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Independent Evaluation of the FDOV Project "Pro Poor Potato"

Commissioned by the Netherlands Enterprise Agency

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Independent Evaluation of the FDOV Project "Pro Poor Potato"

Final Report

Ward Rougoor
Thierry Belt
Nienke Oomes

seo amsterdam economics

Roetersstraat 29 - 1018 WB Amsterdam - T (+31) 20 525 1630 - F (+31) 020 525 1686 - www.seo.nl - secretariaat@seo.nl
ABN-AMRO IBAN: NL14ABNA0411744356 BIC: ABNANL2A - ING: IBAN: NL96INGB0004641100 BIC: INGBNL2A
KvK Amsterdam 41197444 - BTW NL 003023965 B

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Executive Summary

Project

This report contains the evaluation of the project 'Pro Poor Potato' that was implemented with support from the Facility for Sustainable Entrepreneurship and Food Security (FDOV). FDOV is a Dutch government-funded grant programme initiated in 2012 that supports public-private partnerships aimed at improving food security and private sector development in developing countries. FDOV was implemented by the Netherlands Enterprise Agency (RVO.nl) and issued calls for proposals in 2012 and 2014 (and another one in 2018 under the successor facility SDGP). This evaluation is the third out of five project evaluations that are being conducted by PwC, AIGHD and SEO. This project evaluation was carried out by SEO.

The key aim of the Pro Poor Potato project was to develop a sustainable potato value chain in Vietnam. This project was carried out by a public-private consortium led by Fresh Studio Innovations Asia Ltd. Project partners are Agrico, PepsiCo and Wageningen UR. The project is part of the first FDOV call for proposals in 2012, and formally started in 2014.

The project had formally ended in June 2019. Project activities focused on three 'impact pathways':

- **On the private sector development side**, the project aimed to develop a sustainable value chain for potatoes and potato-based products, by introducing new, higher quality varieties of potato into the Vietnamese market, connecting the various links in the value chain and establishing a market for these new potatoes.
- **On the supply side,** the project aimed to establish a potato production system in various (remote) agri-ecological zones of Vietnam by contracting 2,500 farmers. Activities included the provision of productivity enhancing equipment, training potato production advisors, establishing demo-farms and the mechanisation of potato production.
- **On the demand side**, the project aimed to increase the demand for (higher quality) table potatoes by increasing consumer awareness of the nutritional value and versatility of potato consumption through the development of new recipes, consumer- and trader awareness campaigns and marketing campaigns.

Relevance

The design of Pro Poor Potato was relevant (ex ante) with respect to the income generation needs of base-of-the-pyramid (BoP) producers. The project aimed to increase the income levels of smallholder farmers as well as to improve the food security of the consumers and the smallholder farmers themselves. With respect to the former, the project was relevant, as the project targeted particular groups with low incomes and limited alternative income generation capacities.

With respect to food security, the project was less relevant. The country has developed beyond the level in which (part of) its inhabitants suffer from a shortage in caloric intake. Potatoes do have more micronutrients compared to rice. However, the Vietnamese perceive the potato as a replacement for vegetables rather than rice. This was consistently stated by interview partners and Fresh Studio. Other vegetables often represent a similar (or even higher) value in terms of

micronutrients. Furthermore, the project targeted potato farmers rather than rice farmers. No substitution of rice farming for potato farming took place.

The design of Pro Poor Potato was in line with the economic and social priorities of the Vietnamese government related to food security and poverty reduction. The cultivation of potatoes is at the moment not prioritised by the Vietnamese government. Nevertheless, the goal of nation-wide and year-round supply of potatoes is in line with the food security objectives of governmental policies. Moreover, by securing a better match between supply and demand, the project contributes to reducing Vietnam's potato trade deficit.

Additionality

The input additionality of the Fresh Studio activities was highly additional. The funding made available through FDOV enabled knowledge sharing between Fresh Studio, farmers, traders, retailers and end-consumers. It is very unlikely that Fresh Studio was able to do this in the absence of public funding. The limited scale of potato production makes the services offered practically unmarketable in the region.

The input additionality of the PepsiCo contribution is low. PepsiCo fully financed the training and TA given to its own contract farmers. This contribution was used as the private sector contribution to the FDOV project, but PepsiCo's activities stand largely on their own. Providing assistance to contract farmers is beneficial for PepsiCo. It thus seems unlikely that PepsiCo would not have financed and provided training and TA to these farmers without the FDOV project.

The Dutch public contribution to the project was purely financial. There was little to no involvement of any Dutch public party in the project. The FDOV financing was certainly additional but could have been supplemented by additional public involvement in the project. The project partners initially made plans for a government-to-government dialogue aimed at improving the registration process. The Dutch ministry of foreign affairs and/or RVO.nl declined. No alternative public involvement was developed.

Pro Poor Potato had development additionality via its focus on the entire value chain. The holistic approach used by Fresh Studio helped connecting the various value chain actors to each other. Fresh Studio has introduced new potato varieties, organised imports (from Agrico) and sold these to farmers. These farmers received training, were linked to traders and retailers. The retailers benefitted from increased consumer awareness and marketing campaigns. Fresh Studio even engaged with Vietnamese national and regional governments to try and improve policies. In doing so the project created increased capacity at every level.

The *timing* of the delivery of seed potatoes was suboptimal. The project was designed as such that high-quality seed potatoes were delivered from the Netherlands. These came too late for the first sowing period in Vietnam (i.e. winter harvest). Therefore, the seed potatoes could only be used for the second sowing period (i.e. spring harvest). This made the project design less additional.

Targeted farmers were already cultivating potatoes before the start of the project and little additional potato cultivation took place. In other words, no farmers that were 'new' to the concept were trained by Fresh Studio. Moreover, farmers were contacted through the network of (potato) traders. In other words, the partnership between smallholder farmers and traders was often already in place. The same applies for many of the collaborations between traders and retailers. The added value came from the trainings and technical assistance given, the newly introduced potato cultivars and the demand-side activities.

Effectiveness

PSD side

Fresh Studio contributed to the overall development of the private sector. Fresh Studio developed an extensive network of value chain parties during previous projects and cooperated appropriately with the stakeholders in the current project. Parties in the value chain experienced the cooperation as pleasant and wish to further do business. The Dutch potato varieties are well received. Both traders and retailers indicated they would like to see a larger and more stable supply of these new varieties. The new Dutch cultivars were sold in 8 larger supermarkets with in total 22 outlets. Fresh Studio thus delivered on the target of making Dutch cultivars available in modern retail chains.

Outside of the value chain Fresh Studio worked to strengthen the cooperation between the private parties and the local authorities. The potato policy discussion platform was established. The main goal of the platform is dissemination of information on relevant legislation. In 2017, Fresh Studio, PepsiCo, WUR, several local research institutes, universities and governments collaborated on writing a policy brief. This policy brief called for a long-term potato vision, a strategy and a coordinated action plan.

Collaboration with Agrico, WUR was fruitful. WUR experts travelled to Vietnam regularly to give trainings on among others the use of the tractors, harvesters and planters. The collaboration with Agrico was successful in the sense that several of Agrico's potato varieties are now fully registered in Vietnam, which would otherwise not be the case.

The target of contracting 2,500 farmers was formally met but Fresh Studio and RVO.nl should have been more precise about what this meant. These contracts are seasonal and do not reflect the number of "partnerships" established. Parties that cooperated for more than one season were counted multiple times in this aspect. In addition, also the number of partnerships cannot completely be contributed to Pro Poor Potato, as many of these parties had been cooperating before the start of the project. Finally, the contracts do not include price or quantity and should thus be considered to be little more than an *option* of selling to a specific buyer. Nevertheless, Fresh Studio perceived these contracts as a means of strengthening the relationship between farmers and traders.

The project successfully registered new potato varieties but this took considerably longer than expected. Markies and Rosagold were ultimately approved in September 2018, two years later than planned. Since this was also particularly late for the new season, no real commercial adaptation took place during the season 2018/2019. Sinora was permitted for commercial sales (passed phase 2 of the registration process) in 2015.

With hindsight the production target for table potatoes (at least 50 percent) was not realistic, especially considering the size of the operation PepsiCo was already running before the start of the project. Partly because of this, most potatoes produced as part of the project were processing potatoes used by PepsiCo for making crisps. 33 million kilos of processing potatoes were produced by PepsiCo farmers and just 2.7 million kilos of table potatoes were produced by Fresh Studio farmers.

Supply side

The project convincingly delivered on the agreed outputs. Advisors were trained and put to work assisting farmers in the field. 2,500 farmers completed all three sessions of the training module. Two demo farms were established and farmers were introduced to tractors, harvesters and planters and other productivity enhancing equipment. However, farmers showed little inclination to purchase such machines forcing Fresh Studio to adjust the number tractors, harvesters and planters bought to three instead of five sets. The introduction and demonstration of these machines was valuable nonetheless.

The supply side outcomes are a mixed bag. Fresh Studios M&E system lacked a useful baseline figure. This lack of a convincing baseline makes it impossible to confidently state whether or not targets set for yield and income increases were realised. Fresh studio conducted a baseline study in 2013/2014 using a '*combination of farmer group meetings, farmer surveys, interviews with provincial extensions and local traders.'*. This culminated in generic baseline values that were not measured at farm level but estimated by for example provincial public officers. Comparing these estimates with actual recorded yields and incomes at farm level seems to result in large productivity and income increases. We do not feel this is justified. Aside from the baseline Fresh Studio M&E data do show a twenty percent increase in yield from 2016/2017 to 2018/2019. No data from before 2016 is available, but it seems unlikely that significant yield improvements were realised before 2016.

The Dutch cultivars do offer a slight price premium over their main German competitors. Our survey results further show that farmers who received training and/or extension services performed relatively more stable over time. Where the control group suffered a decrease in yield in 2017, yields for farmers who were trained remained more or less the same. Given that prices dropped less than yields increased and that Dutch cultivars seems to trade a small premium we expect a positive impact on farmer income overall. However, the targeted sixty percent increase in income is not met.

Gender specific targets were largely met. 62 percent of the contracted farmers and 71 percent of the farmers that attended all three training modules were found to be female. The targets of 70 percent can therefore be considered (largely) met. A side note here is that about 70 percent of all potato farmers is female. The project thus did not really need to 'target' females or benefit females in any specific way. Meeting the targets set is simply a reflection of the gender ratio among potato farmers.

Demand side

Fresh Studio successfully carried out market and consumer studies to explore the possibilities for delivering suitable product varieties. Subsequently, Fresh Studio was involved in both the promotion of the potato in general through consumer and awareness campaigns, and the specific Dutch cultivars through branding and marketing campaigns.

The project helped to increase demand for potatoes in Vietnam but the scale remained small. Consumers are more aware of the nutritional value of potatoes and more inclined to actually buy potatoes than in earlier years. The sales of Dutch cultivars also increased significantly, but remained well below the expected amount due to the delays in the registration process of new varieties.

Sustainability

The newly introduced Dutch varieties are competitive against other locally produced potato varieties. Chinese imports remain cheaper and available year-round however. This means that the Dutch potatoes will have to be positioned as a premium product. Vietnamese consumers appear to be prepared to pay extra for potatoes produced in Vietnam.

The commitment of Fresh Studio to the Vietnamese agricultural sector is high. Fresh Studio indicates it will remain active in stimulating the development of potatoes in Vietnam. The demo farm will be kept in place and contracts will be maintained where possible. Moreover, Fresh Studio is considering similar potato projects in neighbouring countries. This would provide opportunities to apply lessons learned in Vietnam and could be a way to connect the potato cultivation sectors of multiple countries. Fresh Studio and Agrico agreed to extend their partnership. Fresh Studio will continue to import and sell Agrico potato varieties. They will also continue to register new varieties. Esmee and Erika obtained phase 1 registration. Moreover, trials are being conducted for 2 more table potatoes (Alouette and Carolus).

The project helped the professionalisation of the sector by introducing high quality seed potatoes and the transfer of knowledge. Table potatoes grown in Vietnam are widely appreciated. Limited progress was made in terms of mechanisation of potato cultivation. The majority of the farmers considered the use of machines too expensive. For this to change plot sizes need to increase. The project did not bring systemic change so far and the current scale is still small. However, the new varieties introduced will be available on the market from now on. Farmers were engaged in a professional and commercial way from the beginning. Seed potatoes were provided at an introduction price but farmers were made aware of this. This makes it more likely that they will continue to purchase seed potatoes from Fresh Studio now that the project has ended.

CSR performance

The project actively tried to include smallholder farmers in the value chain. Farmers were linked up with traders and traders were connected to retailers. The branding and marketing campaigns at the retailer level were designed in such a way that smallholder farmers could benefit as well. Smallholders were given packaging material and labels allowing them to signal the brand of their potatoes. Farmers were trained and given extension services as well. This has most certainly given them new market opportunities.

It does not seem likely that the farmers health directly improved through better access to nutrient rich foods (potatoes). All of the farmers in the project were already producing potatoes. Indirectly, the realised yield improvements provide additional income which may be used to buy better food.

The project was successful at promoting more efficient use of fertiliser and plant protection chemicals. The M&E data show a decrease in usage per unit of produce. This is primarily the result of higher yields per hectare. The amount of fertilizer and crop protection products per hectare only decreased slightly. The project tried to limited water usage in two ways, by introducing irrigation systems and by 'substituting' rice cultivation for potato cultivation. The targets with regard to irrigation systems were not met, primarily because of limited demand and the abundance of water in the RRD. The project has not led to any substitution of rice cultivation for potato cultivation. No plan was developed for this. All smallholder farmers in the project were either year-round potato farmers or combined rice farming with one or two potato harvests in the rice off-season.

Lessons learned for future PPP-programmes.

1. The requirement of 50 percent private finance drives project partners to team up with large corporations. That creates an opportunity to change the behavior of these corporations but only when they are actively part of the project. That does not seem to be the case here with PepsiCo focusing entirely on their own value chain.
2. The term Public Private Partnership could be interpreted a little wider. The Dutch government can play a more active role in the project, beyond financing. Government-to-government intervention may have been helpful but was declined.
3. Project partners and RVO.nl should be careful not to draw up too many goals, outputs and targets, especially when a project concerns several distinct domains (supply/demand/PSD/policy). A few key targets that are sufficiently and independently baselined beforehand may ultimately provide more information and motivation.
4. A project partner with an existing local presence is of incredible value. Fresh Studio's experience, network and knowhow greatly benefitted the project. The sustainability of the project will likely be larger as well given that the local presence does not depend on the project.
5. When working with project partners with an existing local presence guarding additionality becomes an extra challenge. This existing local presence make it more likely that project partners tap into existing structures from previous projects or with previous partners. This potentially limits additionality.
6. Project activities should be chosen in such a way that something 'remains' after the project ends. The newly registered varieties are a good example of this.

Visual summary of conclusions

Relevance (scale of 1 to 5)

Providing income generation opportunities to farmers:

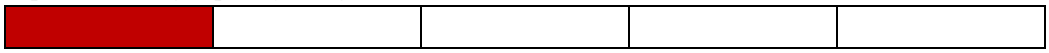
Food security (for both farmers and consumers)

Alignment with local governmental policies

Additionality (scale of 1 to 5)

Input additionality FDOV funding

Input additionality PepsiCo funding



Development additionality

Effectiveness (scale of 1 to 5)

Supply side - outputs

Supply side - outcomes

Demand side- outputs

Demand side - outcomes

Private sector development - outputs

Private sector development - outcomes

Sustainability (scale of 1 to 5)

Continuation of project

Systemic change

CSR (scale of 1 to 5)

Relevance and effects of CSR aspects

Table of contents

1 Introduction

This report contains the evaluation of the project 'Pro Poor Potato' that was implemented with support from the Facility for Sustainable Entrepreneurship and Food Security (FDOV). FDOV is a Dutch government-funded grant programme initiated in 2012 that supports public-private partnerships aimed at improving food security and private sector development in developing countries. FDOV was implemented by the Netherlands Enterprise Agency (RVO.nl) and issued calls for proposals in 2012 and 2014 (and another one in 2018 under the successor facility SDGP). This evaluation is the second out of five project evaluations that are being conducted by PwC, AIGHD and SEO. This project evaluation was carried out by SEO.

