



Technology Transfer for Rural Industries – Strategies that Worked in Thailand

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TISTR at a Glance



A non-profit state enterprise under Ministry of Higher Education, Science, Research and Innovation MHESI (former MOST)



A leading organization in integration of STI for creation of a sustainable innovation-based society



- To conduct R&D in STI for value adding of products & services
- To provide services in MSTQ, cert. of QMS, training & consultancy services
- To transfer technology & innovation to industry & community enterprises, for economic, social and environmental utilizations
- To develop an effective organizational management system



TISTR at a Glance

TISTR RESEARCH & SERVICE GROUPS

กลุ่มสายงานหลักทางการวิจัย พัฒนา และการบริการของ วว. ประกอบด้วย 3 กลุ่มอุตสาหกรรม ได้แก่ [หรือดูหน่วยงานทั้งหมดใน วว.]



Bio-Industries

วิจัยและพัฒนาด้านอุตสาหกรรมชีวภาพ
นวัตกรรมเกษตรสร้างสรรค์ อาหารสุขภาพ
ผลิตภัณฑ์สมุนไพร และเทคโนโลยีชีวภาพ



Sustainable Development

วิจัยและพัฒนาด้านพัฒนาอย่างยั่งยืน
นวัตกรรมวัสดุ พลังงานสะอาดและสิ่งแวดล้อม
หุ่นยนต์และเครื่องจักรกลอัตโนมัติ



Industrial Services

บริการอุตสาหกรรม
ทดสอบคุณสมบัติวัสดุ เครื่องมือ ระบบขนส่ง
ทางราง การรับรองคุณภาพ และงานฝึกอบรม



TISTR EXPERT CENTRE : ศูนย์ความเชี่ยวชาญ วว.

ศูนย์เชี่ยวชาญนวัตกรรม ศูนย์การวิจัยและพัฒนา ศูนย์บริการ ทางวิทยาศาสตร์และเทคโนโลยี ของ วว. เพื่อชุมชน ผู้ประกอบการ และอุตสาหกรรมของประเทศ [ดูหน่วยงานทั้งหมดใน วว.]

InnoAg Expert Center of Innovative Agriculture	InnoFoodi Expert Center of Innovative Health Food	InnoHerb Expert Center of Innovative Herbal Products			
InnoEN Expert Center of Innovative Clean Energy and Environment	InnoMat Expert Center of Innovative Materials	InnoRobot Expert Center of Innovative Industrial Robotics and Automation			
BRC Biodiversity Research Centre	RTTC Railway Transportation System Testing Centre	MPAD Material Properties Analysis and Development Centre	MTC Industrial Metrology and Testing Service Centre	TPC Thai Packaging Centre	OCB Office of Certification Body



Thailand 4.0: 10 New Engine of Growth



Automotive Robotics Medical hub Biofuels Aviation Agriculture Wellness Food for Smart Digital
Biochemical Logistics Biotechnology Tourism The future electronics

