



Gembloux Agro-Bio Tech  
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**NEW DEVELOPMENT IN DAK LAK  
PROVINCE (VIETNAM)  
TO IMPROVE SUSTAINABLE  
AGRICULTURE**

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# Vietnam





## INTRODUCTION

# Evolution of Agricultural systems in Dak Lak

Before liberation (>1975)

A

After re -unification 1975

B

After renovation (1986)

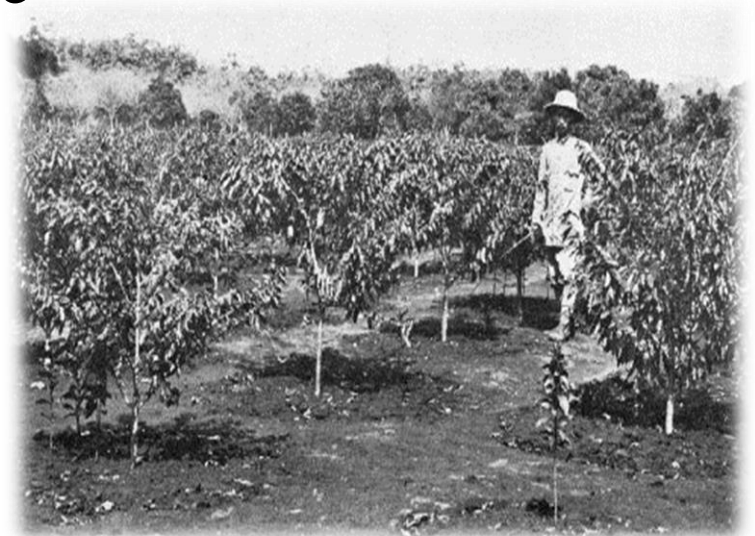
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After 1990

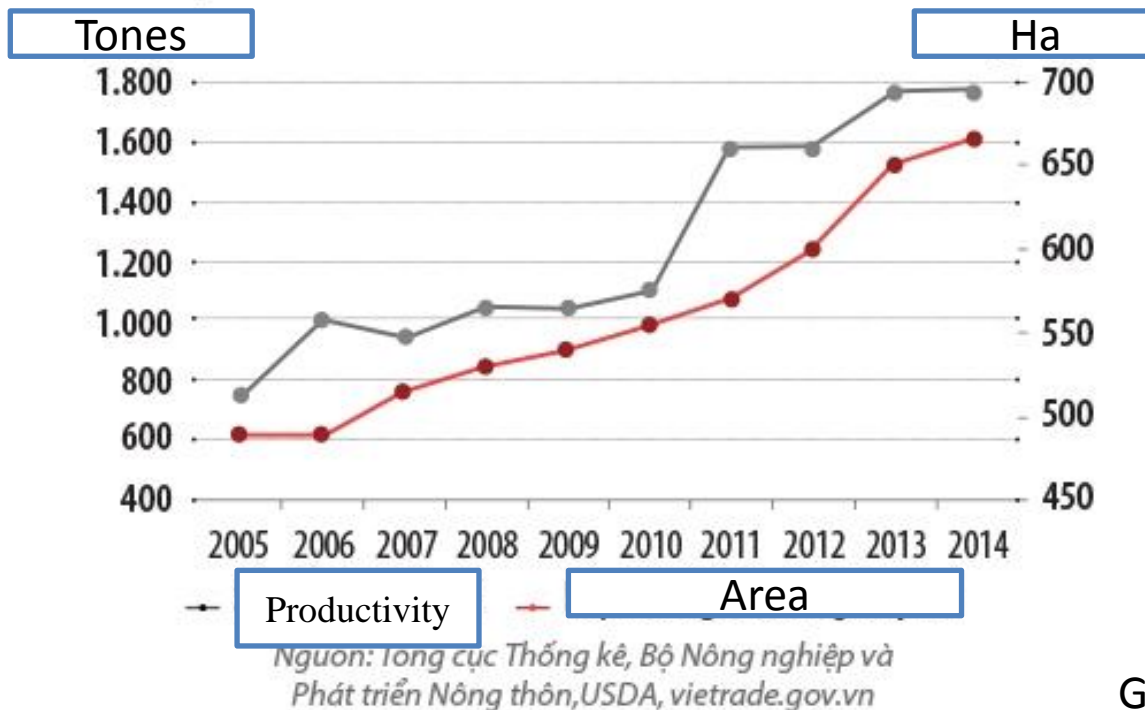
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Dak Lak was depended on French: important location and good conditions, (basalt soil) to help cropping farming (perennial crops) development. In the 1920's, suitable coffee growing areas were discovered in the Central Highlands. The acreage increased until 1945 to approximately 10,000 ha, mainly in Dak Lak province