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The project is part of the first FDOV call for proposals in 2012, and formally started in 2014. The project had formally ended in June 2019. Project activities focused on three 'impact pathways':

- **On the supply side,** the project aimed to establish a potato production system in various (remote) agri-ecological zones of Vietnam by contracting 2,500 farmers. Activities included the provision of productivity enhancing equipment, training potato production advisors, establishing demo-farms and the mechanisation of potato production. The smallholder farmers produced quality potatoes that can either be eaten directly or be processed into crisps. Particular attention was paid to the involvement of women in potato farming.
- **On the demand side**, the project aimed to increase the demand for higher quality table potatoes by increasing consumer awareness of the nutritional value and versatility of potato consumption through the development of new recipes, consumer- and trader awareness campaigns and marketing campaigns.
- **On the private sector development side**, the project aimed to develop a sustainable value chain for potatoes and potato-based products, by introducing new, higher quality varieties of potato into the Vietnamese market, connecting the various links in the value chain and establishing a market for these new potatoes.

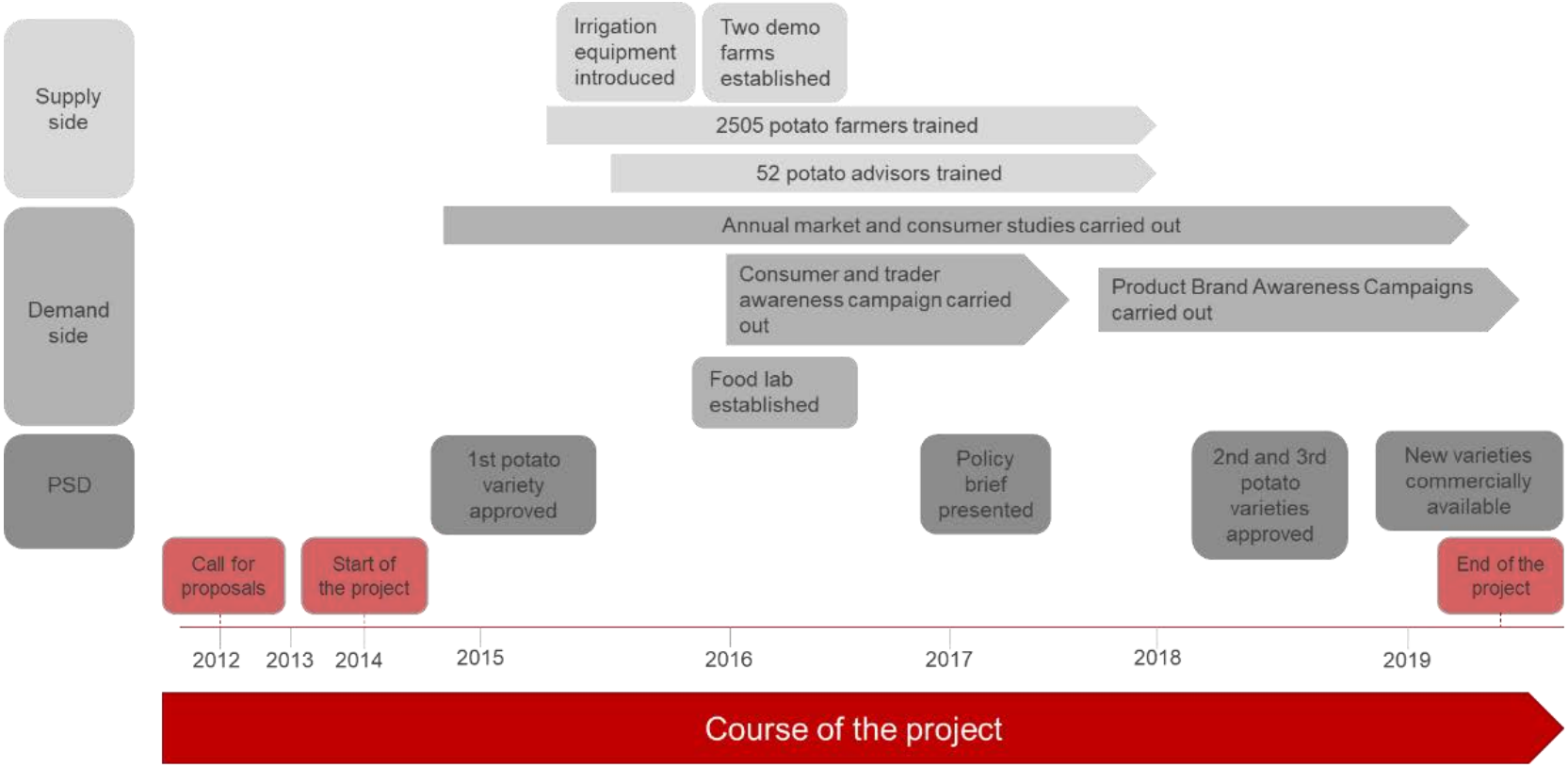
This evaluation assesses the relevance, effectiveness, additionality and sustainability of the Pro Poor Potato program. The full list of research questions is given in Table 5.1. The concepts are broadly defined as follows:

- **Relevance** is the extent to which the project design is relevant to the local context in that (a) it addresses the needs of end beneficiaries; and (b) it is consistent with local government priorities of host countries.

- **Additionality** can be broken down into 'input additionality' and 'development additionality', in line with DCED (2014).[1]
    - **Input additionality** is the extent to which "*the public input resources are additional to what might anyway be invested or done by the applicant/partner company and other parties, as well as the timing of it*".
    - **Development additionality** is the extent to which public resources contribute to changes in development-relevant results that would not have materialised without them.
- **Effectiveness** is the extent to which the project reached its outcome and impact objectives, and the extent to which the observed effects can be attributed to the project.
- **Sustainability** is the extent to which the outcomes and impact of the project are likely to continue after FDOV funding ceases to exist. In this specific case, it refers to the financial sustainability or viability of the potato value chain in the long run.

[1] DCED (2014), "Demonstrating Additionality in Private Sector Development Initiatives", Donor Committee For Enterprise Development.

Figure 1.1 Chronological representation of the project's main activities



Source: SEO Amsterdam Economics based of Fresh Studio M&E

Table 1.1 List of Research Questions (RQs)

RELEVANCE	
RQ1	**Is the intervention locally relevant?**
1.1	To which degree did projects research and design their intervention according to needs of end beneficiaries?
1.2	To which degree are projects relevant for local and governmental policies of host countries?
ADDITIONALITY	
RQ2	**To what extent were the projects additional according to the DCED definition?**
2.1	To what extent was the ex-ante additionality assessment in line with evidence?
2.2	Was public funding necessary for the implementation of the project?
2.3	How can ex-ante additionality assessment be improved?
2.4	What difference has the public contribution made to the achievement of public goals?
EFFECTIVENESS	
RQ3	**To what extent are the projects effective in reaching their outcome and impact objectives?**
3.1	What changes related to outcomes and impact can be observed in comparison to the project baseline?
3.2	What was the contribution or attribution (net effect) of the intervention (design of the project, project duration, the partners, the cooperation within the partnership, etc.) to the observed effects?
3.3	Is the engagement of civil society effective in keeping the focus on public objectives?
3.4	Did the projects reach the desired end-beneficiaries (women, youth, vulnerable groups, farmers, policy makers, etc.) and how are they benefitting?
RQ4	What are the key determinants (both internal and external to the project) for inducing or hampering the intended and unintended effects?
SUSTAINABILITY	
RQ5	To what extent do the benefits of the project (outcome & impact level) continue after FDOV-funding ceased and how was this influenced by the business case and/or revenue model?
RQ6	Did the project/ intervention lead to systemic change and/or was the intervention scalable? If yes, in what way?
CSR	
RQ7	**What is the CSR performance of the selected FDOV projects?**
7.1	How relevant were the designed CSR plans?
7.2	What effects can be observed of CSR plans of private partners in consortia?
7.3	To what extent did the projects have a major positive or negative influence on their direct natural environment or contributed (combatting) global climate change?

2 Theory of Change

This chapter describes the reconstructed Theory of Change (ToC) for this specific project that we used as a tool to guide our evaluation. The ToC consists of three impact pathways: (1) private sector development (PSD), (2) the supply side, and (3) the demand side.

The reconstructed ToC below is based on the project plan and in line with the targets formulated. A preliminary version of this ToC was discussed in interviews with stakeholders and adapted accordingly.

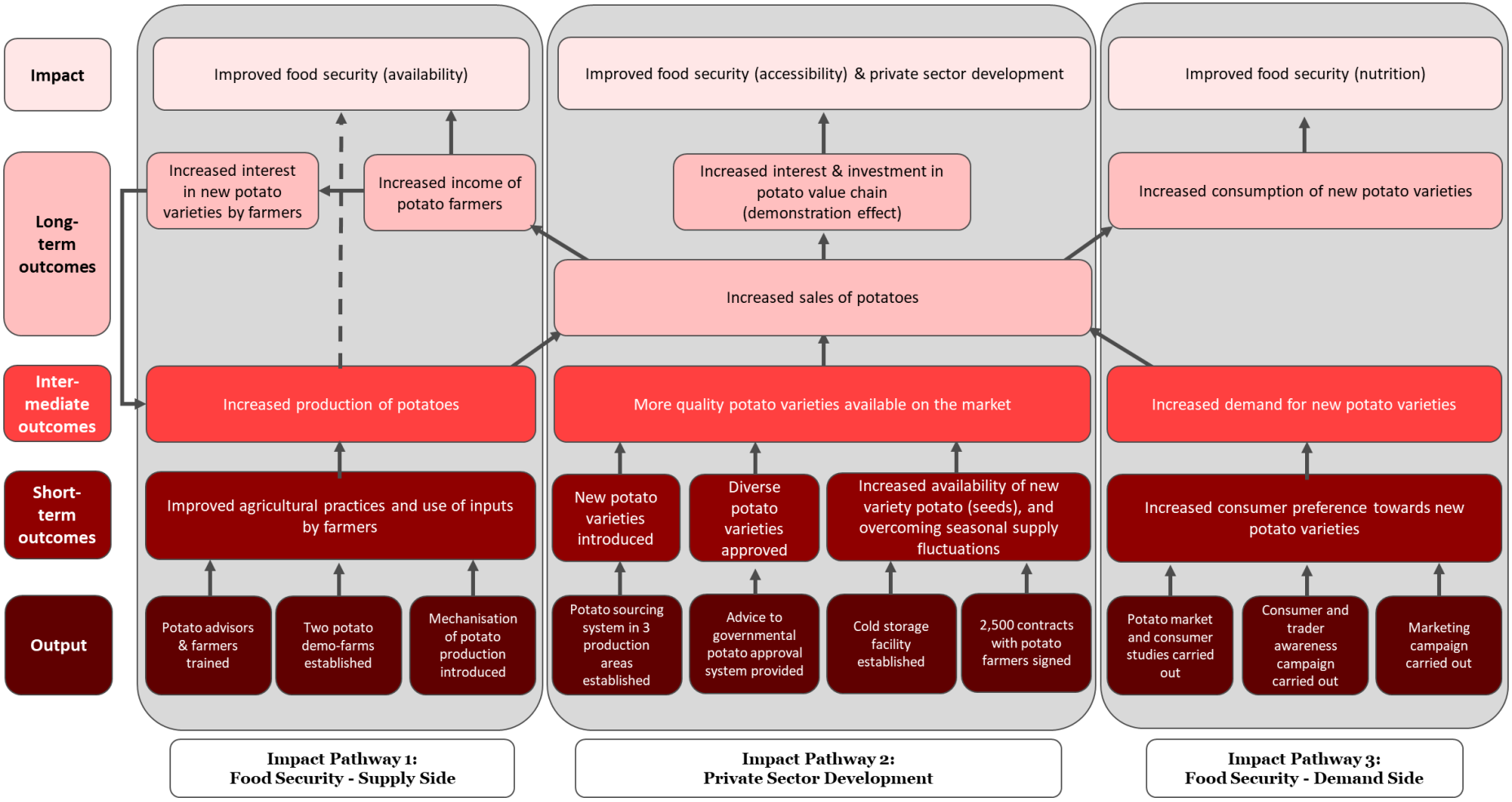
2.1 PSD pathway

The project aimed to develop the potato value chain in Vietnam by introducing new, higher quality varieties of potato into the Vietnamese market and establishing a sustainable market for these new potatoes. This involved:

1. establishing potato sourcing systems in three potato production areas (different agro-ecological zones). Here the most suitable potato varieties were tested, both from a technical and from a consumer preference viewpoint;
2. advising the government on improving the potato variety approval system, so as to obtain faster approval for new varieties in the future;
3. establishing cold storage facilities to ensure the continuous supply of the higher quality seed potatoes, as well as the continuous storage and supply of these potatoes;
4. signing 2,500 contracts with potato farmers.

This would lead to the introduction and approval of new potato varieties, and an increase of new variety potato (seeds) available to overcome seasonal supply fluctuations. This would increase the number of quality potato varieties available on the market and and the total sales of potatoes which would help the private sector develop further.

Figure 2.1 Reconstructed Theory of Change for Pro Poor Potato.



2.2 Supply-side pathway

The project aimed increase the production of quality table potatoes in Vietnam by

1. training potato production advisors on disseminating knowledge and providing advice and training to 2,500 farmers;
2. establishing two demo-farms;
3. the mechanisation of potato production.

This would lead to a year-round supply of fresh potatoes and increased profitability of potato smallholders in Vietnam.[2] This would reduce rural poverty, increase food security and make Vietnam less dependent on fresh potato imports. In addition, this would increase interest in new potato varieties among smallholder farmers and the wider population. This 'demonstration effect' would then further increase potato production by additional farmers.

2.3 Demand-side pathway

The project aimed to increase the demand for higher quality table potatoes by increasing consumer awareness of the nutritional value and versatility of potato consumption. This was done via

1. potato market- and consumer studies;
2. consumer- and trader awareness campaigns;
3. marketing and branding campaigns.

This would lead to increased consumer preference towards new potato varieties, which in turn would lead to increased demand for new potato varieties. As a result, sales would increase, leading to an increased consumption of new potato varieties and thereby improved nutritional outcomes.

[2] The year-round supply refers to the production in Da Lat, located in the Central Highlands. Due to a different climate, potato production is less suitable for year-round production in the Red River Delta, and therefore only cultivated during the 'rice off-season'.

3 Methodology

We used a variety of mixed, triangulated, quantitative and qualitative data sources to arrive at our assessment.

The evidence presented comes from the project documentation, the project's M&E system as well as interviews with project partners Agrico, WUR, Fresh Studio and PepsiCo. In addition to the stakeholder interviews and desk research, SEO and CREM also conducted a farmer survey. While the available resources and timing did not allow for a rigorous quasi-experimental study it was agreed with the reference group to include both beneficiaries and non-beneficiaries in the survey so that the non-beneficiaries could be used as a control group.

