

Evaluation Report of the Horti-Sempre project on behalf of SDC

Final version



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Contents

List of acronyms	2
Note of Thanks	3
Executive Summary	3
1. Introduction	6
2. Scope and methodology of the evaluation	6
3. Methodology of evaluation and validation of information	6
4. Political and economic aspects	7
5. Background of the project	7
5.1 Geographical Scope	8
5.2 Target Group	8
5.3 Intervention areas	8
5.4 Implementation Strategies	9
5.5 Theory of Change	10
6. Evaluation of outcomes based on the OECD criteria	10
6.1 Gender	10
6.2 Output 1.1 Development of inputs and domestic seed providers and producers	11
6.3 Output 1.2. Development of Technology Transfer services (B2B) and WEE activities	13
6.4 Output 1.3 Development of Technical Assistance services	14
6.5 Output 2.1 Development of community and farm-based irrigation solutions	15
6.6 Output 3.1 Development of quality product providers	16
6.7 Output 3.2 Collecting, analysis and diffusion of market information	17
7. Impact	18
8. Relevance	19
9. Efficiency	20
10. Management of the project	21
11. Phase out and Market Systems Development	22
12. Lessons learned	23
13. HSII Implementation Challenges	24
14. Areas not yet Secured	25
Annex 1: Evaluation Matrix	25
Annex 2: Workplan of the Evaluation	28

List of acronyms

ACIANA Association of Commercial, Industrial and Agricultural businesses of Nampula
AGM Annual General Meeting
AGRA Alliance for a Green Revolution in Africa
APROSE Association for the Promotion of the Seed Sector
BOM Banco Oportunidade de Moçambique
CNE National Elections Commission
COVID-19 Corona virus disease of 2019
CTA The Confederation of Economic Associations of Mozambique
DCED Donor Committee for Enterprise Development
DEMO Demonstration Plot
DPASA Provincial Agricultural Directorate (Direcção Provincial de Agricultura e Segurança Alimentar)
DPIC Provincial Department of Industry and Commerce
DUAT Direito do Uso e Aproveitamento da Terra (Land Use Right)
ETG Export Trading Group, a global integrated supply chain manager
FAO Food and Agriculture Organization of the United Nations
GAP Good Agricultural Practices
GoM Government of Mozambique
HS II Horti-Sempre II Phase
IIAM Instituto de Investigação Agrária de Moçambique
IPM Integrated Pest Management
ISFM Integrated Soil Fertility Management
INOVA Feed the Future Agricultural Innovations project
K2 Klein Karoo, Regional Seed Company
KM Knowledge Management
MADER - Ministry of Agriculture and Rural Development (Ministério de Agricultura e Desenvolvimento Rural)
MIC Ministry of Industry and Commerce
MRM Monitoring Results Measurement
MoU Memorandum of Understanding
MSD Market Systems Development
MZN Meticais (1 unit of Mozambique currency)
MT Metric Tonne (1,000 kilograms)
NGO Non-Governmental Organization
NSA National Seed Authority
OLAM International, a global integrated supply chain manager
OPV Open Pollinated Variety (seeds)
PFU Project Facilitating Unit
PSSI Private Sector Seed Inspector
SADC Southern African Development Cooperation
SDAE District Services for Economic Activities (*Serviço Distrital de Actividades Económicas*)
SDC Swiss Agency for Development and Cooperation
SHF Smallholder Farmer
SME Small Medium Enterprise
STTA Short Term Technical Assistance
Tor Terms of Reference
USD United States Dollar

Note of Thanks

The evaluation team expresses its warm thanks to all the interview partners, the project team of Horti-Sempre and all other persons who worked in the background for the success of this mission. Meetings in Maputo from 10 to 12 November and from 29 November to 1 December as well as the field visits in the Nampula region from 15 to 26 November were all well organized by the project team. Due to the fact that the evaluation of the Inovagro project was done in parallel it needed a lot of coordination between the two teams. The evaluation team got all the information that it requested. It didn't get the impression that any critical aspects or events which may happen in the project were hidden.

Executive Summary

Horti-Sempre started in 2013 and was implemented by Swisscontact and GFA Consulting. The project was designed and unfolded on the conviction that horticulture has the potential to become a powerful “income-generator” for small-scale producers of the Nacala Corridor as an alternative to the traditional cash crops of tobacco and cotton. In Phase 1 (2013-2016) the Horti-Sempre project was instrumental to the strong growth experienced by horticulture in the Nacala Corridor. Phase II was designed to further develop the sector by making smallholder horticulture more competitive through increased productivity, quality and all year-round production. SDC also supported another MSD project, Inovagro with overlapping implementation period. Both projects will terminate at the end of 2021. Due to the fact that both projects had many common partners and a certain geographic overlap the evaluation took place at the same time for both projects. However, the results of the evaluation are presented in two separate reports

Objective of the evaluation: To assess the performance of the project in terms of relevance, effectiveness, efficiency, impact and sustainability in relation to the project objectives including the drawing of lessons learnt on what worked and what did not work, and what progress towards a better functioning market system has been achieved/not yet achieved.

Methodology of the evaluation: Interviews were conducted with the team, the project management and some beneficiaries (stakeholders). As a part of the inception report questionnaires for the team, the project management, actors of the value chains and selected beneficiaries were developed. At the end of the mission in Mozambique a presentation highlighted the key preliminary findings and lessons learned were presented and discussed during a validation workshop in Nampula.

Economic environment: The economic deterioration during 2019/20 and the COVID pandemic had a negative impact on the implementation of the project during 2020 and 2021. Phase II of Horti-Sempre was designed for a duration of 4 years (2017-2020). The initial project end date of December 2020 was extended for a further one year to accommodate COVID related delays in implementation.

MSD Approach Horti-Sempre was to adopt a Market Systems Development (MSD) approach that would trigger systemic change in the horticultural market by building on existing “end- of- the market opportunities” in a facilitative approach, rather than delivering direct services. During its implementation, the project underwent a strategic review and was reformulated at the end of 2018. The project was to deliver on three outcomes and five outputs viz i) Inputs & Practices ii), Development of Technology Transfer services (B2B) iii) Irrigation Solutions, iv) Improved Development of quality product providers, and v) the implementation of an intelligence and market information service system.

Development of inputs and domestic seed providers and producers: Activities resulted in the validation and registration of 24 OPVs and the formulation of regulations to guide certification. While the content of the regulations has been approved by stakeholders, these are yet to be approved by the Ministry of agriculture. It is expected that MADER institutions

such as IIAM and NSA will continue to internally drive this process. These public institutions may however not have the necessary financial and human resources. For speedy resolution the process requires an external interest body to continue with the facilitation role that the project was playing. The number of input suppliers has increased from 3 to 13 and demand for improved seed is steady increasing in response to the demand creation activities that have been under implementation with support from the project.

Development of Technology Transfer services (B2B) and WEE activities: The project supported, through a matching grant mechanism, 16 seedling production ventures in trays (2 managed by women) and 21 shed net ventures. The consolidation and growth of these ventures will take longer than the life of the project and will be influenced by the supply and demand for vegetables in the region and the ability of farmers to mobilize resources to make such investments. As WEE activities the project supported duckling production and fruit tree production. These activities were phased out in 2020 following the recognition of the need to mainstream gender activities in core interventions of the project.

Development of Technical Assistance services: The activity targeted technicians from public, private and NGO institutions by offering specialized training courses in different areas of vegetable production. The exit strategy of this activity assumes that staff of trained institutions will continue to offer and replicate trainings for producers to improve their agricultural practices. The focus should have been on self-sustaining market actors including the public sector actors that rely on public funds to sustain their engagement. Non state actors such as NGO projects ought to have been treated as implementing partners whose capacity building is relevant to deliver project services as required. They however do not serve as good options for an exit strategy as their funding is timebound.

Development of quality product providers: This intervention seeks to support farmers to improve the quality of products through the introduction of processing and packing solutions such as use of net-bags, wooden and plastic trays as well as grading tables. Despite the growing demand for packaging materials, the adoption of these quality measures takes time and still needs to be supported by introduction of quality standards. There is no evidence that current initiatives are plugged into structured markets at a scale that allows for attainment of intended outcomes. The economic recession caused by the COVID pandemic and the political and social crisis in Cabo Delgado limited the options of the project to develop aggregation models targeting tourisms centers, mining operations and supermarkets in the region. District level fairs and round tables involving farmers, traders and other actors have been organized. These activities have generated interest among market actors but there is no firm institutional arrangement to sustain this activity.

Collecting, analysis and diffusion of market information: The existing market information system at Rovuma University is rather basic and is not being used by farmers and other actors of the value chain. The issue as such is valid but needs a better orientation to the needs of stakeholders. While the University may have the technical competence to administer the system, it lacks the infrastructure and resources to run a decentralized information collection and dissemination system. Partnership between the University and the Provincial Directorate of Agriculture and that of Industry and Commerce would improve on sustainability.

