

**Searching
and
Serving
the Best**

Collaborative Research and Graduate Education; Some Experiences

**Dahrul Syah
Graduate School, IPB**

**Special Lecture at Workshop on “Wisdom of Land and Water Management”
Research Institute for Humanity and Nature (RIHN), Kyoto, 13-15 Nov 2011**

Agenda



- Who and Where are we
- Collaborative Research
- Impact on Graduate Education
- Other Expectation



BOGOR PALACE



Bogor, Indonesia
60 km from Jakarta





Jakarta via Tol Jagorawi

Jakarta via Cibinong



Jalan Baru Kemang

Pasar Sayur dan Buah-buahan

Jakarta via Parung

Perumahan Yasmin

Jakarta via Parung

Kampus IPB Darmaga

Kampus IPB Taman Kencana

Cilendek/Bogor Kota

Jambu Dua Plaza

Kampus IPB Gunung Gede

Tol Jagorawi



Cilendek/Bogor Kota

Stasiun Kereta Api

Mapolwil Bogor

Kebun Raya dan Istana Bogor

Terminal Bus Baranangsiang

Jl. Salak

Bogor Internusa

Kampus IPB Baranangsiang

Mapolwil Bogor

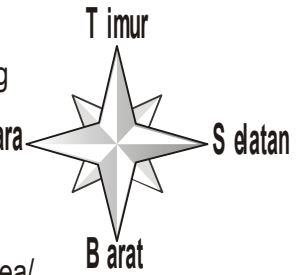
Jembatan Merah

Ciomas

Laladon/Pagelaran/Ciomas

Ciherang

Ciampea/Leuwiliang/Jasinga



Ciawi/Puncak/Bandung

Tugu Kujang

Ciawi/Puncak/Bandung

Terminal Bus Baranangsiang

Kebun Raya dan Istana Bogor

International Collaborative Research in IPB; Partner

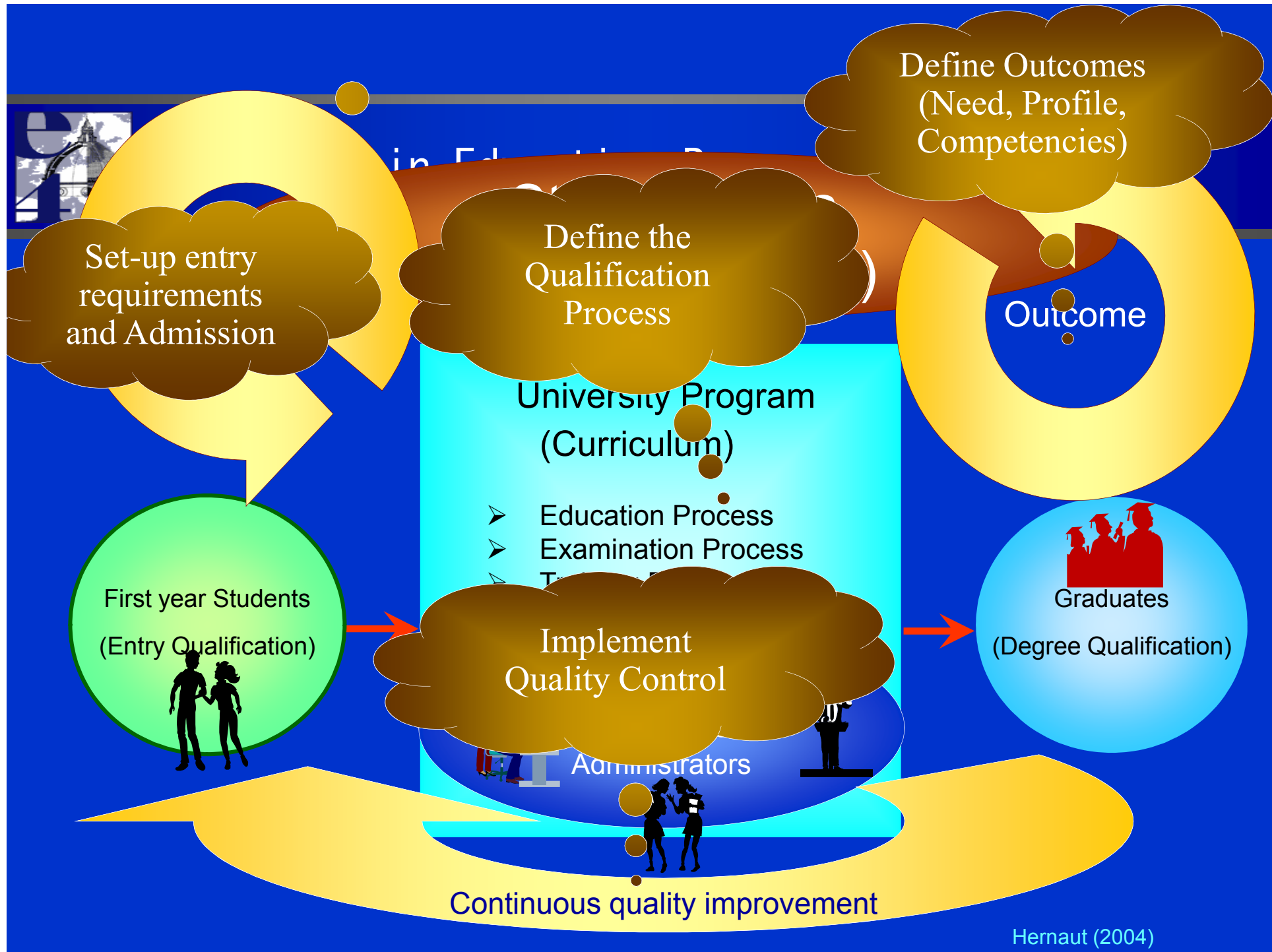
- Since Beginning at Collonial Time
 - Mostly with University in Holland
 - Short time with Japanese University
- After Independence
 - Influence by International Politics, especially before and after 1965
 - Before 1965 : mostly with east block countries
 - After 1965 : University in USA (Kentucky, MUCIA etc), Europe, Japan



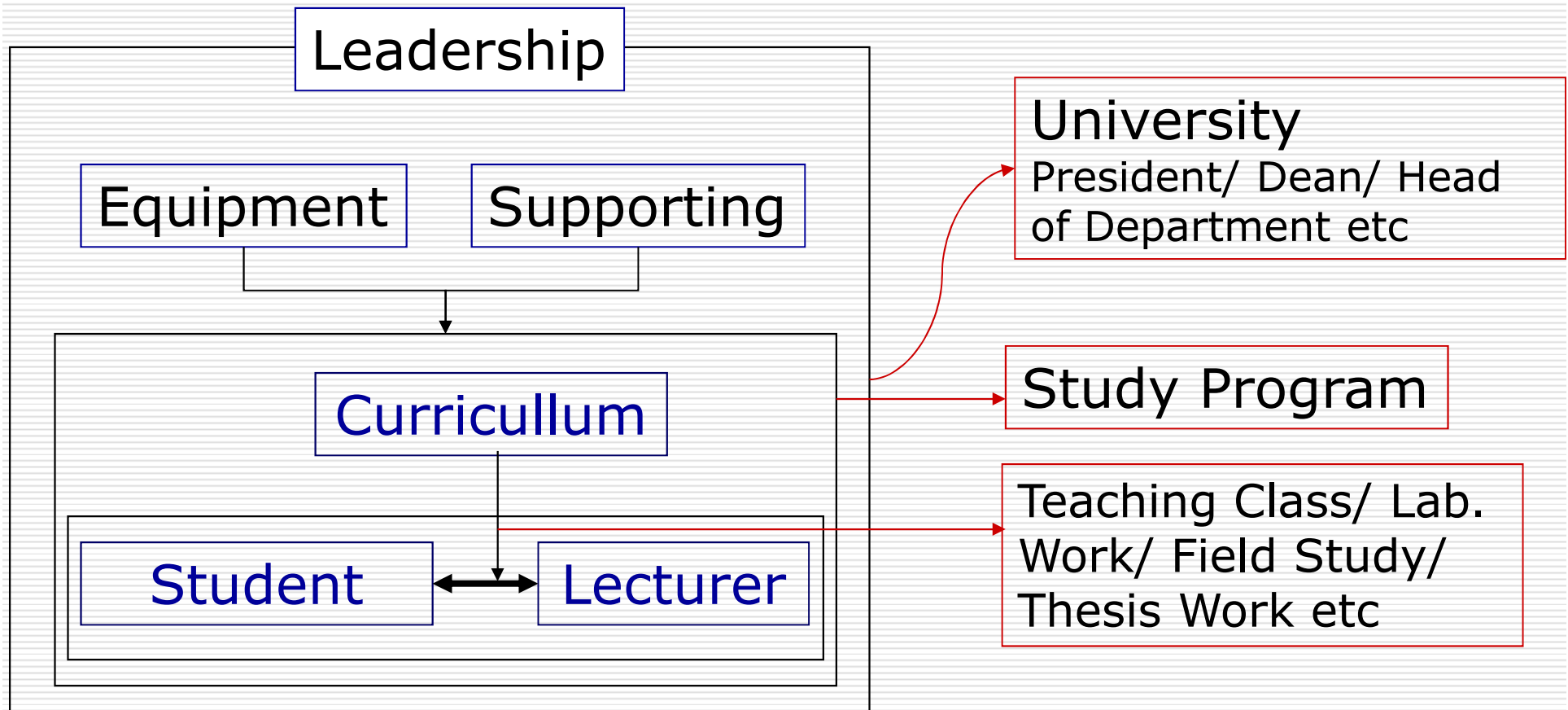
International Collaborative Research in IPB; Theme

- Grouped based on Joint-Publication
- Tropical Biodiversity; especially bioprospecting for various purposes
- Indigenous Knowledge
- Food Security (Availability, Access and Consumption)





Who involve ?