The evaluation team visited Hanoi (located in the Red River Delta in the North) and Da Lat (located in the Central Highlands) in Vietnam in June 2019 and conducted a series of interviews with (local) project partners, stakeholders and beneficiaries. These include:

- Fresh Studio
- Ministry of Agricultural and Rural Development (MARD)
  - Department of Crop Production (DoCP)
  - Plant Protection Department (PPD)
- International Potato Centre (CIP)
- Embassy of the Netherlands in Hanoi
- Potato, Vegetable and Flower Research Centre (PVFC)
- National University of Agriculture
- PepsiCo
- Viet Insight (survey firm)
- MegaMarket (retailer)
- Production advisors
- Several smallholder farmers/traders involved in the project

We took considerable effort to make sure that key stakeholders of the project were interviewed to make sure that the sample of interviewees was reasonably representative across regions, gender, age, experience, and potato production. A more detailed list of interview partners can be found in Appendix B.

Table 3.1 Overview of data sources

Source	Relevant themes/chapters
Qualitative data sources	
In-depth interviews (conducted in the Netherlands)	Relevance Additionality
In-depth interviews (conducted locally among all relevant stakeholders)	Relevance Additionality Effectiveness Sustainability CSR Performance
Project Plan (description)	Relevance Additionality
Quantitative data sources	
Project Plan (supporting data)	Relevance Additionality
Fresh Studio M&E	Effectiveness CSR Performance
External data sources (e.g. Food composition database, UN FAO Stat)	Relevance
Farmer Survey (conducted by Viet Insight)	Effectiveness CSR Performance

Where possible, conclusions are drawn based various data sources, both quantitative and qualitative:

- The relevance of the project was mainly determined by an assessment of the project plan combined with the insights obtained through in-depth interviews. These interviews were conducted in both the Netherlands and Vietnam. External data sources have been used in order to put the nutritional value of the potato and the Vietnamese potato sector as a whole in perspective.
- SEO assessed the additionality of the project based on the project plan as well as the in-depth interviews, conducted in the Netherlands and Vietnam.
- The evaluation team determined the effectiveness of the project based on Fresh Studio's M&E and the farmer survey conducted by Viet Insight. These findings were validated or given interpretation during the interviews conducted *locally*.
- Only qualitative data sources (interviews conducted locally) were used in the assessment of sustainability.
- To evaluate the performance of the project in terms of CSR, the evaluation team used a variety of sources. Fresh Studio's M&E and the farmer survey provided quantitative insights, whereas qualitative information was obtained through interviews conducted locally.

4 Relevance

The project design of Pro Poor Potato was considerably relevant (ex ante) in addressing the needs of base-of-the-pyramid (BoP) producers and consumers. However, the ex ante relevance with respect to local government policies is considered to be low.

We assess the local relevance of the Pro Poor Potato project in two ways:

- RQ 1.1: To which degree did the project research and design its intervention according to needs of end beneficiaries?
- RQ 1.2: To which degree are projects relevant for local and governmental policies of Vietnam?

Research question 1.1 is discussed in Section 4.1. Research question 1.2 is discussed in Section 4.2

4.1 Relevance with respect to end-beneficiary needs

The project was designed to meet the specific needs of 'Base of the Pyramid' (BoP) producers and consumers in less-developed regions of Vietnam. In particular, the project aimed "*to make Vietnam more self-sufficient in potato production: to create a sustainable potato sector that is able to compete with Chinese imports and is able to supply the domestic potato processing industry with a consistent volume and quality offer.*"[3] The project aimed specifically at improving the situation of smallholder farmers and BoP consumers. Within these groups, there was a special focus on women.

The main 'end-beneficiary needs' the project aimed to address were related to food security and income needs. Specifically, three challenges were identified by the project partners:

- Assuring **food security of the Vietnamese population**, including the Base of the Pyramid consumers/producers focusing on the year-round production of a more nutrient rich alternative for rice.
- **Need to help poor farmer communities** by providing these farmers with an alternative source of income.
- Reducing the **potato trade deficit** by meeting the increasing demand for potatoes by providing an alternative to the import of cheaper and perceived inferior Chinese potatoes.

4.1.1 Relevance with respect to end-beneficiary needs (consumers)

The potato is not a new crop for the Vietnamese agricultural sector, as it has been cultivated in the country for decades. Traditionally, potatoes are not a large component in the Vietnamese diet. Consumption is limited to a vegetable ingredient in soups and curries. However, due to globalisation, potato consumption has grown. As a result of this, the currently underdeveloped Vietnamese potato sector cannot meet the increase in demand.[4]

[3] Project Plan Pro Poor Potato, p. 13.
[4] Project Plan Pro Poor Potato, p. 10.

The project design was relevant (ex ante) in addressing the micronutrient needs of the BoP consumer. The project plan states that there is a problem of poverty and micronutrient malnourishment in the two rural regions targeted by the project.[5] This malnourishment resulted from the fact that the diet of the poorest consumers and the rice farmers themselves is largely rice-based. They therefore had a relatively high chance of vitamin- and mineral deficiencies. In our interviews, local research experts confirmed that the local diet is rice-based and alternative (and more vitamin and mineral rich) nourishments are scarce and more expensive. In this context, potatoes are a relevant food product to further introduce. Potatoes provide additional income to farmers and they contain important minerals, especially iron, potassium and Vitamin C.

Table 4.1 Potatoes contain a wide range of vitamins and minerals

Component (per 100g dry weight)	Maize	White rice	Wheat	Potato	Water Spinach	Cabbage	Chayote
Energy (kj)	1660	1696	1574	1533	1278	1317	1389
Protein (g)	10	8.11	14.5	9.5	28.9	16.4	14.2
Fibre (g)	8.1	1.48	14	10.5	24.4	32.0	29.5
Vitamin C (mg)	0	0	0	93.8	44.4	468.0	133.7
Calcium (mg)	7.8	31.9	33.4	57.1	144.4	511.5	295.1
Iron (mg)	3.0	0.9	3.7	3.7	5.6	6.01	5.9
Potassium	319	131	417	2004	5922	2174	2170

Source: USDA Food Composition Databases 2019

A considerable drain on the design of the project is the fact that unlike most of the Western consumers, the Vietnamese do not perceive the potato as 'meal carrier' but more as a vegetable. This insight was broadly shared by interview partners and Fresh Studio. It is unlikely that rice will be substituted for potatoes on a large scale.[6] Instead vegetables may be substituted, and potatoes consumed alongside rice. The nutritional improvement is significantly smaller when potatoes replace vegetables rather than rice in the Vietnamese diet (Table 4.1). Increased availability of potatoes will not harm the Vietnamese diet but the nutritional effects of this project should not be overstated. This is especially true for consumers who have access to a larger array of vegetables. Largely self-sufficient farmers may benefit from the additional iron intake.

4.1.2 Relevance with respect to end-beneficiary needs (farmers)

The project design was relevant in addressing the income generation needs of smallholder farmers. The project aimed to generate income for smallholder farmers by simultaneously developing the supply side and the demand side of the potato market. The Vietnamese potato market was (and still is) characterised by surplus demand, as indicated by the high level of imports from China.[7] However, by further increasing demand for domestically produced potatoes through demand-side stimulation and consumer inclusion, a stronger impulse could be given to the smallholder farmers. Moreover, in the past food crises in Vietnam were tempered by an upscaling

5 Project Plan Pro Poor Potato, p. 9.
6 The most cooked potato dishes are French fries, cooked potato in soup (seasonal dish) and stir fried potato/vegetables.
7 Also based on interviews: retailers indicated that consumers (and thus retailers) prefer domestically grown potatoes. However, due to supply shortages, retailers are dependent on foreign products.

of the local production of potatoes (Tung & Ho, 1995). The area harvested increased from just over 25 thousand hectares in 1975 to more 100 thousand hectares in 1979 and consequently decreased back to 32 thousand hectares in 1983. The production area remained stable at around 30 thousand hectares until 2010 and then decreased to 20 thousand hectares in 2017.

Table 4.2 A selection of potato statistics for Vietnam and the Netherlands (2017)

	Vietnam	The Netherlands
Total production (tonnes)	303,675	7,391,881
Production area (ha)	20,480	160,791
Average yield (tonne/ha)	14.8	46.0
Imports (tonnes)	132,756	2,108,113
Most imports from (tonnes):	China (122,896)	Germany (1,110,569)
Exports (tonnes)	779	2,636,481
Most exports to (tonnes):	Singapore (306)	Belgium (437,884)
Annual consumption per capita (2011):	3.91	93.89

Source: SEO Amsterdam Economics based on UN FAOSTAT

The project specifically targeted groups with limited alternative income generation capacities. The current policy of national rice food self-sufficiency requires a part of the population of Vietnam to remain rice farmer. Farmers thus have limited possibilities in increasing their incomes and improving their diets. Nearly sixty percent of farmers in Vietnam live under the national poverty line (UN FAO, 2018). When these vulnerable farmers are not assisted, it is unlikely that their situation will improve. In fact, their situation is more likely to worsen due as the price of rice is kept at a low level by governmental policies from a national food security perspective. The Government's Resolution on National Food Security stipulates that by 2020, 3.8 million hectares must be reserved for rice cultivation. This represents 35 per cent of land used for agricultural production. The policy's stated purpose is to promote food security in general, but with a particular emphasis on self-sufficiency in rice production and rice price stabilisation.[8]

In the Red River Delta, where most of the land is devoted to rice farming, the Pro Poor Potato project did not require a transition from rice to potato cultivation due to the rice off-season.[9] In fact, farmers were already farming potatoes in the rice off-season. The cultivation of potato in this region is additional to the cultivation of rice, and any proceeds from potato cultivation are not at the expense of rice cultivation. The situation was different for the farmers in the Central Highlands. Due to the cooler climate in this region, potatoes can be cultivated year-round and do form a substitute for the cultivation of rice. Plots here are generally larger and the yields are higher. The project was relevant for women as about 70 percent of all potato farming operations (in the Red River Delta) are managed by women.[10]

The initial scale of the project was relatively small: 2,500 smallholders are targeted with training directly. By targeting not only the demand side of the market, but also the supply side and the private sector, significant growth potential and demonstration effects were expected for the Vietnamese potato production system. The project plan mentions all 175,000 smallholder potato farmers in this respect. The share of the project relative to the total potato sector remains

8 Resolution No. 63/NQ-CP on national food security, 23 December 2009, Hanoi.
9 The rice off-season takes place during the winter from mid-October to mid-March
10 Project Plan Pro Poor Potato, p. 27.

however small. The project plan does not provide a clear direction as to how these 175,000 smallholders can or will be included. The true scope of the project is thus limited to 2,500 farmers and mentioning 175,000 in the project documentation is thus premature.

With respect to the introduction of new potato varieties, the project was moderately relevant for the smallholder farmers. There was a need for potato varieties that were more resistant to late blight[11]. Moreover, interview partners indicated a need for varieties that were more resistant to high temperatures and heavy rain showers. From that perspective, the introduction of new varieties was desired and is therefore additional. However, the majority of the farmers had been using German varieties before they were confronted with the Dutch varieties. These varieties were introduced earlier this century by a project initiated by Europlant and the German government.[12] Although these varieties were performing reasonably well, introducing new varieties adds value in several ways. It provides the sector with a wider range of varieties that it can choose from and it allows the sector to benefit from the progress made in the development of potato varieties. The selected varieties are also selected on taste (consumer panels) and decease resistance. The latter is one of the most important selected criteria for the potato to be registered. Newly registered varieties must also improve yield with at least ten percent compared to the benchmark.

The relevance was tempered by the suboptimal *timing* of the delivery of seed potatoes. The project was designed as such that high-quality seed potatoes would be delivered from the Netherlands. These come, however, often too late for the first sowing period in Vietnam (i.e. winter harvest). Therefore, the seed potatoes can only be used for the second sowing period (i.e. spring harvest). As a result, part of the proceeds of the spring harvest were stored by the farmers and used as seed potatoes for the winter period. This results in a considerable loss of quality and relatively lower yields during the winter harvests.

4.2 Relevance with respect to local government policies

Potato cultivation is not prioritised by the Vietnamese government. The local policy in sustainable crop production development aims at improving quality, productivity and competitiveness to ensure national food security, meet domestic and international demand and increase farmers' income. The Vietnamese government constructed a list of prioritised crops in which potatoes were not included.[13]

During the 1970s, food security was a larger problem in Vietnam than it is nowadays. At the time, the lack of food security was marked by insufficient caloric intake rather than the micronutrient shortage of the present.[14] Local authorities we spoke to told us that potatoes were prioritised due to their high efficiency (calories per square meter) and an area of approximately four times the current size was devoted to the cultivation of potatoes. The Vietnamese government aspires an increase of the area devoted to potato cultivation. A clear policy to achieve this goal is however

11 Project Plan Pro Poor Potato, p. 5
12 According to interview partners
13 The list includes paddy rice, maize, cassava, sweet potato, soybean and peanut according to decision 824/2012
14 Project Plan Pro Poor Potato, p. 9

lacking. Current legislation and regulation hamper the import of quality seed potatoes required to supply the processing industry. The government is involved in the provision of general crop protection services (e.g. trainings), but these are not specifically aimed at potatoes or any crop in general.

By securing a better match between supply and demand, Vietnam's potato trade deficit can be reduced. The value of fresh potato imports increased from 1.1 million dollar in 2003 to 44.6 million dollars in 2011 and was expected to increase further.

Finally, the project contributed to a reduction in the country's environmental impact by limiting the use of water and agro-chemicals.[15] Farmers might use unnecessarily high amount of pesticides, thereby contributing to environmental pollution. This was part of the trainings given. The project also aimed to reduce the environmental impact by limiting the water usage.

[15] Project Plan, Pro Poor Potato, p. 27

5 Additionality

This chapter assesses the input additionality and development additionality of Pro Poor Potato. Both the input additionality and the development additionality of the Fresh Studio activities were high. The input additionality of the PepsiCo contribution is low. This contribution was not really part of the same project.

The research questions addressed in this chapter are:
RQ2: To what extent were the projects additional according to the DCED definition?
2.1 To what extent was the ex-ante additionality assessment in line with evidence?
2.2 Was public funding necessary for the implementation of the project?
2.3 How can ex-ante additionality assessment be improved?
2.4 What difference has the public contribution made to the achievement of public goals?

In line with DCED (2014), it is important to differentiate between input additionality and development additionality.[16] Input additionality occurs when "*the public input resources are additional to what might anyway be invested or done by the applicant/partner company and other parties, as well as the timing of it*". Development additionality is the extent to which public resources contribute to changes in development-relevant results that would not have materialised without them.

5.1 Input additionality

With respect to the activities of Fresh Studio the input resources were additional. The funding made available through FDOV enabled knowledge sharing between Fresh Studio, farmers, traders, retailers and end-consumers. It is very unlikely that Fresh Studio was able to do in the absence of public funding, because the services are practically unmarketable in the region. For individual farmers it is not worth investing in trainings, because the fields are small, profits are very low and potato cultivation is still considered as a side-activity. Without the public funding, Fresh Studio (or any other organisation) could not be involved in large-scale awareness and marketing campaigns.

In general, a well-developed supply chain is beneficial for every link in the value chain. However, because each individual link only behaves in its own self-interest, little effort is taken by each individual. The individual benefits are exceeded by the individual costs, would the activities be carried out by any individual link.[17]

The input additionality of the PepsiCo contribution is low. PepsiCo fully financed the training and TA given to its own contract farmers. This contribution was used as the private sector contribution to the FDOV project but PepsiCo's activities stand largely on their own. Providing assistance to contract farmers is beneficial for PepsiCo. It thus seems unlikely that PepsiCo would not have financed and provided training and TA to these farmers without the FDOV project.