Impact: In quantitative terms the project has met its targets. The project has been working with 27,142 farmers that are reported to be in adoption phase of the various technologies under promotion and/or received technical services. The project reports an average yield increase of 35% against the 30% target. The number of horticultural seed suppliers has increased substantially from 3 in 2017 to some 13. The project underwent structural changes in 2018, leaving it about two years to implement during which the problem of COVID undermined performance. While many interesting innovations are emerging from the project's interventions, their adoption is only beginning to take place and their sustainability requires

further investment in the development of institutional plans at the level of the various public and private sector actors, showing the way forward for systemic change. The evaluation therefore concludes that the objectives of HS II and its vision of promoting continuous vegetable production throughout the year and in a more competitive way, have partially been met. A longer implementation period would have been required to achieve desired outcomes. Initiatives to promote access to markets are considered not to be at the stage one would have expected at the end of this second phase of the project.

Relevance: HS is considered highly relevant. The justification elaborated at design has remained valid for the whole period of its implementation. The programme has remained aligned to GOM objectives and SDC Cooperation Strategy with Mozambique 2017 – 2020.

Efficiency: A cost to beneficiary ratio of CF256.20 was achieved. The beneficiaries is the number of producers adopting and applying the innovations promoted through the project and its partners for the period up to June 2021. On the basis of income per farmer of USD630.42 reported by the project, the ratio of income benefits to program costs for the period is 2.46. This ratio is comparable to that achieved by InovAgro of 2.64. The ratio of net income increase benefits to programme costs is 0.70

Market Systems Development: Given the realities of a market with few and weak actors the project has been playing a much more direct delivery role focusing on technical assistance and expertise. This to an extent comprised the intended market system development. There are however positive changes of the seed market from a non-functioning to an emerging market context. The fact that large international private companies such as Syngenta, Easiseeds, Seed Co, K2, Bayer etc. have entered Northern Mozambique gives evidence for the market potential in future. Market access support services, financial services as well as government support services continue to be weak.

1. Introduction

In 2009, Mozambique was classified as one of the poorest countries in the world, ranked 172nd out of 182 countries in the 2009 UNDP Human Development Index. 54% of the population lived under the national poverty line while 90% lived on less than US\$2 a day and 75% under US\$1.25 a day. Life expectancy was critically low at 42 years. Northern Mozambique had the highest levels of poverty in the country.

In 2010, Swiss Development and Cooperation (SDC) developed the Private Sector Led Development of Agricultural Sectors in Northern Mozambique (later renamed Innovations in Agribusiness – InovAgro) project. The project proposed to create synergies between larger private companies and female and male smallholder farmers (SHF), with the purpose of increasing economic involvement of the poor in agricultural sectors in Northern Mozambique to reduce economic vulnerability and poverty. The project applies a market systems development (MSD) approach to transform the underlying supporting environment for SHF, providing them with access to services that endure beyond the end of the project.

In parallel SDC supported another MSD project Horti-Sempre which started in 2013 and was implemented by Swisscontact and GFA Consulting. The project was designed and built on the conviction that horticulture has the potential to become a powerful “income-generator” for small-scale producers of the Nacala Corridor as an alternative to the traditional cash crops of tobacco and cotton. In Phase 1 (2013-2016) the Horti-Sempre project was instrumental to the strong growth experienced by horticulture in the Nacala Corridor. Phase II was designed to further develop the sector by making smallholder horticulture more competitive through increased productivity, quality, and an all-year-round production. Both projects will terminate at the end of 2021. Since both projects had many common partners and a certain geographic overlapping the evaluation took place at the same time for both projects. This report covers the evaluation of the Horti-Sempre project.

2. Scope and methodology of the evaluation

The TOR of the evaluation define two objectives:

Objective 1: To assess the performance of the projects in terms of relevance, effectiveness, efficiency, impact and sustainability in relation to the project objectives specified in the project documents, including the drawing of lessons learnt on what worked and what did not work, and what progress towards a better functioning market system has been achieved/not yet achieved.

Objective 2: To recommend possible directions, objectives, and approaches for an engagement of SDC in supporting inclusive agro-economic development beyond 2021, building on the results achieved and lessons learnt of the current projects.

The proposals for objective 2 are presented in a separate report (Proposals for supporting inclusive agro-economic development in Mozambique). This report is focusing on objective 1.

3. Methodology of evaluation and validation of information

Interviews were conducted with the team, the project management and some beneficiaries (stakeholders). As part of the inception report questionnaires for the team, the project management, actors of the value chains and selected beneficiaries were developed. At the end of the mission in Mozambique a power-point presentation highlighted the key preliminary findings and lessons learnt (objective 1 of evaluation) were presented and discussed during a validation workshop in Nampula. This step was important to check with the team and partners whether the evaluation team understood the approach and the results of the project correctly.

Their inputs led to some adjustments of the results or pointed out different opinions of the evaluation and the team/partners.

The evaluation matrix can be found in **Annex 1**).

The mission interviewed several partners and stakeholders from 10 to 12 November in Maputo. Field visits from 16 till 19 November 2021 and from 22 to 24 November focused on selected districts in the Nacala Corridor.

4. Political and economic aspects

The onset of the COVID-19 pandemic caused a sudden stop to Mozambique's good economic performance. Real GDP contracted by an estimated 0.5% in 2020, the first decline in 28 years, after growing 2.2% in 2019. A slowdown in construction, tourism, and transport, and a decrease in demand for commodities exports were the main drivers of the deceleration. Economic activity was also hurt by the escalating conflict in the northern province of Cabo Delgado, which has displaced large populations and resulted in more than a thousand deaths. The economic contraction was expected to drag 850,000 people below the international poverty line in 2020, an increase of 1.2 percentage points to 63.7% of the population, according to the World Bank, while GDP per capita was expected to contract by -3.4% in 2020. Despite negative growth, a slight increase in inflation was expected for 2020, from 2.8% in 2019 to 3.1%, pushed by a 21.7% depreciation of the metical against the US dollar." (African Development Bank Group, 2021).

The metical depreciated by 17% throughout 2020, peaking at over MZN 75/USD 1 in February 2021. In early March, the metical began a steep appreciation of 21% over six weeks to mid-April (MZN55.3). It bounced back and settled around 63.3 MZN/USD 1 as of mid-May. The wide swings made it difficult for private agricultural input suppliers and for Small Holder Farmers (SHF) to plan and invest: the depreciation had made imports of agricultural inputs more expensive while the appreciation made exports expensive, leading to farmers receiving lower prices for export crops.

The horticultural sector was affected by several factors. The economic recession paralyzed the tourism sector, affecting the entire catering sector, tourism, restaurants, and hotels, which generate most demand for vegetables. Several leading/emerging producers that started producing for the gas exploration venture in the Palma District (Total and subsidiaries) were stranded by the departure of more than 4,000 workers/employees. On the other hand, the districts where the project works are the largest recipients of people displaced by terrorism, so there are many organizations with humanitarian actions that are temporarily assisting and supporting them with donations. This situation has become an excellent opportunity for suppliers of seeds and agricultural inputs, with several small local agro-dealer businesses being set up to respond to the demand for services. Although a favorable business scenario has been generated for agricultural input suppliers, IDP families and host community families, it is also distorting the whole sense of ownership and co-financing imparted in the philosophy of the MSD approach, which influences the mentality of the beneficiaries and sets back the progress achieved in the application of this approach.

5. Background of the project

Following a successful implementation of Horti-Sempre Phase I (2013-2016), SDC decided to extend the project for a second phase running between January 2017 and December 2020. Phase II has a wider geographical scope (inclusion of Cabo Delgado province) and target group (in addition to small-scale horticultural producers' subsistence farmers were incorporated), as well as interventions aimed at the economic incorporation

of women. The project's aims are to make smallholder horticulture in northern Mozambique more competitive against imports from other provinces and abroad, by increasing productivity, quality and better managing seasonality aspects of horticultural production. The project concentrates its efforts on strengthening public and private actors in horticultural value chains so that their business models are viable, replicated, scaled up and sustainable over time.

Phase II of Horti-Sempre was designed for a duration of 4 years (2017-2020). During its implementation, the project underwent a strategic review and was reformulated at the end of 2018. The initial project end date of December 2020 was extended for a further one year to accommodate COVID related delays in implementation.

5.1 Geographical Scope

The project concentrates activities in the following districts

Nampula: Nacala a Velha, Nacala Porto, Monapo, Nampula, Rapale, Mecuburi, Ribáuè and Malema

Cabo Delgado: Balama, Montepuez, Namuno, Chiúre, Metuge and Pemba

5.2 Target Group

Horti-Sempre aims to reach small-scale horticultural commercial farmers and subsistence producers. Project investments also benefited emerging commercial farmers being those operating on slightly larger areas and with capacity to make investments in improved facilities and technologies for production or commercialization (greenhouses, seedlings infrastructures, collecting and storage centers).

