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“ Industrialization and Modernization in  
Agriculture and Forestry Outlook ”

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# Outline

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2. Review on Industrialization and Modernization and Agriculture and Forestry from 1988 -2013.
3. Conclusion
4. Recommendation
  - 4.1. Direction of industrialization and modernization development in Agriculture sector up to 2025 and vision to 2030
  - 4.2. Implementation measures

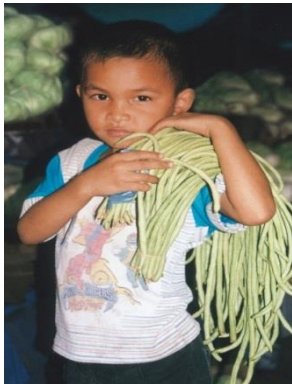
# Introduction

## Background and Importance of Industrialization and modernization in Agriculture and Forestry in the Lao PDR.

- Resolution of IV to IX party congress identified:
  - Agriculture and Forestry Sector is a basic sector of national economic structure. Consider that Agriculture is first priority in development.
- Resolution of VIII party congress has identified: Industrialization and Modernization are prioritized in development. Because, creating of I&M and socialism are the same thing to do.
- The government goal is aiming to lead the country escape from the least poor country in year 2020.

## Introduction (cont.)

- Past, Agricultural sector has been implemented I&M, but many constraints and challenges had been found such are: low rate of economic growth, weak of production capacity, not strong enough of agriculture commodity production with low quality,.....
- So, industrialization and modernization development in Agricultural sector are essentially needed.



**Status of implementation of industrialization  
and modernization in Agricultural sector  
from 1988-2013:**

- Ministry of Agriculture and Forestry has endorsed many legislations and terms to facilitate agriculture production, issue policies to promote utilization of agriculture machinery, mechanization and advanced technology to increase production capacity and quality, to reduce the production cost and meet national standard of agriculture commodities,
- So, have found a lot positive and negative impacts to national economics for instant: able to self-sufficient of food in year 2000 and increasing year after year, and have increasingly some basic commercialized agriculture production for local and export markets.

# Achievement of Industrialization and Modernization in Agriculture sector from the past

## 1. Economic growth rate in agriculture:

### - Proportion in national poor reduction

📉 2001-2002 = 37,6% → 2012-2013 = 10,57%

### - Economic growth rate of agriculture

📉 2001-2005 = 3,3% → 2006-2010 = 4,1 %

### - GDP reduction in Agriculture

📉 1999-2000 = 51,9% → 2012-2013 = 27 %

## Food and commodity produce

### Rice:

- Year 2012 = 3,5 mill. tones, average/head of paddy 520-540kg/head
- Year 2013 = 3,6 mill.tones,
- Year 2014 = 4 mill.tones

Vegetable production = 600.000-700.000 tones/year

Cattle and fish production 2006 – 2012, the grow rate is 5-6% per year



## 2. Commodity production

### Crops:

- Field maize product is increased around 1 million tones equal 126%,
- Coffee bean 87.330 tones, double increased,
- Sugar cane 1.055.700 tones, increased 5 times
- Cassava 1.060.880 tones increased 4 times,
- Tea 3.980 tones increased 6 times,
- Tabaco 75.560 tones increased 3 times,
- Legumes 60.200 tones increased 36%, job-stear 122.300 tones, sesame 13.900 tones.

## 2. Commodity production(cont)

- Cattle - up to 2012, there are many new factors having born for instant: release and utilize improved breed and rearing technique with industrialized technology. The most development in swine rearing, have big farm from 13.910 mother heads in 2011 become 20.220 mother heads (775 farms)
- Fish production: also increased of rearing cages. Nowadays, total 4.500 cages comparing with year 2005 is increased 1,4 times. Able to supply fish to market 82.100 tones /year, increased 38% in comparing with year 2005.