16 DCED (2014), "Demonstrating Additionality in Private Sector Development Initiatives", Donor Committee for Enterprise Development.
17 Individuals arrive in a suboptimal Nash Equilibrium as a result of a 'free-rider' or 'tragedy of the commons' problem (Hardin, 1968).

Table 5.1 PepsiCo Foods is responsible for the bulk of the private sector contribution

Name	Type of organisation	Based in	Description	Own contribution
Fresh Studio Innovations Asia Ltd.	Private Sector	VN	Vietnamese agricultural consultancy firm; executor of the project.	€421,918 (in kind)
PepsiCo Foods Vietnam	Private Sector	VN	Vietnamese department of the American multinational in the field of food, snacks and beverages; main project partner.	€2,966,650
Agrico B.V.	Private Sector	NL	Dutch potato cooperative in seed- and consumption potatoes; partner and supplier of seed potatoes.	€104,795 (in kind)
Applied Plant Research - WUR	Knowledge Institute	NL	Knowledge institute specialised in agricultural research; partner and supplier of knowledge.	€0,-
CREM	Private Sector	NL	Amsterdam based consultancy firm committed to the sustainable economy and CSR.	€0,-
UHY	Private Sector	VN	Audit & Advisory Services	€0,-
FDOV	Public Sector	NL	Financier	€3,493,162

FDOV provided just shy of three million euro in subsidies. Project partners matched this amount with cash or in-kind contributions. PepsiCo provided the bulk of the private sector contributions. A side note here is that PepsiCo's contribution did not leave the company. Neither did PepsiCo receive any part of the FDOV subsidy. The three million euro contribution of PepsiCo was spent on training and technical assistance of PepsiCo contracted farmers.

The majority of PepsiCo's activities can thus be seen as a separate stand-alone column. All project partners did share a common goal: a well-developed Vietnamese potato sector. The target of reaching 2,500 farmers was also a shared goal. However, PepsiCo trained their *own* selection of farmers, used their *own* potato varieties and produced their *own* product (crisps rather than table potatoes). Fresh Studio, Agrico and PepsiCo did try to collaborate further by introducing Agrico varieties to PepsiCo. Unfortunately, these varieties did not match the quality requirements of PepsiCo Global and PepsiCo ultimately decided to use the American variety Atlantic.

PepsiCo did collaborate with the other project partners on developing training materials (alongside WUR), mainly by providing feedback on the Fresh Studio drafts. Furthermore, PepsiCo helped writing a policy brief on the need for a national breeding programme, land exchange and microcredit schemes for farmers and a more efficient potato variety registration system. The FDOV contribution was largely spent by Fresh Studio and to a lesser extent by Agrico and WUR.

5.2 Development additionality

In addition to input additionality, a program can have development additionality if it can be demonstrated that it contributed to changes in development-relevant results. According to DCED (2014), this can be related to e.g. scale, scope, quality, target group, or location of activities.

Pro Poor Potato had development additionality via its focus on the entire value chain. The Vietnamese potato sector was characterised by inefficiencies on the production side: the yields are

relatively low, there is a limited set of potato varieties available and farmers have trouble selling their proceeds. The demand, on the other hand, is increasing.[18] The holistic approach by Fresh Studio helped connecting the various value chain actors to each other. Fresh Studio introduced new potato varieties, organised imports (from Agrico) and sold these to farmers. These farmers received training, were linked to traders and retailers. The retailers benefitted from increased consumer awareness and marketing campaigns. Fresh Studio engaged with Vietnamese national and regional governments to try and improve policies. In doing so the project created increased capacity at every level.

The introduction of new varieties was a clear example of development additionality. Vietnamese farmers experienced relatively low yields, due to (among others) underperforming potato varieties. This is part due to limited availability of suitable potato varieties.[19] By introducing new varieties that are more resistant to late blight, higher temperatures and higher levels of humidity, the local production could be increased. The need for a subsidy in this aspect was high, because the registration process is complicated and costly (25-30 thousand US dollars) for a relatively small Vietnamese market. Moreover, the last time new table potato varieties were introduced to the market, was during a similar project in 2003/2004 subsidised by the German government. Crips manufacturers PepsiCo and Orion have registered new processing potatoes and continue to do so.

In general, the targeted farmers were already cultivating potatoes before the start of the project and little additional potato cultivation took place. In other words, no farmers that were 'new' to the concept were trained by Fresh Studio. Moreover, farmers were contacted through the network of (potato) traders. In other words, the partnership between smallholder farmers and traders was often already in place and not truly additional. The same applied for many of the collaborations between traders and retailers. These relationships were deepened because of the project but not truly new.

The Dutch public contribution to the project was purely financial. Development additionality was thus minimal. There was little to no involvement of any Dutch public authority in the project, thereby removing the public element of the PPP. According to one of the earlier versions of the project plan, the Dutch embassy in Vietnam had a role to play in the project: "*For the Dutch Ministry of Foreign Affairs the partnership sees a very important role, as the Dutch Embassy in Vietnam is currently implementing a "government to government project on the seed potato certification and quality control system. This G-to-G project, perfectly complements this project proposal, in which we envisage the Dutch Embassy to play a facilitating role in the discussions between the private sector (PepsiCo/Agrico/Fresh Studio) and the public sector (Ministry of Agriculture in Vietnam) to streamline and improve the procedures around he potato variety registration process.".*[20] This part of the project was not approved by the Ministry, RVO.nl and/or the Embassy up front and thus has not been implemented as part of the project.. The Dutch embassy only ended up as provider of occasional assistance. No alternatives for this government to government track were developed. As indicated in Paragraph 4.2, the project's activities were not prioritised by the Vietnamese government either, and local support was therefore limited.

18 Project Plan Pro Poor Potato, p. 29.
19 In contrast, the Netherlands Catalogue of Potato Varieties lists 116 different varieties, from Accent to Zorba.
20 Project Plan Pro Poor Potato, p. 4.

6 Effectiveness

This chapter assesses the effectiveness of the project. It finds that the majority of the output and outcome targets were met. Certain crucial targets were not baselined properly. Because of this we cannot be certain production and income growth targets were met.

The key research questions discussed in this chapter are the following:

- RQ3: To what extent has the project been effective in reaching its outcome and impact objectives?
    - 3.1 What changes related to outcome and impact can be observed in comparison to the project baseline?
    - 3.2 What was the contribution or attribution (net effect) of the intervention (design of the project, project duration, the partners, the cooperation within the partnership, etc.) to the observed effects?
    - 3.3 Is the engagement of civil society effective in keeping the focus on public objectives?
    - 3.4 Did the projects reach the desired end-beneficiaries (women, youth, vulnerable groups, farmers, policy makers, etc.) and how are they benefitting?
- RQ4: What are the key determinants (both internal and external to the project) for inducing or hampering the intended and unintended effects?

Rather than discussing these questions one by one, we present the answers to these questions per impact pathway. For each impact pathway, we first provide a short description of the impact pathway before discussing results. Within these three pathways, we discuss the 'results' and 'sub-results' as defined by the project. Note that these results and sub-results do not always perfectly correspond to the boxes in the ToC diagram, as the ToC is an analytical tool that helps to organise and conceptualise the theory behind the results chain, while the results and sub-results are key performance indicators that were previously defined and agreed between the project partners and RVO.nl.

This effectiveness assessment is based on three separate information sources:

1. The project's internal M&E data;
2. the farmer survey, conducted by Viet Insight and jointly commissioned by CREM and SEO, and;
3. interviews with stakeholders in the Netherlands and Vietnam (see Appendix A for a complete overview of the interview partners).

For each (sub-)result we indicate whether it was met completely, partly or not at all. Partly refers to the situation in which the target has not completely been met, but considerable progress (as perceived by the evaluation team) was made towards achieving the target.

6.1 Private sector development (PSD) pathway

On the PSD side, the project aimed to develop the private sector by building a sustainable potato value chain. This involved: (1) establishing three small-scale R&D Potato farms; (2) providing advice to the governmental potato approval system; (3) establishing cold storage facilities; and (4) signing 2,500 contracts with potato farmers. This was needed to introduce, get approved and make available new varieties of potatoes and potato seeds to overcome seasonal supply fluctuations. This would then increase the number of potato varietes available on the market and thereby increase the sales of potatoes. As a result, further private sector interest and investments in the potato value chain were expected.

6.1.1 PSD Outputs

Most key outputs on the side of private sector development were met, either completely or partly. These outputs concern project activities related to contracting and the cooperation with traders.

Sub result	Completed	Realisation as of June 2019
Potato policy discussion platform established	Yes	Completed
2,500 farmers contracted to produce potatoes within the project.	Yes	Fresh Studio helped to close 2,176 contracts related to table potatoes between farmers and traders. PepsiCo signed contracts with 2,311 farmers. The (shared) target has thus been met.
Direct cooperation with at least 5 local traders	Yes	Direct cooperation with 6 traders established
Establishing potato sourcing systems in 3 potato production areas	Yes	Potato sourcing systems to test new varieties during the registration process were established in three ecological zones

General

Fresh Studio contributed to the overall development of the private sector. Fresh Studio developed an extensive network of parties during previous projects and cooperated appropriately with the stakeholders in the current project. Consumer preferences were mapped through household panels, door to door interviews and two food labs. Once the consumers preferences were identified, Fresh Studio and Agrico selected Dutch potato varieties to match their preferences. These varieties were consequently registered. Fresh Studio imported seed potatoes from Agrico in the Netherlands and sold these to farmers. Farmers were linked to traders and traders were linked to retailers. Markies and Rosagold were available in 8 big supermarkets with in total 22 outlets in Hanoi and Ho Chi Minh city. Parties in the value chain experienced the cooperation as pleasant and wish to further do business. The Dutch potato varieties were well received. Both traders and retailers indicated that they would like to see a larger and more stable supply of these new varieties.

Outside of the value chain Fresh Studio worked to strengthen the cooperation between the private parties and the local authorities. The potato policy discussion platform was established. The main goal of the platform is dissemination of information on relevant legislation. There is a special taskforce for vegetables (including potatoes), chaired by PepsiCo. Fresh Studio staff also attended meetings if these were taking place in Hanoi. This did not lead to any clear improvements in the (lengthy and expensive) potato registration process however. In 2017, Fresh Studio, PepsiCo, WUR, several local research institutes, universities and governments collaborated on writing a

policy brief. This policy brief called for a long-term potato vision, a strategy and a coordinated action plan. Among others the need for a national breeding programme, labs, land exchange schemes to reduce fragmentation, microcredit schemes for farmers and a more efficient potato variety registration system were discussed. The policy brief was presented to the Dutch Agriculture Vice Minister on 22 March 2017. The policy brief was again brought to the attention of Vietnamese stakeholders during a potato conference in May 2019.

Collaboration with Agrico, WUR was fruitful. WUR experts travelled to Vietnam regularly to give trainings on among others the use of the tractors, harvesters and planters. The collaboration with Agrico was successful in the sense that several of Agrico's potato varieties are now fully registered in Vietnam, which would otherwise not be the case.

Taken altogether the project has helped improve the potato value chain in Vietnam. Current scale of the project remains small compared to the potato sector in general. However, introducing new potato varieties, the transfer of knowledge and by actively seeking collaboration with value chain parties, research institutes and governments the project has laid a foundation for further improvements in the future.

Contracts between farmers and traders

The total number of contracts seems higher than it actually is. First of all, these contracts are seasonal and do not reflect the number of "partnerships" established. Parties that cooperated for more than one season were counted multiple times in this aspect. In addition, also the number of partnerships cannot completely be contributed to Pro Poor Potato, as many of these parties had been cooperating before the start of the project. Finally, the contracts did not include price or quantity and should thus be considered to be only a little more than an *option* of selling to a specific buyer. Fresh Studio perceived these contracts as a means of strengthening the relationship between farmers and traders, rather than as a very detailed legally binding requirement.

6.1.2 PSD Outcomes

About half of the of private sector development outcome targets were met. These outcomes concern the results of the project's activities on the domestic availability and export of potatoes and the policy brief.

Sub result	Completed	Realisation
At least 70% of table potatoes contracted within project are sold in Vietnam.	Yes	During the project period all table potatoes were sold in Vietnam.
Annual export of Dutch potato seeds to Vietnam increased from around 50 ton to over 500 tons.	Partly	Respectively 138, 319 and 236 tons of Dutch potatoes imported in 2016, 2017 and 2018
At least 3 table potato varieties commercially available on the market	Yes	Registration for Rosagold and Sinora (table) and Markies (multipurpose) completed
50% of the contracts and the total contracted volume designated as table potato	Partly	Contracts were about 50:50 between table potatoes and processing potatoes. More than 90% of the contracted volume was processing potatoes contracted by PepsiCo.
Policy brief on potato pests and disease management in Vietnam	Yes	Policy brief presented to Dutch Agriculture Vice Minister on 22 March 2017. The policy brief was also brought to the attention of Vietnamese stakeholders during a potato conference in May 2019.
Table potatoes available in at least 2 modern retail chains across Vietnam	Yes	Markies and Rosagold were available in 8 big supermarkets with in total 22 outlets
Prolonged shelf life (up to 3 months)	No	Cold storage is too expensive and until recently sprout inhibitors were not allowed in Vietnam

Availability of locally produced potatoes

All contracted table potatoes were sold domestically. Fresh Studio had agreements with eight larger supermarkets to offer Dutch cultivars, Markies and Rosagold. These supermarkets had in total 22 outlets. Fresh Studio thus delivered on the target of making Dutch cultivars available in modern retail chains.

Commercial availability of new potato varieties came quite late in the project. Markies and Rosagold were approved in September 2018. Two years later than planned. Since this was also particularly late for the new season, no real commercial adaptation took place during the season 2018/2019. Sinora was permitted for commercial sales (passed phase 2 of the registration process) in 2015. Seed potatoes of varieties that are still in the registration process cannot be sold in a commercial way. However, production on at least fifty hectares is part of the registration process itself. This means that Dutch varieties have been planted in seasons 2016-2019 but true commercial adaptation was never achieved within the project.

Table 6.1 shows that nearly 700 tons of Markies and Rosagold were ultimately produced by farmers. The German varieties Marabel and Solara and Vietnamese variety 07 can be considered to be their main competitors. Atlantic (PepsiCo) and PO3 are processing potatoes and thus serve a different goal.

Table 6.1 Nearly 700 tons of Markies and Rosagold were produced by about 650 farmers

Variety	Nationality	Type	Kilo produced	Number of farmers
Fresh Studio/Agrico varieties:				
Alouette	Dutch	Table	2,674	4
Arsenal	Dutch	Processing	290	1
Carolus	Dutch	Table	3,457	5
Corsica	Dutch	Processing	4,078	6
Destiny	Dutch	Multipurpose	21,276	27
Erika	Dutch	Table	48,346	62
Esmee	Dutch	Table	11,521	13
Laudine	Dutch	Table	7,469	12
Markies	Dutch	Multipurpose	397,642	350
Rosagold	Dutch	Table	291,321	301
Other varieties:				
Atlantic	American	Processing	262,580	212
KT	Vietnamese	Table	1,329	3
07	Vietnamese	Table	157,710	17
PO3	Vietnamese	Processing	339,246	52
Marabel	German	Table	663,571	601
Solara	German	Multipurpose	98,459	158
Total	**-**	**-**	**2,316,711**	**1.830**

Source: SEO Amsterdam Economics based of Fresh Studio M&E (harvest years 2016-2019).