5.3 Intervention areas

The initial design of Horti-Sempre is presented in Fig. 1 below. Three outcomes are recognized: Inputs and practices, irrigation and sector competitiveness. The various activities were reorganized in 2018 (Fig. 2) into five key outputs 1) The introduction and dissemination of new horticultural seeds/varieties adapted to tropical conditions from Brazil; 2) The Introduction of new affordable irrigation solutions; 3) The transfer of know-how technology and practices to farmers and agro-companies of Mozambique; 4) The support to horticultural hubs through the Introduction of improved quality standards, packaging and logistic services and 5) strengthening access to market information. In addition, Horti-Sempre introduced specific women targeted activities to foster Women's Economic Empowerment, which included the installation of fruit orchards for identified associations with a high proportion of female members and in agricultural schools.

Fig 1: Initial HS Intervention Structure

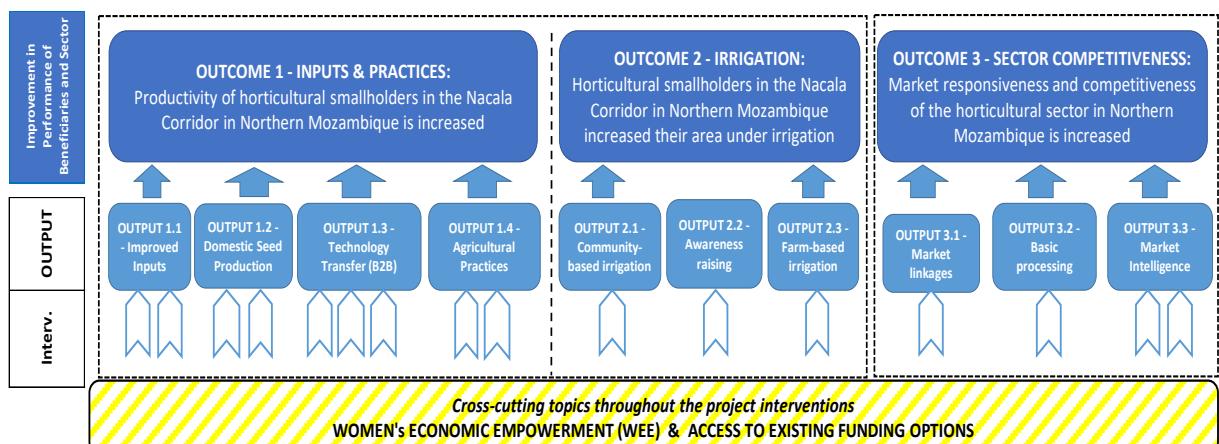
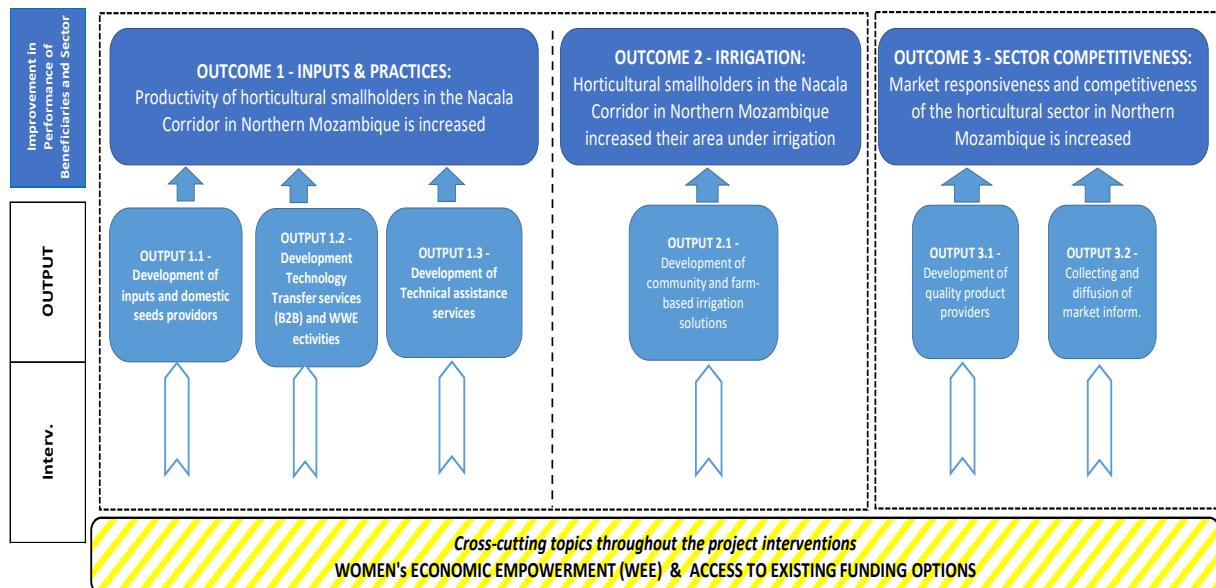


Fig 2: Revised HS Intervention Structure



The project seeks to consolidate two value chains

- a. **High-quality seeds and plant material (seedlings)**
 - Promotion of imported improved seeds through the articulation between suppliers and producers
 - Promoting local production of certified seed and linking it to the market
 - Facilitation of seed certification, inspection, and control processes
 - Improvement of the traditional system of production of seedlings in the open
 - Promotion of business models to produce genetic and sanitary quality seedlings on trays
 - Facilitating a process of generating supply and demand for high quality plant material
- b. **Traditional and non-traditional fresh vegetable production**
 - Facilitation production of traditional vegetables in open fields and greenhouses
 - Facilitating the development and presentation of quality fresh produce through good harvest and post-harvest practices and packing supplier's development
 - Promotion of access and market linkages processes of fresh produce between producers, aggregators, traders, and final markets

5.4 Implementation Strategies

Horti-Sempre was to address the needs of both semi commercial market ready farmers as well as subsistence farmers. The project was designed foreseeing different activities and/or crops for each target group of beneficiaries. The target value chains for the semi commercial farmers included tomatoes, onion, garlic, lettuce, peppers, and carrots while those for subsistence farmers included cassava, beans

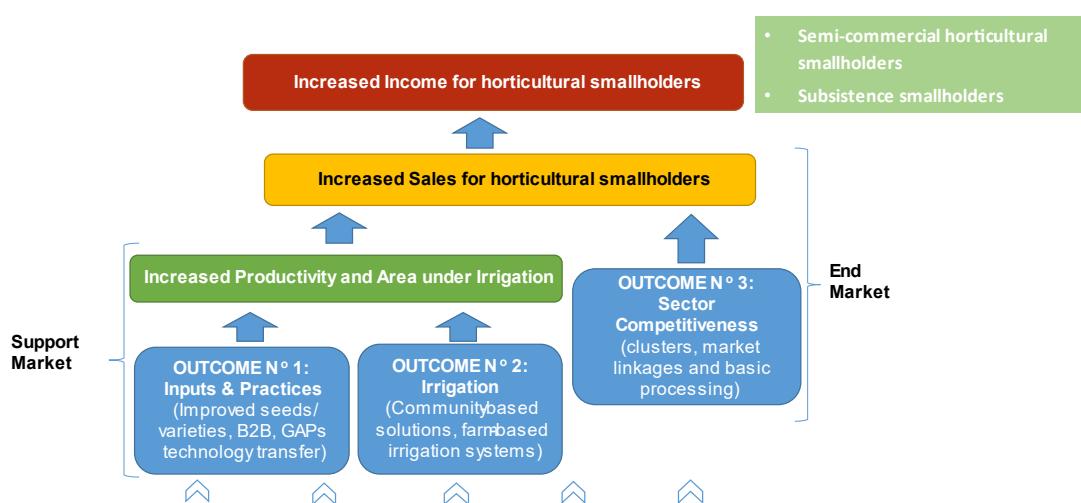
Horti-Sempre was to adopt a Market Systems Development (MSD) that would trigger systemic change in the horticultural market by building on existing “end-of-the market opportunities” in a facilitative approach, rather than delivering direct services. It was not expected to work

directly with smallholder farmers but rather through private and public partners to induce systemic change in the horticulture sector in the Nacala Corridor. This implementation model assumed the presence of both private and public sector actors with interest in the development of the horticultural sector.

5.5 Theory of Change

The theory of change for HS II is built on the premise that continued MSD support is needed to further promote systemic change for a well-functioning horticultural market in Northern Mozambique. HS seeks to create a positive systemic change in the functioning of inputs and output markets thereby leading to improved delivery of high value agri-inputs, services and commodity markets to smallholder farmers. The HS could be summarized as follows: If service providers for horticulture inputs (mainly seed) have the right capabilities and incentives to improve service delivery, if public and private sector increasingly collaborate and if innovative experiences of HS are institutionalized, a better enabling environment will emerge with service providers incentivized to provide better services and farmers making use of such services, which in turn will result in increased income opportunities in the horticulture sector of Northern Mozambique leading to improved wellbeing and reduced livelihood vulnerabilities.

MISION, STRUCTURE AND IMPACT LOGIC



6. Evaluation of outcomes based on the OECD criteria

6.1 Gender

HS II initial gender strategy focused on creating separate investment opportunities for women farmers. For the period up to 2018 HS introduced specific women targeted activities to foster Women's Economic Empowerment, which included the installation of fruit orchards for identified associations with a high proportion of female members and in agricultural schools. The rationale was that such enterprises would be easy to manage and could be attended by women in the vicinity of the houses.

