VIETNAM COCOA FARMING SYSTEMS APPRAISAL III

September/October, 2006

SUCCESS Alliance Cocoa Clubs 2004/05

Ben Tre, Ba Ria Vung Tau, Tien Giang, and Binh Phuoc

Farming System Appraisal - Objectives

- To measure the cocoa growth and survival rates across provinces;
- To evaluate the level of adoption of better crop practices by cocoa farmers;
- To better evaluate the “success” of SUCCESS Alliance against the proj. objectives and targets;
- To assess the impact of SUCCESS Alliance training and extension activities; and areas for improvement.

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Farming System Appraisal - Methodology

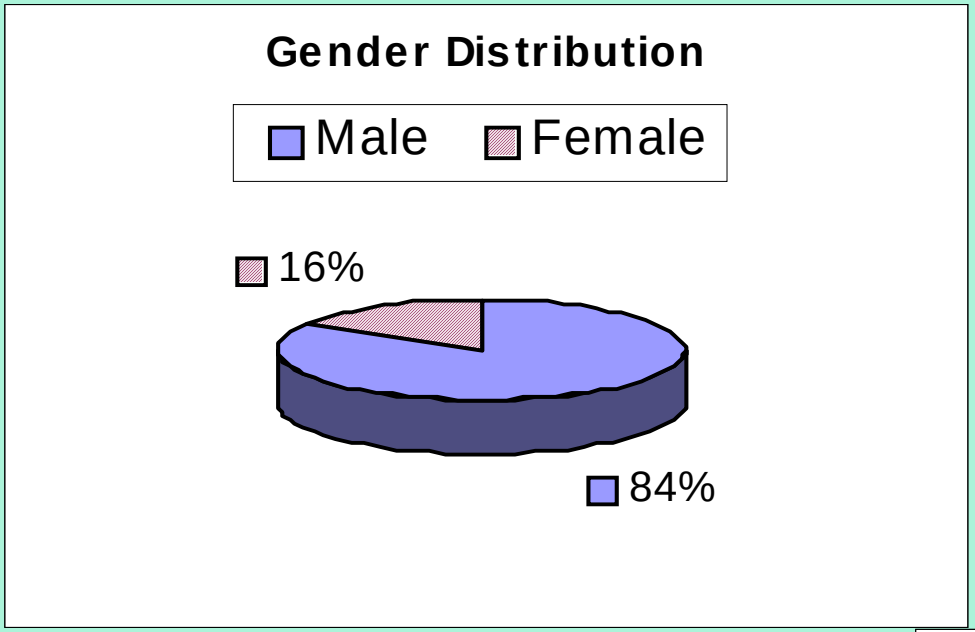
- Baseline data collection
- Field Survey and Quantitative Analysis

