



THINK WELLNESS  
THINK **THAI HERB**  
คิดถึงสุขภาพ คิดถึงสมุนไพรไทย



Hub of Knowledge  
Herbs for Sustainable  
Health and Well-being



# From Bioeconomy to Nutrieconomy: The Future of Health and Wellness in Thailand

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# Thai Herbal Market Potential



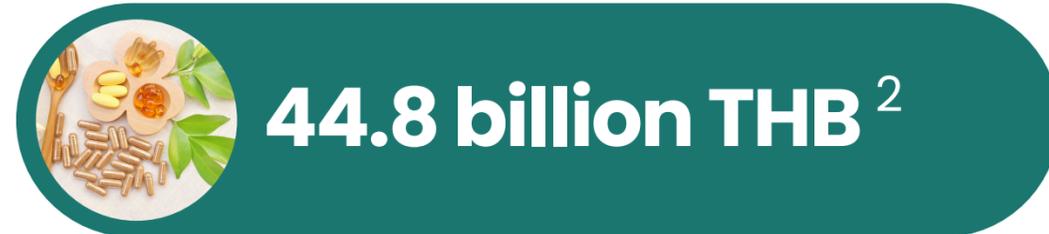
## MEDICINAL PLANT SPECIES

High biodiversity



## THAI TRADITIONAL FORMULATIONS

Long-standing Thai traditional medicine knowledge



(Market in 2024 )



(Forecast for 2029 )

The global trend toward preventive healthcare has driven the rapid growth of the herbal products market.

<sup>1</sup> Callaghan, S., Doner, H., Medalsy, J., Pione, A., & Teichner, W. (2024, January). The trends defining the \$1.8 trillion global wellness market in 2024 [White paper]. McKinsey & Company.

<sup>2</sup> Euromonitor International. (2024). Herbal/Traditional Products in Thailand. Euromonitor International Passport. Retrieved from Euromonitor International database.



# Global Wellness Market Trends



## Global Wellness Market Trends<sup>3</sup>

### GLOBAL MARKET

Global wellness market value: **USD 7 trillion, growing at 5–10% annually**

### HEALTH TECHNOLOGIES

High demand for health technologies, **wearables**, and **AI-driven health monitoring**

### NICHE MARKETS

Rapid growth in niche markets such as **women's health, healthy aging, and weight management**

### MEDICAL RECOMMENDATIONS IMPACT

Strong consumer influence from **expert** and **medical recommendations**.

<sup>3</sup> สำนักข่าวอีไฟแนนซ์ไทย. (2568, 24 กุมภาพันธ์). เศรษฐกิจสุขภาพไทยเติบโตอันดับ 1 ของโลก! ผสานความร่วมมือระหว่าง BDMS Wellness Clinic และ Global Wellness Institute เป็นปีที่ 3 ร่วมศึกษาโอกาสของประเทศไทยในด้านเศรษฐกิจเวลเนส ที่มีมูลค่าเติบโตรวดเร็วเป็นอันดับ 1 ของโลก. efinanceThai.

<sup>4</sup> Global Wellness Institute (GWI). (2023). The Global Wellness Economy: Country Rankings. อ้างอิงใน W9 Wellness Center. (2566). เทรนด์ดูแลสุขภาพ สไตล์เวลเนส ปี 2566.

# The Evolution: Defining the Nutrieconomy

A health-centric system where nutrition is the primary driver of economic value.



# The Two Pillars of Thai Herbal Products

Understanding the two distinct regulatory classifications is crucial to navigating the market.

## 1. Herbal Medicines

Products intended to **treat or prevent diseases.**

Regulated with stringent, pharma-grade standards.

## 2. Dietary Supplements

Products intended to **support or supplement health.**

Regulated as a special category of food.

# Pathway 1: Herbal Medicines

Regulated by the Thai FDA as DRUGS, requiring a full registration dossier.

**Evidence:** Must provide data on **Safety, Efficacy, and Quality**.

**Manufacturing:** Requires **GMP/PICs** certification (pharmaceutical grade).

**Claims:** Can make specific therapeutic claims (e.g., "for the relief of cold symptoms").

**Status:** Can be listed in the **National List of Essential Medicines**, making them reimbursable.

# Pathway 2: Dietary Supplements

Classified as FOODS under a lighter, notification-based process with the Thai FDA.

