

Meet the Dutch Delegation

Agtech, Robotics & Digitalization in Open Field Crops

Innovation Mission
United States of America

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Netherlands

The United States and the Netherlands share a longstanding cooperation in agriculture. Both our countries are important partners in horticulture and agrifood and are globally well-known as leading producers of high-quality agricultural and horticultural products.



Ton van Arnhem

As major agricultural producers, both the Netherlands and California face similar challenges, such as climate change impacts, pest and disease pressure, and significant labor shortages.

To address these challenges, the California Department of Agriculture and the Netherlands Ministry of Agriculture, Fisheries, Food Security and Nature, signed a Letter of Intent in 2015 to promote collaboration in climate-smart and sustainable agricultural production. Also with strong support from the Netherlands Consulate General in San Francisco, this has resulted in a robust partnership known as the Global Controlled Environment Agriculture Consortium. Alongside cooperation in indoor production, there is a focus on expanding innovations for outdoor cultivation, including field production and orchards.

Renowned for its diverse and productive agricultural sector, California leads the U.S. in producing a wide variety of crops, fruits, and nuts. This is supported by a thriving AgTech sector that collaborates with growers to develop cutting-edge technologies aimed at enhancing efficiency, sustainability, and productivity. The Netherlands is recognized in California as a country with advanced solutions and innovations in agriculture, including robotics and automation.

Innovation in automation and robotics is crucial for advancing our sectors in a more sustainable, efficient, and profitable manner. Private sector companies and research institutes play a vital role in leading the way by inventing and implementing innovative solutions, creating proofs of concept that can inspire others.

Unlike trade missions focused on sales, this innovation mission aims to exchange information, foster partnerships, and explore scalable technologies for mutual benefit. It seeks to enhance public-private collaboration among industry, knowledge institutions, and companies in research and development.

I am proud that so many esteemed partners are joining us on this visit to California to build relationships with our U.S. counterparts. With the extensive knowledge and networks of the diverse participants in this mission, I am confident it will facilitate mutual learning and sharing, creating opportunities to positively influence the future of plant production in both California and the Netherlands.

Please find the company profiles in this mission booklet. Let's connect and collaborate on innovative solutions for our shared global challenges!

Ton van Arnhem
Agricultural Counselor to the US and Canada



The United States and The Netherlands are the largest exporters of agrifood products in the world. As leaders it is our job to serve the world with the technologies to produce agrifood products in a sustainable and labour use efficient way.



Erik Pekkeriet

Agriculture is still moving to bigger machines, bigger fields with more monoculture as a result. This is due to scale-up operations (markets and size, amenable to global trade) and labour minimisation but it reduces biodiversity at the same time. To be more sustainable, fresh, diverse, and nutritious, while reducing inputs at the same time, more labour and effort is needed. Labour inputs must increase, precisely now when at the macroeconomic level labour availability is under most pressure, both demographically and politically. This requires a change in how we produce food.

There is a need for extremely low cost, accessible, adaptive, multifunctional robots, machines, digital products, and sensor systems that provide high levels of labour input to deliver and secure productive, biodiverse, heterogeneous landscapes of diverse cropping systems. Robots that will also serve scalability to secure market size and global trade. The United States and The Netherlands should pick up ownership in developing these technologies, to produce food in a less labour-intensive way of farmworkers and farmer knowledge dependencies, serving better scalable food supply solutions throughout the world. Joining forces in the research, development and adoption seems so logical but is not the common way of working. This Innovation Mission is aiming to bridge it.

Your Mission Leader,

Erik Pekkeriet

Programme Manager Vision + Robotics @ Wageningen University & Research



Index

Forewords

Ton van Arnhem - Agricultural Counselor to the US and Canada	3
Erik Pekkeriet - Programme Manager Vision + Robotics @ Wageningen University & Research	4

Delegation

Agurotech B.V.	8
BBLeap – Farming At Plant Level	9
eLEAF	10
FME	11
GPX Solutions	12
NLWorks	13
Odd.Bot	14
Pixelfarming Robotics	15
Rometron bv	16
SoilBeat	17
Wageningen University & Research	18

Organization

Netherlands Embassy, Washington DC – Agricultural Office	20
Ministry of Agriculture, Fisheries, Food Security and Nature.....	21
Netherlands Enterprise Agency (RVO), International Innovation department	22



Delegation

Agurotech B.V.