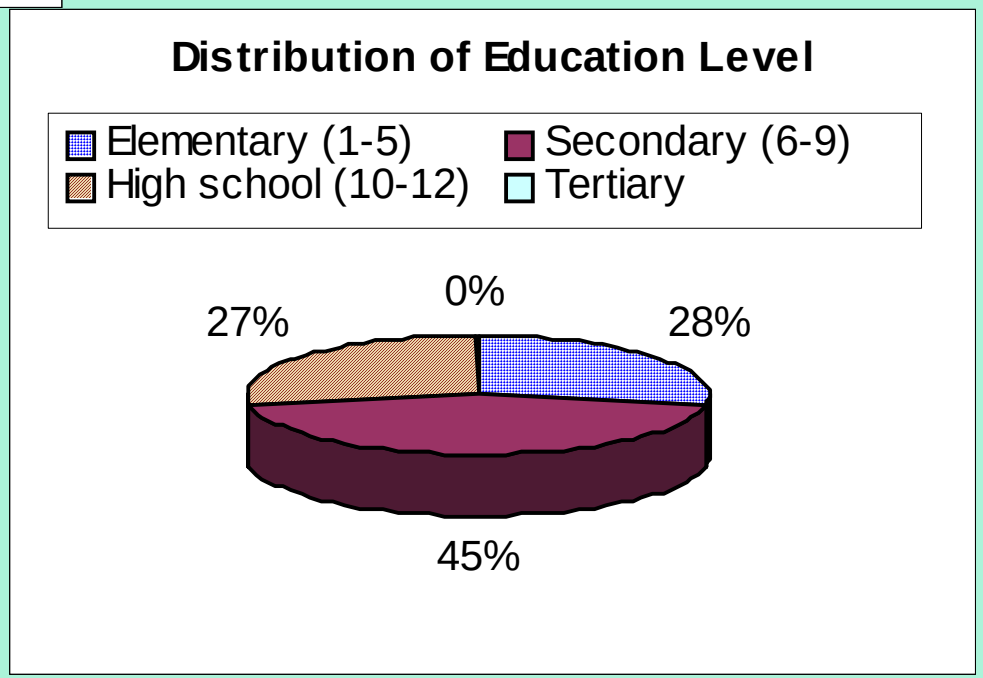
  = evidence
- Qualitative Approaches

  = participatory discussion

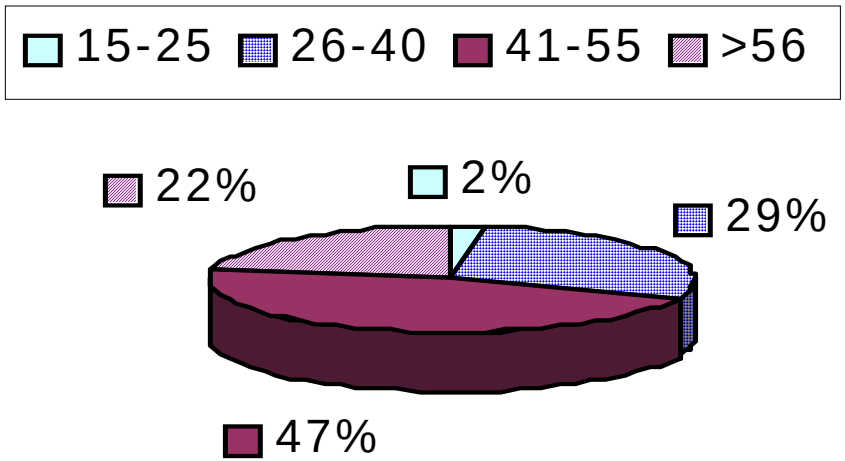
Baseline Data

SUCCESS Alliance Cocoa Farmer Profiles

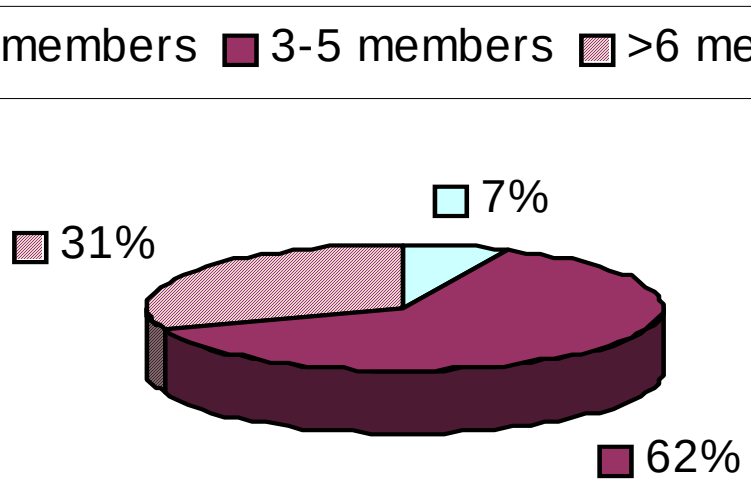




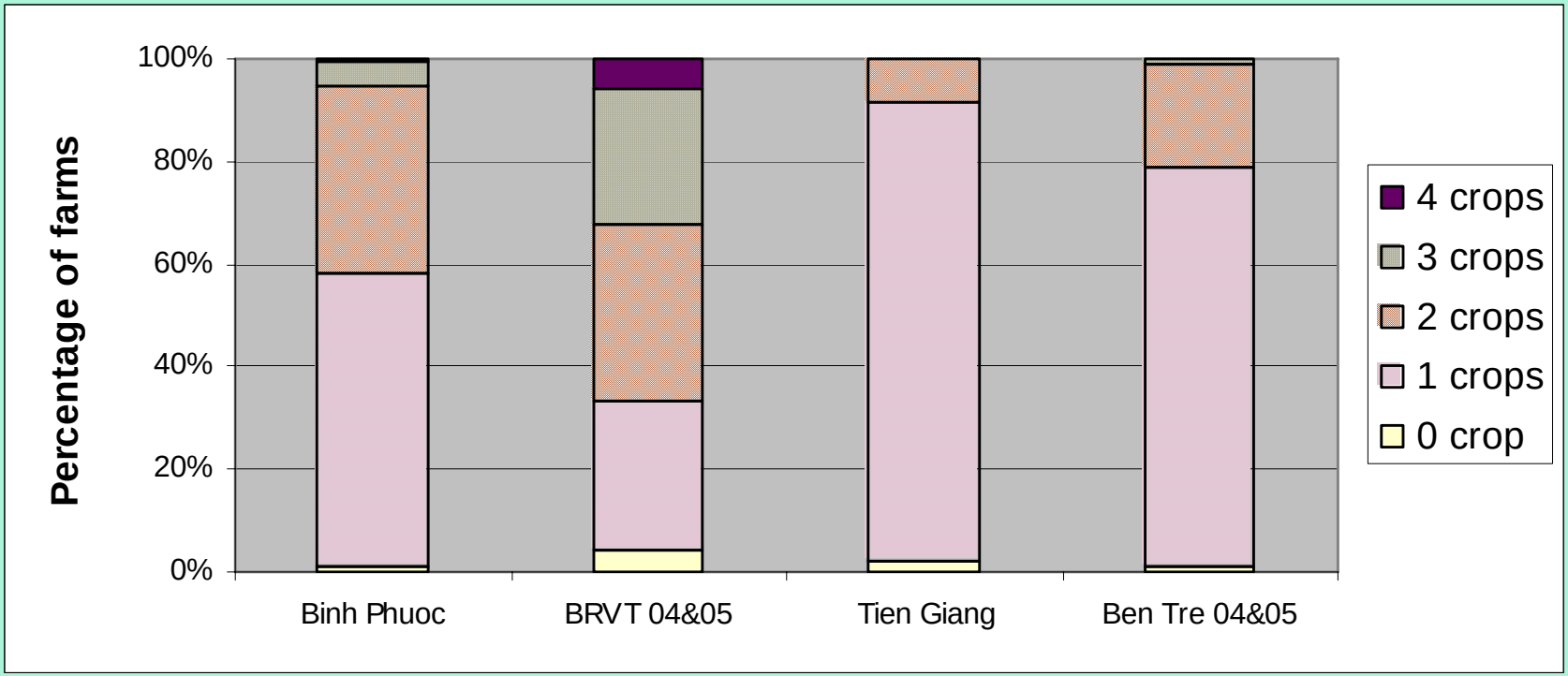
Age distribution



Family Size



Cocoa is Planted into Mostly Monoculture, Some Mixed Systems



