

A Study of Innovation and Change

A Study of Innovation and Change Management in Ghana's Forest Products Industry

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Outline

- Background
- Methods
- Findings / Results
- Conclusions and Recommendations

Introduction

- FP industry major source of employment
- Sector contributes 6% of country's GDP
 - 11% of foreign exchange
 - 30% of export earnings
- Raw material supply declining
 - Annual allowable cut = 1 million cubic meters
 - Industry capacity = 5.7 million cubic meters
 - Deforestation also due to agriculture and mining

The Problem:
lack of tropical timber - plants closing



Why consider bamboo?

- Proven suitable for flooring, furniture, panel products, (towels, apparel)
- Sustainable supply of raw material
- Ghana government suggested/supports bamboo use
- Market evidence
- Grows fast



Objectives

1. To create a **profile** (scope, size, markets, products, etc.) of **Ghana's forest products industry**
2. To **identify barriers to the adoption of bamboo** as a raw material in the tertiary and panel sectors of the wood industry as perceived by managing directors and general managers

Objectives

3. To identify barriers as perceived by policymakers and industry associations that may affect their ability to influence increased adoption of bamboo
4. To develop policy instruments and change management models to assist government, industry, policymakers and industry associations in implementing the change

Methods

- Pretest of main study
- Interviews conducted in late 11/07- mid. Feb. 08
- Two subject groups studied
 - Industry : 26 CEOs and general managers of leading exporters of downstream and panel products
 - The 26 companies constitute 90% of industry's exports out of nearly 200 companies
 - Institutions : 32 institutional heads in study area (purposive sampling)

Methods and Data Collection

- Two different semi-structured interview schedules for each group of subjects designed and administered
 - Managing directors/general managers of companies
 - Policy makers and industry associations e.g., FORIG, GTMO, GIPC, ADB, GEPC, KNUST (Wood Science Department), etc.

Analyses

- Descriptive statistics; means, summary tables, figures
- Mann Whitney tests
- One-way ANOVA
- Correlations
- Contingency tables (Cross-tabs)
- Pearson's Chi-square test
- Qualitative analysis

One -Way ANOVA: Needs of companies with size

Variable Item	Size	N	Mean	p-value
Availability of capital	Small	14	2.45	.064
	Large	12	3.08	
	Total	26	2.74	

$\alpha=95\%$

Survey Item	Size	N	Mean	p-value
Opportunities to acquire loans	Small	14	2.36	.064
	Large	12	3.17	
	Total	26	2.73	

- Some evidence that larger companies are more endowed with capital
- They may be able to bid for timber concessions

One -Way ANOVA: Needs of companies with location

Variable Item	Region	N	Mean	p-value
Availability of capital	Ashanti	13	2.46	.099
	Other regions	13	3.02	
	Total	26	2.74	

$\alpha=95\%$

Survey Item	Region	N	Mean	p-value
Availability of land	Ashanti	13	3.15	.034
	Other regions	13	3.69	
	Total	26	2.73	

- Significant evidence that companies in other regions have more land
- Companies in Ashanti may need more land with help from the government
- Government may establish plantations for use in Ashanti

Important firm attributes in adoption

Innovativeness with company size - Mann Whitney test

Variable Item	Size	N	Mean	p-value
Product Innovativeness	Small	14	4.39	.070
	Large	12	3.83	
	Total	26	4.13	

- Some significant difference in product innovativeness
- No significant difference in market and process innovativeness

Important firm attributes in adoption

Innovativeness with size-cross validation

Survey Item	Means for size of company			p-value
	Small (N=14)	Large (N=12)	Total N=26	
Company may have to				
Train new managers	4.29	3.58	3.96	.043
Develop new products	4.43	3.75	4.12	.023
Treat products with preservatives	4.37	3.75	4.12	.048

- Smaller companies appear to have higher propensity for product innovation
- Size of company is an important attribute for adoption