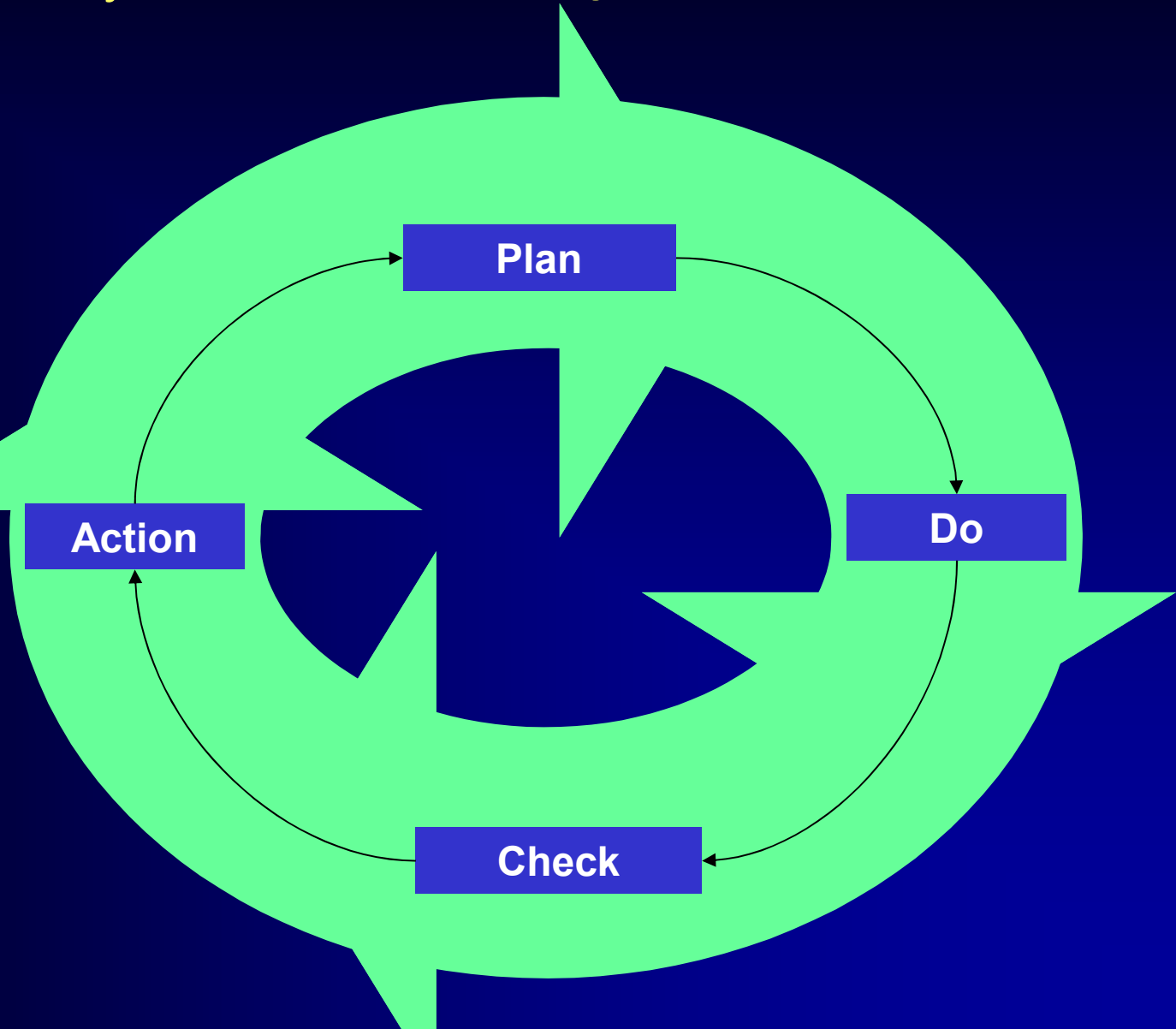


Role of Graduate School

- Internal Quality Assurance of Study Program
 - Coordination and Supervision in Implementation
 - Selection and Enrollment of New Student
 - Promotion
 - Recommendation to President of IPB
 - Opening / Closing of Study Program
 - Head of Study Program
-

How to be implemented ?

Quality Assurance; Planning, Control and Improvement



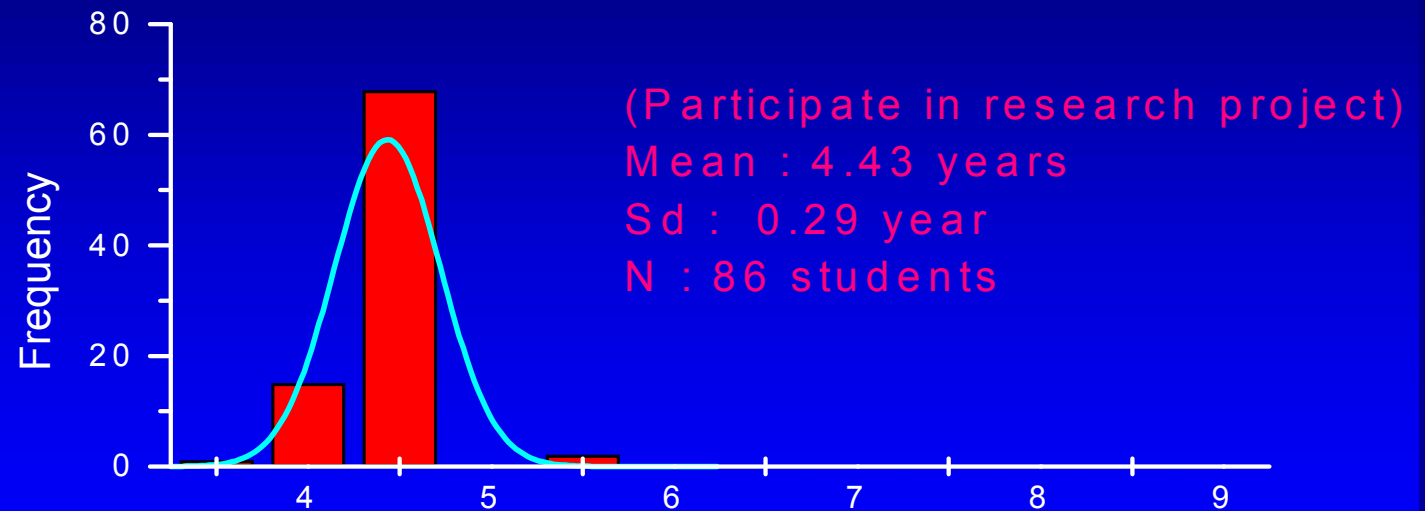
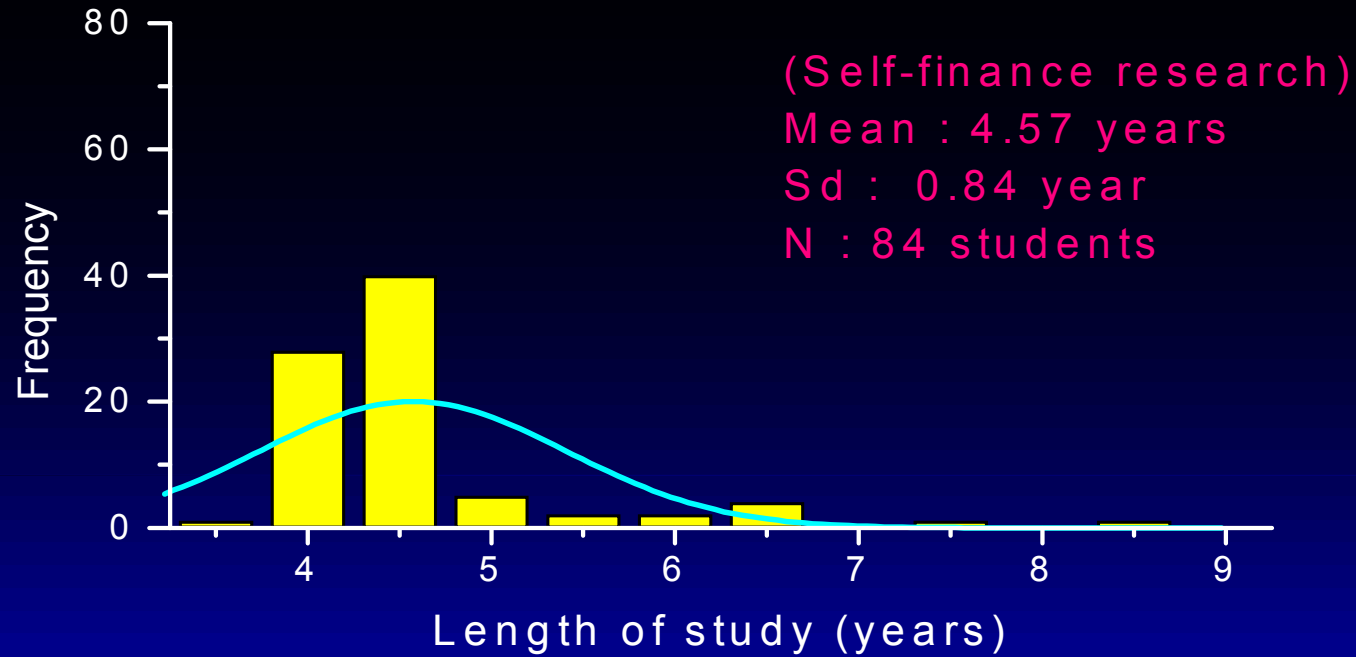
Steps in implementing

