



Ministry of Foreign Affairs

The Horticulture Sector in Peru

Commissioned by the Netherlands Enterprise Agency

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International.*

THE HORTICULTURE SECTOR IN PERU

Sector analysis and business opportunities



December 2024

*Study supported by the Netherlands Enterprise Agency and the Embassy of
the Kingdom of the Netherlands in Lima*

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EXECUTIVE SUMMARY

Horticulture in Peru is predominantly driven by small-scale producers, with 90–95% of vegetable production carried out by family-owned or individual enterprises, primarily located in the Sierra region. The sector faces significant challenges, including fragmentation of land ownership, limited access to technology and resources, excessive use of agrochemicals, and insufficient market access. Small producers rely on basic technologies in their fields, such as simple nurseries and open-field farming, with limited adoption of advanced techniques like greenhouse cultivation. Excessive use of agrochemicals poses health and environmental risks, reflecting a need for improved agricultural practices.

While Peru has established value chains for export-oriented fruits like asparagus and artichokes, vegetable production primarily serves the domestic market due to limited associativity and quality standards. Niche products like *ají amarillo* and *rocoto* find export markets, but overall, small-scale producers struggle to access export opportunities due to stringent regulations and quality requirements. Despite the advantages of Peru's climate and perennial production, the vegetable sector lags behind the fruit industry in terms of growth and value contribution. Factors like fruit durability, distance from export markets, and private sector investments have favoured fruit production over vegetables.

Addressing challenges in Peru's vegetable sector requires a holistic approach focusing on skill enhancement, infrastructure development, market access, and technology adoption. Public training programs, improved infrastructure for water management and transportation, and targeted export strategies can enhance competitiveness and sustainability.

Nonetheless, Peru's vegetable sector holds significant potential for growth and development, but overcoming challenges requires collaborative efforts and targeted interventions. By leveraging their expertise in technology, infrastructure development, and market access, Dutch companies can contribute significantly to the growth and modernization of Peru's horticulture industry. Strategic partnerships between Dutch and Peruvian firms can focus on innovation and knowledge transfer, facilitate the adoption of improved and advanced agricultural practices, and enhance productivity. Moreover, investments in areas such as seed production, artificial intelligence applications, substrate supply, and processing facilities align with the Dutch strengths in agricultural innovation and value chain management. By tapping into Peru's abundant natural resources and favourable climatic conditions, Dutch entities can not only drive economic growth in Peru but also access new markets and diversify their global supply chains.

1. INTRODUCTION

1.1 Rationale of the study

In the last twenty years, Peru stabilized its position as one of the main exporters of fruit and vegetables, being amongst the top exporters of asparagus, blueberries, avocado, organic banana and table grape. Specifically, fruit production and export grew exponentially since 2011. The vegetable sector, however, did not experience the same trend.

This study was commissioned by the Embassy of the Kingdom of the Netherlands with the aim to support the development of the vegetable sector and identify business opportunities for Dutch companies and entrepreneurs. The Netherlands is an important commercial party of Peru, on top of being globally recognized for its excellent agricultural sector, both in terms of production and technologies. For these reasons, it is expected that knowledge transfer and investment from the Netherlands can help advancing the Peruvian vegetable sector.

1.2 The agricultural sector in Peru

Peru is a tropical country, located on the western coast of South America with a population of around 33.7 million people¹. Peru is considered a mega biodiverse country and it's composed of three main ecosystems, the western coastline (partly desert), the Andean mountains, and the rainforest in the East. According to data published in 2021 by the Ministry of Agrarian Development and Irrigation², Peru has a total land area of approximately 1.2 million km². Of these, the 9%, around 116,000 km (11.6 million hectares) are cultivated². Vegetables are cultivated across 225,000 hectares in the country.

Agricultural land in Peru is not abundant, and producers are suffering the effects of climate change. According to the Servicio Nacional de Meteorología e Hidrología del Perú (SENAMHI) In 2021 and 2022 there were frost episodes that had a negative effect on crops in the central region. And, in general, the increase in global temperature has caused certain crops that require colder climates to move to higher altitudes. For instance, in order to cultivate native potatoes, which are usually sown and grown in high and intermediate areas, farmers have sought areas above 3,000 m.a.s.l., to protect the impact on their productivity due to diseases and/or weeds. It is therefore clear that agricultural production, for both internal consumption and export, needs to be adjusted to new challenges that are and will keep arising.

Specifically, the three macro-regions have the following characteristics in relations to climate and agriculture^{3,4,5,6,7}.

Costa: Coastal region

The Coastal region of Peru is an important economic and agricultural area, benefiting from favourable climate, strategic location, and strong infrastructure. It is home to a significant portion of Peru's population (59%) including the over 11 million residents in the capital Lima. The Costa covers 12% of the country's land and it's characterized by low altitudes, dry desert landscapes, and high temperatures. However, the region can also count on the presence of 53 rivers has helped create fertile valleys and support an extensive irrigation network.

¹ INEI (Instituto Nacional de Estadística e Informática), press note, 2023. Available [here](#)

² Midagri, Superficie Agrícola Nacional, 2018. Available [here](#)

³ Midagri, Perspectivas de la agricultura peruana, 2023. Available [here](#)

⁴ World Bank, Tomando impulso en la agricultura peruana, 2017. Available [here](#)

⁵ IDB, Análisis de políticas agropecuarias en Perú 2014-2018, 2020. Available [here](#)

⁶ Midagri, Panorama de la actividad agrícola en el Perú 2021, 2022. Available [here](#)

⁷ Coprofam, La agricultura peruana afronta su peor momento de los últimos años ante la indiferencia del gobierno, 2023. Available [here](#)

The irrigation infrastructure has turned the Coastal region into a thriving agricultural centre, with valuable farmland and ideal conditions for growing various crops. Most of the agricultural production in the Costa focuses on high-value crops for the export market, contributing significantly to the region's agricultural GDP. This includes fruit production such as table grape, avocado, citrus, blueberry and mango, and vegetables such as asparagus, artichokes, onion, paprika and tomato. Export-oriented farming adopts modern techniques, automated irrigation systems, mechanization of sowing and/or harvesting, to improve efficiency and productivity.

Figures 1 and 1a. Export-oriented yellow sweet onion production, Ica



Sierra: Andean region or highlands

Inland from the Coastal region lies the Andean Sierra region, covering 28% of Peru's land area. This area features higher altitudes ranging from 500 to over 4,000 m.a.s.l and hosts around 27% of the Peruvian population.

Agricultural activity in the Sierra is made of both traditional methods and modern techniques to address soil quality, water availability, and varying climates. Most farms in the region are small-scale, typically occupying less than five hectares of land. These farms are spread across different environments, each offering unique agricultural opportunities and constraints. While some areas rely on static and subsistence farming, others are dedicated to productions for the national markets, emphasizing the region's importance in the agricultural supply chain. Crops cultivated in the Sierra include potato, corn, quinoa, beans, non-traditional product such as maca and prickly pear, but also vegetables like cabbage, carrots, lettuce, peppers, and tomatoes.

Selva: Amazon region

The Selva region covers a vast 60% of Peru's land area and hosts part of the great Amazon Forest. Known for its lush scenery, high humidity, and consistent rainfall, this area is rich in biodiversity, hosting numerous unique plants and animals. Despite its large size, the Selva is home to only 14% of Peru's population, mainly involved in traditional farming.

Traditionally, agriculture in the Selva has focused on subsistence farming, with indigenous communities playing a key role in growing crops for their own consumption. However, some parts of the rainforest have started commercial farming practices in recent years. Agriculture in the Selva is mainly carried out by small-scale farmers who grow crops like coffee, cocoa, bananas, and cassava. They are also responding to the growing demand for non-traditional products such as *pijuayo*, reflecting changing consumer preferences. Mechanization and irrigation are limited in the Selva, with only a small percentage of farmers using tractors and irrigation systems.

Figure 2. Geographic regions of Peru

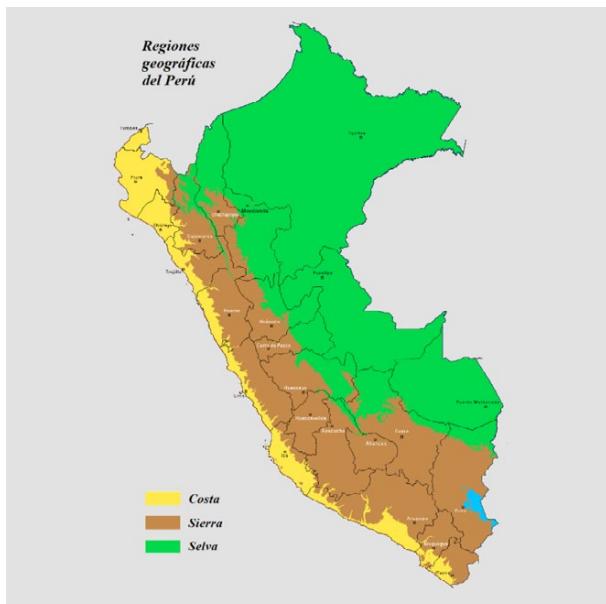


Figure 3. National Map of Agricultural Surface (MIDAGRI)

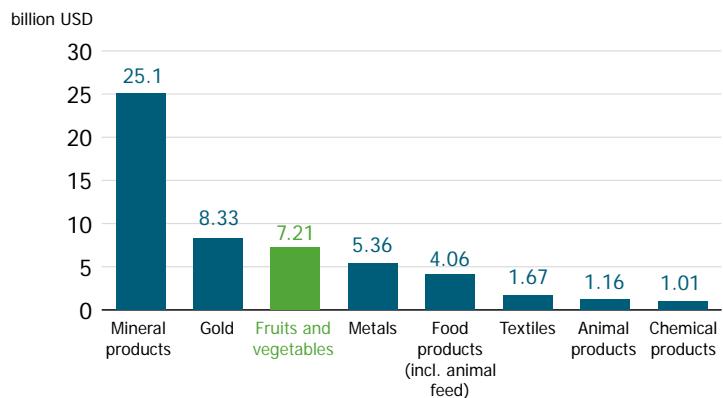


The agricultural sector employs roughly approximately one quarter of the Peruvian population⁸. The distribution of formal versus informal jobs⁹ in the sector can vary traditionally, a significant portion of agricultural jobs in Peru have been in the informal sector, due to diffused small-scale farming. On the contrary, agricultural production for export has minimal levels of informality.

Agricultural exports in Peru are significant and ranked second only to exports from mining activities. In 2021, mineral products counted for around 44% of the total value of Peruvian exports, gold for 14%, vegetable products for around 12%¹⁰. Key fruit and vegetables exports from Peru include blueberries, grape, avocados, mangos and banana in the fruits category, and asparagus (fresh, processed and frozen), processed artichokes, fresh onion and processed piquillo pepper.

The following graphs illustrate the main Peruvian exports and the main fruits and vegetable exports in 2021.

Figure 4. Main Peruvian exports in 2021 per value. The graph only shows exports over 1 billion USD. Adapted from OEC¹¹



⁸ INEI, Evolución de los Indicadores de Empleo e Ingresos por Departamento, 2022

⁹ Informal jobs most often lack official recognition and are not subject to labour laws and protections, such as minimum wage regulations, social security benefits, health insurance, and employment contracts

¹⁰ OEC, Exports. Available [here](#). Consulted on 22/02/2024

¹¹ Ibidem

Figure 5. Main fruit exports in 2021. Adapted from OEC¹²

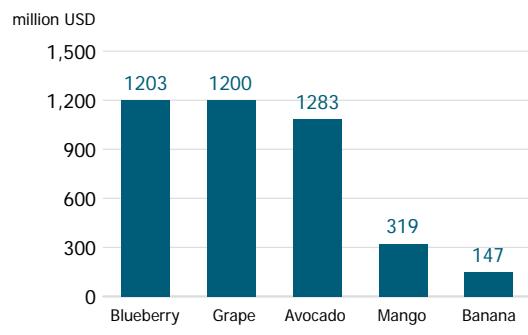
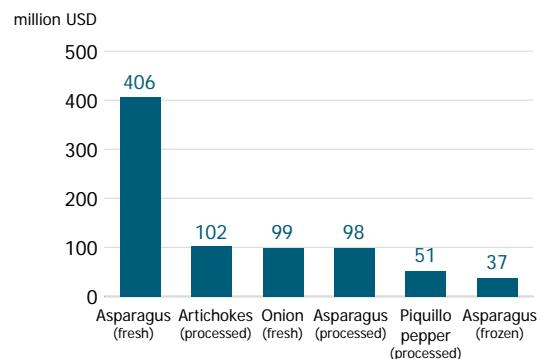


Figure 6. Main vegetable exports in 2021. Adapted from OEC¹³



1.3 Methodology

This study builds upon both primary and secondary data. The latter was collected by means of desktop research, including (grey) literature review, although the information available on the vegetable sector in Peru is limited. Primary data was collected by means of interviews and field visits, 19 in total, performed by the research team. These included actors from several categories, both from the private and public sector, such as small, medium and large Peruvian vegetable producers and exporters, wholesale markets, public institutions and academia.