Barriers expressed by the industry

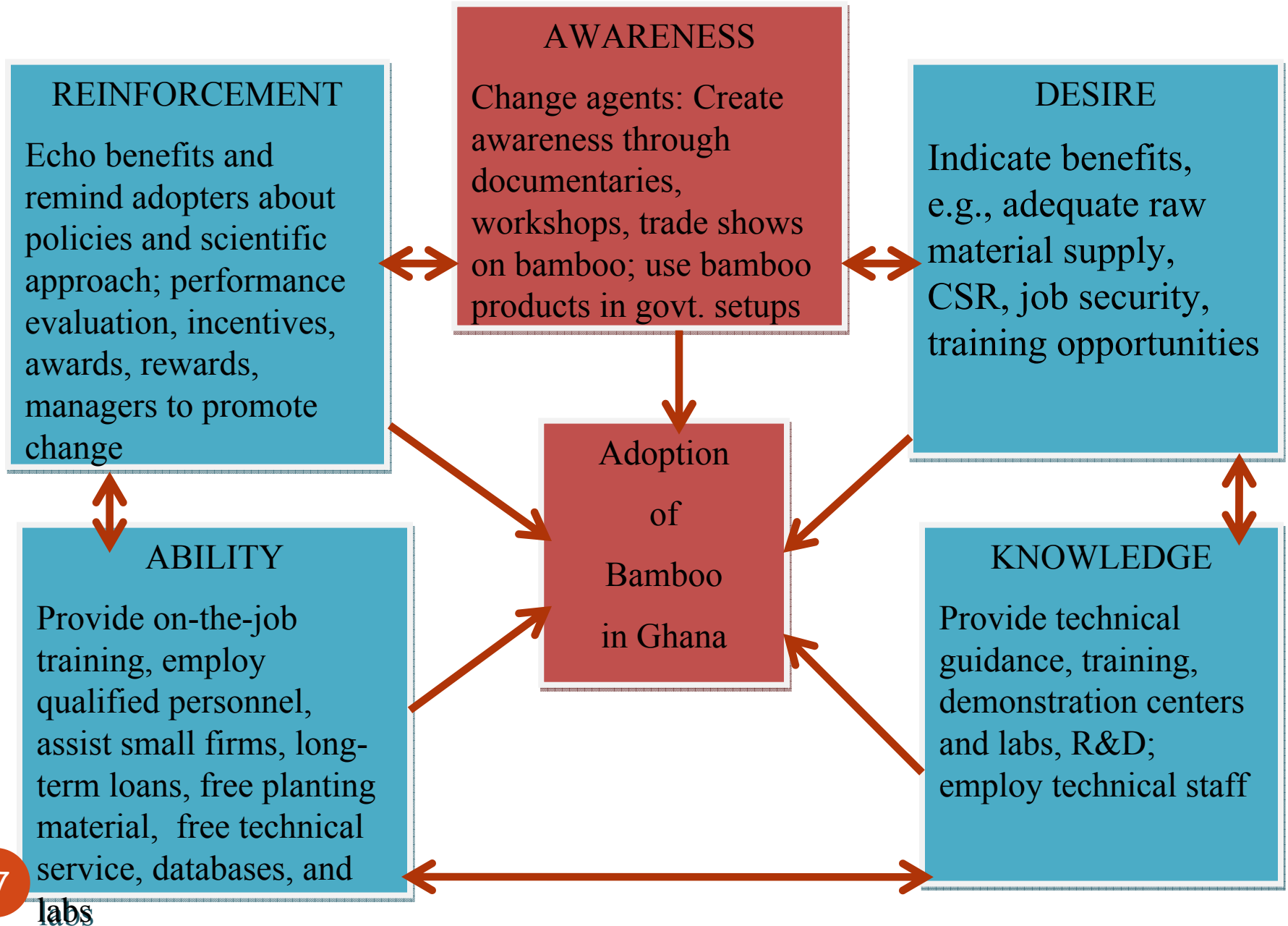
Major barrier faced by company	Number of respondents who mentioned this barrier	Percent
No information on product, machines, cost, markets, raw material etc.	17	65.4
No technological know-how	16	61.5
High investment capital	11	42.3
Low raw material base	9	34.6
No equipment	7	26.9
No markets	5	19.2
Poor perception about bamboo	5	19.2
Uncertainty	5	19.2
No land	4	15.4
Company has adequate wood raw material or not ready	3	11.5

Barriers perceived by institutions:

Respondents' needs:

- Policies
- Funding
- Training
- Technical information
- Lab equipment
- Collaboration
- Awareness creation
- Change in perception

Summary Framework for Adoption



Conclusions

- Industry impacted by raw material decline
- Most companies manufacture moldings, floorings and plywood which can all be made from bamboo
- Government should promote the use of bamboo
- Adoption not possible until barriers mitigated

Conclusions

- Most companies receptive to bamboo adoption
- Important firm attributes include: firm size, innovativeness, and location of company
- Smaller companies need more assistance from govt., NGOs, institutions, banks
 - Long-term loans
 - Subsidies, planting material, training at minimal costs
- Land needed where govt. could support bamboo plantation establishment

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- Learn
- Connect
- Exchange

Are there any questions?