TISTR Expert Center





SDGs & TISTR O·Z·O·N·E Concept

SDGs



TISTR



Opportunity
to create new business opportunities for the Thai economy/society



Zero waste management
to reduce waste to zero



Occupation
to build entrepreneurial expertise & career for community

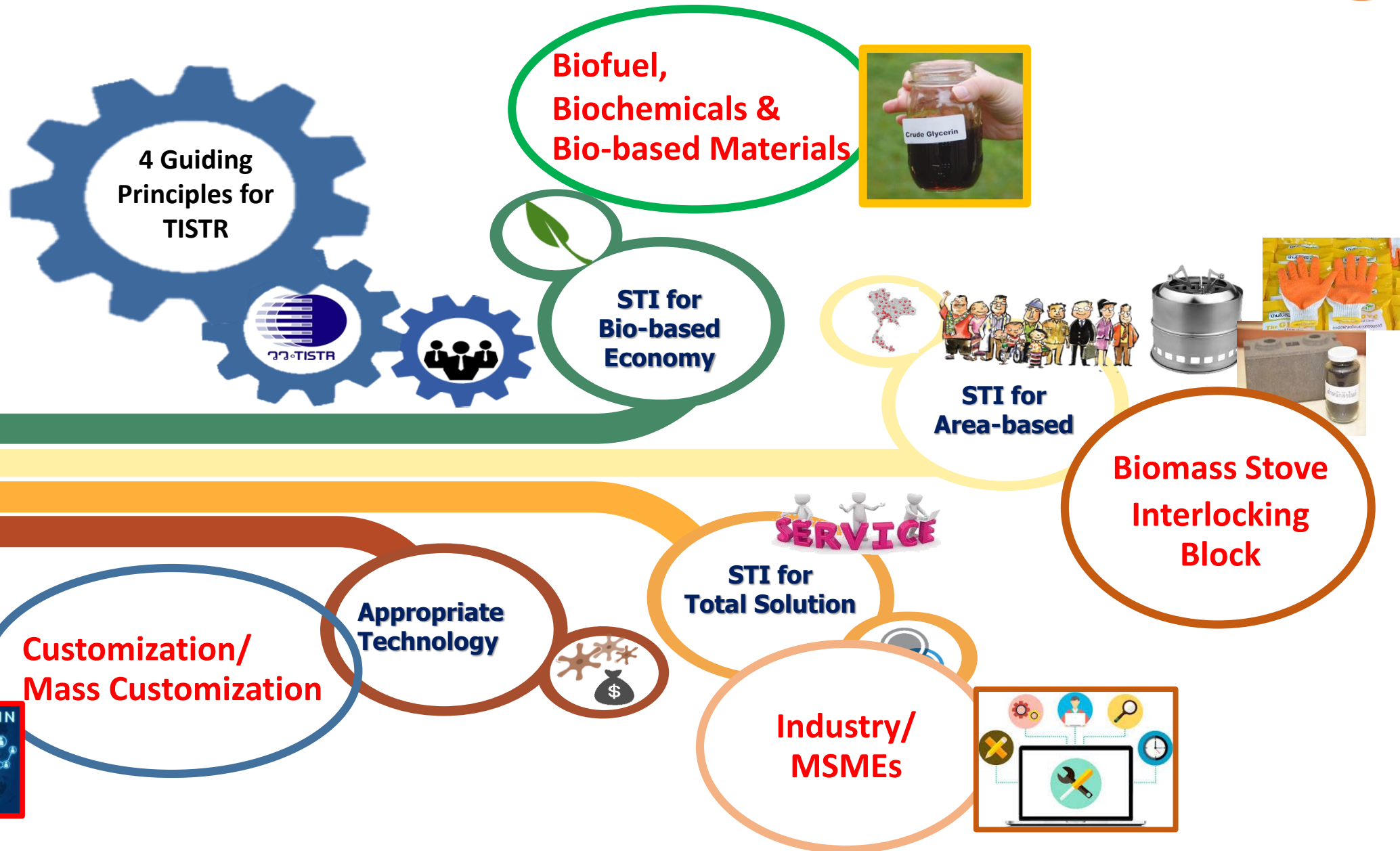


Natural resource based
to develop work from the natural resource in the country



Energy efficiency
to develop product quality with energy efficiency