**Evidence:** Primarily focuses on **Safety and Quality** based on food standards.

**Manufacturing:** Requires **Food GMP** certification.

**Ingredients:** Must be from the FDA's "positive list."

**Claims:** Limited to **health support and nutritional function** (e.g., "supports immune function").

# Regulatory at a Glance: Medicines vs. Supplements

Feature	Herbal Medicines	Dietary Supplements
Regulation	As <b>Drugs</b>	As <b>Foods</b>
Regulator	Thai FDA (Drug Division)	Thai FDA (Food Division)
Evidence	Safety + Efficacy + Quality	Mainly Safety + Quality
Claims	Treatment / Prevention	Health / Nutrition Support

# Case Study: Andrographis

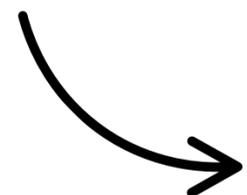
*Andrographis paniculata* showcases the two pathways in action.

## As an Herbal Medicine:

Standardized extract is on the **National List of Essential Medicines** for cold/flu, requiring rigorous clinical evidence.

## As a Dietary Supplement:

Lower-dose powder is marketed for general "immune support," requiring only safety data.



**Herbal Health Products**

# Value Chain Analysis

## Study Findings: Key Challenges

### Upstream

#### Raw Material Production

**Limited access to basic technologies** and tools results in inconsistent quality

**High production costs**, particularly in organic farming.

**Inconsistent quality of raw materials** due to limited GAP/organic compliance

**Market instability** and lack of bargaining power for farmers

**Lack of knowledge** and skills in proper **post-harvest** management.

### Midstream

#### Processing

**High cost** limits access to **standard processing technology**

**Limited knowledge of GMP/HACCP** standards among processors.

**Fragmented supply chains with weak aggregation** of products for large-scale industry.

**Regulations:** Complex and inflexible factory rules hinder SMEs.

**Budget limitations** hinder ongoing procurement of raw materials (e.g., hospitals)

### Downstream

#### Marketing

**Legal:** Strict advertising restrictions and complex export regulations

**Lack of strong national herbal brands** recognized globally

**Consumer distrust** in quality and safety of herbal products.

**High costs of extraction technology** and reliance on imports (>90%).

**Production not aligned with demand**, resulting in market imbalance

# Gap Analysis of the Herbal Value chain

LACK OF GAP STANDARDS LEADS TO INCONSISTENT QUALITY AND A RISK OF CONTAMINATION

A LACK OF STANDARDIZED RAW MATERIALS AND FARMER/PRODUCER CONSOLIDATION

## NO GENETIC AUTHENTICATION

LACK OF TRACEABILITY SYSTEM FROM THE FARM TO THE FACTORY

POST-HARVEST CARE INFRASTRUCTURE IS INADEQUATE

THE ABSENCE OF A CENTRALIZED DATABASE RESULTS IN IMPRECISE PLANNING FOR BOTH PRODUCTION AND MARKETING



## NO DATA INTEGRATION

DATA STANDARD DISCREPANCIES

LACK OF ALIGNMENT WITH INTERNATIONAL STANDARDS (WHO, ISO)

LACK OF VALUE CHAIN INFORMATION

ABSENCE OF AN IMPARTIAL DATA GOVERNANCE FRAMEWORK

LACK OF A NATIONAL HERBAL DATABASE WITH COMPREHENSIVE INTEGRATION

**NATIONAL DATABASES ARE FRAGMENTED AND NOT LINKED AS A SINGLE, ONE-STOP SYSTEM**

LACK OF POST-MARKETING DATA

THERE ARE MANY STANDARDS, A LIMITED NUMBER OF AVAILABLE LABORATORIES, AND THE HIGH COST OF TECHNOLOGY

THE LACK OF MODERN PROCESSING AND EXTRACTION TECHNOLOGIES PREVENTS DOMESTIC PRODUCTION FROM REPLACING IMPORTS

# Gap Analysis of the Herbal Value chain

LACK OF CLINICAL RESEARCH

INSUFFICIENT SUPPORT FOR RESEARCH  
COMMERCIALIZATION

**NO CLEAR GUIDELINES ON THE USE OF REAL-WORLD  
DATA (RWD) AND REAL-WORLD EVIDENCE (RWE)  
FOR PRODUCT REGISTRATION**

RESEARCH  
AND  
INNOVATION

LAW AND  
PATENTS

COMPLEX REGISTRATION AND  
PATENT PROCESS, TIME-CONSUMING  
AND COSTLY

MARKETING

LACK OF CONSUMER CONFIDENCE

INSTANCES OF EXAGGERATED ADVERTISING ARE  
FOUND, AND THE BRAND IS NOT STRONG IN THE  
GLOBAL MARKET

**UNABLE TO COMPETE EFFECTIVELY IN  
INTERNATIONAL MARKETING AND BRANDING**



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# “ADVANCING SUSTAINABLE HERBAL MEDICINE”