- After reunification, Dak Lak had largest natural area in the country with about 60% natural area of country in which 715.774 ha of basalt soil (36.52%) and over 60.000 ha of high fertility soil.
- It is suitable to develop agriculture, especially perennial crop systems.
- A majority of newly claimed land has been used for cash crop production (Dang Thanh Ha and Gerald Shively, 2008).



GSO, 2014

After Renovation, agricultural sector of Dak Lak changed significantly with outputs and diversification crops, particularly in perennial crops like coffee, rubber, pepper and cashew.

Agriculture shifted from self-sufficient to commercial production.

The province invested the new planting and expanded intensive farming.

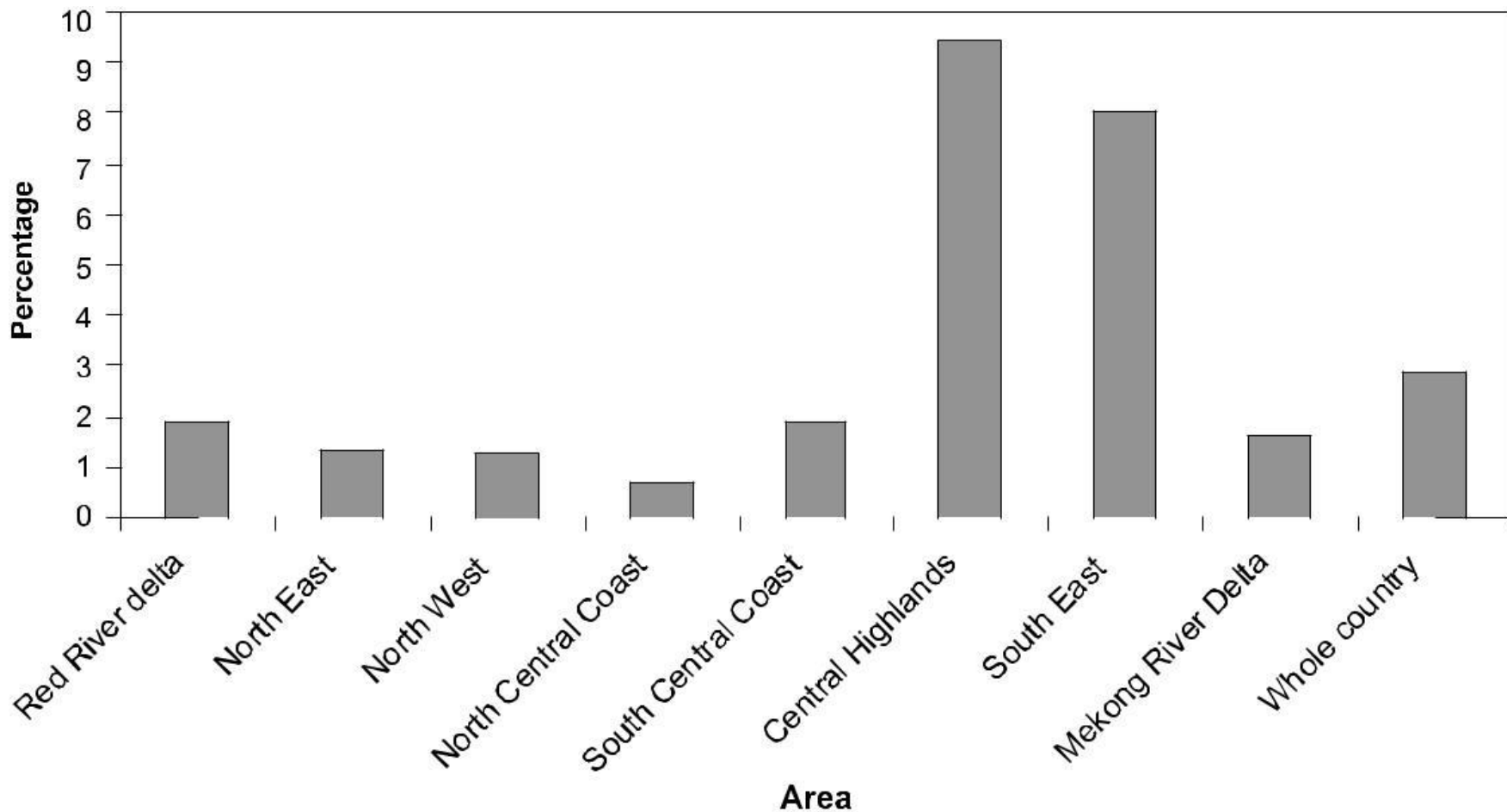
New economic zones, state farms and forest enterprises were established and a program for long term population re-distribution through a mass organized migration to the Central Highlands was initiated.

