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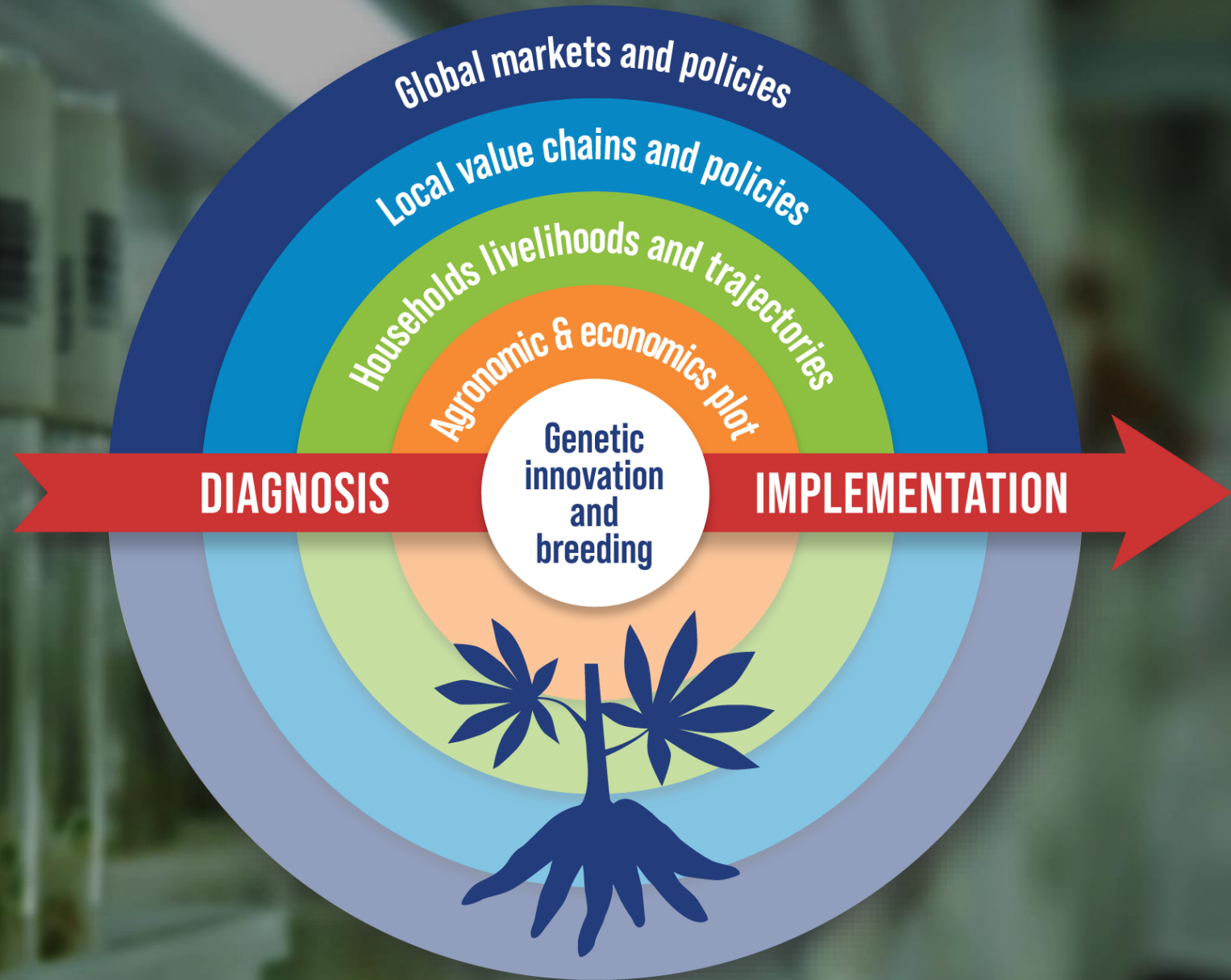
## Enhancing the livelihoods of cassava-growing smallholders and their communities

**Dr. Jonathan Newby**  
Cassava Program Leader  
[j.newby@cgiar.org](mailto:j.newby@cgiar.org)

**Cassava Program Retreat Feb 2023**

The Alliance of Biodiversity International and the International Center for Tropical Agriculture (CIAT) is part of CGIAR – a global research partnership for a food-secure future.

As a program we work with partners, across scales to understand the drivers, trajectories and incentives to adopt and scale innovations in different contexts



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# Some broader context and trends

- **Population growth**
  - Increased demand
  - Need for diet diversification to meet needs
- **Climate change**
  - Variety development
  - Changing pest and disease dynamics
  - Seed system complications
  - Cropping system constraints and opportunities
  - Irrigation
- **Economic/Agrarian transition rising labour costs**
  - Mechanization
  - Variety development; weed management
  - Cropping system constraints and opportunities
- **Rising incomes and Diet changes**
  - Animal protein – animal feed (chips/leave)
  - Alternative protein – starch
    - Variety development
    - Cropping systems
    - Seed systems
    - Post harvest
- **Consumer preference**
  - Clean label – variety
  - Organic – cropping system
  - Seed systems
  - Zero deforestation – policy, systems

# Cassava products



**Biofortified  
cassava  
for human  
consumption**

(LAC, SSA)



**Fresh &  
dried roots  
for human  
consumption**

(LAC, SSA & SEA)



**Industrial  
cassava -  
starch &  
animal feed**

(LAC, SSA & SEA)



**Cassava  
specialty  
starch**

(LAC)