Agurotech develops technological solutions for precision farming. Our product range consists of soil sensors, weather stations and smart farming applications. Our solution contributes to optimisation of irrigation processes, helping farmers to save water and optimize their yield.

We also advise on spray planning and plant disease management. California is an important area with high yielding crops and water scarcity. Agurotech can offer highly valuable solutions to the local farming community. With this trade mission we hope to expand our market reach to California.



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BBLeap – Farming At Plant Level

BBLeap revolutionizes crop management for growers globally with cutting-edge technology to spray at precision level. Say goodbye to unnecessary spraying of healthy crops—our solutions empowers farmers to treat each plant, fruit, or tree individually, maximizing yield and sustainability.

Our versatile technology seamlessly integrates with any brand of sprayer, whether existing or new. Beyond spraying technology, BBLeap offers LeapSpace, a sophisticated cloud solution for creating detailed application maps from 1 ft x 1 ft up to 5,000 acres, and LeapEye for real-time spray applications.



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eLEAF

eLEAF is a leading provider of satellite-based data and services to support sustainable water management, optimize agricultural production and to assess climate and weather risks. We were the first to use satellite data to estimate evapotranspiration (ET) and biomass production operationally, and today we have a 20+ year track record in providing data and services around the world.

For Agribusinesses we map ET at field level (10x10 meter, daily), estimate crop water stress and quantify crop biomass production. Our web-based FieldLook application supports farmers to monitor production on all their fields while optimizing on-farm water management.

For irrigation managers we identify where and when irrigation is taking place (in-season), and quantify irrigation volumes. Unique to our technology is that we can estimate which part of ET is due to irrigation rather than e.g. rainfall. This innovation allows irrigation managers to detect changes early on, to identify unauthorized water withdrawals for irrigation, or assess the impact of drought on irrigation practices.

We have a state-of-the-art data processing factory which we developed and maintain ourselves. Our technology is applied at field level but is scalable, meaning we can provide high resolution data for vast areas. At the moment we provide actual ET and biomass production data globally with a near-real-time update every 10 days. In the United States this data is available at a 300m resolution.

While eLEAF HQ is in the Netherlands, we are part of the Iility Group with offices in San Diego, San Jose and Austin.

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FME

By participating in the innovation mission to California, we can further strengthen our international innovation cooperation and further consolidate our position to promote innovation and provide support to operating agritech companies.

Together with strong partners such as the US, we can improve our competitive position and jointly tackle social challenges. By joining forces in bilateral collaborations and field labs, we can optimally support our members in realizing their international ambitions.

In addition, the trade mission offers the opportunity to promote our interests as a sector towards public stakeholders and to further expand our network. It is a unique opportunity to demonstrate our innovative strength and explore new collaboration opportunities.



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GPX Solutions

GPX Solutions was founded in 2017 to combine GPS technology, robotization and surveying in agriculture. We develop and manufacture an autonomous aftermarket kit to support farmers during busy periods during the year and be able to work more efficient. We believe in autonomous solutions for future farming and flexible technologies in agriculture.

Our aftermarket kit is designed for every tractor brand or tractor type. We integrate a Vehicle Depending Module on the tractor and listen to the GPS module of Novatel, Topcon or Raven which send us information about the position of the tractor and the position of (steering) wheels. Finally, we integrate our safety system in front of- and around the tractor and we are ready to work autonomously within 2 weeks. The driver will be able to create a route and add different actions to the route. Via an application, the user can follow the tractor and receive real-time information about RPM, oil temperature, fuel level, fault codes of the tractor etc.

GPX Solutions is stated in the Netherlands within the orchards and currently, we developed approx. 10 autonomous kits. From MF, till Kubota, from CNH till Fendt, we make sure that each tractor will leave our location with autonomous functionalities. Our dream is to build an Experience Centre for Future farming. We are very close of achieving this dream.

With the trade mission in California, we want to investigate how we can approach the American market with the right knowledge of important requirements (regulation) and more important; can we find a trustful partner with enough interest in Autonomous software and knowledge of GPS to be able to provide the right service remotely and on the spot.