Estimated Agriculture Income/ Household

Province	Estimated Annual income from agriculture (million dong)	Est. Land Use Efficiency= Annual income/hectare/farmer (million dong)
Binh Phuoc	51.0	18.5
Ba Ria Vung Tau	22.0	25.6
Tien Giang	5.5	10.0
Ben Tre	5.3	12.7

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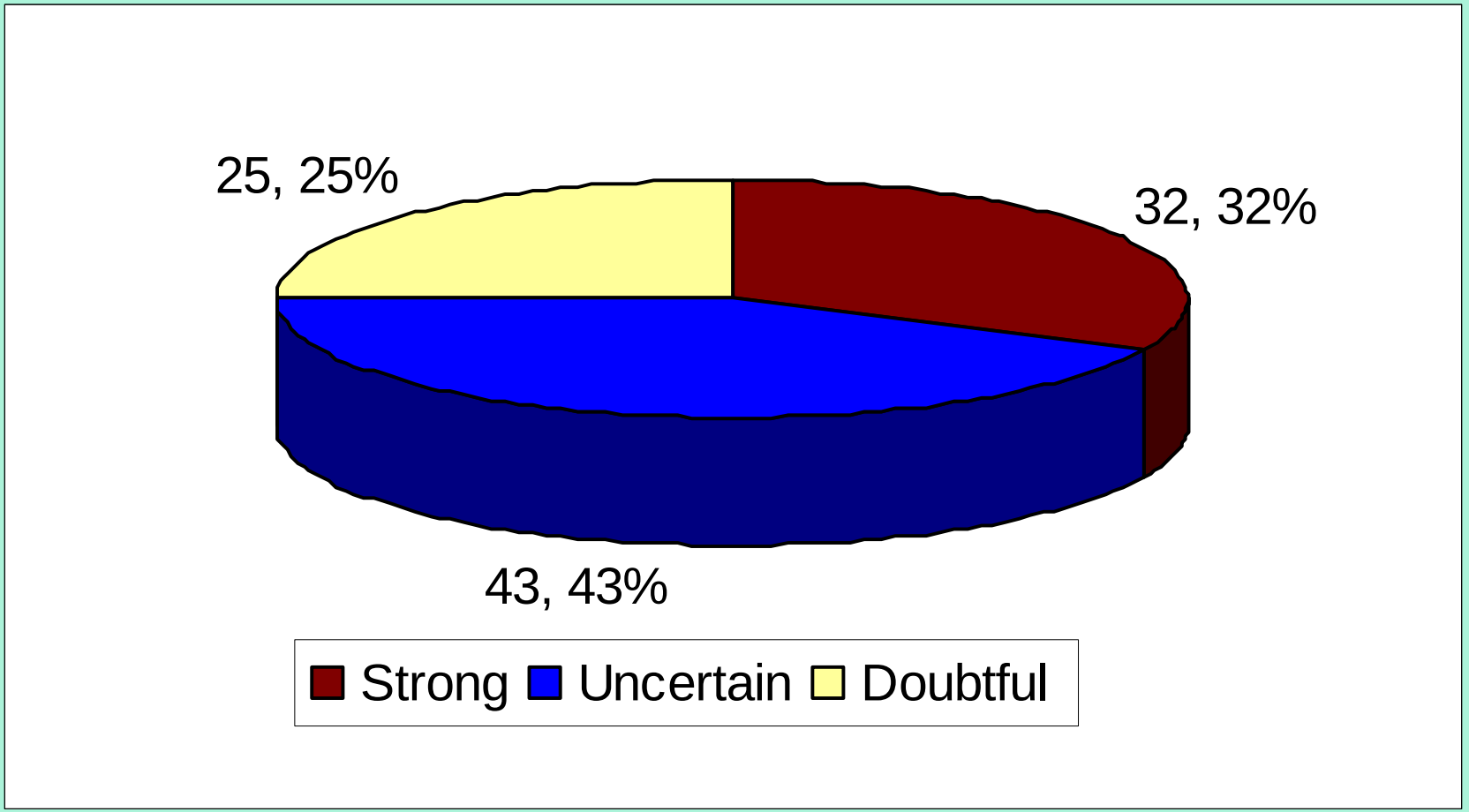
Outlook toward cocoa



