and drawing up protocols to better manage the crop;
- Strengthening the cooperation between economic actors in the same link (producers) and the relationship between the different links (producers, intermediaries, wholesalers, processing sector)
- The need to develop a strong policy for the valorisation of local markets; more knowledge transfer and exchange
- Development of the value chain.

Recommendations regarding processing

- Strengthening the capacity of processors regarding processing procedures
- Supporting processors by purchasing quality equipment
- Strengthening the organisational level of the processors
- Breaking the dependency on packaging; imported products sell better because of their attractive packaging, not because of their higher quality
- The possibility of subsidising the purchase of processing machines and related equipment;
- A strong policy for upgrading locally processed products;
- Facilitation of certification of processed products.

Recommendations concerning commercialisation

- Taking more and better account of the requirements of all categories of customers (from individual customers to intermediaries and sellers);
- Combating unfair competition resulting from the current way of working with local traders
- Raising awareness of the benefits of trading in food products
- Training in storage techniques for horticultural products
- Developing a policy to encourage traders to invest – and other parties with interest in horticulture

Recommendations in relation to consumption

- Strengthening the organisational level of local farmers so that they can play a greater role in the process
- Raising public awareness of the benefits of consuming local products
- Strengthening purchasing power
- Developing a price control policy

2.2 Lead farmers – the process, the selection

The first line of the project is to ensure that Nigerien farmers and their families produce better, more and/or differently in order to build a better existence. We do this by transferring knowledge from the Netherlands, which we integrate as much as possible with local knowledge, by offering technology and other production methods, seeds and other inputs and techniques. The way in which we put this into practice is through the concept of the lead farmer as put forward by Holland Greentech.

It was not easy to find out whether farmers would be interested, or whether it was easy to recruit them. Most farmers were willing to participate. But some farmers were reluctant and doubtful. The reason was that they had already participated in projects several times. In some cases, the project had never started. In a few cases, land had even been made available and nothing had been done with it.

The HortiHub team did everything in its power to eliminate this distrust. Therefore, it is of utmost importance that farmers receive seeds soon. To be able to start in any case. Other materials are on order, but it takes a long time before they are available in Niger.

The process

- ✓ In February and March, 400 sites were surveyed. These are many, but Niamey has four large basins, both along the river and in the areas far beyond. There are numerous communities in these basins. In this phase, we only looked and made a short description of what was seen;
- ✓ On the basis of a first selection, 140 sites were discarded. Of the 260 remaining sites, a more detailed study was made (on the basis of looking). Another 210 sites were excluded for various reasons. Some of the 50 remaining sites were discussed with their owners. After this, 19 sites remained.
- ✓ Intensive talks were held with these 19 growers. Of these, 12 remained and agreements were made with them to be Lead Farmer. Two of them are women. This process took place in the period April to June inclusive;
- ✓ During this period, work was simultaneously carried out on the criteria. These were drawn up partly based on the knowledge gained during the trips and interviews.

Some criteria

Not so much a criterion, but a wish of the team to take growers who are not under the influence of the chefs de la commune. Six of the selected farmers said they were very honoured and happy to take part in the project. They said that they are often not approached because they are not part of the chef's circuit. A good choice of the HortiHub team, because the chef's choice is not always the best choice for farmers. Of course, the HortiHub must find a good way of dealing with this. We must ensure that this choice does not turn against us and that the lead farmers are not inconvenienced.

The producers must:

- Have a farm of about 500m² for horticulture;
- Be an inhabitant of the Niamey region
- Have at least 5 years' experience in the field of peri-urban horticultural production in one of the five sectors (products) selected by the project;
- Be available by deed to apply good agricultural practices to enable the holding of demonstration days. (He/she must sign a cooperation/ commitment form)
- Have a good attitude to work in the field with a team. Be open and flexible to even ad-hoc visits;
- Have managerial skills and willingness to share knowledge with others and to receive.

- Be willing to participate in the training of lead farmers in the pilot phase with the pool of trainers from Pfl, UASTM and other consortium members;
- Have a site that is accessible, has water available and where roaming animals do not affect production.

The selection

All potential Lead farmers could score points on the criteria (last column in attached table). The table lists 14 Lead farmers, four of whom are on the reserve list. In a second round, two women were selected. Below is a brief description of one of the lead farmers.