Box 6.1 Registration process

The registration process for new potato (or any plant) varieties in Vietnam consists of two phases.

Phase 1: A 'Value for Cultivation and Use' (VCU) test. In this phase the added value of the new variety has to be proven. These tests are done by government officials under a specific set of conditions. The exact requirements remain somewhat unclear given that the results are ultimately weighted by a panel of scientific experts. Important requirements are yield (>10% higher than the baseline variety), heat resistance and decease resistance. After this process the variety is verified (safe to use/consume) but it is not yet allowed to be commercially sold.

Phase 2: The variety will have to be produced on at least 50 hectares within three years' time. Once this hurdle is taken the variety is fully registered and can be sold commercially to farmers (seed potatoes) and consumers.

Fresh Studio was initially not aware that registration required approval in two separate phases. This meant that registration took considerably longer than expected.

Table potato variety Esmee passed phase 1 (VCU) registration and a start has been made for phase 1 registration for table potatoes Alouette and Carolus.[21] A small remark has to be placed on the degree to which Sinora's registration can be assigned to the project. Since the registration process had been initiated before the start of the project, its success cannot be completely attributed to the project. Moreover, Agrico decided in 2019 to stop producing Rosagold seed potatoes, as it has been outperformed by other varieties on the global market. This is a shame, given the lengthy registration process it went through.

[21] Trials have also been done for Arsenal, Destiny, Laudine and Corsica, but these varieties were not submitted for registration because the performance was not good enough.

The 500-ton target for exports of Dutch (seed) potatoes to Vietnam was not met. Exports increased since the start of the project, but reached only half of the target in 2018. This can partly be explained by the limited production of the contracted farmers due to complications in registering new potato varieties. This process took much longer than expected. During the registration process varieties could not be sold on a truly commercial basis. Therefore, a lower-than-expected number of farmers used the new varieties. See also Table 6.1.

Contracted volume

In hindsight the production target for table potatoes (at least 50 percent) does not seem realistic. Fresh Studio helped sign 2,176 contracts between farmers and traders related to table potatoes. (of which 62 percent women). PepsiCo signed 2,311 contracts related to processing potatoes. The (combined) target of 2,500 was met convincingly. However, PepsiCo farmers were more productive and had larger fields at their disposal. As a result, 33 million kilos of processing potatoes were produced by PepsiCo farmers and just 2.7 million kilos of table potatoes were produced by Fresh Studio farmers. As a result, over 90 percent of the potatoes produced by Fresh Studio and PepsiCo combined were processing potatoes. This is not surprising given the scale of PepsiCo's operation even before the Pro Poor Potato project started.

Policy brief

Fresh Studio wrote a policy brief on potato pests and disease management in Vietnam. On March 22nd of 2017, the policy brief was presented to the Dutch Agriculture Vice Minister. Additionally, the policy brief was also brought to the attention of Vietnamese stakeholders during a potato conference in May 2019. Earlier, a policy brief workshop took place in March 2016. Moreover, a potato discussion platform was established in which both the project partners and the Vietnamese authorities participate.

Prolonged shelf life

The project did not contribute to increased shelf life of locally produced potatoes. The project plan contained two channels through which this objective should be achieved. Cold storage facilities were considered to be too expensive, whereas sprout inhibitors were not allowed in Vietnam until recently. Nevertheless, Fresh Studio is actively seeking for other possibilities to provide a year-round supply of domestically produced potatoes. In June 2019, Fresh Studio and WUR shared the results of their joint research results on extending shelf life with the Vietnamese Ministry of Agriculture (MARD). Alternatively, Fresh Studio is currently exploring the possibilities to cultivate potatoes in other (cooler) regions in Vietnam, such as Moc Chau. This would allow for a year-round supply of potatoes and limit the need for a longer shelf life.

6.2 Supply side

On the supply side, the project aimed to establish sustainable potato production system. This was expected to lead to increased productivity and profitability of potato smallholders in Vietnam and a year-round supply of fresh potatoes. A target was set to involve 70 percent female farmers in the project. About 70 percent of all potato farmers are women and in this way they are included in the same proportion.

6.2.1 Supply-side outputs

Most of the key supply-side outputs were met. These outputs concern project activities related to the provision of trainings, the establishment of contracts, the commercial availability of cultivars and support or production enhancing equipment provided to the farmers.

Sub result	Accomplished	Realisation as of June 2019
40 potato advisors trained	Yes	52 potato advisors trained (of which 27 women).
Potato production extension service operational with at least 20 potato production advisors dedicated to table potato production.	Yes	During the last project year in total 24 potato production advisors were actively working on table potato extension service (this number includes Fresh Studio agronomists).
100 training sessions organised to train 2,500 smallholder farmers, of which 70% women	Yes	2,505 farmers (of which 71% women) followed all 3 modules and received a completion certificate.
Production enhancing equipment tested and distributed in the three potato production areas.	Partly	Three sets (tractor, planter and harvester) were bought instead of five budgeted. Farmers have shown little interest in such machines. The sets were ultimately sold at 40% of the procurement price (lower than budgeted)
Irrigation equipment introduced to 60 farmers with a capacity of 45,000 m^2.	Partly	Irrigation equipment introduced to 14 farmers with a total capacity of 35,300m^2 (8700m^2 in the RRD and 26,600m^2 in the Central Highlands))
Two potato demo farms established in the RRD and Central Highlands	Yes	One demo farm was established in Da Lat (Central Highlands) and one small area was rented in Hai Dungh (RRD) to provide trials.

Training and extension services

The targets with regard to training and extension services were all met. In total, the project provided three training modules, each individual module being attended by around 3,000 Vietnamese smallholder farmers. Moreover, 2,505 smallholders followed all three modules and received a completion certificate. Approximately 70 percent of the smallholder farmers that received training was female. Moreover, 51 potato advisors (of which 27 women) were trained in Vietnam as a result of the project. In the final project year 24 of these potato advisors were actively providing potato extension services. These services were a combination of capacity building, helping farmers put newly learned technique into practice and ad hoc problem solving.

Equipment

The targets on production enhancing equipment and introducing irrigation systems were not met. Farmers were interested in the machinery when they were demonstrated during the training but not willing purchase a tractor, planter or harvester themselves.

- Farmers were not willing to invest in relatively expensive machinery for an activity that is still considered a side-activity. Only tractors were somewhat cherished, as these could also be used for other activities as well.
- Some of the machinery was found to be too sophisticated and farmers would rather do the harvest by hand.[22] Moreover, the agricultural fields that each farmer had at its disposal was often found to be too small to be taken care by machinery efficiently.
- Whereas the machinery can be perfectly used in combination with the soil in Da Lat, the soil in the North of Vietnam was found to be too heavy to be operated by machinery efficiently. Additionally, the wheelbase of the tractors was not aligned with the width of field beds, resulting in a partial destruction of the beds once the machine was applied. Tractors with a larger wheelbase could theoretically offer a solution, but these are often found to be even more expensive and complex.
- Finally, the certain machinery (e.g. planting machine) is designed for 'single row' planting whereas 'double row' is the practice in Vietnam. This double row practice is also required in the registration process for new varieties.

The 'equipment' part of the project thus was not a success. Fresh Studio initially planned to purchase and distribute five sets of machinery. After lack of demand and consultation with RVO.nl on the issues above only three sets were purchased. These were used on the demo farms and sold to farmers with a 40 percent discount (60 percent was budgeted). Irrigation equipment was introduced to 14 farmers with a total capacity of 35,300m^2. Ample water and high ground water level in the RRD resulted in a limited need for irrigation systems. The project showed adaptability by buying less machinery than initially proposed once the lack of demand became clear. One of the takeaways of the project seems to be that mechanisation is currently not financially feasible. For this to production will need to shift to larger plots.

Demo farms

Two demo farms in the RRD and the Central Highlands were established, meeting the target. In Da Lat (the Central Highlands) one large demo farm was set-up in order to perform crop tests, apply new techniques and to cultivate crops on a continuous basis. Besides the generation of knowledge, this demo farm also served (and still serves) as a source of income for Fresh Studio. The second demo farm was established in Hai Dungh (RRD) on a significant smaller scale and a temporary basis. Each year, Fresh Studio rented an agricultural field of approximately one hectare in order to perform tests and to function as a show-case farm. In total 42 demo days were organised by Fresh Studio, in cooperation with other parties (e.g. local governments and other experts).

[22] Even though Fresh Studio had selected a very basic set of tractor, planter and harvester.

6.2.2 Supply-side outcomes

All key supply-side outcomes were met, either completely or partly. However, the baseline against which some of these outcomes are measured is suboptimal at best.

Sub result	Accomplished	Realisation
Improved agricultural practices and use of inputs by farmers	Yes	Farmers indicated to have significantly improved and practically applied their obtained knowledge
50% production increase	No	Yields were reported to be 35% and 36% higher in the RRD and the Central Highlands respectively. We reject these reported increases because the baseline was not measured reliably.
60% income increase for smallholder farmers in the RRD and Central Highlands	No	Gross income increases of 59% in the RRD and 154% in the Central Highlands were reported to RVO.nl. We reject these reported increases because the baseline was not measured reliably.
Potato yield increases realised with the same or less chemical inputs compared with the current situation.	Yes	Overall, a 30% decrease of fertilizer and crop protection products per ton of potatoes produced was reported for the RRD. The reduction in the Central Highlands was found to be higher.
At least 70% female participation	Yes	Targets with respect to gender ratios within the trained and contracted farmers were (largely) met.

Agricultural practices

Our survey suggests that the project succeeded in improving the agricultural practices and use of inputs by farmers. Trainings and extension services were well received by the smallholder famers. Farmers indicated improved knowledge of potato production. More than 70 percent of the trained farmers indicated that they practically applied general potato cultivation methods *after* the training, compared to less than 10 percent *before* the training. The difference was even larger for the farmers that received both training and extension services. Moreover, surveyed farmers that did not receive any training indicated that they would have liked to receive training and assistance (see Appendix A for more detail).

Production and income

Fresh Studio's monitoring system lacks a reliable baseline for yield and farmer income. We thus feel the reported increases are an overestimation. Fresh Studio reported that the farmers in the RRD and the Central Highlands realised an average increase of their yields of 35 and 36 percent between 2014 and 2019 respectively (compared to a target of 50 percent). Fresh Studio also reported that the involved farmers in the RRD and the Central Highlands subsequently realised an average increase of their incomes of 59 and 154 percent respectively (compared to a target of 60 percent). These increases are high but were measured against a suboptimal baseline. Fresh studio conducted a baseline study in 2013/2014 using a '*combination of farmer group meetings, farmer surveys, interviews with provincial extensions and local traders.*'. This culminated in generic baseline values that were not measured at farm level but estimated by for example provincial public officers. Comparing these baseline values with monitoring data of farmers in the project is problematic because the baseline values were not collected for the same group of farmers. The baseline reflects a regional estimate. There is no way to ensure that the project farmers are indeed representative for the regional average. In fact, it seems likely that farmers who agree to be trained by a project like Pro Poor Potato are on average better informed and more ambitious than average. Finally, no separate

values were reported for winter and spring harvests, while there are significant differences between the two.

In order to assess the project impact on yield and income we triangulate several data sources:

- Fresh Studio M&E results (excluding the unreliable baseline figure)
- Our own survey
- Interviews (primarily regarding the price of Dutch cultivars)

Table 6.2 and Table 6.3 show Fresh Studio M&E results for yield and income (revenue minus costs) for the RRD and Central Highlands respectively. The earliest data gathered is from 2016.

Table 6.2 Average yields among RRD farmers increased between 2016 and 2019

	Average yield (Ton/ha)	Average farm size (m2)	Average price/kg for class 1 potatoes	n
Winter 2016	16	820	7,964	293
Spring 2017	22	496	7,340	340
Winter 2017	15	474	7,318	171
Spring 2018	19	547	5,196	375
Winter 2018	19	490	6,567	295
Spring 2019	23	526	6,624	165

Source: SEO Amsterdam Economics based of Fresh Studio M&E

Table 6.3 Only a small number of farmers in the Central Highlands was working with Fresh Studio

	Average yield (Ton/ha)	Average farm size (m2)	Average price/kg for class 1 potatoes	n
Spring 2016	18	556	8,000	9
Spring 2017	21	3,750	11,222	18
Winter 2017	21	2,184	13,532	31
Spring 2018	29	1,295	9,227	11
Winter 2018	30	2,254	11,960	25
Spring 2019	31	1,415	8,273	11

Source: SEO Amsterdam Economics based of Fresh Studio M&E. No data available for winter 2016.

Recorded yields do show an increase over time, in particular when comparing 2016/2017 to 2018/2019. The winter 2018 harvest in the Red River Delta (19 ton/ha) is just over twenty percent more productive than the average of winter seasons 2016 and 2017. Spring seasons show a large fluctuation in productivity but the spring season 2019 (23 ton per ha) is het most productive. The number of farmers in the Central Highlands is too low to draw conclusions from. Prices in the RRD appear to have dropped from about seven and a half thousand VND per kilo in 2016/2017 to six and a half thousand VND per kilo in 2018/2019.

Dutch varieties offers slightly higher yield and price compared with German competitors. From 2018 onwards Dutch cultivars Rosagold an Markies were produced on a larger scale, although full commercial adaptation was never achieved within the project. To separate their impact from the aggregated results above Table 6.4 presents yields and prices for the four most commonly produced varieties of table potatoes in the winter 2018 and spring 2019 seasons.[23]

[23] The Vietnamese 07 variety can also be considered to be a competitor but was only produced by one farmer in the project monitoring database during the winter 2018/spring 2019 seasons.

Average yield of newly introduced varieties is just over ten percent higher for Markies and Rosagold compared with Marabel en Solara. Farmers receive on average 7,200 VND per kilo for Markies and Rosagold versus 6,700 for Marabel and Solara (seven percent price difference). Some interview partners state that the branding campaigns contributed to higher prices paid to farmers and traders. Farmers we spoke to do indeed report higher selling prices. However, two traders we spoke to did not indicate a difference in purchase price between the branded and unbranded potatoes. A retailer mentioned that he paid the same for branded and unbranded potatoes.

Table 6.4 Dutch varieties offer slightly higher yield and price compared with German competitors

	Nationality	Type	Average Yield (ton/ha)	Average price (class 1)	Kilo produced	Number of farmers
Markies	Dutch	Table	21	7.432	123.307	66
Rosagold	Dutch	Table	22	6.825	23.563	4
Marabel	German	Table	20	6.348	215.745	240
Solara	German	Table	18	7.003	30.310	75

Source: SEO Amsterdam Economics based of Fresh Studio M&E. Winter 2018 and spring 2019 season only

A drawback from the projects M&E data is the lack of a control group. All farmers for which yield and price data were collected are part of the project. We thus do not know what development farmers that are not part of the project went through.

Table 6.5 Revenues in winter harvests

		N	Number of sao's	Total yield per sao (kg)	Weighted price kg	Revenue per sao
						x 1,000 VND
Winter 2016	Training only	107	5.0	685.5	6,820	4,662
	Training and extension services	25	3.1	688.4	6,640	4,531
	Control	48	4.2	685.4	6,910	4,771
Winter 2017	Training only	97	4.7	734.4	6,380	4,690
	Training and extension services	19	3.0	708.9	6,310	4,469
	Control	52	4.0	711.3	6,090	4,275

Source: SEO Amsterdam Economics, Viet Insight.

