



PAPUA NEW GUINEA PROJECT Presentation

Integrated Assessment of Trade-Related Policies in
the Agriculture Sector and Biological Diversity with
focus on Sweet Potato and Taro

Geneva, 18-20 March 2009

FOCUS OF THE ASSESSMENT



Post-Ante Study

The Specific Trade Policy: **Tariff Reduction Program**

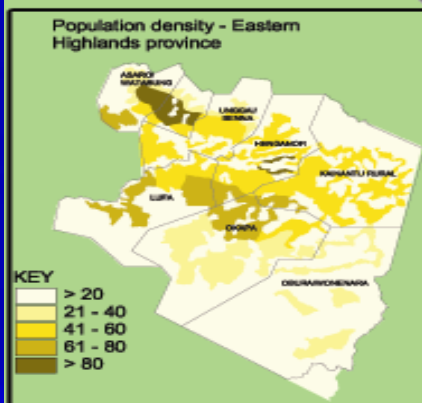
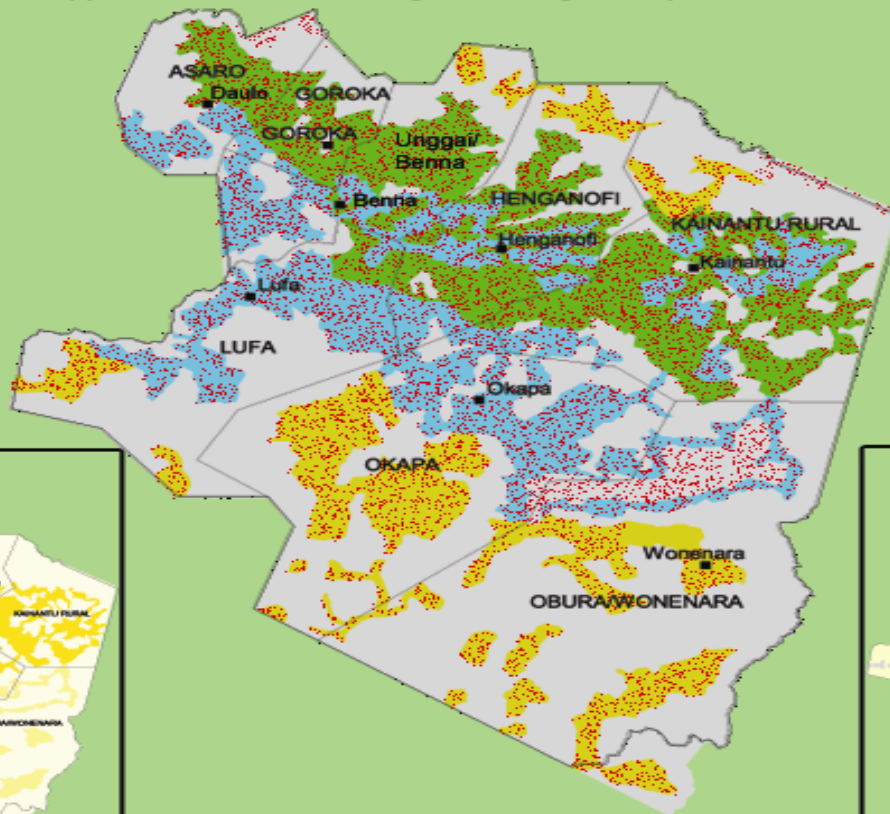
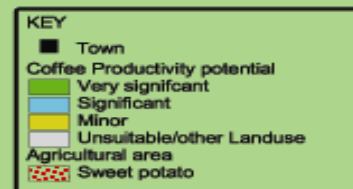
Other overarching and/or related policies:

Economic Recovery through Export-Driven Strategy

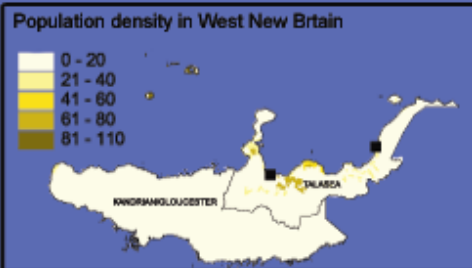
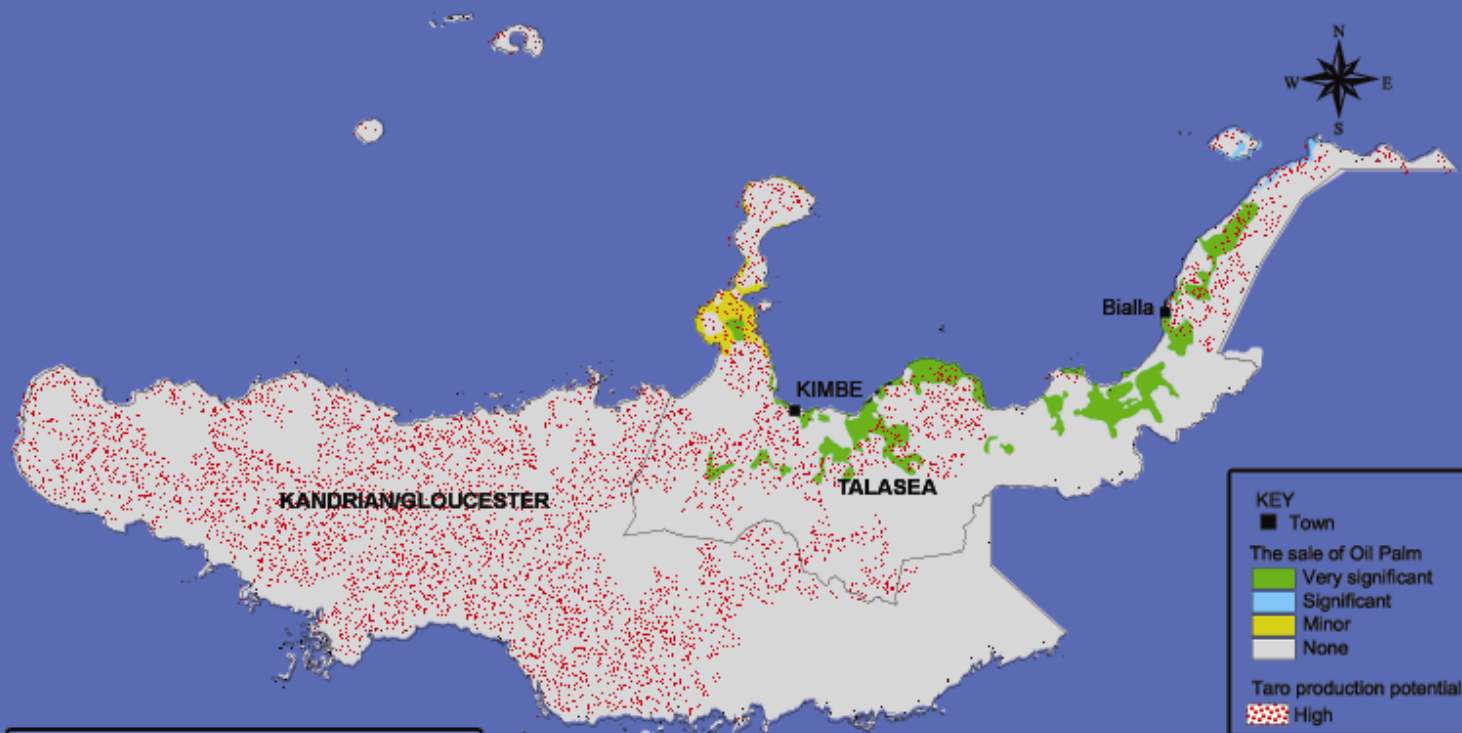
The sector: **export crop sector (coffee and oil palm).**