Belko Diofo (Neinigoungou)

Age : 64 ans

Années d'expériences : 50 ans

Statut du terrain : Héritage

Spéculations principales : Piment, tomate, chou, oignon

Disponibilité de l'eau : forage ; bras du fleuve

The farmer (promoter) has been involved in market gardening for a long time by farming his own land. He is a reference in the sector as he chairs an organisation of Neneigoungou market gardeners. He produces the project's target crops and is open and available. He has a good capacity to mobilise and can move around without difficulty. He farms more than a hectare. After discussions, the Horti Hub Niger team noted that the promoter is experienced in the production of various products, notably onions and cabbage. The farmer has an excellent attitude towards the work on his land. The promoter is a market gardening opinion leader in the Neinigoungou area and therefore has the confidence of other producers and can communicate clearly. He is willing to give up part of his land for demonstrations. The promoter employs a family and salaried labour force. He faces water problems from April onwards.

NB: The promoter has identified a reliable and sustainable spring (see photo) 500 m from his plot.



Access to river water

Table:

N°	Nom et prénom	Localité	Bassin	téléphone	Coordonnées	Note /100
1	Yacouba Adamou	Bourbourkabé 1	BBK	90428920	13°38477/2°09150	97,5
2	Mohamed Abdoulaye	Gorou Kayna	BBK	88744354	13°32584/2°10075	93,5
3	Noura Issa	Saga Gorou 2	SG	99060873	13°30411/002°12715	95
4	Halidou Abdou	Saga Gorou 1	SG	94718868	13°30990/2°12369	90,5
5	Safianou Zakou	Gassi Kwora	RG	99436693	13°27183/002°08706	99
6	Omar Salou	Tondibiah	RG	94728340	13°34840/01°59721	95

7	Yacouba Zakou		Gamkalé	RG	96767499	13°28946/002°077 61	91
8	Abdoulaye Amadou		Carel	RD	85005956	13°29371/2°00543	97,5
9	Soumaila Binandi		Kolladjé	RD	98889728	13°27478/2°06975	97
10	Belko Dioffo		Nenegoungou	RD	96030041	1er jardin 13°30781/2°04409	92
Liste d'attente							
11	Oumarou Boureima		Yamyoway	RD	96417113	13°30440/002°037 93	92
12	Harouna Adamou		Rezi	RG	84100007	13°27327/002°085 45	92
13	Maazou Moumouni		Bourbourkabé 3	BB K	93893441	13°63734/2°15579	89,5
14	Souley Djibo		Saga Gorou 1	S.G	90335205	13°31340/2°12336	85

RD : Rive droite ; RG : Rive gauche ; BBK : Bourbourkabé ; SG : Saga Gorou

The Baseline

After the selection process, the HortiHub team interviewed all lead farmers, took land surveys and asked what products the farmers were growing now and how much - the baseline. They also asked what the farmers needed now in order to participate in the project. Here we came across the fact that the farmers cannot answer these questions themselves. This requires the knowledge and skills of the other partners. Based on the input in the table below, seeds have been ordered and sent. With aQysta we are still discussing which pump would work best, because the impression is that the current of the river is not strong enough for a Barsha pump. The local team has indicated that there is a need for a pump to experiment. The flow of the river varies greatly and at high tide it seems to be sufficient. Specifications state that the speed of the water must be at least 1 metre/second and the minimum flow 300 litres/second.

Data provided (The whole table is to be seen if you click on this one, it shows in Excel)

Lead Farmer	Superficie pour les démos (m ²)	Spéculations principales	Besoins semences (g)	Besoin fertilisants (kg)	Besoin produits phyto (litre)	Moyens de captage utilisés	Moyens d'hexaure utilisés
Yacouba Amadou	500	Chou	40	15	2	Forage	Motopompe
		Tomate	30				
		Poivron	30				
Mohamed Abdoulaye	750	Chou	75	23	2	Forage et mare (tarissable en	Motopompe
		Tomate	75				
Halidou Abdou	500	Chou	100	15	2	Puits	Motopompe
		Tomate	30				
Noura Issa	500	Chou	40	15	2	Mare permanente, puits et forage	Motopompe
		Poivron	30				

2.3 Agripreneurs – the process, the selection

The second line of action of HortiHub Niger is to combat the high unemployment in the country. The project will partly create new jobs, but the emphasis is on creating new entrepreneurship in the value chain of agriculture and horticulture. This means training people to become entrepreneurs in the agricultural sector, to become agripreneurs. All consortium members work together on this. UASTM is in charge of recruiting the right (future) entrepreneurs. The students will come partly from UASTM, partly from other private universities and the public university Abdou Moumouni (UAM).