- *Duck rearing intervention.* The duck rearing intervention aimed at providing opportunities for women to improve their nutrition and diversify their source of income. The intervention also integrated the cultivation of vegetables for market purposes with beneficiary families receiving trainings on horticultural production. Every family that

received ducks would transfer some of their additional ducks to other families/neighbours free of charge. 70% of the 128 first beneficiary families have complied and transferred ducks to neighbouring families. The remaining 30% of the families that didn't transfer ducks experienced several problems at the beginning (e.g. deaths by diseases, robbery or bad management).

- *Fruit orchard intervention.* The fruit orchard intervention started in 2014 and ended in 2020. In total 13 associations and agricultural schools benefited from this intervention. The activity was not so successful considering the high mortality rate of trees that was registered.

Following an internal review in 2018 it was recognised that Gender is a cross-cutting issue and that for effectiveness it needed to be mainstreamed in the core activities of the project. In the last quarter of 2019, the project's gender strategy was reviewed and adjustments were made to each of the intervention activities with a view to integrating the gender perspective and inclusion in a cross-cutting manner. The specific WEE activities (ducks and fruit orchards) were continued until their completion in 2020. In 2020 the process of awareness raising, and implementation of this approach was strengthened by providing training to project partners and the technical staff. The implementation strategies focused on identifying economic opportunities along the horticultural value chains, providing support to individual as well as women groups. The implementation experience of WEE interventions in areas of seedling production and post-harvest processing of vegetables allowed for some adjustments to the business models initially designed, considering some cultural elements and the intrinsic roles of women in household chores.

The evaluation considers that the implementation of the revised gender strategy came rather late in the life of the project and thus the project could not maximize on opportunity to mainstream gender activities. The following lessons are emerging:

- There are many opportunities within value chains for activities relevant to women. An analysis of target value chains is required at the start of the project to identify entry nodes for women economic empowerment.
- Training on business management, entrepreneurship and basic life skills such as leadership, networking and communication is essential to equip upcoming women entrepreneurs.
- Group enterprise activities managed only by women groups may be constrained by literacy issues affecting members. Mitigation measures may be required including identifying suitable local mentors/facilitators

6.2 Output 1.1 Development of inputs and domestic seed providers and producers

Summary of Outputs

HS has been working with IIAM and other local stakeholders for the introduction of tropicalized OPV varieties from Brazil. This resulted in the validation and registration of 24 OPVs and training of 71 farmers and a company Oruwera in seed production for onion, garlic, and lettuce. As of December 2020, 38 t onion seeds, 54 t garlic seeds and 242 kg lettuce seeds had been produced. This has however been sold informally as formal seed marketing requires certification. HS has been working with relevant stakeholder (the Department of Seeds of the Ministry of Agriculture, the ANS, IIAM and APROSE) for the formulation of the certification regulations. The contents of the regulations were accepted by all stakeholders. The final legal formulation of regulations is under review by the Ministry of Agriculture.

The market for seeds and other agricultural inputs is becoming more dynamic in the region and demand for improved seed is steady increasing in response to the demand creation activities that have been under implementation led by distributors and agro-dealers with

support from the project. 13 input providers (up from 3 at the start of HSII) have been participating in project activities and these include K2, Syngenta, TECAP, AGRIFOCUS, PROMA Comercial, AKILA Comercial, AGROZOO, Olima Farm, Loja Baccar, Hélder Comercial, Bayer, Amarula Farm and AFIAGRA. Input's providers sold around 4,500 kg of seeds (OPV and Hybrids) in the last three years (average of 1.500kg/year). 9 383 farmers (39% women) are reported to be using improved seed.

Effectiveness:

Ongoing onion and garlic seed production campaigns are not being registered or inspected by the Provincial Seed Laboratory of Nampula, since the relevant regulations have not yet been approved. The project has provided various capacity building support targeting IIAM staff, producers and Oruwera. As demand for basic seed increases IIAM will need to increase its own capacity to match this. Development of a business model for IIAM to produce basic seed in a sustainable manner was planned but the activity was not operationalised due to delays in certification. The poor quality of locally produced seed of other crops has been a matter of concern in recent times. Effective inspection and certification are therefore critical. The capacity of the National Seed Services to undertake such inspection is a topic that InovAgro and its partners having been addressing. It was planned that HS would also contribute to the training of private seed inspectors once the regulations had been approved. Stakeholders interviewed consider the development of a hybrid seed market as equally important and that HS should have provided more investments and support in this direction.

The project has been working with seed companies and agro-dealers in demand creation activities. The extent to which seed, and fertilizer partners were mobilised to participate in the same demos is not reported upon. Equally no information is provided by the project on the amount (volume) of fertilizer sales promoted with these activities. Increased production (especially from use of hybrids) requires use of fertilizers and effective control of pests and disease through chemicals and integrated pest management. Farmers believe that it is not feasible to produce horticultural crops during the summer season. Demos needed to be mounted in different times of the year to show producers the technical and financial viability of all year-round production. Project reports do not highlight this technical approach.

Sustainability

The approval of the certification regulations is a critical element to the development of a local seed producing industry. Experience has shown that such processes tend to be slow within the MADER and may not be achieved quickly without an external facilitator or interest body. No clear exit arrangements have emerged to continue with the facilitation role that the project was playing. This activity will require the active involvement of the industry. This is an activity that could be taken by a better organised seed industry body (MITSA or APROSE.)

With respect to local production of seed relationships between local seed producers and the ANS, the Nampula Seed Laboratory, ORUWERA and IIAM have been facilitated. A good understanding between the private company (Oruwera) and the producers will be able to give continuity to the efforts made once the relevant regulations have been promulgated. Lack of basic seed through IIAM may force the development of alternative arrangements that will compromise the quality of seed produced. For example, project reports indicate that in response to the scarcity of basic seed in the country, two courses were held on positive bulb selection processes for the production of "improved" onion and garlic seed. This underlines the need to ensure that adequate capacities are installed at the level of IIAM to guarantee availability of basic seed and that proper certification procedures are in place prior to any seed production process taking place. Failure to this undermines the integrity of the local seed industry.

6.3 Output 1.2. Development of Technology Transfer services (B2B) and WEE activities

Summary of Outputs

HS has been promoting development of production of quality seedlings using trays. The project has supported 16 seedling production ventures in trays (2 managed by women). In the first half 2021, the seedling ventures (16 -in trays- and 8 -onion open field-) produced nearly 7,458,578 seedlings (6,360,800 onion in open field and 1,067,778 in trays). 2,068 farmers are assessing improved seedlings. Participating farmers have received training on good practices for seedling production and have been linked to private sector companies that provide required inputs such as trays, rakes, sifters, substrate, plastic and disinfectant products. HS has also supported some pilot initiatives to produce horticultural crops under shed net conditions as a strategy to guarantee all year-round production. This activity is targeting producers that are willing to co- invest in the setting up of such infrastructures. 21 such ventures have been supported with 40% co-financing. Training has been provided to some 80-extension staff drawn from Government, NGOs, input suppliers and operators of the ventures as a strategy to building a network of trainers that can assist farmers interested in setting up such infrastructures.

Effectiveness:

Cultivation under protected conditions allows for all year-round production of horticultural crops. It however has a high initial capital requirement that may not be within reach of a majority of producers. This was confirmed in the interview with one of the participating producers. Success in such investments requires diversification into the production of high value nontraditional vegetables. This activity however should be viewed as a pilot activity. As a pilot it was successful in demonstrating the potential but more time was required to prove the viability of the activity. The quality of the shed cloths is also another issue. In sites visited the cloth was already showing signs of damage in the lower edges meaning that beneficiaries may have to seek its replacement within a few seasons. The consolidation and growth of protected cultivation areas and seedling production will take longer than the life of the project and will be influenced by the supply and demand for vegetables in the region and the ability farmers to mobilise resources to make such investments. Production of seedlings in trays is a specialized method that is justified where expensive seed is used. As farmers move to the production of more expensive hybrids, this method of seedling production is justified as it leads to lower losses. Such considerations will influence the demand for such services and thus the volume of business from such enterprises.

Sustainability

The project has introduced pilot projects that should serve as demonstrations for other farmers that may want to take up the technologies. A number of key factors will determine the sustainability of this activity and the possibilities for scaling up. First the ability of target beneficiaries to raise the initial investment. This will in part depend on the ability for farmers to source capital from the market. This opportunity is limited. Equipment suppliers may also offer payment terms to farmers including cost sharing arrangements. The experience with Syngenta support to one of the shed cloth facilities is a good example of such an option. This is a model that the project could have explored more during the pilot phase. Second, the business viability of the enterprises. This element has still to be confirmed. Although the project indicated that it had assisted beneficiaries in developing business plans, those interviewed during this evaluation did not demonstrate that they had internalized the key parameters of such plans (eg breakeven, costs etc) Seedling producers will need to sell high enough volumes to be able to generate sufficient revenue. The protected production requires the production of high value vegetables that can be sold into niche markets such as supermarkets, restaurants and hotels. Some of the beneficiaries (eg the women group visited) will need continued implementation

support. This may come from the local extension staff or some other follow-on NGO initiative. Third, the ability of the beneficiaries to meet the repairs and maintenance costs as well as replacement costs. The quality of the equipment being offered on the market is a relevant consideration.