- **Competence Based Curriculum**
 - Ability to do something
- **Learning Outcomes**
 - the knowledge (facts, concepts, principles) and skills (processes, strategies, methods) to be learned
- **Delivery and Assessment**
 - 'Standard' - a predetermined criterion of a level of student performance
 - 'Assessment' - the process of collecting data/evidence about student learning outcomes

Using Indicators

- ❑ Input : GPA in Undergrad, Competitiveness, Attractiveness
 - ❑ Process : Length of study
 - ❑ Output : GPA
 - ❑ Outcomes : # of Publication based on thesis and dissertation
 - ❑ Impact : Tracer Study
-

Using Indicators and Comparison



of Study Program in Master & Doctor Degree

Faculty	# M	# D
Agriculture	12	8
Veterinary Medicine	7	5
Fisheries and Marine Science	8	9
Animal Husbandry	2	2
Forestry	7	5
Agric. Engineering & Technology	6	3
Mathematic and Natural Science	11	7
Economic and Management	7	2
Human Ecology	6	5

Corridor for Education-Cooperation

- Research : already established and successfully
 - Education; How recognize student achievement ?
 - Based on learning outcomes
 - Review learning outcomes from both side
 - Content, delivery and assessment
 - Similar ?
 - Recognizing as Credit Unit
-

Form of Education Cooperation

- Exchange without credit
 - Most simple form
 - Only for overseas experience
 - Credit Earning Activity
 - Activity in Host Institution
 - Recognize as credit in Home Institution
 - Degree from Home Institution only
 - Good start for Double Degree
 - Example currently summer course
 - Double Degree
 - Credit will be recognized both side
 - Degree from both institutions
-



IN A PERFECT WORLD...

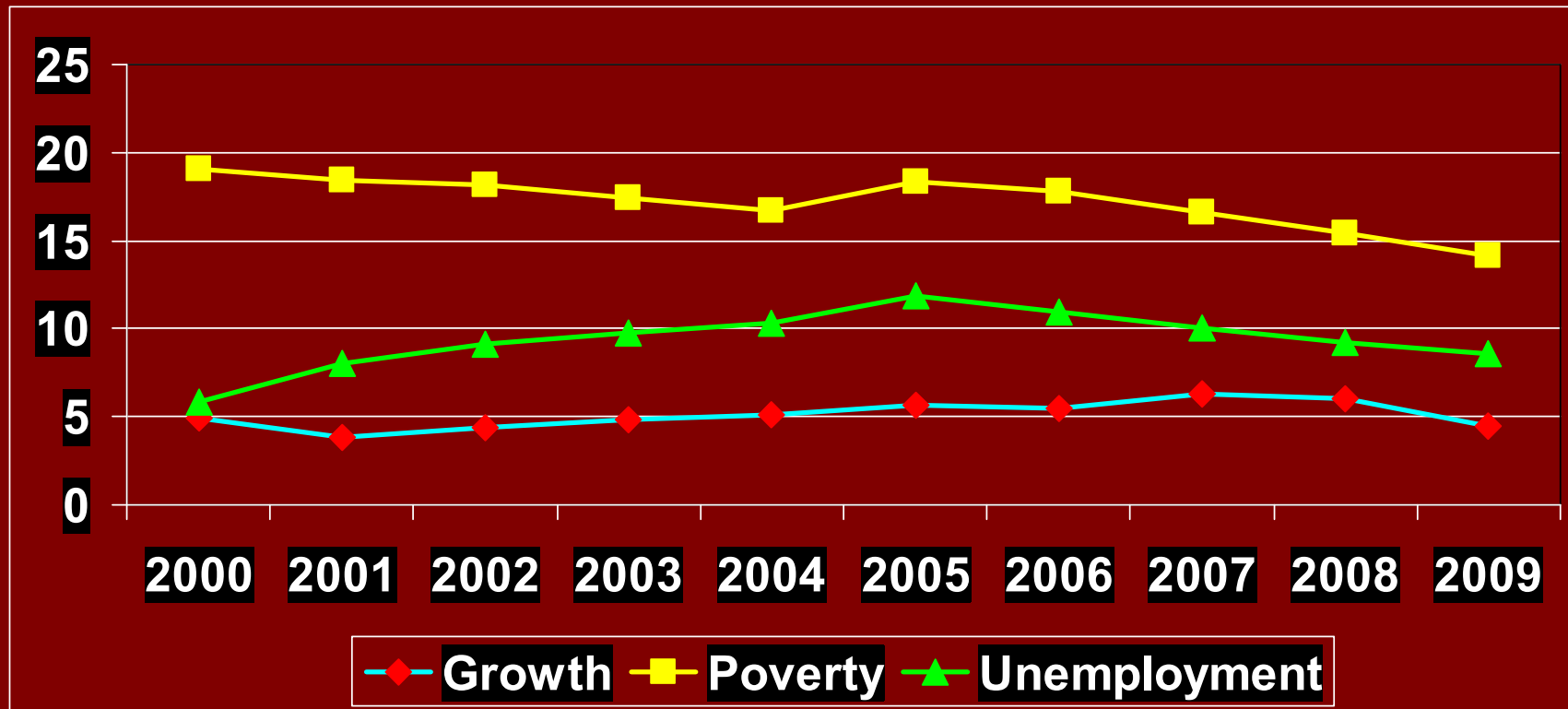
Our Dream; Excellence Human Resources

- **Smart**
- **Use opportunity and threat proportionally**
- **Contribution of Student Exchange**

