Promoting SCP in the agro food sector in China

Promoting a sustainable edible bamboo shoot value chain in China

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Overview

- Bamboo industry in China: edible bamboo shoot production
- Challenges in edible bamboo shoot production
- Objectives, strategy and expected outcomes and impacts
- Key stakeholders: role of bamboo shoot processing SMEs
- A case study: how to engage SMEs
Known as the Kingdom of Bamboo

- More than 500 bamboo species are distributed in 16 provinces. About 200 bamboo species have edible shoots, and more than 30 taste good.

- 6.7 million ha bamboo forest. Edible shoot producing bamboo forest/plantation makes up about 1.9 million ha. (28% of total bamboo forest)

- The annual production value of the bamboo industry in China is about US$ 18.9 billion, employing more than 18 million workers.
The annual production output of the bamboo shoot industry was about 166 million tons in 2011. Annual export earnings reached about 220 million USD (exceeding 60% of the world’s total.)

Fujian Province ranks at the top with 692,000 tons bamboo shoot production, accounting for 41.7% of China’s total. The annual production output in Yunnan, Zhejiang, Anhui, Sichuan and Chongqing also exceed 100,000 tons.
Challenges and problems in some SMEs in western China such as Sichuan, Guizhou and Yunnan provinces:

While advanced technology and policy governance have been implemented in the bamboo shoot SMEs in eastern China, such as Zhejiang province, **large gaps between some SMEs in eastern and western China** exist, such as in Sichuan with following problems:

- Low resource efficiency, large quantity of fresh water consumption (1:4) and pollution
- Overuse of preservatives, mainly salt and sodium pyrosulfite
- Increasing labour costs in production
- Lack of high value-added products to maintain SMEs’ profit
- Poor processing technologies, standards and policy governance.
The EU Switch Asia Programme Greening Bamboo Shoot Value Chain Project (2013-2017) is going to address the urgent needs of those SMEs.

Its objectives are to build their capacities in processing technology, environmental performance, product quality and marketing strategies etc., and to increase profits for SMEs and improve efficiency throughout the whole value chain.
Project intervention engages stakeholders/actors throughout the whole production value chain, including through four work packages listed below:

<table>
<thead>
<tr>
<th>Work Package I</th>
<th>Revive consumption of safe and eco-friendly preserved foods</th>
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</thead>
<tbody>
<tr>
<td>Work Package II</td>
<td>Develop less polluting and safe food produced by green SMEs in Zhejiang and Sichuan Provinces</td>
</tr>
<tr>
<td>Work Package III</td>
<td>Formulate and enforce policy for pollution control and for safe processed foods</td>
</tr>
<tr>
<td>Work Package IV</td>
<td>Disseminate, transfer, and duplicate successful experiences and models to other SMEs of preserved vegetables, fruits, and meat</td>
</tr>
</tbody>
</table>
The International Network for Bamboo and Rattan

Promoting SCP practices in agro-food sector

Bamboo Shoot Industry

Meat, vegetables and fruit sectors

Case study

Outcomes

- Market share increased by 10-15%
- Water pollution reduced by 50%
- Water use efficiency increased by 30-35%
- 90% targeted SMEs meet standard

Value chain & Stakeholders

Consumption System

Consumers & Retailers

Production System

SMEs/processors

Farmers

Policy and Standards

Government, industrial Associations

Activities

- Marketing
  - Trade fairs
- Quality assurance
  - Preservatives
- Environmental performance
  - Water efficiency & Waste
- Organic farming
- Carbon accounting
- Standards formulation
- Investment

- Education/capacity building
  - Awareness raising events
- Standards formulation
- Investment
Expected Impacts

- **Technical impact:** 2 SME clusters and information platform established, sets of guidelines & demo sites will be produced and serve for future training activities.

- **Environmental impact:**
  - Water pollution by 30-35%
  - Soil pollution by 10-15%
  - Pollutant content by 35-40%
  - Water use efficiency by 30-35%
  - Waste use by 30%

- **Policy impact:** Two standards on eco-friendly bamboo shoot farming and SME primary processing technology and two sets of policies will be developed and implemented in the two provinces.

- **Social-Economic impact:** The industry is worth about 16 million USD per year, which could secure about 5,000-6,000 jobs within the rural SMEs areas.
The International Network for Bamboo and Rattan

Project sites

Sichuan province

Zhejiang province
Zhejiang province

Lin’an and Anji Counties: Primary hubs for bamboo shoots in eastern China, bamboo shoots have become the first pillar industry of Lin’an ‘s rural economy.

