

कृषि में मूल्य श्रृंखला वित्तपोषण (विश्लेषणात्मक रूपरेखा)

Value Chain Financing in Agriculture (Analytical Framework)

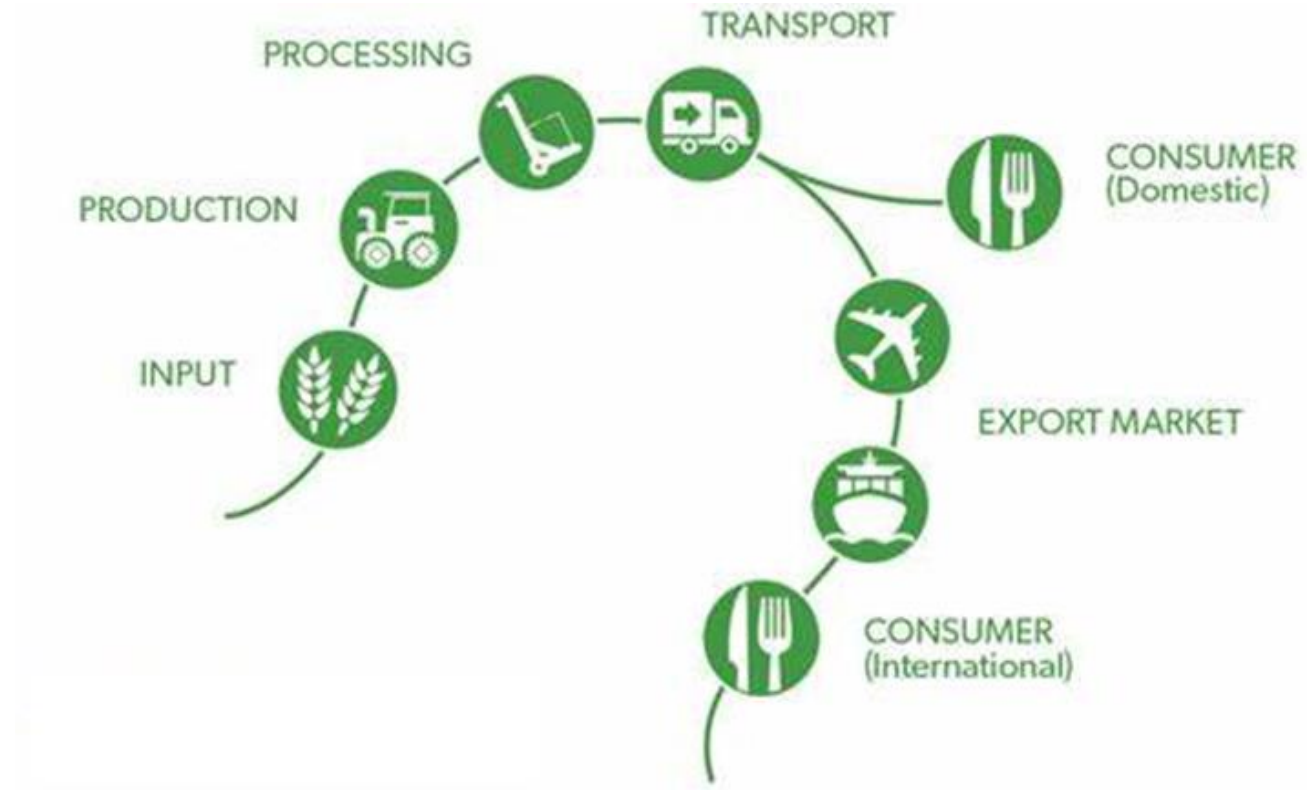
डॉ. के सुब्रमनियन, उप महाप्रबंधक / Dr. K. Subramanian, DGM

संकाय सदस्य / Member of Faculty

कृषि बैंकिंग महाविद्यालय, पुणे / College of Agricultural Banking, Pune

भारतीय रिज़र्व बैंक / Reserve Bank of India

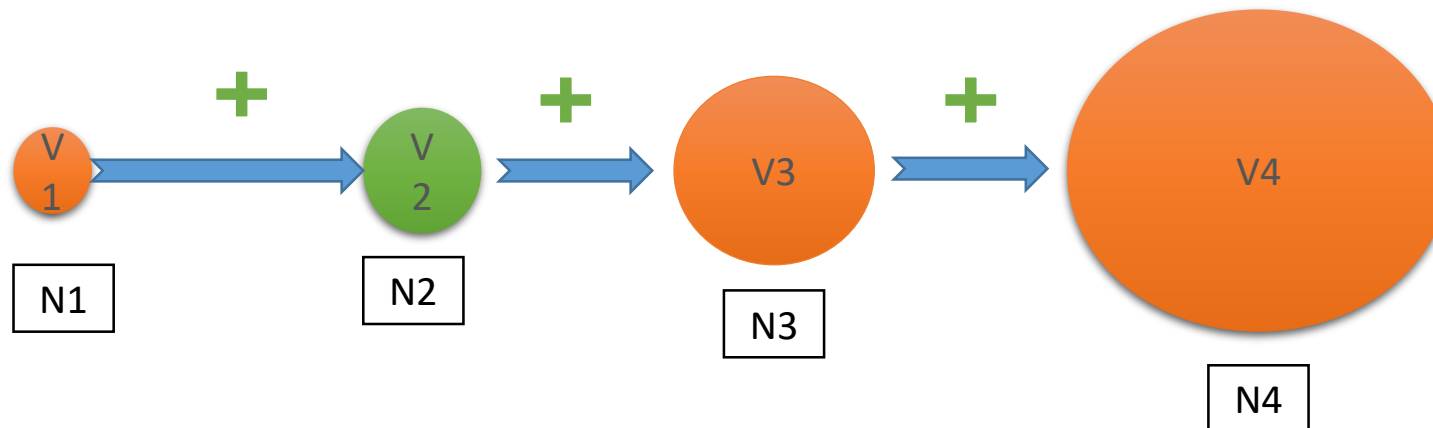
Agriculture Value Chain



Value Chain - Concept

- ✓ Value Chain Actors
- ✓ Value Chain Nodes
- ✓ Value Addition
- ✓ Length of Value Chain

- ✓ Backward Linkage
- ✓ Forward Linkage



Value Chain

Supply Chain

Aspect	Value Chain	Supply Chain
Definition	Focuses on adding value to a product or service at each stage to enhance customer satisfaction.	Involves the flow of goods, services, and information from suppliers to consumers.
Objective	Maximize value creation and competitive advantage.	Optimize the movement of raw materials and finished products efficiently.
Focus Area	Includes activities like innovation and value addition	Emphasizes logistics, procurement, production, and distribution.
Outcome	Leads to differentiation and better customer experience.	Ensures product availability and cost efficiency.