TISTR 4 Guiding Principles



RDI Management from Up Stream to Down Stream

Technology & Trends, Foresight, Policy, Platform, Benchmarking

- Analysis
- Identify Priority Area

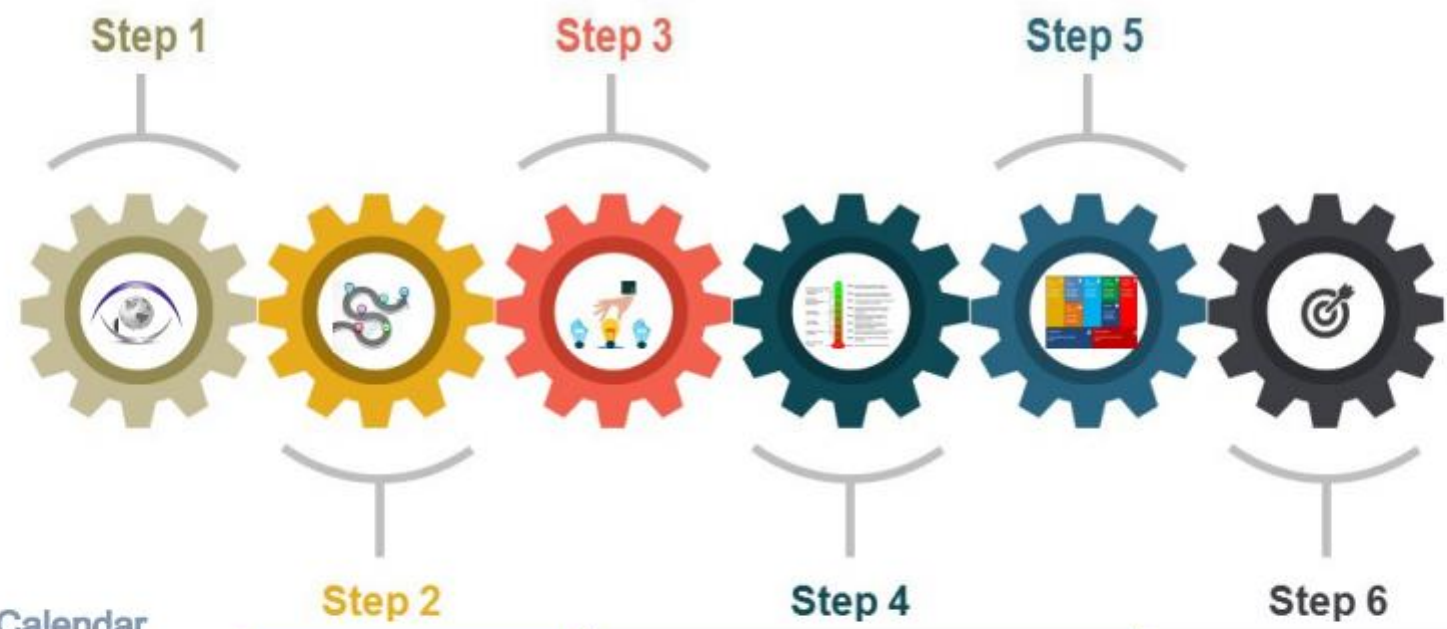
Project Proposal Formulation & Selection

- TRM*
- TRL*/BMC* (Phase Continue)

Out Put Management

- KM/KI
- IP Valuation/Commercialization/Protection
- BMC*

(Reduce Risks: Tech.-Market-Investment)