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Joanne de Ruiter
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NLWorks

At NLWorks, we believe in the power of collaboration. Sharing strengths and knowledge and working together is essential for businesses, knowledge institutes and governments to prepare for the challenges of today and the future.

We match Dutch knowledge, technology and expertise with international partners. This way, we help to build businesses with impact in multiple sectors and various countries. This fits with NLWorks' aim of addressing international economic, social and environmental challenges by facilitating and organizing Dutch solutions that work locally.

Together with our Dutch and Californian partners we have developed the Global Controlled Environment Agriculture Consortium (GCEAC). This consortium consists of 25 businesses, knowledge institute and public partners and focusses on accelerating indoor agricultural innovation in both the Netherlands and California. During this mission we will discuss the following steps in this consortium as well as assess the possibilities for enlarging this partnership towards open field growth and almond orchards.



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Odd.Bot

Odd.Bot successfully developed autonomous weeding implements they call Weader and a 4-wheeled carrier, sold either as separate tool for OEM's and system integrators to include in their machinery or as full autonomous system called Maverick with 2 or 3 Weader implements.

The solution utilize A.I. to detect and distinguish between weeds and crops and remove the weeds fully mechanically. The solution is suitable for regenerative, sustainable and organic agriculture and can weed in carrots, onions and chicory with more crops to follow.

Odd.Bot is open to partnerships for resellers, distributors, service, maintenance and spare-part suppliers to set up shop in the USA.



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Pixelfarming Robotics

Pixelfarming Robotics was founded in 2019 to support the robotics transition in agriculture. We design and manufacture advanced agricultural robots to support biodiverse farming. We believe in robotic technologies in agriculture.

Robot One is a cutting-edge agricultural robot designed for smart farming. Equipped with 14 advanced depth sensing camera's and dual GPS antenna's it is ideal for large-scale and biodiverse environments.

Robot One helps farmers transition to regenerative farming. This is achieved through practices such as cover cropping, reduced tillage with our specialized tools and smart crop rotation. This not only increases soil fertility, but also improve water retention, reduce erosion, and promote biodiversity. In addition to improving the health of the soil, regenerative farming can also lead to more resilient crops and higher yields.

Our new laser module is designed to selectively target weeds in a sustainable manner using a high-power Co2 laser. Our laser module is part of a larger trend in the industry where farmers are looking for better and ecological alternatives to achieve their sustainability goals.

Pixelfarming Robotics is stated in the Netherlands at Campus Almkerk and currently, we are manufacturing approx. 10 robots this year. We are scaling up rapidly.

With the trade mission we want to investigate how we can approach the American market when it comes to the production and delivery of Robot One.

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Rometron bv

Through 25 years of experience we have set the standard for precision spraying. We offer the fastest, most accurate and most easy to use weed detection and elimination technology based on chlorophyll fluorescence. By developing new technology that merges data, hardware, software and practical experience WEED-IT brings the next generation of precision spraying that goes Beyond Accurate. With our dedicated team, local partners and worldwide network of dealers, we offer tailor-made solutions for any field and any farmer. This allows you anywhere, anytime, to manage your plants and crops Beyond Accurate.

One of the unique features and benefits of the Power of Fluorescence is that every living plant, no matter how small, is naturally detected by the WEED-IT sensor. If needed, the system can be set to detect even a single leaf up to the foliage of a tree. This capability and versatility enables growers to deploy the technology to detect individual trees and tree foliage in orchards and vineyards and other permanent crops. By detecting trees, individual trees can be treated with liquid fertilisers, plant biostimulants, insecticides, fungicides and thinning products allowing for growers to optimise deposition and lower input costs. And by separating trees from open areas, spray drift is minimised to allow for more sustainable berry, fruit and nut production.



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SoilBeat

SoilBeat: Accelerate the Transition to Regenerative Agriculture

SoilBeat is a Dutch data platform empowering the agricultural sector to transition towards a sustainable regenerative future. We focus on aggregating data crucial for reducing synthetic inputs, strengthening crops' natural resilience, and increasing climate resilience – data often overlooked by other platforms.