Other Expectation; especially in Context of National Development

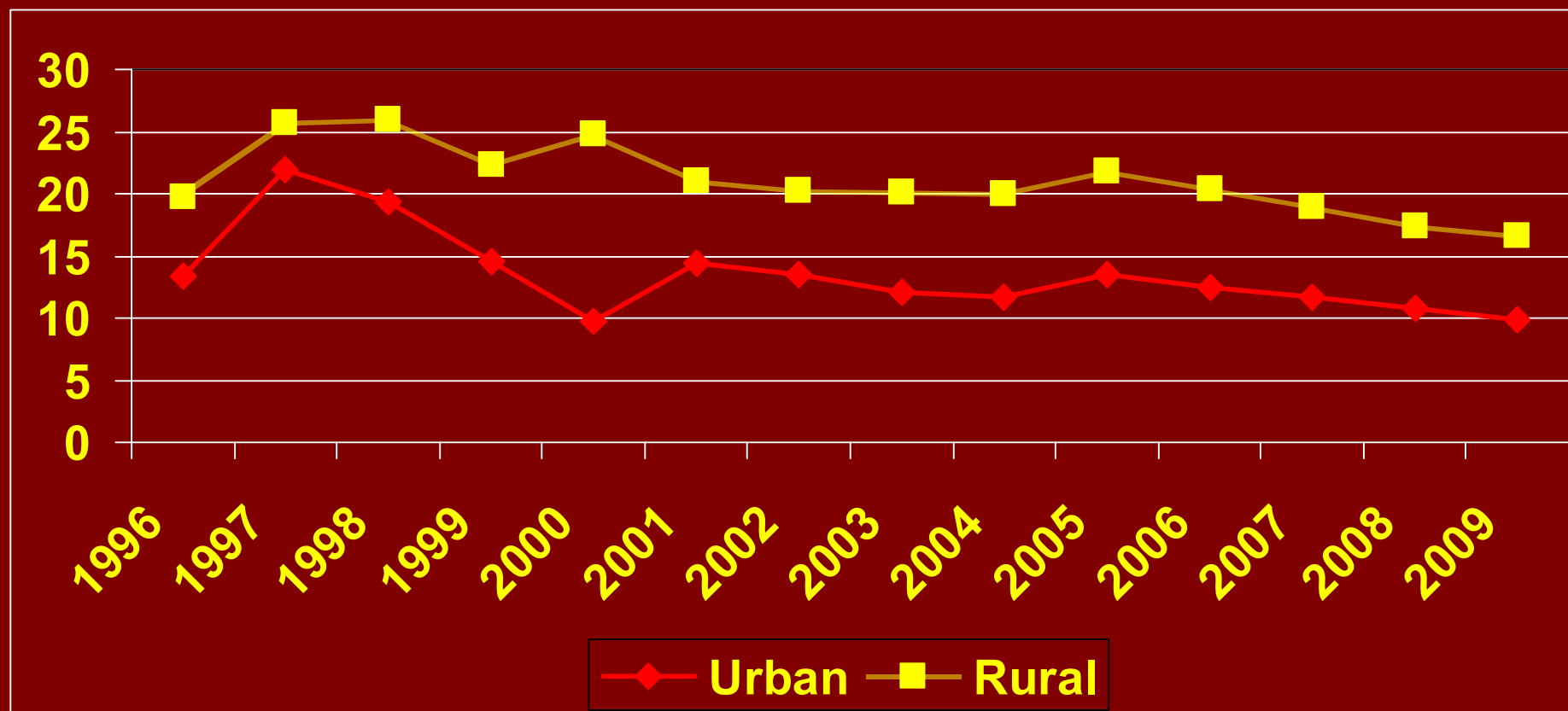
Research = Creating Prosperity

Some Facts; Growth, Poverty and Open Unemployment



Poverty in Urban and Rural

% tage of poor people



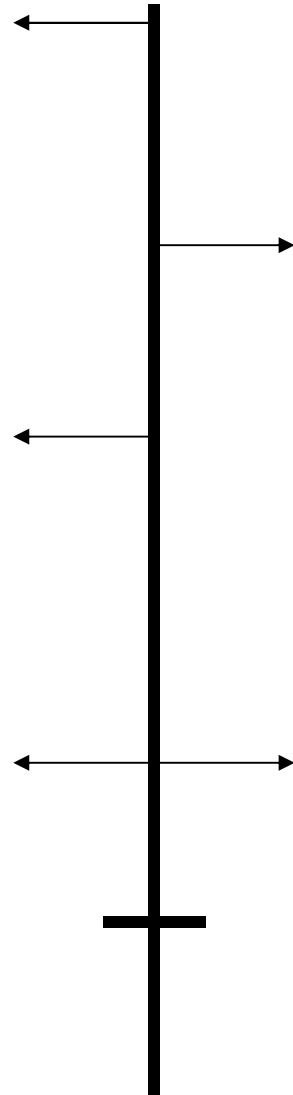
Cost and Price

Rice
Rp 2750 /kg
(320 US \$/ton)

Paddy (GKP)
= Rp 1230
(147 US /ton)

Cost for Paddy
Rp 850 / kg
(100 US \$/ton)

INDONESIA



Rice
200 US \$/ton

Cost for Paddy
100 US \$/ton

THAILAND

Source: Purba dan Seta (2004)

Indonesian Perspective; **Growth, Poverty and Unemployment**

- Economic Growth
 - Not sufficient to create job opportunity
 - Triggered by consumption
 - Not high enough
 - Quality of growth
 - Special attention for rural area
 - Depend on prime mover
 - Contribution of Research-Result ?
-

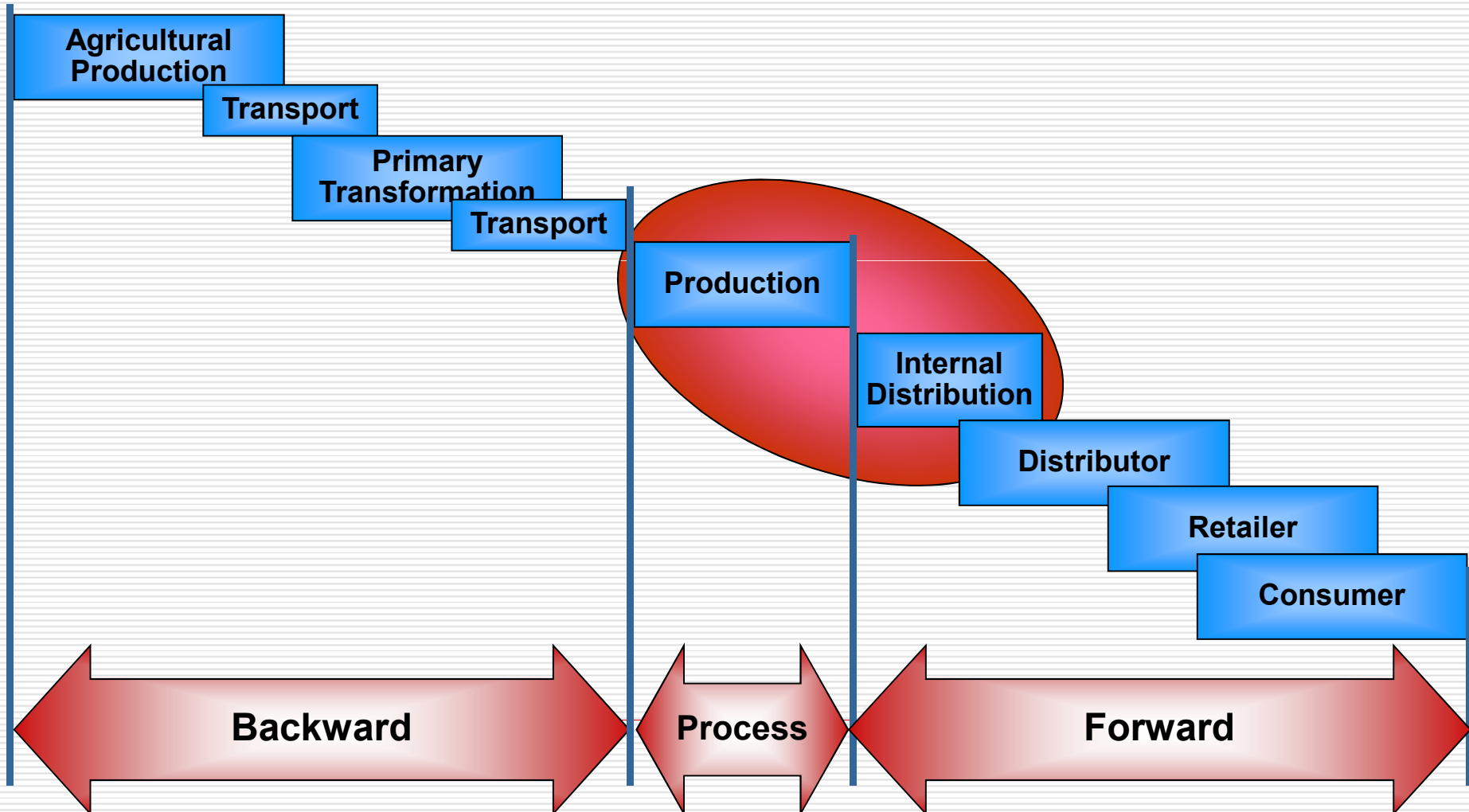
Research related to Agriculture

- Rural development = agricultural development + rural industrialization
 - Huge multiplier effect
 - Job opportunity and income in rural
 - Reduce urbanization
 - Environment friendly
 - Pro growth, pro job, pro poor, pro indigenous resources
-

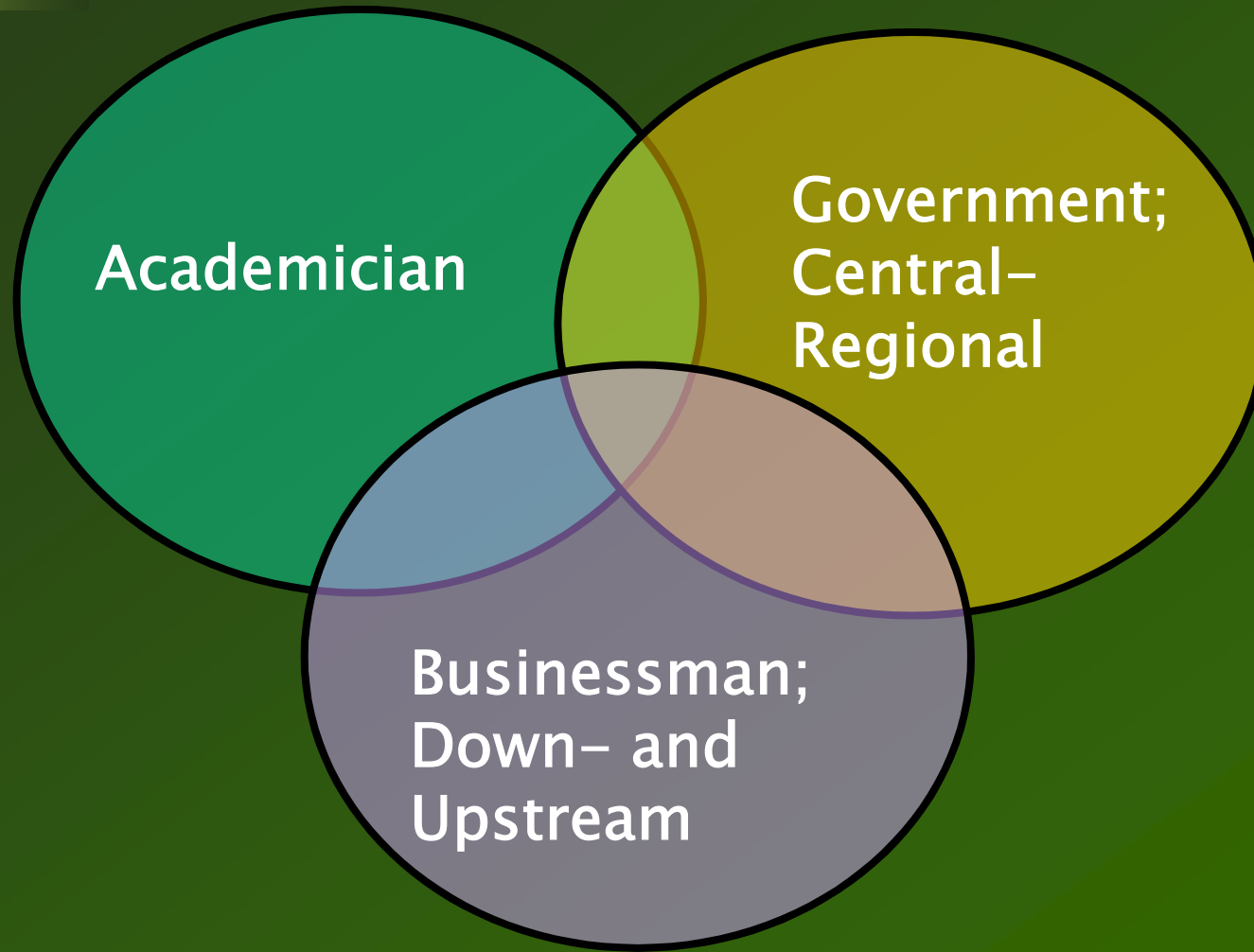
Indigenous Resources

- Set of *knowledge* and *technology* existing and developed in, around and by specific indigenous *communities (people)* in an specific area (*environment*)
 - Optimized, in order to
 - Foster community development
 - Create job and income
 - Diverse food consumption
 - Pro poor, pro growth, pro job, pro indigenous resources
-