Year Plan Calendar



TRM*

- Development
- Revision

Project Implementation

- Monitoring (TMI)
- Evaluation (Termination)
- TRL*/TTCA Assessment
- Impact Assessment
- Unforeseen

Technology Transfer/Licensing

- (IP) Commercialization (Revenue Generation)
- Community → **Rural Industry** (Social-well being Generation)

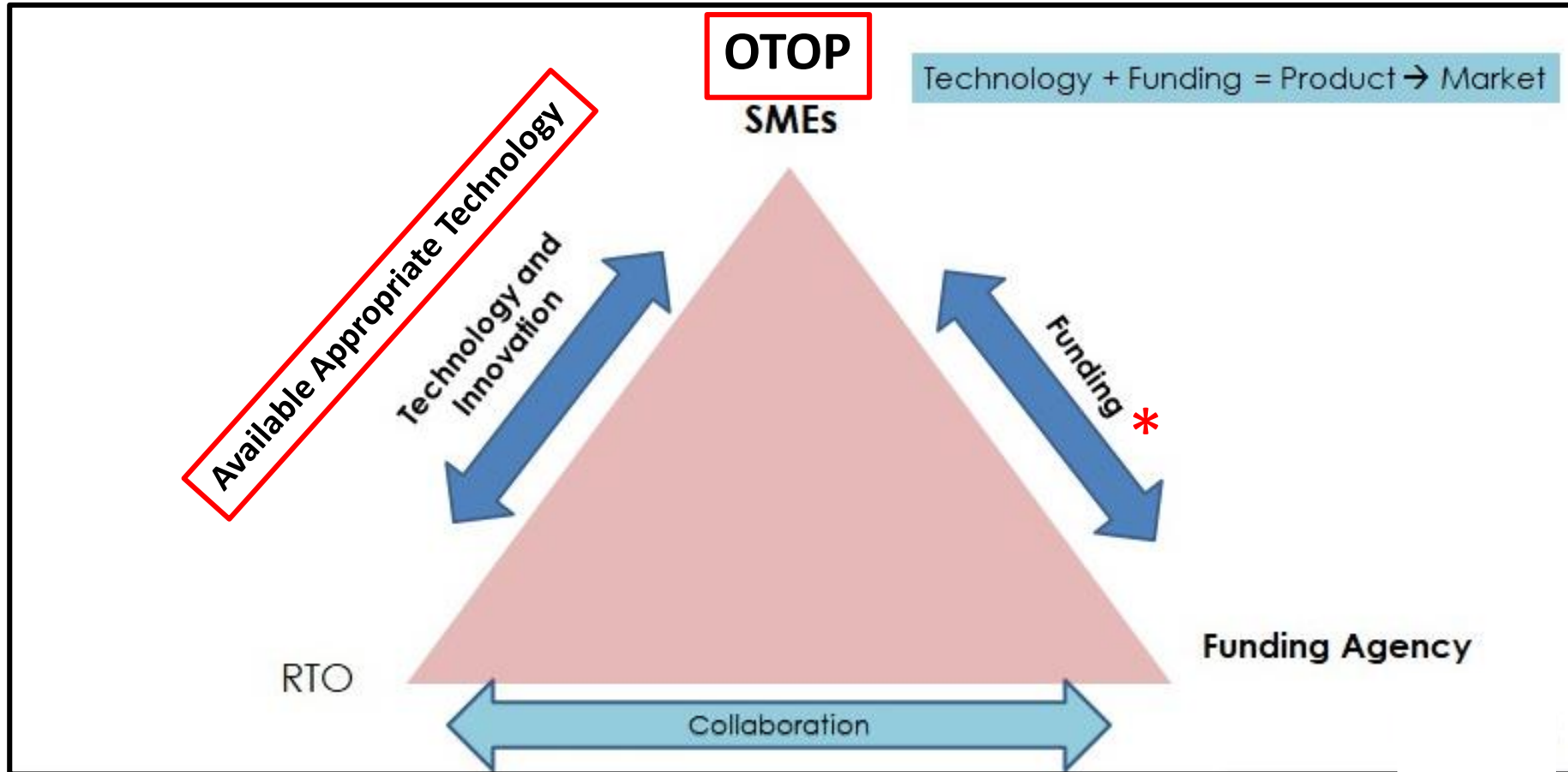
(Quality & Relevance, Actual Impact, Return to Customer, Size of Company/Customer)