# Concerning the population

- Between 1986 and 1995, Dak Lak resettled 311,764 planned migrants. Spontaneous immigration compounded the flow, with approximately 350,000 arriving during the same interval → Land conflicts were inevitable

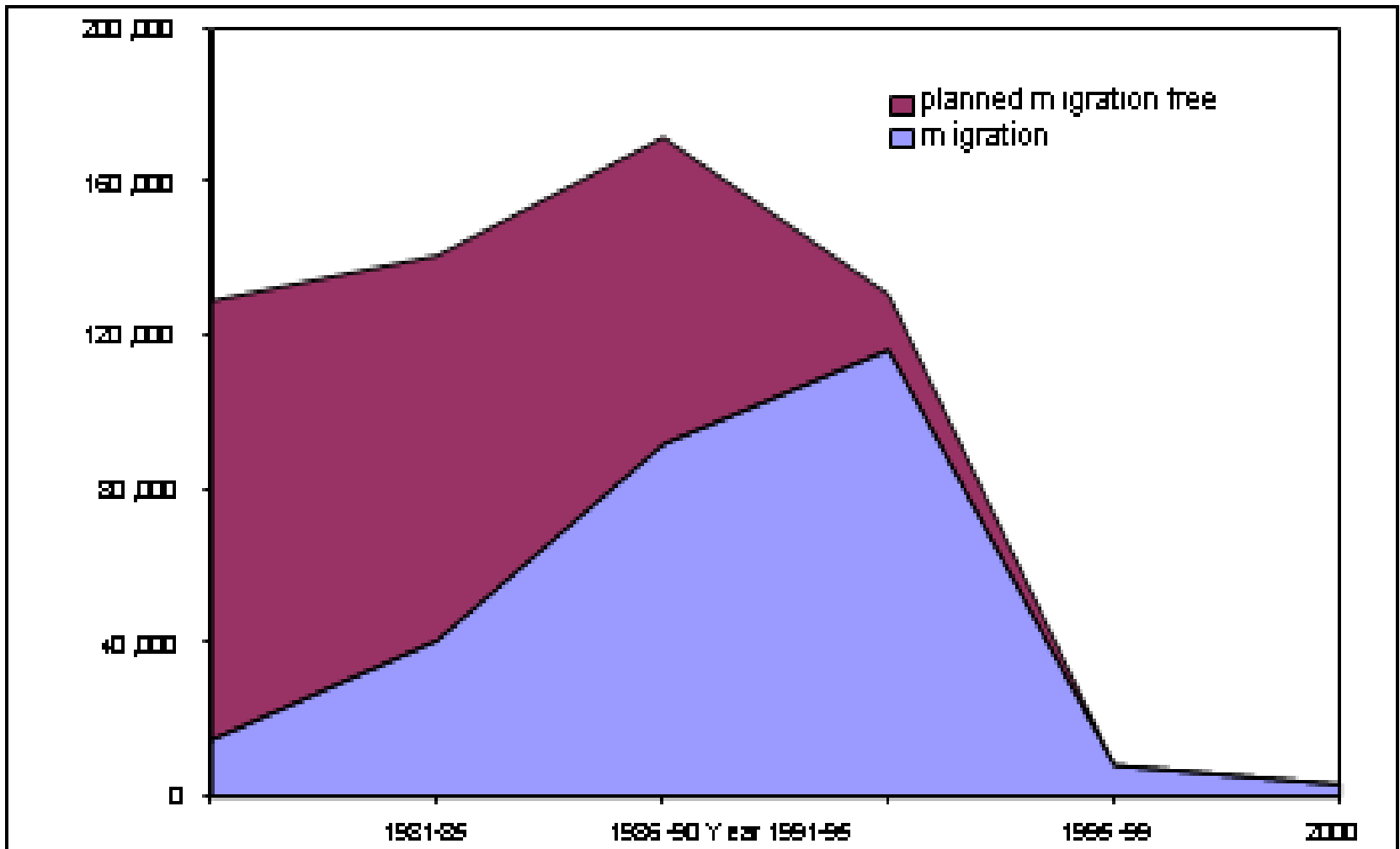






Migration patterns 1994–1999 (Source GSO – UNDP, 2001)

