

# Farmer Distress

## The Problem

Agriculture and allied sector in India accounts for 14% of GDP and is a source of livelihood for 58% of the population with reference to fiscal year 2016-17 (Central Statistics Office, Government of India, 2016). India has around 260 million people living in poverty and 80% of them live in the countryside. About 72% of land holdings are small and marginal land holdings (less than 2 hectares) and they cannot reap the benefit of economies of scale. Since 1960 real agriculture growth rate in India has been on an average of 2.8 percent. Indian farmers are in a state of distress and this is manifested by the increasing number of farmer suicides. Between 1995 and 2012, a total of 28,4673 farmers committed suicide in India.

This paper seeks to research on the reasons for farmer distress in the state of Rajasthan, and research on the interventions for alleviating the distress.

## Solutions

Interventions	BCR	Benefit (INR crores)	Cost (INR crores)
<b>Introduction of e-Mandis (time horizon 20 years)</b>	65	8,523	131
<b>Cold Chain Infrastructure (time horizon 10 years)</b>	15.5	92,788	5,985
<b>Farm Loan Waiver (time horizon 5 years)</b>	0.81	9,537	11,731

Total costs & benefits discounted at 5%

The full paper by professor **Nilanjan Banik** of Bennett University is available on [www.rajasthanpriorities.com/agriculture-and-food-security](http://www.rajasthanpriorities.com/agriculture-and-food-security).

## Farm Loan Waiver

### The Problem

Among all the states in India, Rajasthan has one of the lowest farmer suicide rates. Between 2010 and 2012, there were 3.6 farmer suicides per 1000 population. The corresponding figure for all India during the same period was 15 per 1000 population (Mishra, 2014).

In terms of land-holding size, small and marginal farmers in the state constitute 58.4% share in total area. Big farmers - with farm size more than 10 ha - hold 33.3% of the total area.

### The Solution

This intervention assumes a hypothetical farmer loan waiver scheme that waives all formal loans/institutional credit of individuals with land holding sizes less than 2ha.

In February 2018, Rajasthan Government announced one-time loan waiver of up to INR 50,000 for small (between 1 and 2 ha land size) and marginal farmers (with less than 1 ha land size) in the state. This is estimated to cost Rs. 8000 crores to the state exchequer.

### Costs

At a macro level, loan waiver program may cost the state exchequer to the extent that less money is available for other development activities. In terms

of costs academic evidence suggest that there is reduction in lending to small farmers up to four years after the bailout. There are 2 effects of credit redistribution (a) credit contraction for small and marginal farmers and (b) credit expansion for large farmers. It is estimated that a cost of INR 8117 crores would be incurred for the loan waiver.

At micro level in Rajasthan, the extent of loss due to reduced lending is estimated at a loss of INR 1616 per year for marginal farmers and INR 5156 per year for small farmers. Additionally, reduced lending will impact crop production. It is estimated that small and marginal farmers will lose INR 1185 cores annually.

Total formal credit held by farmers subject to loan waiver intervention



**Benefits**

Benefits of farm loan waiver constitute immediate benefit to the small and marginal farmers (less than 2 ha) need not pay the outstanding loan the value of which is INR 8117 crores, exactly equivalent to the cost of the loan waiver. Other component of benefit is medium-run and for large farmers as there is an expansion of formal credit for them. This allows them to pay informal credit and increase production. The benefit to larger farmers is the total formal credit increase multiplied by the interest rate

differential, 13.53% (informal – formal). This amounts to INR 535 crore per year.

**Managing cold supply chain logistics**

**The Problem**

Fruits, vegetables and milk command higher market price compared to staple crops (rice, wheat etc.) but they are perishable hence need proper storage facilities else there is huge wastage of these products. However, majority of small farmers do not risk to grow these crops, partly because of improper post-harvest management. Around 18% of the country’s food and vegetables get wasted annually because of lack of proper storage (ICAR-CIPHET, 2015). For milk, data shows the amount of loss can be as high 40% and two-third of this loss happen during storage (ASSOCHAM, 2017). It is estimated that the likelihood of a farmer being poor is 3–7% less if they grow high value crops. The intervention time horizon is 10 years.

**The Solution**

The intervention seeks expanding end-to-end cold-storage infrastructure in the state of Rajasthan.

**Costs**

National Centre for Cold Chain Development (NCCD) has estimated the cold storage and warehouse related infrastructure requirements for India, including Rajasthan. It is estimated that in 2017 the total storage requirement for storing milk, fruits and vegetables for Rajasthan stands at 74,889 MT. About 90% of the storage requirement already exists in the state, but the remaining infrastructure needs are almost non-existent.

To fill this gap a one-off investment of INR 1883 crore is required, plus additional investments over the following 9 years averaging approximately 11% of this value per year to meet expected growth in the horticulture and dairy sectors. The average annual workforce costs are INR 95 crore over the 10 years. Additionally, operations and maintenance cost of 10% of invested capital which averages INR 276 crore per year.

## Cost components of cold chain solution

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**Storage**  
 Upgraded existing facilities and build new to fill current gap
- 
**Ripening chambers**  
 Including workers to run all facilities and operate the trucks
- 
**Pack houses**  
 Plus additional investments to meet growth the following 9 years
- 
**Specialised trucks**  
 Required for transporting fruits, vegetables and milk



### Benefits

Benefits include reduced wastage of these products estimated between 5% to 30%. For milk the amount of loss can be as high 40% and two-third of this loss happen during storage. In the first year, the total benefit from putting cold chain logistics in place is estimated at INR 931,265 lakh. The annual benefit increases by 6% per year in line with the expected rate of growth in the horticulture and dairy sectors. This intervention might also lead to a shift in cultivation from low value subsistence crops to high-return crops by small and marginal farmers.

## Introduction of e-Mandi

### The Problem

Government of India plans to double farm income by 2022 as per the Union Budget of 2018. An important way for this to happen is to ensure better

price realization for the farmers. However, because of inefficient supply chain logistics farmers seldom realize true market price.

### The Solution

This intervention seeks to address the above mentioned issues with supply chain management by setting up of e-Markets/online trading platform for better price realization by farmers.

### Costs

The cost for e-mandi intervention include all factors such as cost of setting and running e-markets, cost of training farmers to participate in e-mandis. Fixed cost of setting an e-market is INR 3.4 lakhs. There are 114 agricultural markets in Rajasthan that are yet to be e-enabled. The one-time total cost (fixed cost) of introducing e-mandi is INR 39 crore. Additionally, there is operational cost for these e-Mandis which will increase linearly with the growth of crop output. The cost of setting up and running e-mandis up to 2037 (20-year time horizon) is Rs 131 crore.

### Benefits

Benefits include better price realization of crops by farmers due to reduced information asymmetry and direct access to the market. As per estimates farmers are likely to realize a 13% increase in price resulting from their ability to connect directly with the buyers from various geographical areas. Since this price premium is basically a transfer of monetary resources from middlemen to farmers, for calculating cost-benefit analysis it is assumed that the social benefit is only 50% of this 13% increment in price realization for the farmers. Estimates suggest that farmers will gain INR 8,523 crore over the next 20 years from complete roll out of e-mandi in Rajasthan.