### 3. Research and promotion of technology

- Establish total 15 research centers within country
  1. Rice Research Center
  2. Livestock Research Center
  3. Aquatic and Fish Research Center
  4. Horticulture Research Center
  5. Forestry Research Center
  6. Agriculture Economic Research Center
  7. Louangnamtha Agriculture Research Center
  8. Upland Agriculture and Forestry Research Center
  9. Thasano Rice Research Center

10. Southern Agriculture and Forestry Research Center
11. Maize and Cash crop research center
12. Lao-Khouangxi cooperation research center
13. Research Center for Agriculture Adaptation to Climate Resilience
14. Information Research Center
15. Rubber Research Center

- **Achievement in research and technology development:**

- ☒ Rice seed (high yielding sticky, good quality, aerobic, aromatic non glutinous)

- ☒ Maize seed(VT450, LVN10)

- 13 kinds of O.P vegetable seeds, 12 kinds of fruit tree seedlings and some industrial crops,

- ☒ Fish multiplication and local fish production(ນົມ, ເຄິງ, ເພັ້ນ, ຊວາຍ..)

- ☒ Artificial cattle breeding technique and various grass varieties production.

- ☒ SCV technique

- ☒ Land survey and classification in provincial and district levels in 153 districts in year 2014

## 4. Investment of other economic sectors

- Government around 22-35 thousand mill. Kip/year.
- International project 376 mill. dollar
- Private sector 2.336 mill. dollar
- Coffee export to Internal market
- Okra export to Japan
- Maize export to China, Vietnam and Thailand
- Medecinal and herb
- Natural and organic tea

## 5. Agriculture labor use

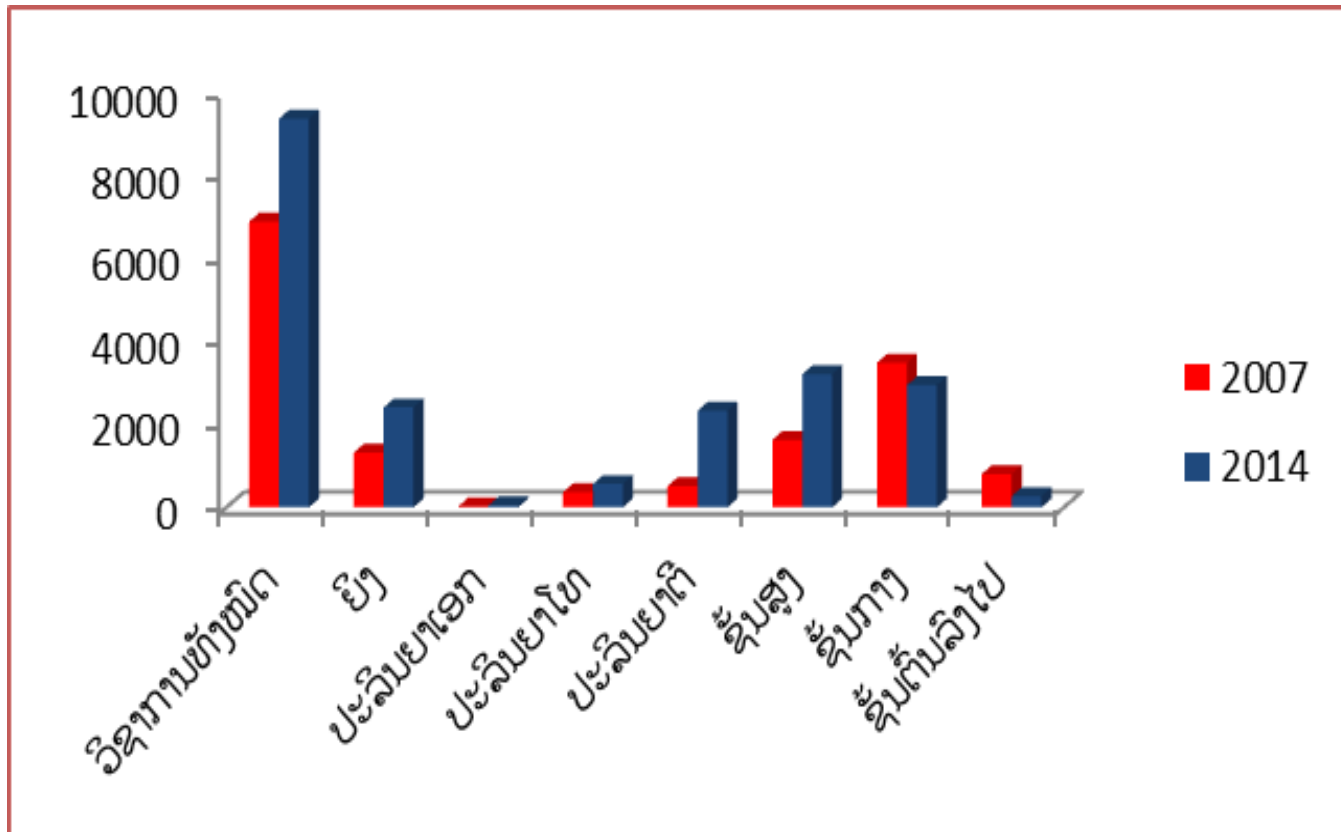
- Agriculture labor shared in national economic structure is decreased from **85.4%** in 1995 to **71.3%** in 2003 and **66,14%** in 2013
- While labor shared in industry is increased from **3.4%** in 1995 to **20.9%** in 2003

