

Managing Agricultural Risks

Innovative Tools & Procedures

Shishir Ranjan

Manager

Agriculture & Business Development Services

BASIX, India

Livelihood Challenges in India

- Millions joining the work force
- Low productivity in Agriculture, which engages the largest numbers
- Technologies replacing labour
- Low access to markets, information and financial services
- Unmanaged risk
- Geographical and social exclusion

Importance of Agriculture

- India sustains 16% of the world's population on 2.4% of land resource
- Agriculture contributes **24% of the Indian GDP**
 - Livelihood support to two-thirds of the population
 - Employment to 57% of work force
 - **Single largest private enterprise**
 - Raw material source to large number of industries like (food processing, textiles, silk, sugar, rice, flour mills, milk products etc.)
- Any change in this sector has a **multiplier effect on the economy**

Agriculture in India



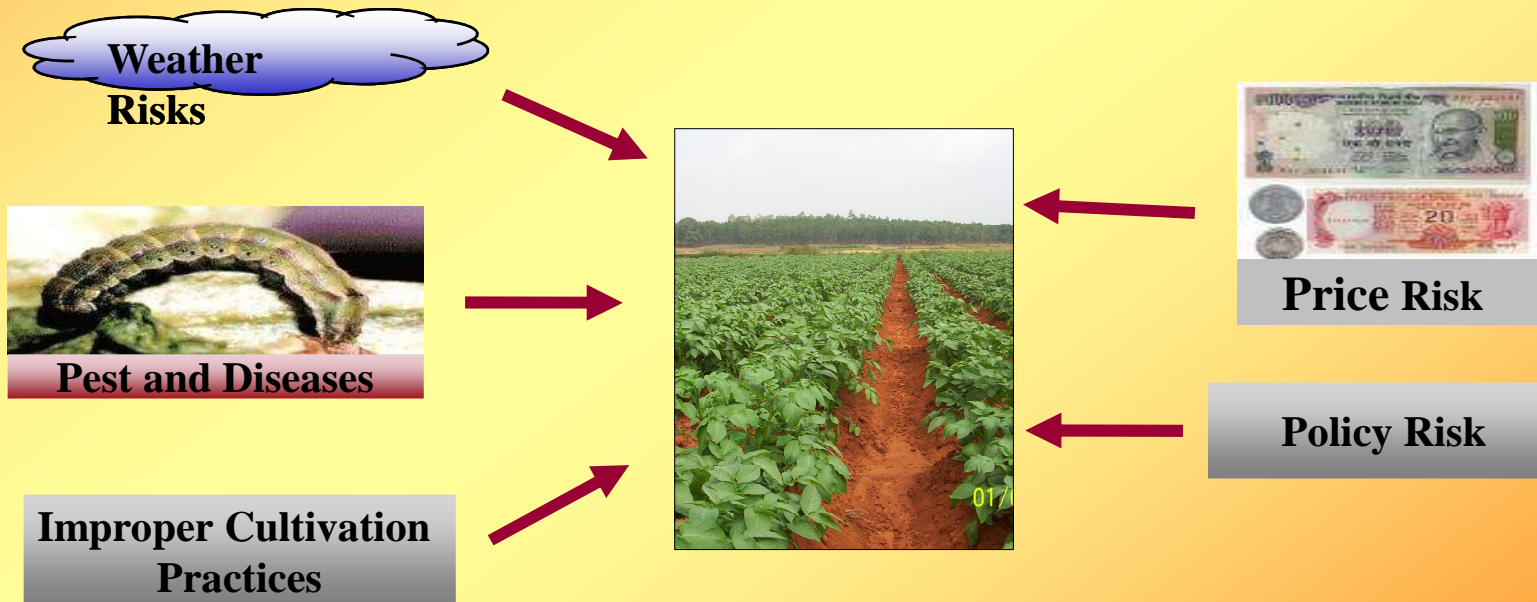
Farmer at the mercy of rains

- High dependence on weather
 - 40% of net sown area irrigated, 60% dependent on rains
 - Most irrigation from non-perennial sources
 - Affects adoption of improved crop production techniques because of high risks and low margins
- Dwindling ground water resources

Agricultural Risks

Production Risks

Out put Risks



Responses

Govt. Support

Extension

Subsidies

Minimum Support Price

Calamity Relief Fund

Crop Insurance



Self Insurance

Shift to Non-Remunerative crops

Reduced tech. use

Distress sale

Change of vocation

Investment in Bore wells

Dig into savings

BASIX Mission

- To promote a large number of **sustainable livelihoods**, including for the rural poor and women, through the provision of **financial services and technical assistance in an integrated manner**
- BASIX will strive to yield a competitive rate of return to its investors so as to be able to access **mainstream capital and human resources** on a continuous basis.