## 5 MAIN STRATEGIES TO NEW S-CURVE



### 01 (Upstream)

#### DEVELOPING THE UPSTREAM SUPPLY CHAIN

PROMOTING THE CULTIVATION OF HIGH-QUALITY RAW MATERIALS ACCORDING TO GAP/ORGANIC STANDARDS AND CONNECTING FARMERS TO THE MARKET



### 04

#### INTEGRATION INTO THE HEALTHCARE SYSTEM

PROMOTING THE USE OF HERBAL MEDICINE IN HOSPITALS, ALLOCATE BUDGETS FOR PURCHASING AND ENSURING CONSUMER PROTECTION.



### 02 (Midstream)

#### PROMOTING MIDSTREAM PROCESSING AND INNOVATION

SUPPORT R&D, UPGRADE FACTORIES TO INTERNATIONAL STANDARDS, AND CREATING INVESTMENT INCENTIVES (BOI).



### 05

#### CREATING AN ENABLING ECOSYSTEM

ESTABLISHING A NATIONAL POLICY COMMITTEE, DEVELOPING HERBAL CITIES, AND CREATING A COMPREHENSIVE DATABASE.



### 03 (Downstream)

#### EXPANDING THE MARKET AND BUILDING THE BRAND

DRIVING PROACTIVE MARKETING UNDER THE “THINK WELLNESS, THINK THAI HERB” CAMPAIGN AND EXPANDING E-COMMERCE CHANNELS.