1. Back- and Forward Linkages is essential

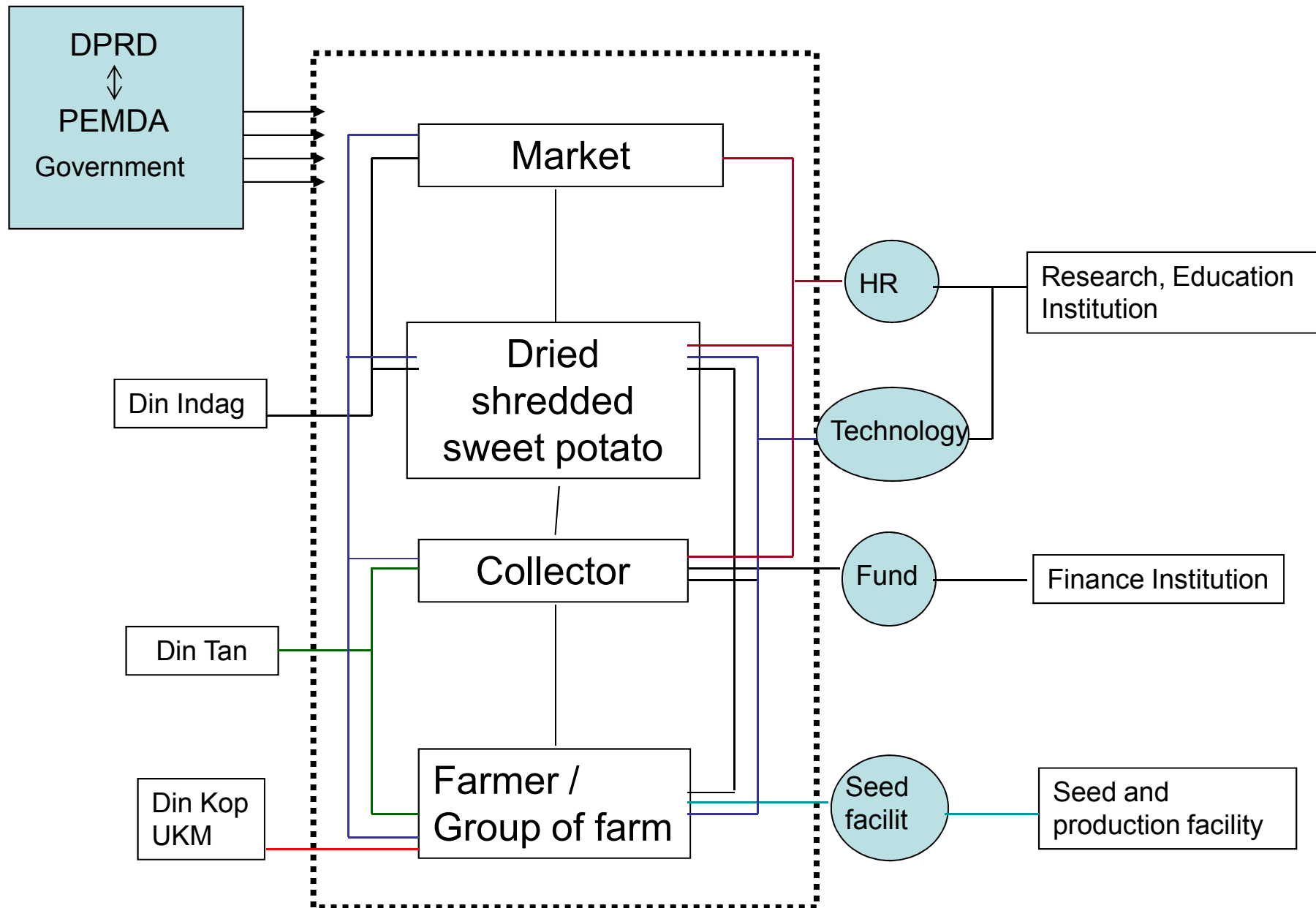


2. Involvement of Stakeholders



→ Integrated through Logical Framework

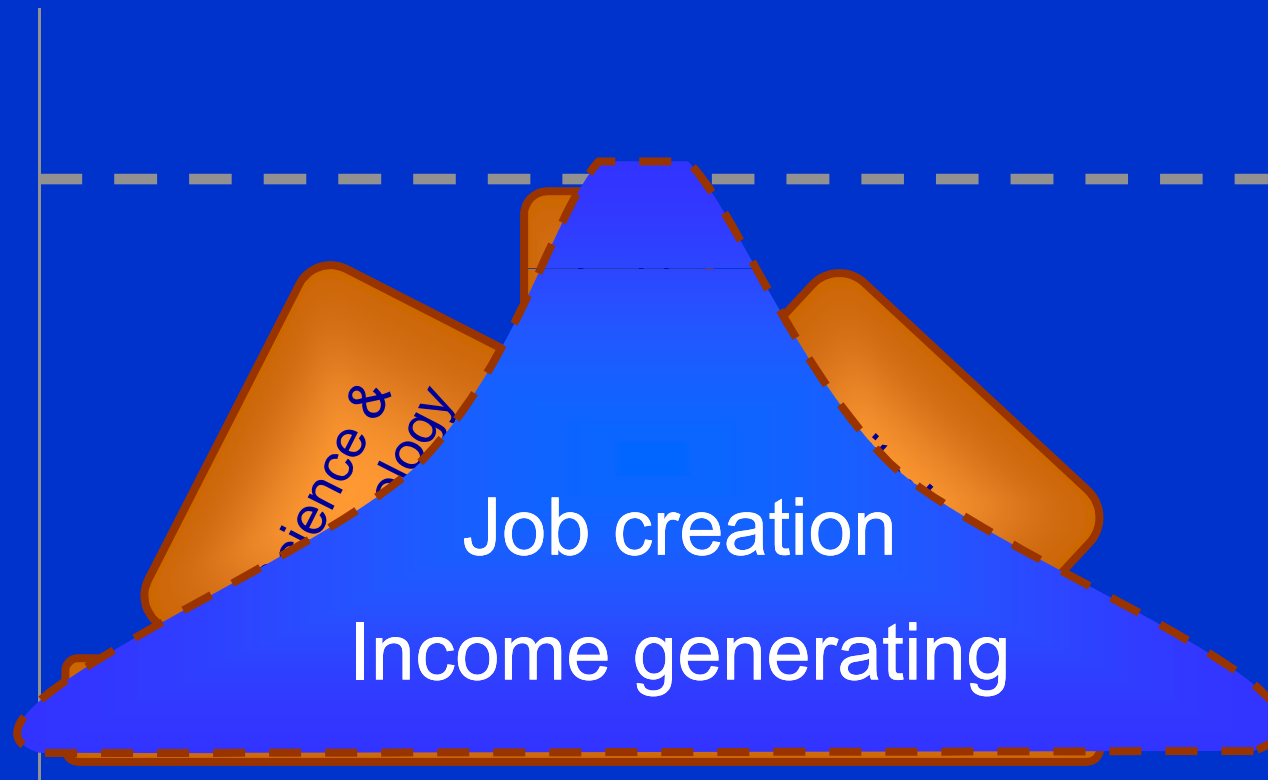






3. S&T for local empowerment

Purchasing Power

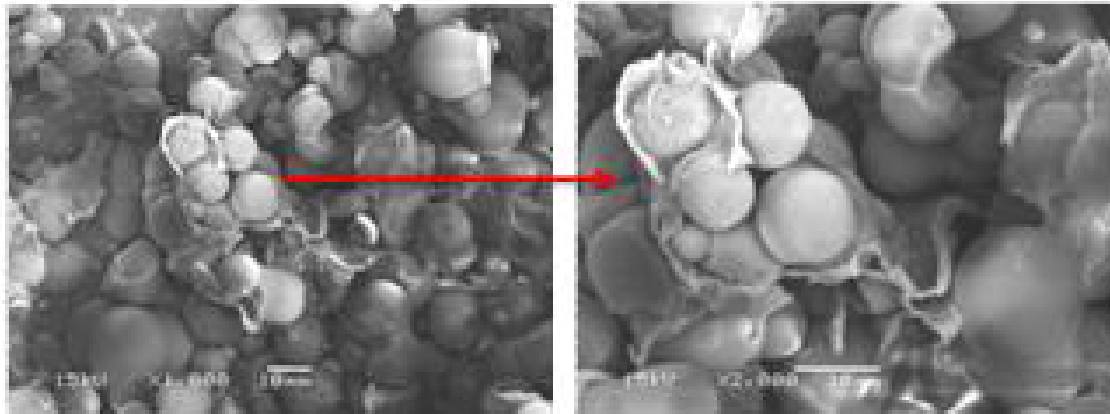


Example: Regional Development based on Cassava in Trenggalek

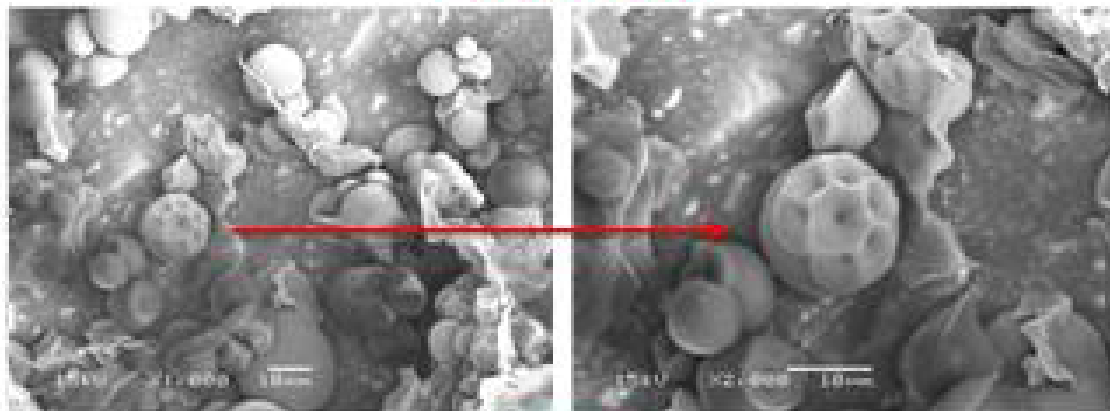
- Why cassava ?
 - Long history
 - > 50 % poor people are cassava farmer
- Currently : under value, limited industrial use
- Cassava aroma and taste
 - Avoided by Food Industry
 - Mostly processed into tapioca starch
- Eliminating aroma and taste ?
 - Outer layer of starch granule
 - Which process is suitable ?

Sources : Subagio (2008), Suharto (2009)

Breaking granule outer layer (Subagio, 2004)



Tepung ubi kayu

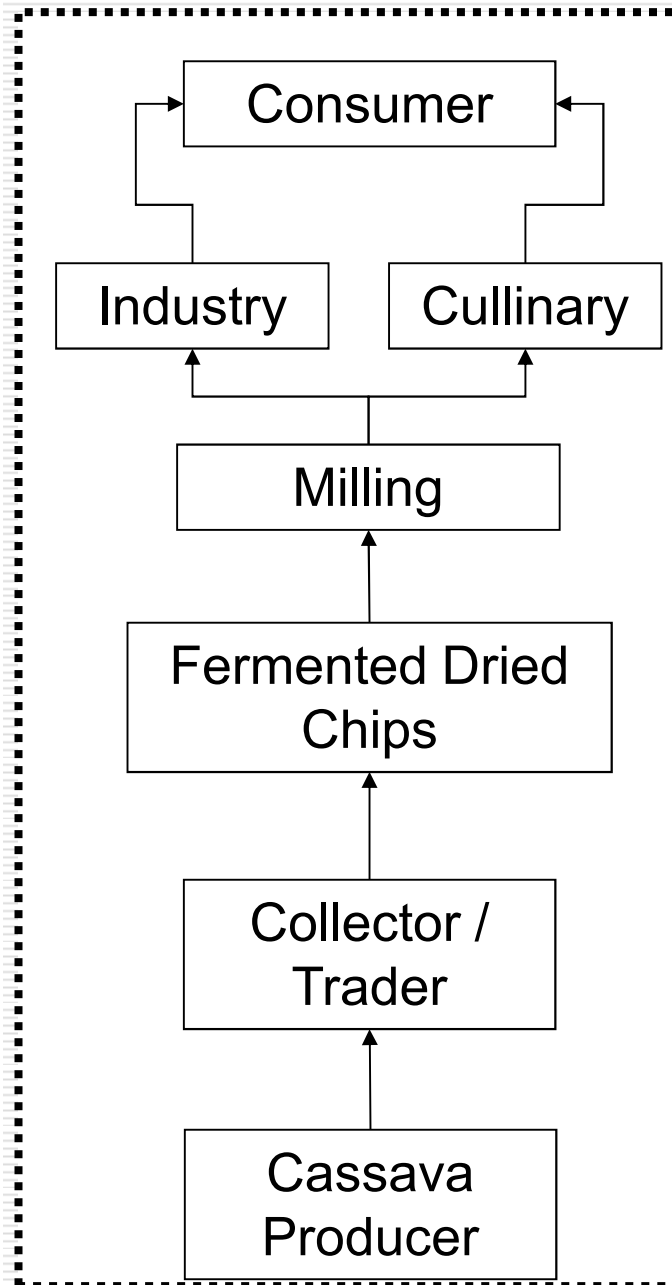


MOCAF

- Tasteless and plain

New
Ingredient
???

Create Value Chain



- Stakeholders : Farmer, Collecting Trader, Processing, Flour User, Consumer, Center and Regional Government
- Must be synergized
- Increase efficiency along chain;
 - on and off farm activity