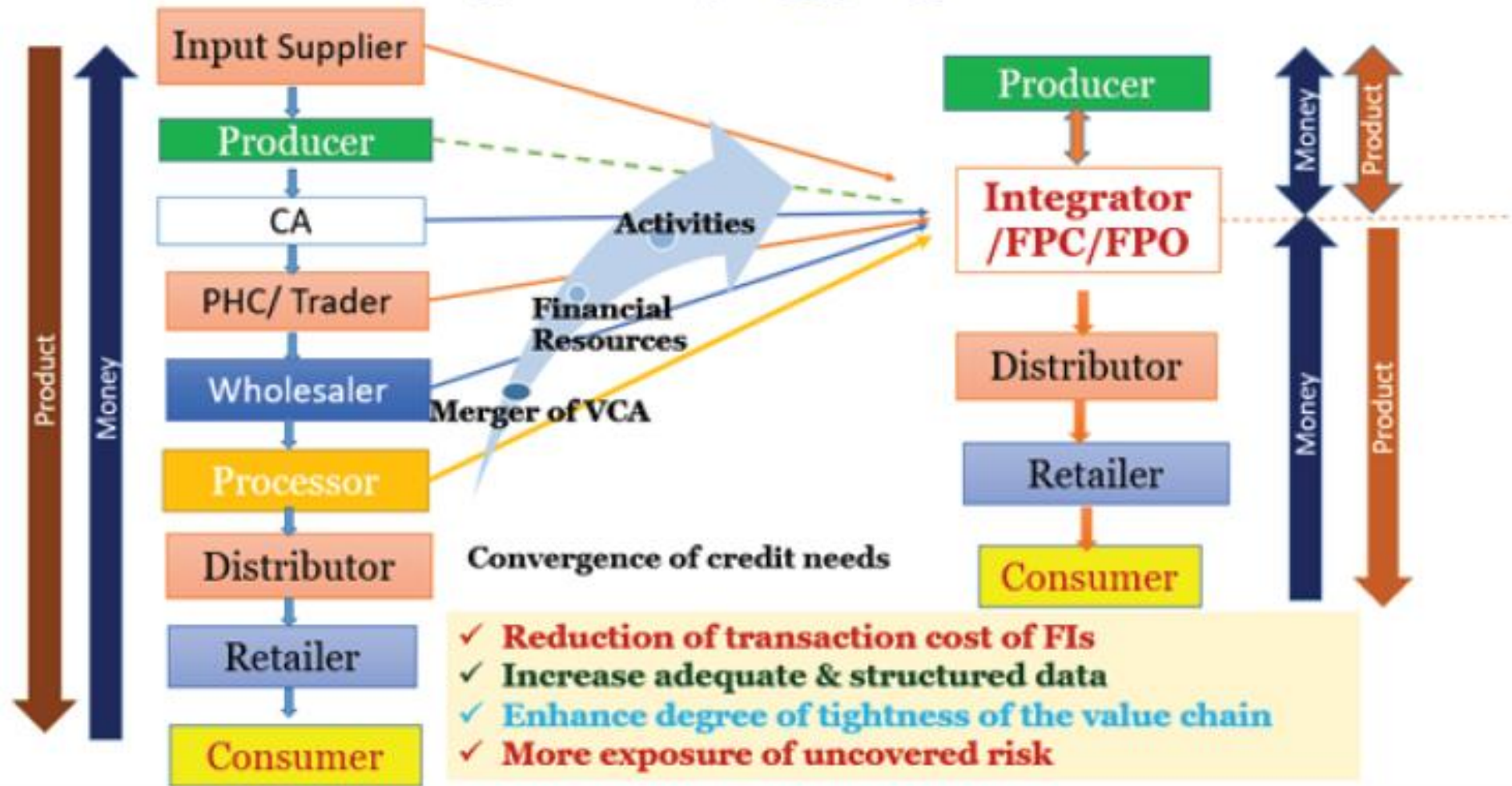
Role of Anchor in Agriculture Value Chain

Anchor	Aim/Benefit	Driver	Examples
Producer Driven	Producers' share in the consumers' rupee	Cooperative society/ Producer Organization	Amul
Buyer Driven	Seamless availability of produce to meet consumer demand	Processors, exporters, retailers, traders, and wholesalers	Contract farming of milk by Nestle India Ltd., potatoes by PepsiCo
Facilitator Driven	Provide market access for small and marginal farmers	Government Agencies, NGOs, Banks, CSR wings of corporates	Mahagrapes, Mother Dairy Fruits and Vegetables Limited, Kesla Poultry Cooperative
Organised Food Retailer Driven	Keeps consumer demand at the core	Organised food retailers and food delivery agencies	Bigbasket, Grofers (Blinkit), Reliance Retail

What do we
mean by
saying
shortening of
value chain?