**Latin America and the Caribbean (LAC)**

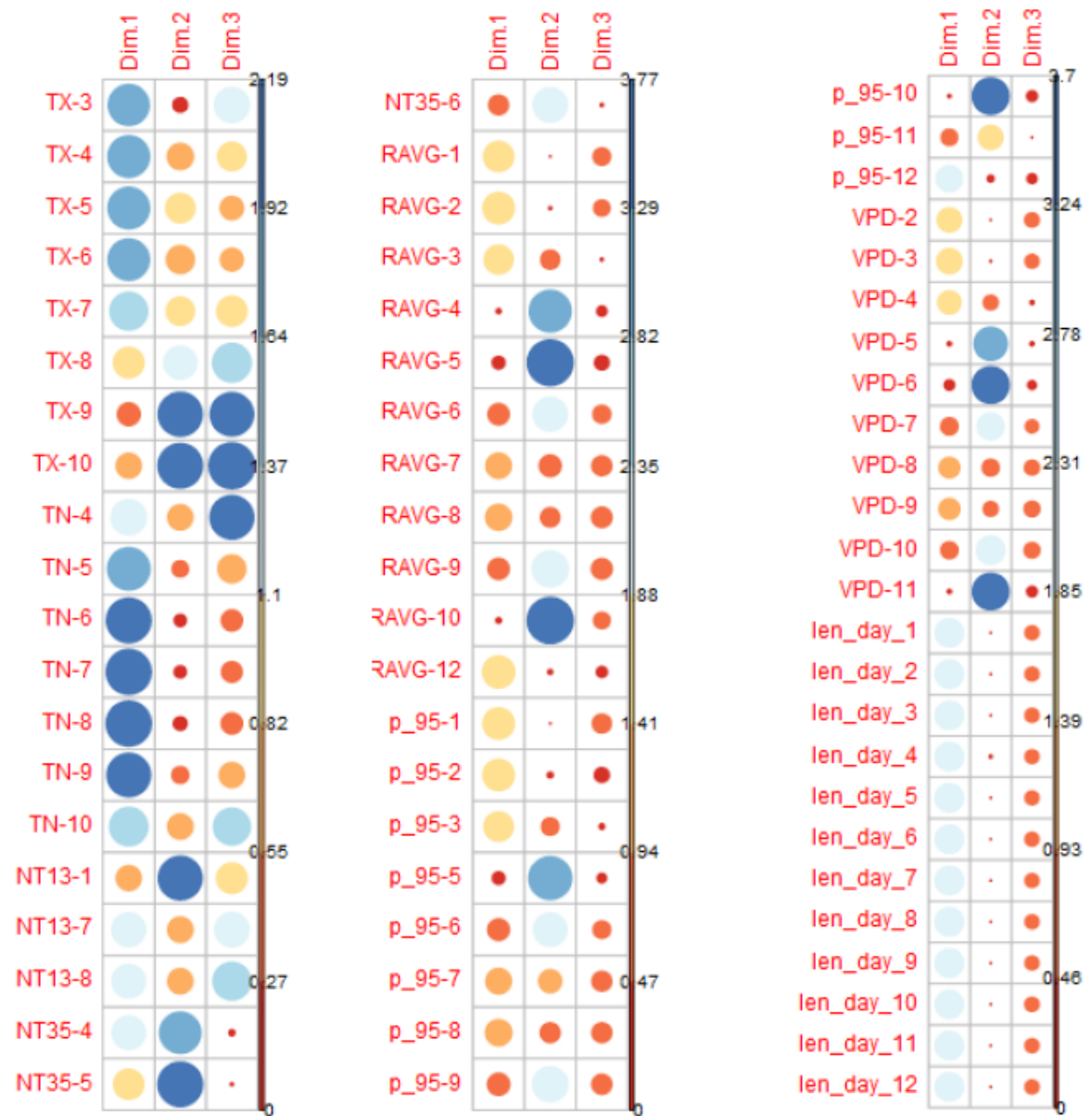
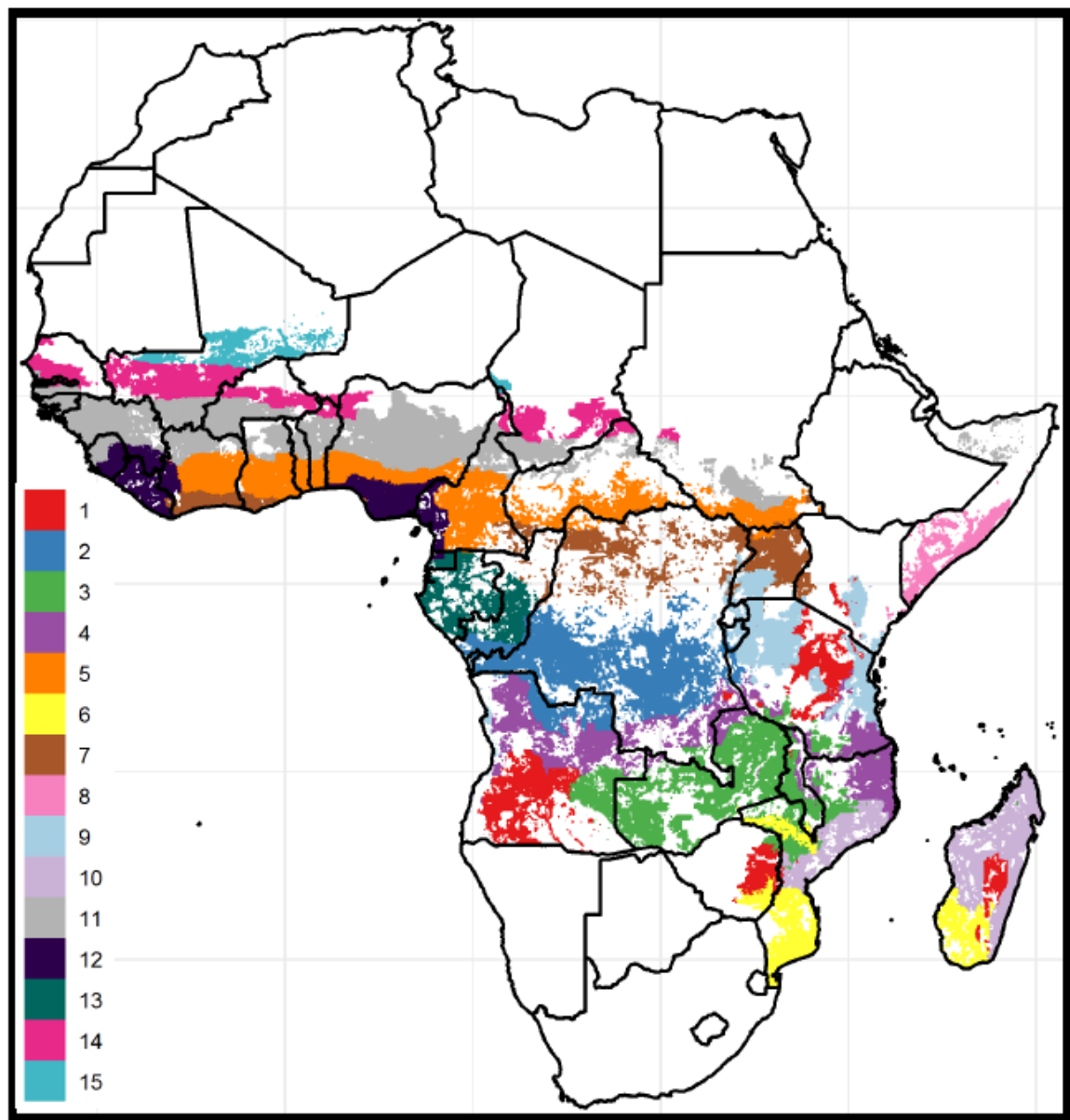
**Sub-Saharan Africa (SSA)**

**South East Asia (SEA)**

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# Agro-climatic Clusters Identified for Cassava in Africa

