DAIRY VALUE CHAIN ANALYSIS
A beginner’s guide to link smallholder farmers to market

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FOREWORD

Dairy farming is traditionally based on smallholder system, primarily subsistence-orientated, mixed crop-livestock farming systems. This sector is of very significant importance to the country’s rural economy, and over 78% of the rural households own cattle. Dairy farming is an integral part of the Bhutanese farming system producing food items such as milk, butter, cheese and meat for home consumption and sale.

The adoption of a commodity approach by Department of Livestock during 11th FYP and beyond is intended for enhancement of commodities value chains is intended to vigorously support productivity increases and output quality and growth. However commodity value chain is underdeveloped. In order to strengthen dairy sector, strengthening dairy value chain applying innovative approach is essential.

Dairy value chain approach enables product tracing and handling/processing across the entire chain from the production through to the consumption stages. These measures can enhance safety and quality of products so as to manage the significant public health risks posed by products of uncertified origin.

I am very pleased to note that that National Dairy Research Centre, Yusipang has come up with a handbook to guide extension staff on How to conduct dairy Value Chain Analysis. These guidelines, I am sure will help Livestock Extension Staff to apply it to detect the fault lines in the chain and take corrective measures where necessary. This would enable advancement of the productivity and competitiveness of the dairy chain for enhanced national food self-sufficiency; income generation that ensures livelihood security and family wellbeing.

(Dr. Tashi Samdup)  
DIRECTOR GENERAL
INTRODUCTION & DEFINITION OF A VALUE CHAIN

- A value chain is a series of **processes and linkages** required to bring a product from input supply to final consumers

- It is an alliance of **enterprises collaborating and connected vertically** to achieve a more rewarding position in the market

- To achieve a strong market position, the partnerships work on three main areas: **quality and quantity improvement, system efficiency and product development**

- As the product moves along the chain value is added i.e quality may be improved, price increase

SUPPLY CHAIN VERSUS VALUE CHAIN

**SUPPLY CHAIN**
- Supply driven -Push
- Productivity oriented
- “Sell what you produce”
- Bulk commodity
- Individual actor vision
- Opportunistic behaviour
- Win- lose
- Spot markets --open
- No governance
- Quality control low
- No forum

**VALUE CHAIN**
- Consumer driven -Pull
- Market oriented
- “Produce what you sell”
- Boutique, value added
- Partnerships, shared vision
- Strong relations, trust
- Win Win
- Niche markets (closed)
- Chain leader/ governor
- SQT regulations
- Chain platforms
VALUE ADDITION

• Process of increasing economic / nutritional value and consumer appeal of agricultural product (i.e. milk)

WHY VALUE ADDITION?

• Increasing household income
• Potential for employment creation
• Food security, quality and safety
• Enhanced competitiveness of agricultural products
• Mitigating Rural Urban Migration
• Strengthening partnerships among actors in the sector
• Includes diversification into specialty products, packaging, branding, safety and quality improvement
• It is a marketing strategy driven by customer needs/ preferences
• VALUE ADDED: Increment in product value at different stages of the value chain

CHARACTERISTICS OF DAIRY VALUE CHAIN

Value chain main characteristics are producers, processors and consumers of dairy products as depicted in figure below:
BASIC CHAIN MAP
Basic chain is drawn to see various actors involved in a value chain:

VALUE CHAIN ANALYSIS
Value Chain Analysis involves three sequential phase. They are as follows:
Phase 1: End market analysis
Phase 2: Chain analysis (“diagnosis”)
Phase 3: Upgrading strategy (“treatment”)

Value chain management through Farmers Cooperatives and Federation
Source: Gujarat Milk Cooperative Federation and Union, Anand
PHASE 1: ANALYZING COMMODITY MARKETS AND MAKING CHOICES

Lead questions that need to be born in mind are:
1. Who are the main buyers/markets for the product and what are their requirements?
2. Which buyers-market should actors pursue?