Biodiversity specific: **Food crop: Focus: Sweet Potato & Taro.**

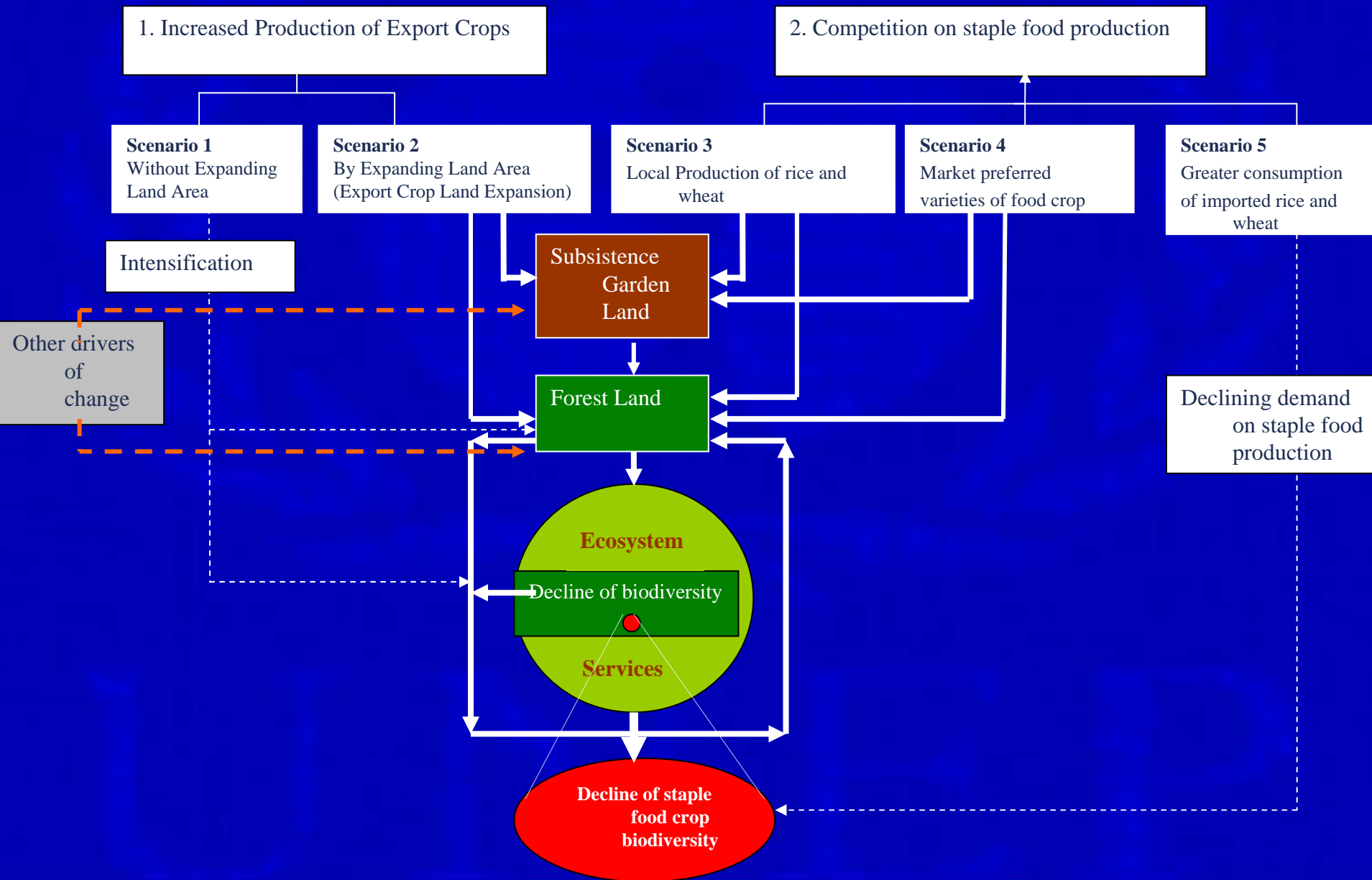
Potential Coffee (*Arabica*) production areas occurring on existing Sweet potato cultivated areas in Eastern Highlands Province



Potential of Taro production areas occurring in Oil Palm growing areas in West New Britain



METHODOLOGY: Scenarios



METHODOLOGY

Desktop: **Economic and Social Indicators**

Coffee and Oil Palm Export Figures

Other national indicators:

GDP, HDI, HPI

Sweet potato and taro production figures

General forest and ecosystem services

Rice import and consumption literature

Field Survey: **Environmental**

Sweet potato and taro cultivars assessment

Use of chemical by coffee and oil palm industries

Environmental plan by coffee and oil palm industries

Land under Export crops and food crops

METHODOLOGY (cont.)

Survey Plan

Sample: 50 farmers in coffee-sweet potato system
50 farmers in oil palm-taro system Q

Strata of survey:

population

access to services (road infrastructure)

food crop intensity

export crop intensity (coffee)