The training of agripreneurs is done by a pool of experts from various disciplines. A selection was made from professors of the UASTM, from Abdou Moumouni and from the pool of experts of Pfi. aQysta provides knowledge and from HGT the local representative is used to transfer the knowledge. Synergos will supply a communications expert and someone from the women's movement who is an expert in setting up and maintaining a simple and workable administration for small farmers and horticulturalists.

The Process

A lot of time went into searching for other universities. At the end of July, the criteria were ready. At the beginning of August, the question was put out to students on various media and university channels to apply. One of the issues the team ran into was the requirement that the student must be from Niamey. Many students respond with the idea that they must have their own land. However, most of these students live outside Niamey because the land in the city is far too expensive. This has been taken into account in the selection. Also with the fact that an agripreneur does not necessarily need land; he/she can become an entrepreneur in processing, trade, packaging, new markets, marketing etc. The whole value chain offers entrepreneurial opportunities.

At the end of the counting, it appears that students from Abdou Moumouni University are the most numerous (34.48% of candidates). Out of the total number of candidates, 11 female candidates were registered, i.e. 18.92%. The other 47 candidates were men. There were 5 applications from UASTM students, i.e. 8.62% of the total received.

	Institution	Homme		Femme		Total	
		Nombre	%	Nombre	%	Nombre	%
Dépôt en ligne	UASTM	3	5,16%	2	3,44%	5	8,62%
	UAM	18	31,03%	2	3,44%	20	34,48%
	Autres écoles/instituts	3	5,16%	4	6,88%	7	12,06%
	Autres personnes	17	29,31%	3	5,16%	20	34,48%
Dépôt physique	UAM	1	1,72%	0	0%	1	1,72%
	Autres instituts	4	6,9%	0	0%	4	6,9%
	Autres personnes	1	1,72%	0	0%	1	1,72%
Total dépôt		47	81,08%	11	18,92%	58	100%

Cadre: the first selection of agripreneurs

The Selection

The selection was done on the basis of judging the applications that were filled in according to the criteria as listed. After the gathering of all the applications, talks were held and the future agripreneurs were then asked about their ideas, approach and motivation. After this process the selection was made.

Criteria

- *Name of project*
- *Express the vision of your project :*
- *What does your project consist of in concrete terms:*
- *What drives you (personal motivation) to implement this project :*
- *Who will be the direct beneficiaries of your product :*
- *What added value do you bring to your beneficiaries with your product?*
- *What motivates you becoming an agripreneur:*
- *How is your project innovative?*
- *What is the area (district, city, region, department, etc.) where the project will be implemented:*
- *What are the main objectives and expected impact of the project:*
- *In the context of the implementation of this project what have you already done? :*
- *At what level are you currently in this project? :*
- *In the best of worlds, where do you see your project in 1 year? What is the development plan for your project?*

The agripreneurs were also asked about joining the RVO project. They had to answer questions like why do you want to join the RVO project? How does the RVO project benefit you? What are your expectations from the project? Do you participate in all the coaching sessions offered? The team working on the procedure got reactions from the students that it was difficult, but they appreciated this way of working very much because it forced them to think more thoroughly and look forward.

The requirements are strict, but the desire to participate is great and this selection avoids bad participants. 90% of the applications met the requirements. In the attached box you can read Harouna's story.

Agripreneur Oumoukher Soumana Harouna (27 years)

She holds a Master's degree in sustainable rural transformation (WAC-SRT) and a professional degree in Biodiversity and Environmental Management 2018-2019. Oumoukher is particularly passionate about studies and entrepreneurship. She has good interpersonal skills.

With a good command of the French language, a fairly good English. She built her business idea in horticulture under the name of Green Gold of Niamey (GGN). Her personal ambition stems from a deep desire to confer greater food autonomy on the city of Niamey so that one day the whole of Niger will reach Goal 2 of sustainable development, which is Zero Hunger.