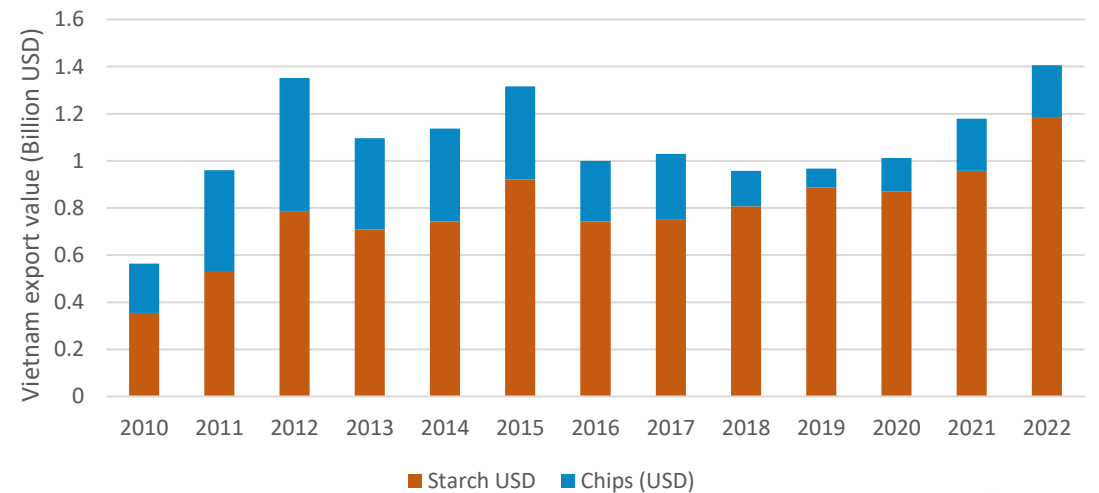
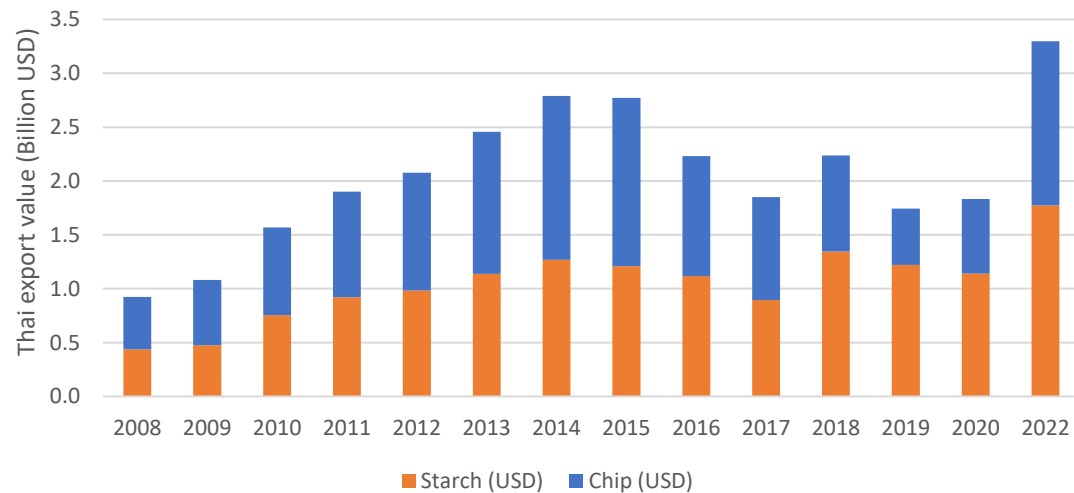
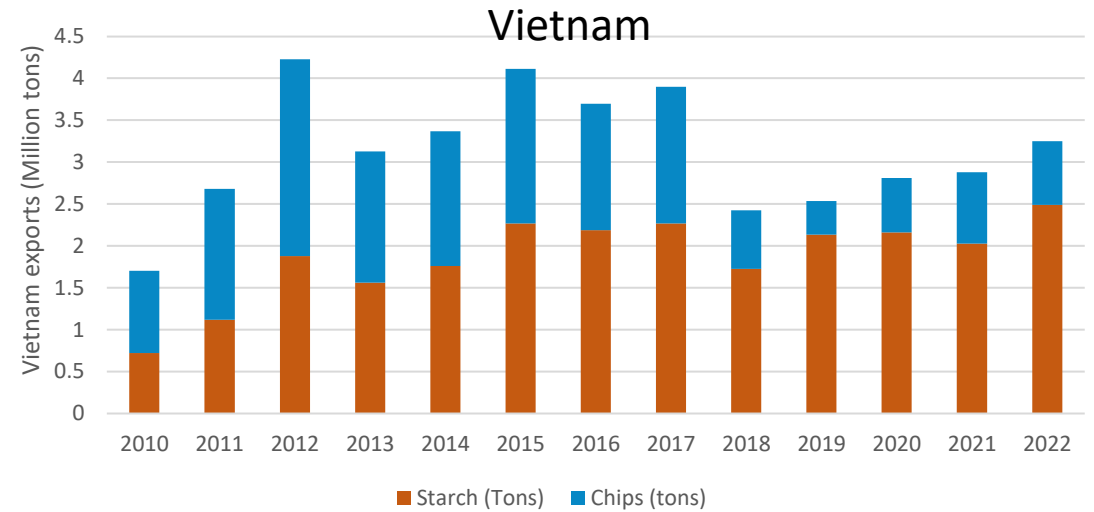
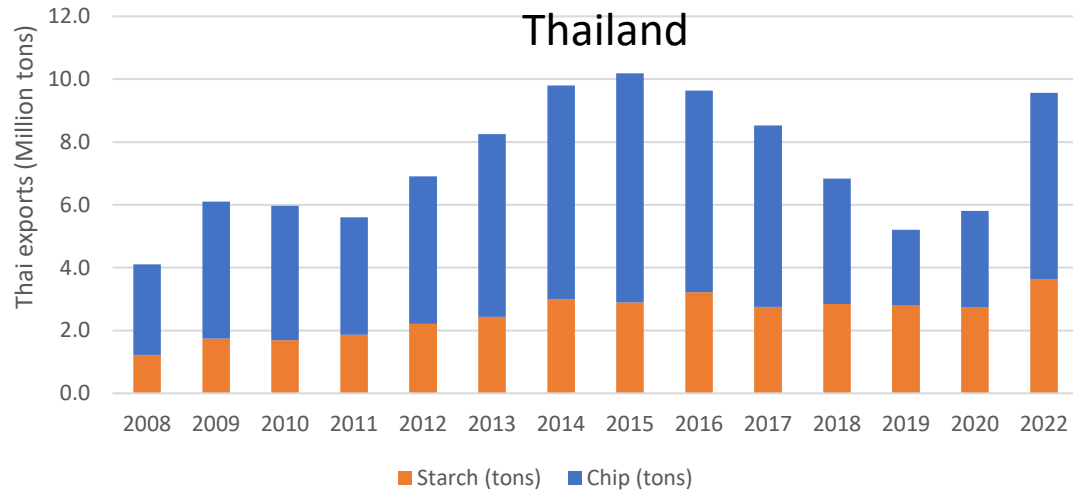


# On the demand side – the market outlook for cassava needs to be considered in the context of substitutes in different applications