Processing of MOCAF

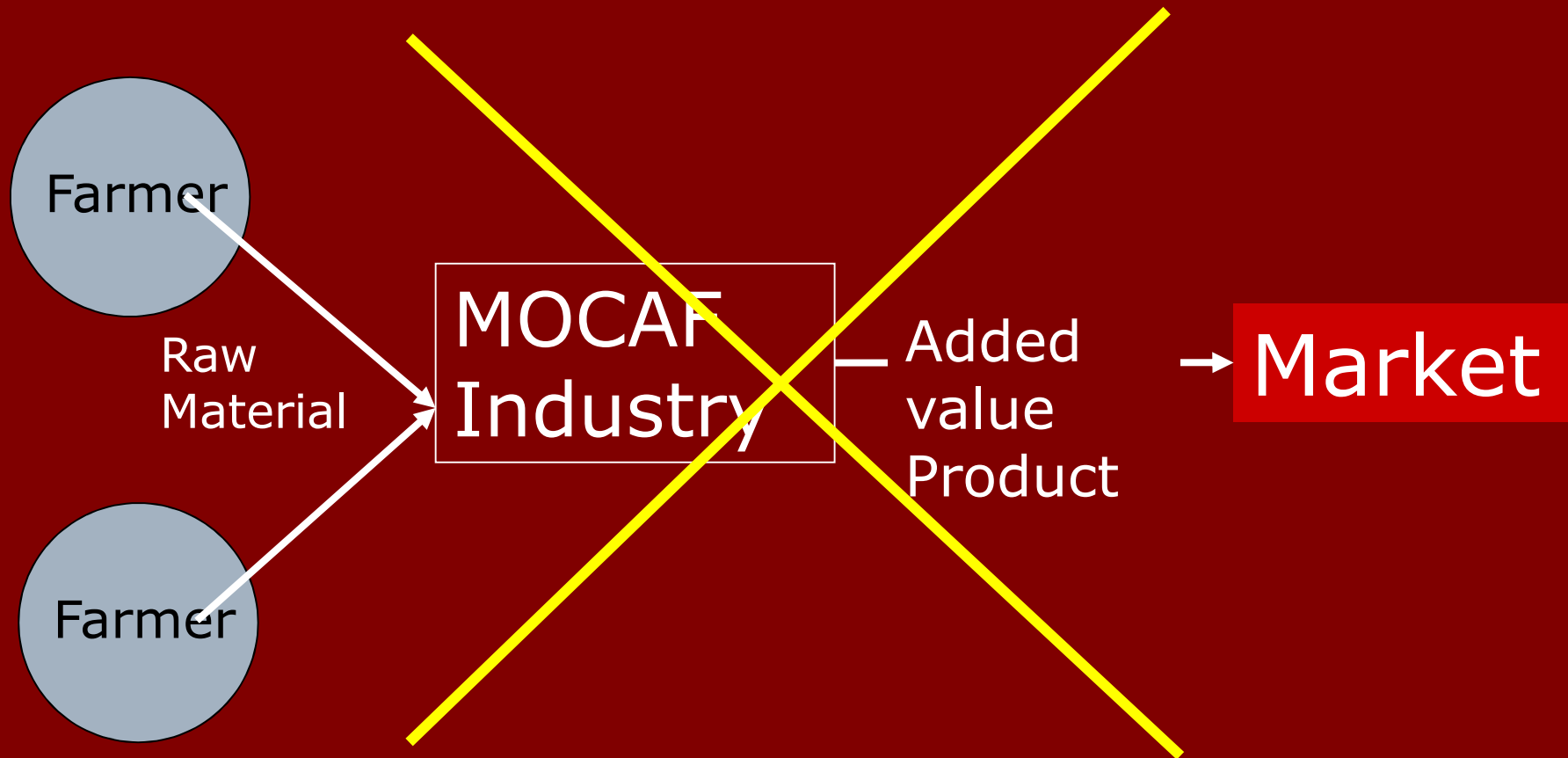


At Beginning; Centralized Processing

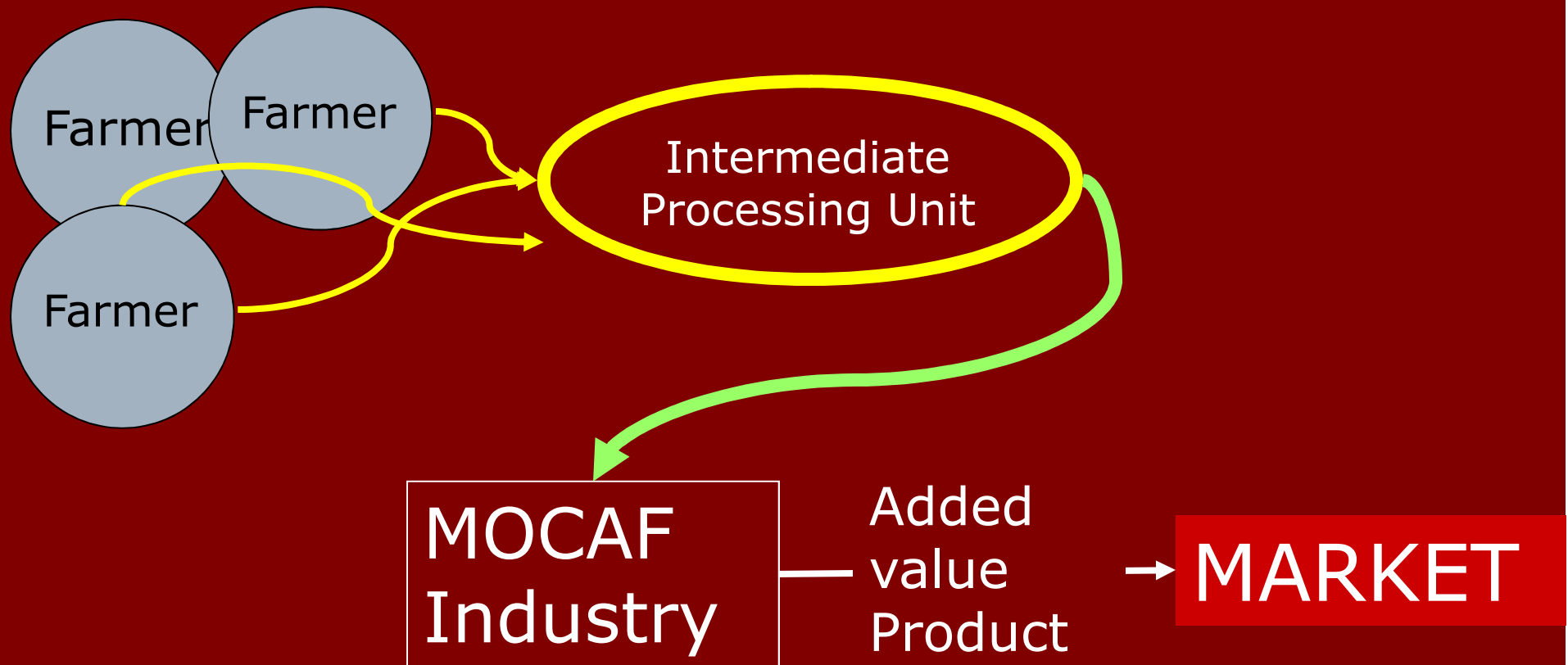


- ❑ Farmer only as supplier of raw material
 - ❑ Raw material transportation; mostly water
 - ❑ Waste problem
 - ❑ Added value not enjoyed by farmer
-

Thinking about decentralization



Strategy; Intermediate Product





On-Farm Activity

In Intermediate Processing Unit



Cluster
YAYASAN YATIM PIATU
AL-MUHAJIRIN
NGULANWETAN POGALAN
TRENGGALEK





In Intermediate
Processing Unit

Cluster di Desa Kerjo
Karanganyar



Fermented Dried Chip transported to Factory

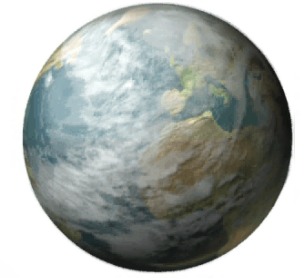


Weight of FDC as part of transaction mechanism



Outcomes and Impact

Technology, Regional
Development



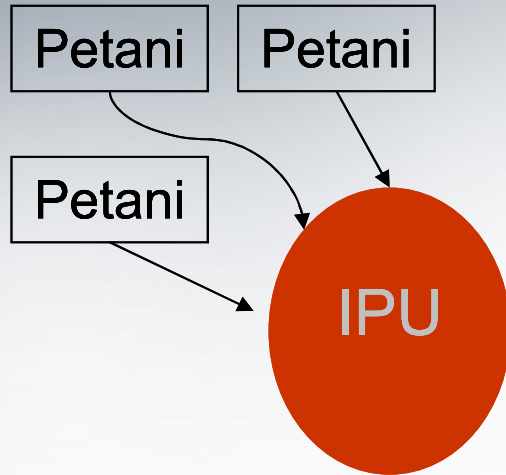
Compliance
to process
and product
specification