## The proportion of households in Lao PDR used tractors in crop cultivation from 2003-2013

Year	Hand tractor	Four wheel tractor
2013	32,7%	4,6%
2008	24,0%	4,0%
2003	15%	4,0%



## 6. Human resource and development in Agricultural sector



# Impact from "I&M"

- **Positive:**
- GDP of agriculture and forestry increased in each period, food production and commodity production were booming and quite fast growth in both quantity and quality.
- State control by laws and regulations are broader and increased. More scientific utilization and technology,
- Infrastructures are more developed, fast growth day by day and increased,
- The role play of Lao PDR in ASEAN state and worldwide is more increase.

# Impact of “I&M”

- **Negative:**
- The big national and foreign business are more increased but control them is not tight; low enforcement is not good enough, corruption is spread out.
- Increasing environment damage, more environment impact and people health.
- Large scale of land concession for large scale production following industrialization direction, more threaten to the forest ; some rice production lands were changed to other industrialized crops.
- Contradiction with green agriculture development and sustainable which is concerning with environmental conservation.

# IV. Conclusions

- Agriculture and Forestry sector is being a basic sector in national economic structure, and play important role in government policy and national economic development plan implementation,
- The term least development in Lao PDR is related to many sectors. However, it is more concerning in agriculture by 71.1% of agricultural main power, 80% of population
- Development of industrialization and modernization is the same goal with socialism development, therefore it is essential needed to do,

# Recommendations:

- Observation that inadequacy of I&M indicators in Agriculture and Forestry of Lao PDR, but Party has been set up future goals, extremely was done in the VII<sup>th</sup> Revolution Party Conference. Acceptance of National Economic Development Plan up to 2020, expect to eradicate from the list development country and determine some new indicators for I&M. However, there are a lot of indicators missing compared with international indicators. However, we have some recommendations as follow:

# Direction of industrialization and modernization development in Agriculture sector up to 2025 and vision to 2030

- **Vision:**

Reform agricultural production methodology, successfully develop fundament of industrialization and modernization, people livelihood is creased by 4 times, agriculture economic is secured in both quantity and quality toward marketable, able to link with regional and global market, national economy is strong and increasing systematically, social is safety, wellbeing, country is definitely independent from least poor country.

# Direction of industrialization and modernization development in Agriculture sector

## 5 Goals:

1. Toward implementation 7 programmes or Mega projects of this sector, such as agro-irrigation project in main lowland areas by intensification production with complex of investment, full circle production (rice, commodity crop, livestock rearing and fishery) related with processing and services in sorrowing places with using advanced technology in production, storage, processing and supply chain, focusing on national and international private sector investment.

2. Widely open production linked with industrialization and modernization in some areas (small and medium) of upland environment where agriculture land is limited. Concentration on smallholder intensive production, group production with irrigation supply for food and commodity.