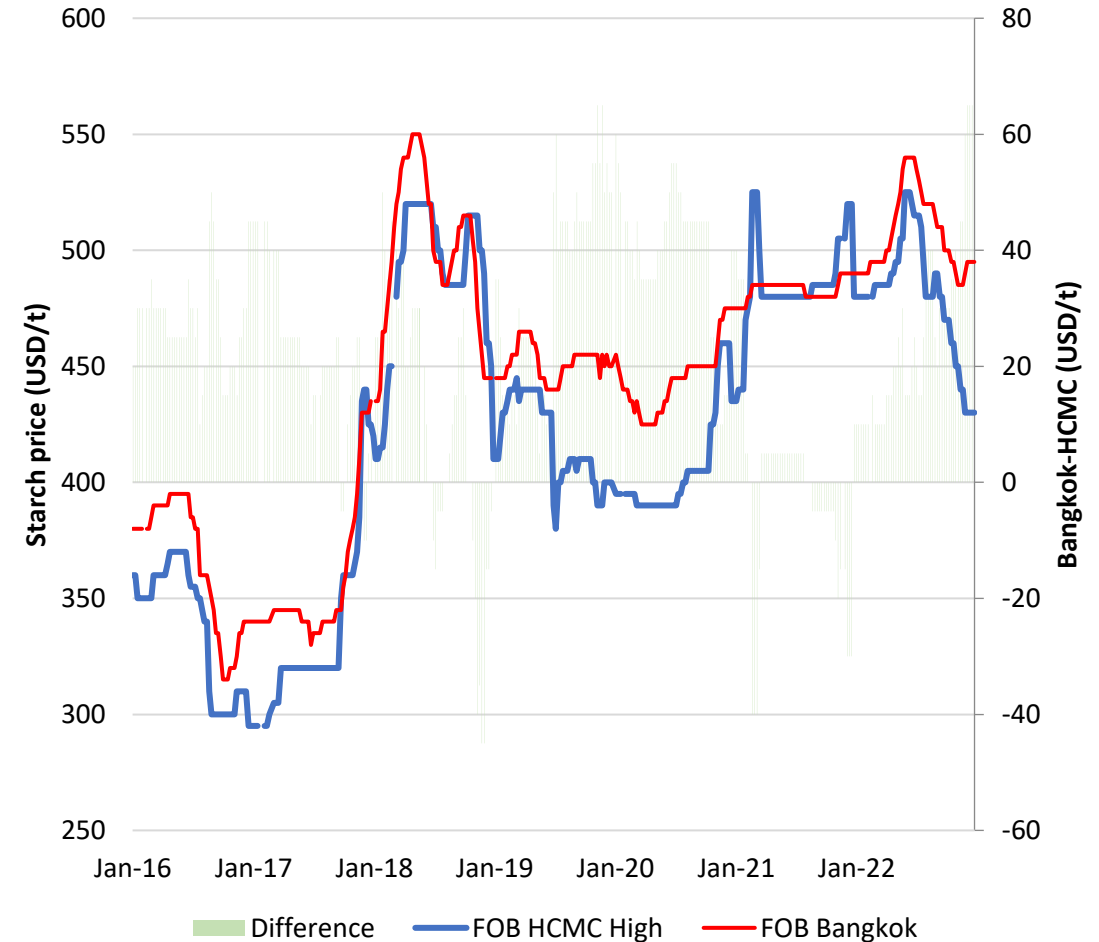
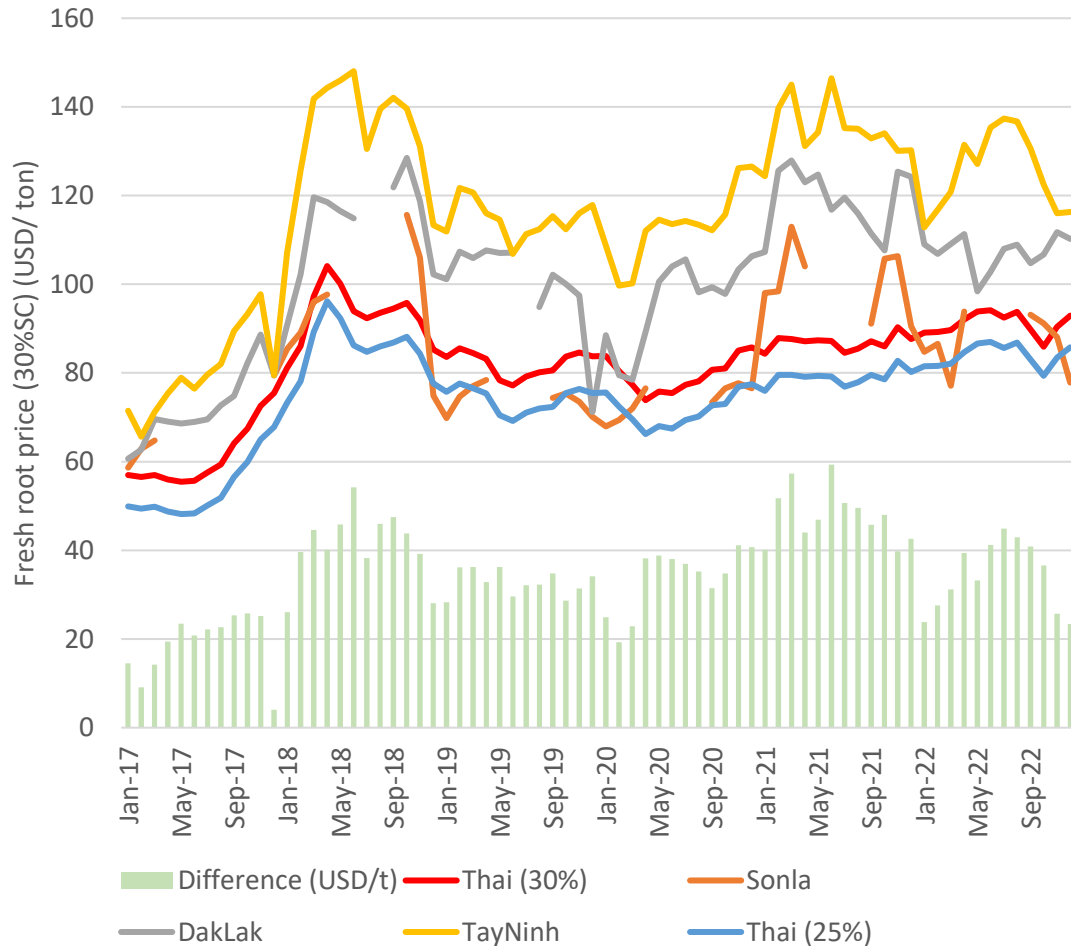
1. Direct consumption as food and on-farm utilisation in livestock system (compete against other own and purchased alternatives).
2. Global markets where cassava chips compete with other forms of carbohydrate for processing animal feed or ethanol such as **maize, sorghum, wheat, molasses – oil, gas.**
3. Markets where cassava starch competes largely on price with substitutes such as **maize** and **potato** starch, **sugarcane.** (*& value of co-products like plant based protein*)
4. Markets where the functional properties of the starch are desired. Consumer preferences, clean label segment, gluten free, non-GMO, etc