Table 6.6 Profits winter harvests

Profits x 1.000 VND	Winter 2016, per sao	Winter 2017, per sao
Training only	2,210	2,228
Training and extension services	2,121	2,054
Control group	2,377	1,812

Source: SEO Amsterdam Economics, Viet Insight.

Our own survey does feature a control group. We find that income of trained farmers seems to fluctuate less over time than the income of the untrained farmers (Table 6.5 and Table 6.6).

Total costs per sao were found to be comparable between the farmers that did and that did not receive any training modules during both harvest seasons.[24] However, the control group experienced a decrease of approximately 25 percent of their average profit per sao, whereas it remained fairly stable over time for the farmers that received training (and extension services). These results do not reflect any impact from the Dutch cultivars given that they were only introduced on a larger scale in the 2018 season. Our survey also shows a slight decrease in prices from 2016 to 2017 which corresponds to the Fresh Studio M&E data reported earlier. For more detail about our survey results see Appendix A.

In conclusion, we find that both yields have increased, but not as much as initially reported by Fresh Studio. Fresh Studio M&E data show a twenty percent increase in yield from 2016/2017 to 2018/2019. No data from before 2016 is available. It seems unlikely that significant yield improvements were realised before 2016. The bulk of the trainings were given in 2016 and 2017 (although a few farmers had the first of three trainings during the 2015 seasons). The newly introduced Dutch Cultivars Markies and Rosagold could only be produced on a commercial scale from 2018 onwards.

Overall prices dropped between 2016 and 2019. It seems unlikely that increased supply from the farmers is to blame. The project is too small to affect market prices.[25] The price drop thus seems to reflect external factors. The Dutch cultivars do offer a slight price premium over their main German competitors. This is disputed by some of our interview partners but we will follow the data on this. Our survey results show that farmers who received training and/or extension services performed relatively more stable over time. Where the control group suffered a decrease in yield in 2017, yields for farmers who were trained remained more or less the same. Given that prices dropped less than yields increased and that Dutch cultivars seems to trade a small premium we expect a positive impact on farmer income overall. However, the targeted sixty percent increase in income is not met.

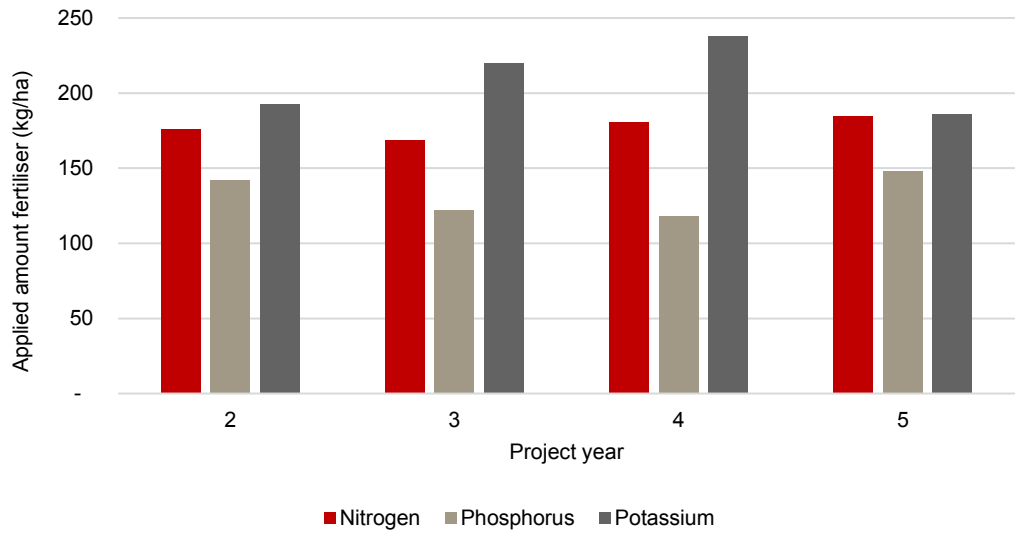
Use of chemicals

In the final year of the project, smallholder farmers in the RRD were using less chemical inputs per unit of produce than observed during the second year, when they were first measured.

[24] A sao is a commonly used unit of measurement to measure (agricultural) land and is equal to 360 square meters.

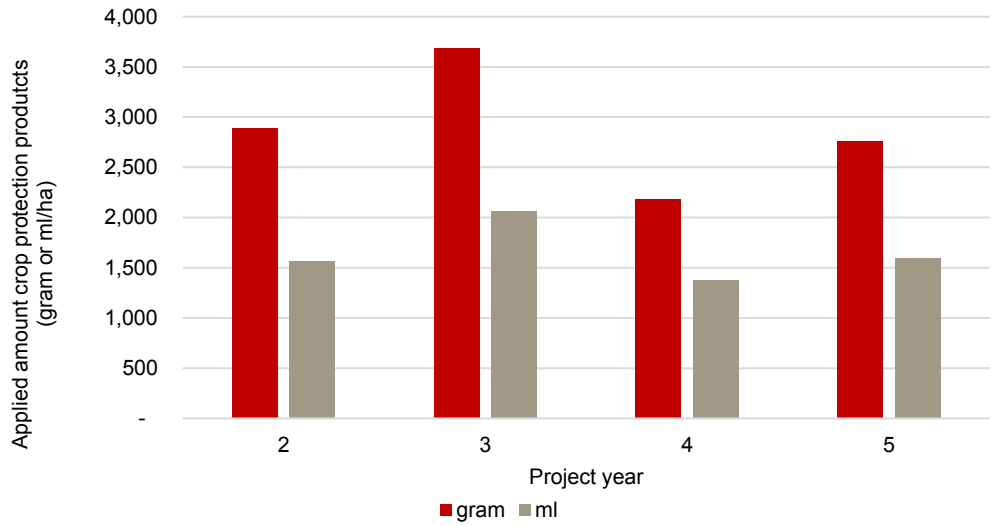
[25] In total 2.7 million kilos of table potatoes were produced by the project over the course of several years. The regular annual production of potatoes in Vietnam amounts to 300 million kilos' annually.

Figure 6.1 Fertilizer applied per hectare – Red River Delta



Source: SEO Amsterdam Economics based of Fresh Studio M&E

Figure 6.2 Crop protection products applied per hectare in the Red River Delta



Source: SEO Amsterdam Economics based of Fresh Studio M&E

In the final project year farmers used similar levels of fertilizer and crop protection products as in the second project year. However, because yields have increased, the usage of chemical inputs per unit of produce must have decreased.

In our own survey we did not ask farmers about amounts of fertilizer and crop protection products use. Farmers did indicate costs per sao of fertilizer and crop protection products. These costs remained more or less stable between the 2016 and 2017 winter harvests. This corresponds with the projects own M&E result of stable usages per area (sao or hectare). The number of observations for the spring harvests is too low to draw conclusions upon. The farmers that have received additional extension services have reported lower costs related to fertilizers and pesticides. Whether

or not this is a project result is hard to tell. Surveyed farmers did indicate that, in their view, the more efficient use of chemical inputs was one of the major contributions of Fresh Studio's training sessions and extension services (see also Appendix A).

Female participation

Gender specific targets were largely met. 62 percent of the contracted farmers and 71 percent of the farmers that attended all three training modules were found to be female. The targets of 70 percent can therefore be considered (largely) met. A side note here is that about 70 percent of all potato farmers in Vietnam is female. The project thus did not really need to 'target' females or benefit females in any specific way. Meeting the targets set is simply a reflection of the gender ratio among potato farmers.

6.3 Demand side pathway

On the demand side, the project aimed to increase the consumption of potatoes. For this to occur, the increase in the (produced) supply of potatoes must be met with an equivalent demand for potatoes and potato products among consumers.

6.3.1 Demand-side outputs

All key demand-side outputs were met. These outputs relate to the market studies, awareness and marketing campaigns, and the establishment of a food lab.

Sub result	Completed	Realisation
Potato market and consumer studies carried out	Yes	2,810 consumers were interviewed in Hanoi and HCMC through door-to-door interviews. 253 households in Hanoi and HCMC participated in household panels
Consumer and trader awareness campaign carried out	Yes	Awareness campaigns were conducted based on the market surveys
Marketing campaign carried out	Yes	Product Brand Awareness Campaign focusing on the specific Dutch cultivars carried out in 2018 and 2019.
Food lab established	Yes	A food lab was established in Hanoi and another was rented in HCMC. 400 consumers in Hanoi and HCMC participated in sensory evaluations of potato varieties.

Consumer studies and marketing campaigns

All targets with respect to the outputs at the demand side were met. The project executed all the planned marketing and awareness campaigns as well as it performed market studies and established a food lab. During the early phases of the project, 2,810 consumers were interviewed in Hanoi and Ho Chi Min City through door-to-door interviews. This gave the project partners insight into the role of potatoes in the Vietnamese diet and preferences with regard to taste, shape and colour. In addition, 253 households in Hanoi and Ho Chi Min City participated in household panels. Each prepared four selected potato varieties at home and consequently provided feedback. Based on this market analysis, general awareness campaigns were conducted in order to promote the consumption of potatoes amongst consumers and traders. Subsequently, two food labs were established in Hanoi and Ho Chi Min City in which an additional four hundred consumers

participated in sensory evaluation of several potato varieties. Once the consumer preferences were identified, suitable Dutch potato varieties were selected and registered in Vietnam. After the registration process Fresh Studio carried out branding campaigns in supermarkets specifically targeting these Dutch cultivars with their "Born in the Netherlands. Grown in Vietnam" brand.[26]

6.3.2 Demand-side outcomes

All key demand-side outcomes were met. However, the targets with respect to the demand-side outcomes are ambiguously defined. These outcomes relate to the results of the project's market studies and branding campaigns.

Sub result	Completed	Realisation
Increased awareness of the nutritional value of potatoes	Yes	The share of respondents in diary research that is aware of the nutritional value increased during the length of the project.
Increased sales figures of table potato at retail chains where the general and specific awareness and marketing campaign are executed.	Yes	Sales of specific Dutch potatoes increased between 133% up to 210% in most retail channels.

More people became aware of the nutritional value of potatoes. During the length of the project, households participated in a diary research. This has shown, that over the years, more households became aware of the nutritional value of potatoes. These households also cite this as a reason for including potatoes in their diets. Although not actively measured, Fresh Studio argues that the training modules also resulted in an increased awareness of the nutritional value of smallholder farmers themselves.

The sales of specific Dutch potatoes increased between 133 and 210 percent (depending on the retailer) during the project.[27] Moreover, retailers we spoke to indicated that they would like to sell more and would like a year-round supply of Dutch Potatoes grown in Vietnam. The market share of Dutch potatoes remains very small however. Fresh Studio farmers produced about 2.7 million kilos of potatoes during the project. Less than a third of these potatoes was 'Dutch'. Given the population of Vietnam (nearly 100 million) and an average consumption of potatoes of 4 kilo's per capita the current market share might be about 0.2 percent (see also Table 6.1).

It should be noted that the *overall* increase in demand for potatoes was mostly the result of growing demand for processed products. Interview partners indicated that globalisation and the introduction of fast-food are the driving forces behind the increasing demand for processing potatoes. Individual consumers were found to have a strong preference for domestically produced potatoes. Processors in contrast do not, as *their* customers are not able to differentiate once the potatoes have been processed. Processors currently maintain a preference for the lowest-priced potatoes, a role that is currently reserved for the Chinese potatoes. The "business-to-business" (B2B) relation was not included in the project plan. Moreover, the marketing campaigns were largely aimed at the individual consumers, leaving the local business more or less unaffected.

26 In Vietnamese known as "Sinh ra tu Ha Lan. Lon len tai Viet Nam"
27 Before the start of the project no Dutch potatoes were sold in Vietnam.

7 Sustainability

This chapter discusses the sustainability of the Pro Poor Potato project. It finds that potato cultivation in Vietnam is sustainable in financial terms, but the contribution of the project towards systemic change has so far been limited. The registered new varieties do offer potential for scalability.

The two research questions discussed in this chapter are the following:

- RQ5: To what extent do the benefits of the project (outcome and impact level) continue after FDOV-funding ceased and how was this influenced by the business case and/or revenue model?
- RQ6: Did the project/ intervention lead to systemic change and/or was the intervention scalable?

RQ5 is discussed in Section 7.1 while RQ6 is discussed in Section 7.2.

7.1 Financial sustainability of value chain segments

Financial sustainability

The newly introduced Dutch varieties are competitive against other locally produced potato varieties. Chinese imports remain cheaper however meaning that the Dutch potatoes will have to be positioned as a premium product. Vietnamese consumers appear to be prepared to pay extra for potatoes produced in Vietnam. Fresh Studio is also looking into possibilities of local seed multiplication together with the local university. This would solve the problem of Dutch seed potatoes arriving too late for the winter season in Vietnam and would mean lower transportation costs.

Commitment of partners and future activities

The continued commitment of Fresh Studio to the Vietnamese agricultural sector is high. Fresh Studio has said they will remain active in stimulating the development of other agricultural products, including potatoes, in Vietnam. It also plans to keep the demo farm in place and to maintain contracts where possible. Moreover, Fresh Studio is considering similar potato projects in neighbouring countries. This would provide opportunities to apply lessons learned in Vietnam and could be a way to connect the potato cultivation sectors of multiple countries. Fresh Studio and Agrico agreed to extend their partnership. Fresh Studio will continue to import and sell Agrico potato varieties. They will also continue to register new varieties. Esmee and Erika obtained phase 1 registration. Moreover, trials are being conducted for two more table potatoes (Alouette and Carolus). Local governments, CIP (international potato centre) and a Korean crisp company called Orion are also in the process of registering new varieties.

No true partnership between PepsiCo and Fresh Studio has come to fruition and it is not likely that this will happen in the future.

Training and monitoring

Fresh Studio is based in Hanoi and its day-to-day activities evolve around improving agricultural practices in Vietnam. This is not expected to change now that the project has ended. Fresh Studio aims to continue training and monitoring activities to some extent. There are plans to update training materials based on the lessons learned. This will be housed under 'Fresh Academy'.[28] Potato advisors that were already working for traders or local authorities will continue to do so after the project. Potato advisors solely paid for by the project will likely be employed on other projects.

Awareness and branding campaigns

Fresh Studio will remain involved in the promotion of Dutch agricultural products, but no additional large-scale marketing campaigns will take place. In the absence of a subsidy, there will be no financing available for such marketing campaigns. It is also unlikely that Agrico will finance such a campaign given that Vietnam is just a minor market.

7.2 Systemic change and scalability

The project helped the professionalisation of the sector by introducing high quality seed potatoes and the transfer of knowledge. The consumer studies and awareness and branding campaigns made potatoes more visible in Vietnam**.** Table potatoes grown in Vietnam are widely appreciated. This appreciation is, however, largely the result of the aversion of Vietnamese consumers towards Chinese products. In order to be truly competitive in the long run, price differentials will have to decrease. Chinese potatoes are currently cheaper and available year-round. The higher quality and yield of the new Dutch varieties do not fully offset this.

Limited progress was made in terms of mechanisation of potato cultivation. The majority of the farmers considered the use of machines too expensive. For this to change plot sizes need to increase. Furthermore, the RRD is not ideal for potato cultivation. For now, it does offer farmers a bit of additional income in between the rice seasons. Potatoes can be grown year-round in the Central Highlands. PepsiCo demonstrates that production can be commercially viable, at least for processing potatoes.