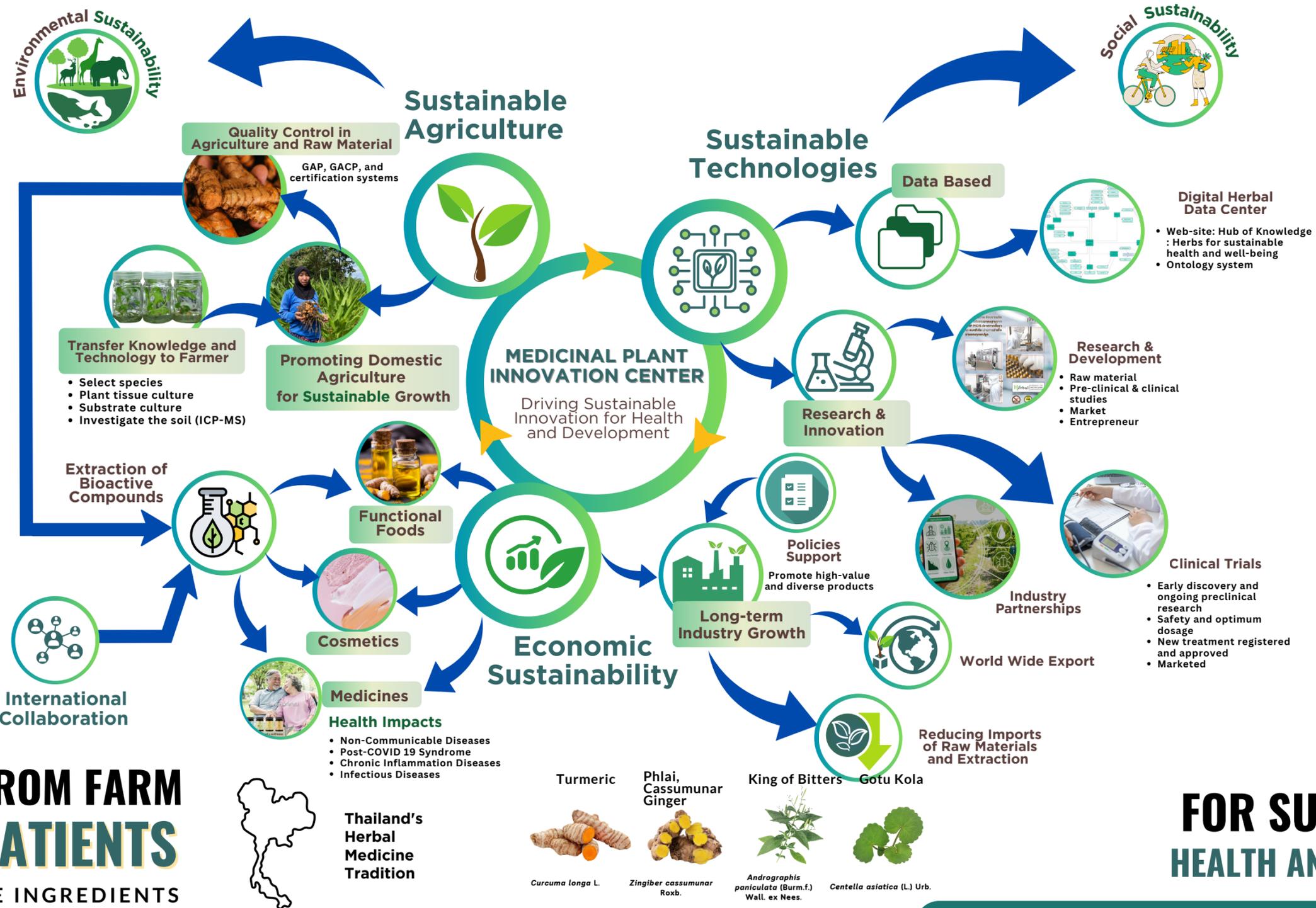


SUSTAINABLE DEVELOPMENT GOALS



# ADVANCING SDG-ALIGNED SOLUTIONS FOR

# HEALTH, AGRICULTURE, AND GLOBAL WELL-BEING



## MEDICINAL PLANT FOR SUSTAINABLE HEALTH AND WELL-BEING

# FROM FARM TO PATIENT

MEDICINAL PLANTS INNOVATION CENTER  
OF MAE FAH LUANG UNIVERSITY

## FROM LAB TO FARMERS



- 1. Select species
  - 2. Plan tissue culture
  - 3. Substrate culture
  - 4. Investigate the soil (ICP-MS)
    - No pesticides
    - No heavy metal
    - No bacteria
  - 5. Transfer knowledge and technology
- Good plant propagation
- High quality of raw material

- 6. Mother root from the Lab and Cultivate on the farm
- 7. Farm management
- 8. Quality control of agricultural and harvesting processes
  - Soil investigation by ICP-MS
  - Raw material investigation by HPLC

- ### INTERNATIONAL STANDARD
- Good Manufacturing Practice/Pharmaceutical Inspection Co-operation Scheme (GMP/PICs)
  - Good Agricultural Practices (GAP)

- ### HERBAL DRUG DISCOVERY
- In vitro* assays; pharmacological activities  
*In vivo* testing; toxicity and efficacy  
Clinical trials; safety and efficacy

- ### HEALTH IMPACTS
- Non-Communicable Diseases
  - Post-COVID 19 Syndrome
  - Chronic Inflammation Diseases
  - Infectious Diseases



(Promote in Herbal Product Champion)  
**TRANSFER KNOWLEDGE AND TECHNOLOGY TO FARMER**

**Turmeric**



*Curcuma longa* L.

**Phlai, Cassumunar ginger**



*Zingiber cassumunar* Roxb.

**King of Bitters**



*Andrographis paniculata* (Burm.f.) Wall.ex Nees.