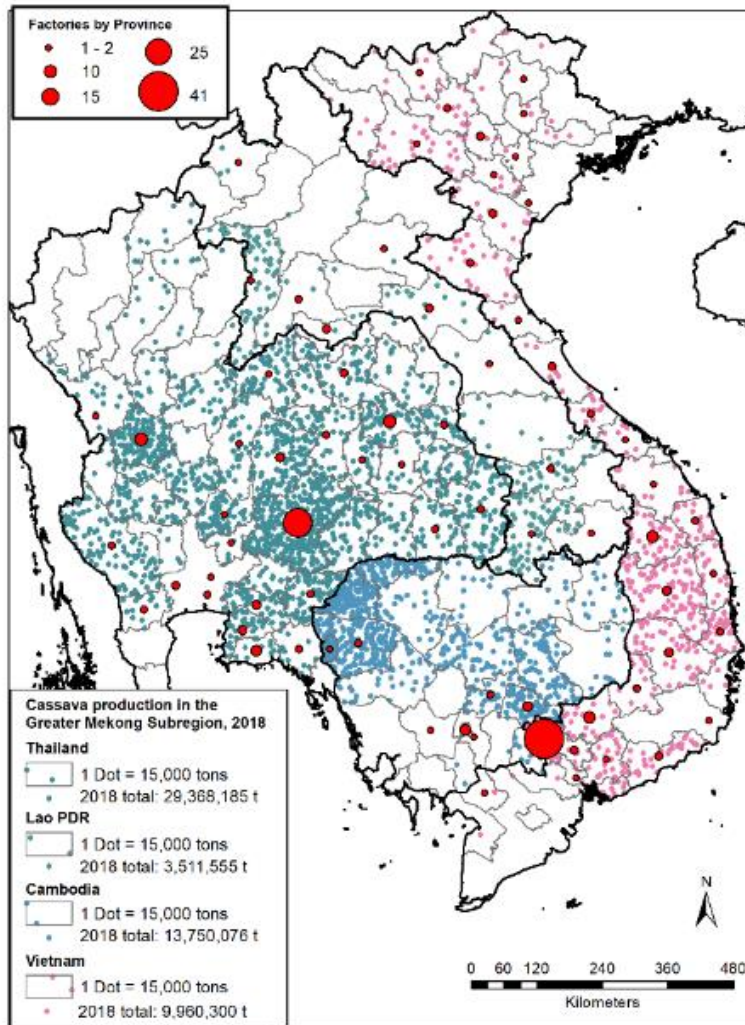
# In 2022 Thai and Vietnam export value reach all time high



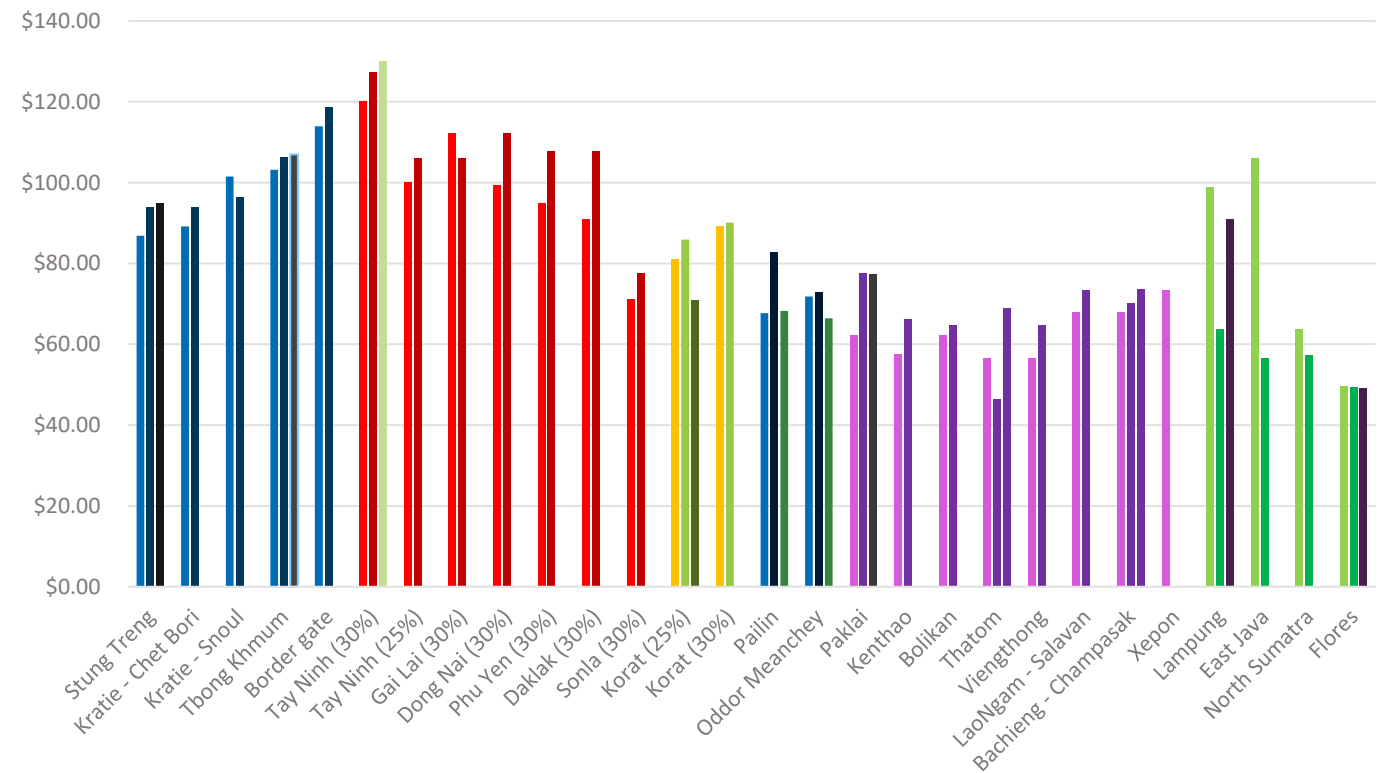
# Fierce competition for roots between starch and chip processors to secure feed stock