In terms of implementation, too, Oumoukher has very clear ideas. Her project will involve a series of activities that will help to achieve the objectives by creating jobs for young people. These activities will allow for an increase in supply to meet demand, a reduction in post-harvest losses with an increase in profit margins, the development of marketing tools and the implementation of a management plan.

The objectives are production in terms of quality and quantity, marketing and finally processing with an increase in supply, a reduction in post-harvest losses and an increase in the profit margin.

The added value of the project would be: good quality and quantity of the product with an organic production at a price accessible to all.

Indeed, it would bring a solid food base to the populations, offering also powerful beneficial properties for their health. Indeed, the moringa is a medicinal tree, and not only food by its fresh or dried leaves it allows to fight against malnutrition thanks to its beneficial properties for health, it contains seven times more vitamin C than the orange, twice more vitamin A than the carrot and five times more vitamin E than the almond; and fatty acids omega 3 and 9.

Her project responds to some of the challenges in Niger such as food security, unemployment, poverty, and the promotion and consumption of local products.



3: The Budget

The budget lines that had to be filled in were not easy for most partners. Many of the Nigerien partners work with other systems and this system does not fit in with that. In the end, of course, everyone succeeded. The result is:

- From the government budget for Year 1 of €179.999, 60% is spent with a total of €73.760;

If we translate this into the modules, we see the following.

- | Coordination module | Year 1 | Year 2 |
|----------------------------|---------------|---------------|
| Planned Budget | € 35.560 | € 35.560 |
| Spent | € 38.670 | |

The expenditure pattern is in line with what was planned for this year. This is logical, because most of the time was spent on coordination and getting the HortiHub itself up and running; a big amount of start-up activities, establishing the structures and procedures for the next two years. The same budget has been reserved for year 2.

- | Studies Module | Year 1 | Year 2 |
|-----------------------|---------------|---------------|
|-----------------------|---------------|---------------|

Planned Budget	€ 18.250	€ 0
Spent	€ 12.250	€ 6.000

The budget for the module in which the study took place was not fully utilised. As indicated in Year Plan 2, from September to December work will be carried out by PFI on questions arising from the study that has been done.

- **Demonstration Project Module Year 1 Year 2**

Planned Budget	€ 48.254	€ 31.282
Spent	€ 44.480	

In this module, the work of selecting and preparing the lead farmers, visiting the sites, preparing the horti-hub land and identifying the agripreneurs takes place. This has been done. The Farmer Field Days, the experiments with the farmers and agripreneurs and the demonstration days all take place in year two and three.

- **Knowledge Transfer and Capacity Building Module Year 1 Year 2**

Planned Budget	€ 130.048	€ 170.495
Spent	€ 12.318	

Most of the budget is still available for this module. Part of it has already been spent on hiring the Hub staff including the Field Managers. Important now is the preparation of the Hub itself, both the physical place at PFI and the training programme for the farmers and agripreneurs. Furniture has been ordered for the furnishing of the Hub. Most of the budget from year 1 is transferred to year 2.

- **Communication Module**

Planned Budget	€ 8.594	€ 22.146
Spent	€ 5.204	

Activities that fall within the communication module can be found throughout the entire period. Together with RVO, we worked on the branding strategy (further fine-tuning and elaboration will take place in year 2), a logo was created and a website delivered. Much has been done on internal communication. Cooperation has also been found with a locally operating communications specialist. Year 2 (and 3) will be devoted to more external communication.

Note:

- **In the previous version of the report (29-08-2022), the hours made by UASTM were not taken into account.**
- **As mentioned earlier, the reporting is sometimes difficult. What we see is that many of the hours made by the coordination was put in the Demonstration Module. But many of the activities belong to the Knowledge transfer module. We will look after this more thoroughly.**

4: Risks and how to mitigate them

Working in Niger involves numerous risks. The implementing partners and the project leader have a lot of experience. Nevertheless, there are always risks that can affect the project and prevent it from being carried out properly. A number of risks have already been identified in the study. We have identified the risks from various interviews and during a number of

sessions. Herewith an overview of these and how we think we can mitigate them. In all cases, RVO will be informed, both when a problem is identified and when a solution needs to be found (if the team is unable to resolve the problem).