**Gotu Kola**



*Centella asiatica* L. Urban

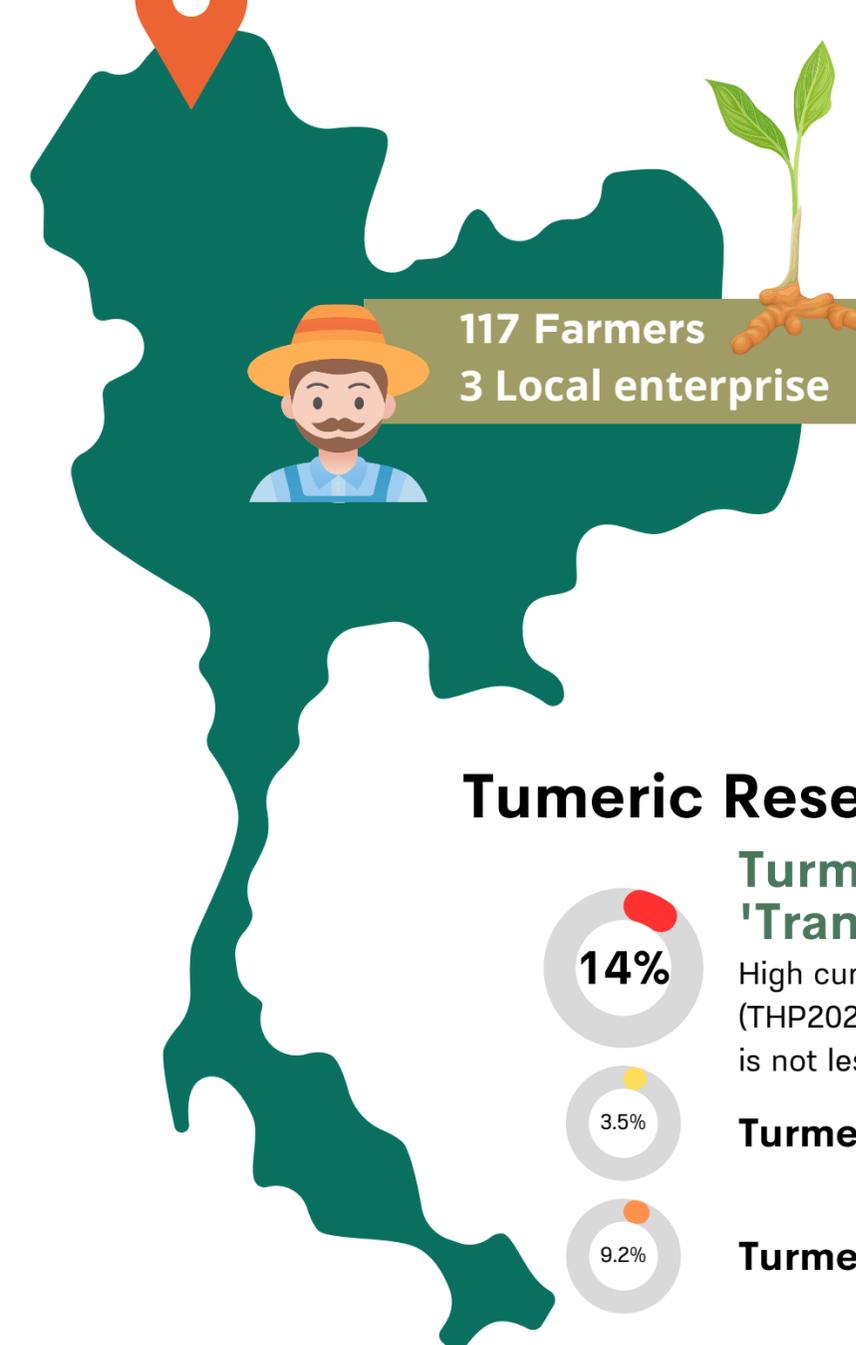
## HIGHLY ACTIVE INGREDIENTS



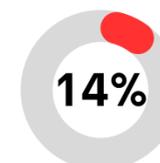
# Promoting High-Quality Raw Materials for Sustainable Growth



CHIANG-RAI PROVINCE

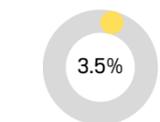


## Tumeric Research



**Turmeric 'Trang 84-2' & 'Trang 1'**

High curcuminoid content  
(THP2021: curcuminoid content is not less than 5%)



**Turmeric**



**Turmeric 'Dang Siam'**

QUALITY CONTROL IN AGRICULTURE

AND RAW MATERIAL



- **Total curcuminoids (HPLC analysis)**
  - Spice (>5%)
  - THP grade (5-9%)
  - Premium grade (<9%)
- **Humidity (<10%)**



- **Heavy Metal (ICP-MS)**
  - Arsenic
  - Cadmium
  - Lead
  - Selenium
  - Mercury
- **Microorganism**
  - Mesophilic aerobic bacteria
  - *Escherichia coli*
  - *Salmonella abs*
  - Fungus & Mold

## Soil analysis

- **pH value (5.5-6.5)**
- **Essential Mineral Elements (Kjeldahl and ICP-MS)**
  - Nitrogen
  - Phosphorus
  - Potassium
  - Calcium
  - Magnesium
  - Sulfur
  - Iron
  - Manganese
  - Zinc
  - Copper
- **Soil organic matter (Colorimetric Method )**



- **Heavy Metal (ICP-MS)**
  - Arsenic
  - Cadmium
  - Lead
  - Selenium
  - Mercury