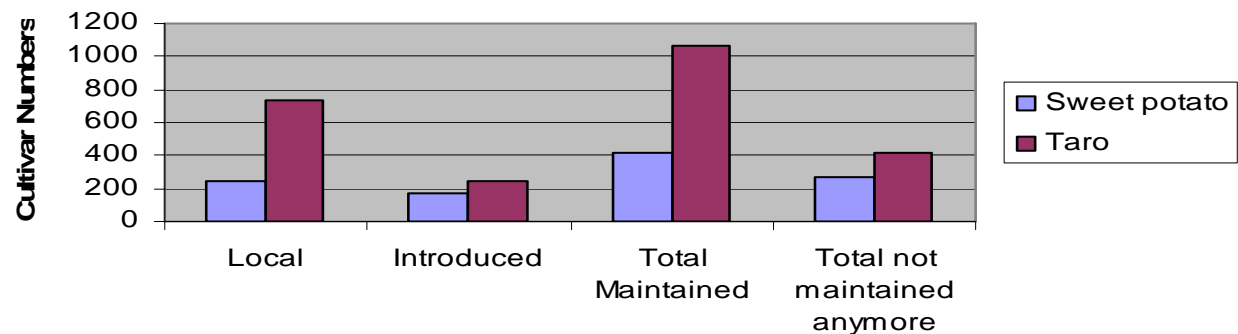
Results of the Integrated Assessment



Status of Taro and Sweet Potato Cultivars for the surveyed farmers

	Local	Introduced (from other parts of the country)	Total Maintained	Total not maintained anymore
Sweet potato	247	167	414	274
Taro	729	239	1068	422

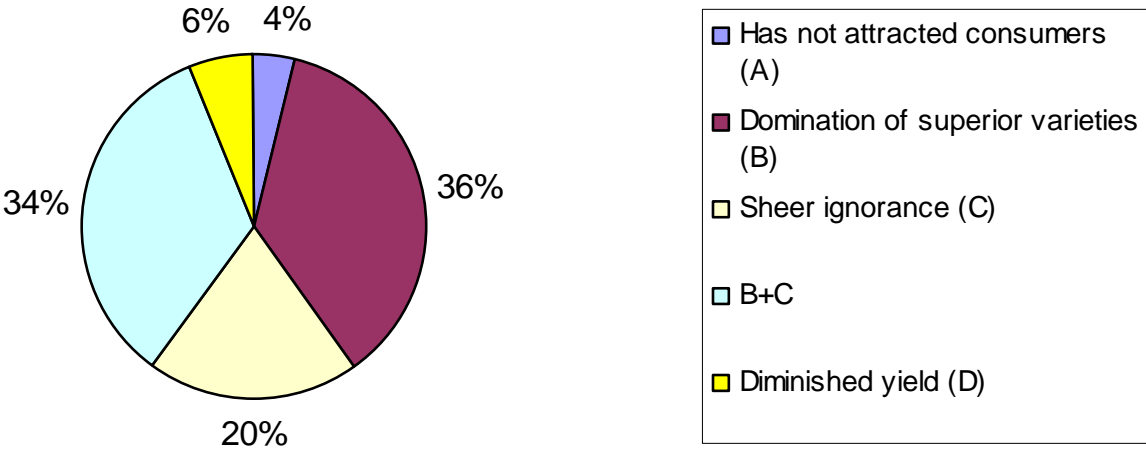
Status of Taro and Sweet Potato Cultivars for the Surveyed Sites



Results of the Integrated Assessment (cont.)



Reasons for the 'loss' of sweet potato varieties

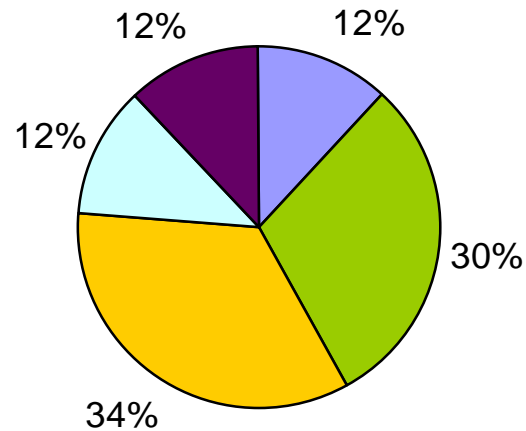


Main: Superior varieties

Results (Cont'd)



The Reasons for Disappearance of Taro Varieties



- Superior varieties dominated the market
- Sheer Ignorance
- Socio-cultural factors
- Socio-cultural factors/labour shortage
- Superior varieties dominated the market/Not enough land

Main:

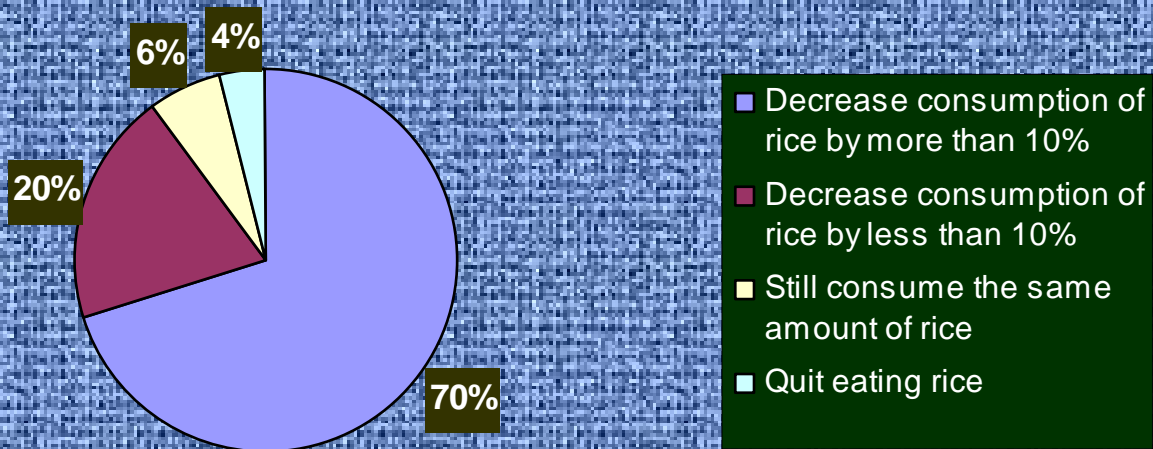
(1) Superior varieties

(2) Cultural

Competitive Food: Rice



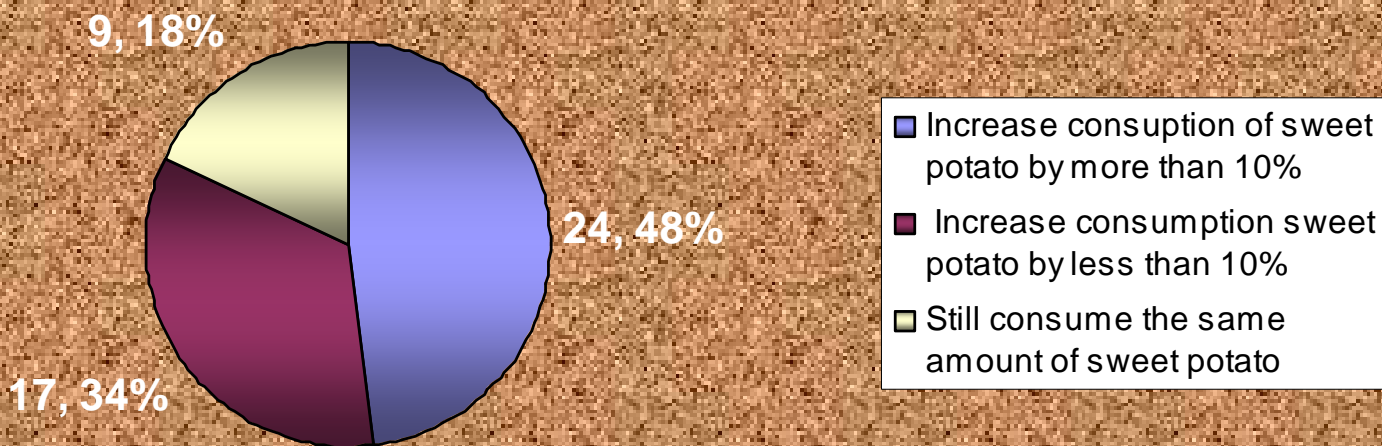
How consumers would respond if the price of rice increases by 10% in the future



Competitive Food: Rice (cont'd)



