Financing Potato Value Chain in South India

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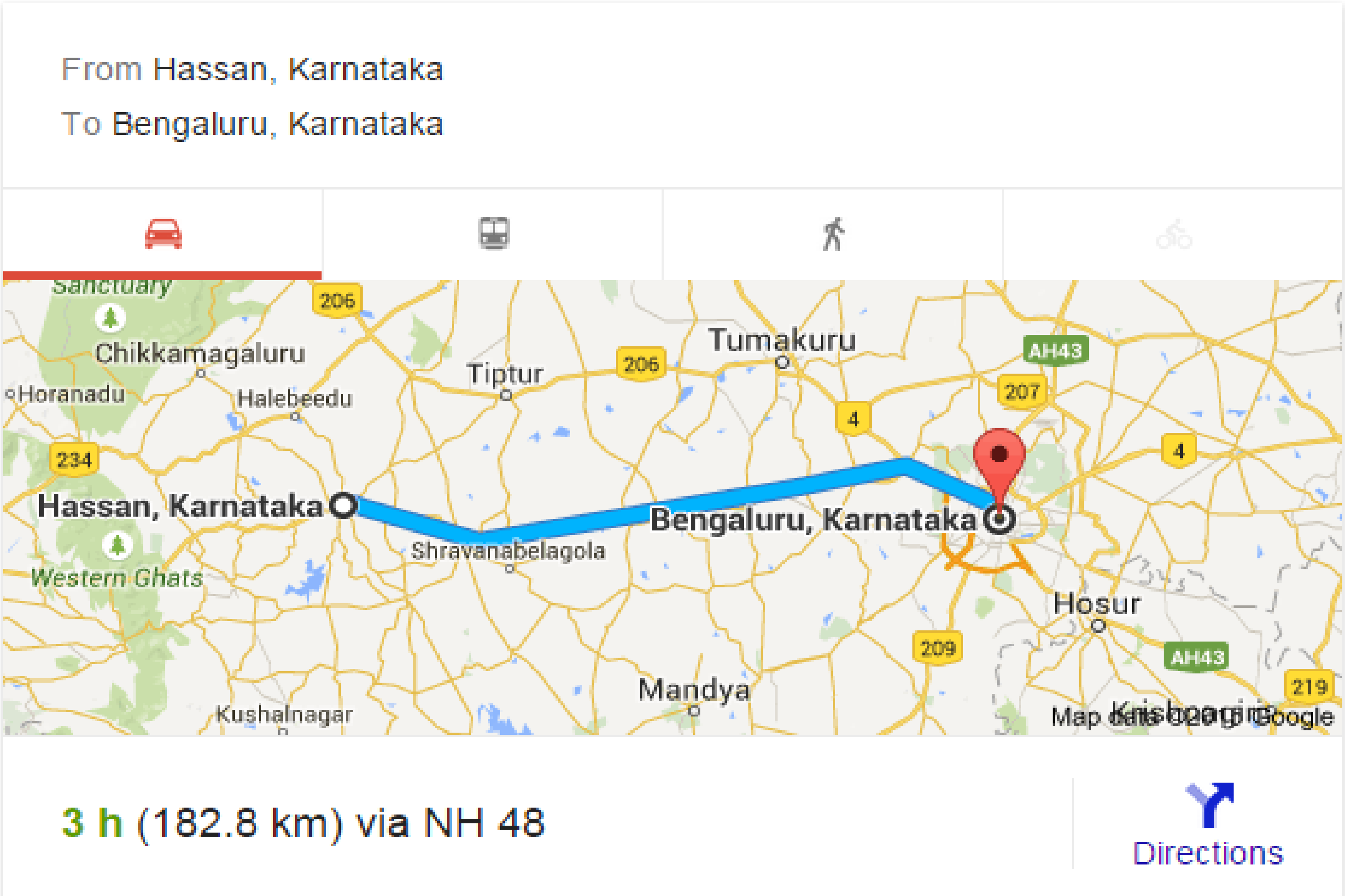
Value Chain in the Study

Main Value Chain Studied



Importance of Potato in Hassan

- Potato produced mostly in Rabi (winter) and Summer
- In Hassan potato is produced in Kharif (monsoon) season
- Helps to meet the lean supply season demand in South India

Seed Supply

- Seed produced in Punjab during Rabi
- Mostly early harvest or small potatoes
- Supply depends on weather conditions
- Higher supply if weather is not congenial to produce table potato
- Supply variability
- Long distance
- Role of cold storages