Concerning internal affairs

<i>Risks</i>	<i>Mitigation</i>
Bankruptcy of one of the partners	Depending on which partner this is, a replacement partner is sought. If this is not necessary, the work of the bankrupt partner is taken over by one of the other partners.
Withdrawal of one of the partners	same as for bankruptcy
Mutual disagreement	the project leader takes the initiative to ensure that the parties come closer together. <ul style="list-style-type: none"> ○ If the parties cannot reach an agreement, the embassy will be involved; ○ If the disagreement persists, consultations are held with RVO on the measures to be taken, again depending on which parties are at odds with each other
Fraudulent actions	These are prevented by the strict instructions in place and by enforcing them. Last is the role of the coordinator, the project leader and the accountability to RVO.

Concerning Lead Farmers, farmers and agripreneurs

<i>Risks</i>	<i>Mitigation</i>
Land status	The number of producers is growing. Some buy land, others rent it. To prevent owners from pulling out or requiring tenants to withdraw from the project, strict contracts are drawn up with the lead farmers' land owners
A Lead farmer goes bankrupt	We choose a new one, we have a list of reserve.
The lead farmer performs bad as a host for the participants	It is laid down in the contracts. If they keep on having bad performance, the Field Managers are responsible for finding a solution.
Withdrawal of a lead farmer	Depending on the moment of withdrawal of the project (and the investment already made), a replacement is chosen. The contract states that when the project is in it's second year, the lead farmer must return all investments.
Poorly functioning agripreneurs.	This is prevented by the right selection. If they do turn up, they are removed from the project or UASTM counsels them.
Shortage of women	This is adjusted during the implementation.
Equipment stolen.	All participants sign a participation agreement. Also the participants of the demonstration days. All materials, fertilisers and seeds will remain on the plot.
Stealing remains	More emphasis will be put on social control. It is a well-known mechanism that works because the cooperation takes place with local people (and everyone knows one another).
Climatic conditions	Niger is severely affected by the consequences of climate change; the country is plagued by sometimes short, sometimes long heavy rains, alternating with long periods of severe drought and heat. We cannot mitigate climate change, but we can minimise the consequences for the participating farmers. By working with hybrid seeds, by looking closely at the sowing and harvesting periods, by applying the new irrigation techniques.
Flooding	We choose lead farmers with the least risk of flooding.

Concerning politics, security and corruption

<i>Risks</i>	<i>Mitigation</i>
Political	Niger is currently the most politically stable country in the Sahel zone. We cannot take any measures if this changes. If there is unrest, we will take the right decision at that moment. This may mean waiting a while, staying in the lee until the dust settles. Experiences in other countries has shown that national unrest does not necessarily result in the suspension of a project.
Security	On the Dutch Ministry of Foreign Affairs map, most of Niger is coloured red. This is due to activities of jihadists and terrorists. The capital is safe and for that reason the project has chosen to stay in and around Niamey. <ul style="list-style-type: none"> • It should be noted that the local partners can travel freely, also to the areas coloured red. • Mitigation measure is that the other partners (the whites) do not travel into the country.
Corruption	So far we have not had to deal with this. As a mitigation measure, we inform the

	relevant political and official partners and external parties and involve them in the project when necessary. <ul style="list-style-type: none"> Inviting politicians and officials during Hub sessions mitigates problems that can occur later
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5: The business case and how to make the Hub sustainable

An important condition is that the HortiHub can continue to exist in the long term, even without direct subsidy from RVO. A business case has been made for this. A number of points are included here. Holland Greentech in cooperation with Rivulis made proposal for a business plan on half a hectare per lead farmer. The ideas will be worked out in Year 2. Of the 12 lead farmers that have now been selected, 9 meet the requirements for scaling up to half a hectare (5000m²). That is a tenfold increase of the current acreage of the lead farmers. Also year 2 will be needed to discuss ownership of the land, the hub-land and the physical hub.

Business case

1: Fees: Students who apply to become agripreneurs pay a modest fee. A part will be paid from a grant. This income stream should've started from day 1 of the project, but it did not. The fees are low, they provide a modest revenue stream. We will take care that people won't be excluded because of the fees.