Due to the above considerations, the prospects of a widespread adoption of these technologies may not be high. A review of the experience from Phase 1 had concluded that ... smallholders lack on the one hand the capacity to invest into costly equipment for protected cultivation (tunnels) and on the other hand that the uptake of seedlings for production was also limited by smallholders. In the light of these experiences, the project will not engage intensively in interventions on protected cultivation and nurseries, but on a 'demand-driven' basis by potential investors (source: 2017 Annual report p.16).

6.4 Output 1.3 Development of Technical Assistance services

Summary of Outputs

Farmers suffer from limited exposure to Good-Agricultural-Practices (GAP) and a low rate of adoption due to insufficient public and private extension services. This intervention aimed at developing a sustainable technical assistance service system to support producers in the target areas. The activity targeted technicians from public, private and NGO institutions by offering specialized training courses in different areas of vegetable production. Some of the activities implemented included i) training of staff of agricultural colleges to improve the quality of training of students (709 trained). Community outreach activities have also been supported ii) training of staff of agro-dealers who in addition to selling their products also offer technical training to farmers iii) training of staff from local NGOs involved in implementing community projects. iv) training of public sector extension staff. 26 SUSTENTA PACEs were trained. A multimedia educational package consisting of 8 videos was developed. A notable innovation has been the setting up of technical advisory centers "Consultórios Agrícolas" (CoA) which are physical spaces, fixed or mobile, established in some agrarian institutes and/or in the agro-dealers stores, where producers can access relevant information and advice. The essence of a CoA is to do "for free work", which complements and adds value to the service or business being promoted. By the end of 2020, 14 CoAs were established of which 7 are active permanently, 3 intermittently and 4 have discontinued due to COVID 19.

Effectiveness

Training of trainers and facilitating the work of trainees to then transmit their knowledge to the intended beneficiaries is considered an effective multiplier method to achieve wider outreach. In this regard the project adopted a good strategy. Training of farmers is however generally viewed as a public good since beneficiaries do not pay for such training and therefore do not generate tangible "economic benefits" for trainers. The incentive mechanism that has been built into the training of trainers' system, especially with respect to the COA may not be adequate or sustainable. A good proportion of the beneficiaries of training was staff of agricultural colleges. The immediate interface of such staff are students. That students would then serve as transmitters of knowledge in their communities is unlikely to be an effective strategy for training of farmers within the timeframe of the project. Given the inward-looking nature of majority of agricultural colleges and the fact that they may also not have resources to support any outreach activities, undermines the strategy. One of the strategies proposed for the closure of the project is based on the transfer of the function of facilitation and articulation of these activities to the SDAEs. In its June 2021 report the project states that ".....the lack of motivation, development vision, commitment and logistical capacity of these institutions has been felt; some more or less than others, which means that the project has had to reformulate some different exit strategies...." The fact that the project was not able to find an effective

working relationship with the SDAEs was a weak point of the strategy. It is a well-known fact that public extension system has limited resources and to accommodate any additional activities outside their normal plan would require that the interested partner contribute to the costs of such activities. Providing such resources is however an effective short-term solution but does not improve the situation in the long run.

Sustainability

The exit strategy of the project assumes that staff of trained institutions will continue to offer and replicate trainings ensuring that target producers receive the required technical knowledge to improve their agricultural practices. This will be achieved with respect to the more permanent institutions within the public sector especially the local SDAEs. With respect to NGOs, they tend to have the same character as the project itself and will exit at the end of their own funding. Where their programmes end at the same time as the project, as is the case with OLIPA, then their usefulness in this regard is limited. Extending training to agricultural colleges is a long-term strategy that may not have immediate benefits to the project as they generally have no capacity to sustain outreach into communities. It is debatable if a project like HS should have taken up this task. The focus should have been on self-sustaining market actors including the public sector actors that rely on public funds to sustain their operations. It is reported that in the last two years, technicians from private input companies have started to become aware of the usefulness of providing TA services, and it is with them that work has also been done to develop their capacities to make the services sustainable. Non state actors such as NGO projects should be treated as implementing partners whose capacity building is relevant to deliver project services as required. They do not make good candidates for an effective exit strategy.

6.5 Output 2.1 Development of community and farm-based irrigation solutions

Summary of Outputs

This activity seeks to provide irrigation support services to communities and individual farmers that are located in areas with good sites for water harvesting and suitable land for irrigation. A cost sharing grant mechanism has been used to support community and individual farmer irrigation projects. Related activities involved working with private sector actors to promote uptake by farmers of water harvesting, manual and solar pumping and water distribution technologies through various publicity channels including demonstrations and shows. HS has also been working with the private sector distributors to establish a supply chain for irrigation equipment and accessories

25 irrigation systems/solutions have been completed covering an area of 198 ha and benefitting some 1,482 farmers.

Effectiveness

The project reports that delivery on the activity was affected by COVID which resulted in increased cost and untimely delivery of materials and equipment. Farmers also faced difficulties in meeting their contributions. Besides that, civil construction companies showed no interest in the implementation of small works. Thus, the project assumed a direct implementation role working with local mason operators. Tendering in large lots rather than on a scheme-by-scheme basis could have been an effective alternative solution to attract contractors. However, the project reports that the experience with tenders were rather disappointing as the emerging cost of works was unreasonably high.

Sustainability

Requiring users to co finance investments both in cash and in-kind augers well for sustainability. Training has been provided to both users and technicians from partners institutions on repairs and maintenance. The low-cost technologies that the project has been disseminating including gravity systems, solar powered irrigation and people powered pumps systems are appropriate and will contribute to sustainability. The main challenge to continuity and upscaling of the intervention is the ability of farmers to raise the capital required for investment in pumping and water delivery systems. The lack of a financing window to meet this need affects upscaling. No viable solution was presented as an exit option for the project. A related matter is the need for beneficiaries to put up sufficient funds to replace equipment or making necessary repairs to distribution systems. Although the Nacololo farmer group visited by the mission is reported to have previously participated in the repairs of its pump, they did not, appear to have set a target level of saving for this purpose. Interventions in irrigation development are relevant for the development of horticulture. What continues to be missing is a market driven model to support individuals interested in this type of investment. The model being pursued by the public sector through IRRIGA is the development of medium and large-scale collective public schemes. This can address requirements of communities but does not respond to the needs of individual commercial operators.

6.6 Output 3.1 Development of quality product providers

Summary of Outputs

This intervention seeks to support farmers to improve the quality of products through the introduction of processing and packing solutions using simple equipment adapted to their economic reality. Activities supported include the introduction of two prototype sorting and grading tables- one for handling large volumes and the other for domestic use; providing support to two carpentry and locksmith ventures that build the tables and providing demonstration packaging materials to strategically located associations and institutions and distribution of 22 tables to associations, small scale aggregators and emerging producers. The use of appropriate packaging such as wooden and plastic boxes and net bags has been promoted and has attracted the interest of many farmers. By the end of June 2021, suppliers of these materials reported that demand and sales of the packaging material have increased, selling more than 10,000 net bags, 1,000 wooden boxes and 1,500 plastic boxes. District level fairs and round tables involving farmers, traders and other actors have been organized.

Effectiveness

The project has implemented various interesting pilot initiatives and there is clearly an interest in use of improved bags as well as in sorting and grading equipment. Some increased volume in quantities sold is reported. The bulk of this production is destined for the Nampula wholesale market. There is however no evidence presented in progress reports that show that current initiatives are plugged into structured markets such as hotels, supermarkets and those catering for the mines. These are the more selective markets that would reward producers for making such post-harvest investments. The projects reports that it had designed two model fresh produce collection and processing centers one for Nampula and the other for Cabo Delgado. The economic recession caused by the COVID pandemic and the political and social crisis in Cabo Delgado limited the options of the project to develop aggregation models targeting tourisms centers, mining operations and supermarkets in the region.

Sustainability

This evaluation considers that current initiatives do not provide for sustainability. For farmers to invest and be rewarded for quality they need to be part of structured value chains. In this case the end market, transferred by the traders in between, will define the quality parameters that need to be observed. The farmers would in turn make the necessary investments that would allow them to meet the minimum requirements of such markets as well as reaping price reward for meeting any grading standards that may apply. The project was operating at pilot stage and needed to have been working with defined off-takers for such pilots to adequately demonstrate the benefits of investing in quality improvements. In the case of the ADPP managed facility farmers that used to bring produce for sorting and grading have reduced after the buyers that used to purchase from ADPP stopped coming. During the evaluation mission visit no processing activity was taking place which might also be a result of the low season during the evaluation.