Target Customers



*One Tumbon (Sub-district), One Product ~ Rural Industries

Key Challenges for Promoting SMEs & OTOP



RTO = Research & Technology Organization e.g. TISTR

STI Mechanisms to Support Entrepreneur

All are Technology + Funding (Financial Support)



STIM

ITAP

RESEARCH GAP FUND
(Innovative StartUp)

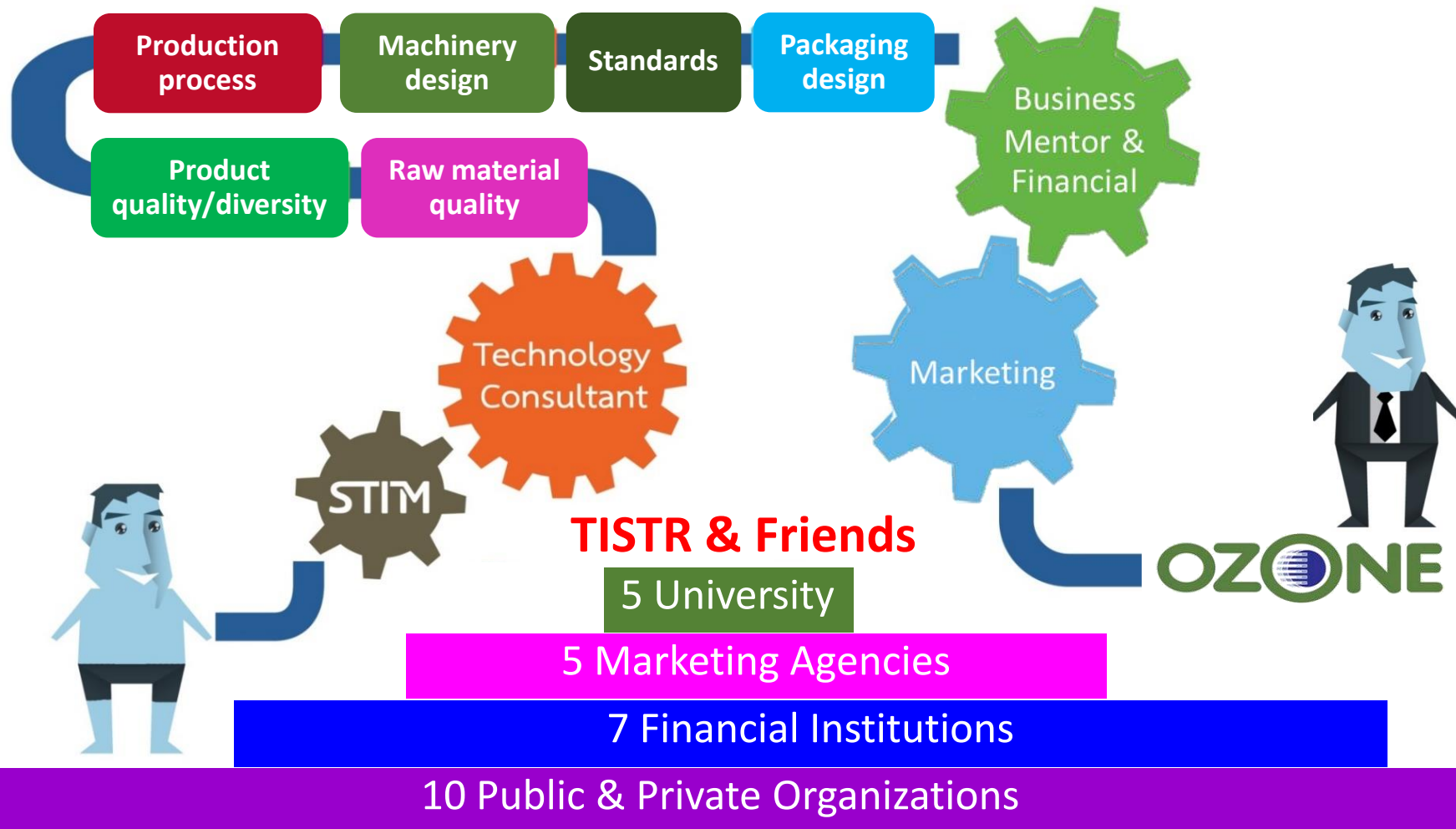
OTOP/STIM

Science

Technology

Innovation

Matching program



OTOP Target Groups



New OTOp

People, community enterprise, farmers group, cooperative that would like to use STI for setting up of new business from innovative product/service but have not registered for OTOp entrepreneur

Existing

OTOp entrepreneur who would like to use STI for creating/developing innovative product/service to increase their competitiveness

Growth

Company Ltd.(S) that registered as OTOp entrepreneurs who produces/distributes OTOp products and would like to use STI to improve their products/services in order to increase their competitiveness on both internal market share expansion and ability to export

Financial Support

No. of Staffs (Full & Part Time)	Financial Support (USD/Y)	Ratio of Financial Support TISTR : Entrepreneur* (%)		
		1 st Year	2 nd Year	3 rd Year
1-5	10,000	70:30	60:40	50:50
6-10	13,000	60:40	50:50	40:60
11-15	16,000	50:50	40:60	30:70