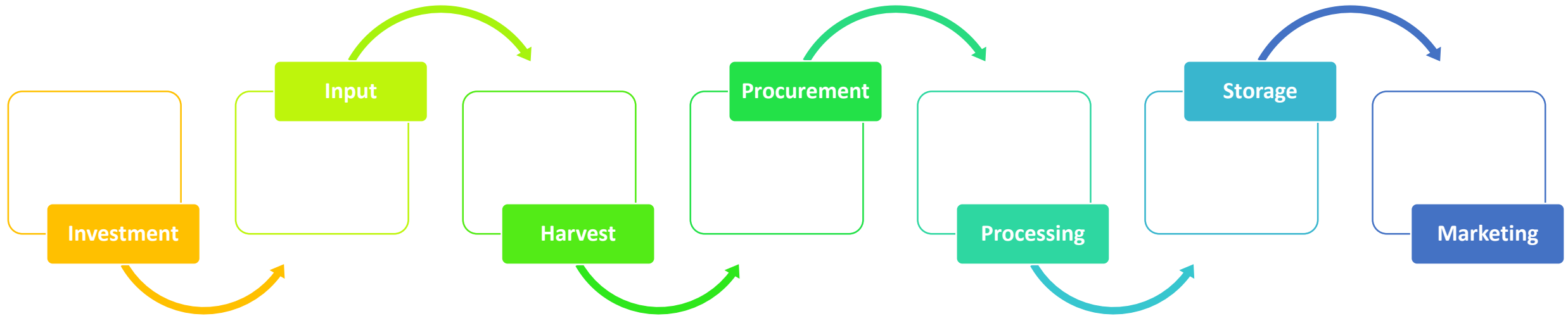


Effects of Integration /Aggregation



Successful Value Chains in Agriculture

- Sugar
- Dairy



A typical Paddy Value Chain