The organisation of district fairs and round tables is useful as it brings together market actors. These have however continued to be under the direct management of the project (through a service provider) up to the end. There was a need for a successor institution that would allow for their continued organization. A missed opportunity was to work with the Provincial Directorate of Industry and Commerce, the entity responsible for similar events at district and provincial levels

6.7 Output 3.2 Collecting, analysis and diffusion of market information

Summary of Outputs

This activity has been under implementation since HS I involves collection of market related data on the wholesale market WARESTA in Nampula. At the end of 2019, a digital system (www.warestaindex.com) was developed as a repository of this information. The objective of the online system is not only to facilitate the recording of information, but also to publish it in real time. Regular reports are produced that publish the information and 7 such Waresta Index Reports (2014-2020) have been published. Management of the system has now been transferred to the technical partner, UniRovuma.

Effectiveness

Information is being collected and disseminated from the main wholesale market, Waresta. For more effectiveness the system would need to be widened to collect information from other markets and ideally also district markets. Government stakeholders interviewed consider the current system as a useful contribution to decision making. No information dissemination activities are under implementation and therefore the system is not yet benefitting the project target groups. The existing market information system at Rovuma University is rather basic and not really used by farmers and other actors of the value chain. The issue as such is valid but needs a better orientation to the needs of users. An analysis of the market information needs of the actors in the horticulture and other value chains must be a first step. Afterwards data collection and information technology must be defined. A viable financing model for the activity must be developed including exploring options for introducing it as an embedded service by the wholesales

Sustainability

Sustainability depends on i) institutional arrangement for information collection, processing and dissemination ii) availability of resources for financing the activities. To reduce costs and

improve sustainability, it would have been more appropriate to secure the participation of an institution that has some minimum infrastructure to support the system. While the University may have the technical competence to administer the system, it lacks the infrastructure to run a decentralized information collection and dissemination system. As a public training institution this activity is not part of its core business and therefore it may not have sufficient internal resources that it can apply to run the system. The University will therefore need to secure resources to set up all these structures and given its public sector nature, this may be a challenge and raise concerns on sustainability. Partnership between the University and the Provincial Directorate of Agriculture and that of Industry and Commerce would improve on sustainability.

7. Impact

Evidence from discussions with partners and beneficiaries during this evaluation shows that HS is considered a valuable and important actor in the horticultural sector in the region. Its technical contributions to the establishment of a local seed production system as well as its contribution to increasing production and productivity by working with inputs distributors and technical trainers including the capacity building provided to various actors is acknowledged.

In quantitative terms the project has met its targets. The project has been working with 27,142 farmers that are reported to be in adoption phase of the various technologies under promotion and/or received technical services. Adoption of improved seed account for 60% of beneficiaries followed by access to TA services at 20%. The number of farmers benefitting from access to post harvest technologies and market information is however low at about 1.6%. It is noteworthy that there is an overlap in farmers adopting one or more of the technologies under promotion.

The project reports an average yield increase of 35% against the 30% target. It is recognized that net yield increases are however variable across crops. Modest increases have been registered with crops such as onions, tomato, garlic while cabbages registered an increase of over 50%.

During the life of the project new dynamics have emerged in the inputs supply sector. The number of horticultural seed suppliers has increased substantially from 3 in 2017 to some 13. According to the registers of the importers and distributors (that are working with the project), demand for seed has increased and more than 4,500 kg seed (improved OPV and hybrids) were sold over the past and 9.383 (39% women) are using improved seeds

Project design envisages however that the project would foster systemic changes to the inputs and output markets for horticulture. Faced with a situation of the presence of few market actors, the project adopted a more direct delivery role focusing mainly on provision of technical services. This has come at a cost of not being effective in facilitating sustainable systemic changes in the horticulture market system as only a few systemic changes can be seen. The project underwent structural changes in 2018, leaving it about two years to implement during which the problem of COVID undermined performance. While many interesting innovations are emerging from the project's interventions, their adoption is only beginning to take place and their sustainability requires more investment in the development of institutional plans at the level of the various public and private sector actors, showing the ways forward for systemic change.

The evaluation therefore concludes that the objectives of HS II and its vision of promoting continuous vegetable production throughout the year and in a more competitive way, have partially been met. This might partially be explained by the limited duration of the project.

Initiatives to promote access to markets are considered not to be at the stage one would have expected at the end of this second phase of the project. Stakeholders consider access to

markets one of the main outstanding challenges still faced by farmers. Most of the merchants or buyers of the system are informal (and itinerant in many cases), making farmers more vulnerable to market risks and uncertainties. There are no large-scale aggregators or processing facilities to provide the demand pull. This element did not receive sufficient attention from the project.

8. Relevance

Relevance considers the extent to which the project's theory of change, design strategies, management structure and delivery mechanisms are aligned with program objectives.

HS is considered highly relevant. The justification elaborated at design has remained valid for the whole period of its implementation. The programme has remained aligned to GOM objectives and particularly the new vision to accelerate the development of a commercial agricultural sector through improved access to inputs, practices, irrigation and markets. Horti-Sempre also directly responds to the Agenda 2025 of the Mozambican government and its agricultural development strategy (PEDSA 2010 – 2019) with the vision for “an integrated, prosperous, competitive and sustainable agriculture sector”. The project has provided capacity building in support of government institutions including the national Research Institute, Seed Services and networks of extension staff under SDAE. The Provincial Government institutions that participated in this evaluation appreciated the collaborative manner in which the programme was implemented.

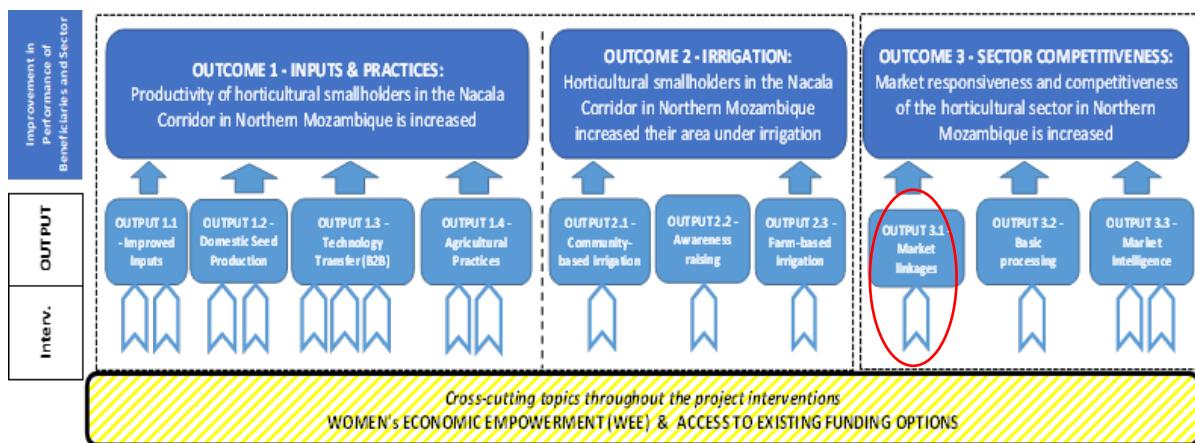
The horticultural sector is a source of livelihoods for a majority of smallholder farmers in the Northern Region. The demand for horticulture products is strong and growing driven by rapid growth in the main urban centers of Nampula, Pemba and Lichinga. The mining operations and the tourism sector continue to be important demand drivers. There continues to be a huge gap between supply and demand and therefore facilitating a further dynamization of the horticulture system in the Northern Provinces and improving the integration of small-holder farmers into such systems will likely remain highly relevant for the medium-term future.

HS is in line with the indicators of the SDC Cooperation Strategy with Mozambique 2017 – 2020. HS managed to contribute to improved market opportunities, skills development, and improved access to services for smallholder farmers.

The design framework of the project makes a few assumptions that emerged to be a challenge to its implementation.

