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Tomatoes! The Red Gold from Suriname







1. Executive Summary Solar Tomato Greenhouses Project



Medium Tech Solar Tomato Greenhouses led by 2500 women educated in Agriculture are changing the Future of Agriculture and the Economy of Suriname.

1. Strong sponsors. Suriname government and local government providing agriculture land for free to set up medium tech solar tomato greenhouses.

2. Increase in net profit. Suriname is a cash crop importing country. By growing tomatoes in greenhouses and selling them in Suriname, this import money can be spent on increasing the standard of living for all citizens.

3. Combating illiteracy. Educating 2500 women of all ages in AgriTech who have had little or no education in the agricultural and in entrepreneurship.

4. Infrastructure in inlands. Providing sanitary, energy (solar panels), WiFi, roads, schools, medical and daycare centers to the community.

5. Independency for women. Women will generate their own income by starting up agritech tomato farms, local shops and markets.

6. Scalable cash crops investment. In addition to tomatoes, there are 20 other cash crops that can be grown in the medium tech solar greenhouses.

7. Trade and export. Starting up export to CariCom by the solar tomato greenhouses, as local AgriTech hubs.

8. HeadStart. In Q3-2024: The presidential task Agriculture will be setting up an EXPO Farm (Low-Tech Greenhouse Tomato Nursery) in Phedra, a former Palm Oil Plantation with a small village, next to the Suriname River.



4 Year AgriTech Tomato Project

WEATERNING THE APPART

MG

5 Inland Districts

100 ha: 5 Sites x 20 ha

Educating 2500 Women

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Growing 10,000 Pounds of Organic Tomatoes in a High Tunnel Gree

11:36 / 31:31 • Preparing High Tunnel for Tomatoes

5 Sites: Solar Fields, Medium Tech Greenhouses, Tomato Plant Nurseries, Day Care and Education Centers

2500 Surinamese Indigenous Woman Educated in <u>AgriTech</u> for <u>Independency</u>

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2. Project Location: Inland Districts in Suriname





The **5 districts** in Suriname for this project, are inhabited by many **threatened irreplicable species**, living side by side with the indigenous people.

- Suriname is located North of Brazil.
- Suriname is a cash crop importing country.
- Many districts are covered with Amazone rainforest.
- There are hardly roads.
- Boats are the main ways of transportation.
- A lot of land is unused and various farms are dilapidated.
- No solar tomato greenhouses!
- Education and healthcare were troubled for years, but are now improving.
- People are open for change! (AgriTech & import replacing production)



Suriname has a high biodiversity and many protected areas. Having sustainable agriculture projects for the people is of high importance.

3.1 Project: Solar Medium Tech Tomato Greenhouses + Women AgriTech Education

Dragon1 AgriTech + The Indigenous Women in Suriname

- The project runs from 2025 tot 2028.
- Feasibility study for growing tomatoes in med tech-greenhouses has been done.
- Surinamese government taskforce will set up an AgriTech Greenhouse EXPO Farm for investors.
- Acquire 100 ha unused land/farms (5 x 20ha in 5 districts in Suriname).
- Already landowners have offered to provide their land. Government is open to discuss.
- Build 5 sites (20ha) with Solar PV panels fields (0.2ha), medium tech greenhouses (5ha) with water drip, plant nurseries (5ha) and grow fields/low-tech (10ha) (tomato plant containers).
- Educate 2500 women, class-based & digital, in solar, greenhouses, AgriTech, 20 cash crops, horticulture, growing, processing and selling tomatoes, disease monitoring and improving literacy.
- Providing daycare, medcare, WIFI/internet and getting fresh water from new wells.
- After the project, growing tomatoes and 20 cash crops continues for at least 10 years.
- Annual revenue > US\$ 20m, annual profit > US\$ 2m.
- Gradually management and ownership are handed over to local women.