Sichuan province

Changning and Zigong Counties: the biggest bamboo industry counties of Sichuan Province, and the bamboo shoot processing hub of southwest China.

<table>
<thead>
<tr>
<th>Sites</th>
<th>No. SMEs</th>
<th>Annual output(tons)</th>
<th>production value (million USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lin’an, Zhejiang</td>
<td>46</td>
<td>235,000</td>
<td>354 (56 export value)</td>
</tr>
<tr>
<td>Anji, Zhejiang</td>
<td>12</td>
<td>13,700</td>
<td>16</td>
</tr>
<tr>
<td>Changning, Sichuan</td>
<td>19</td>
<td>250,000</td>
<td>48</td>
</tr>
</tbody>
</table>
Bamboo Shoot Processing SMEs working as a link for the whole value chain

SMEs are linking farmers, consumers and other stakeholders such as local governments and business associates together, playing an important role in local economic prosperity, share of outputs, employment and farmers’ income, and corporate social responsibility (CSR)
The industry has become a mainstay industry in project sites.

- **Livelihoods and income generation:** more than 200,000 rural farmers depend on harvesting bamboo shoots for a living in Anji or 50% of income earned from the industry. During harvest seasons, employees’ income increases by about 800 USD.

- **Economic revival and job creation for local community:** the industry secures about 3,000-6,000 jobs in the SME-based areas in the project sites, especially during harvest seasons. Over 40% of employees come from disadvantaged social groups, such as women and the elderly.

- **Technical innovation and up-grading:** develop and adopt new skills and processing technologies, raise the level of processed food industry, improve processed food quality and even improve the food processing system, thus increasing resource efficiency and profits for long-term sustainable development.


Promotion of regulations and standards

In collaboration with other stakeholders, SMEs promote new processing/quality regulation and standards.

Lack of uniform product quality standard for Dried bamboo shoot products in Lin’an:

The special flavor of bamboo shoots will be compromised if the standards for dehydrated vegetables are applied. Hence, each SME has their own enterprise standard of quality to prevent problems with quality inspection and food safety control.

Recently, dried bamboo shoot processing SMEs have been working on promoting an industrial uniform standard, and an Industry Union Standard for Dried Bamboo Shoots is forthcoming in Lin’an County. This is an important starting point for the shoots industrial transformation and upgrading.
Lin’an City Xing Wang Food Co, Ltd, Zhejiang Province

<table>
<thead>
<tr>
<th>Basic Information</th>
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<tbody>
<tr>
<td>Products</td>
<td>hand-stripping bamboo shoots, instant bamboo shoots, shredded</td>
</tr>
<tr>
<td></td>
<td>bamboo shoots etc.</td>
</tr>
<tr>
<td>Outputs</td>
<td>hand-stripping bamboo shoots 110 tons and other instant products</td>
</tr>
<tr>
<td></td>
<td>50 tons</td>
</tr>
<tr>
<td>Output Value</td>
<td>800,000 USD</td>
</tr>
<tr>
<td>No. of employees</td>
<td>about 30 people, 60-70 during busy season</td>
</tr>
<tr>
<td>Use of Preservative</td>
<td>salt 7.5 tons</td>
</tr>
<tr>
<td>Water Consumption</td>
<td>deep well water, no statistics</td>
</tr>
</tbody>
</table>
**A Case Study: How to Engage SMEs**

Lin’an City Xing Wang Food Co, Ltd, Zhejiang Province

**Challenges and Problems:**
- Technical problems: a few hand-stripping bamboo shoots have gone bad during hot weather; a few sterilization cans (tinplate) have swelled during hot weather etc.
- Economical problems: difficult for SMEs to borrow money from banks.

**Development Needs:**
- Need and desire for cooperation with research institutes and universities etc. to upgrade processing technologies to tackle technical problems.
- Need for policy and financial support for SMEs.
A Case Study: How to Engage SMEs

Lin’an City Xing Wang Food Co, Ltd, Zhejiang Province

Our Method to work with SMEs:

1. Baseline study
2. Common problems & development needs
3. Problem list and analysis
4. Application of new technologies in demo SMEs
5. Research on new technologies
6. Technologies & experiences transfer to more SMEs
Successful models transferred to other 600 SMEs

- Less polluting & more efficient technology
- Eco-friendly processing practices
- Increased consumption & profits
- Policy and financial support, consumer awareness
Thanks for your attention!

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