The project did not bring systemic change so far and the current scale is still small. However, the new varieties introduced will be available on the market from now on. Farmers were engaged in a professional and commercial way from the beginning. Seed potatoes were provided at an introduction price but farmers were made aware of this. This makes it more likely that they will continue to purchase seed potatoes from Fresh Studio now that the project has ended. Furthermore, Fresh Studio expects that Dutch cultivars will remain competitive and attractive for farmers.

[28] Fresh Academy is a Dutch-Vietnamese knowledge institute and a collaboration between Fresh Studio, Dutch and Vietnamese universities and local businesses.

8 CSR Performance

This chapter discusses the CSR performance of the Pro Poor Potato project. It finds that CSR plans were relevant and effective, and CSR risks were minimal.

The questions addressed in this chapter are:
RQ7: What is the CSR performance of the selected FDOV projects?

- How relevant were the designed CSR plans?
- What effects can be observed of CSR plans of private partners in consortia?
- To what extent did the projects have a major positive or negative influence on their direct natural environment or contributed (combatting) global climate change?

Relevance of designed CSR plans

The project proposed mitigation measures in three CSR domains:

1. Socioeconomic impacts:
   a. Creating new market opportunities for smallholder farmers through improving potato supply for both processing and table potato market segments
   b. improving the farmers' health through access to healthy foods. Potatoes offer essential zinc and iron and therewith decrease micronutrient deficiencies
   c. improving the farmers' working conditions through the introduction of production enhancing equipment (irrigation systems, planter, tractor and potato harvester)
   d. gender, 70 percent of all potato farms are managed by women
2. More efficient use of chemical inputs. Ensuring safety and quality of produce in the food chain by reducing the non-rational application of agro-chemicals
3. More efficient use of water by substituting rice cultivation by potato cultivation

Fresh Studio, Agrico and PepsiCo all had CSR policies in place. These policies were submitted to RVO.nl at the start of the project.

CSR impact of the project

The project actively tried to include smallholder farmers in the value chain. Farmers were linked up with traders and traders were connected to retailers. The branding and marketing campaigns at the retailer level were designed in such a way that smallholder farmers could benefit as well. Smallholders were given packaging material and labels allowing them to signal the brand of their potatoes. Farmers were trained and given extension services as well. This has most certainly given them new market opportunities.

It does not seem likely that the farmers' health improved through better access to nutrient rich foods (potatoes). All of the farmers in the project were already producing potatoes. The same holds for the working conditions. Potato farming in Vietnam is very physical. Plots are small and farmers considered mechanisation as too expensive. The project did try to introduce mechanisation but results were limited. In the end three sets of a tractor, a harvester and a planter were sold to farmers.

The project has been successful in promoting more efficient use of fertiliser and plant protection chemicals. The M&E data show a decrease in usage per unit of produce. This is primarily the result of higher yields per hectare. The amount of fertilizer and crop protection products per hectare only decreased slightly. The project tried to limited water usage in two ways, by introducing irrigation systems and by 'substituting' rice cultivation for potato cultivation. The targets with regard to irrigation systems were not met, primarily because of limited demand and the abundance of water in the RRD. The project did not lead to any substitution of rice cultivation for potato cultivation. No plan was developed for this. All smallholder farmers in the project were either year-round potato farmers or combined rice farming with one or two potato harvests in the rice off-season.

During our visit in Vietnam in June 2019, we did not encounter any CSR-related issues with project partners and/or smallholder farmers.

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Appendix A Farmer Survey

Introduction

SEO and CREM asked Viet Insight to conduct a survey among 240 farmers located in the Red River Delta. Farmers were surveyed between December 2018 and January 2019. 127 of these farmers received training, 55 received both training and extension services. The control group of 58 farmers did not receive training or extension services. This chapter describes the survey results and examines the effectiveness of the training modules and extension services.

We start with a description of the farmer sample. Next, we describe the quality of the training received from the perspective of the participating farmers. Then we show the contribution of the training modules (and extension services) to the farmers knowledge, cultivation methods and yields. Subsequently, we construct a business case for a Vietnamese potato farmer which supplements the farmers' own evaluations.

Farmer sample

Fresh Studio trained farmers in the Red River Delta divided over fourteen districts within four provinces. The majority of these farmers received at least one training module of three sessions. 296 farmers were selected to continue receiving extension services. Extension services are defined as additional services provided after the initial training modules were completed, such as field technical support and help with the implementation of the lessons from the training. The sample presented here consists of 240 farmers and represents three out of the four provinces and four out of the fourteen districts in which the training modules and extension services were provided (see Table A.1)

Table A.1 Distribution of groups by location

Province/District	Training only	Training and extension services	No training and no extension services	Total
Bac Giang/Yen Dung	37	17	21	75
Bac Giang/ Luc Nam	31	13	15	59
Thai Binh/Dong Hung	0	24	7	31
Bac Ninh/Que Vo	59	1	15	75
Total	**127**	**55**	**58**	**240**

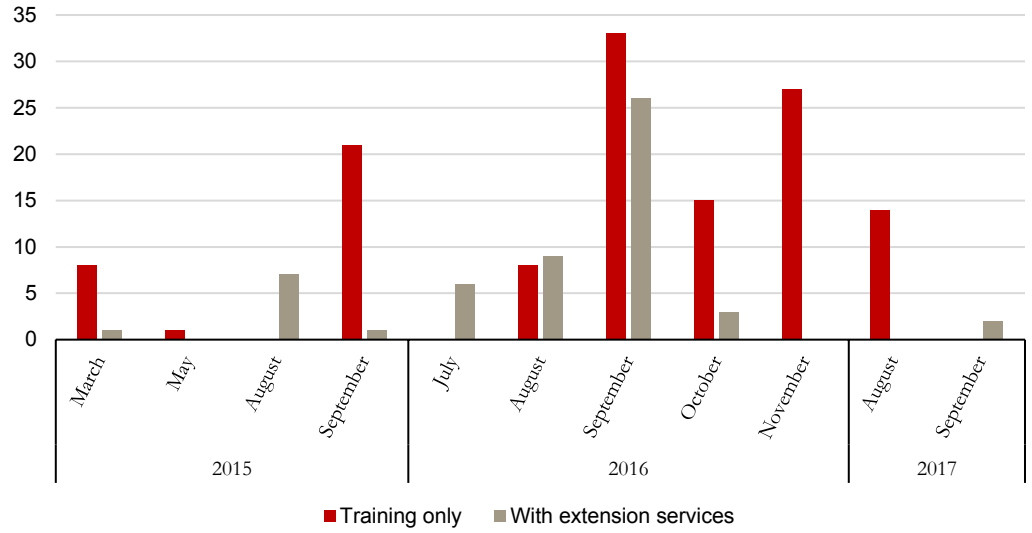
Source: SEO Amsterdam Economics, Viet Insight.

The survey design is such that three separate groups of farmers can be distinguished:

- 58 farmers did not receive any training or extension services (control group)
- 127 farmers attended at least one training session
- 55 farmers attended at least one training session and received follow up extension services.

The majority of the potato farmers received their first training session in the last quarter of 2016. More training sessions were provided between September 2017 and December 2018. However, these did not result in additional farmers being trained, but only in additional training sessions being provided for farmers that had been trained before.

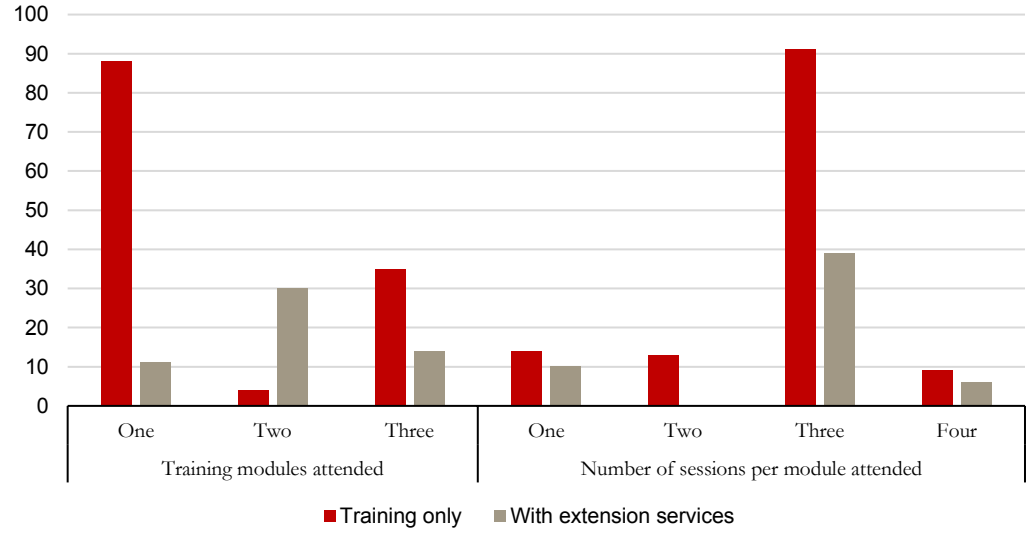
Figure A.1 The majority of the farmers attended their first training in 2016



Note The figure only displays the first training session attended by each farmer
Source: SEO Amsterdam Economics, Viet Insight.

The majority of the responding farmers attended one training module of three training sessions. This corresponds to the training design as set up by Fresh Studio. The figure below shows that two thirds of the farmers belonging to the training group received followed one training module. A quarter indicate to have followed that three *modules*. We assume these farmers have in fact followed three *sessions* within the same module.

Figure A.2 The majority attended one training module of three sessions



Source: SEO Amsterdam Economics, Viet Insight.

The average farmer in the sample is female and around 55 years of age. 200 out of the 239 responding farmers of which the gender is known are female. Males are slightly older on average but the age distribution is higher among female farmers, with reported ages ranging from 27 to 75 years.

Table A.2 Respondent characteristics

	Observations	Average age	Youngest	Oldest
Men	39	59.0	40	71
Women	200	54.9	27	75
Total	**239**	**55.6**	**27**	**75**

Source: SEO Amsterdam Economics, Viet Insight.

Females are generally responsible for potato cultivation. Most farmers indicate that they have been cultivating potatoes for more than twenty years. About two thirds of the trained farmers indicate that potato cultivation is their main source of income.[29] Our control group is not perfect. Fewer farmers indicate that potatoes are the main source of income. Farmers in the control group also are a bit less experienced in potato cultivation. One explanation for this difference is that farmers who more actively cultivate potatoes were more likely to attend the training offered.

Table A.3 Summary statistics by group

	Training only	Training and extension services	Control
First year of potato cultivation (average)	1989	1991	1995
Potato is the main source of income	69%	65%	40%
Female is responsible for potato cultivation	94%	85%	89%
Number of observations	127	55	58

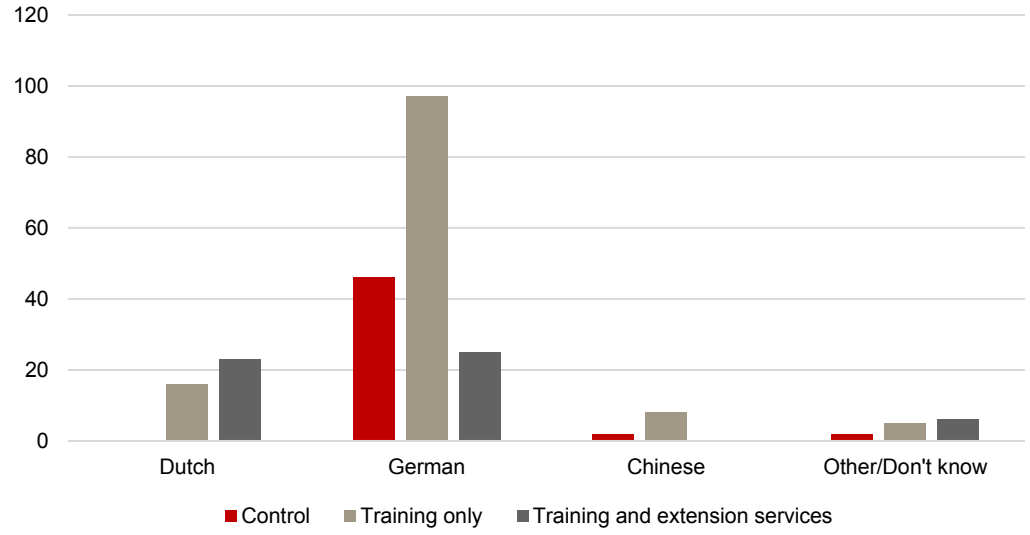
Source: SEO Amsterdam Economics, Viet Insight.

Farmers mostly use German varieties for potato cultivation. The share of German variety usage ranges from approximately 50 percent in the group that received training and extension services to more than 90 percent in the control group. Fresh Studios planned to provide all the farmers that received training sessions also with higher quality seed potatoes from the Netherlands, because this was expected to result in the highest yield increase. However, in the current sample, only a quarter of the trained farmers made use of Dutch potato varieties.[30] Logically, the farmers that were not in contact with Fresh Studio's project have not been using Dutch potato varieties.

[29] This statement must be interpreted with some caution. The proceeds from rice cultivation are, on a yearly basis, still found to be the main source of income. However, it is likely that during the "rice-off" season, potato cultivation contributes the most to the household income.

[30] The majority of the farmers mentioned that they made use of a "Dutch" variety, whereas only a few specifically mention the name of the variety (i.e. Carolus or Markies).

Figure A.3 Farmers mostly use German varieties for potato cultivation

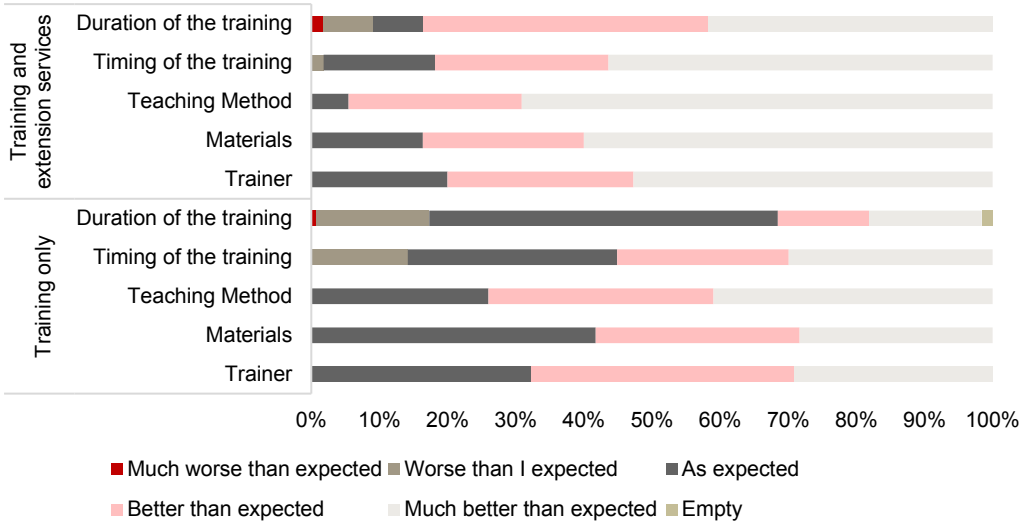


Source: SEO Amsterdam Economics, Viet Insight.

Farmer experience

Participating farmers typically report the training was better than expected. For each of the five aspects outlined in the figure below at least 80 percent of the responding farmers perceived it as better or much better than expected. Farmers that received both training and extension services are most positive. Farmers have made minor comments with respect to the training materials. Not all materials that have been introduced during the trainings are widely available.