Source: Agri Value Chain Financing – An Analysis by BIRD, Lucknow

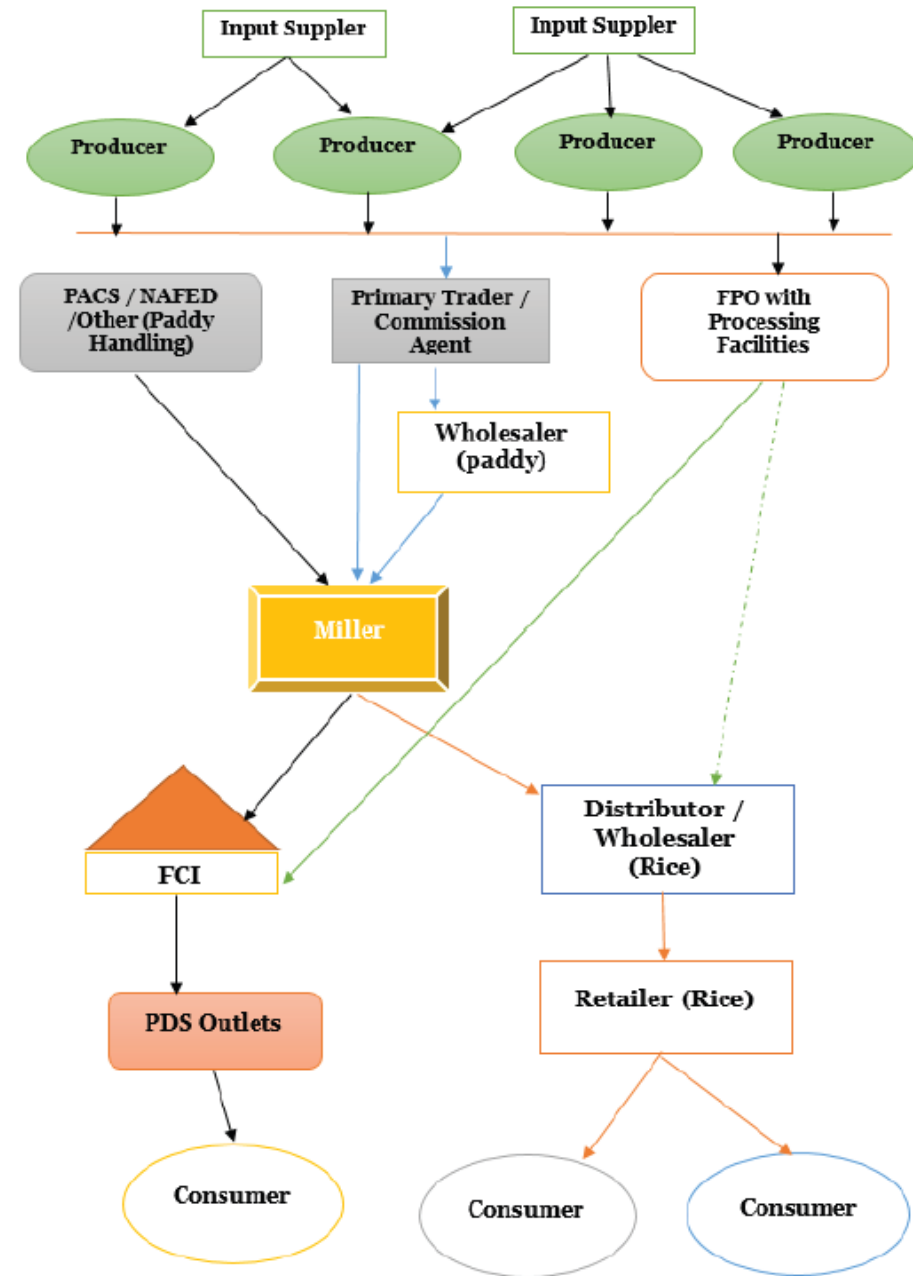
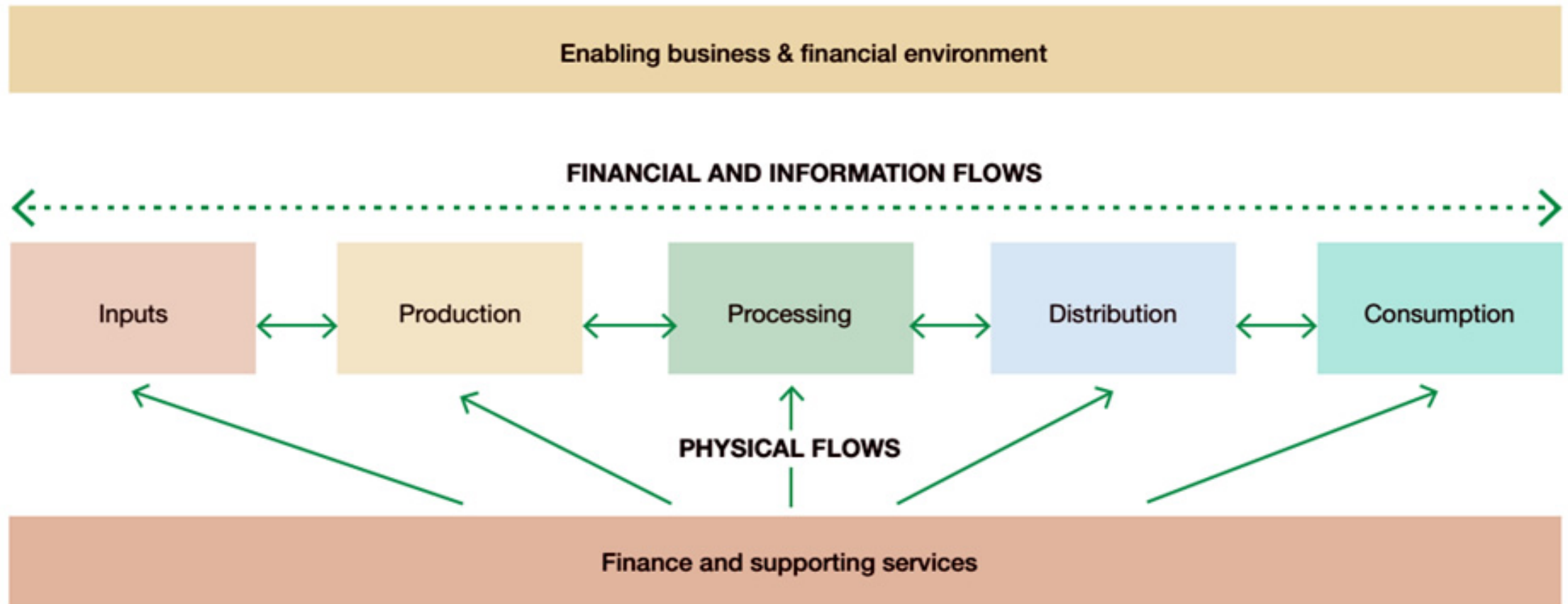
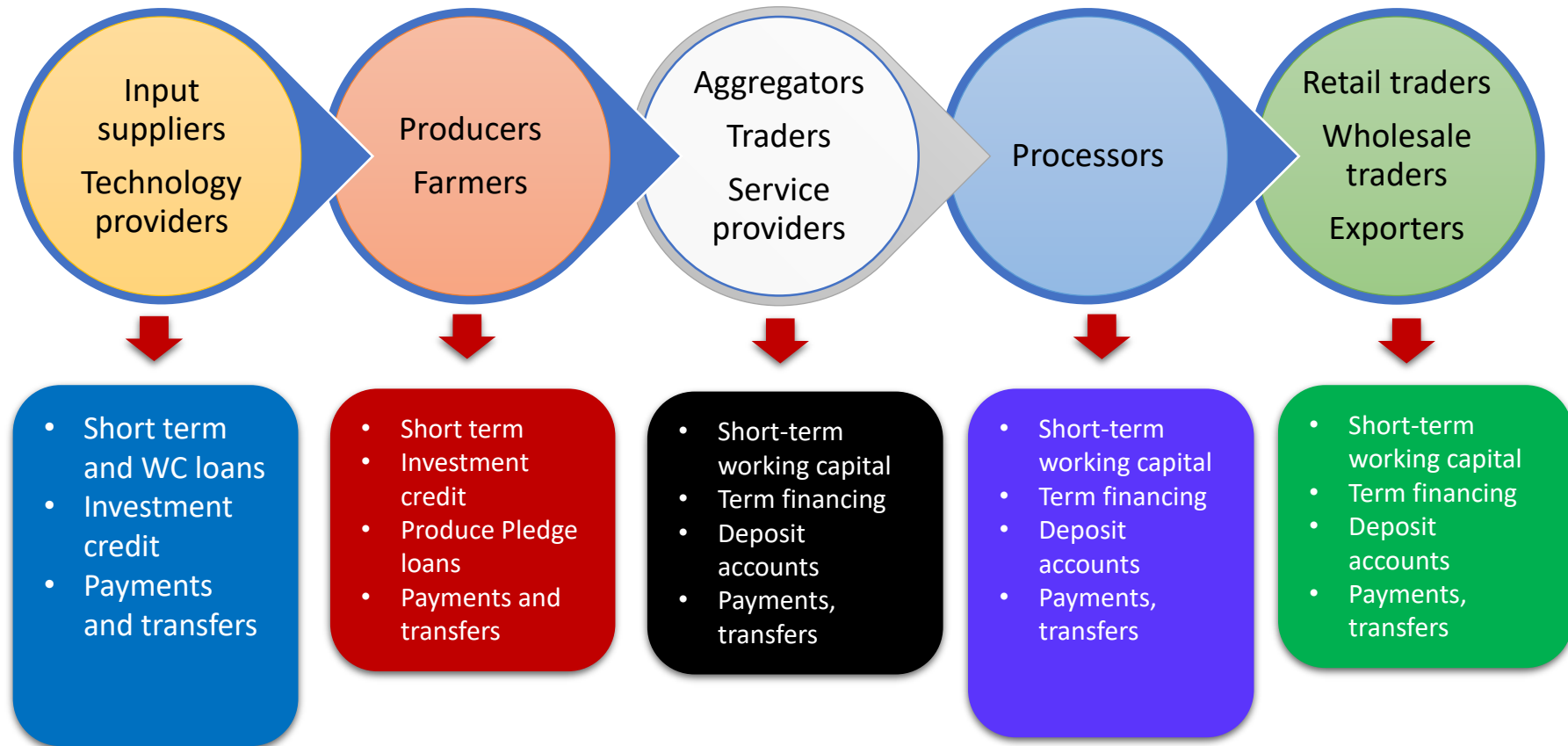