*Financial support from entrepreneur

- Money
- Raw materials & utility etc.
- Financial support from other sources

GP1 STI for Bio-based Economy

Agricultural

Product for one time of fertilizer application on rice production

**Food ingredient
Food innovation**

Herbal Product

Bio energy

Environment

STI for product/process/service > 200 items



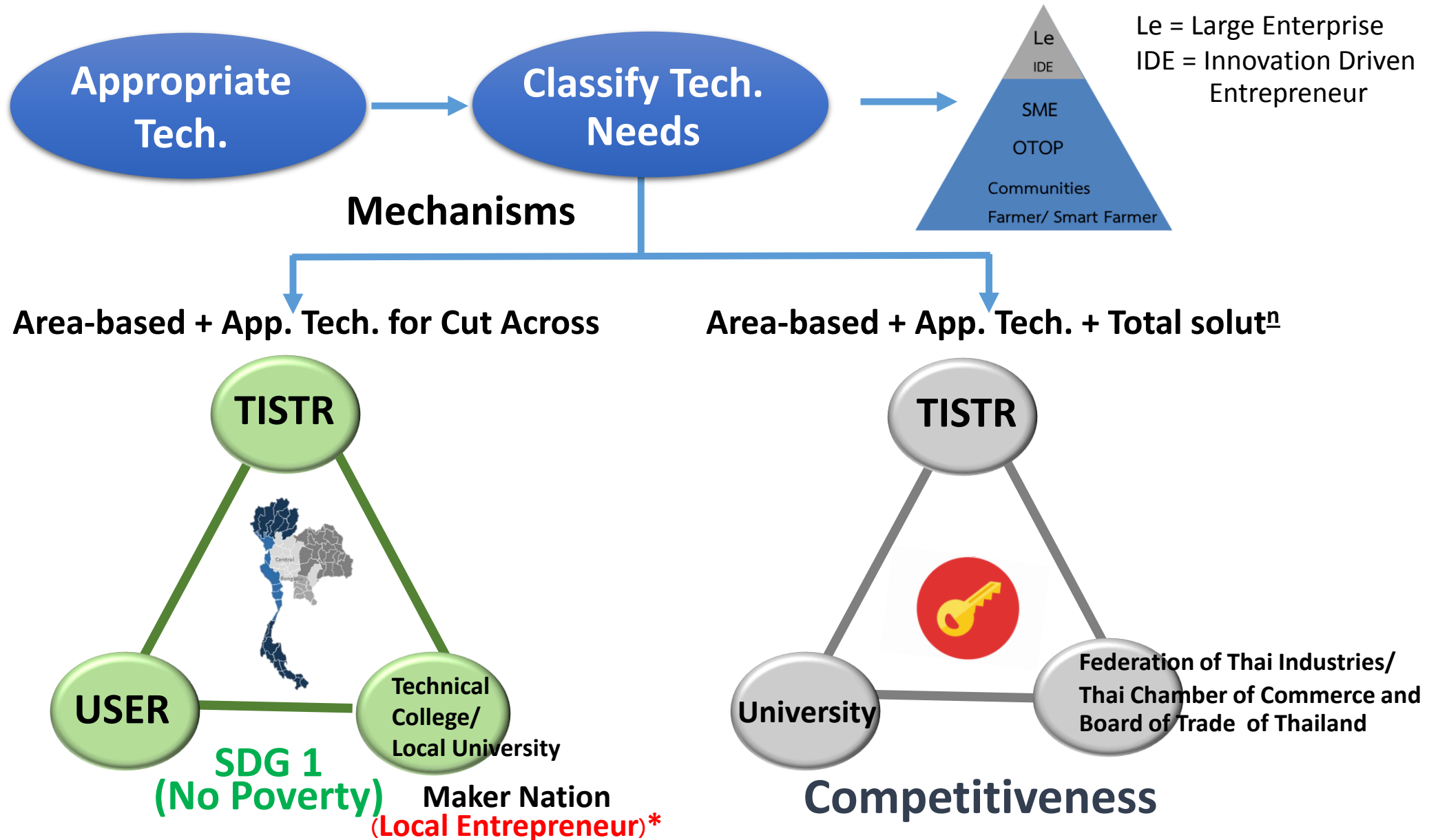
**UNESCO
Biosphere Reserve**



Consortium



Appropriate Tech. (GP4) & Total Solution (GP3) for Area-based (GP2)