Basix's Strategy **THE LIVELIHOOD TRIAD**

IDS

- O**-Organize
- F**-Functional Linkages (input, output & know-how)
- F**-Formalize: The legal status
- E**-Enabling systems, operating, HR & Information systems
- R**-Revive defunct community organisations, Policy Work

LFS

- Savings Credit Short Term / Long Term
- Insurance for Lives & Livelihoods
- Fund Transfers
- Commodity Derivatives

Ag BDS

- Productivity Enhancements
- Risk Mitigation (Non Insurance)
- Local Value Addition
- Alternate Market Linkages (Input & Output)

BASIX's Experience.....

- Managing Production Risks
- Mitigating Marketing Risks
- Weather based Crop Insurance

Contract Farming with small & marginal farmers of Processing Potato

Managing Production Risks

CROP CALENDAR & Call Centers

- Productivity enhancement by adopting Scientific Management Practices
- Implementation / Adherence of Package of Practices
- Monitoring of Farmers Field and his Practices
- Continuous Monitoring of Agro climatic conditions and quick response for any modification in standard PoP.

Disease Incidence

Disease Incidence							
	Year	2005-2006		2006-2007		2007-2008	
		CG Potato	Check	CG Potato	Check	CG Potato	Check
Disease	Total Farmers	143	143	907	907	1442	1442
Bacterial Wilt		124	97	67	347	52**	369**
Early Blight		52	79	13	317	29**	349**
Late Blight		87	123	29	726	321**	1174**