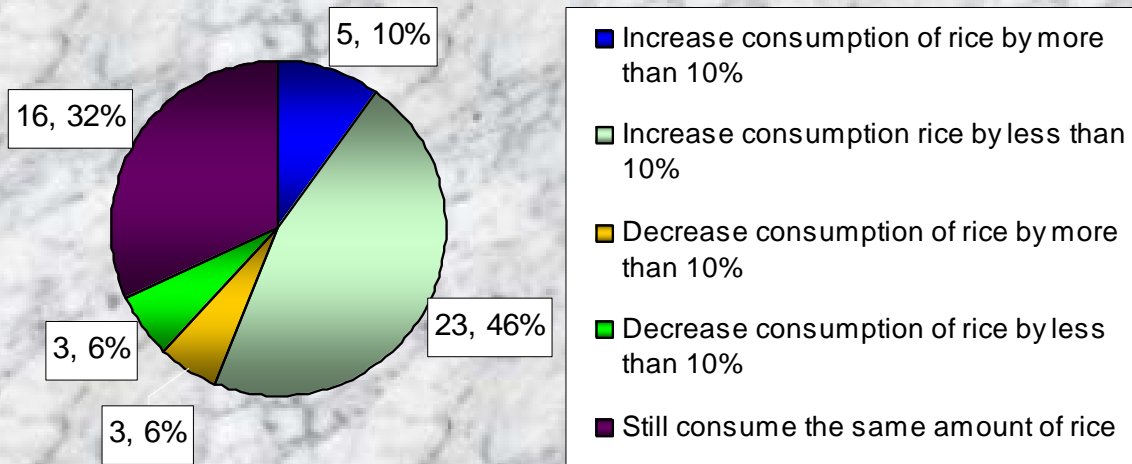
How Consumers (farmers) would respond in terms of sweet potato if price of rice increases by 10% (response tally, %)



Competitive Food: Rice (cont'd)



How consumers (farmers) would respond in terms of consumption of rice if their income increases by 10% (responses tally, %)



Competitive Food: Rice (cont'd)

The lessons to be learned from these findings (rice consumption) are:

- **(1) Rice has high price elasticity** meaning that consumers are very responsive when the price changes. This also means that rice is not a staple food, nor is it the only choice for food. This may be different for urban consumers where for convenience, limited choice and competitive price of sweet potato, they may not respond very much to price changes.
- **(2) Rice and sweet potato have high price-cross elasticity**, meaning that when the price of one changes, consumers switch to the other, which also confirms that the two are substitute goods.
- **(3) Rice is neither a normal good nor an inferior good** but somewhere in between, a finding that is quite different from some sources where rice is an 'inferior good' (Gibson, 2000). The limited sample size could be the cause of these differences.

- Study revealed that factors other than tariff have been responsible for the 'loss' of food crop diversity.
- = Scenario 4

Results (Cont'd)



- Despite lack of sufficient evidence that tariff reduction contributes to erosion in biodiversity, it will be unfair to say at this stage, trade does not have any impact on the decline of agricultural food crop biodiversity
 - (1) other trade policy instruments/commodities (trade agreements), and not only tariff should have been included
 - (2) other biodiversity beyond sweet potato and taro should have been included

POLICY RECOMMENDATIONS (cont.)



In the Second Phase

1. Focus on Revenue and Combined farming systems options
 - main agricultural regions
 - resource scarce/limited options communities
 - population growth and density (regions and areas)

2. Strengthen the national (institutional) capacity:
 - (a) DNA finger-printing facilities
 - (b) Strengthen the current germplasm maintenance effort
 - (c) Identify and establish 'sanctuaries' - alternative or variant to (b)

Recommendations (Cont'd)



- 3. Support formulation/existence of appropriate standards on food crop biodiversity as well as that of forest.
- 4. Current export crop rehabilitation & expansion plan (NADP) be implemented with due consideration to the maintenance of food crop diversity – i.e to promote balance in export and food crops
- 5. Take stock of current Donor Assistance Projects undertaken by different departments and organizations at the moment and identify how best the results of this study can be incorporated into those projects under the banner of Aid for Trade (AfT)
- There is a need to design and implement new/extended studies which should take into account the biodiversity

ACTION PLAN



1. National Stakeholder Awareness (Workshop) - 29 or 30 April, 2009

Lead Agencies: DFAT, DEC, DAL, DCI, NARI

2. Development of the identified projects, seek funding and implement - June 2009

Lead Agencies: DFAT, DEC, DAL, DCI, NARI

3. Information Paper to National Executive Council (NEC), 20 May, 2009

DFAT & NARI,

Achievements and Constraints



Achievement:

1. National Capacity developed on IA assessment
2. Wider stakeholder consultation/collaboration...
2. Assessment Study Completed.
3. Opportunity to understand the importance of biodiversity...
4. Recommendations for national policy responses

Constraints.

- Lack of past records/information on agricultural input costs from the farmers
...
- Lack of secondary data on land under coffee, sweet potato and taro: accommodated by primary data through field survey
- “Multiple counting’ due to different naming of the same food crop cultivars.
- The link between food crop and trade is indirect – challenge!

**Thank you
for your attention**