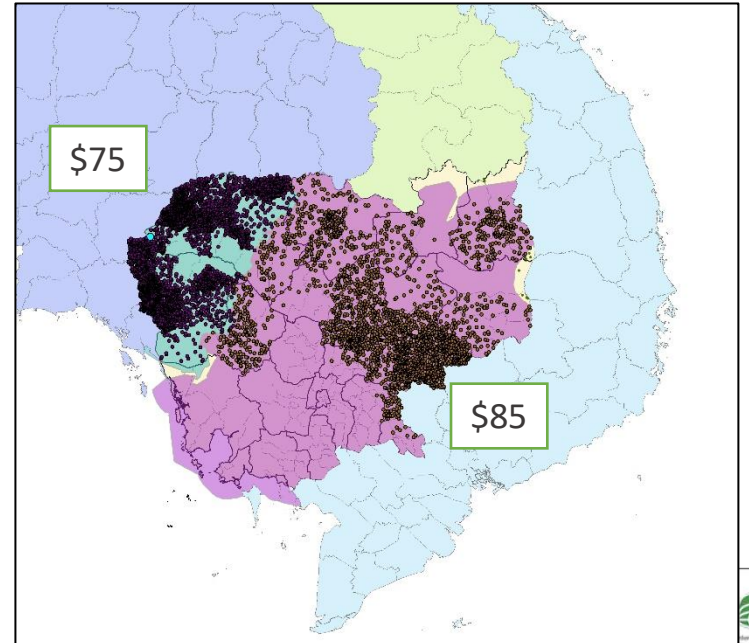
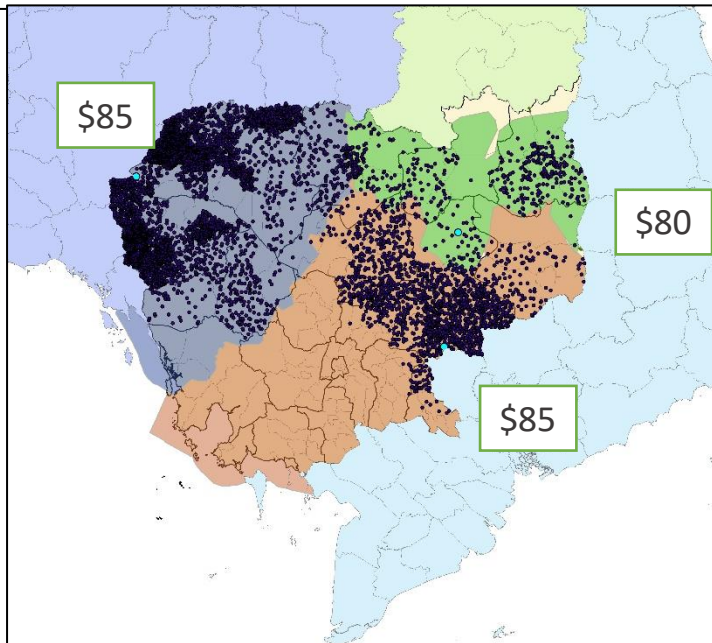
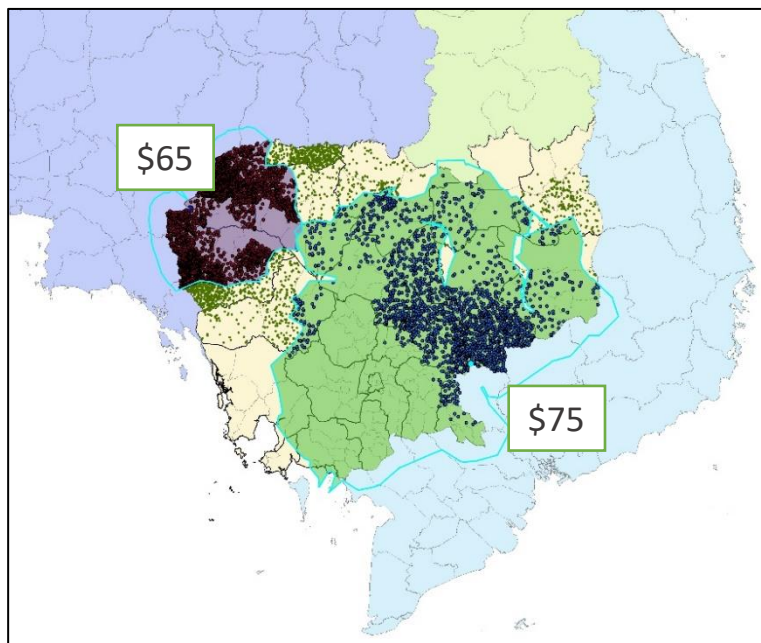
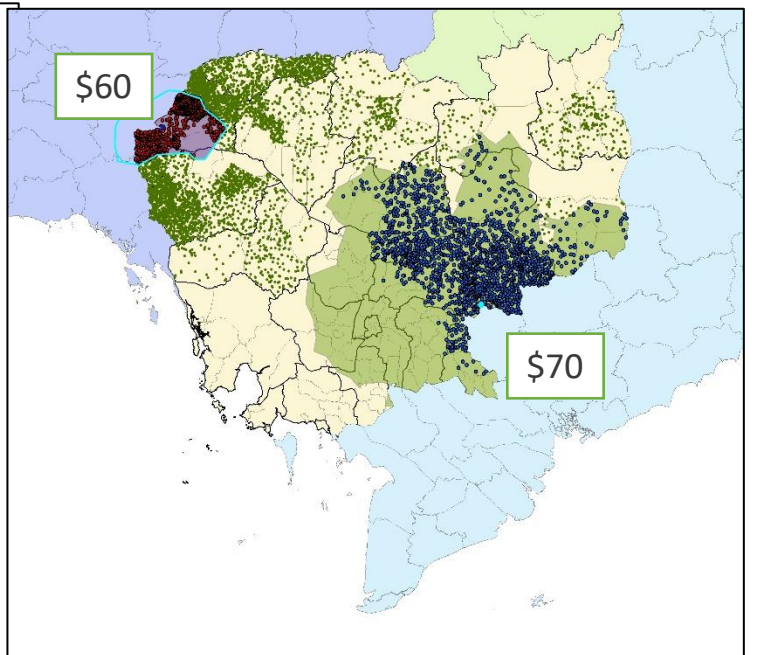
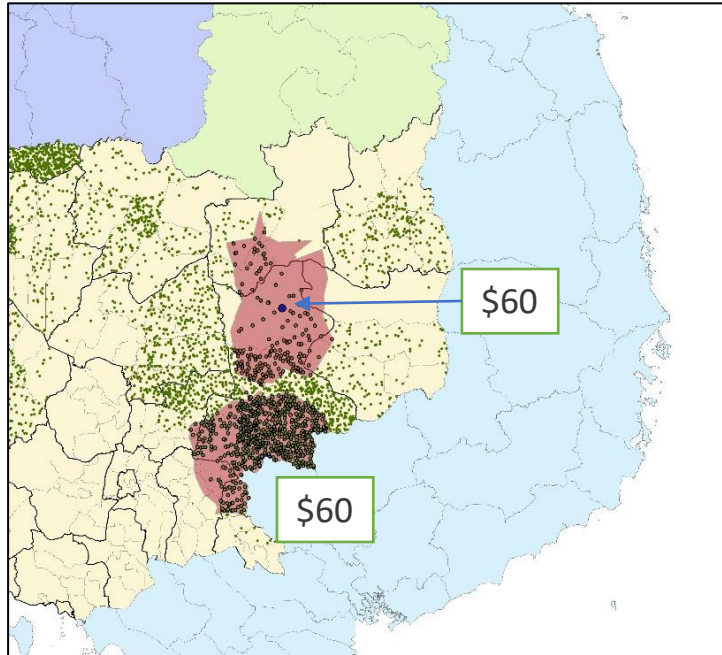
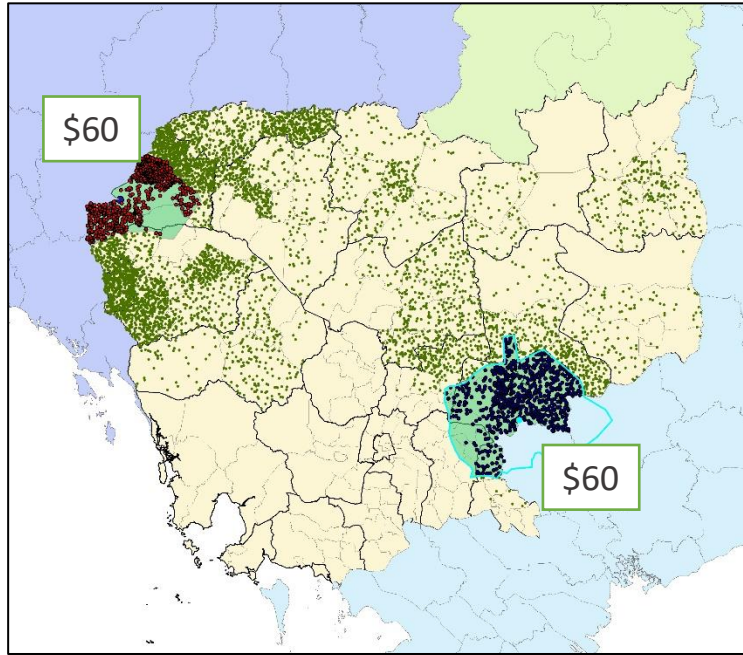