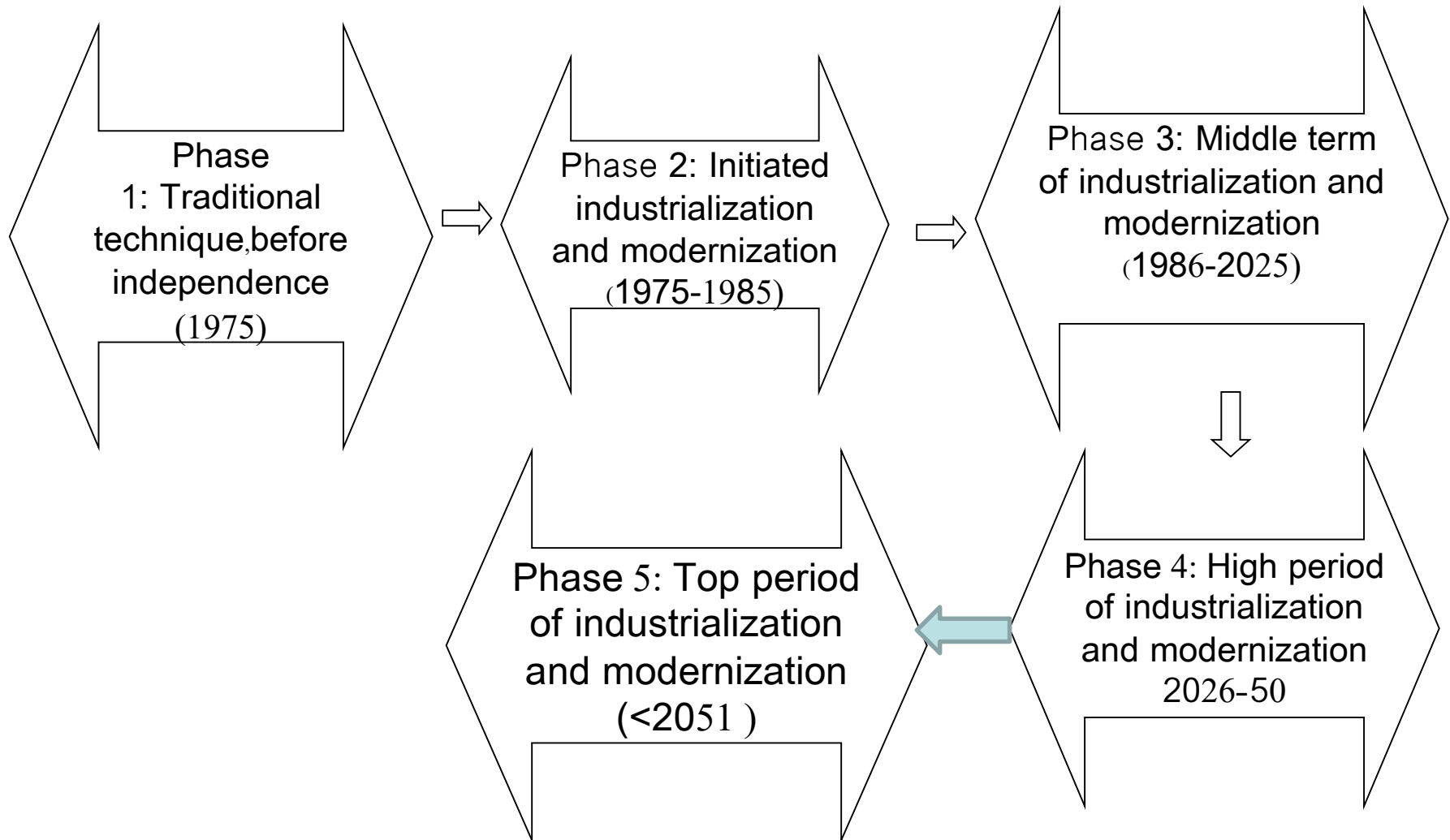
3. Apply zero-tillage technology(SCV) where land is suitable for food and grass production,
4. Staple food and market oriented production should be strongly parallel with rural development in complex; where as: road construction, electricity to link rural with a city
5. Beside widely staple food and market oriented production, organic production must be concerned depending local possibility and condition with stable market availability focusing on: coffee, rice, vegetable.....