# QUALITY CONTROL MANAGEMENT SYSTEM

**Turmeric**

Features

- Dashboard
- Inspection Details
- Inspection History
- Reports & Data Export
- Settings

### Welcome UserTestQuality!

Total Inspected Batches

**4**

Last updated: March 2025

Pass Rate

**100%**

Quality Assessment

Pending Inspections

**0**

Awaiting Review

Rejected Batches

**0**

Failed Quality Check

Curcumin % Trend

Moisture % Trend

BATCH ID	FARM NAME	HARVEST DATE	GRADE	STATUS	ACTIONS
T-Batch-003	Mechai Farm	Aug 20, 2025	Grade Grade A	Passed	<a href="#">View Details</a>
T-Batch-002	MFU Farm	Aug 20, 2025	Grade Grade A	Passed	<a href="#">View Details</a>
T-Batch-001	MFU Farm	Aug 20, 2025	Grade Grade A	Passed	<a href="#">View Details</a>
T-Batch-001	MFU Farm	Aug 20, 2025	Grade Grade A	Passed	<a href="#">View Details</a>

### Latest Lab Results

**T-Batch-003** ✔ Passed

Moisture N/A

Curcumin 42.7 mg/g

Aug 20, 2025

**T-Batch-002** ✔ Passed

Moisture N/A

Curcumin 43.7 mg/g

Aug 20, 2025

### Lab Notifications

✔ All Caught Up!

No pending notifications  
Lab system running smoothly

No notifications [Refresh](#)

**Turmeric**

Features

- Dashboard
- Farm Information
- Planting Batches
- Factory Submission
- Settings

### Welcome UserTestFarmer!

Next Harvest

**Harvested**

Harvest completed

Harvest Quality

**71% Grade A**

29% Grade B

Status

**Harvested**

Ready for processing

Upcoming Tasks

**Lab Submission**

Submit samples for testing

Curcumin %

Standard Value Current Value

Turmeric History – T-Batch-001

- Fertilizer Completed Aug 4, 2025
- Planted Completed Aug 20, 2025
- Harvesting Completed Aug 20, 2025
- Lab Submission Completed Aug 20, 2025
- Lab Submission Completed Aug 20, 2025
- Factory Submission Completed Aug 20, 2025
- Factory Submission Completed Aug 20, 2025

**Recent Activity**

Harvesting

- Batch : T-Batch-001
- Date : 8/20/2025
- Quality Grade : Grade B
- Yield : 450 kg

**Quick Action**

Planted

Record Fertilizer

Record Harvest

Lab Submission

Thursday, Aug 21, 2025

### Weather Average

Chiang Rai

Thursday, Aug 21

**25°C**

Sunny

2.5 km/h 960.7 mbar 0 mm

24.1°C Soil 0.34% Moisture

**Notification** T-Batch-001

Batch marked as completed successfully yesterday

A new harvest record has been created

Transparency and Traceability



# Herbal Medicine Manufacturing







# TURMERIC-EXTRACT-BASED PRODUCTS



## Curcuminoids

DMC 3.33, BDMC 8.24, CUR 660.8 mg/g

## Curcuminoids complex

- Curcuminoids powder : beta-CD ratio 1:2 mmol
- Solubility: 23.26 mg/L
- Curcuminoids content: 270.28 mg/g  
DMC 7.94, BDMC 32.76, CUR 229.58 mg/g

## Immune enhancer

- ↑ Innate and adaptive immune cell proliferation (80%)
- ↑ Phagocyte activation (1.5 folds)
- ↑ Immune cells activation (↑CD69+, ↑CD86+)
- ↑ Cytokine secretion (IL4, IL2, CXCL10, MCP1)
- ↑ Cytokine's gene expression (IL6, TNF alpha)