¹² Ibidem

¹³ Ibidem



2. OVERVIEW OF THE PERUVIAN VEGETABLE SECTOR

2.1 Production systems

In Peru, almost the totality (90–95%) of the vegetable production is carried out by small producers, in family and unipersonal companies, the majority of which are located in the Sierra. The typical Peruvian vegetable farmer cultivates very small plots of land, between 0.5 and 3 hectares, leading to a high level of fragmentation in the sector. This situation has started in the 1970s with the agrarian reform, when extensive land properties were divided amongst individual workers, and worsened overtime with family lands being further split through inheritance. The fragmentation is further driven by the fact that small producers often rent *parcelas* (small plots of land) for the duration of one growing season. Renting plots of land per season allows for a certain level of flexibility in choosing the type of environment (e.g. higher or lower altitude, closer or not to water sources) that best adapts to the vegetables that farmers decide to plant. However, such fragmentation results in a tendency of producers to act rather independently, which in turn results in low levels of associativity. By not being organized, farmers often miss out on making use of economies of scale, e.g. to purchase agricultural inputs, or invest in infrastructure.

Technologies

Small producers often buy vegetable seeds from distributors and send them to nurseries that secure higher germination rates and healthier seedlings for them to plant, compared to open-air nurseries. Such nurseries are largely diffused across the country and are rather simple, they are often only shaded by shade cloth (*malla sombra*) and employ low-skilled workers. When nurseries handle seedlings of higher value crops, their infrastructure is better, and they employ higher-qualified people. Still, farmers sometimes buy seeds from other local growers or keep seeds from their own yield, to be planted in the following season. This was reported happening in case the market price of the vegetable in question is too low: in that case, some farmers prefer letting the produce ripe further, to then use the seeds. It is rather general agreement however that store-bought seeds are of better quality, as well as seedlings acquired from nurseries.

Smallholders' fields are characterized by rather basic technologies, although some producers access to reservoirs from which they pump water with drip irrigation systems. They mostly cultivate their produce in open fields as investing in *casas mallas* is rather expensive. *Casas mallas* translates to 'greenhouse', however, we refer to simple structures of mesh net, in which several produce can be grown, such as tomatoes, lettuce, cabbage and eggplants. In these simple greenhouses, produce can be grown, allowing to protect the plants from different pests or soil-borne diseases, as well as from unfavourable weather. This results in savings in the use of agrochemicals and higher productivity. Interviewees reported that installing this simple type of greenhouse can cost up to 150–200,000 soles, or 36–48,000 euros per hectare.

Figure 7. Smallholder field in Santa Rosa de Quives, inland from Lima



Figure 8. Reservoir in a smallholder field in Santa Rosa de Quives, inland from Lima



In Peru it is well known that small producers tend to make excessive use agrochemicals. Despite the instruction provided by the product label and by the distributors, farmers often apply more than the indicated dose of different agrochemicals, especially pesticides, believing it will be more effective. It was also reported, during field visits, that several producers or daily workers do not wear the proper protective gear necessary when spraying the field. This leads to sever concerns about human health and wellbeing. Several recent scientific and news article report about the excessive use of agrochemicals in Peruvian vegetable fields, and its negative impacts on the health of producers, consumers and on the environment¹⁴.

In general, small producers are trying and willing to modernize their fields, however they lack resources. It is also argued that the same public policies, currently, do not encourage nor foresee the growth of small producers into medium or large ones. The eagerness to adopt new technologies is often there, and some support programs are available for this (e.g. [Programa Agroideas](#) from the Peruvian Government). However, small producers have limited financial capacity and, also because of the limited associativity and organization, they are not likely to adopt (expensive) innovations on their own.

Smallholder access to market

Smallholder farmers almost always produce for the national market. The limited levels of associativity do not allow them to consolidate the offer of produce, nor to strive to reach a consistent (high) quality of production, which makes it difficult to access export markets. Even if they were able to do so, often they would not be able to export because of the maximum residual limits of certain substances, which, especially in the case of importing into the European Union, are rather low.

The situation is different for niche products, such as *ají amarillo* and *rocoto* that exporters often buy from small farmers.

Established value chains

In the vegetable sector, Peru can count on some established value chains, where production is dominated by large-sized companies. This is the case for most export vegetables such as asparagus, artichokes, onion and tomato (paste). These companies have the resources to invest in technified cultivations, they operate on own or rented land and are mostly located in the Costa, that has easier access to market routes, both to the main cities and to export destinations. Medium and large companies invested in on state-of-the-art facilities: nurseries, protected agriculture (*casas mallas*), advanced irrigation systems, primary processing and packaging areas, loading areas.

Bigger horticulture companies buy seeds either from distributors or directly from local branches of the seed producing companies. In Peru, vegetable seeds are mostly imported, coming from countries such as the USA, Brazil and Chile – although often they are of Dutch varieties. Different producers however claim that the most advanced and recent varieties do not reach Peru because of the scarce demand coming from the country. This hinders them to fully exploit the advances of breeding technologies and forces them to either work with older varieties¹⁵ or face more difficulties to access their preferred varieties. The Agrarian University of Lima (La Molina, or UNALM) experiences a similar struggle with the seeds they use to grow organic vegetables, claiming better varieties for organic cultivation are available globally but not in Peru.

¹⁴ Such articles include the following:

Uso indiscriminado de pesticidas y ausencia de control sanitario para el mercado interno en Perú, 2018 (available [here](#))

Perú exporta alimentos seguros, pero usa 27 plaguicidas prohibidos en los productos para el consumo local, 2023 (available [here](#))

Alerta por plaguicidas en el Perú, 2023 (available [here](#))

¹⁵ A medium-size vegetable producer indicated they use varieties from 15-20 years ago

Figure 9. Casa malla (Universidad Nacional Agraria La Molina, Lima)



Figure 10. Vegetables produced at UNALM (Lima) and sold on location



2.2 Sector development

Despite climate change affecting the country, the agricultural sector in Peru holds the strong advantage of virtually perennial production. The climate of the country, especially on the coast, allows for several production seasons during the year and hence an advantage against certain competing countries. This is however mostly reflected in the fruit sector, that is substantially bigger than the vegetable one. The difference between the two subsectors also results in fruit production contributing for 28.3% to the gross value of agricultural production, and vegetable production contribution for 11.6%¹⁶. In fact, vegetable production in Peru has been relatively stable in the last decade, growing from 2.9 million tons in 2010 to 3.13 million tons in 2021, while fruit production in the same timeframe grew from 5.06 to 7.9 million tons.

Figure 11. Fruit and vegetable production 2010–2021. Translated from Midagri, 2022¹⁷



Such difference is to be attributed to three intertwined factors:

1. *Fruit resistance and durability*: most fruits have an inherently longer post-harvest life than most vegetables and are more resistant to e.g. difficult transport conditions. These features make fruits easier to export, which connects to the following factor.
2. *Proximity to export markets*: Peru is generally far from the main export markets (USA and EU), and even farther when compared to competitors for vegetable products, the main one being Mexico. For this reason, vegetables exports have not driven any substantial development in vegetable production in Peru.
3. *Private sector investments*: the abovementioned factors rendered the fruits sector much more attractive to private investments than the vegetable one. Private companies, sometimes accompanied by foreign partners, heavily invested in the fruit sector. By adopting the latest technologies and complying with mandatory and voluntary standard, they were able to drive the development of the fruit sector – and export – towards a globally recognized excellence.

¹⁶ Midagri, Situación actual de las frutas y verduras en el Perú, 2022

¹⁷ Ibidem

To contrast some of the disadvantages listed above, Peruvian vegetables are most often exported after being processed, such as canned asparagus, frozen artichokes, heart palms in glass jars, tomato paste and dried chilies. This not only allows for longer conservation of the products, but also increases local value addition, with positive impact on the Peruvian economy.

2.3 Production, import and export

In 2021, the vegetable sector production amounted to a gross value of 2,846 million soles¹⁸, roughly 763 million USD. The main vegetable produced in Peru, and registered in the agricultural statistics system, are reported in the table below. The table divides the vegetables into seven groups, according to which part of the plant is consumed, namely: bulbs, roots and tubers, stems, leafy greens, fruits, flowers and seeds. The table also reports the main and the secondary production areas, showing that the Costa is the region where the large majority of the production takes place, followed by the Sierra.

Table 1. Vegetable production areas, volume and exports – adapted from Midagri, Situación actual de las frutas y verduras en el Perú, 2022

Consumed part	Vegetable	Main and secondary production areas	Production volume (tons)
Bulbs	Garlic	Costa 75%, Sierra	90,612
	Leek	Costa 80%, Sierra	20,310
	Onion	Costa 80%, Sierra	605,619
Roots and tubers	Beetroot	Costa 70%, Sierra	36,074
	Carrot	Costa 70%, Sierra	193,821
	Radish	Costa 80%, Sierra	17,089
	Turnip	Costa 75%, Sierra	9,992
Stems	Asparagus	Costa	370,532
	Celery	Costa 70%, Sierra	33,495
	Swiss chard	Costa 70%, Sierra	7,112
Leaves	Cabbage	Costa 70%, Sierra	33,818
	Lettuce	Costa 80%, Sierra	69,304
	Spinach	Costa 70%, Sierra	29,855
Fruits	Bell pepper ¹⁹ (varieties of <i>Capsicum Annum</i>)	Costa	92,801
	Caigua (<i>Cyclanthera pedata</i>)	Sierra 90%, Selva	10,416
	Chili peppers (different varieties, such as <i>Capsicum Baccatum L.</i> , <i>Capsicum Chinense Jacq.</i> , <i>Capsicum Frutescens L.</i>), Rocoto pepper (<i>Capsicum pubescens</i>)	Sierra 60%, Costa	83,361
	Cucumber	Costa 90%, Sierra	43,561
	Pumpkin	Sierra	177,897
	Squash	Sierra 90%	14,650
	Tomato	Costa 85%, Sierra	204,126
Flower	Artichoke	Costa 80%, Sierra	82,096
	Broccoli	Costa	46,419
	Cauliflower	Costa 70%, Sierra	19,221
Seeds	Beans ²⁰ (common, lima bean)	Costa 60%, Sierra	16,737
	Corn (<i>Zea Mays L.</i>)	Sierra 90%, Costa	410,264
	Fava bean	Sierra	71,828
	Green beans	Costa 80%, Sierra	19,431
	Green onion	Costa 90%, Sierra	26,016
	Green peas	Sierra 90%, Costa	135,106

¹⁸ Ibidem

¹⁹ Pimiento morron, piquillo

²⁰ Frijol grano verde, pellar grano verde

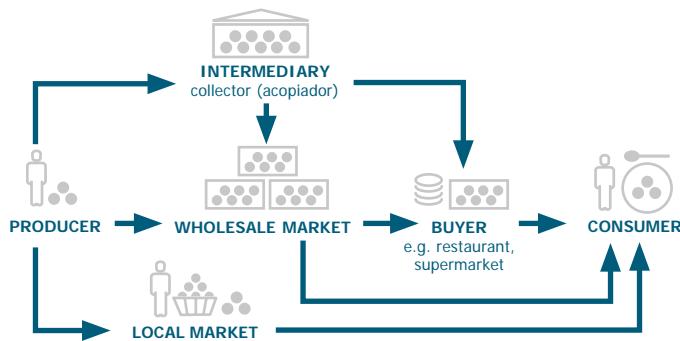
Since 2000, Peru continuously strengthened its position of net exporter of fruits and vegetables, which now sees the country exporting products for a total of 5,588 million USD, while importing only 132 million USD²¹. In fact, both fruits and vegetable exports were not noteworthy in the early 2000s, with vegetables reaching higher numbers than fruits. In 2011 the trend changed, and fruit exports reached 804 million USD, while vegetables stopped at 773 million USD. From then onwards, fruits exports skyrocketed until reaching 4,679 million USD in 2021, when vegetable exports only reached 909 million USD (612,000 tons).

At the same time, vegetable imports grew from 0.2 million USD in 2000 to 4.7 million USD in 2020. In the following year, they jumped to 8.4 million USD. Imports of products include corn, wheat, soya, rice and dry legumes²².