Research
Institution

Government
of Trenggalek
Regency



What to do in Intermediate Processing Unit ?



- Raw Material Inspection
- Peeling
- Slicing
- Fermenting (submerged)
- Drying
- Packing



Agro industri **MOCAF**
Bagian penggerak ekonomi masyarakat

Manpower involved

Cluster	Trader & Labour	Factory					Transportasi	Jumlah
		Operator mesin	Buruh	Manajemen	Keamanan	Kebersihan		
(orang)	(orang)	(orang)	(orang)	(orang)	(orang)	(orang)	(orang)	(orang)
1060	159	2	4	4	2	1	4	1236



Job creation in IPU (in-situ); Man-hour / 300 kg cassava

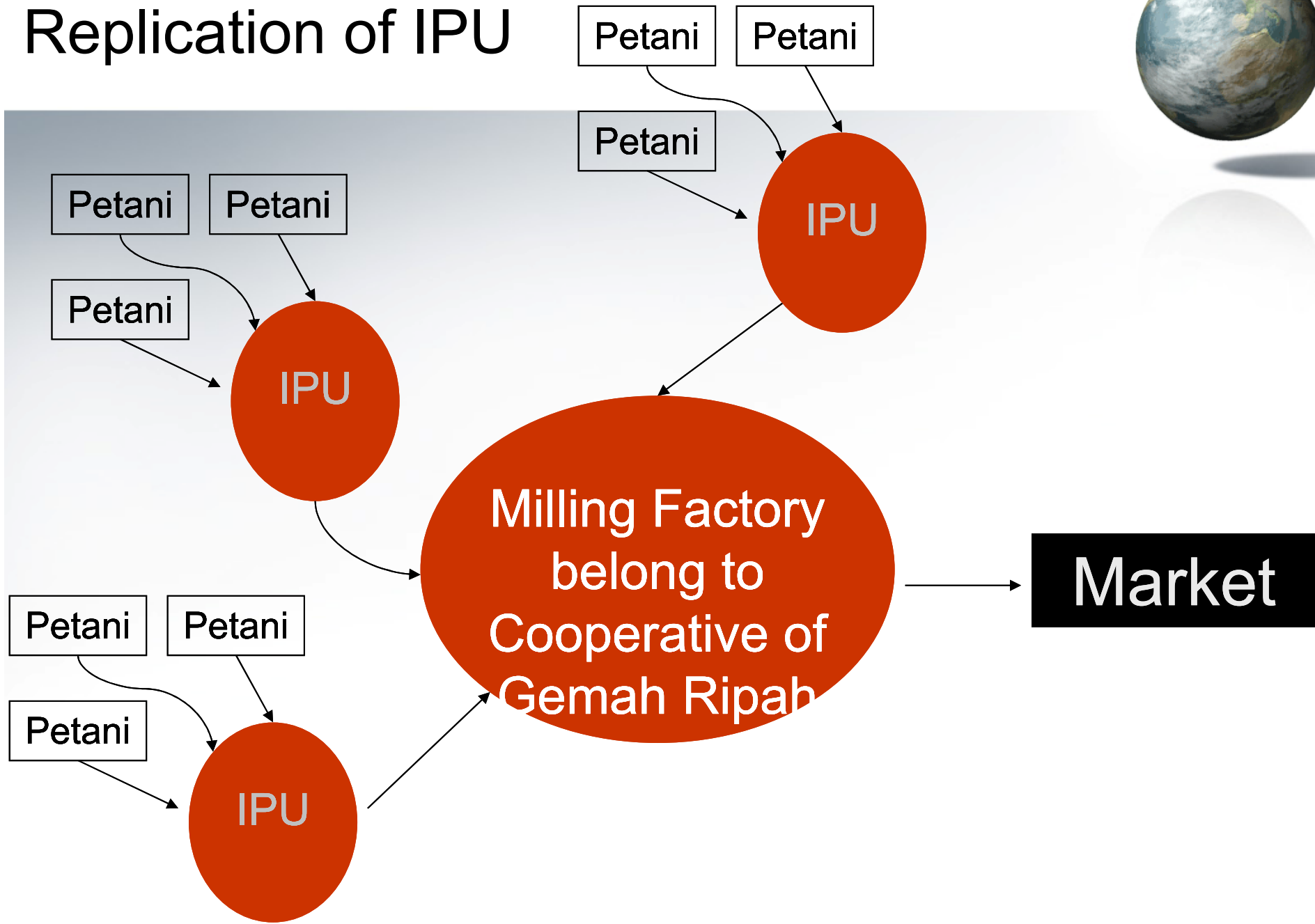
Step	m.h.	Remark
Raw Material Receiving	0.5	Weighting of cassava, will be grouped as 100 kg raw material
Peeling	6.0	100 kg need 2 hours
Washing	0.5	In wash bassin
Slicing	1.0	Included preparing for fermentation
Incubation	0.5	Placing of chip in fermentation vessel