2: Income from horticultural activities on the Horti-hub land, from tomatoes, onions and green pepper (paprika) - three of the Cluster crops. With the new techniques, seeds and inputs we count on two to three harvests a year. In the cadre one example of the income stream of harvests with tomatoes and onions. These calculations assume that we will scale up. This is necessary in order to ultimately become profitable and to be able to continue in a sustainable manner.

Sources of income	2024		2024	2025		2025	2026		2026
	unit	output	Year 1	unit	output	Year 2	unit	output	Year 3
			total			total			total
1.Student fees									
UASTM	80	€ 75	€ 6.000	100	€ 75	€ 7.500	100	€ 75	€ 7.500
Other Uni's	40	€ 100	€ 4000	60	€ 100	€ 6.000	60	€ 100	€ 6.000
	2 ha	2 ha	2 ha	4 ha	4 ha	4 ha	6ha	6ha	6 ha
2.Horticulture	Yield/ton	Costs/ton	Revenue	Yield/ton	Costs/ton	Revenue	Yield/ton	Costs/ton	Revenue
Tomatoes 11 ton/ha	€1.220	€ 350	€ 9.570	€1.220	€ 350	€ 22.990	€1.220	€ 350	€ 9.570
Onions 40 ton/ha	€ 153	€ 23	€ 2.140	€ 153	€ 23	€ 5.200	€ 153	€ 23	€ 11.320
3. Subsidies, grants									
Swiss Agency for development			€ 45.000						
Dutch Embassy						€ 20.000			€ 20.000
Total turnover			€ 80.627			€ 88.482			€ 100.022

3: Subsidies / grants. After three years of operation, the Hub has been able to prove itself. With in mind, funding is sought for continuation of the Hub and expansion of its activities. In the budget, we have only focused on the Swiss Agency for Development and Cooperation and the Dutch Embassy. Of course, there are many others to approach.

6. The Team, challenges, bottlenecks and the step to year 2

The team consists of representatives from six companies, not all of whom work in Niger. In a row:

Partners in Niger

- Partners for Innovation (PFI): Local coordinator based in Niamey, Idrissa GUISSO MAÏGA Djibril (Call sign Idrissa). Two field managers on the ground, Ahmed Ibrahim Ali, (call sign Ali) and Abdou Bawa Harouna (call sign Abdou). PFI final responsible within the project Rakiatou Gazibo;
- Holland Greentech Burkina (HGTB): Manager for the Priva Kabre region based in Ouagadougou, representative in Niamey, Hadjara Mamadou (call sign Hadja). HGT final responsible within the project Norbert Van der Straaten;
- UASTM: Contact person Mahamadou Ibrahim Agada (call sign Agada). UASTM final responsible within the project Boris Segbenou;
- Synergos Communication: not full time, but at least four times a year in Niger, Project Manager and final responsible Baud Schoenmaeckers.

Not in Niger

- Rivulis: representative and responsible Simon Lenoir is based in Senegal, is sometimes represented by Holland Greentech;
- aQysta: representative Tim van der Linden is based in Malawi, the administration runs via Alisha Shetri, based in Nepal. aQysta final responsible within the project Lennart Budelman.

The team has though never come together physically, but virtually we met four times during the first project year, with attendance of all cluster members. With the team 'sur place', multiple meetings were held. And between individual cluster members there are sometimes even weekly meetings. Especially between the local representatives from Partners for Innovation and Holland Greentech, sometimes Completed with UASTM

All these meetings show a high commitment to the project from all project members, which has been very positive. The pandemic and distance have hampered more frequent physical meetings, but all partners have effectively used virtual meetings as an alternative.

Zeker in het begin is het zoeken geweest naar rollen en verantwoordelijkheden. Met name voor de mensen met de voeten in de klei van Pfi en HGT is het goed afstemmen wiens verantwoordelijkheid waar ligt. Hierin is in de loop van het jaar duidelijkheid gekomen.

What is striking overall and of great value is that the cooperation is good, the atmosphere good and relaxed and that every team member is full of energy to make this project a success.

Challenges and Bottlenecks

internal communication & agreed decisions

Challenges were experienced, especially regarding following up on agreed decisions about deadlines and sometimes internal cluster communication. Keeping promises and sticking to agreements is important for the durability of the team relations and improving this for the rest of the project is a priority. At the same time, when clear agreements are jointly decided upon in meetings (cluster and individual as stated), in practice these agreements are not always followed up upon (in time). This is a difficult problem to address, but continuous critical assessment of the project structure will remain important to create improvements in this situation.