ASK

- US\$ 30.7m TOTAL INVESTMENT, DISTRIBUTED IN 4 PHASES, 4 YEARS.
- We use US\$ 1.5m for 5 x 0.2ha solar PV Panel fields.
- We use US\$ 17.5m USD to build 5 medium tech greenhouses (5 x 5 ha).
- Simple ROI, 4-year investment = 10%
- Break Even Point = 2nd year after the last investment phase (2030)



3.2 Why Medium Tech Greenhouses & Solar PV?



Climate controlled greenhouses





Ventilation in Greenhouses has 4 key benefits: Pollination, Fresh Air, Pests and Temperature!

> Source: Wageningen University Research https://www.wur.nl

3.3 Education Women in Everything AgriTech

Class-Based and Digital/Online: www.schooltv.sr (developed by Dragon1 Education)





Towns in Suriname for the Project, District, District Population

Pokigron/Atjoni, Boven-Suriname, Pop: >18000 Moengo/Peto Ondro, Marowijne, Pop: >18000 Onverwacht, Para, Pop: >24000 Brokopondo, Brokopondo, Pop: >16000 Totness, Coronie, Pop: >3000



4.1 Alignment With SDGs for Suriname



77.4%

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4.2 Direct Social Benefits



Equality

The participants in this project will be women.

Literacy

This project will significantly increase the number of literate and educated women in agriculture.



Agriculture Education

This project is about educating low or no-income women (young and middle-aged) in the Dutch language and modern ways of agriculture, horticulture, and entrepreneurship. Middle-aged women normally hardly participate in these kinds of training courses. With this project we are all-inclusive.



Utilities: Water & Energy

If present, this project will modernize the well near every plant nursery and medium tech greenhouses, giving people access to clean and fresh water. Nowadays, many people still have drinking water from water tanks filled weekly or monthly. The plant nursery that we have set up must have tools and materials for this.



Entrepreneurship

By participating in this project, the women can work on the plant nurseries and in the medium tech greenhouses or start their own agriculture, horticulture, or trading business. This will bring them income.





4.3 Direct Environmental Benefits



CO2 Avoided because of solar power generation

Preservation of valuable hectares of biodiversity

Restoration and Preservation of Mangrove in Coronie

Preservation of Sea Turtles in Marowijne

Profits to be used for scalable sustainable agriculture:

- Expanding the Solar PV Fields
- Increasing the tech of the Greenhouses
- Building new Greenhouses for 20 other Cash Crops
- Focus is to scale up sustainable agriculture and local economy and improve housing, farming and care.

20 Cash Crops: Lettuce, Onion, Mushrooms, Peppers, Ginger, Saffron, Strawberries, Banana, Boulanger, Dwarf Coconut, Guava, Coffee, Cucumber, Long Beans, Mango, Markoesa, Sopropo, Pumpkin, Spinach and Watermelon

(2003: Sopropo-export from Suriname to The Netherlands. \$ 15 million. Today: \$ 0 million) (2011: The total export value of fruit and vegetables (excluding banana) was \$ 2 million.)

https://www.discover-suriname.com/nl/agriculture

5. Sales: Technology, Yield and Market



YIELD

1-hectare tomatoes open field = 75 ton
1-hectare tomatoes low-tech greenhouse = 120 ton
1-hectare tomatoes med-tech greenhouse = 250 ton

5-hectare tomatoes open field = 375 ton 10-hectare tomatoes low-tech greenhouse = 1,200 ton 5-hectare tomatoes med-tech greenhouse = 1,250 ton

25-hectare tomatoes open field = 1,875 ton 50-hectare tomatoes low-tech greenhouse = 6,000 ton 25-hectare tomatoes med-tech greenhouse = 6,250 ton

125-hectare tomatoes open field = 9,375 ton 250-hectare tomatoes low-tech greenhouse = 30,000 ton 125-hectare tomatoes med-tech greenhouse = 31,250 ton 20 ha

100 ha

500 ha

MARKET

Suriname is an importing country for tomatoes (cons:2100ton, prod:1100ton).

Suriname is part of CariCom, an economic union of 15 member states (Barbados, Jamaica, Trinidad, Haiti, ...) + 5 Associate states and 8 Observer states (Aruba, Venezuela, Colombia, Mexico, ...).

CariCom imports billions of US dollars worth of fruits and vegetables from the US.

In CariCom, it has been agreed that regional produced fruits and vegetables should be bought first.