## Migration to Dak Lak, 1976-2000



Source: (OXFAM ICARD, 2002)

- Perennial crops have been growing significantly about: area, productivity but low quality and economic efficiency (Hoa, 2010). Especially the price of coffee decreased rapidly. The response of HHs with many solution, in which planting two or more crops (Dang Thanh Ha and Gerald Shively, 2008).

( Coffee and pepper intercropping)

- It is necessary to develop the new cropping systems to meet requirement in sustainable agriculture in which intercropping systems are significantly popular in Dak Lak.
- Play a pivotal role to improve socio – economic status in the region.
- The expanding of the system is general farmers almost work by their own exper coffee and pepper.



# RESEARCH SITE



# METHODOLOGIES

## **Data collection**

- *Focus group discussion*: FGD was carried out with a participation 5-7 farmers having experience in coffee and pepper intercropping production, aimed to explore the name of characteristics and production costs.
- *Households survey*: was conducted with the sample containing 50HHs, data about the cost, economic efficiency and factors affecting economic performance of CPI production.

# Result and discussion

- *General information the intercropping system*

Items	Value	Proportion (%)
<b>Method of intercropping</b>		
<u>Group</u>	20	40
<u>Intersection</u>	30	60
<b>Density (tree/ha)</b>		
Coffee	960	-
Pepper	690	-
<b>The average experience (years)</b>		
Under 5 years	12	24
5-15 years	26	52
Over 15 years	12	24
<b>Garden old age</b>		
Under 3 years	12	24
Over 3years	38	76

Indicators	2012	2013	2014	Comparison (%)	
				2013/2012	2014/2013
<b>1.Total coffee and pepper area</b>	2,259.5	2,340.5	2,540	103.58	108.52
<b>Of which, intercropping area</b>	<b>225</b>	<b>335.5</b>	<b>450</b>	<b>149.11</b>	<b>134.13</b>
<b>2. Total production (ton)</b>					
<b>Coffee</b>	5,490	6,985	6,680	127.22	95.63
<b>Pepper</b>	742	994	1,423	133.91	143.22

Quang Hiep Commune, 2015

## ***The investment cost of coffee and pepper intercropping systems***

Unit: Million VND

<b>Indicators</b>	<b>Value</b>	<b>Proportion (%)</b>
Land preparation	58.3	33
Hired labor	8.2	5
Material costs	98.1	62
<i>Nursery</i>	6.3	4
<i>Pillar</i>	83.3	50
<i>Fertilizer, pesticide</i>	8.5	5
Others	1.1	2
<b>Total investment cost</b>	<b>165.7</b>	<b>100</b>

**Source: Survey results, 2015**



## ***The annual cost of coffee and pepper intercropping systems***

Unit: Million VND

<b>Indicators</b>	<b>Value</b>	<b>Proportion (%)</b>
<b>I. IC</b>	36.5	68
Fertilizer	14.8	28
Pesticide	10.6	1
Fuel expenses	4.4	8
Season workers	15.6	2
Others	1.2	29
<b>II. Interest payment</b>	14.7	27
<b>III. Depreciation</b>	2.2	5
<b>Total annual cost</b>	53.9	100

