Weaving Wealth:
Resource efficient and cleaner production and supply chain integration
for more sustainable rattan and bamboo craft in Viet Nam

SLIDES PRESENTATION
Viet Nam

- **Capital City:** Ha Noi
- **Population:** 90.5 million
  14th most populous country in the world
- **Area:** 321,210 kilometres

- **GDP per capita:** US$ 1,224/ lower-middle income country (World Bank, 2010)
- **HDI:** 0.593/ ranked 125 of 187 (UNDP, 2011)

Viet Nam

- Rapid industrialization and economic development
- Reduction in absolute poverty from 29% in 2000 to 14% in 2010
- Inequalities still exist

- Environmental degradation
    - Industrial zones
    - Waste management
    - Soil degradation
Vietnamese Handicrafts Sector

- ILO definition:
  - Informal
  - Local availability of natural resources
  - Small scale/household level,
  - Intergenerational skills

- Examples: wooden furniture, lacquerware, silk, candles, jewellery, glass products

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Vietnamese Handicrafts Sector

- Cultural traditions:
  - Approx. 3,000 crafts villages, of which around 2,000 have a history of more than 100 years

- Contribution to economic growth, employment and livelihoods - exports turnover

- Over exploitation of natural resources - unpredictable supply, shortages, illegal importing of raw materials, unsustainable production practices
Bamboo and Rattan

- **Bamboo**
  - Hollow, free standing, perennial, grass, fast growing
  - Potentially more sustainable alternative to timber logging
  - Bamboo forests - good carbon sinks, can help prevent soil erosion

- **Rattan**
  - Solid core, vine-like palms, vertical grain, durable but flexible

- Different species but share some similar properties
  - Light, strong and versatile
Bamboo and Rattan Craft - Around the World

- Bamboo and rattan is closely linked to the livelihoods of 1.5 billion people

- Amongst the most valuable non-wood forest products

- Many uses, furniture, basketry, scaffolding, housing, paper, chopsticks, etc.

Bamboo and Rattan Craft in Viet Nam

- 1.5 million hectares of natural bamboo forests
- Total rattan resources: 380,000 hectares
- Overall, women comprise 80% of all workers in value chain

- Large variety of products – complex supply chain
- Crafted products – relies on skill of workers
The Pilot Site: Nghe An Province

- 2.9 million inhabitants

- GDP per capita of VND 10,490,458
  - Compared to a national average of VND 17,180,000

- Around 65-80% of the farmers/craft producers are women and ethnic minorities who reside in remote areas and are disproportionately affected by poverty

- 80,000 ha of bamboo and rattan

The Pilot Company: Tinh Tu Company

- Established in 1993

- 70 workers, two thirds of whom are women

- Approximately 3,000 collectors and weavers who collect raw materials, produce both finished goods and partially finished goods

- Main products: furniture, lamps and other decorative items
  - Bamboo Longsima sp. Nov – “lung” bamboo and garden rattan
Resource Efficient Cleaner Production and Value Chain Diagnostics

…for more informed policymaking

Resource Efficient and Cleaner Production

- Continuous application of preventive environmental strategies to processes, products and services to increase efficiency and reduce risks to humans and the environment

- RECP addresses three sustainability dimensions individually and synergistically:
  - Production efficiency
    - Through improved productive use of natural resources by enterprises
  - Environmental management
    - Through minimization of the impact on nature by enterprises
  - Human development
    - Through reduction of risks to people and communities from enterprises and supporting their development
RECP for the Greening of Industry

- Evaluation report (2012) conducted by SECO:
- 340 consultancy projects conducted by Viet Nam Cleaner Production Centre on behalf of ten major donors and agencies such as CIDA, DANIDA, ILO, UNEP, WWF and the EU

- Cleaner Production options implemented in pilot companies led to savings of:
  - 7% in electricity,
  - 9% in coal,
  - 18% in water and
  - 25% in chemical consumption
  - Average savings of US$ 75,000/year

Source: SECO, 2012

RECP for more informed policymaking

- For an enterprise level perspective:
  - Production processes
  - Sources of waste and pollution
  - Resource (including) energy efficiency
  - Occupational health and safety

- For practical “triple-bottom line” solutions to dispel conventional myths about environmental protection costing more, not being feasible etc.
Value Chain Diagnostics Methodology

- Better understanding and optimizing of resource use
- Enhanced adaptive capacity,
- For products and services that are green, and
- Holistic analysis of sustainable development.

Rattan and Bamboo Craft - The Challenge

- You are local government officials working for the provincial government of Nghe An Province.