Field Survey Method

- **Sampling:** random selection, using cocoa clubs as cluster sampling across provinces;
- **Sample size:** approx. 400 households (5% of total population);
- **Data collected:**
  - Plant survival and growth; Adoption of farming practices; Symptoms of insect and disease damage; Social-economic conditions; Environmental conditions
- **Data analysis:**
  - JMP package; GIS application (Mapinfo)

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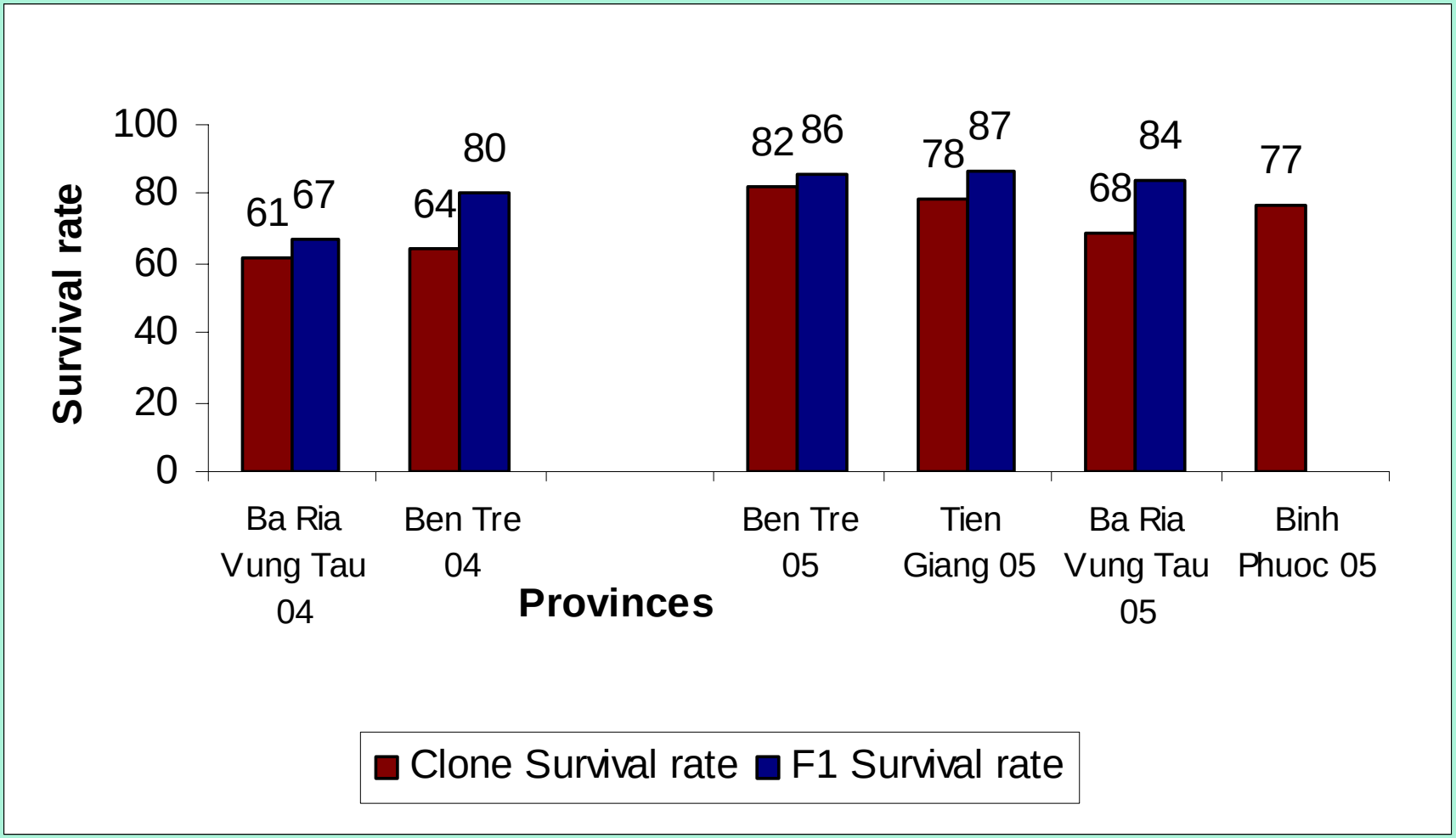
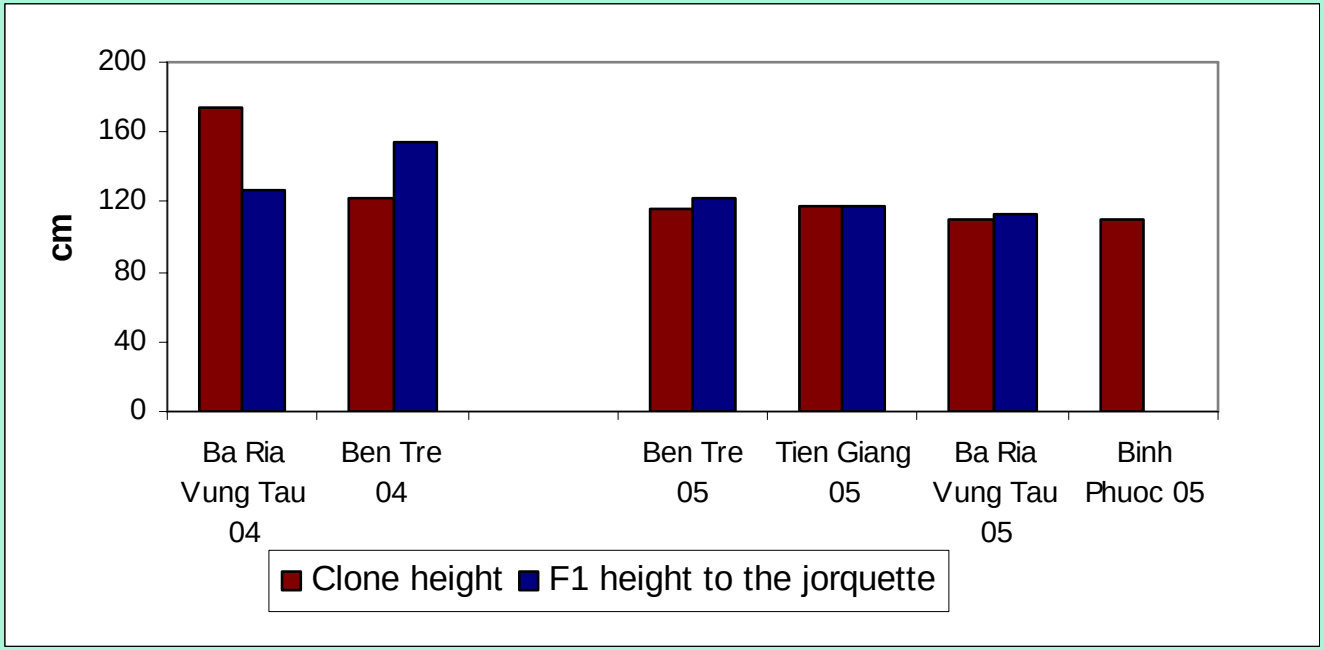
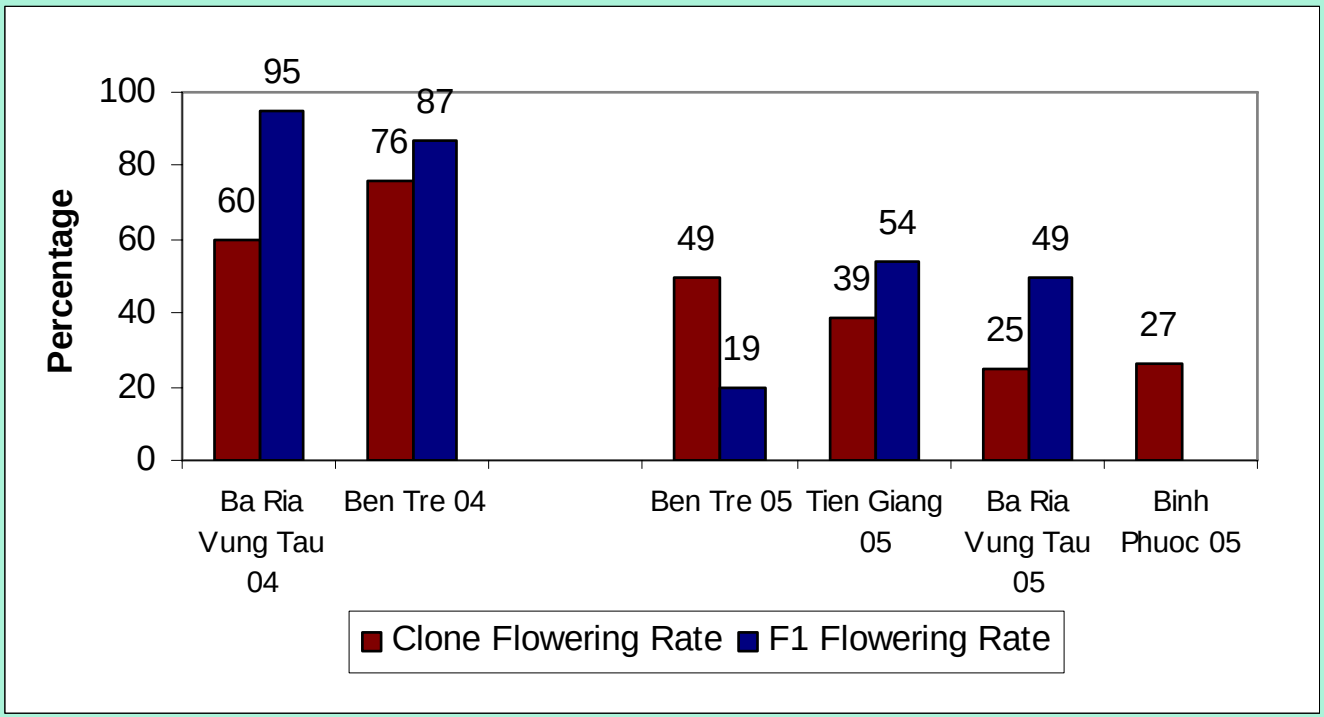
Survival Rate of Clonal seedling Compared to Hybrid Seedling