2.4 Supply chains

Generally, the supply chain of fresh vegetables for national consumption, as illustrated below, is rather short. Producers either sell directly to a client, or to intermediaries. Usually, no more than 3 intermediaries are involved in the commercialization of vegetables from field to shelf. This mostly depends on the location of the producers and final consumers. As the intermediaries buy from several producers, it is likely that they experience difficulties in proper sorting and aggregating of different product batches. In turn, this leads to higher logistics costs and longer times from producer to consumer, affecting the quality of the produce.

Figure 12. National supply chain of fresh vegetables in Peru. Own elaboration



When products are exported, less actors are involved in the supply chain. Large producers grade and pack their products, which they will then ship towards (air)ports and from then onwards to the final destination. In case of products from small growers, these are often bought from a collector, an intermediary, a primary processing or packaging company, that will render it export-ready before shipping it to the concerned (air)ports.

2.5 Main actors of the Peruvian vegetable sector

The following paragraphs describe, in no particular order, the main actors of the Peruvian vegetable sector and their functions.

1. Agrorural²³ is a program from the Peruvian Ministry of Agrarian Development and Irrigation (MIDAGRI) that aims for a rural agrarian productive development in the country. Their focus is on small producers, especially in the Sierra, but are present in 22 regions. Amongst their many functions are technical assistance, capacity building, yield-improving technology promotion and adoption. Despite their efforts to improve and advance the Peruvian rural production, the logistics of Agrorural, both in terms of budget and manpower, are deficient and do not allow to reach their maximum possible impact. Agrorural is strongly interested in creating alliances and partnerships that can support them in their mission.

²¹ Midagri, Situación actual de las frutas y verduras en el Perú, 2022

²² Banco Central de Reserva del Perú, Reporte de Inflación, septiembre 2021. Available [here](#)

²³ Programa de Desarrollo Productivo Agrario Rural

2. **Wholesale markets.** The **Gran Mercado Mayorista de Lima** is the biggest (public) wholesale market in Peru, administered by EMMSA, a municipal enterprise. The Gran Mercado Mayorista was created with a social mission, that of supplying the city of Lima, and hosts almost 1200 wholesalers on 54 hectares of land. Of the wholesalers, almost 500 are the same producers. Daily, around 2300 tons of produce enter the market. Of these, more than 1000 tons are potatoes, and most of the rest are other vegetables. In the same area of the city, the Santa Anita district, another market can be encountered: the private market **Mercado Tierra Prometida**. This market was created with the goal of formalizing the old La Parada market, an area where informal trade of fresh produce was taking place and was lacking controls, hygiene and security. Mercado Tierra Prometida hosts a total of 1800 stands and receives 1400 tons of fresh produce daily, the large majority of which are vegetables. The market develops over 5 hectares of land, with plans to expand in the coming years. Both specialize in vegetables as fruits are the main specialty of a close by market, the **Mercado de Frutas**, located in La Victoria. A third market, the **Mercado de Productores**, or producers' market is also located in Santa Anita.
3. The IPEH, **Peruvian Institute of Asparagus and Vegetables**, which aims at representing producers and exporters of vegetables, seems to have an almost exclusive focus on the asparagus chain. This further hinders associativity amongst producers.
4. The INIA, **National Institute of Agrarian Innovation**, is a national institute, part of the Ministry of Agrarian Development and Irrigation, that focuses on agricultural research activities, technology transfer, conservation and use of genetic resources, aiming at competitiveness, food security and adaptation to climate change. They also produce seeds and seedlings. When they release new varieties, they usually commit in activities to raise awareness amongst small and medium farmers, as well as training them and supporting them until the cultivation is consolidated. When the variety developed is export-oriented, they engage in such activities mostly with larger scale producers. INIA is also working with organic cultivations.
5. The **National Agrarian University La Molina** (UNALM) is an important institution in the Peruvian agricultural sector. Their vegetable program encompasses vegetable production on 9 hectares, 6 of which are organic. While producing organic vegetables for the national market, they research different inputs and methods to obtain high quality and high volume of organic produce. Overall, they aim to a shift towards more environmentally friendly producing systems, as well as healthier produce, and hence food, for the people of Peru.
6. Senasa, the **National Agrarian Health Service of Peru**, is a national institute, part of the Ministry of Agrarian Development and Irrigation, regulates agricultural sanitary matters, quality of inputs in the country, agri-food safety. Amongst other specific tasks, Senasa work on biological pest management, and produces insects.
7. **Promperú**, the export and tourism promotion agency of Peru, has five directions including 'fresh produce'. Within this, the prioritized vegetables are asparagus, bell peppers (capsicums), onion, ginger, peppers. However, as the vegetable sector and consequently the export offer are still small, their operations are limited.
8. Similarly, the **Chamber of Commerce of Lima**, in their commercial promotion axe, have a component of export promotion. They approach companies of different value chains to understand the products, and difficulties and challenges they may be experiencing.

2.6 Commercial relations with the Netherlands

The current commercial relation between Peru and the Netherlands in the agricultural sector is significant, with the latter importing 14.8% of the Peruvian produce in 2021, corresponding to 650,321 metric tons. Of these, 69.5% was represented by mangoes, grapes, bananas and tangerines²⁴. In 2022, the Netherlands were the second importer of Peruvian agricultural products, after the USA, the first importer of Peruvian avocado and mango and the third in the case of asparagus²⁵. Other Peruvian vegetables also reach the Netherlands, but the volumes concerned are not comparable to those of fruits. The following table reports the main vegetable products exported from Peru to the Netherlands in 2022²⁶.

²⁴ ProducePay, Peru's Agroexport Success: Leading the European Market, 2023. Available [here](#)

²⁵ Gobierno de Chile, Perspectivas de la agricultura peruana, 2023. Available [here](#)

²⁶ ITC Trade Map, 2024. Available [here](#). Consulted on 13/02/2024

Table 2. Value and volume of the main vegetable products exported from Peru to the Netherlands in 2022. Adapted from ITC Trade Map, 2024

Product code	Product		USD (2022)	Tons (2022)
070810	Green peas	Fresh or chilled peas " <i>Pisum sativum</i> ", shelled or unshelled	9,027,000	2,610
071080	Vegetables	Uncooked or cooked by steaming or by boiling in water, frozen (excl. potatoes, leguminous vegetables, spinach, New Zealand spinach, orache spinach, and sweetcorn)	865,000	337
070310	Onion and shallots	Fresh or chilled	358,000	888
071339	Other dried beans	Dried, shelled beans " <i>Vigna</i> and <i>Phaseolus</i> ", whether or not skinned or split (excl. beans of species " <i>Vigna mungo</i> [L.] <i>Hepper</i> or <i>Vigna radiata</i> [L.] <i>Wilczek</i> ", small red "Adzuki" beans, kidney beans, Bambara beans and cow peas)	166,000	93
070320	Garlic	Fresh or chilled	93,000	48
071335	Black-eye pea	Dried, shelled cow peas " <i>Vigna unguiculata</i> ", whether or not skinned or split	89,000	69
070200	Tomatoes	Fresh or chilled	67,000	17
070960	Fruits of the genus Capsicum or Pimenta	Fresh or chilled	46,000	5
070920	Asparagus	Fresh or chilled	35,544	8,876
071360	Pigeon peas	Dried, shelled pigeon peas " <i>Cajanus cajan</i> ", whether or not skinned or split	26,000	20

On the other hand, Dutch agricultural inputs are certainly present in the country, such as seeds and substrate, but do not seem to be more popular than American, Brazilian or Chilean inputs and technologies. Especially in the case of seeds, American varieties are preferred, as they better adapt to the climatic conditions of Peru. Furthermore, as horticulture products are mostly exported to the USA, American varieties are often the obvious choice to comply with market requirements.

3. BOTTLENECKS TO THE DEVELOPMENT AND GROWTH OF THE VEGETABLE SECTOR

In Peru's vegetable sector several challenges intertwine, creating difficulties for small-scale farmers. Production is fragmented, and largely carried out on very small plots, a complication exacerbated by informal land ownership. This fragmentation not only makes maintaining consistent quality difficult but also hinders efforts to adopt efficient production practices and coordinate market strategies. Smallholder farmers seem to lack motivation and entrepreneurship, as they see the sector as unprofitable and facing finance barriers. This lack of drive not only disrupts capacity building initiatives but also contributes to technical problems, such as the excessive use of agrochemicals, that in turns worsening product quality and hampers access to foreign markets.

Infrastructure issues, especially in regions like the Sierra, worsen transportation problems and food loss. Limited technology adoption further hampers productivity. Market access and export hurdles add another layer of complexity, having to compete with countries that can count on lower production costs, stricter quality standards and proximity to export market (e.g. Mexico). Stringent export requirements, coupled with limited awareness and capacity among producers, create significant entry barriers into foreign markets (e.g. USA and UE markets).

The scarce associativity and cooperation among producers, prevents the sector from being able to jointly advance and effectively meet market demands. Without collaboration and coordination, efforts to overcome these challenges remain disjointed and ineffective.

Production challenges	Market access and export challenges
<ul style="list-style-type: none">Fragmentation of production among small-scale farmers complicates maintaining consistent quality standards across multiple producers.Smallholder farmers' lack of motivation hampers capacity building initiatives and contributes to the perception of the vegetable sector as unprofitable.Improper use of agrochemicals leads to soil and water contamination, posing quality concerns that impede access to foreign markets.Limited organization and standardization in vegetable production result in fragmented quality and oversupply issues, driving down prices.Insufficient mechanization of agricultural processes increases production costs and inefficiencies.High agricultural input costs, exacerbated by pandemic-related challenges, further strain profitability.Lack of formal land ownership complicates organizational efforts and deters investment in the sector.	<ul style="list-style-type: none">Competition from countries with lower prices and advanced production methods, such as Mexico, presents challenges in international markets.Strict export requirements, combined with limited awareness and capacity among producers, restrict market access.Limited access to finance due to perceived risks and lack of profitability in the national vegetable market.Inadequate incentives and policies to encourage cooperation and the growth of small farmers into larger producers.Abrogation of the Agricultural Promotion Law²⁷ removes potential benefits for agricultural development and employment.
Infrastructure and technology challenges	Associativity and cooperation issues
<ul style="list-style-type: none">Inadequate infrastructure in regions like the Sierra, with poor roads, limited transport options, and unreliable internet access, leads to product damage and food loss.Limited access to and adoption of technology among small producers exacerbate productivity challenges.	<ul style="list-style-type: none">Minimal associativity and cooperation among producers hinder efficient production planning and exacerbate oversupply issues.The limited entrepreneurial mentality, and entrepreneurial skills and knowledge, in the vegetable sector, compared to fruit producers, impedes business growth and management.

²⁷ Ley de promoción agraria de 2020, or Ley Chlimper

4. INTEGRATED STRATEGIES FOR THE DEVELOPMENT AND GROWTH OF THE VEGETABLE SECTOR

In the complex mix of challenges and opportunities in Peru's vegetable sector, each aspect interacts with others in a connected way. Strategies to solve these challenges should take the same approach, with focus on improving skills, knowledge sharing, and innovation. For starters, by boosting public training programs and sharing information on new methods and technologies, farmers could become better organized and adopt more efficient practices. This would set the stage for improved market access and export strategies.

Infrastructure is vital for supporting these efforts. Developing water resources, like dams and reservoirs, would ensure efficient water use for sustainable vegetable growing. Better infrastructure would also help with post-harvest operations and transportation, crucial for maintaining vegetables' freshness and quality along the supply chain.

Furthermore, market access, export strategies, and financing are closely tied to these efforts. Concentrating on vegetable production in specific regions and adding value to products can make exports more viable. Being present in wholesale markets would give farmers more bargaining power, and a focus on regional export could help testing readiness for larger markets. Access to finance would allow farmers to invest in quality and efficiency improvements, making them more competitive. The introduction of appropriate technology is also important for the growth of the sector, for instance with pilot projects, often done through partnerships between public and private sectors, that could adapt technology to local needs.

A holistic approach is needed to tackle the challenges and opportunities in Peru's vegetable sector. By improving skills, infrastructure, market access, and technology, Peru can unlock the full potential of its vegetable industry, leading to sustainable growth and prosperity.