# Competition for roots and transport costs determine farm gate prices

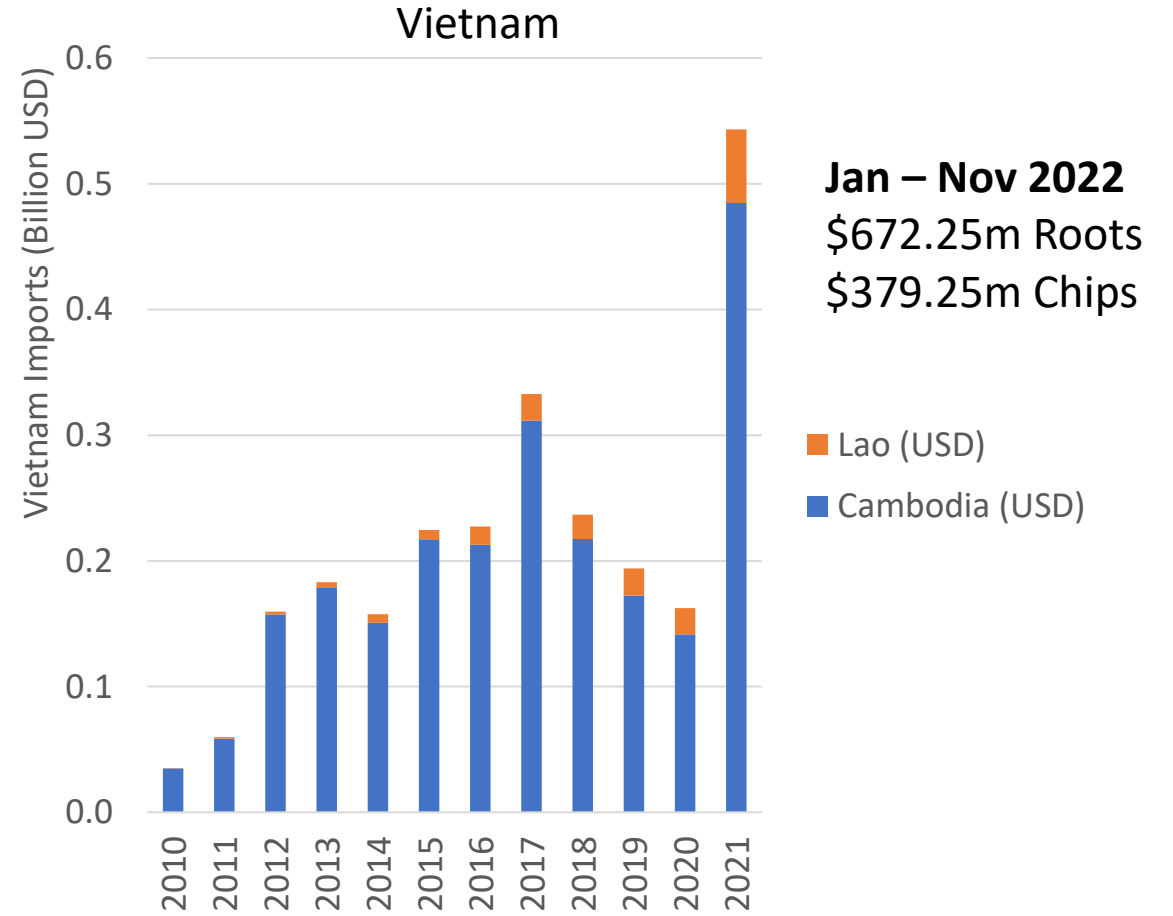
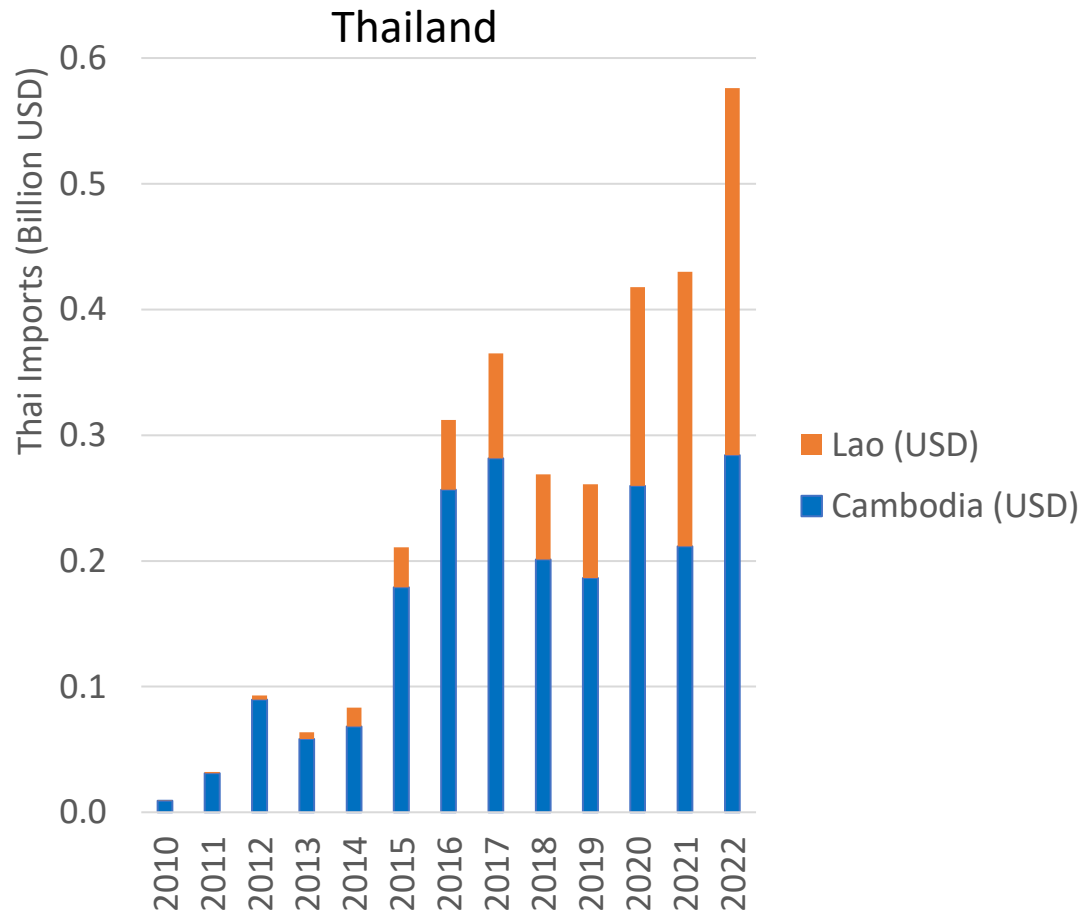


