

Orchard of the future



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Marcel van Haren

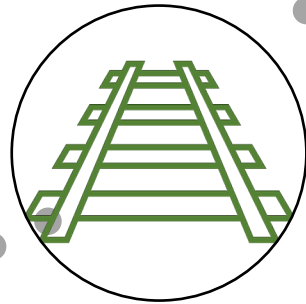
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History of Orchard Automation in WA



2019

first fully automated apple picking in NZ and WA

2005

platforms tested in orchards

2004

1st technology roadmap developed

1969

WTFRC was founded to drive automation

Provide affordable tools and methods to growers



Irrigated perennial crops

- Across size and scale (family and corporate)
- Across entire range of production system

Outcome:

Maintain or build profitable and sustainable businesses.

• Our mission

Key figures

2.200

LIDBEDRIJVEN

21

MILIARD EURO
TOEGEVORDE
WAARDE

30

BRANCHEVERENIGINGEN
ZIJN AANGESLOTEN
BIJ FME

220.000

WERKNEMERS

51

MILIARD EURO
EXPORT

108

MILIARD EURO
OMZET

Technology is making the world a better place. Let's show how. Technology provides answers to some of society's most pressing questions and challenges. Our mission is to help shape those answers by mobilizing and connecting technology companies with each other and society as a whole. We are committed to a future-proof world: prosperous, healthy and inclusive.

How We Got Here 2015-2020 - The pre-COVID19 Part

Karen Ross visits Netherlands – first Letter of intent



Martijn van Dam visits California



NL Innovation Mission



NL Fact Finding Trip



CA Fact Finding Mission

2015

Nov 2016

March 2018

Jul - Aug 2018

December 2018

Identification of LOI themes

- Agtech
- Water
- Climate
- Foodtech

Visit followed by several webinars on Saline Agriculture Dairy Farming Soil Management Greenhouse Horticulture Manure Management

Identifying Smart Food production cross-over: robotics, ICT + agri.

Deeper exploration of California AgFoodTech ecosystem

Market study to pinpoint concrete cooperation



WTFRC & WSDA visit to NL



World Ag Show Tulare Visit CDFA



IIFH in Davis Indoor Ag Con Las Vegas



GES2019 The Hague



Fruit automation factfinding in CA & WA Greenhouse round table in NL



First collaborative project WUR and WTFRC LOI @ CES in Fresno Factfinding



CA roadmapping visit to NL

January 2019

March 2019

Mai 2019

Juli 2019

September 2019

November 2019

January 2020



European Study Tour: Technology

January 29-February 8,
2019

Trip participants

WTFRC Board members/staff

Ines Hanrahan

Jeff Cleveringa

Sam Godwin

Teah Smith

Dena Ybarra

Tom Butler

Aylin Moreno (in place of Milne)

Bob Gix – Pear Research Sub-Committee Chair

Jim McFerson - WSU

Karen Lewis - WSU

Dale Goldy* - Advisory Board, WSDA

Hans van Someren* - Former CEO, Stemilt

Joe Davidson* – Field Robotics Engineer, OSU

Patrick Capper* – Deputy Director, WSDA

Rianne Perry* – International Marketing
Manager, WSDA

Zachary Garza* – Trade Specialist, WSDA

*Netherlands only

Goals

- **Establish relationships** with technology developers and providers in Netherlands and Germany
- **Identify technologies** to better manage risks associated with labor, weather and yield security
- Opportunities to **partner** in effort to validate technologies in Washington
- **Develop solutions** to ensure tree fruit industry profitability

Netherlands Impressions

- 1. Farmers = data miners
(data will become the new oil
of this industry)**
- 2. Creating a unifying vision is
important**
- 3. Involve students more in
problem solving**



What
resonated
with us?



2050 = food will be scarce



12 year plan: then break it down



Energy efficiency



What do we want first? Smart sprayer or autonomous tractor?

How we got here 2020-2021 – The post-COVID19 Part



**Weekly progress of developing
a long term relationship
and innovation program**

Why Washington state?

Washington state is the leading US producer of apples, pear, and sweet cherries

WA Tree Fruit Research Commission (WTFRC) has a long record of promoting innovative, industry-relevant academic research

50-year public/private partnership between tree fruit industry and Washington State University

Proven commitment to technology innovation by Washington producers and allied industries