Capacity building, knowledge transfer, and innovation	Market access, export strategy, and financing
<ul style="list-style-type: none">Improve public capacity building and knowledge transfer through practical training sessions and hands-on experiences.Develop organizational knowledge and skills to boost farmers' organization and associativity.Research and disseminate information on new varieties, disease-resistant crops, and proper fertilizer use.Organize internships or training programs for institutions' staff to learn about available technologies and adapt them to the local context.Enhance awareness and adoption of organic production methods.Create and share knowledge on solutions for pests, pollinizers, climate impact, and better planning using robotics and AI.Introduce technologies to reduce reliance on manpower and improve post-harvest operations.Set up pilots to adapt technologies to local conditions and crops through Public-Private Partnerships (PPPs).Establish programs to utilize cooperation funds for adopting necessary technologies and improving safety standards.	<ul style="list-style-type: none">Focus on vegetable production in the Sierra and transformation/value addition in the Costa, consolidating activities in clusters for manageable volumes.Prepare for export by organizing the offer, land preparation, providing quality water, and basic value addition activities.Increase the presence of wholesale markets to empower farmers in negotiation and ensure better market access.Initiate regional exports before targeting more developed markets (EU, USA) to test producers' and enterprises' interest.Pilot vegetable production for export markets through family farming and PPPs, with potential replication by private companies.Ensure access to finance for producers to improve quality and processes.Implement incentivizing mechanisms, such as technical assistance provided to associations or enterprises rather than individual farmers.Establish more programs from available cooperation funds, enabling companies to level up and invest in necessary technologies.Improve the safety of cultivations for the national market by controlling residues of prohibited substances.
Infrastructure development	<ul style="list-style-type: none">Develop water infrastructure, including dams and reservoirs, to harness water resources efficiently.

5. POTENTIAL SOLUTIONS AND OPPORTUNITIES

The study highlighted some business opportunities that we describe in the following sections.

Artificial intelligence applications for phytosanitary purposes

Artificial intelligence (AI) presents significant opportunities in phytosanitary management, particularly for identifying and treating plant diseases and pests. In Peru, especially in advanced export-oriented cultivations, AI technologies can enhance productivity, reduce losses, and improve produce quality. AI technologies like machine learning and computer vision effectively identify plant diseases early. Tools with image recognition can scan crops for disease signs such as leaf discoloration, spotting, or wilting, allowing timely interventions and reducing disease spread. AI-driven precision agriculture tools can also improve weeding and pest control. Automated weeding machines with AI can differentiate between crops and weeds, allowing precise removal without harming plants, reducing herbicide need, and promoting more sustainable practices. AI can help optimizing the application of agricultural input like fertilizers, pesticides, and water by analysing data from various sources, including soil sensors, weather forecasts, and crop health monitors. AI systems can recommend the optimal amount and timing of treatments, ensuring efficient resource use, reducing costs and environmental impact, and maximizing yields.

Dutch companies specializing in AI and precision agriculture have a unique opportunity to enter the Peruvian market by offering advanced phytosanitary solutions. Collaborations with large producers can facilitate technology adoption, improving crop management and productivity. Additionally, Dutch companies or knowledge institute can partner with Peruvian agricultural research institutions to develop customized AI solutions for local crop conditions and challenges, fostering innovation and driving sustainable agriculture advancement in Peru.

Yellow sweet onion

In the vicinity of Ica, located 300 km south of Lima, the majority of the export-oriented production of yellow sweet onions occurs. Five companies, clustered within a few squared kilometres, collectively produce around 4,000 tons of yellow sweet onions yearly.

Two of the main five producers specifically shared that they struggle with finding **varieties suitable for a short and hot day**. One of the companies also expressed the need for **varieties characterized by smaller onions**. Currently, they cultivate a variety that yields onions meeting the size requirements for the US market, with 90% of their harvest destined for this market and the remaining 10% for European clients. However, when importers from the EU require bigger volumes, it means that they have to increase the entire production of what they plant for the US market, which is not always convenient. Producers of sweet yellow onion also struggle with **Iris yellow spot virus** (IYSV) caused by *Thrips tabaci* which causes necrosis in onion leaves, thereby hindering bulb growth to the desired size.

Despite being competitors, these five companies reportedly collaborate on addressing common challenges affecting their fields. Given the close-knit nature of the sector, a Dutch entity capable of offering solutions to these specific challenges stands to forge robust partnerships throughout the value chain.

Substrates

In 2023, Peru imported peat-based substrate for a value of around 16 million USD. More than 83% of the peat-based substrate imported by Peru in 2023 was dedicated to 'soft fruit' (mostly blueberry) production, while 14% was imported under the 'horticulture' category²⁸. This type of substrate is largely used by nurseries catering to high-value crops like grapes, fruit trees, and artichokes, and those specializing in vegetable seedlings such as lettuce, cabbage, celery, cucumber, zucchini, and spring onion. Conversely, coconut fibber-based substrate finds predominant use in blueberry and flower production, including non-professional gardening.

²⁸ Reporte de Importación Peruana de turba, Infonecta, 2024

The demand for substrate used in vegetable nurseries in Peru is primarily driven by the increasing demand for vegetables themselves. This demand is fuelled by factors such as a growing population and a rising interest in healthy products among consumers. As more individuals seek out fresh and nutritious vegetables, the need for high-quality substrates to support their cultivation also rises. Furthermore, the demand for substrates is closely linked to the international demand for other Peruvian produce, particularly blueberries, as their cultivation consumes a significant portion of the total peat-based substrate imports in the country.

As Peru's agricultural industry continues to expand and diversify to meet consumer preferences and both domestic and international market demands, the demand for substrates is expected to remain strong. This presents an interesting business opportunity for companies involved in substrate production and supply, as they play a crucial role in supporting the growth and success of the country's vegetable and fruit sectors.

Paprika production and processing

Papriqueen and papriking are the predominant varieties of paprika produced in Peru. Notably, Peruvian paprika made significant inroads into the US market in 2021²⁹, particularly due to sanctions imposed on China. This development underscores the growing potential of Peruvian paprika exports, especially in light of shifting trade dynamics.

According to data from the Export Potential Map by the International Trade Centre, Peru's exports of dried, crushed, or ground pepper (*Capsicum* or *Pimenta*) currently only fulfil 58% of their potential³⁰. This indicates substantial room for growth and expansion within the paprika value chain.

Dutch companies specializing in food processing, particularly in the field of paprika processing, can explore lucrative opportunities in Peru. By investing in processing facilities and technologies, Dutch firms can contribute to enhancing the value chain for paprika products in Peru. This could involve initiatives such as establishing processing plants for drying, crushing, or grinding paprika, as well as implementing quality control measures to ensure consistency and compliance with international standards.

Strategic partnerships between Dutch and Peruvian companies could facilitate knowledge transfer, technology exchange, and market access, ultimately fostering the growth of the paprika industry in Peru. By leveraging Dutch expertise in food processing and supply chain management, Peru can strengthen its position as a reliable supplier of high-quality paprika products to global markets, thereby unlocking new avenues for economic development and trade expansion.

Seed production

Ica, with its extended sunshine hours, hot daytime temperatures, and cooler nights, offers favourable conditions for seed production, particularly for nightshade vegetables like tomatoes, eggplants, and bell peppers. While some seed companies have already set up production facilities in Peru³¹ to capitalize on these conditions, there remains interesting opportunity for additional seed houses to establish a presence in the country.

Moreover, in recent years, there has been a notable trend among seed production companies to relocate their operations from China to alternative destinations. This presents a unique opportunity for Peru to position itself as an attractive destination for seed production. The conducive climate in Ica makes it a promising choice for seed companies seeking new manufacturing hubs.

By leveraging its favourable climate conditions, Peru can attract more seed production companies, fostering growth and innovation in the agricultural sector. Additionally, partnerships and collaborations between Dutch seed companies and Peruvian counterparts could further enhance seed production capabilities in the region. This synergy between international expertise and local resources holds great potential for driving the development of high-quality vegetable seed production in Peru, benefiting both the local economy and global agricultural markets.

²⁹ Red Agricola, Importaciones de paprika peruana se consolidan en EEUU, 2021. Available [here](#)

³⁰ ITC Trade Map, 2024. Available [here](#). Consulted on 13/02/2024

³¹ Access To Seeds Index, Peru, 2019. Available [here](#). Consulted on 22/02/2024

6. ACCESS TO THE DUTCH MARKET FOR PERUVIAN HORTICULTURE PRODUCTS

Peru's horticulture sector has a close trade relationship with the European Union (EU) due to the Multiparty Trade Agreement between Peru, Colombia and Ecuador and the EU, in force since 2013. This agreement has progressively eliminated many tariffs and facilitated access of Peruvian agricultural products to the European market. The tariff and non-tariff measures applicable to the horticultural sector in this context are detailed below.

6.1 Requirements

Access to the Dutch market from Peru for agricultural products, particularly horticultural products, is influenced by European Union (EU) regulations in force since 2013. As The Netherlands is an important hub for the import and distribution of agricultural products in Europe, it represents key market for Peruvian exports. The main aspects related to tariff measures, regulations, relevant policies and opportunities for the promotion of activities are described below.

Tariff measures

Thanks to the Multi-Party Trade Agreement, the tariff is zero for most agricultural and horticultural products exported from Peru to the Netherlands. It is crucial to perform the following steps when exporting from Peru:

- *Correct classification of the products* under the Harmonized System (HS) to ensure that the preferential tariffs are applied.
- *Certificate of origin*: it is mandatory to present this document to benefit from preferential tariffs. The certificate must be issued by an accredited Peruvian authority, such as the Peruvian Exporters Association (ADEX), Lima Chamber of Commerce (CCL), Foreign Trade Society of Peru (COMEX), National Society of Industries (SIN). To process a certificate of origin, the Origin Component of the Foreign Trade Single Window (VUCE) can be used.

Non-tariff regulations

Although there are no tariffs applied directly to horticultural products from Peru, there are specific non-tariff measures that can act as trade barriers for certain products, so horticultural products exported to the Netherlands must comply with strict EU requirements. In addition, value-added products such as canned vegetables, may be subject to different classifications and regulations, making it important to constantly review updates to the TARIC (EU integrated system) database to confirm applicable conditions. Non-tariff regulations include:

1. *Phytosanitary standards and sanitary controls*:
 - Phytosanitary certificate: issued by SENASA (National Services of Agricultural Health) in Peru to ensure that the product is free of pests and diseases.
 - Compliance with Regulation (EU) 2016/2031 concerning protective measures against plant pests.
 - For specific products such as fruits (e.g., mangoes, avocados, blueberries), compliance with control measures for pests such as fruit flies is mandatory.
2. *Maximum Residue Limits (MRLs)*:
 - The EU has strict standards on pesticide residues. These limits are specified in Regulation (EU) 2023/1536, adopted in July 2023, which amends Annex III of Regulation (EC) No. 396/2005. This regulation establishes specific limits for different pesticide residues in agricultural products, continuously adjusting to EFSA (European Food Safety Authority) scientific assessments and to changes in agricultural uses of these compounds.
 - In addition, Implementing Regulation (EU) 2023/731, which covers the period 2024–2026, details a multi-annual control program to ensure compliance with these MRLs in food of plant and animal origin. This program includes comprehensive monitoring of various commodities, such as grapes, bananas, strawberries, eggplants, cauliflower and lettuce.
 - Peruvian exporters must demonstrate that the products comply with the MRLs by testing in accredited laboratories.

3. *Traceability:*
 - Products must comply with Regulation (EC) No. 178/2002, which states that each lot must be fully traceable from production to market.
4. *Quality standards and labeling:*
 - Compliance with EU Fresh Fruit and Vegetable Marketing Regulations.
 - Labeling requirements:
 - » Product name
 - » Country of origin
 - » Producer/exporter information
 - » Product class (e.g., extra, Class I or II)
 - » Net weight.
5. *Voluntary certifications (highly recommended):*
 - GlobalG.A.P.: Ensures responsible and sustainable agricultural practices.
 - Fair Trade: For products under fair trade.
 - Organic (EU Organic Certification): Essential requirement for products labeled as organic.
6. *Sustainability standards:*
 - Dutch consumers value sustainable products. Exporters must demonstrate responsible practices in water use, soil management and environmental protection.

Special cases where restrictions may apply include:

1. Safeguards for sensitive products: if a Peruvian horticultural product begins to generate significant competition for European producers, the EU could activate safeguard measures, such as quotas or temporary tariffs. This is rare but could occur if Peruvian exports grow rapidly in volume.
2. Products with high sustainability standards: some Dutch buyers are implementing unofficial restrictions, such as additional requirements to reduce carbon footprint or promote regenerative agricultural practices.