For years, Suriname is aiming to fulfil that role.

In Brazil, large cities like Manaus (2m), Belem (1.3m), Sao Luis (1m) and Fortaleza (2.5m), Natal (.7m) and Recife (4m) are very interested in fruits and vegetables from Suriname.

TECHNOLOGY



low-tech (no electric ventilation, < 3 m high, low-grade plastic)



med-tech (electric ventilation, 2-4 m high, polyethylene plastic)



6.1 Financial Projections – 2025 / 2028













Phase 0: HeadStart Project
Invest: 100.000 USD
2024

Phase I: Start building the sites & education

Invest: 11 min USD

2025

Phase II: Start to grow, keep expanding & educating

Invest: 9 min USD

Phase III: Expanding the sites

Invest: 7 min USD

2027

Phase VI: Keep, expanding & educating

Invest: 3,7 min USD 2028

Start up an EXPO Low-Tech Tomato Nursery farm in Phedra.

Acquiring unused land / farms (100ha).

Setting up tomato plant nurseries (5x5ha), plant container grow fields / low tech greenhouses (5x10ha), building infrastructure, education centers. Starting education the first group of women.

Building the initial state of the tomato medium tech greenhouses (5x1ha) and agri shops/garden centers.

Building 5 small Solar PV Panel fields (5x0.2ha) 500 - 1000 panels per Ha (100mx100m) / 2 KWh per panel per day / > 1000 MWh per year (500 Households in Suriname) / > 1000 KWh per Ha per day / Greenhouse: 10 KWh per m2 per year

Maintaining the Greenhouses and Solar PV Panel fields Starting education the last group of women. Market research export possibilities to CariCom.

6.2 HeadStart Project – EXPO AgriTech Farm A Low-Tech Solar Greenhouse Tomato Farm (2024)



To ensure the funding of the bigger project, the presidential Task Agriculture wants to start up an EXPO Farm

May 2024 - The president of Suriname and the presidential Task Force Agriculture support the national TOPSplan (AgriTech/Greenhouse) from Dragon1 to startup Horticulture as an industry in Suriname. They approved the TOPS plan.

May 2024

Dragon1 AgriTech is granted 20-year access to 2 x 100 ha at Phedra, Suriname. A local site manager is appointed. The presidential task Force Agriculture supports this project.

August 2024

The first products are sold: seeds, tomato plants, produced juices from bought other fruits (most fruit in Suriname is not harvested). We keep educating, building greenhouses, growing tomatoes and producing seeds.

June 2024

TOPS

voor Suriname 2024-2034

Mark Paauwe with a team of 10 people start building 10 low-tech greenhouses. The team gets agriTech education. We build a site house for the team, which is common in Suriname. Also, we will grow in open field plant containers.

September 2024

Mark Paauwe together with the team (10) to start setting up expo field at the production location, to setup shop in Paramaribo (Capital), to send product shipment to Barbados and Jamaica. May 2024 - The presidential Task Force Agriculture is to provide land via various parts and organizations and to support Dragon1/Mark Paauwe, to have Dragon1 make a first startup of low-tech educative solar tomato greenhouse: the HeadStart project!

July 2024

A storage is built up and filled with seeds, soil, plant containers and tools. The team produces seeds, plants seed in container, produces tomato ketchup with bought tomatoes.

October 2024

Dragon1 AgriTech to organize a factfinding trade mission for local and foreign investors, partners and potential clients at the production/expo site.





After 2028, we can expand the solar PV fields and greenhouses in hectares and upgrade the greenhouse technology to hightech

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7.1 Project Planning

Communication

Feasibility study is carried out

2024

Start building the sites & education

2025

Expanding the sites 2026

Start to grow, keep expanding & educating

2027

Keep growing, expanding & educating 2028

ACTIVITIES

- ✓ Communication with the indigenous villages en people
- ✓ Feasibility study carried out (2007, 2010, 2018)
- □ Acquire unused land
- Build greenhouses and solar fields
- □ Set up tomato plant nurseries (5x1ha) and grow fields (5x5ha)
- Build education centers and agri shops/garden centers
- □ Start with educating the women
- □ Improve security
- Educating women
- Growing tomatoes, disease monitoring
- Increase size of greenhouses, solar fields and plant nurseries
- Introduce new cash crops in the plant nurseries and on the grow fields
- □ Improve logistics and utilities
- □ Improve day care and med care
- □ Improve the agri shops and garden centers
- □ Support preservation of sea turtles
- □ Support restoration of mangrove and beekeeping