Job creation in IPU (in-situ); Man-hour / 300 kg cassava

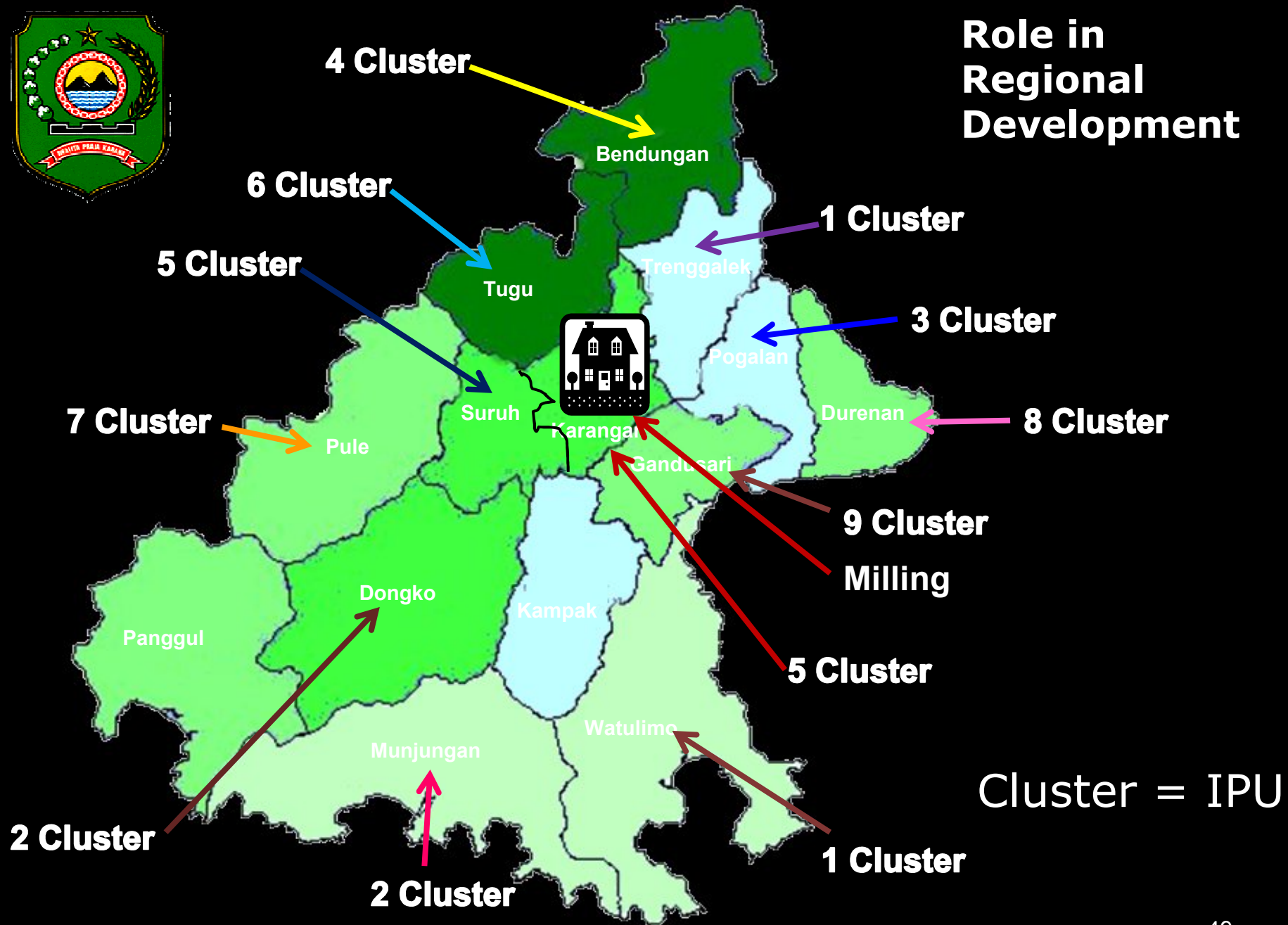
Step	m.h.	Remark
Salting	0.5	Washing in salting vessel
Drying	6.6	Sun drying. Assumption : in same location
Packaging	6.3	Collecting from dryer, packaging and warehousing
TOTAL	21.9	

Replication of IPU





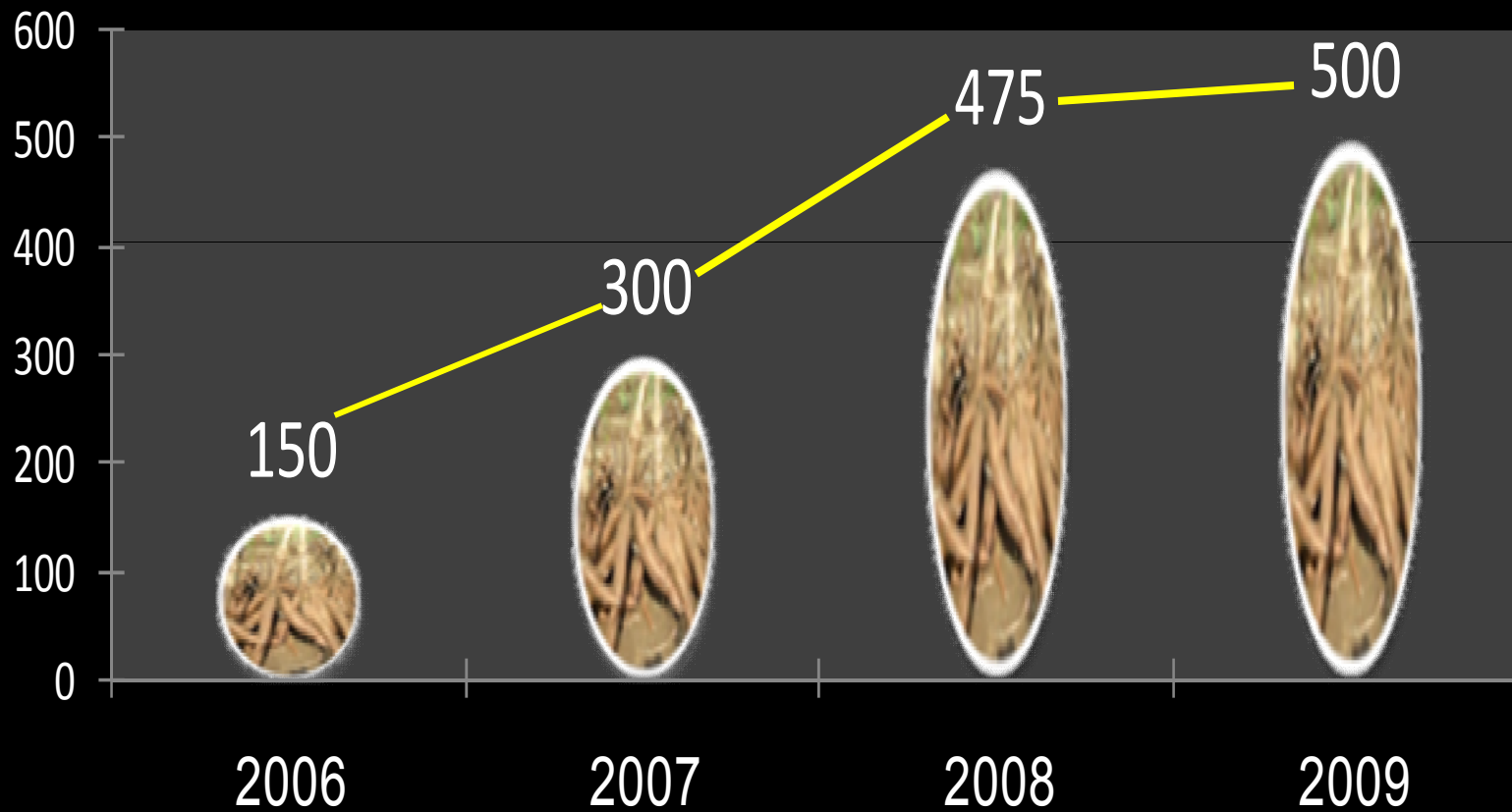
Role in Regional Development



Cluster = IPU



Stability of Cassava Price



Closing Remark



in WEF, Davos (2011)

- The world's current economic model is an environmental "global suicide pact" that will result in disaster if it isn't reformed,
- political and business leaders need to embrace economic innovation in order to save the planet.
- "We need a revolution," how best to make the global economy sustainable. "[Climate change](#) is also showing us that the old model is more than obsolete."
- He called the current economic model a recipe for "national disaster" and said: "We are running out of time. Time to tackle climate change, time to ensure sustainable ... growth."



Interesting Statistics on “tilted situation” (the UN Human Development Report; 1998)

Description	USD Bil
Cost of Supplying Basic Education to all children	6 / y
Cost of US spending on cosmetic	6 / y
Cost of Provision of Water and Sanitation for all	9 / y
Cost of Spending on Ice Cream in Europe	11 / y
Cost of Provision of Basic Health for all	13 / y
Cost of Spending on Cat Food in USA & Europe	17 / y
Cost of Elimination of Malnutrition through improved agricu.	4 / y
Cost of Slimming Aids to counter obesity and over-eating in the first world	4 / y

With The Right Team
No Goal Is Too Distant.