Using AI, data science, and smart algorithms, we translate this data into practical advice for both agricultural consultants and growers. We also foster knowledge building by supplementing data and observations with explanations, videos, and links to our partnerering RegenAg specific e-learning platforms.

Why California?

We have an established US-based sales team and see California as a key market due to its:

- High climate pressure: The urgency to build climate resilience aligns perfectly with the benefits of regenerative agriculture.
- Thriving organic market: Demand for organic produce is strong, creating opportunities for growers adopting sustainable practices.
- Stringent regulations: Our adaptable software is easily customized to comply with local legislation for agricultural advice.

Collaboration with Research Institutes

We're eager to collaborate with Californian research institutions to develop crop-specific advice algorithms based on plant sap and soil data, combining our technical expertise with local knowledge to accelerate the transition to regenerative agriculture.

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Wageningen University & Research

Our Programme Vision + Robotics its DNA is deeply rooted in agriculture, food, horticulture, marine, and livestock research.

Vision + Robotics is powered by Wageningen University & Research (WUR), with its century-long legacy of pioneering research in these domains. We harness this rich heritage and bring together a diverse team of more than 50 experts in AI, computer vision, spectral imaging, and robotic systems from all corners of WUR.

This unique synergy creates a powerhouse of tech-savvy individuals, united by a shared commitment to developing high-tech solutions that benefit both people and planet.



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Organization



Kingdom of the Netherlands



Netherlands Embassy, Washington DC – Agricultural Office

The Agricultural Office at the Netherlands Embassy represents the Ministry of Agriculture, Fisheries, Food Security and Nature (LVVN) in the United States and Canada. They are supported in their activities by the Dutch Consulate Generals throughout the United States and Canada, including the Netherlands Innovation Network at the Consulate General in San Francisco.

The Agricultural Office in Washington, D.C., together with the Consulate Generals, facilitates Dutch companies in the agricultural sector in their international ambitions in the United States and Canada.

The Dutch agricultural and commercial network in the US, assists Dutch companies with their export by providing information about rules and regulations, sectors, trade and innovation missions and providing for instance assistance in case of border issues. Conform the Dutch LVVN vision, the network in the US focuses on promoting the Netherlands as a producer of innovative, sustainable and high quality food, agricultural and horticultural products as well as a manufacturer of advanced equipment and technologies.

The triple helix model, in which companies, universities and governments cooperate, is one of our guiding principles. Together with the Netherlands network in the US we collaborate with partners in California, Washington State and Kentucky on projects in the field of sustainable agriculture and innovation, including sustainable dairy.

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Ministry of Agriculture, Fisheries,
Food Security and Nature

Ministry of Agriculture, Fisheries, Food Security and Nature

The Ministry of Agriculture, Fisheries, Food Security and Nature is responsible for agricultural policy, food policy, food safety, fisheries, forestry, natural conservation and animal welfare.

The Ministry is working with all stakeholders to consolidate the agriculture sector's leading international position, strengthen the link between nature and agriculture, and improve farmers' economic situation.

Innovation is one of the priority areas. It forms the basis of successes of the Dutch agriculture and food sector and is crucial in developing solutions for the challenges the sector faces. The innovation missions are one of the instruments the Ministry uses to stimulate and promote innovation in an international context.



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Netherlands Enterprise Agency

**Netherlands Enterprise Agency
International Innovation Department**
(Rijksdienst voor Ondernemend Nederland, RVO)

Netherlands Enterprise Agency is the executive agency of the Dutch Ministry of Economic Affairs. The Agency promotes sustainable development and innovation, both within the Netherlands and abroad. The aim is to improve opportunities for Dutch entrepreneurs and research institutes and strengthen their position. One of the facilities we offer for that is international technology and innovation missions around the world.

Through Netherlands Enterprise Agency national and foreign organizations gain access to a broad Dutch network of knowledge institutes, research centers, trade associations, companies and government officials. The agency participates in numerous international platforms and counselling groups. It helps with finding grants, business partners, know-how and compliance with laws and regulations.

Furthermore, you can contact us for information, advice, financing issues, networking and regulatory matters. Whether you are entrepreneur, knowledge institute or government body.



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