How to analyze markets?
1. Segment the different markets (local, national or export)

2. Identify market requirements
   - Quantity
   - Quality
   - Price: Lush season/lean season/average
   - Delivery schedule

3. Identify types of suppliers: Small scale / large scale
4. Is the market a) growing? : Yes/No b) Saturated? : Yes/No c) Diminishing? : Yes/No
5. Trends a) Buyer / consumer preferences—e.g. raw, processed, packaged, organic milk
6. Identify access requirements such as:
   a) Infrastructure
   b) Standards
   c) Tariffs / taxes
   d) Policy / regulations
   e) Distance

7. Identify competitors
8. Identify competing products
9. Identify opportunities and challenges

Ranking of markets
Parameters:
1. Markets/ buyers to choose from (A,B,C,D)
2. Variables: W, X, Y and Z e.g. quality, quantity, price, reliability
3. Criteria: 1= very low; 2= low 3= average 4= good (market prospect)
4. Advantages and disadvantages of each market

Schematic representation of Dairy Value Chain
PHASE 2: CHAIN ANALYSIS: DIAGNOSTIC PHASE

It should be noted that “wrong diagnosis” may lead to wrong treatment and patient condition:
   a) Remains the same
   b) Deteriorates
   c) Patient dies

Hence care should be taken to diagnose the problems correct to find the fault line across the chain for appropriate corrective measures. Steps in chain analysis are:

**Step 1**
Mapping & understanding **current structure** of the Value chain (VC)
Lead questions: Who are the main stakeholders in the VC and how is the VC organized?
Quantifying the flow of product (s) to different market segments and economic analysis

**Step 2**
Mapping and understanding **institutions (public/ private)**, policy & infrastructure
*Lead question:* Which are the key institutions and policies

**Step 3**
Identification of **major constraints and opportunities** at each level of the VC
*Lead question:*
Which constraints (both technological and non technical) influence performance (reduce productivity, commercialization and competitiveness of the VC in specific markets)?

**Mapping stakeholders and roles**
In order to understand of stakeholders and their role, three levels of stakeholders needs to be understood:

<table>
<thead>
<tr>
<th>Level</th>
<th>Stakeholders</th>
<th>Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actors</td>
<td>Input suppliers, farmers, traders, processors, wholesalers, retailers, consumers</td>
<td>Own products</td>
</tr>
<tr>
<td>Service providers</td>
<td>Extension, research, finance, transport, NGOs</td>
<td>Provide facilitation services</td>
</tr>
<tr>
<td>Enablers</td>
<td>National/ Government, WTO, Regulatory bodies, Trade unions</td>
<td>Provide and define the environment in which both actors and service providers operate</td>
</tr>
</tbody>
</table>

**Identification and ranking of constraints and opportunities**
Constraints at any level can affect the performance of a VC. It is important to identify key constraints and address the root causes
Tools
• Methods: SWOT, Pair wise ranking, Problem tree
**Example of Strength, Weakness, Opportunities, Threat (SWOT) matrix**

<table>
<thead>
<tr>
<th>Internal</th>
<th>External</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STRENGTHS (enabler)</strong></td>
<td><strong>OPPORTUNITIES (enabler)</strong></td>
</tr>
<tr>
<td>Milk coolers available</td>
<td>Growing population-- Demand</td>
</tr>
<tr>
<td><strong>WEAKNESSES (obstacle)</strong></td>
<td><strong>THREATS (obstacle)</strong></td>
</tr>
<tr>
<td>Inadequate milk supply</td>
<td>Milk contamination threat to food safety</td>
</tr>
</tbody>
</table>

**PHASE 3: UPGRADING STRATEGY (“TREATMENT”)**

1. **Formulating chain vision (strategic direction)**  
   Q: How should the VC look like say, 5-10 years from now? What needs to change?

2. **Formulating an upgrading strategy / entry points**  
   Q: Which gaps exist between the current structure of the VC and that derived from the vision?

3. **Anticipating impact of upgrading**  
   Q: What will be the effect of upgrading on livelihoods?

**Upgrading strategy**  
How to improve position of smallholder farmers in the value chain?

Depending on SWOT analysis and other analysis during diagnostic/ chain analysis phase desired steps can be opted:

1. Remain actor and specialize in production
2. Do it yourself (Vertical integration: carry out other functions of the VC)
3. Cut off middle men or traders from the chain (analyze whether traders are opportunists or savior?)
4. Cross the river in a crowd (organized in groups/ cooperatives)
5. Vertical linkages (coordination) with other actors (ownership)

Finally suggest/ recommend interventions on major bottlenecks (main game changers)

- Micro level (operators) ---- upgrading
- Mesolevel (services) ---- Promotion / Facilitation
- Macro level (enabling environment) ---- Policy / Infrastructure

**CONCLUSION**

- Value/ price paid for a product is dependent on social actors and economic environment
- Value chain analysis needs to understand interactions of numerous actors in a value-based transactions- value chain
- Interventions to strengthen the entire chain is essential for: **market linked production for assured income**

**REFERENCE**