Figure : Paddy Value Chains in Deoria district of Uttar Pradesh

Financing Opportunities in the Agriculture Value Chain



Value Chain Participants and credit needs



Typical loan needs in a value chain

Nature of activity	Type of loan	Remarks
Investments – productivity improvement	LT Loans for irrigation, mechanization, productive assets	Usually available from banks – with collateral
Inputs - cultivation	Crop loans	Available from banks for those with land title
Procurement of harvested produce	Working capital loan – very short term	Not available to most farmers and FPOs from banks – NBFCs provide
Processing	Working capital loans – short term	Not for most farmers and FPOs – some NBFCs provide
Storage	Loans against stocks of commodity	Limited availability from banks to large coops
Marketing	Trade finance, invoice discounting limits	Not available to most farmers and FPOs

- Seed production & processing (50% margin)
- Nursery units (50-100% margin)
- Manure production & sales (30-50% margin)
 - Organic manures production & sales
 - Organic fertilizers sales
- Crop protection chemicals sales (10% margin)
 - Pesticide
 - Weedicide
 - Fungicide

Area – 500 Ha

Seed
Rs. 25 Lakh

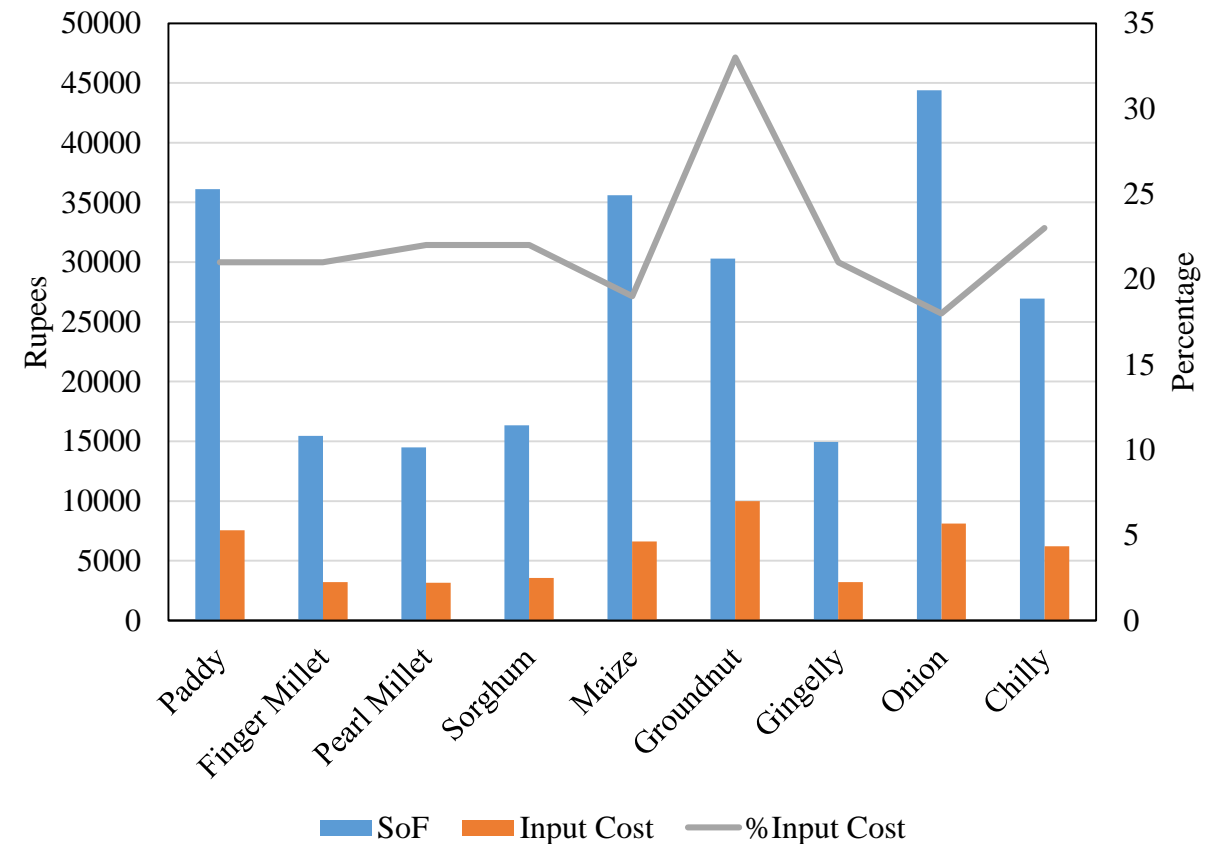
Manure
Rs. 50 Lakh

Crop
Protection
Rs. 50 Lakh

Input Management

- Input cost is approximately 20% of the total cost of cultivation
- Average input cost for field crops at around Rs. 5000.
- A cluster of 500 farmers would be required to operate its input business with an annual turnover of around Rs. 25 lakhs, if the cropping intensity is only 100%.