Moreover, from Year 2 onwards the project leader had already planned to be more proactive on preparing decisions and consequently proposing these to the cluster rather than waiting for discussion opportunities. In addition, the local project coordinator Idrissa and the project leader Baud will have more frequently contact (every week) to look how the decisions made are followed and if necessary, what measures have to be taken.

Also with the executive team Idrissa, Ali, Abdou and Hadja, sometimes with Agada (UASTM) Baud will have a short update weekly (on Friday morning).

Lastly, for some consortium members English is challenging to speak, understand fluently or write. Others do have difficulty with French. The solution is that the project leader is switching between languages.

Recruitment

Maybe we should not see it as a bottleneck, but as one of the things that took a lot of time, more than expected, was the recruitment. First the recruitment of the team (The Hubstaff, coordinator, farmer managers). Secondly the selection and recruitment of the Lead Farmers. We experienced that it was hard to find more women. And thirdly, the selection and recruitment of the Agripreneurs.

For the recruitment process of the Lead Farmers, Partners for innovation drafted a recruitment strategy and procedure (Paragraph 2.2), for which consequently agreement was sought with HGT. The same took place with PFI and UASTM for the recruitment of the agripreneurs (paragraph 2.3).

For the second year, we do not foresee any problems with the recruitment of farmers who want to be trained on the fields of the Lead farmers by the cluster partners. A strategy will be made for this. An important part of this is the network. On the one hand, that of the lead farmers themselves, and on the other hand, that of the local partners. Already a few dozen farmers have come forward to participate in the training.

Material

Many of the lead farmers were already recruited three, sometimes four months ago. Since then, nothing has happened. One of the bottlenecks is that seeds, fertilisers and other inputs cannot be delivered earlier. Initially, it was unclear exactly what inputs were needed per lead farmer and in total. This has now been clarified. As a result, at least the seed was shipped from the Netherlands in August.

Another problem is that the other inputs would normally come from Holland Greentech Burkina. Due to the current political developments it is not possible to send agricultural goods over land from Burkina Faso to neighbouring Niger. Extra attention will be paid to this at the beginning of year 2.

Another challenge is to get the right pumps from India to Niger. It is now clear that the number of Barsha pumps will be reduced in favour of solar powered pumps. We are now considering sending them by aeroplane for transport. This is mainly to save time. We are looking at whether it is financially feasible within the budget. Another challenge is how aQysta is going to instruct the local farmers.

The last issue is the material that Rivulis is going to supply. In all cases, drip installations have been chosen because they cause the least water loss (through evaporation).

The step to year 2, lessons learned

Much has been done, but much more needs to be done in the next two years. We learned a lot the first year and this will all be taken with us in the next years. Of great importance is the enthusiasm of the cluster partners to achieve the goals set. This is a condition for success: the will to work on them.

Everything we are going to do is in Annual Plan 2. We would like to highlight a few things here, as a result of experiences of the first year, lessons learned. Even some of them are not mentioned earlier. The points are not exhaustive and are not in order of importance.

1: Annual plan 2 is a guideline for the follow-up, including deadlines and keeping track of performance indicators;

2: The Hub should be set up as soon as possible.

3: More attention will be paid to the participation of women in the project. Both in terms of participants (farmers and agripreneurs) and providers of knowledge, the trainers.

4: Good solutions must be found for a number of components. An example is the question of how aQysta and Rivulis want to transfer knowledge to farmers and agripreneurs about the use and installation of pumps and irrigation equipment.

The team has suggested using a local irrigation specialist for this. This person can be trained to transfer the knowledge in local languages to the local farmers and agripreneurs;

5: Internal communication will be improved; plans have already been made for this. 3: Internal communication will be improved; plans have already been made for this. The WhatsApp group will be used better and more intensively and there is a storage facility in the cloud for documents.

6: External communication. With the site as a basis, a number of newsletters will be sent out in year 2, external partners will be more involved in the project and the network will be expanded in such a way that an extra basis is laid for further sustainability of the project.

7: For the remaining years, an International Corporate Social Responsibility (ICSR)-policy will be drafted and shared

We are looking forward to the continuation!