- The widening of the beneficiary classes to include non-market focused subsistence farmers meant that the project could not consistently implement an MSD approach to all its activities.
- The 2018 redesign unwittingly eliminated output 3.1 on market linkages. The project has thereafter not adequately emphasized on this output with the result that deliverables with respect to this activity is no longer as distinct as per the original design of the project

INITIAL INTERVENTION'S STRUCTURE (until 2018)



9. Efficiency

HS phase II operated with a budget of 6,994,760 USD for the period 2017 to 2021. The actual expenditure up to 31st October 2021 is USD 6,846,990 (98%). Management estimates that the final end of project expenditure will be USD 6,953,787 (99%). Expenditures are in line with the budget across all budget lines except on evaluations and planning (59%) for which no expenditure is recorded for the period 2017 to 2019. This may be attributed to the project management challenges that the project is reporting for this period. It is also reported that part of this budget had initially been reserved for the final evaluation of the project

To determine the efficiency of the program implementation one has to i) analyse the costs per beneficiary and ii) compare the costs per beneficiary of the programme to the additional net income of the target groups. The beneficiaries is the number of producers adopting and applying the innovations promoted through the project and its partners for the period up to June 2021. A cost to beneficiary ratio of USD 256.20 was achieved. On the basis an income per farmer of USD 630.42 reported by the project, the ratio of income benefits to program costs for the period is 2.46. This ratio is comparable to that achieved by InnovAgro of 2.64. However, the ratio of net income increase per farmer to programme costs is 0.70

Total Expenditure	6,953,787
No of beneficiaries	27,142.00
Cost/beneficiary	256.20
Average net income per farmer	630.42
Average net income increase per farmer	180.42
Net income/dollar invested	0.70

Table 1 Budget and expenses of Horti-Sempre for Phase II (incl. extension 2021)

		Budget/Costs							
		2017	2018	2019	2020	Forecast December 2021	Costs 2017a 2021	Budget 2017-2021	% execution
Part 1-3									
Part 1	Services Headquarters	10,125	15,409	11,220	11,220	14,556	62,530	63,029	99
Part 2	Local Office	182,359	194,560	170,113	149,505	83,000	779,537	779,541	100
Part 3a	Long-term experts	497,824	470,466	455,346	460,369	467,000	2,351,005	2,351,991	100
Part 3b	Short-term experts	0	0	0	0	0	0	0	0
Part 3c	Local Support	232,210	136,490	146,155	138,996	135,520	789,371	810,015	97
Total Part1-3		922,518	816,925	782,834	760,090	700,076	3,982,443	4,004,576	99
Administrated project funds								0	
Outcome 1	Inputs and Practices	445,231	254,168	328,688	281,106	256,963	1,566,155	1,571,695	100
Outcome 2	Irrigation	207,534	148,707	94,124	186,232	60,601	697,198	697,587	100
Outcome 3	Sector Competitivness	99,653	74,324	22,720	36,774	53,719	287,190	291,163	99
Monitoring and Measurement		77,630	34,578	6,642	76,686	69,345	264,882	266,119	100
Information and sharing		55,057	-2,398	32,924	18,877	45,455	149,916	153,511	98
Evaluations and Planning				0	4,504	1,500	6,004	10,109	59
Total Administered Funds		885,104	509,379	485,097	604,179	487,583	2,971,344	2,990,183	99
Total		1,807,623	1,326,304	1,267,932	1,364,269	1,187,659	6,953,787	6,994,760	99

Table 2 Project beneficiaries at 31st June 2021

Output	Name of the Intervention	Beneficiaries									Technicians, Teachers and Students		
		Cumulative (Jan 2017- Dec 2020)			Achieved (January - June 2021)			Cumulative (January 2017-June 2021)			Cumulated (Jan 2019-June 2021)		
		M	F	T	M	F	Total	M	F	T	M	F	T
1.1	Development of inputs and domestic seeds providers and producers	13,006	9,439	22,444	447	838	1,285	13,453	10,277	23,729			
1.2	Development of Technology Transfer services (B2B) and WEE oriented activities	5,908	2,597	8,505	190	100	290	6,098	2,697	8,794	180	84	264
1.3	Development of Technical Assistance services	5,198	3,065	8,263	284	139	423	5,482	3,204	8,686	541	168	709
2.1	Development of community and farm-based irrigation solutions	1,032	688	1,720	240	336	576	1,272	1,024	2,296	181	25	206
3.1	Development of quality product providers	307	60	367	19	12	31	326	72	398	125	44	169
3.2	Collecting, analysis and diffusion of market information	622	119	741	1,113	711	1,824	1,735	830	2,565	21	12	33
Total Interventions		26,072	15,968	42,040	2,293	2,136	4,429	28,366	18,103	46,469	1,048	333	1,381

10. Management of the project

HS is reported to have gone frequent management changes prior to 2018. This stabilized during the past three years of the project. A consultancy commissioned in 2020 to analyze the project implementation and present an outlook for future interventions (Tim Gamper Final Report: 24.07.20) concluded that the management structure of HS were considered suitable for the implementation of HS. It was observed that a lot of improvement had been registered since the 2018 project restructuring but however that the project continued to struggle with adopting an MSD approach. Given the realities of a market with few and weak actors the project has been playing a much more direct delivery role focusing on technical assistance and expertise. This approach meant that its outreach was then limited the capacity of available staff. The project had limited presence in the regions it was working. The direct implementation approach

is considered as not effective in facilitating sustainable systemic changes in the horticulture market system in Northern Mozambique. The study acknowledged that such a direct intervention mode is relevant and a realistic option under the project environment of few market actors. This strategy was meant to be pursued until a certain degree of experience was gained among public and private partners. However, the challenge faced by the project is how to manage the transition away from such a role to a more facilitation role. The report cautions that it would be “wrong to conclude that MSD does not work in Northern Mozambique but rather it is more about how it can be adapted to the context and how the above-mentioned transition can best take place in this specific environment”. HS in its 2021 June report recognises the need to make further investments into its role as a facilitator and move away from having a direct delivery function.

11. Phase out and Market Systems Development

Change of market functioning is evident in the sense that

- there is an increased presence of seed supply companies. HS has been working with 13 companies up from 3 at baseline
- large increase of agro-dealers who are hiring field technicians to advise on GAP, while selling their products
- the project independent replication of specialisation courses in horticulture at agriculture institutes
- the increased adoption of improved seeds, both OPVs and hybrids, amongst producers
- the adoption of new packaging methods for fresh produce

Critical points of the market development are the still not really improved services of Government such as:

- seed certification process
- lack of budget for SDAE
- training for farmers
- too little resources for research (IIAM)
- bad road infrastructure in remoter areas

The second area is the lack of financial institutions providing working capital for the SMEs in the value chain (agro-dealers, commercial farming enterprise).

The third area is access to market services to drive investments in production.

It remains the question what the attribution of Horti-Sempre to the changes in the market system was. The expansion of agro-dealers also occurred due to donations or heavily supported deliveries of transport means as well as supporting farmers' demand (voucher program of FAO). These facts may be considered as happy coincidence which is positive for the actors in the value chain. To quantify the contribution of the project to the market changes is not possible. But it shows that MSD projects are embedded in complex environments with many actors not following a market-oriented strategy. Sometimes this helps some actors within the value chains (e.g. investments of agro-dealers), sometimes it distorts the markets (subsidies).

Since the sister project InovAgro was working partially in the same districts as Horti-Sempre combined effects of activities both projects may have arisen in the markets and supported the efforts mutually. Other programmes such as PROMER and INOVA have also been targeting the same districts in Nampula and Cabo Delgado and sometimes the same stakeholders with similar interventions.

12. Lessons learned

The evaluation team has taken up some of the lessons learned proposed by Horti-Sempre which are in line with the overall achievements of the project. Some lessons were added by the evaluation team.

Access to Seed

- The approval of the certification regulations is a critical element to the development of a local seed industry. Equally the development of an effective certification system is critical for the credibility and integrity of the locally produced seed. The NSA lacks the capacity to deliver on this and the involvement of the private sector through private sector inspectors is considered relevant and necessary
- There is an increasing appetite for hybrid seed. A disincentive to adoption is the relatively higher cost of the technology. Farmers consider the low producers price a major disincentive to adoption.
- The actors involved in this area are increasingly aware of the needs and are seeking to diversify their portfolio of products and services, incorporating trained personnel to provide after-sales services and technical assistance. These actors are the basic pillar for assuming the responsibilities and continuity of the project's interventions.

Demand Creation Activities

- Sustainability of demo-plots is only secured if seed companies will finance them in future via the agro-dealer network, farmers associations. Greater integration of local extension networks is considered necessary in order to harmonize extension messages
- Production improvement and quality require investments not only in improved seed, but also fertilizer and chemicals. There is a need to mobilise fertilizer and chemical suppliers to co invest in same seed demos for effective results
- Smallholders lack the capacity to invest into costly production systems such as greenhouses/shed-cloth or seedling production under trays and require financial services that would allow them to borrow to make such investments. Such investments should however only be promoted where there are opportunities for production of high value crops suitable for niche markets

Development of community and farm-based irrigation solutions

- Communities can be mobilised to make contributions in cash and kind. This approach secures their commitment to the project
- Communities need to be mobilised to make adequate savings that would guarantee availability of resources for maintenance

Financial system:

- Lack of a financial system to promote productive investments and limited investment capacity, stop the development of a more modern horticulture. The financial sector is not sufficiently interested in supporting the development of financial products aimed at promoting agriculture (high-risk area)

Production of Quality Products

- The standard of quality of products is commonly defined at the level of the market. Support for quality improvement therefore requires identifying the target market and its requirements
- For farmers to invest and be rewarded for quality they need to be part of a structured value chain. In this case the end market will define the quality parameters that need to be observed. The farmers would in turn make the necessary investments that would allow them to meet the minimum requirements of such market as well as reaping price reward for meeting any grading standards that may apply

Capacity Building

- It is not the mandate of a project like HS to build institutional capacities at all levels of the horticulture system in Northern Mozambique. The project can facilitate change, support piloting and up-scaling of successful interventions, but institutions need to change based on their own internal drive. Such changes take considerable time and are not likely to fully materialise over the lifetime of a project phase, in particular if it has undergone considerable strategic adjustments along the way.
- The involvement of other actors such as private actors (NGOs, companies, suppliers) was a successful strategy to expand the knowledge and dissemination of GAP in horticulture, generating greater adhesion and confidence among producers and allowed to scale up and expand the scope of intervention.
- Capacity building of Agricultural Institutes and Universities may not bring immediate impact on the project, but is considered a long-term strategy to the development of the sector.