Flow of Seed in the Study Area

Implications

- Seed quality is uncertain
- Cartelization
- High prices
- Local Government Committee fixes prices

Potato Production

- Small size of holding
- Use of tractor for ploughing
- Other operations manual
- Manure application has gone down
- Fertilizer application has increased
- Yields are stagnant
- Poor government information system

Household Level Potato Farm Land Distribution

Land	Marginal (0,1]ha		Small (1,2]ha		Medium (>2ha)		Total	
	2012-13	2007-08	2012-13	2007-08	2012-13	2007-08	2012-13	2007-08
All land (ha)	2.14	1.54	2.79	2.72	5.11	5.18	4.07	4.09
Potato land (ha)	0.59	0.37	1.15	1.23	2.75	2.94	2.02	2.15

Organic Fertilizer	Marginal (0,1]ha	Small (1,2]ha	Medium (>2ha)	Total
Organic fertilizer used in 2012-13 (kg/ha)	2866	4360	5387	4840
Organic fertilizer used in 2007-8 (kg/ha)	7600	7525	10000	9392

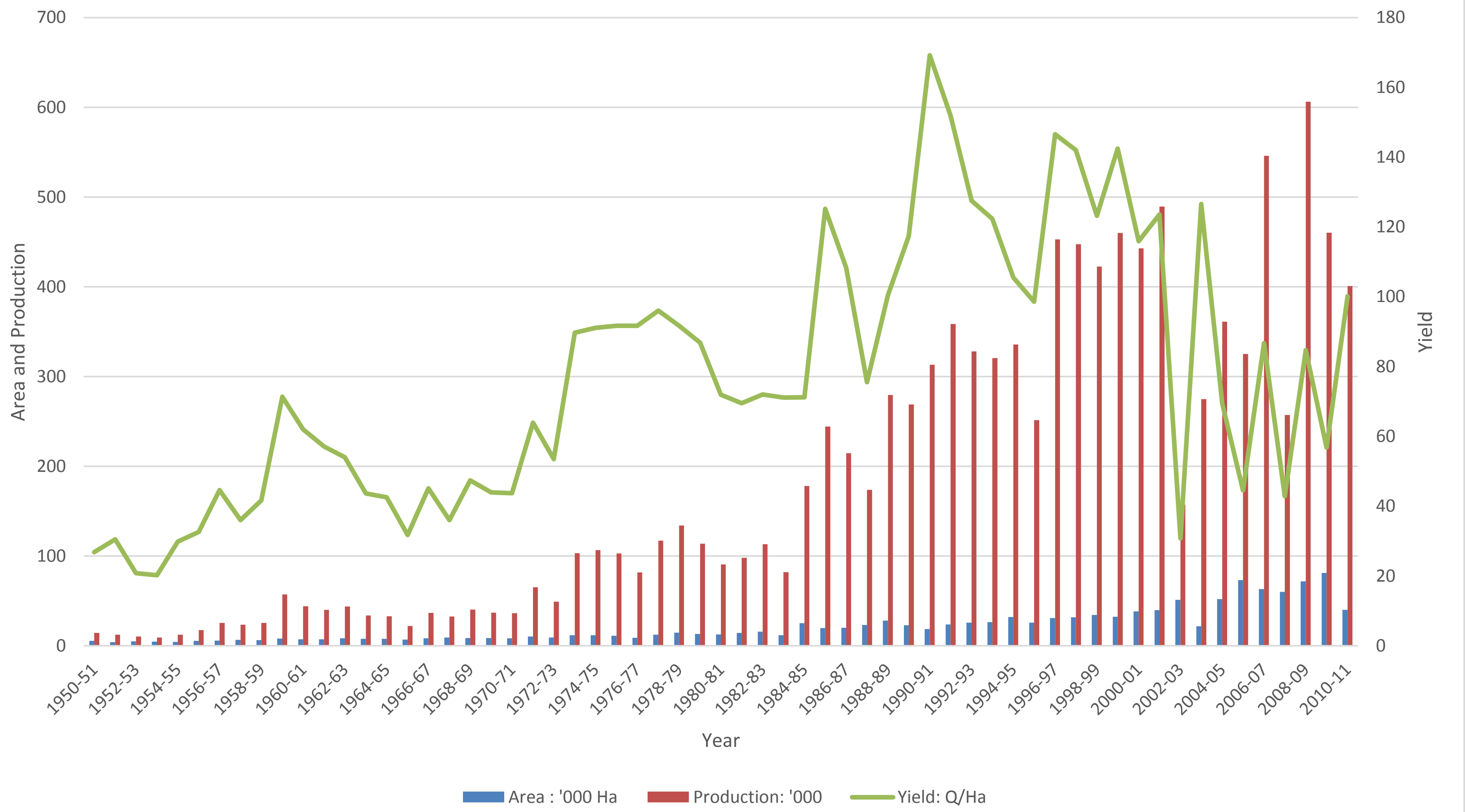
Fertilizer	Marginal (0,1]ha		Small (1,2]ha		Medium (>2ha)		Total	
	2012-13	2007-08	2012-13	2007-08	2012-13	2007-08	2012-13	2007-08
K fertilizer (kg/ha)	157.39	173.53	174.22	164.33	182.36	165.33	177.29	165.96
N fertilizer (kg/ha)	112.50	170.59	151.38	130.33	152.54	145.93	149.13	143.28
P fertilizer (kg/ha)	130.87	162.50	204.86	180.16	227.87	197.29	210.51	188.89
Compound fertilizer (Kg/ha)	100.00	100.0	150.0	200.0	206.0	191.67	176.92	186.36
K fertilizer (Rs/ton)	927.14	682.94	1003.44	731.72	1014.46	675.94	1001.90	692.90
N fertilizer (Rs/ton)	379.29	361.18	412.76	323.44	407.37	319.96	406.93	324.50
P fertilizer (Rs/ton)	1000.43	731.25	1017.64	781.72	1022.64	750.14	1018.75	756.96
Compound fertilizer (Rs/ton)	765.00	450.00	766.67	937.50	1193.75	908.33	1029.23	877.27
Total fertilizer cost (Rs/ha)	8885.0	8169.58	13601.85	8090.32	14261.42	9721.85	13503.72	9083.10