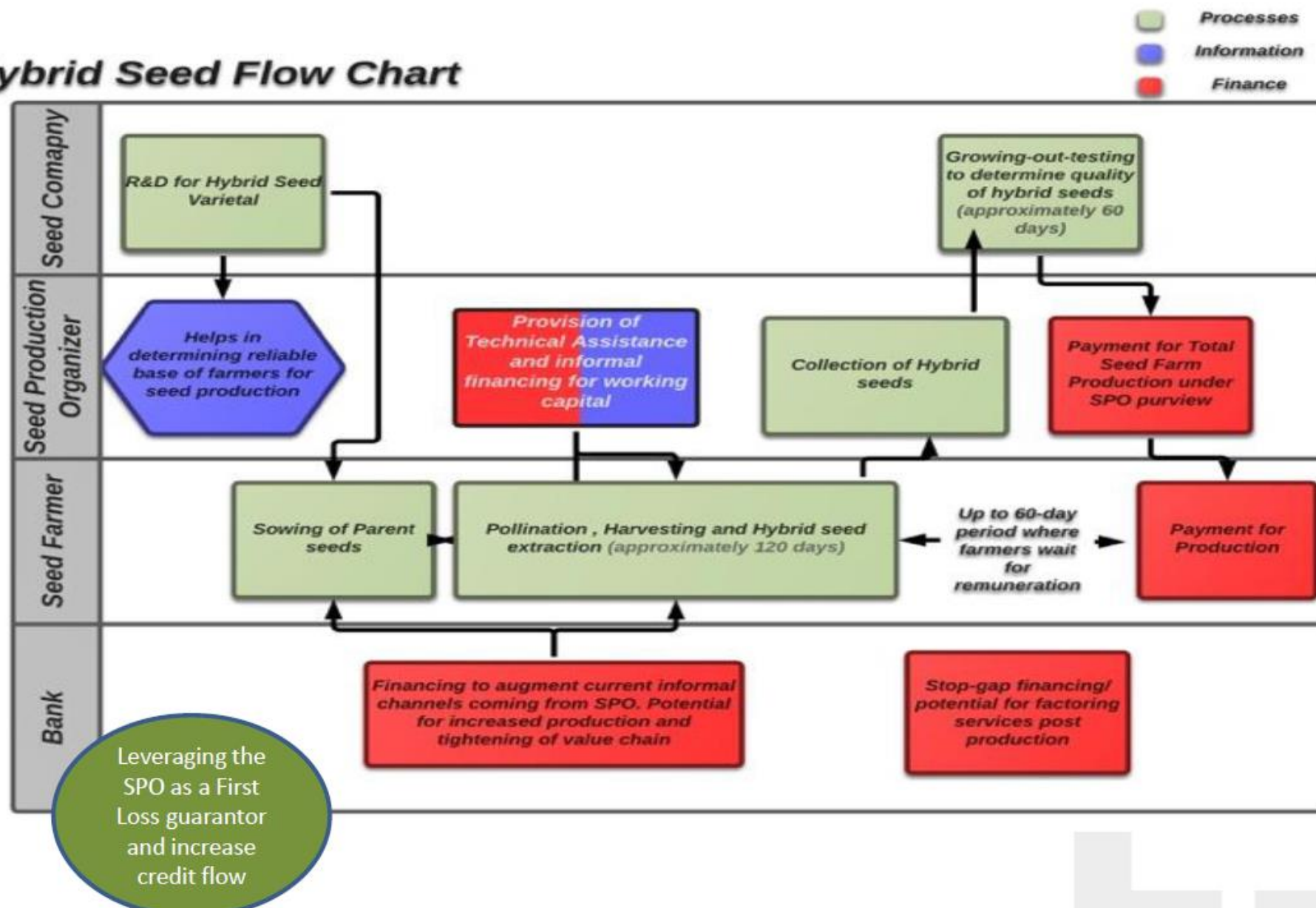
Fig 1. Input Cost as % of SoF



Case Study

Hybrid Seed production

Hybrid Seed Flow Chart



Why Value Chain Finance in Seed Production?

Reduce Information Asymmetry

Knowledge Based lending

Leverage Info available with off takers

- Crop Specific Customer Profiles
- Region culture /
- Market information

Lower Operating Cost

Economic Density readymade

- Created by the VCF partners
- Build Payment Systems around them
- Shared monitoring & supervision Data / early warning

Key Challenges in a Value Chain

- **Side Selling Risk** : determine the level of tightness in the VC . i.e. the legal , Social, motivation for farmers to stay loyal.
- **Entry Point** for the bank : Where does the power center of the value chain rest between the Processor, Aggregator and Farmer
- **The sustainability** of the Value chain , in terms of industry growth, product demand and strength and processes of VC partners.
- Finding the right **Geography** to operate in for a specific product
- Benchmarking **best practices** across VC's of different products.

Irrigation Management



Water Resources Development

Community Wells
Cooperative Lift
Irrigation Scheme
Community surface
water management
• Tank irrigation
• Farm Ponds

50 wells @ Rs. 3
lakh per well



Water Resources Management

Centralized purchase
and installation
Cooperative micro
irrigation system

Micro Irrigation
Rs. 50,000 per ha
x 100 Ha
PMKSY



Water Pumping

Solarisation of
agricultural pump
sets
PM KUSUM

Solar
PMKUSUM -60%
5 kw x 50
Rs 150 lakh

Mechanizing Agriculture



Establishing Custom Hiring centers

Farm Power

Farm implements

- Tillage
- Protection
- Harvesting
- Drones



Convergence

SMAM

Agriculture Infrastructure Fund

Tractor
Power Tiller

Cultivator
Sowing

Sprayer

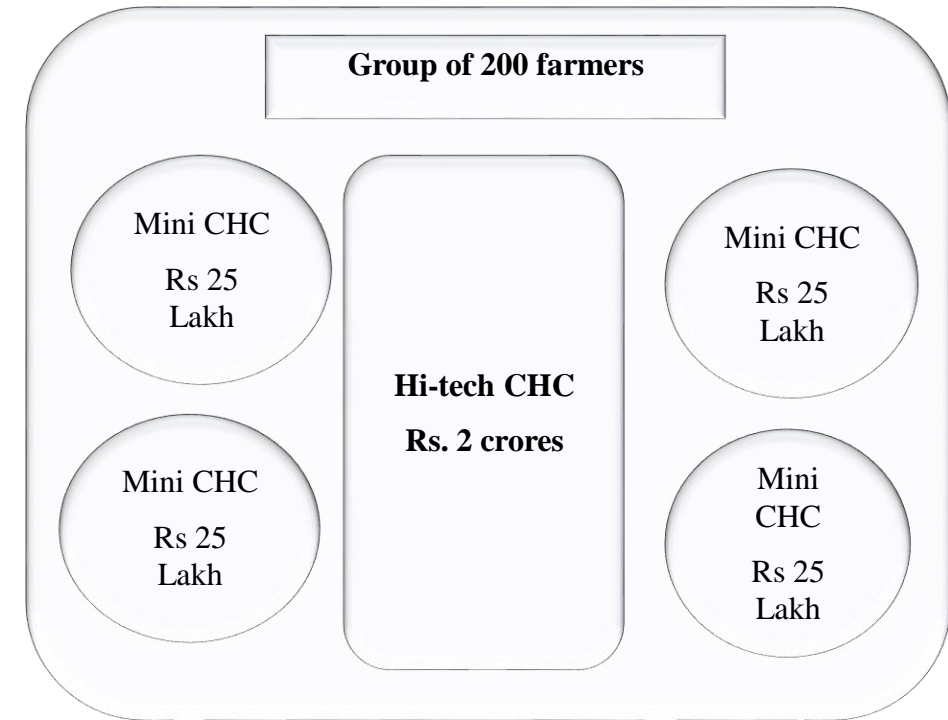
Harvester

Transportation

SMAM
Subsidy: 40%
Ceiling Rs 60
Lakh

Financing CHC as part of Value Chain Financing

- A typical CHC can be established at a cost of Rs. 25 lakhs for 50 farmers (50 Ha).
- One Hi-tech CHC at a cost of around Rs. 2 crore for about 200 farmers
- This Hi-tech CHC could include earth-moving machinery, combine harvesters, land levelers, and other advanced equipment.
- Usage frequency of such high-tech machinery less. So, one Hi-tech CHC is enough



- **Procurement of produces**
 - Logistics
 - Purchase of produces
 - Transportation
 - Primary processing
 - Temporary Storage
 - Bulk Sale
- **Storage**
 - Warehouses & Silos
 - Cold Storages