**Some suggested indicators for Industrialization and modernization in Agriculture and Forestry in the Lao PDR based on international standard to 2025:**

<b>No</b>	<b>Standards</b>	<b>International</b>	<b>Lao PDR</b>
<b>I</b>	<b>Economic development</b>		
1	GDP average per capita (USD)	≥ 5.000	2.500-3.000
2	Share amount of Agriculture in GDP (%)	≤ 10	≥20
3	Portion of Agriculture Labor (%)	20-30	45
4	Share amount Industry in GDP (%)	>20	>20
5	Proportion of urbanization	>50	>50
6	Average electric produce Kwh/head	3.000	>3.000
<b>II</b>	<b>Social Development</b>		
7	Human Resource Development index (HDI)	≥ 0,70	≥ 0,63
8	Average longevity (year)	73	74
9	GINI	0,32-0,38	0,40
10	Average doctors per population 10.000 persons	≥ 10	≥ 10
11	Professional labors (%)	50	35
12	Proportion of population use internet (%)	>35	>30
<b>III.</b>	<b>Environments</b>		
13	Clean water access of people (%)	100	100
14	Forest cover (%)	≥ 45	>70
15	Ware house gas reduction every year (%)	1,5-2	1,5

# Development period and Agriculture economic growth in the Lao PDR:



# Improved basic structure and period of industrialization and modernization in agricultural sector

- Industrialization and modernization agriculture and forestry development by condition of Lao PDR, promotion of 4 basic structures as following:

## 1) Government policy(Master plan, regulatory, supported policies)

- Master plan
- Supported policies
- Issue of regulatory (farm implementation and management, Coperative, production group....)

## 2. Technique and technology development(crop production, animal raising, ຊປທ, ກົນຈັກ, ຂໍ້ມູນຂ່າວສານ, ສົ່ງເສີມ)

## 3. Social service(credit, marketing, price insurance)

## 2. Management mechanism (production group, farm, land management, infrastructure)

### 1) Infrastructure improvement:

- *Determine appropriated agricultural production zone;*
- *Formulation and implementing of rural development complex followed industrialization and modernization goal,*
- *Form up production group and community production,*

### 2). Applying advanced production technology

- *Improved research facility and scientific promotion:*
- *Sufficiency and strengthen human resource development and man power*

## 3. Social service

### 1) Financial service for production

- Government should top up credit volume to commodity production, to support expanding production land and produced volume to achieve expectation goal in year 2020. From Vietnamese and Chinese experiences, government must be strongly tried to convince more investment from foreign investors in agriculture and forestry, including increasing of foreign bank which focus on crediting on agriculture. Giving advise to the bank must supply credit to intensive production zones and on production season with flexible return condition and debt.

### 2) Standard certification and quality control of agricultural products

Now, marketable oriented agricultural product in Lao PDR. Is very fast grow up which can be exported and earn more income into the country, but standard management system and quality control or SPS are able to create only some crop only which is a main barrier,

# 11 major measurements need to be implemented:

- Special National Committee must be assigned to responsible industrialization and modernization agriculture and forestry;
- Decentralization more detail in different level within central, provincial and district levels managing I&M project with pilot project first in some location then expand the success project to other place
- Department of Extension and Cooperative should be a main organization in improving production man power, mainly production groups, upgrade them to cooperative toward agricultural production linkage with processing and service,
- Department of Planning and finance of MAF must be center in improving coordination mechanism between Central with local organization to help seeking fund support from government and foreign organization to implement Mega project of agricultural sector,

- Government should play coordination role between state and farmers, production group, and local and foreign to select out volunteer to implement project. Must lead, monitor and consistent of local organization from provincial, district and community,
- First step, government must be considered rural development complex, secondly is industrialization and modernization,
- MAF need to be considered human resource development, focus on build up more special subject specialists,
- NAFRI must be selected the advanced technologies in the region and worldwide to test and widely promote utilization, support opportunity and condition for business man, and private sector, company are able to dial agriculture research and seed development,

- Government need to mobilize fund from various sources in investment in agriculture and need to efficient manage both government and ODA funds;
- During project implementation, the project management team need to do evaluation systematically, draw out lesson from succeeded countries such are: China, Korea...
- Management system, government should concentrate in state management and accelerate social service, transparent and strict following state law.



Thanks for your attention