## Anticancer

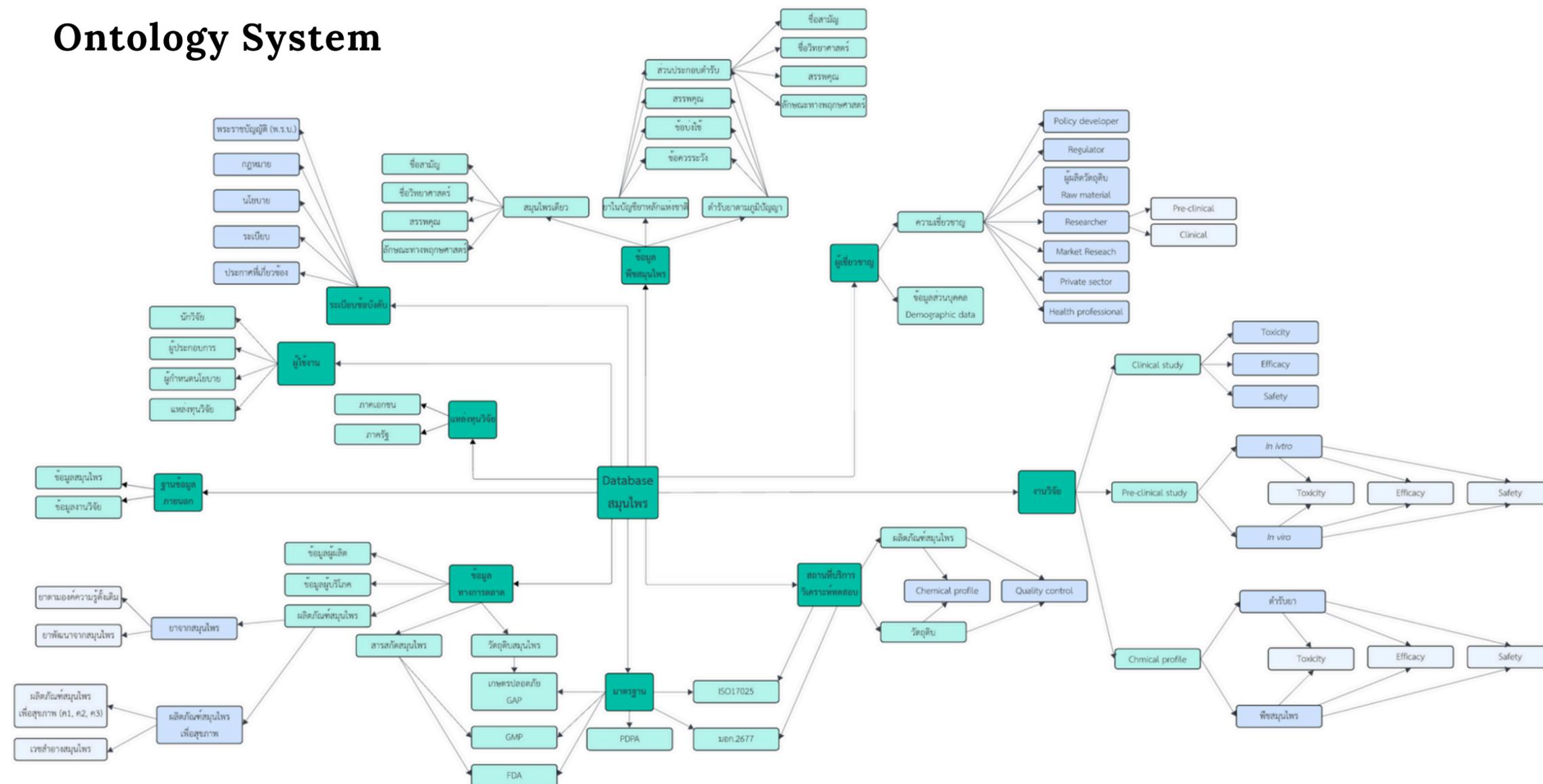
- ↓ Colon cancer cell growth



# DATA CENTER OF HERBAL PRODUCTS

- Centralized data on Thai herbs, including traditional uses, clinical findings, and industry applications.
- Improves data accessibility for policymakers, researchers, and businesses.

## Ontology System



- Herbs: Plants used for medicinal purposes.
- Traditional herbal medicine usage based on Thai wisdom.
- Key market data for herbal product marketing
- Profile of herbal product entrepreneurs
- Comprehensive collection of data on herbal policies
- Dataset of the herbal product supply chain
- Herbal regulation dataset
- Data on systems supporting herbal research
- Database of experts in herbal medicine

# The Path Forward

1. Thailand is advancing from a Bioeconomy to a science-driven **Nutrieconomy**.
2. Market structured on two pathways: high-evidence **Herbal Medicines** and fast-growing **Dietary Supplements**.
3. Future growth hinges on **scientific validation, upgraded manufacturing, and traceability**.
4. Clear opportunities for **global partnership** in research, investment, and market development.



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# THANK YOU

# THAI HERBAL INDUSTRY