6.2 Relevant policies and trends in the Netherlands

- Sustainability and reduction of environmental impact:
 - The Netherlands promotes policies aligned with the European Green Pact and the reduction of carbon footprint.
 - There is a preference for products with sustainable or recyclable packaging.
- Consumption of healthy products: Dutch consumers demand fresh, organic products with outstanding nutritional properties.
- Logistics and distribution: the port of Rotterdam is a key hub for agri-food trade. This facilitates access to other European markets.
- Incentives for innovation: on the Dutch market, advanced agricultural technologies are valued. Peruvian exporters that incorporate technological systems to improve quality and traceability will have an advantage.

6.3 Promotion of activities: trade fairs and publications

Trade fairs in Europe

Participating in international trade fairs is key for promoting Peruvian products on the Dutch market. Some of the most important trade fairs include:

- Fruit Logistica (Berlin, Germany): although it is held in Germany, it is one of the most important events for Peruvian horticultural exporters, as it brings together buyers from all over Europe, including the Netherlands.
- World of Fresh Ideas (Amsterdam, The Netherlands): an event focused on innovation and trends in the fruit and vegetable sector. It is ideal for exploring technologies and market niches.
- Macfrut (Italy): similar to Fruit Logistica, but with a focus on European markets.
- Biofach (Nuremberg, Germany): specialized in organic products, a growing segment in the Dutch market.
- Fruit Attraction (Madrid): for the fruit and vegetable sector.

Specialized publications

At international level, the main specialized magazines for the agriculture sector are:

- FreshPlaza: a leading portal for news and analysis of fruit and vegetable markets. It is useful for identifying trends and connecting with buyers.
- Eurofruit Magazine: a publication that covers market analysis, importer profiles and consumer research.

7. ACCESS TO THE PERUVIAN MARKET FOR DUTCH PRODUCTS, EQUIPMENT AND SERVICES FOR THE AGRICULTURAL SECTOR

The Peruvian market represents a great opportunity for Dutch technology, equipment, services and agricultural inputs, given the low level of technification that the sector presents in Peru, especially in the horticulture subsector.

Peru does not currently impose significant tariffs on agricultural technology products from the Netherlands because of the Multiparty Trade Agreement with the European Union, which eliminates most tariffs on industrial and agricultural products. This promotes smooth trade in goods such as machinery and agricultural equipment. The tariff and non-tariff measures applicable in this context are detailed below.

Requirements

Tariff measures

1. Import tariffs: Products related to the agricultural sector may be exempt from tariffs or subject to reduced tariffs, depending on their classification and origin.
 - Agricultural machinery and technology: in general, agricultural machinery (tractors, irrigation systems, precision equipment, drones) have low or zero tariff rates, especially if they come from countries with trade agreements in force with Peru.
 - Chemicals and fertilizers: some essential fertilizers and pesticides have 0% tariff, depending on their classification under the Harmonized System (HS).
2. Relevant trade agreements:
 - Peru has free trade agreements (FTAs) with countries such as the United States, the European Union, China, Canada, and Pacific Alliance countries (Mexico, Colombia, Chile). In addition, on November 14, 2024, the mega port of Chancay located on the central coast of Peru was inaugurated. The port is expected to facilitate maritime traffic from Asia to South America on the Pacific side of the sea, causing a potential reduction in freight costs and port costs.
3. General Sales Tax (IGV): most agricultural products and equipment are subject to a IGV (general sales tax) of 18%, once the product has entered Peruvian territory and is sold in the local market. However, there are temporary exemptions for certain critical inputs for the agricultural sector.

Non-tariff regulations

1. Phytosanitary regulations:
 - The entry of biological products, seeds, fertilizers, and agrochemicals requires the approval of the National Agricultural Health Service (SENASA).
 - Biological and chemical products must comply with safety specifications to avoid risks to the environment or human health.
2. Technical standards:
 - Technological equipment must comply with international or national standards in terms of safety, energy efficiency and operational compatibility.
 - Labeling and technical documentation must be in Spanish or include a translation.
3. Regulations for fertilizers and chemicals:
 - Fertilizers must comply with the Regulations for the Registration of Fertilizers and Amendments issued by SENASA.
 - Pesticides and other chemicals require prior evaluation to ensure their safety and efficacy.
4. Environmental Certification: equipment and products that directly impact the environment (e.g., irrigation systems, pest control technologies) must demonstrate a sustainable approach, in line with the General Environmental Law.

Relevant policies and trends in Peru

- Modernization of the agricultural sector:
 - The government is promoting the use of technologies to improve agricultural productivity, such as drip irrigation, drones, precision sensors and automated machinery.
 - There is interest in sustainable technologies that optimize water use and reduce dependence on agro-chemicals.
- Promotion of agricultural innovation:
 - Programs such as the Competitiveness Compensation Program (Agroideas) encourage the adoption of modern technology by small and medium-sized farmers.
 - Foreign companies may find opportunities to partner with these programs.
- Fiscal incentives: the Agricultural Promotion Law grants fiscal benefits, such as reduced tax rates, to encourage the growth of companies in this sector.
- Imports of organic and sustainable products: there is a growing demand for inputs and technologies that allow the production of organic food, in response to the domestic and export markets.

Promotions of activities: trade fairs and publications

Trade fairs in Peru

Participating in specialized events is an excellent way to introduce products and technologies to the Peruvian market. Among the most important trade fairs are:

- Expoalimentaria (Lima): main food and agricultural technology fair in Peru. It is a space to showcase machinery, irrigation systems, fertilizers and agrochemicals.
- AgriExpo Peru: focused on technological innovation for the agricultural sector, including equipment, software and services.

Specialized publications

In Peru, some magazines specializing in agricultural and horticultural production that stand out include:

- AgroNegocios Perú: focuses on trends, technologies and analysis of the Peruvian agricultural sector.
- MINAGRI Bulletins: The Ministry of Agriculture and Irrigation publishes relevant updates on regulations, subsidies and projects in the sector.
- Redagrícola Perú: a leading magazine on agricultural and horticultural innovation topics. It publishes relevant content on technologies, best practices, and trends in the agricultural sector both in Peru and the rest of Latin America.
- Agro Perú Informa: it provides news, analysis and reports on the Peruvian agricultural sector, with emphasis on sustainable agriculture, agricultural technologies and the development of the agro-export sector.
- Revista Agraria: a publication focused on agrarian policies, rural development and issues related to agricultural production in Peru.
- RAM platform³²: up-to-date with regulatory information on non-tariff requirements for Peru's main export products.

³² <https://ram.promperu.gob.pe/>

8. DUTCH LANDING IN PERU AND POTENTIAL FUNDING OPPORTUNITIES

Dutch companies interested in investing in the Peruvian vegetable sector can have good results when following these steps:

1. Study the local market: identify the specific needs of Peruvian farmers, especially in key regions such as the coast (irrigation technification) and the highlands (adaptation to cold climates and altitudes).
2. Build strategic alliances: partner with local distributors or participate in government programs, such as Agroideas, that promote the acquisition of technologies.
3. Adaptation to local standards: ensure that imported products comply with Peruvian technical, phytosanitary and environmental regulations.
4. Active participation in trade fairs: use trade fairs and specialized events to position the brand and establish contacts with buyers and farmers.
5. Contact the Embassy of the Netherlands in Lima and the bilateral chamber of commerce NLAndes³³: Dutch entrepreneurs can receive specialized information on Peru's agricultural and horticultural sector.

Dutch companies interested in such investments may receive subsidies from the Netherlands Enterprise Agency (RVO), including the following:

- **DHI subsidy scheme** Dutch SMEs with innovate and green solutions can apply for one of the three modules of DHI funding, namely (1) demonstration projects: presentation of technology, capital goods or service (2) feasibility studies: assessment of the profitability of a foreign investment in a product or service. (3) investment preparation projects: assessment of the technical and commercial profitability of an investment in a company.
- **DGGF**: the Dutch Good Growth Fund (formerly managed by RVO, now by Invest International) is directed to investors that want to invest in a factory and/or machinery in Peru but cannot get funding from commercial banks. Through the DGGF, they can get funded by the Dutch Government, who can provide loans, participations, guarantees, export credit insurance and export finance.

Contact us for more information.

³³ <https://nlandes.com/>

9. CONCLUSIONS AND RECOMMENDATIONS

This study highlights the numerous challenges facing the Peruvian vegetable sector, which are hindering its growth and competitiveness. Fragmented production, worsened by informal land ownership, disrupts quality control and effective market strategies. Additionally, smallholder farmers' lack of motivation and resources lead to technical issues, like excessive agrochemical use, and limit access to foreign markets. Infrastructure deficiencies, especially in remote areas, worsen transportation problems and food loss, while slow technology adoption does not allow for substantial increases in productivity.

Addressing these challenges requires a comprehensive approach. Initiatives should prioritize collaboration among smallholder farmers, training and financial support. Developing transportation and post-harvest facilities is crucial to enhance market connectivity and minimize food waste and loss. Market access strategies should emphasize regional initiatives and focus on value addition to meet international standards. Moreover, providing access to finance and creating incentives can stimulate investment in technology and innovation, thereby boosting sector competitiveness. Exploring opportunities for diversification, such as innovative plant health solutions and value-added products, can foster sectoral growth. A coordinated effort involving both public and private stakeholders is essential to implement integrated strategies that tackle production challenges, improve infrastructure, and capitalize on emerging opportunities. By addressing these underlying challenges and seizing growth opportunities, Peru's vegetable sector can unlock its full potential, driving economic prosperity for smallholder farmers and the wider agricultural sector.

Our recommendation for the public sector, both Dutch and Peruvian, is to establish tailored programs to strengthen the vegetable sector in Peru. These initiatives should align local producers' offerings with the demand from higher-end markets and restaurants, focusing on improving product quality through showcasing good agricultural practices, such as protected agriculture. Over time, this would lead to increased quality standards and pave the way for regional and international exports, including the Netherlands. Along this trajectory, identifying key crops and export opportunities will be crucial for future success.

In conclusion, it is important to note that currently, the vegetable sector oriented towards domestic consumption faces limitations in financial incentives and technological advancement, making it ill-prepared for the highly advanced Dutch agricultural technologies. On the other hand, the export-oriented sector shows greater promise for growth and development. We strongly believe that those with the resources and long-term vision to invest in the Peruvian vegetable sector will be able to capitalize on this opportunity.

ANNEX 1. SUSTAINABILITY CONCERNS BASED ON MVO RISICO CHECKER

Stichting MVO, the foundation for Corporate Social Responsibility, supports Dutch entrepreneurs in contributing to the transition to a sustainable economy. The MVO website offers a 'Risk Checker' tool that allows to identify sustainability concerns in selected value chains and countries. The following table reports the results of the MVO Risk Checker³⁴ or 'Vegetables and Fruits' in Peru.

AREAS OF CONCERN	
Environment	
Climate & energy	DESCRIPTION
	<ul style="list-style-type: none">For every kilogram of nitrogen applied to crops, between 60-400g is lost and especially nitrous oxide is particularly harmful to the environment.Moreover, the energy-intensive production of nitrogen fertilizer releases high amounts of carbon dioxide. Organic fertilizers (manure) produce nitrous oxide and methane as well, if it is not stored, managed and applied appropriately.This country scores 5 out of 5 in the Ecological Threat Report, which means that there is an extremely high risk of ecological threats. Ecological Threat Report 2022 analyses four different ecological threats: food security, disasters from natural events, population growth and water stress.
MITIGATION MEASURE	
	<ul style="list-style-type: none">Use the Forest, Land and Agriculture Science Based Target-Setting Guidance (SBTi FLAG Guidance) to set targets for reducing your land-based emissions related to agriculture, forestry and other land use. The Guidance helps you to set science-based targets (SBTs), which show how much and how quickly your company needs to reduce its GHG emissions to align with the Paris Agreement's goal to limit global warming to 1.5°C.The effects of climate change such as extreme drought, crop failures and migration flow directly affect international supply chains. To minimize these effects, reducing CO₂ emissions is crucial. Not only from your own corporate activities, but also from production sites in the supply chain.To gain insight in the impact of your business, calculate your CO₂ emissions with a CO₂ calculator. Determine the impact of your supply chain by calculating Scope 3 emissions. See also the GHG Protocol for tools and training. Reduce the emission of greenhouse gases by, for example:<ul style="list-style-type: none">Taking energy-saving measures. Examples of measures can be found on RVO.nl and on the website of klimaatplein.Switching to a sustainable energy supplier.Reducing transport kilometres and using fewer polluting forms of transport.Report your carbon footprint and target in your annual report and/or via the Carbon Disclosure Project.Finally, compensate for your CO₂ emissions that are (for now) unavoidable. This is called 'carbon offsetting', and it means that you pay for your CO₂ emissions. With that money, projects are funded that reduce CO₂ emissions elsewhere. Carbon offsetting has no direct impact on reducing CO₂ emissions of your business operations and is therefore not an alternative to CO₂ reduction. It is an additional measure, intended for the emissions that are truly unavoidable. There are several initiatives and organizations that offer climate compensation (for example for air travel or electricity use). See for example the REDD+ Business Initiative or the Fair Climate Fund.