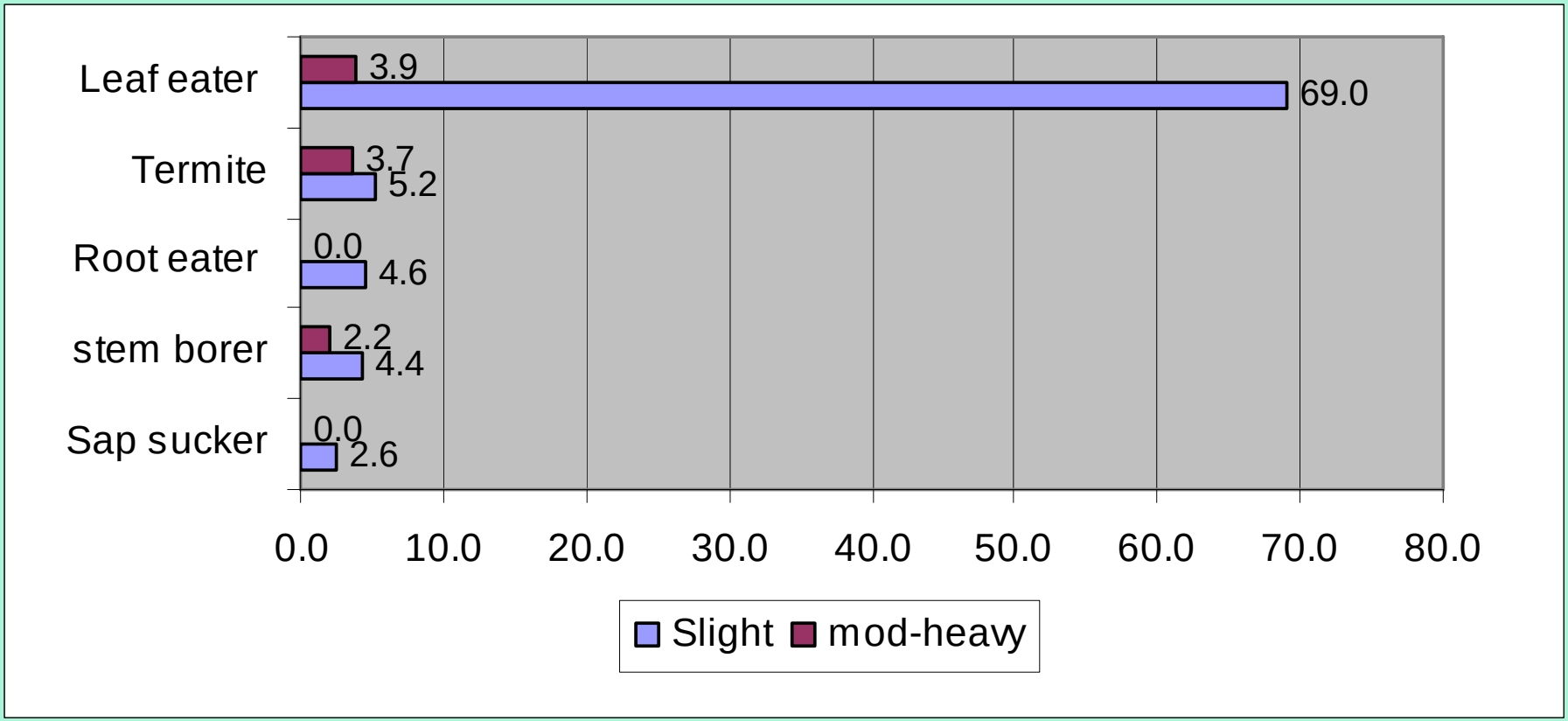
Average Plant Height of F1 Hybrids and Clones