Gender

- Designing stand-alone interventions for gender issues runs the risk of losing focus in reaching positive gender dividends in the core areas of the project. It 'outsources' gender to few interventions, specialized delivery mechanisms and implementing partners, rather than truly making it everybody's business.
- Gender equality mainstreaming is most successful, if it is based on the necessary in-depth analysis of needs of both women and men using adequate expertise and experience throughout the PCM process and if capacities within the team and partners on this are continuously strengthened.

13. HSII Implementation Challenges

The **project team** identifies the following as the main challenges that had to be overcome during the course of implementation

- Disjointed actors; producers with little access to services and inputs
- Low technical knowledge about vegetable production (technicians and producers)
Scarce suppliers of TA inputs and services
- Poor quality and low diversity of seeds, inputs and equipment
- Weak organisational structure at producer level (associations and cooperatives) and limited investment capacity of private entrepreneurs
- Many institutions working in the same districts, with the same people and with different technological and subsidy proposals

- Difficulty in applying and understanding the MSD approach at all levels Main Constraints
- Producers used to receive subsidies and free inputs
- The government extension system is very weak and limited
- Political campaigning for elections
- Lack of interest of government, construction companies and equipment suppliers to develop small irrigation systems
- Limited financial conditions for producers to invest and co-finance in irrigation and protected production
- The financial system does not respond to the needs of the agricultural (high-risk)
- Humanitarian aid vs. economic development (climatic events, COVID-19 and terrorism)

14. Areas not yet Secured

- Approval of Seed Regulation
- promotion of use of hybrids and other modern inputs (fertilizer, chemicals) to improve productivity and quality
- Improved market linkages
- Value Addition (agroprocessing, packhouses)
- Market information system that responds to needs of farmers and other actors
- Financing for SMEs in horticulture value chain

Annex 1: Evaluation Matrix

The evaluation will carry out focus group discussions with all groups of smallholder farmers. Women groups will especially be considered under the discussion of cross-cutting aspects.

1) Relevance

Main Questions/sub-aspects	Discussion partners	When
Objectives and strategies in line with the priorities of the partner countries?	SDC, respective ministries	1 st week
Difficulties/changes during implementation?	SDC, resp. ministries, SC team	1 st week
Impact of climate change?	SDC, resp. ministries, SC team	1 st week
Which aspects positive/negative?	SDC, resp. ministries, SC team	1 st week
Relevant, valid and consistent with the needs of the direct and indirect target groups?	Focus groups discussions target groups, actors of the value chain	2 nd week
What changed in their business model?	Focus groups discussions target groups, actors of the value chain	2 nd week
Which innovation?	Focus groups discussions target groups, actors of the value chain	2 nd week
Economic impact?	Focus groups discussions target groups, actors of the value chain	2 nd week
What didn't work?	Focus groups discussions target groups, actors of the value chain	2 nd week
Changes due to environmental and/or COVID crisis?	Focus groups discussions target groups, actors of the value chain	2 nd week

Intervention logic models (including assumptions, risks etc.) valid and at appropriate levels?	Evaluation team	2 nd week
Outputs consistent with the intended impact, overall goal and the achievement of the project objectives?	Evaluation team	2 nd week
Relevant for the market actors without disturbing markets?	Focus groups discussions actors of the value chain	2 nd week
What changed in the markets during the last 5 years?	Focus groups discussions actors of the value chain	2 nd week
What are the reasons for these changes?	Focus groups discussions actors of the value chain	2 nd week
Which expectations for the future developments of the markets?	Focus groups discussions actors of the value chain	2 nd week
What impact had interventions of Government?	Focus groups discussions actors of the value chain	2 nd week
Which influences did/do have projects of other donors?	Focus groups discussions actors of the value chain	2 nd week
Complementary and coherent with other similar projects?	SDC, respective ministries, other projects	1 st week

2) Effectiveness

Main Questions/sub-aspects	Discussion partners	When
Analysis of the quantity and quality of project outputs and results (outcomes) achieved?	Evaluation team	3 rd week
Which intended and unintended, including both positive and negative effects?	All interview partners	
Why did they occur?	All interview partners	
Application of a market system development approach?	Implementing Organizations	2 nd /3 rd week
Reasons for deviation?	Implementing Organizations	2 nd /3 rd week
Which effects in the implementation of the projects?	Implementing Organizations	2 nd /3 rd week
Effectiveness of private sector partnerships and the project's role in the partnership towards the set objectives?	Implementing Organizations, actors of the value chains, public partners	All the time
Which value chains are functioning today without interventions?	Implementing Organizations, actors of the value chains, public partners	All the time
In which value chains are further adjustments necessary and which one?	Implementing Organizations, actors of the value chains, public partners	All the time
What did work well in the collaboration between private sector, public sector and implementing organizations?	Implementing Organizations, actors of the value chains, public partners	All the time
Contribution of the project's interventions to institutional strengthening?		
Question to be asked at all the interviews with institutional partners	Institutional actors of the value chains, public partners	All the time
Indications and evidences of systemic change taking place in the sectors concerned?	Implementing organizations, evaluation team	2 nd week
Separate view on the different sectors		2 nd week
Which aspects could not be achieved according to the exit plans?	Implementing organizations, evaluation team	2 nd week

3) Efficiency

Main Questions/sub-aspects	Discussion partners	When
Reaction to unforeseen external factors?	Implementing Organizations	2 nd week
Political changes?	Implementing Organizations	2 nd week
Climate change and environmental disasters?	Implementing Organizations	2 nd week
COVID 19?	Implementing Organizations	2 nd week
Efficiency of the project administration?	Implementing Organizations, evaluation team	2 nd week
Staff turnover high?	Implementing Organizations, evaluation team	2 nd week
Costs of staff in relation to overall costs and financial means used for activities?	Implementing Organizations, evaluation team	2 nd week
Overall use of budget?	Implementing Organizations, evaluation team	2 nd week
Collaboration with private and public sector actors?	Implementing Organizations, evaluation team	2 nd week
Division of labor optimized?	Implementing Organizations, evaluation team	2 nd week
Financial means of third parties available and used?	Implementing Organizations, evaluation team	2 nd week
Use of the monitoring system for decision making?	Implementing Organizations, evaluation team	2 nd week
Which improvements in the monitoring system during the phase II?	Implementing Organizations, evaluation team	2 nd week
Which data could be used for changes/adaptations of the project implementation?	Implementing Organizations, evaluation team	2 nd week
Which data improved the reporting process?	Implementing Organizations, evaluation team	2 nd week

4) Impact

Main Questions/sub-aspects	Discussion partners	When
What tangible positive or negative changes have been achieved by the project particularly for the female and male farmers?	Target groups, evaluation team	2 nd week
Income-wise? How is this measured?	Target groups, evaluation team	2 nd week
Direct/indirect changes: which ones?	Implementing organizations, evaluation team	2 nd week
Intended changes?	Implementing organizations, evaluation team	2 nd week
Unintended changes?	Implementing organizations, evaluation team	2 nd week

5) Sustainability

Main Questions/sub-aspects	Discussion partners	When
Better functioning of the market system?	Evaluation team	3 rd week
Differences among the different value chains?	Evaluation team	3 rd week
Institutional aspects?	Evaluation team	3 rd week
What is necessary for further growth of the markets?	Evaluation team	3 rd week
Economic growth of the overall economy?	Evaluation team	3 rd week
Increase of productivity at all levels of the value chain?	Evaluation team	3 rd week
Less interventions of Government?	Evaluation team	3 rd week
Stronger competition in the trade sector?	Evaluation team	3 rd week

Systemic changes in the benefit of the target groups?	Evaluation team	3 rd week
Effects of the project's measures for phasing out?	Evaluation team	3 rd week

Cross-cutting aspects

Main Questions/sub-aspects	Discussion partners	When
Gender Equality		
Women economic empowerment = successful approach?	Women of target group, implementing organizations	2 nd week
Influence of markets, traditions, available resources?	Women of target group, implementing organizations	2 nd week
Access to existing funding options	Implementing organizations, financial institutions, SDC	1 st and 2 nd weeks
Availability of funding organizations?	Implementing organizations, financial institutions, SDC	1 st and 2 nd weeks
Access for target groups given?	Implementing organizations, financial institutions, SDC	1 st and 2 nd weeks
Use of external financial funds?	Implementing organizations, financial institutions, SDC	1 st and 2 nd weeks
Impact of climate change	Implementing organizations, SDC	1 st and 2 nd weeks
Good governance	Implementing organizations, SDC	1 st and 2 nd weeks

Remark: Annex 2 (work plan) removed due to personal data of staff.