Fresh root price comparison between December 2019 and December 2020 (USD/t)






# Imports from Cambodia and Laos mask fall in farm level productivity




**CLARIA®**  
Functional Clean Label Starch



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- Polylol Sweeteners +
- Specialty Sweeteners +
- Sugar +
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**Non-GMO\* Tapioca Syrup**  
A label-friendly swap for corn syrup

Contact Us

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### Introduction to CLARIA® Functional Clean-Label Starch

Also known as **Clean-label starch, functional clean label starch, starch**

CLARIA® Functional Clean-Label Starches labels simply as starch yet perform similarly to modified starches.

Tate & Lyle's line of CLARIA® Functional Clean-Label Starches empowers manufacturers to meet increased consumer demand for cleaner labels enabling formulations with similar functionality to a modified food starch. Globally, consumers are demanding convenient, great tasting foods that have recognisable ingredients on the label. In fact, one-in-four new products today is launched with "cleaner-label" claims. All CLARIA® Functional Clean-label Starch products are certified as non-GMO.

At Tate & Lyle, our texturants range now offers a comprehensive array of Non-GMO offerings for all regions, providing our customers with choices to fit their needs. Our **non-GMO ingredients** offer the same functionality as their traditional counterparts without compromising on taste or texture, meaning you can offer your consumers everything they're looking for in the foods and beverages they love.



Ingredients > Starches > **Functional Native Starch**

## Clean up labels with functional native starch

Our portfolio of more than 25 NOVATION® clean label starches lets you formulate on-trend, clean label products rich in texture and taste, across a broad range of applications

As the pioneer in clean label ingredients, we offer the broadest range of speciality clean label starch solutions and formulation expertise available. Having identified the clean label trend in its infancy and helped turn the trend into a way of life for food manufacturers, we know all there is to know about clean label.

As consumers grow ever-more health conscious, clean labels are becoming increasingly important to them. People want to know exactly what's going into their food. That's why you need simple recipes, with ingredients they recognise and trust.


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Home > Products & Services > Food and Beverage Solutions > Starches > Tapioca Starch Ingredients

## Tapioca Starch Ingredients

Clean delicious taste and texture with a gluten-free, non-GMO starch



**Tapioca Starch**

Tapioca starches from ADM deliver great taste and texture that's also on trend—and satisfies consumer demand for clean label offerings. Non-GMO and gluten-free, our tapioca starches offer all the functionality to deliver superior texture, plus a clean, neutral flavor profile for the ultimate consumer-pleasing taste in your products, especially in applications where the flavor of a traditional starch is not desirable.

**SMS** FOOD NON-FOOD

### New Product Highlights

Explore our new product highlights with highest performance to catch up food & beverage trends and advance your products to the next level

- D-PERSE® CAP** – the shortcut to transform oil-based ingredient to powder
- Deliver clean label yogurt to health lovers with **Natura® Y808**
- Serving the favorable soup & sauce texture with **GENIGEL® M78**
- KREATION® N-BIND** - an excellent binding ability for plant-based meat

### OUR CUSTOMER BENEFIT PLATFORMS



- CLEAN & ORGANIC**
- HEALTH & NUTRITION**
- CONVENIENCE**
- FUNCTIONAL SOLUTION**
- SUSTAINABILITY**

**OFFERINGS**

- DELIVERING SIMPLE & NATURAL INGREDIENT SOLUTIONS WITH BETTER PERFORMANCE AND FRIENDLY LABEL.
- DELIVERING ON-TREND SOLUTIONS TO ADDRESS GROWING HEALTHY AND NUTRITION TRENDS.
- ENCOMPASSING QUICK SOLUTIONS FOR MORE CONVENIENCE.
- PROVIDING BETTER INGREDIENTS FOR PRODUCT PERFORMANCE AND IMPROVEMENT, ESPECIALLY IN YIELD, PROCESSABILITY AND COSTING.
- CREATING VALUES TO WASTE AND BY-PRODUCTS EMBEDDED WITH CORPORATE SOCIAL RESPONSIBILITY ON THE ENVIRONMENTAL CONSERVATION.

**PRODUCTS**

- ORGANIC TAPIOCA STARCH
- ORGANIC TAPIOCA SWEETENER
- ORGANIC RICE STARCH & FLOUR
- ORGANIC WAXY RICE STARCH & FLOUR
- WAXY TAPIOCA STARCH
- CASSAVA H. OIL
- RICE STARCH & FLOUR
- SAVET PULVER FLOUR
- KUJOU STARCH
- TARO FLOUR
- SAGO STARCH
- ARROWROOT STARCH
- GLUTEN FREE RANGE, RANDOM MIX, BATTER, BREADING & COATING
- FIBRES
- LOW GI FLOUR
- TAPIOCA PEARL
- RICE DEX-TEL DRINK
- MODIFIED STARCH FOR FOOD & BEVERAGE PRODUCTS
- PREMIX: STARCH & FLOUR
- FERTILIZERS
- ANIMAL GROWTH PROMOTER
- THE MOST PLASTIC STARCH FOR BIOPLASTIC

**THAI WAH**

**BIOVERSITY International**  
International Center for Tropical Agriculture  
Since 2002. Dedicated to sustainable change.

# African varieties in the face of CWBD in Southeast Asia



# Pre-emptive research on potential threats:

Cassava Browns streak disease (Africa); Cassava Frogskin Disease (South America); Additional strains of cassava mosaic disease (Africa, India)





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# Thanks!

**Jonathan Newby**

**Cassava Program Leader**

[j.newby@cgiar.org](mailto:j.newby@cgiar.org)