- Your task:
  - In your working groups you will develop a strategy:
    - To improve incomes of local people in Nghe An Province, contributing to better livelihoods and poverty alleviation.
    - To reduce overexploitation of natural resources in addition to production processes which pollute the environment.
Working Session 1: Value Chain Analysis

Task 1:
- Map the bamboo and rattan value chain in Nghe Province in Table 1.
  - Actors,
  - Functions and
  - Interchanges

Working Session 1: Value Chain Analysis

Task 2:
- Characterise the different dimensions of the bamboo and rattan value chain,
  - Identify constraints and opportunities,
  - Making your observations in the Table 2.
Working Session 2: Resource Efficient and Cleaner Production and Suggestions for Policy Recommendations

Task 3.
- From the description of production processes involved in making rattan and bamboo,
  - Identify problem areas and potential cleaner production options in Table 3:

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Task 4.
- Make policy recommendations for bamboo and rattan sector in Table 5.
  - Sustainable development objectives
  - Recommendations for policy actions

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Task 1: A Solution: Bamboo and Rattan Value Chain

- Raw material supply
- Pre-processing
- Production
- Trading
- End markets

Bamboo and rattan collectors

- Household processing (drying, cutting, splitting, etc.)
- Taedra (I) - Thieves only
- Taedra (II) - Processing and react
- Imported bamboo & rattan from Laos and Cambodia

Enterprise: Drying, sulfur treatment, and weaving.

- National Importers
- Provincial Wholesalers
- Collectors on district level
- Export markets
- Local markets
- Tourists in Viet Nam

Task 3: Cleaner Production

Problem Areas ...
Raw Materials - Collection

Photos from www.pbase.com

Transportation

Photos from www.pbase.com
Case 9: Weaving Wealth: Resource efficient and cleaner production and supply chain integration for more sustainable rattan and bamboo craft in Viet Nam

Before...

Pre-processing

Before...

Pre-processing
Pre-processing

...After

Pre-processing

...After

RECP & Supply Chain Integration for Sustainable Rattan & Bamboo Craft in Viet Nam
Case 9:  
Weaving Wealth:  
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Waste

Before...

...After

Storage Facilities

Before...

...After

RECP & Supply Chain Integration for  
Sustainable Rattan & Bamboo Craft in Viet Nam
ProsPER.Net Joint Research Project:
Development of learning materials and methodological support on Sustainable Production and Consumption

Finishing of Goods

Design-for-Sustainability - Eco-Design
Green Growth Through Green Industry Development in Viet Nam

- Presenting results from the project, Policy Advice for Environmental Management, results included
- A policy framework and guiding quantitative goals
- Green industry pilot demonstrations:
  - Pilot I: EAF Steel Industry
  - An industry-driven, voluntary approach, based on intra-sector benchmarking and technology-cooperation, best practice sharing and learning, and technology road-mapping
  - Pilot II: Eco-Town Development in Hoi An City
    - A local-government-driven planning approach for GI solving environment and climate challenges, balancing business and community development, and enhancing income and employment opportunities
  - Pilot III: Zero Waste Systems for Crafts Villages
    - Innovative models for sustainable crafts production focusing on recovery and utilization of all materials and reduction of emissions

Reference Materials:

- CP Toolkit
  - Modular structure
    - Introduction to CP
    - Team, Policy and Motivation
    - Material Flow Analysis
    - Energy Analysis
    - Innovation, Creativity and Option Generation
    - Green Procurement and Hazardous Materials
    - Industrial and Environmental Controlling
    - Waste Management and Recycling
    - Audits
    - Networking at National and Regional Level
    - From CP to Environmental Management Systems
    - Hazard Analysis and Critical Control Points
  - Linked with supervised CP audit programme leading to UNIDO endorsed CP award
Background: MDG-F Joint Programme - Results

- 43 “Quick Scan” cleaner production assessments conducted and recommendations made
- 1,430 grassroots producers trained
- 50 Trainers from vocational schools trained
- Expert help to 22 SMEs to redesign their products based on principles of eco-design and LCA
- Dissemination of CP case studies

Conclusion

- Integrated/ value chain solutions
- No miracle materials
- No inherent green industries
- Environmental issues need to be addressed in their socio-economic context
- No such thing as free!
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Reference Materials:

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Websites:
- Green Production and Trade to Increase Income Opportunities and Employment for the Poor: www.greentrade.org.vn
- International Network for Bamboo and Rattan: www.inbar.int
- UNIDO Cleaner and Sustainable Production Unit (CPU) Homepage: www.unido.org/cp
- Viet Nam Rattan Association: http://vietnamrattan.org/
- Viet Nam Cleaner Production Centre: www.vnipc.vn
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Thank You

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