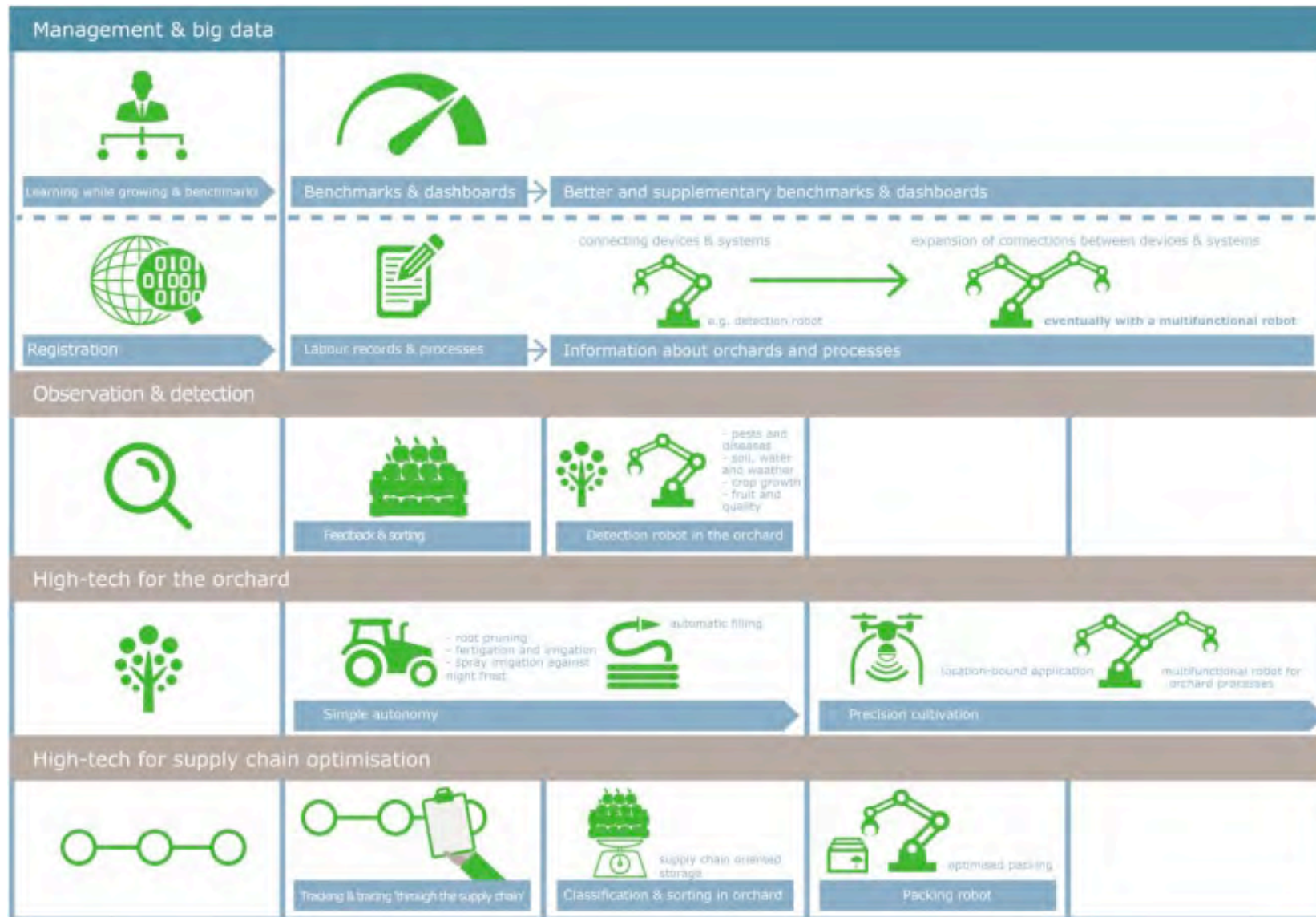
Decades of Washington state public investment in agricultural technology innovation

Washington State University is consistently among top three US institutions in federal agricultural research funding

Washington State and The Netherlands compared

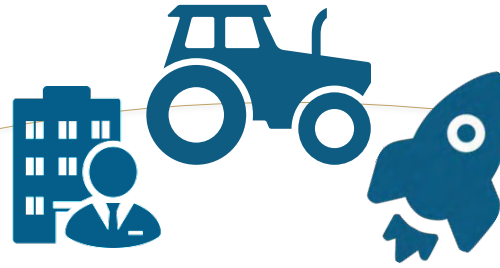
	Washtington State			The Netherlands		
	Hectares	Turnover	\$/hectare	Hectares	Turnover	\$/hectare
	=Acres/2.5	M\$	k\$	=Acres/2.5	M\$	k\$
Apples	72000	2185	30	6600	176	27
Pears	8000	246	31	10000	311	31

The Next Fruit 4.0 Roadmap



Triple-Helix is a Core Value

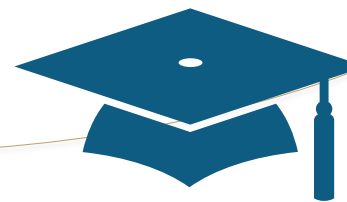
Industry + Farmers + Entrepreneurs



CA-NL AgriFood
Innovation Consortium



Government



Knowledge
institutions

Partners On the Journey to Collaboration



+ a fast growing community of +700 people