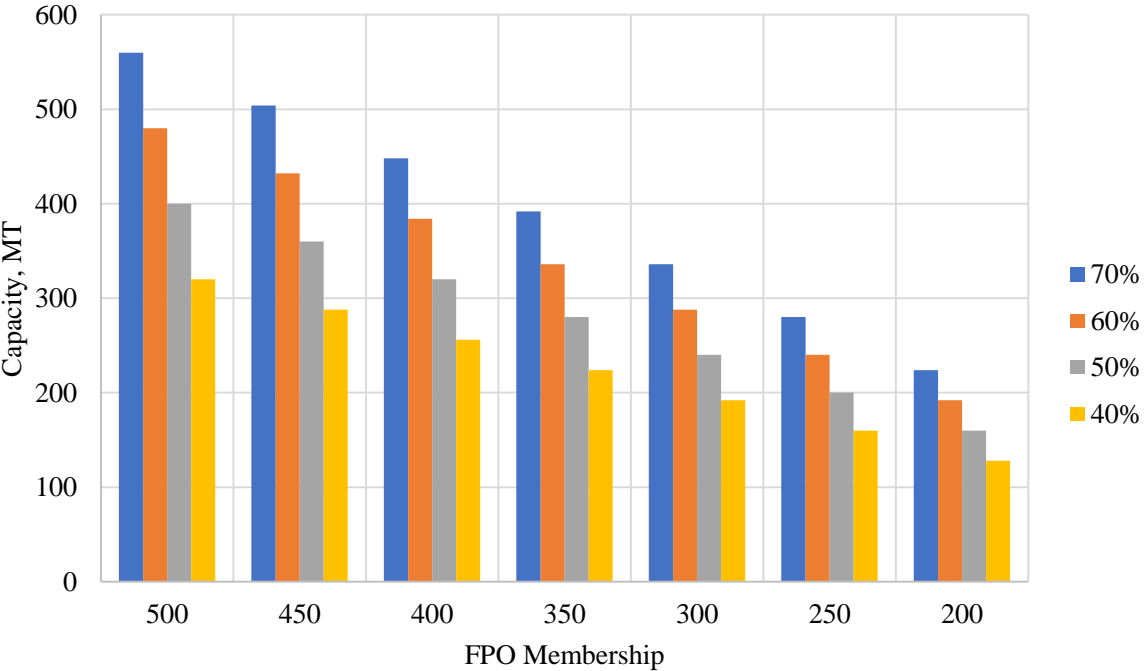
Convergence
AIF



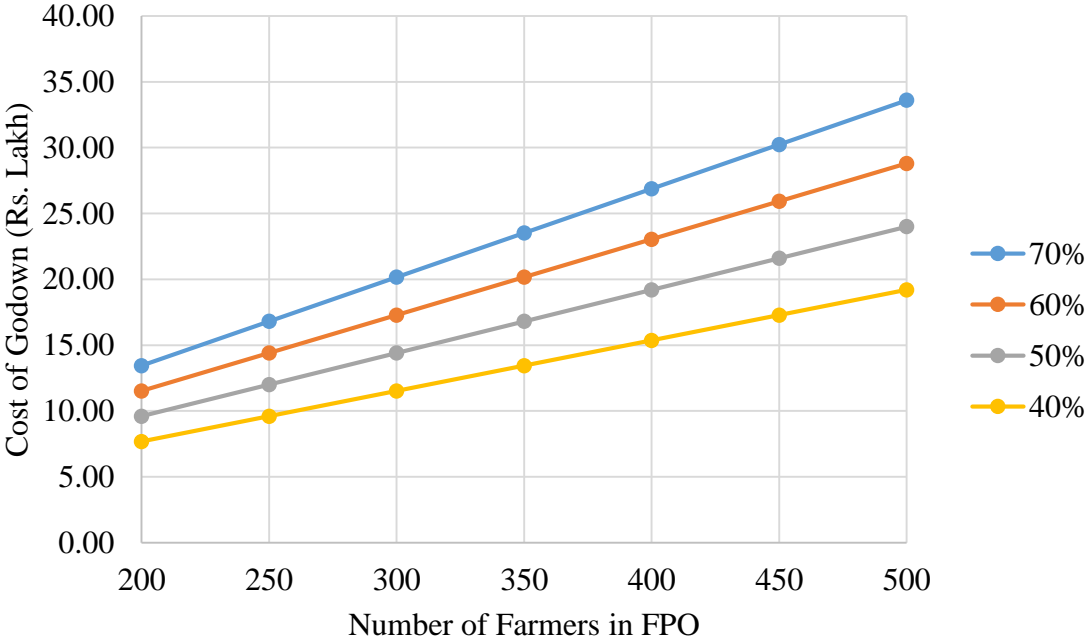
Convergence
AMI
MIDH

Investment Credit for Storage of Farm Produce

Storage Requirement (LH-1 Ha; Crop-Maize)