GP2 Area-based



- Agro-processing
- Smart farm for safe agri-products



- Export fruits development
- Agro-processing



- Food processing entrepreneur
- Palm oil industry
- Para rubber value creation



77 Provincial Growth



- Food & agro-processing
- High quality Jasmin rice production

Fruit production improvement

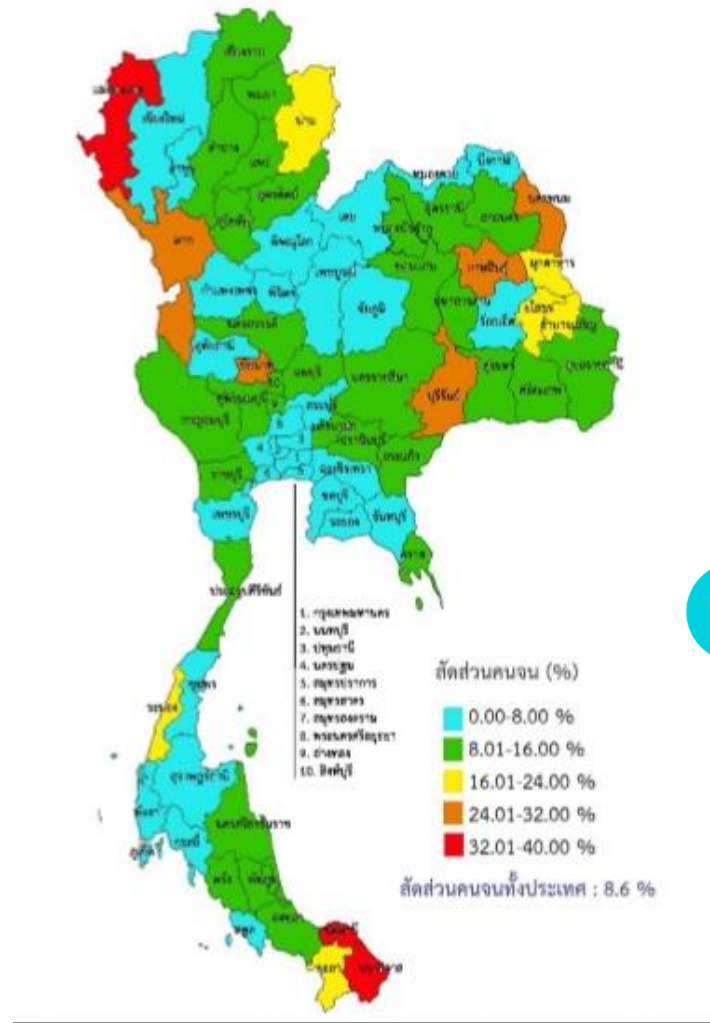


Agri community

OTOP innovation

Reduce production cost	30%
Increase product price	20%
Increase income	20%

- STI for OTOP**
- 1 Raw material quality
 - 2 Product quality
 - 3 Production process
 - 4 Machine design
 - 5 Standard certify
 - 6 Packaging design



Improvement of OTOP entrepreneur in the 10 Poorest Provinces of Thailand

- Social Return on Investment (SROI) = 107 MUSD
- Increase GPP = 0.92 %
- Return on Investment = 1 : 8.43
- Increase Income = 25.16 %

Evaluated by 3rd party

STI OTOP Product Upgrade

Pineapple Products



Skin Serum from Goat Milk



Para Rubber Coated Gloves



Dried Rambutan Product



Vacuum Sealed Rice Products



Metal Mold for New Design Batik



Dietary Supplement Products (SMEs)



OCIMA
Greater Pharma Co.,Ltd.



SCAMULAN
Sri Singhara Co.,Ltd.



Livetal-D and Livetal
V&P Health Care Co.,Ltd.



Herbacid
Greater Pharma Co.,Ltd.

Food Machinery



Skin Polishing Machine for Vegetable and Fruit



Commercial Orange/Lemon Juicer



Extractor for Juice Production



Vacuum Fryer



Juice Processing Machine



STI Training Program including:

- Packaging Design
- Packaging Development
- On site Training Program or mentoring for up-scale production and market
- etc.





Food Innovation Service Plant

“GMP”



Our services:

- Test analysis service
- Incubation technology for the production of commercial food products
- Standard production line for food products
- Shelf life assessment service
- Training service





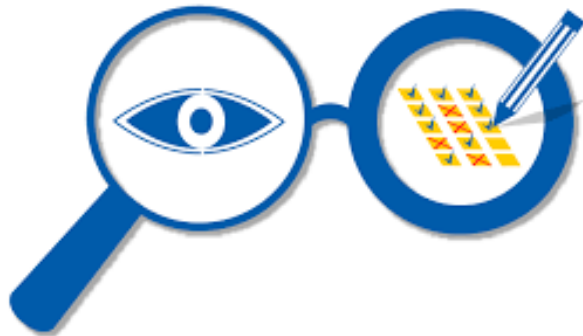
Office Of Small & Medium Enterprise Promotion (OSMEP)



Monitoring & Evaluation

KPI:

- Increase Revenue 10%
- Decrease (Production) Cost 7-9 %
- Self Assessment
- Third Party Evaluation



Strategic that Worked For STI OTOP Upgrade at TISTR



I. End-to-End Management



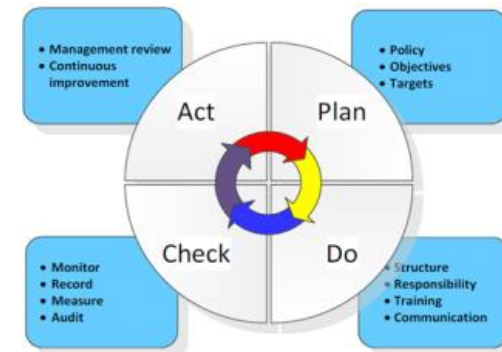
III. Clarify Key Challenges



IV. Select Suitable Mechanisms



II. Target Group Focus



IV. Monitoring & Evaluation for Improvement

Thank you very much

עוועווע, תיסטר, או, תח



Bhutan

Happiness is a place