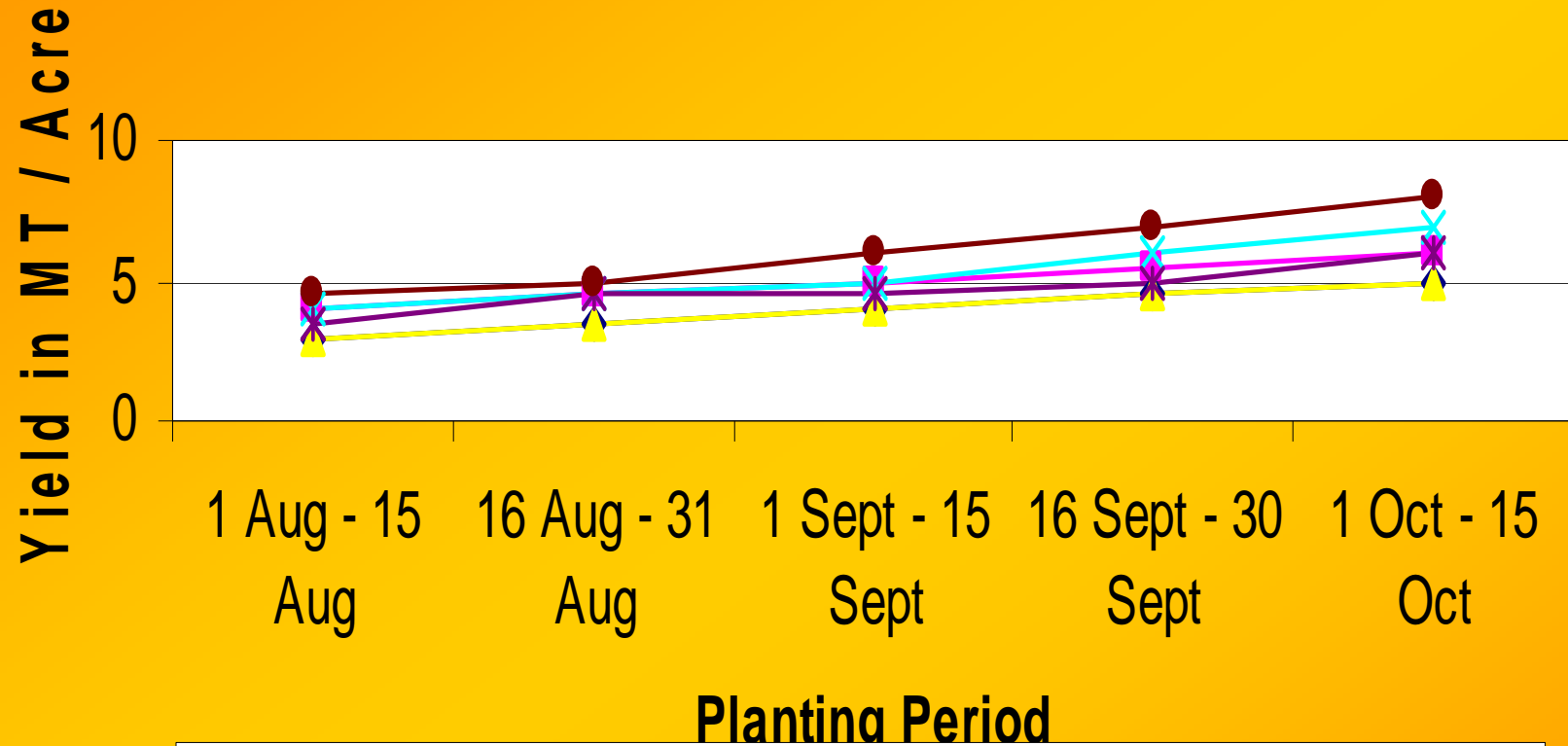
** Disease Incidence Till 30/11/07

Production

Average Yield Metric Tones / Acre							
	Year	2005-2006		2006-2007		2007-2008	
		CG Potato	Check	CG Potato	Check	CG Potato	Check
Planting Date	Total Farmers	143	143	907	907	1442	1442
01 Aug - 15 Aug		4.0	3.0	4.0	3.0	4.5	3.5
16 Aug - 31 Aug		4.5	3.5	4.5	3.5	5.0	4.5
01 Sep - 15 Sep		5.0	4.0	5.0	4.0	6.0**	4.5**
16 Sep - 30 Sep		5.5	4.5	6.0	4.5	7.0**	5.0**
01 Oct - 15 Oct		6.0	5.0	7.0	5.0	8.0**	6.0**

** Anticipated Yield

Production Trends



- ◆ Average Yield of Check 2005-06 MT/Acre
- Avg Yield of CG Variety 2005-06 MT/Acre
- ▲ Average Yield of Check 2006-07 MT/Acre
- × Avg Yield of CG Variety 2006-07 MT/Acre
- * Average Yield of Check 2007-08 MT/Acre
- Avg Yield of CG Variety 2007-08 MT/Acre

Mitigating Marketing Risks

- Every **farmer** is aware of approximate cost of production.
- However on being asked how much will be your income?
- He is filled with uncertainty
- His standard response begins with
- “If I am able to catch the season.....”

This is because there is upto 300% variation in prices within a week

Mitigating Marketing Risk



Linkage with PepsiCo India (Frito Lay Division) for Assured Price of Potato

- Pricing based on
 - Quality of Produce
 - Season of Produce
 - Quantity of Produce

Sales Proceeds (INR / Acre)

	Check 2005-06	CG Variety 2005-06	Check 2006-07	CG Variety 2006-07	Check 2007-08	CG Variety 2007-08
01 Aug-15 Aug	33000		34500	38000	38500	47250
16 Aug-31 Aug	33250		35000	38925	42750	47500
1 Sep-15 Sep	32000	42500	34000	37250	36000**	50100**
16 Sep-30 Sep	27000	41250	27000	39000	35000**	54950**
1 Oct-15 Oct	20000	33000	20000	38500	36000**	57600**

** Anticipated

Weather Based Crop Insurance

Rainfall is the biggest factor in determining a good crop

- It need not be excess
 - If it is excess, the seed tuber will rot in the field and result in a total crop loss.
 - Intensive sunshine after prolonged rainy days induces **Bacterial Wilt** a serious disease of Potato
- It needs to be distributed properly
 - If it is not distributed properly, need for irrigation will be required.

Diseases like Early & Late Blight are also of serious concern and are induced by certain weather conditions

All this has an impact on yield, and one could do nothing about it!

Weather based Crop Insurance

- Developed few models.
- Still at evaluation stage.
- Premium 15-18% of the sum assured
 - **Percieved as costly**
 - **Need of Government Subsidy a must**

TERMSHEET FOR WEATHER INDEX INSURANCE

Crops	Potato
Reference Weather Station	Ranchi
Index	Number of Blight Conducive Events (BCE) in the policy period where a Blight Conducive Event is when within a period of 5 days following conditions are observed simultaneously: there is some amount of rainfall observed in two consecutive days, morning and evening relative humidity is observed to be more than 85% for continuously 2 days and the maximum and minimum temperature of a day is observed to be in between 7.2 - 26.6 degree celsius for 4 continuous days

Policy Duration 15-Sep-06 4-Nov-06

Strike (No. of BCEs) >	0
Exit (No. of BCEs) >=	2
Pay out (in Rs for observed index of 1 BCE)	600
Pay out (in Rs for observed index of 2 BCE)	1,000

Premium (Rs) 157

Policy limit (Rs) 1,000

Data Source NCMSL

Settlement Date Thirty days after the data release by Data Provider and verified by Insurer.