Percentage of Farm with Tree Flowering or Setting Pod



Percentage of Farms Observed with Symptoms of Insect Damage



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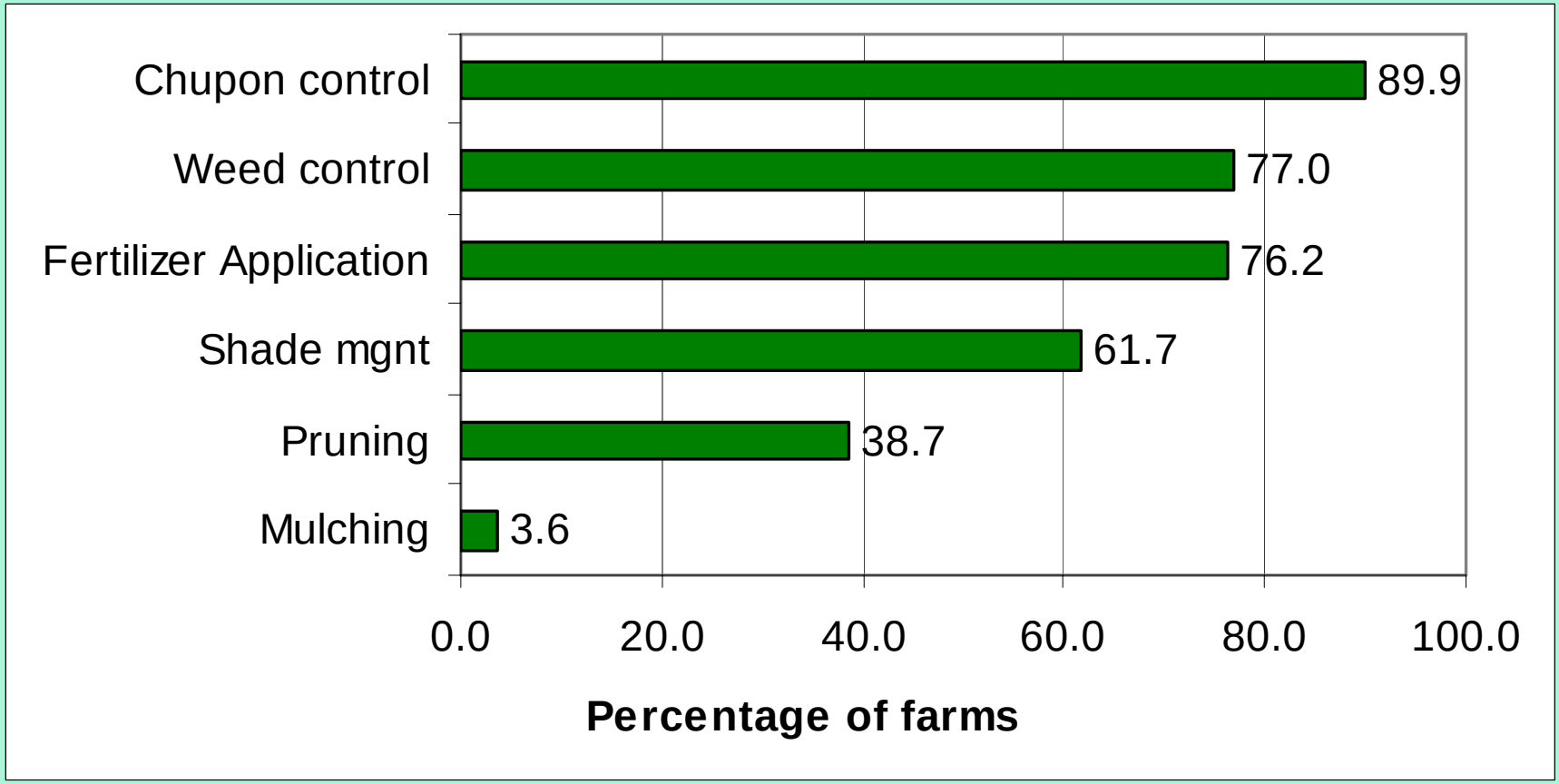
Diseases Incidence

Disease	**# Observed cases**	**Province**
VSD (*Oncobasidium theobromae*)	1 2	Ba Ria Vung Tau Ben Tre
Pink disease (*Corticium salmonicolor*)	7 1 2	Binh Phuoc Ben Tre Tien Giang
Black pod rot (*Phytopthora spp*)	1 1	Ba Ria Vung Tau Tien Giang

Adoption Rate



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FSA scoring
Group & Bring it All Together

FSA Score

- FSA practice: plant density, mulching, shade mgnt, weeding, pruning, chupon growth control, and nutrient level
- FSA environment: depth to water surface, drainage condition, windbreak, soil, salinity/acidity, pest and disease
- FSA farm factor: time for farming, labor availability, attitude toward cocoa market, income, birthplace, ethnic minorities, and completion of training

- Analysis affects
  - What affects the level of adoption?
  - What affects the cocoa survival and growth rate?
  - What do these mean for smallholder cocoa development?

What Influences the Farmer to Adopt Good Cropping Practices?