Set Back to Potato Production

- Late blight disease
- Farmers suffered huge losses
- Blamed Pepsico for introducing variety susceptible the disease
- Contract farming has been restricted
- No clear understanding
- Farmers went back to old varieties

Potato Yield	Marginal (0,1]ha		Small (1,2]ha		Medium (>2ha)		Total	
	2012-13	2007-8	2012-13	2007-8	2012-13	2007-8	2012-13	2007-8
production(ton/ha)	45.53	83.26	60.09	65.62	56.50	70.89	56.52	70.42

Figure 2.2 Karnataka-Potato Production, Area and Yield



Marketing Channel

- Farmer Sells to
  - Village trader who in turn sells mostly to traders from other States
  - Local Wholesaler through Agricultural Produce Market Committee, Hassan
  - Urban Wholesaler through APMC, Bangalore
- Retailers in Bangalore buy it from wholesaler
- Modern retailers buy in the APMCs
- Hardly any cold storing of this potato

Potato Sales at Farm Level

Potato sales	Marginal (0,1]ha		Small (1,2]ha		Medium (>2ha)		Total	
	2012-13	2007-08	2012-13	2007-08	2012-13	2007-08	2012-13	2007-08
Potato sale location								
On farm(%)	42.3	50.0	18.5	14.5	25.9	19.2	25.2	20.5
At home (%)	0.0	0.0	0.0	1.3	0.7	0.7	0.4	0.8
The same village (%)	3.8	4.5	0.0	0.0	0.7	1.4	0.8	1.2
Other villages in the same town(%)	3.8	0.0	1.2	1.3	0.0	0.0	0.8	0.4
Other towns in the same city(%)	3.8	4.5	0.0	0.0	2.7	2.1	2.0	1.6
Another city but in the same state(%)	34.6	31.8	49.4	55.3	44.2	50	44.9	50
Bangalore APMC(%)	11.6	9.1	30.9	27.6	25.9	26.7	26.0	25.4
Customer								
Local Trader(%)	7.7	9.1	17.3	21.1	26.5	21.9	21.7	20.5
Non Local Trader (%)	84.6	90.9	81.5	78.9	72.8	78.1	76.8	79.5
Supermarket(%)	7.7	0.0	1.2	0	0.7	0	1.6	0.0
The same village(%)	3.8	4.5	0.0	1.3	2.0	0.7	1.6	1.2
Others villages in the same town(%)	0.0	0.0	0.0	0.0	1.4	0.7	0.8	0.4
Other villages in the same city(%)	7.7	4.5	2.5	1.3	1.4	0.7	2.4	1.2
Other cities in the same sate(%)	69.2	77.3	67.9	69.7	68.7	71.9	68.5	71.7
Bangalore APMC(%)	19.2	13.6	29.6	27.6	26.5	26.0	26.8	25.4