Suriname will export tomatoes and peppers to the US (2018)

) January 24, 2018 at 10:45 am 2 minutes reading time



c Pansa: Suriname is the first Caribbean country to allaborate with Agro Business, Photo, Suriname Herait

"Suriname is the first country in the Caribbean that has an agreement with Agro Business and this is a very important collaboration for our country," says district commissioner (IDC) Kenya Pansa of



7.2 Use of Funds -Investment Plan

Investing in infrastructure and education is investing in the new generation.

5 Sites of 20ha - 5 Med Tech Greenhou Solar PV, 5ha Plant 10ha Grow field / I	iha Tomato use, 0.2ha Nursery, Low tech	Total Investment US\$ 30.7 m	Revenue 2029 > US\$ 10 m	Profit 2029 > US\$ 1 m
Capital Deployment 2025 - 2028		9	7	[USD mm]
	2025	2026	2027	3.7

Capital Structure



We seek investor funding



8. Tomatoes Cashflow, Revenue & Profit





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NOTE: Figures expressed in US\$ mm.

9. Entrepreneur and his team

Mark Paauwe (53) is director of Dragon1, in Wageningen, the Netherlands. Dragon1 is an enterprise architecture software platform for enterprise innovation and a platform for digital (primary) school education. But also has an **AgriTech unit**.

For 25 years, Mark has been busy with software development, digital transformation, process innovation of enterprises, and **agritech projects**, like vertical farming and insect farming.

For Suriname, Mark Paauwe has been leading the projects to develop **DISCOVER SURINAME** (trade and development website for Suriname) and **SchoolTV.sr** (the digital primary school for Suriname).

For the past 3 years, Mark Paauwe has been leading an initiative of educating over 100 farmers in Suriname, via weekly WhatsApp support. Mark has about 500+ personal and business contacts in Suriname and has already traveled to Suriname for 15 years.

For the Medium Tech Tomato Greenhouses project, Mark built up a **network with 100+ horticulture companies and growers** in the US and EU and has engaged with 10+ remote/inland villages in Suriname for potential land.

There are stakeholders at all levels of government and interest groups who will participate in the tomato project.

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10. Investment Structure - Stakeholders





1. States

11. Risk ESG and Risk Management



How is risk mitigated?

- Mandate of Suriname Government -Agricultural policy plan for 2025 - 2035
- Taskforce of three Surinamese ministries: LLV, IBIS, and Education in Q3 2024
- Program management under Dutch leadership.
- Interest group of local farmers.







Zero Hunger – Providing thousands of indigenous people access to own produced, affordable and healthy food, like tomatoes.



Quality Education & Gender Equality – Educating 2500 Indigenous women in growing greenhouse tomatoes for independency.



Clean Water and Sanitation – Providing indigenous people basic infrastructure like fresh water, sanitation, roads medcare and childcare facilities on the sites.



Affordable and Clean Energy – The medium tech greenhouses with solar panels will provide free and sustainable energy to thousands of indigenous & tribal people.



Decent Work and Economic Growth – Indigenous technical training for Solar O&M + land and power generation assets/licenses donated to the people. AgriTech training in growing tomatoes in solar greenhouses.



Life on Land – Greenhouse's agriculture helps to preserve valuable biodiversity. The sites will help avoid CO2 emissions through clean power generation [+ Land Conservation].



Changing the Future of Agriculture and the Economy of Suriname.

Infrastructure Investments and Educating Women Pays off!

Medium Tech Tomato Greenhouses and Solar PV Fields.



DISCOVER SURINAME

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www.Dragon1.Com | www.Discover-Suriname.com

ASK: US\$**30.7**m PAY OUT: US\$**33.77**m