- This term sheet is tentative and subject to verification of weather data by a professional data cleaning agencies.
- Premium inclusive of service tax

END Note..... . . .

- Managing Production Risks
 - Crop Calendar & Call Centers
 - Intensive Agriculture Extension Services
 - Crop Calendar
 - Quick responsive adaptation / modification in Package of Practices for change in Agro climatic Condition and *information dissemination through SMS's (text / voice) on Cell phone from Call Centers.*
- Mitigating Marketing Risks
 - Developing Linkages with Agro Industries / Corporate tie-ups
- Weather based Crop Insurance
 - Compulsory Weather Insurance
 - Subsidies from Government

Thank You

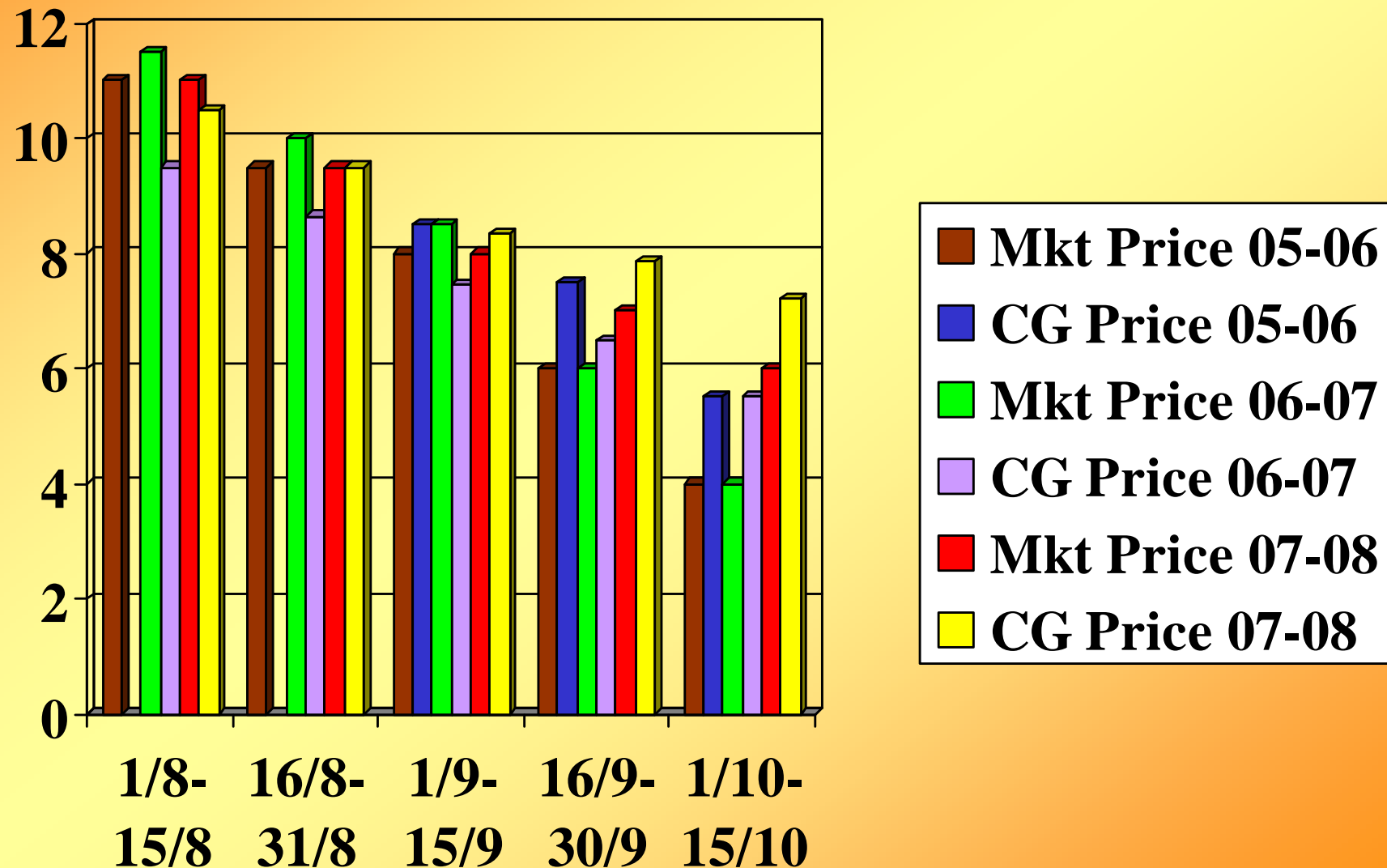


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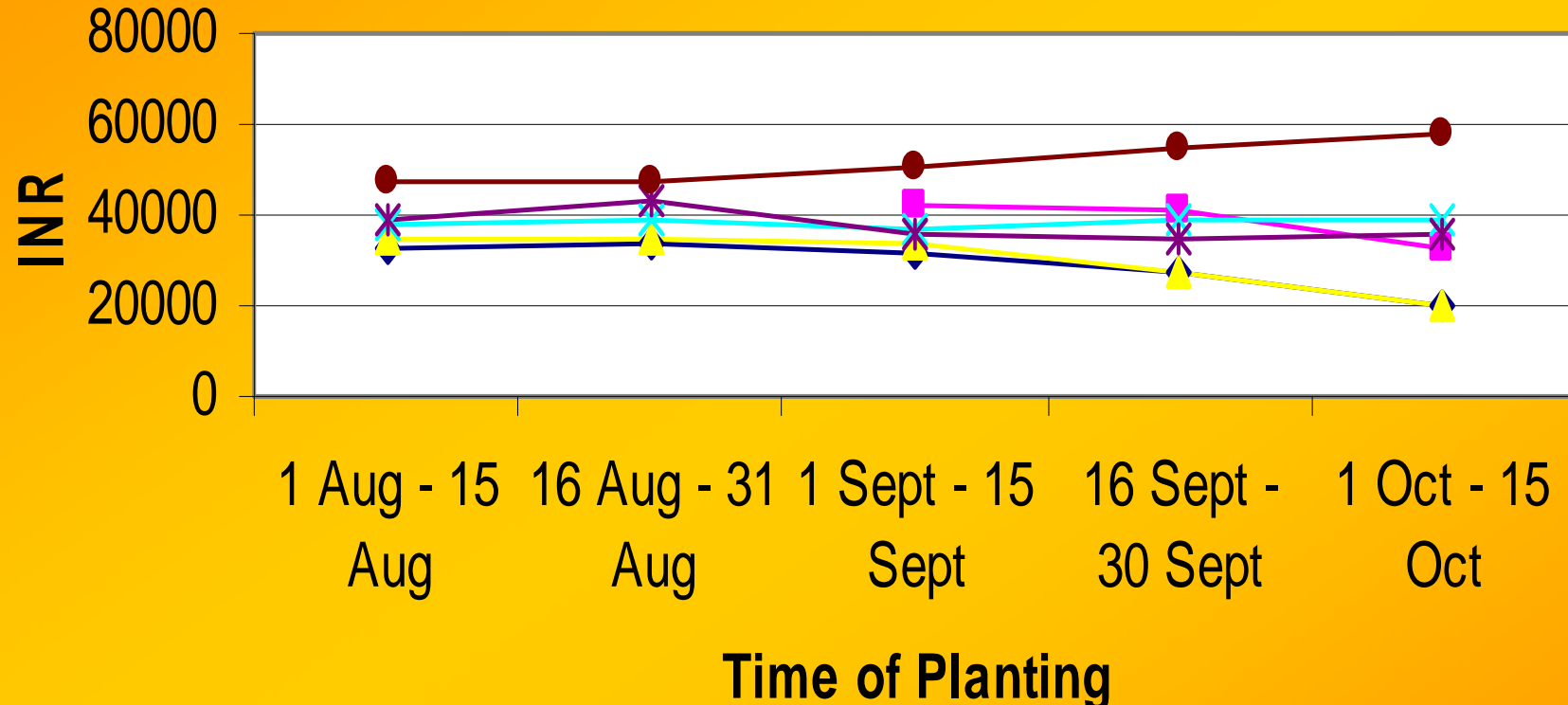
shishirranjan@basixindia.com



Potato Price Trends of Jharkhand Market



SALES PROCEEDS / Acre



Sales Realisation / Acre