³⁴ MVO Risk Checker. Available [here](#). Consulted on 30/01/2024

AREAS OF CONCERN

Environment	
Biodiversity & deforestation	<p>DESCRIPTION</p> <ul style="list-style-type: none"> • The food, beverage and tobacco sector have the highest potential impact on biodiversity worldwide of all identified sectors in the top 10 biodiversity-impact ranking of company industries. The sector contributes to 21% of the total impact of all sectors. Within the sector, the highest potential negative impact on biodiversity is food products. • Worldwide, complete bee hives are mysteriously dying off. Possible causes include the use of pesticides and monoculture farming. As a result, fewer bees are available for pollinating fruit and vegetables. A third of what we eat has been pollinated by bees. • Illegal logging takes place on a large scale in the forests of the Amazon. The environmental costs of this are enormous. There is loss of biodiversity and decreasing carbon dioxide absorption. • From 2001 to 2022, Peru lost 3.86 million hectares of tree cover, representing a 4.9% decline in tree cover since 2000. The Loreto, Ucayali and San Martín regions were responsible for most of the loss. • Peru ranks 6th with the world's highest primary forest loss. Since 2001, Peru has lost more than 26,000 square kilometres of rainforest, an area bigger than the size of Ecuador. Deforestation is caused by a variety of factors, including illegal logging, agriculture, mining, and oil and gas development.
<p>MITIGATION MEASURE</p> <ul style="list-style-type: none"> • The Green Label Greenhouse certification scheme for plant products from the covered crop includes criteria for the theme's climate, energy, crop protection, water quality and quantity and light pollution. • In their Farming with biodiversity report, the WWF describes ten agroecological principles to prevent biodiversity loss, while providing healthy food and securing the livelihoods of the people that produce it. • FoodPrint also describes the importance of maintaining (bio)diversity in crops and livestock. This includes seed and gene banks, but also requires the cooperation of farmers, horticulturalists and eaters around the world. Working together with indigenous groups to reintroduce crop varieties, for example, is one possible way to do so. • Biodiversity (the variety of plant and animal species within an ecosystem) is an important indicator of the health of an ecosystem. Business activities can have a negative impact on the flora and fauna in an area, thereby endangering biodiversity. Take measures to prevent and minimize significant impacts. • Use the BioScope-tool to map your impact and to identify priorities. With this tool, you can gain insight into the impact on biodiversity for each commodity, investment, or financial product purchased or provided by your company. Pay extra attention to the possible negative consequences of your business activities if you do business in or near a world heritage or biosphere reserve. The Global Forest Watch world map tool provides an overview of afforestation and deforestation in the areas where you are active. The world map of the GRAS Tool shows which areas are at increased risk for biodiversity-loss. • When evaluating your company's impact on biodiversity, it is important to be aware of your level of dependence on the natural environment. The value of ecosystems and the services and products they provide is also known as 'natural capital'. See the Natural Capital Protocol to make informed decisions about natural capital. Join the Natural Capital Community for more information and to share solutions and challenges. • The WWF Biodiversity Risk Filter is a free online tool that enables companies and financial institutions to Inform, Explore, Assess, and Respond to biodiversity risks. It is a corporate and portfolio-level screening tool to help companies and investors to prioritise action on what and where it matters the most to address biodiversity risks for enhancing business resilience and contributing to a sustainable future. It currently assesses two types of biodiversity-related business risk: Physical and Reputational. In the future WWF will be incorporating biodiversity-related regulatory risks as well. • A recent meta-analysis of 320 studies covering 24 years of data has identified key drivers and factors that halt tropical deforestation. Factors that slow deforestation include rugged terrain, stronger protections for parks and reserves, Indigenous land management, commodity certification programs, and payments for ecosystem services. The study aims to guide policies and actions to combat deforestation, a crucial aspect of addressing the climate crisis. 	

AREAS OF CONCERN

Environment	
Water use & water availability	<p>DESCRIPTION</p> <p>In the Ica valley in Peru, the agricultural sector, which is largely dominated by large-scale export agriculture, accounts for over 90 percent of yearly ground-water extraction. This increased pressure on freshwater resources has led to an acute water crisis for local communities. In some areas, the local population only has access to water for a few hours per week. Moreover, some small-scale farmers have been forced to leave their lands due to the competition for irrigation water and drying wells.</p> <p>MITIGATION MEASURE</p> <ul style="list-style-type: none"> Conduct an extensive assessment of water-scarcity and other human rights impacts related to agricultural products from the Ica valley and other export hotspots, in order to fully determine the scale and character of the impact. Leverage to address the issues can be increased through joint collaboration with other companies and stakeholders. Contribute to the establishment of an inclusive dialogue between all stakeholders in the region and help ensure that human rights defenders can participate in this without fear of retaliation. Calculate your company's water footprint using one of the following online tools: Water Risk Filter, Water Footprint Assessment Tool, WRI Aqueduct or the Water Risk Monetizer. Take into account two components: how much water is used in the production chain and where the product comes from. Minimize your water footprint by preventing water-intensive products from being imported from countries with high water scarcity. Based on the calculated water footprint, determine which measures have priorities. When it is clear where your company has the greatest impact and where the priorities are, develop a strategy to improve this, for example by doing the following: <ul style="list-style-type: none"> — Raise awareness among employees and suppliers of their water consumption. — Efficiency of water use within the production chain (irrigation, reuse) and prevention of waste (also indirect water waste, for example food waste or often replacing electronics). — Water-saving measures in production processes. — Use of sustainable water sources, such as rainwater or regenerated water, instead of depleting local water sources. In addition, it can be valuable to register your company or project at organizations such as the Water Action Hub or the Water Footprint Network. By becoming a member of one of these or similar organizations, you can expand your knowledge of water risks and share it with others. The WWF Water Risk Filter is a free online tool that allows companies and financial institutions to explore, assess and respond to water risks. It is a screening tool to help companies and investors prioritize actions to address water risks, thereby increasing business resilience and contributing to a sustainable future. The tool helps you to understand how water issues can lead to business risks by considering three types of risks related to water: physical, regulatory and reputational.

AREAS OF CONCERN

Environment	
Air pollution	<p>DESCRIPTION</p> <p>The capital of Peru, Lima, is one of the most polluted cities in Latin America.</p> <p>MITIGATION MEASURE</p> <ul style="list-style-type: none"> • Agriculture, transport, waste, and industry are among the main sources of air pollution. This is not only a threat to the climate, but also to human health. Many businesses are either directly or indirectly involved in these sectors, and thus have a key role in reducing air pollution. • Reduce air pollution caused by your business activities (including your supply chain), by the following two main strategies: <ul style="list-style-type: none"> 1. Minimize the emission of pollutants, such as methane, black carbon and ground-level ozone. 2. Clean unavoidable emissions by using filters and scrubbers. • In this UN report, you will find various strategies to reduce human-caused methane emissions in the three main contributing sectors: agriculture, fossil fuels, and waste. • In the transport sector, you can reduce air pollution by limiting the number of transport kilometres or by using cleaner forms of transport. For example, increase the occupancy rate of lorries in order to reduce transport kilometres. Finally, let employees work more from home, so that commuting is reduced. • In industry, leaking equipment is one of the largest sources of volatile organic compounds (VOCs). Read this Environmental Protection Agency manual to find out how to monitor leaks properly. • Reduce the use of fossil fuels to avoid air pollution. This can be done by switching to (electricity from) renewable energy sources and by investing in energy efficiency. For example, install solar panels or small wind turbines at or near your business location(s).
Soil & (ground)water contamination	<p>DESCRIPTION</p> <ul style="list-style-type: none"> • Farmers can use pesticides. The use of pesticides has led to the pollution of 80% of Europe's farmland. Research shows that people are exposed to it and that this can lead to various chronic diseases, as cancer and neurological disorders. • Phosphorus loss might be an issue with the harvesting/cultivating of crops. Phosphorus is an important nutrient for crops and a shortage of it in the soil can be an early indication of soil degradation (depletion of nutrients). <p>MITIGATION MEASURE</p> <ul style="list-style-type: none"> • Ohio State University has established best practices for more effective and efficient pesticide application. Main principles are: <ul style="list-style-type: none"> 1. Positive identification of the pest(s). 2. Selecting the pesticide specifically designed to control the identified pest(s). 3. Selecting the proper equipment, particularly the correct type and size of nozzle. 4. Applying the pesticide at the right time and under the right conditions. 5. Checking the accuracy of equipment (calibration) periodically to ensure the amount recommended on the pesticide label is applied uniformly onto the target. • Additional tips of Ohio State University can be found through this link. • Avoid potential damage to nature or the health of local residents by maintaining good water and soil quality. Examples of measures to prevent soil and water pollution are: <ul style="list-style-type: none"> — Design products in a circular way, whereby materials are reused, and the use of new raw materials is reduced. — Avoid the use of excess nutrients. — Avoid the use of harmful substances, such as chemicals or heavy metals. — Minimize the use of water for production purposes. — If contamination cannot be prevented, the wastewater should be purified as well as possible. — Control waste management: avoid landfill or open combustion.

AREAS OF CONCERN

Environment	
Soil & (ground)water contamination	<ul style="list-style-type: none"> • In addition, maintain soil quality in order to prevent a negative impact on local arable farming, livestock and drinking water supplies. Examples of measures are: <ul style="list-style-type: none"> — Prevent deterioration of the soil structure by the use of heavy machinery. — Avoid soil erosion through deforestation or overgrazing. — Vary soil use to avoid the build-up of soil-borne diseases and pests and to maintain soil fertility. — Prevent the release of nutrients, antibiotics and toxins into the soil. — Avoid soil salinization by efficient irrigation.
Environment and waste (general)	<p>DESCRIPTION</p> <p>The Environmental Justice Atlas provides an overview of environmental conflicts all over the world. It focuses both on social and environmental impacts, including air and water pollution, land degradation, deforestation, loss of biodiversity, contribution to climate change, and the health and livelihoods of local communities. It is possible to filter on country, industry or theme to see what conflicts might be present in your field.</p> <p>MITIGATION MEASURE</p> <ul style="list-style-type: none"> • The IDH Fruits and Vegetables program (= SIFAV) aims for 100% sustainably sourced fresh fruits and vegetables from Africa, Asia and Latin America 2020. In a partnership with more than 40 partners, the IDH MoU has been signed in which the partners pledge to purchase 100% sustainable (tropical) fruit and vegetables by 2020. • The report issued by USAID provides information on how to prevent and/or reduce the negative impacts of plantation crop production. The report contains information concerning pesticide use, biodiversity impacts, soil erosion and more. Read the report here. • Use the ‘precautionary principle’ as far as the environment is concerned. This means that if it is uncertain whether a business activity will have a negative impact on the environment, you still take preventive measures to prevent damage. • Measure your impact on the environment with the Ecological Footprint calculator. This footprint calculator helps you to understand how much land is needed for the production of a particular product and compares the outcome with how much land is available in total. Taking into account your Ecological Footprint within your business processes is called ‘Ecological accounting’. This manual explains how ecological accounting works. • Or use the Life Cycle Analysis (LCA). With an LCA you measure the environmental impact of products over their entire life cycle, from raw material to the end of the life phase. • In addition, create an environmental impact assessment (EIA). This is mandatory for certain activities, depending on the country where you work. Consult the country profiles of the Netherlands Commission for Environmental Impact Assessment to see under which circumstances an EIA is mandatory and what the EIA procedure entails in the country concerned. However, be aware that compliance with local legislation alone often does not provide sufficient protection for the local population and the environment. • ISO 14001 is an international standard for which you can be certified. The ISO 14001 certificate specifies requirements for an effective environmental management system and is linked to a location: each site must therefore be certified separately. You can find out which organization arranges and verifies environmental certification for each country on the ISO website. • Finally, consider doing business in a circular way. In circular business models, recycling is included in the revenue model. This is good for the environment and leads to long-term cost savings. Have a look here for more information and inspiration in the field of circular business. • For country-specific research on legislation of raw forms of plastics and plastic products, consult the Global Plastic Laws. This database lists applicable laws on plastics in nine themes.