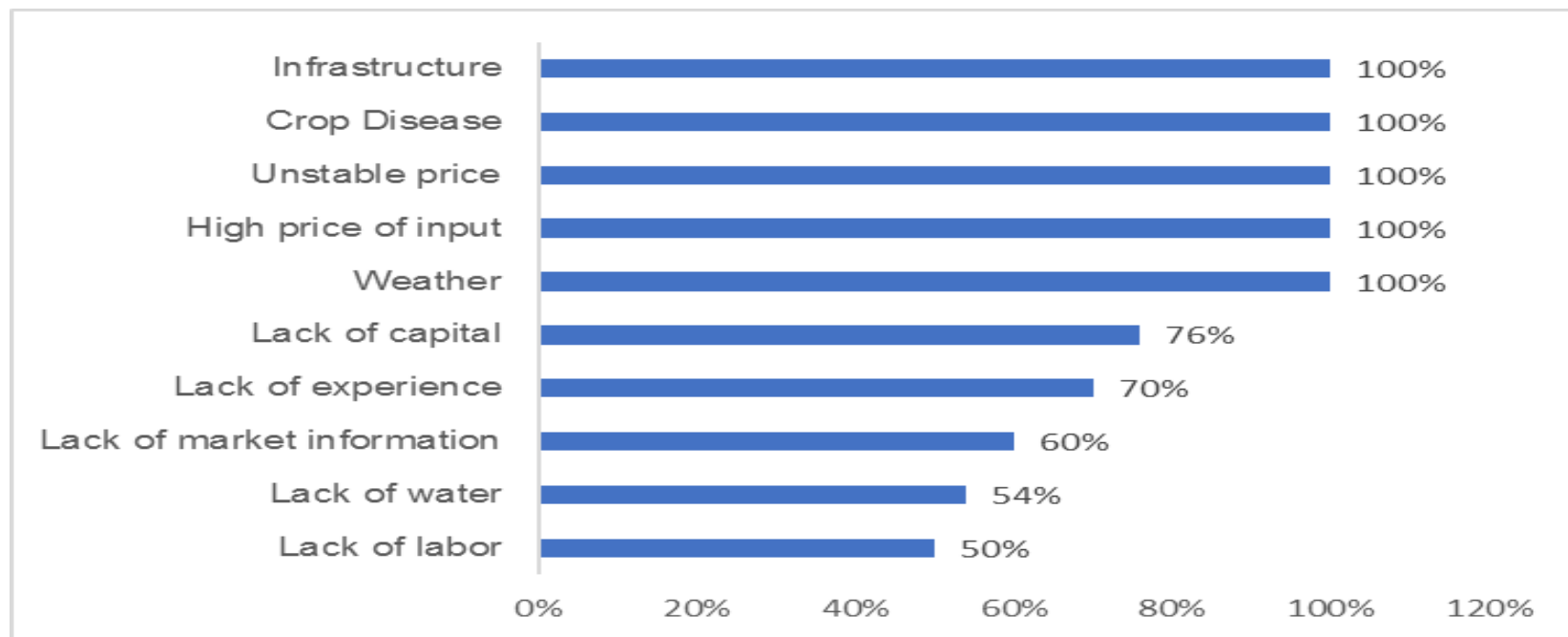
**Source: Survey results, 2015**

## *The economic performance of CPI system*

<b>Indicators</b>	<b>Unit</b>	<b>Value</b>
<b>Gross Product (GP)</b>	<b>Million dong</b>	<b>358.4</b>
<b>Intermediate cost (IC)</b>	<b>Million dong</b>	<b>36.5</b>
<b>Value added (VA)</b>	<b>Million dong</b>	<b>321.8</b>
<b>Family Net Income (FNI)</b>	<b>Million dong</b>	<b>304.4</b>
<b>IC/GP</b>	<b>Percentage</b>	<b>10</b>
<b>IC/VA</b>	<b>Percentage</b>	<b>11.3</b>
<b>Family labour</b>	<b>Day</b>	<b>230</b>
<b>FNI/active family labour</b>	<b>Million dong/day</b>	<b>0.9</b>

**Source: Survey results, 2015**

## Factors affecting economic performance of coffee and pepper production



**Source: Survey results, 2015**

**Recommendations to improve economic performance of coffee and pepper intercropping in Quang Hiep Commune**



**Improving farmer's knowledge and technique on CPI production.**

**Increasing investment and encouraging use of quality nursery.**

**Infrastructure improvement and other supports from local government and line agencies.**

**Improve farmers' capability in production and negotiation with traders.**

# Conclusion

- Coffee and pepper intercropping system is economically feasible.
- The production system now faces other obstacles.
- Several recommendations to improve economic performance of the coffee- pepper intercropping in Quang Hiep commune are proposed
- There is a need to conduct a research on the effectiveness and economic performance of the system over longer span of time

# Reference

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# Expanding the study in the future

- To evaluate and compare deeply about socioeconomic efficiency between pure coffee, pure coffee and coffee – pepper intercropping.
- To identify the risks of perennial crops producer and their strategies in the future.





**THANK  
YOU**