Bi-variable analysis of factors influencing farming practice adoption rate

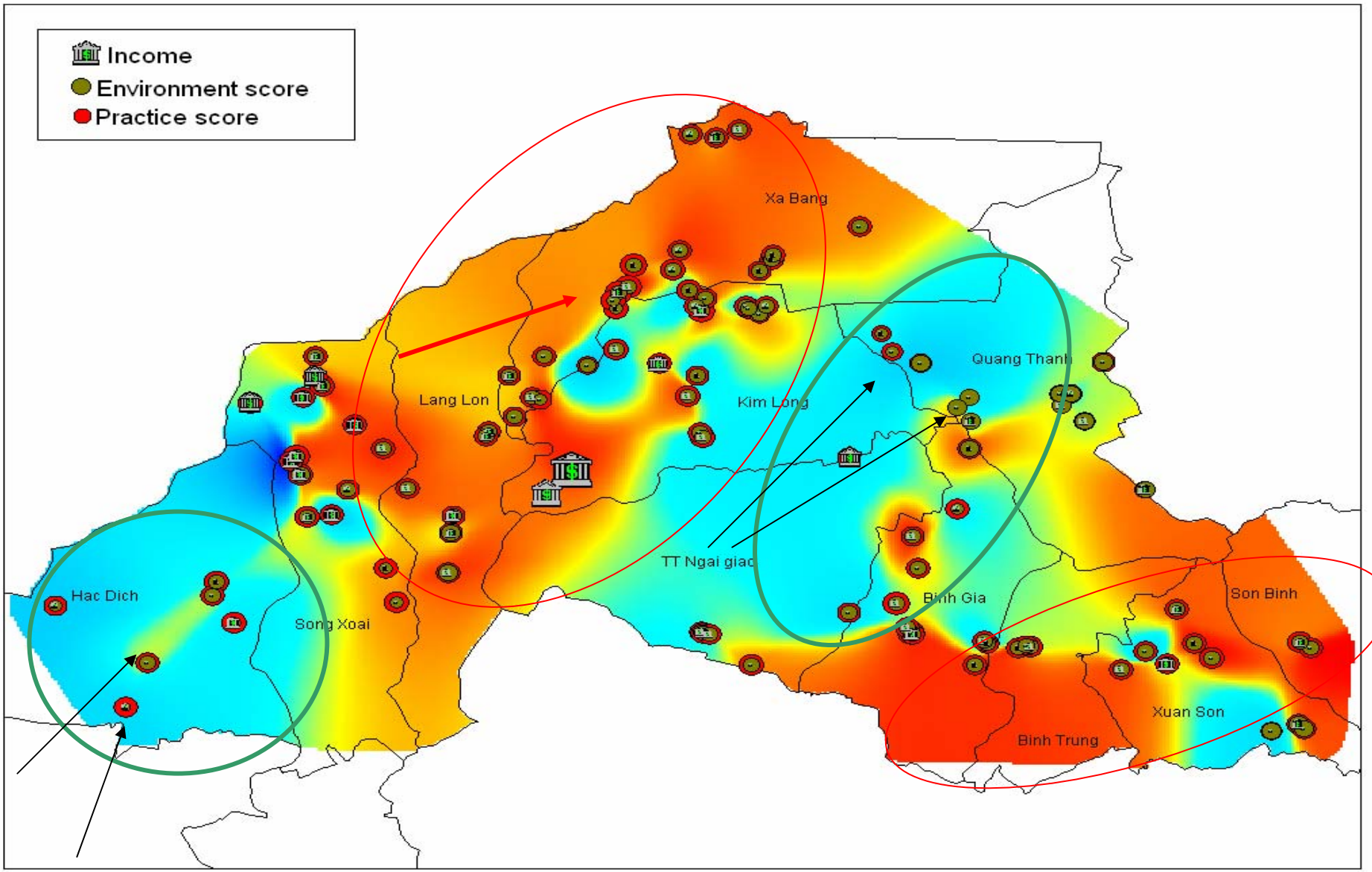
Factors affecting level of Adoption	P-value
Time allocated for cocoa garden	0.007
Attitude toward cocoa market	0.02
Having met someone sold cocoa	0.04
Training complete	0.05
Ethnicity *	<0.0001
Migrants *	<0.0001

- Relationship between FSA_{PRAC} and ethnicity/migrants was found to be significant only in Binh Phuoc
- Ethnicity-negative correlation

What Influences the cocoa survival and growth rate?

Factors / Response	Environmental factors	Farming practice factors	Farm factors
Survival	**FSA_{ENV}** Soil type, Salinity/Acidity, Pest		**FSA_{FARM}** Training, Market outlook, Ethnicity
Growth robust		**FSA_{PRAC}** - plant density, shade management, weed control, pruning	Income* Met someone has sold cocoa, Migrant, Ethnicity*

GIS Application:
Ba Ria Vung Tau Clone Survival VS Factors



Expansion of Cocoa Area Plantation

Survey

	SUCCESS Alliance	Private Expansion	% Change
No. Farmers	376	54	15%
No. seedlings	69,439	11,626	17%
Ave No. seedling/Farm	185	211	114%

Estimation of cocoa areas from S/A expansion

	SUCCESS Alliance	Expansion w/i S/A Clubs	Expansion outside S/A	**Total**
No. seedlings	2,813,000	470,000	1,080,000	**4,363,000**
Area (ha)	4,700	770	1,800	**7,270**

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Conclusions

- Growth and Survival rate is acceptable ; therefore cocoa is proven viable in project areas under most smallholder farming systems;
- Growth is fairly robust, flowering and pod setting is progress well accordingly;
- Growth is affecting positively by good farming practices and they achieved that at training;
- The survey has provided a successful methodology to investigate and measure the outcomes and impact of T&E activities;

Recommendations

- Training to focus on:
  - Ethnic minorities needs
  - Additional communication activities
- Market development and farmer confidence in cocoa;
- Environmental considerations: salinity / acidity in Ben Tre/Tien Giang, soil types and water availability in Binh Phuoc;
- More careful monitoring in pest and disease in farmer-led research;
- Future monitoring to focus on time-line analysis, cocoa pod production, and income improvement from cocoa development;
- The usage of GIS application in monitoring and assessing the existing cocoa development sites and also in investigating the suitability of new cocoa development.

Thank you !