AREAS OF CONCERN

Labour rights	
Freedom of associations	DESCRIPTION
<p>Of the agro companies in Peru's Ica region exporting to Europe, only two have a labour union. Neither union has any temporary workers as members, although the majority of workers in the sector are employed on a temporary basis. Union membership is low even among permanent employees, and the percentage of affiliation has decreased in recent years. The fear of being fired is the main reason for the low numbers, and dismissals are common even among permanent workers.</p>	
MITIGATION MEASURE	
<ul style="list-style-type: none"> Consult the flyer Questions to address freedom of association and social dialogue in the agrifood sector, developed by CNV Internationaal, Fairtrade and the IRBC Agreement for the Food Products Sector. The flyer contains a set of questions that traders, buyers, CSR managers, brand or retail representatives can ask to get a better understanding of policies and practices with regard to freedom of association and social dialogue at farms, plantations and processing factory levels in their supply chains. Social dialogue can lead to addressing other important labour rights such as child labour and living wages. If there is a repression of trade union freedom, allow your employees (or the employees of your supplier) to unite and discuss work-related matters with management. This is established by the ILO in two conventions: the right of employees to organize, freedom of association, and rights regarding collective bargaining. These rights are an important part of a free and open society and can have a major impact on the working and living conditions of your employees. According to CNV Internationaal, companies can make a positive contribution to trade union freedom: read this information. Be alert to the following issues: <ul style="list-style-type: none"> Discuss trade union freedom with suppliers using this questionnaire; Set up an (anonymous) complaints mechanism. Prohibit blacklists of employees. Put an end to ghost unions. Prevent (dependent) Yellow Unions and advocate for independent trade unions. Prevent employees from signing blank sheets of paper. Include trade union freedom in contracts. Draw consequences for regularly breaking the rules. Also follow this list of actions drawn up by Shift and Mondiaal FNV on how to respect trade union rights (Chapter 3, p. 35). 	
Labour conditions (contracts, working hours)	DESCRIPTION
<ul style="list-style-type: none"> In the agricultural sector, it is common that employees are contracted as seasonal workers to perform seasonal and labour-intensive work. Seasonal workers have worse salaries, hours and facilities than regular employees. Peru has special labour laws for agro export companies, which say that workers can be kept on temporary contracts for years. 	
MITIGATION MEASURE	
<ul style="list-style-type: none"> Follow the conventions of the International Labour Organization (ILO) for fair and transparent employment contracts and conditions of employment for all employees. Recommendations include a maximum of 48 hours per week, a limited number of overtime hours, sufficient breaks, holidays and sick leave, and the right to a living wage. <ul style="list-style-type: none"> See the education module of the ILO about labour standards and how to comply to them. Do the WagelIndicator Foundation's Decent Work Check, which provides insight into the rights of employees in each country, based on local labour laws. Keep in mind that local legislation in foreign countries does not always directly result in adequate working conditions for workers. Consult the Business Helpdesk for information and answers to questions on labour-related topics. The Database of Business Ethics has collected different types of codes of conduct and supplier codes from international companies, sorted by sector. Here you can see what a good code of conduct should include to protect human rights. As alternative to conventional CSR, the Worker-Driven Social Responsibility (WSR) model was created as a new paradigm for protecting human rights in global supply chains, one designed, monitored, and enforced by the very workers whose rights it is intended to protect. Along with this initiative is the WSR Network, read more about it here. 	

AREAS OF CONCERN

Labour rights

Forced labour & human trafficking	DESCRIPTION
	<ul style="list-style-type: none"> According to an ILO report, modern slavery takes place in almost every country in the world and also across ethnic, cultural, and religious boundaries. In 2021, 10 million more people worldwide live in modern slavery than in 2016. According to the report, 50 million people live in modern slavery in 2021. Of these, 28 million people suffer from forced labour and 22 million people are trapped in forced marriages. Women and children are particularly affected by this type of modern slavery. 80% of all people affected by forced commercial sexual exploitation are women and girls. The private sector accounts for 86% of forced labour, while state-mandated forced labour accounts for 14%. Especially in upper-middle income countries as well as in high-income countries, more than half (52%) of all cases of forced labour and a quarter of all cases of forced marriages take place.

MITIGATION MEASURE

- A supermarket operating in several European countries as well as the USA, Australia and China, developed an International Policy on Forced Labour for its global food and non-food supply chain. The policy includes expectations regarding the terms of recruitment and employment and demands suppliers to put in place adequate management systems to tackle forced labour (including identification of at-risk regions and industries; ensuring staff is trained on forced labour topics; and providing effective grievance channels).
- The company supports its business partners in implementing the policy through a Guidance Paper on Forced Labour and by providing e-learnings and trainings. Furthermore, the company monitors compliance by conducting assessments in key production facilities and sending questionnaires directly to workers. The company collaborates with NGOs and business associations to ensure remediation if necessary. Read more about this best practice [here](#).
- Combat forced labour and human trafficking by applying [the ten principles of the ILO](#) (page 3) or follow [the e-learning courses](#) offered by Verité on forced labour and human trafficking. Human trafficking means recruiting, transporting or accommodating people by (the threat of) violence, deceit or deception, with labour exploitation as a possible goal. Labour exploitation concerns forced labour and underpayment. The ILO has drawn up several [basic indicators](#) to recognize situation in which workers are exploited. In any case, it is important to set up a complaint's mechanism, where employees can directly and anonymously file a complaint. See the Amfori BSCI [manual](#) for this.
- Read in the [ILO Manual against Forced Labour](#) (chapter 6) how to address forced labour, also for specific situations such as in prisons and debt bondage. Or use [the Checkpoints app](#) to combat forced labour.
- In addition, use the various methods and initiatives to prevent forced labour and human trafficking:
 - The Ethical Trade Initiative's [guidelines](#) for companies;
 - The [SEE](#) (Scrutinise, Engage, Ensure) formula for combating forced labour, human trafficking and exploitation in any sector involving temporary agency work;
 - [This portal](#) for more information and tools on the recruitment of (migrant) labour in supply chains.
- [The Anti-Slavery Scorecard](#) was created to give companies insight into what they can do to address modern slavery. The way to do this is through self-assessment with an anonymous questionnaire. Then strategies and concrete actions are shown that can contribute to preventing modern slavery in your company.

AREAS OF CONCERN

Labour rights

Child labour	DESCRIPTION
	<p>MITIGATION MEASURE</p> <ul style="list-style-type: none"> Follow these practical ILO steps to prevent and tackle child labour, follow the Ethical Trade Initiative guide or check this report by the OECD among others. Not all work done by children is considered child labour. ILO's definition of child labour is work that is mentally, physically, socially, or morally dangerous for children and/or stands in the way of education. The ILO makes recommendations for minimum wages for different types of work. For the lightest variant, the minimum age is 12 years. Companies can do the following: <ul style="list-style-type: none"> In addition, set up a Social Compliance System to combat child labour. Go through the steps in this toolkit, developed by the Bureau of International Labour Affairs of the U.S. Department of Labour. Finally, apply for a subsidy through the Child Labour Fund of the Netherlands Enterprise Agency to eliminate child labour in your international production chain. The US Department of Labour has developed an app that clearly displays information on child labour and forced labour by country. The app allows you to do the following: <ol style="list-style-type: none"> Check countries' efforts to eliminate child labour; Find child labour data; Browse goods produced with child labour or forced labour; Review laws and ratifications; See what governments can do to end child labour; and Browse USDOL's projects to combat child labour and forced labour. Click here for more information about the app. Together with the United Nations Global Compact and Verisk Maplecroft, the Business and Human Rights Helpdesk has developed a practical guide to human rights issues along the supply chain. On this portal, you will find a variety of different practical examples, background information as well as instructions from everyday business life on the ten essential human rights issues, including child labour. This will help you better understand the human rights impacts of your operations and supply chains, as well as integrate human rights due diligence into your business. The SÜDWIND Institute has published a recommendation for companies on how to combat child labour in global supply chains. Please read the handout for companies.
Discrimination & gender	<p>DESCRIPTION</p> <ul style="list-style-type: none"> UN Women notes that there is progress in women's rights in Peru. However, there is still work to be done to achieve gender equality. In 2018, 11.1% of women indicated that they had experienced physical and/or sexual violence by a current or former partner in the past 12 months. Women also spend more time in unpaid care and domestic work. Look here for comprehensive data on women's rights. In Peru, there is no specific legislation prohibiting discrimination against persons based on sexual orientation. Discrimination against individuals with disabilities, members of racial and ethnic minority groups, indigenous persons, lesbian, gay, bisexual, and transgender persons, and persons with HIV/AIDS has been reported. NGOs reported employment discrimination based on race, gender, skin colour, national origin, social origin, disability, language, and social status. Arbitrary dismissal of pregnant women and workplace discrimination against women are common.

AREAS OF CONCERN

Labour rights	
Discrimina- tion & gender	<p>MITIGATION MEASURE</p> <ul style="list-style-type: none"> • You have a responsibility to combat discrimination (it is one of the four compulsory ILO core principles). Prevent discrimination by only basing HR decisions (including salary) on relevant and objective criteria. <ul style="list-style-type: none"> — Prevent gender discrimination by ensuring equal pay for men and women. Consult these guidelines by the Ethical Trading Initiative. In addition, make sure you adhere to the guidelines for gender equality in codes of conduct and guidelines for gender equality in social audits. For further action on gender, refer to the ILO Resource Kit on Gender Based Violence in Global Supply Chains, the Women's Empowerment Principles of Global Compact or this guide from ActionAid. — Prevent discrimination of indigenous peoples, consult this guide; — Prevent discrimination based on religion, consult the website of Workplace Fairness; — Prevent discrimination against lesbian, gay, bisexual, transgender and intersex (LGBTI) people by consulting this guide of the United Nations; — Prevent discrimination against people with disabilities by using this guide from Global Compact and the ILO or this guide by the Ethical Trading Initiative; • The Supplier Gender Toolkit supports companies to increase the percentage of women leaders in their supply chains. The toolkit highlights challenges, opportunities and recommended actions that businesses can take to recruit, retain and support women in the workforce and help them progress. It also spotlights particular issues that suppliers should address including gender-based violence (GBV), unpaid care work and negative gender stereotypes.
Wage & remuneration	<p>DESCRIPTION</p> <p>According to research by Swedwatch on agro export companies in Peru's Ica region, temporary workers are generally paid the minimum wage of 930 Soles per month, equivalent to EUR 240, which does not cover the basic needs. Workers claim that at least 600 Soles more would be needed to cover the expenditure of a family. Due to the lack of living wages, many of the workers living in informal settlements experience low living standards. Employment alternatives to the agroindustry are rare and most workers are unemployed outside the production seasons.</p> <p>MITIGATION MEASURE</p> <ul style="list-style-type: none"> • Use Fairfood's ALIGN tool to integrate living wages into your business operations or consult the IDH Roadmap on Living Wages. • When purchasing products from (small-scale) farmers, it can be difficult to estimate the price that will result in a living income. Join supply chain initiatives such as Fair for Life or Fairtrade to facilitate this process. • Invest in programs and partnerships with suppliers to support smallholder farmers to increase their incomes and strengthen their resilience, health, and livelihoods. Since smallholder farmers are a highly diverse group, who face different barriers and challenges, it is recommended to apply farmer segmentation. This is the practice of placing farmers into distinct groups to enable a deeper understanding of their challenges and needs in order to develop more targeted, effective solutions. This toolkit for procurement teams provides an explanation of what farmer segmentation is, how it can benefit both farmers and businesses, and which steps are needed to implement it, including some best practices. • Provide a living wage for employees of your own company and its suppliers. A living wage (or a living income for self-employed people such as farmers) is a wage that is sufficient to meet the basic needs of the employee and their family. Basic needs include food, clothing, housing, school and medical assistance. Usually, a little extra is added for unexpected expenses. A living wage is a universal human right and is included in the UN Human Rights Declaration. • Minimum wages set by governments are often, however, much lower than a living wage would be. It is therefore important to use a living wage (and not the minimum wage) for employees in order to calculate the costs. Consult the WageIndicator or the country information of Global Living Wage Coalition for an overview of minimum wages and living wages per country. Or use the Fair Renumeration Quick Scan to gain an understanding of the cost of living of your employees within the regional context your business operates. Use the Living Income Toolkit or the Roadmap to Living Wages tool to integrate living income into your operations.