Investment towards Storage Godown

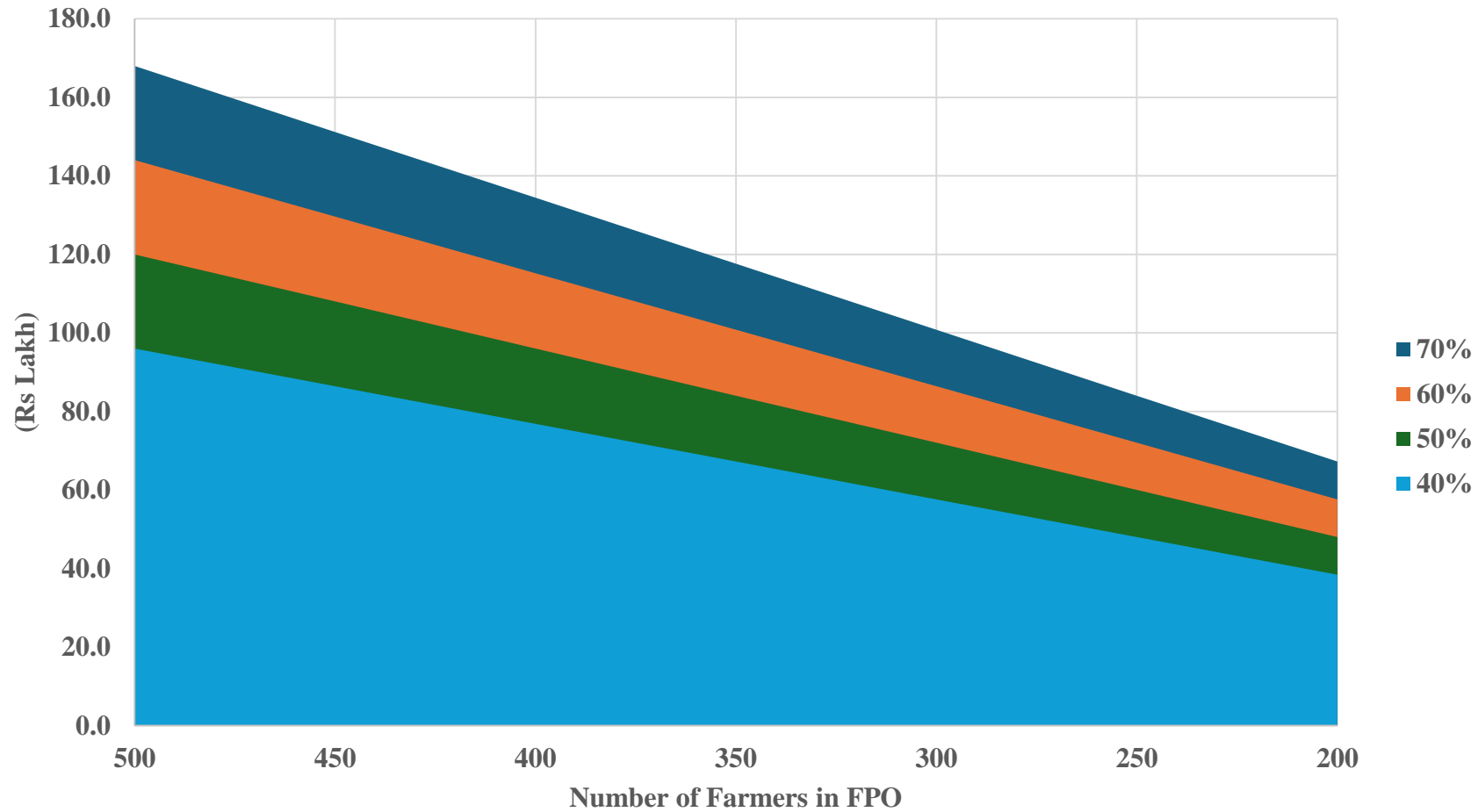


Percentage of Farmers Participation in FPOs considered from 40% to 70%

- **Secondary Processing**
 - **Milling**
 - **Floor Mill**
 - **Baking**
 - **Sauce, Jam, etc.**
- **Packaginging**
 - **CAP**
 - **MAP**

- Bulk Sale
- Retail Market
 - Distribution system
 - Transportation
 - Outlets
- Digital Marketing
- Marketing promotion

Working Capital Requirement for Procurement by FPOs



Percentage of Farmers Participation in FPOs considered from 40% to 70%

Summary of the mainstream credit requirements for FPOs

Sr. No.	Major Activity under Agricultural Value Chain	Credit Requirements under VCF (Rs. Lakh)		Total Credit Requirements (5000 Units) (Rs. Crore)
		Minimum (200 members)	Maximum (500 members)	
1	Working Capital for Input Business	10.00	25.00	875
2	Working Capital for Procurement	67.20	167.00	5000
	Total Working Capital	77.20	192.00	5875
3	Investment Credit for Farm mechanization	300.00	400.00	17,500
4	Investment Credit for Storage	7.68	33.60	1,032
	Total Investment Credit	307.68	433.60	18,532

Is it beneficial to Banks for financing Value Chains in Agriculture

Value Chain Analysis Approach for Banks

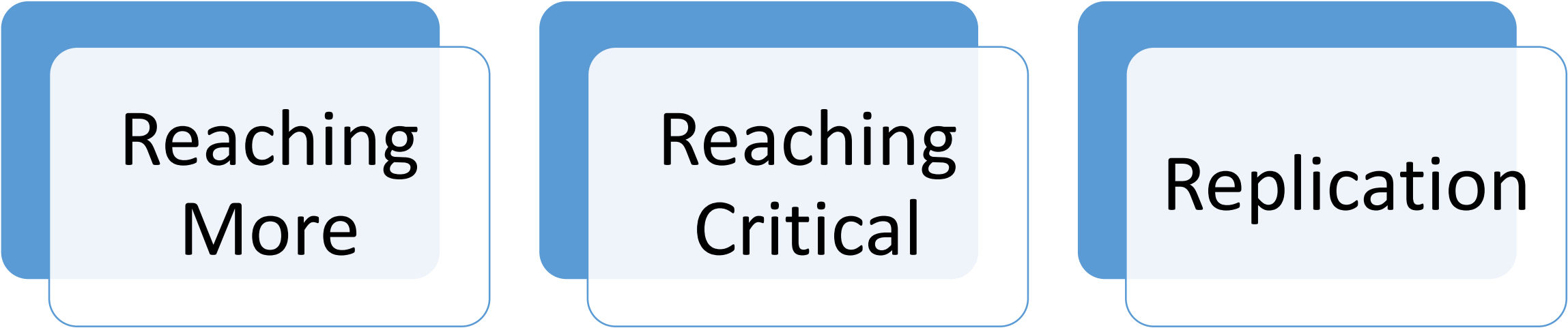
- Cost of cultivation and farm gate price
- Existing supply chain for the commodity
- Distribution of economic rent among actors/activities
- Strengths of current value chain
- Weaknesses of current value chain
- Ideal value chain structure (say for an FPO)
- Economic model of value chain
- Model credit bundle for Value Chain Financing

What is KYCC

(Know your Customers Customer)

A Practical Approach for financing Value Chain in
Agriculture by Banks

Financing under Value Chain Framework



Reaching
More

Reaching
Critical

Replication

Why should Banks participate in Agriculture Value Chain?



Agriculture credit portfolio



**De-risking agriculture
lending**



**Reduction in transaction
cost**

GOOD PRACTICE FOR DESIGNING VALUE CHAIN FINANCE INTERVENTIONS



**DESIGN INTERVENTIONS BASED
ON VALUE CHAIN**



SELECT PARTNERS CAREFULLY



**RECOGNIZE BOTH THE LIMITS AND
THE BENEFITS OF FINANCING BY
VALUE CHAIN ACTORS**



**FOCUS ON ECONOMIC
OPPORTUNITIES**

Thank you