Figure A.4 Most farmers were pleasantly surprised with the quality of the training

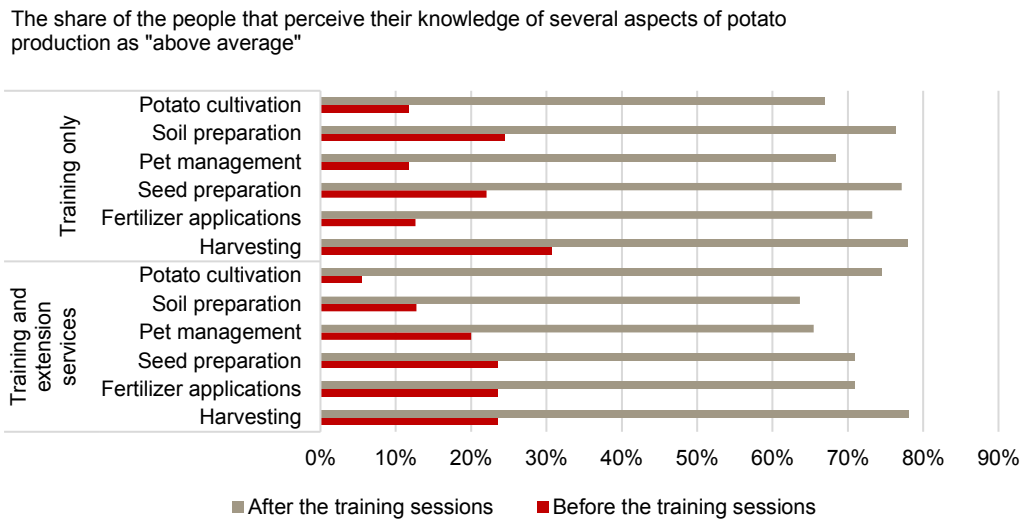


Source: SEO Amsterdam Economics, Viet Insight.

Smallholder farmers in the Red River Delta indicate the training has greatly improved their knowledge of potato cultivation. Figure A.5 shows that between 5 and 12 percent of the farmers indicated that they had above average general knowledge of potato cultivation *before* the training sessions. In comparison, 67 to 75 percent of the farmers indicated that they had an above average general knowledge of potato cultivation *after* the training sessions. The same holds for the specific aspects of potato cultivation. The farmers that have received extension services on top of the training provided do not report a larger increase in knowledge than farmers that have only received training.

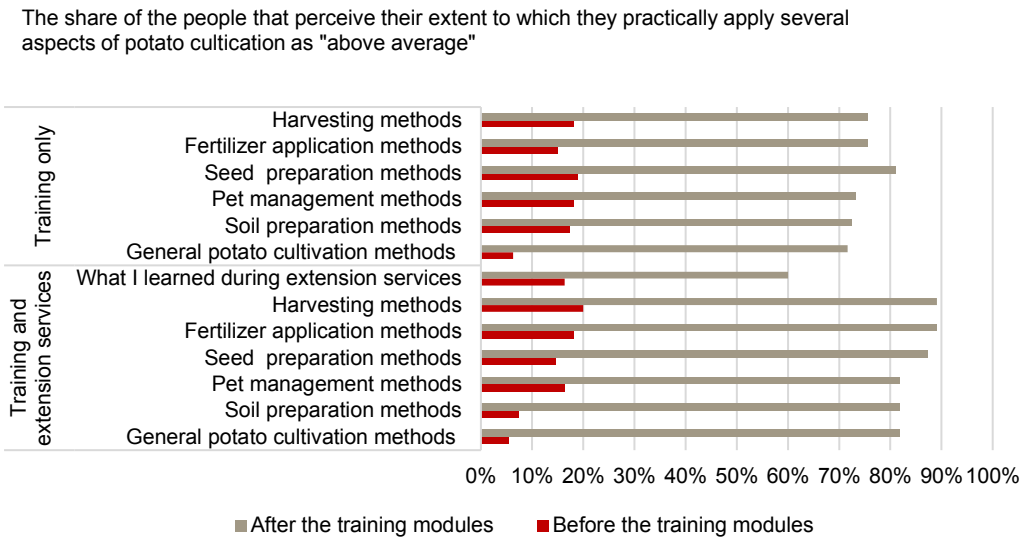
Farmers report increased application of several potato cultivation methods after receiving the training modules. 5 to 6 percent of the farmers indicated that they had practically applied general potato cultivation methods to an 'above average' extent *before* the training sessions. In comparison, 72 to 82 percent of the farmers applied did so *after* the training modules. Extension services appear to increase the application of cultivation methods even further.

Figure A.5 Farmers perceive their knowledge of potato production methods as highly increased



Source: SEO Amsterdam Economics, Viet Insight. Farmers were asked to rate their knowledge on a scale of 1 to 5. This figure reports the share of farmers that indicate their level of knowledge to be 4 or 5.

Figure A.6 Farmers perceive their application of potato production methods as highly increased



Source: SEO Amsterdam Economics, Viet Insight.

Farmers report large increases in their yield per sao as a result of increased knowledge and application of cultivation methods.[31] Farmers were first asked to estimate the effect of the training on their yields. Many reported as much as a 50 percent increase. Farmers have indicated fewer problems related to insects and diseases due to more effective use of pesticides. Moreover, farmers that did not receive any training indicated that they have a strong need for training modules. Responding farmers have also indicated that potato cultivation is currently more profitable than rice farming. The next section goes into more detail with regard to the farmers actual reported yields and find a less spectacular increase in productivity than estimated by the farmers themselves.

Table A.4 Both training groups report a substantial increase in the yield per sao on average

	N	Average	Lowest	Highest
Training only	127	+39%	-14%	+150%
Training and extension services	55	+42%	-43%	+100%

Source: SEO Amsterdam Economics, Viet Insight.

The data shown in Figure A.5, Figure A.6 and Table A.4 have to be interpreted with some caution. Questions related to both the before and after situation were asked after the training sessions were conducted, leaving room for socially desirable answers. However, the smallholder farmer survey has indicated that (1) the farmers appreciate the training sessions and extension services, (2) farmers perceive the training sessions and extension services as a contribution to their knowledge and of cultivation methods (3) farmers report increased potato yields and income levels as a result of the training, (4) training is perceived to be highly necessary by farmers that did not receive any training and (5) potato cultivation is perceived to be more profitable than rice farming.

45 percent of the farmers that received training and 90 percent of the farmers that did not receive training indicate that there are other organisations active in the field of training

[31] A sao is a commonly used unit of measurement to measure (agricultural) land and is equal to 360 square meters.

smallholder farmers. These activities are provided by farmer associations and communal groups, and relate to technical advice/guidance and the prevention of potato diseases. The project worked together with agents from other institutions in order to provide the training modules and extension services. This set up could incorrectly create the perception that other organisations were active in the field, whereas they were actually connected to the project. Moreover, the government is occasionally involved in general crop protection trainings. These are, however, not specifically aimed at potato cultivation.

Financial performance

This section constructs a business case for potato farming to assess the impact of the training modules and extension services on the financial outcomes of potato farmers in the Red River Delta.[32] We provide a full business case for the winter harvests of 2016 and 2017. For these harvest seasons the data are comprehensive enough to estimate the average profitability of the farmers in the sample.[33] These estimations are supplemented with an overview of the revenues during the three most recent spring harvests. In the last section a modest comparison is made between the newly introduced potato varieties and the "traditional" varieties.

Winter harvests

Revenues of the trained farmers do not differ much from the control group. Total revenue is slightly larger for the control group during the harvest of winter 2016. This difference is largely the result of higher reported prices for the control group. Yields per sao were found to be the same: 690 kilograms per sao on average. One kilo of potatoes sells for six to seven thousand VND, or about €0.25.[34] The group of farmers that received training have done better during the harvest of winter 2017. The revenues per sao remained more or less constant for the groups that received training, whereas the control group experienced a considerable decrease in their average revenue. This seems to be largely the result of significantly lower reported prices in the control group, as the yields per sao increased slightly for all groups.

Table A.5 Revenues in the winter harvests

		N	Number of sao's	Total yield per sao (kg)	Weighted price kg	Revenue per sao
					x 1,000 VND	x 1,000 VND
Winter 2016	Training only	107	5.0	685.5	6.82	4,662
	Training and extension services	25	3.1	688.4	6.64	4,531
	Control	48	4.2	685.4	6.91	4,771
Winter 2017	Training only	97	4.7	734.4	6.38	4,690
	Training and extension services	19	3.0	708.9	6.31	4,469
	Control	52	4.0	711.3	6.09	4,275

Source: SEO Amsterdam Economics, Viet Insight. The weighted price for each farmer is calculated based on the relative importance of the various types of potatoes (i.e. 1st-3rd class potatoes and seed potatoes) in the total revenue of the respective farmer. Subsequently, an unweighted average is calculated for each group based on the weighted prices for each specific farmer within that group

[32] It should be noted that this is only an assessment of the impact of the training modules and extension services on potato cultivation. The impact of the new Dutch potato varieties is not included in the analysis, because these have only been used by a very limited number of farmers during seasons 2016 and 2017.

[33] Our survey was held early 2019 while the 2018 winter season was still underway.

[34] One Euro is worth about 25 thousand VND.

Costs per sao were very similar across all groups, but remained the most stable for the farmers that received training (Table A.6**)**. When looking at the individual cost categories, small differences are observable. The farmers that have received additional extension services have reported lower costs related to fertilizers and pesticides for example. This is in line with the aim of more efficient use of pesticides and fertilizer. The costs related to land preparing, on the other hand, were found to be relatively high for this specific group of farmers. The importance of proper land preparation is also addressed in the extension services. Moreover, these differences seem to be relatively constant over time. The costs related to the other specific categories fluctuate between groups over the years. No clear trend is observable.

Table A.6 Costs for the winter harvests

X 1,000 VND/sao		N	Seed price	Fertilizers	Pesticides	Land preparing	Care and harvest	Other	Total costs/sao
Winter 2016	Training only	107	571	494	113	161	1,121	45	2,453
	Training and extension services	25	613	424	75	222	1,100	30	2,410
	Control	48	627	483	95	154	1,054	29	2,395
Winter 2017	Training only	97	576	503	111	160	1,123	44	2,462
	Training and extension services	19	688	431	76	234	1,098	33	2,415
	Control	52	630	484	94	154	1,069	29	2,463

Source: SEO Amsterdam Economics, Viet Insight.

The profits of the group of farmers that received training are constant over time, whereas the control experienced a considerable decline during the same time period. The group of farmers that received additional extension services experienced a decline in their average profits as well. This reduction was much smaller than the reduction for the control group. Overall, the farmers that received at least one training module performed relatively better than the untrained farmers during the 2017 winter harvest. However, no significant difference was found for the farmers that received additional extension services as well.

Table A.7 Profits winter harvests

Profits x 1,000 VND	Winter 2016, per sao	Winter 2017, per sao
Training only	2,210	2,228
Training and extension services	2,121	2,054
Control	2,377	1,812

Source: SEO Amsterdam Economics, Viet Insight.

Spring harvests

The spring season is of less importance to potato farmers: relatively few farmers are involved in potato cultivation during this season and the farmers that are involved in potato cultivation devote smaller areas to the crop. Partly because of this, relatively large differences arise between the three groups. Because the fields need to be prepared for the rice season (that starts immediately after the potato season), potatoes are harvested earlier. This results in lower yields. Table A.8 shows that the revenues per sao in the control group were found to be approximately one and a half times as large as the revenues per sao in the other two groups during

However, it has to be noted that these findings are based on a very small sample, especially for the farmers that received extension services. We are not able to draw any conclusions for the spring seasons.

Table A.8 Revenues in the spring seasons

	Group	N	Number of sao's	Total yield per sao	Weighted price (kg)	Revenue per sao
				Kg	X 1,000 VND	X 1,000 VND
Spring 2016	Training only	59	1.0	440.4	8.7	3,714
	Training and extension services	1	0.8	500.0	10.0	5,000
	Control	15	1.3	523.3	12.1	6,640
Spring 2017	Training only	62	1.0	466.8	7.7	3,611
	Training and extension services	2	1.4	550.0	6.7	3,600
	Control	16	1.2	529.4	9.6	5,028
Spring 2018	Training only	51	1.0	459.8	7.1	3,224
	Training and extension services	3	0.9	700.0	7.0	5,067
	Control	15	2.0	566.7	9.0	4,850

Source: SEO Amsterdam Economics, Viet Insight. The weighted price for each farmer is calculated based on the relative importance of the various types of potatoes (i.e. 1st-3rd class potatoes and seed potatoes) in the total revenue of the respective farmer. Subsequently, an unweighted average is calculated for each group based on the weighted prices for each specific farmer within that group. Revenues are in thousand Vietnamese Dong or whole euros.

Concluding remarks

Farmers appreciated the training received. Farmers also received additional extension services are even more positive.

- Farmers reported increased knowledge with respect to potato production. The farmers who received additional extension services as well did not report a larger improvement of knowledge compare with the group that only received training.
- Practical application of potato cultivation techniques increased. Additional extension services were beneficial to get farmers to apply learned techniques.
- Farmers that were not selected to receive training modules or extension services indicated that they had a need for training and assistance.

Farmers that received at least one training module report more stable profits than the farmers that did not receive any training modules. Differences remain small however.

- Total costs per sao were found to be comparable between the farmers that did and that did not receive any training modules during both harvest seasons.
- The average revenues per sao for the trained farmers remained fairly stable over time, whereas the control group experienced a slight decrease.
- The control group experienced a decrease of about 25 percent in the average profit per sao. The other two groups did not. The survey does not offer insight into what extent the training or extension services received can be credited for this.

Appendix B Interview Partners

Netherlands

- Mr. Sicko de Vries (Senior Agronomist International at Wageningen University of Applied Research, WUR)
- Mr. Adrie Omtzigt (Product Manager at Agrico)
- Mr. Victor de Lange (Managing Partner at CREM)

Hanoi (Vietnam)

- Ms. Lan Anh Ha (Business Development Manager at Fresh Studio) and Mr. René van Rensen (R&D Director Crops at Fresh Studio)
- Mr. Trân Xuân Đinh (Deputy Head of the Department of Crop Production (DoCP) of MARD) and the Director Crop Department of MARD
- Mr. Marc van der Linde (First Secretary Economic Affairs at the Netherlands Embassy in Hanoi)
- Mr. Dao Huy Chien (International Potato Centre, CIP)
- Mr. Kiêu Song Hào (North Local Category Manager MegaMarket)
- Two trader/farmer collectives
- Prof. Dr. Nguyên Quang Thach (Scientist at Vietnam National University of Agriculture, Institute of Biotechnology) and Dr. Nguyen Xuan Truong (Scientist at Vietnam National University of Agriculture, Institute of Agro-Biology)
- Ms. Tran Nhu Trang (Managing Partner at Viet Insight)

Da Lat (Vietnam)

- Department of Crop Production (DCP) of MARD) and Plant Protection Department (PPD) of MARD)
- Nguyen Hong Hang (Agronomy Development Manager at PepsiCo)
- Nguyen The Nhuan (Director at Potato, Vegetable & Flower Research Centre, PVFC)

The evaluation was supervised by a steering committee with members from RVO.nl (among which the Pro Poor Potato case officer) and evaluation experts from MFA (Policy and Operations Evaluation Department)

This is a publication of
Netherlands Enterprise Agency
Prinses Beatrixlaan 2
PO Box 93144 | 2509 AC The Hague
T +31 (0) 88 042 42 42
E klantcontact@rvo.nl
www.rvo.nl

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