AREAS OF CONCERN

Labour rights	
Wage & remuneration	<ul style="list-style-type: none"> Do you have difficulties finding out whether living wages are paid in your supply chain? Then consult an external organisation, such as the Fair Wage Network. This organisation sends a research team to investigate wage practices in your company and its suppliers. The organisation also offers support with remediation and the possibility of certification for companies with exemplary wage practices.
Health & safety at work	<p>DESCRIPTION</p> <p>Agriculture is a particularly risky sector with respect to health and safety. This is due to the risk of infection by parasitic diseases, and because of the exposure to chemicals (both farmers and consumers) that are used in farming. These risks are relatively higher in lower- and middle-income countries.</p> <p>MITIGATION MEASURE</p> <ul style="list-style-type: none"> According to the International Labour Organisation (ILO) employers in the agricultural sector have to provide a safe and healthy working environment for workers. Therefore the ILO developed the 'Safety and Health in Agriculture Convention'. According to this convention, an employer should: <ul style="list-style-type: none"> Carry out health and safety risk assessments and adopt preventive and protective measures based on the results. Ensuring that under all conditions of their intended use, all agricultural activities, workplaces, machinery, equipment, chemicals, tools and processes under his control are safe. Provide adequate and appropriate training and comprehensible instructions on safety and health and if necessary, guidance or supervision. It is important to take the level of education and differences in language of your workers into account. If there is an imminent and serious danger to safety and health, any operation must stop immediately, and workers have to be evacuated as appropriate. You are responsible for safe and healthy working conditions in your company and at your suppliers. This includes preventing undesirable psychosocial stress at work, such as work-related stress (guide for factories), bullying and sexual harassment. Workers who are particularly at risk of unfair treatment include migrant workers, unskilled workers and subcontractors. Follow the general safety regulations as specified by the EU, and carry out a Risk Inventory & Evaluation (RI&E). This online tool guides you through the execution of an RI&E. ISO 45001 (formerly OHSAS 18001) is an internationally recognised occupational safety and health management system for which you can be certified. In addition, contribute to the improvement of safety and health at work by developing a methodology with this starter kit from the ILO. The starter kit contains various tools that you can adapt to your own context. Finally, the Violence @ work guide offers you tools to prevent violence in the workplace. You are responsible for safe and healthy working conditions in your company and at your suppliers. This includes preventing undesirable psychosocial stress at work, such as work-related stress (guide for factories), bullying and sexual harassment. Workers who are particularly at risk of unfair treatment include migrant workers, unskilled workers and subcontractors. Follow the general safety regulations as specified by the EU, and carry out a Risk Inventory & Evaluation (RI&E). This online tool guides you through the execution of an RI&E. OHSAS 18000 is an internationally recognised occupational safety and health management system for which you can be certified. In addition, contribute to the improvement of safety and health at work by developing a methodology with this starter kit from the ILO. The starter kit contains various tools that you can adapt to your own context. Finally, the Violence @ work guide offers you tools to prevent violence in the workplace.

AREAS OF CONCERN

Human rights & ethics

Government influence	DESCRIPTION
	<p>At least seven environmental defenders, including six Indigenous people, were killed from January through September 2022 in Peru. This happened in the Madre de Dios, Loreto, Junín and Huánuco regions. Read more about this in Amnesty International and Human Rights Watch.</p> <p>Law enforcement officers in Peru use excessive force, which goes unpunished. Read more about this in the reports of Amnesty International and Human Rights Watch.</p> <p>Peru is considered to be “partly free” according to the Freedom House Country List. This means that there is an oppressive regime, with regard to civil liberties.</p> <p>Authorities in Peru undermine freedom of expression and assembly. The authorities suppressed protests in 2022, resulting in at least 22 deaths and dozens of injuries, including among police. They also neglected communities impacted by pollution, and six human rights defenders were killed in areas with illegal logging and drug trafficking in 2022. Read more about this in the Amnesty International report.</p> <p>Peru is ranked 110 out of 180 countries in the World Press Freedom Index with a score of 52.74 on a scale from 0 (worst possible score) and 100 (best possible score). This means that press freedom is limited.</p>
Conflict & security	<p>MITIGATION MEASURE</p> <ul style="list-style-type: none"> Prevent or minimize involvement in and support for the government if you do business in a country with an authoritarian/dictatorial regime or in a country where there is a high risk of human rights violations by the government. In such a regime regular business and tax payments can already contribute to human rights violations. Do not ignore human rights violations, because that means you accept and legitimize them. Prevent this by doing the following: <ul style="list-style-type: none"> Admit any involvement in human rights violations. Publicly recognize the human right violated, express regret that you cannot fully comply with the right in the present circumstances and describe the company's special procedures for preventing and mitigating the negative impact of its operations. Dissociate your actions from the government. Do not publicly condemn the regime, but align yourself with reputable human rights groups, explain your policies and operations, and ensure that you respect human rights without exception. Consult the advice of the Geneva Centre for the Democratic Control of Armed Forces and the International Committee of the Red Cross on how to deal with complex environments. Or join the Business for Peace-Platform, set up by UN Global Compact, for companies that work in conflict zones and want to operate there in a way that counteracts human rights violations.

AREAS OF CONCERN

Human rights & ethics

Conflict & security

- Explore the impact of your business activities on human rights and what you can do about it, using the [Human Rights Impact Assessment](#). Or join the [Business for Peace Platform](#), a group of companies that are active in conflict zones and want to avoid human rights violations. Also, the [United Nations Human Rights Council](#) has described the responsibilities of companies to respect human rights and established action points that can be implemented for this purpose (from page 19).
- Consult the [Guidance on Children in Humanitarian Crises: What Business can do](#), to read what you can do for the well-being of children in humanitarian crises, from natural disasters to conflicts.
- Finally, if private security is needed to ensure safety make use of the [ICoCA Procurement Guide](#) for contracting with responsible private security companies to ensure human rights.
- Ensuring human rights and security is an added challenge when operations take place in conflict zones. With information from the Geneva Centre for Security Sector Governance, a number of guidelines have been drawn up for companies to use. Next to that you can find an elaborate explanation in their [handbook](#).
 1. Make sure you understand where and when the principles of international humanitarian laws apply.
 2. Be aware of your potential liability in relation to international humanitarian laws.
 3. Commit to complying with international humanitarian laws and adjust your company's policies accordingly.
 4. Pay extra attention to due diligence when your activities take place in conflict or high-risk areas.
 5. Weigh the impact of doing activities in conflict areas against the impact of removing activities from the area.
 6. Ensure you have a clear exit strategy.

Land use & property rights

DESCRIPTION

- Although Peru has ratified the international law that guarantees indigenous peoples' land ownership rights, more than 600 indigenous communities in Peru still do not have legal titles to their land.
- More and more, the livelihoods of many indigenous people in Latin America are being destroyed through illegal mining, agriculture and huge energy projects. In corresponding projects, the indigenous communities are often affected by land grabbing, resettlement, displacement and lack of compensation. In addition, affected communities often do not have sufficient opportunities to participate in the decision-making processes of projects. In particular, the right to free, prior, and informed consent of Indigenous peoples is repeatedly violated.

MITIGATION MEASURE

- Prevent land grabbing by identifying, consulting and compensating local stakeholders for any losses. The Interlaken Group and the Rights and Resources Initiative have published a guide for companies to align their operations with the [Voluntary Guidelines on the Responsible Governance of Tenure](#).

Community impact

DESCRIPTION

- According to the [OECD-FAO Guidance for Responsible Agricultural Supply Chains](#), food security is one of the major risks in agricultural supply chains. The agricultural sector may undermine access to and availability of food in various ways. One of the most prominent adverse impacts can result from acquiring large tracks of land or overusing natural resources such as water, which in turn prevents local communities from cultivating food for own consumption or income generation.
- In the Ica valley in Peru, the export-oriented agricultural sector puts high pressure on freshwater resources, which has caused an acute water crisis for local communities. Increased competition over water has led to violent conflicts, and human rights defenders reporting on the issue have faced threats and other forms of retaliation.

AREAS OF CONCERN	
Human rights & ethics	
Community impact	MITIGATION MEASURE
	<ul style="list-style-type: none"> Invest in the local economy to ensure that your business contributes to improving the standard of living of the entire community. This is a way to create local support for your business activities. Before you start a new project, you need to ensure a Free, Prior and Informed Consent (FPIC) of all potentially involved local communities. This will inform communities and address the issues they have identified. How to implement FPIC can be found in this FAO step-by-step guide. It is important that you communicate well with local communities in order to maintain their support. In addition, set up processes to deal with the potential negative consequences of your business activities, especially when these have an impact on human rights. Operational-level grievance mechanisms are in many cases effective in dealing with business conflicts. Read the 'Doing Business With Respect for Human Rights' guide for setting up such a complaints procedure. Use the Product Social Impact Assessment handbook which explains step by step how to find out for products and services how and if the local community is negatively affected.
Animal Welfare	<p>MITIGATION MEASURE</p> <ul style="list-style-type: none"> Take the animal welfare standards of the European Commission as a starting point. Comply with the following 'Five Freedoms', defined by the European Convention for the Protection of Animals kept for Farming Purposes: <ul style="list-style-type: none"> — Freedom from hunger and thirst: access to fresh water and a diet for full health and vigour. — Freedom from discomfort: an appropriate environment with shelter and comfortable rest area. — Freedom from pain, injury and disease: prevention or rapid treatment. — Freedom to express normal behaviour: adequate space and facilities, company of the animal's own kind. — Freedom from fear and distress: conditions and treatment which avoid mental sufferings. Also refer to the Terrestrial Animal Health Code and the Aquatic Animal Health Code (paragraph 7) for recommendations on animal welfare during transport and slaughter.
Consumer interests & product safety	<p>MITIGATION MEASURE</p> <ul style="list-style-type: none"> As a company, you have a number of important responsibilities towards consumers. These are summarized in the United Nations Guidelines for Consumer Protection. Please note the following points: <ul style="list-style-type: none"> — Make sure that your products and services meet all required standards regarding consumer health and safety. — Ensure that fair and honest relationships with consumers form an integral part of your business culture. — Provide clear, complete, and accurate information on the composition and use of your products, as well as on the final costs. — Provide a clear, transparent, and inexpensive complaints procedure and contribute to a quick and fair resolution of disputes. — Respect consumer privacy and set up a mechanism to protect personal data. — Work cooperatively with authorities to minimise potential harm to public health and safety from the use of your products and services. Are you interested in corporate digital responsibility and digital ethics to identify the impact of company internal digital technologies on the environment, society, employees, customers, or investors? Then take part in this Quick Check for Corporate Digital Responsibility & Digital Ethics from PwC.

AREAS OF CONCERN

Fair business practices

Taxation	MITIGATION MEASURE
	<ul style="list-style-type: none"> • Make use of the OECD Transfer Pricing Guidelines for the correct implementation of the transfer price conform the Arm's Length principle. • Use the following six guiding principles formulated by VBDO and Oikos to draw up a responsible tax policy. <ol style="list-style-type: none"> 1. Define and communicate a clear strategy. 2. Tax must be aligned with the business and is not a profit centre by itself. 3. Respect the spirit of the law. Tax compliant behaviour is the norm. 4. Know and manage tax risks. 5. Monitor and test tax controls. 6. Provide tax assurance. • Finally, join the Fair Tax mark. This mark shows that you are open and transparent about your tax policy and payments and that you are paying the right amount of taxes at the right time in the right place.
Corruption	DESCRIPTION
	<ul style="list-style-type: none"> • Corruption is a serious problem for business in Peru, with irregular payments, bribes and the favouritism of government officials in awarding contracts being particularly common. • There are widespread allegations of corruption in public procurement and in public-private partnerships in Peru. Large transportation and energy infrastructure contracts frequently generated high-ranking political interference and corruption. Companies also reported that mid-level government officials skewed tender specifications to favour bidders who paid bribes. • According to the Corruption Perceptions Index, the corruption score of Peru is 36, on a scale of 0 (highly corrupt) to 100 (very clean). This means that the risk of corruption in Peru is high. • Peru faces structural corruption, impunity and political instability. In less than five years, the country has rejected four presidents, three of whom are under investigation for corruption.
Market distortion & competition	MITIGATION MEASURE
	<ul style="list-style-type: none"> • Refrain from practices that restrict competition, such as fixed pricing agreements, open tender arrangements, or division of markets, customers, suppliers, geographical zones or activities. You disrupt the market by introducing low-cost or subsidised products. Selling products significantly below market price is known as 'dumping'. For more information, please visit the website of WTO. • In addition, cooperate with local competition authorities and make your staff aware of all applicable competition regulations. • The International Competition Network has five Working Groups in which both national agencies and non-government advisors working on recommendations for better cooperation.



For inquiries, please contact us at susanna@resiliencebv.com

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Netherlands Enterprise Agency
Prinses Beatrixlaan 2
PO Box 93144 | 2509 AC The Hague
T +31 (0) 88 042 42 42
Contact
www.rvo.nl

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