Source of Finance

- Farmers finance their crop production through
  - Cooperative societies
  - Relatives and friends
  - For large loans through banks
  - Government provide subsidy for inputs to small and marginal farmers
- Wholesalers/Traders
  - Relatives and friends
  - Their own savings
  - Bank finance

Bank Finance

- Mostly for large asset purchase such as tractor purchase or large scale operations such as large wholesalers
- Perceived procedures as cumbersome and high interest rates
- Scale of operation is a major constraint

Costs Incurred in the Value Chain

- Large amount of cost incurred by farmers (78-80%)
  - Seed
  - Fertilizers and pesticides
  - Labour
- Wholesalers incur 19-20% cost
- Retailers costs are small

Share of Different Items of Costs

Item	2012 high season	2013 low season	2007 high season	2008 low season
Wage Costs of Traders	17.96	18.11	18.73	18.83
Traders (wholesalers and retailers) operational Costs (includes electricity, telephone/fax)	2.88	2.06	2.43	1.88
Seed potato purchase	19.17	19.32	21.62	21.74
Farmers’ Input Purchases (all purchased inputs other than land and labor)	24.45	24.65	23.27	23.39
Farmer’s Land Rental Costs	7.93	7.99	7.80	7.85
Farmer’s Machinery and Animal Rental Costs	9.31	9.39	9.37	9.43
Farmer’s Wage Labor Costs	18.12	18.27	16.61	16.70
Retailer operating expenses	0.18	0.21	0.16	0.18
Total Cost	100.00	100.00	100.00	100.00

Share (%) of Costs in the Value Chain

Item	2012 high season	2013 low season	2007 high season	2008 low season
Farmers	78.98	79.62	78.68	79.11
Traders	20.84	20.17	21.17	20.72
Retailers	0.18	0.21	0.16	0.18

Margins in the Value Chain

- Wholesaler/trader keep large amount of margin (68-70%)
- Farmers get only about 20% of the margin
- Retailers get about 10%

Margin Share (%) of Different Agents

Item	2012 high season	2013 low season	2007 high season	2008 low season
Farmers	21.68	21.37	30.74	30.40
Traders	67.90	67.44	62.28	61.81
Retailers	10.42	11.19	6.98	7.79
Total	100	100	100	100

Pace of Transformation

- **Market power is getting concentrated in seed market**
- **Technology adoption is constrained**
- **Production technology remains stagnant**
- **Farmers are looking for off-farm jobs**
- **Output Market changes are slow to happen**
- **Modern retailing is yet to make its headway**

Constraints

- Restricted production and cold storage requirement creates market power
- High uncertainty about technology is a barrier for growth
- Reduced use of manures and increasing fertilizer applications
- Public research not able to resolve debate about technology
- Labor shortage at peak season, like seedling and, harvesting, etc
- Market reform requires strong political will and drastic changes in the process
- Policy debate on FDI is still conclusive
- Access to credit, especially for big infrastructure projects
- Traders and wholesalers usurp large part of the margin
- Quality improvement is not taking place in a big way.
- Poor government information system

Upstream (inputs and Farm)

- To provide information on seed supply conditions in upstream seed production
- More participation of quality seed suppliers
- Production of manures and supply
- Developing variety resistant to late blight
- Adoption of quality seeds, and training farmers in discerning seed quality
- Contract farming in potato production
- Services:
- Quality seed production
- Better targeted extension services
- New farm organizations such as Producer organization to procure good quality seed and increasing manure applications
- Making provision of credit easier

Midstream (Post Harvest to Mills)

- Potato sorting and grading
- Energy saving technologies, especially equipment with lower electricity use rates
- Grade based e-trading platforms
- Development of logistic services
- Cold storage facilities
- Services:
- Access to formal credit for SME

Downstream (wholesale, retail, supermarkets)

- Modernizing wholesale markets
- Modern retail chains
- Services:
- Transportation hub with modern information sharing system
- Easier access to credit, to wholesalers
- Easy access to e-trading platforms
- Public research on consumer behavior and handling of potatoes
- Food safety and quality improvement programs by the government

Policy Dialogues

- Quality control for seeds
- Creating competition in the seed market
- Proper research and extension services to farmers on seed, pests and manure applications
- Policy on modernizing primary wholesale markets and introducing e-trading platforms
- Quality assessment and grade based transaction in the wholesale markets.
- Introducing warehouse receipt system and e-trading would streamline output market
- Facilitating FDI in retail
- Proper mechanism to settle disputes with regard to contract farming.