

## Syllabus

### Compulsory PAPER-IV

### General Studies-III:

1. Technology, Economic Development, Bio diversity, Environment, Security and Disaster Management.

#### A. ECONOMIC DEVELOPMENT

2. Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment. Government Budgeting.
3. Inclusive growth and issues arising from it.
4. **Major crops cropping patterns** in various parts of the country.
  - a) **different types of irrigation** and irrigation systems storage,
  - b) **transport and marketing** of agricultural produce and issues and related constraints;
  - c) **Economics of animal-rearing**.
5. **Food processing and related industries in India**- scope and significance, location, upstream and downstream requirements, supply chain management.
6. **Issues** related to direct and indirect **farm subsidies** and **minimum support prices**;
7. **Public Distribution System**: objectives, functioning, limitations, revamping; issues of buffer stocks and food security.
8. **Land reforms in India**.
9. Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth. Infrastructure: Energy, Ports, Roads, Airports, Railways etc.
10. Investment models.

Topics 4 to 8 only are covered in this document

**Possible Question for CSE Main, 2016:**

Q.1 How is India a 'net exporter of water' through agricultural exports?

See [Page 9](#) and for details see the Economic Survey 2016.

Q2. Application of technology to help agricultural sector

Q3. Legalising Tenancy needed for land reform.

Q4. Pradhan Mantri Fasal Beema Yojana

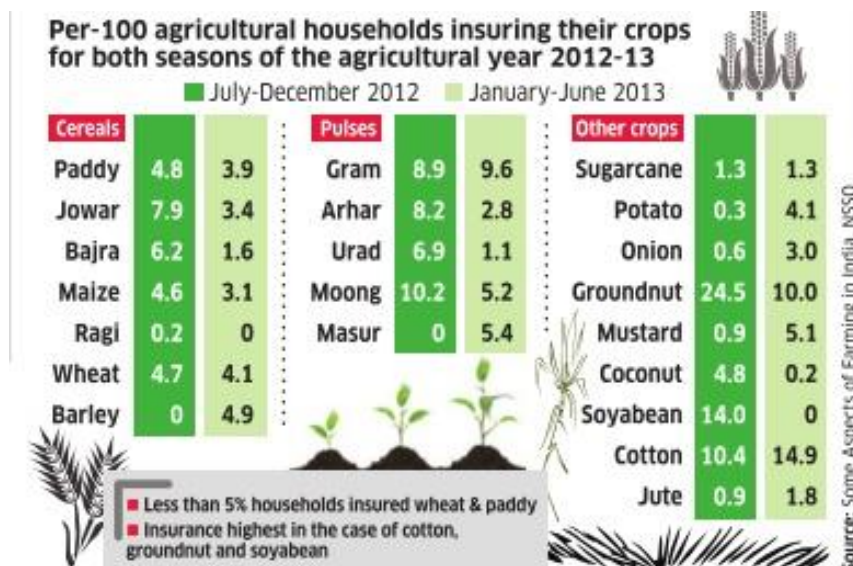
Q5. Impact of Monsoon on agriculture

Q 6. Drip irrigation and fertigation

Q.7 Causes of farmers' distress

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1. 19.02.2016 The prime minister is setting great store by his government's new crop insurance scheme, touting it as a panacea for farmers' ills. Data from an NSSO survey shows a very small percentage of agricultural households actually buy crop insurance...



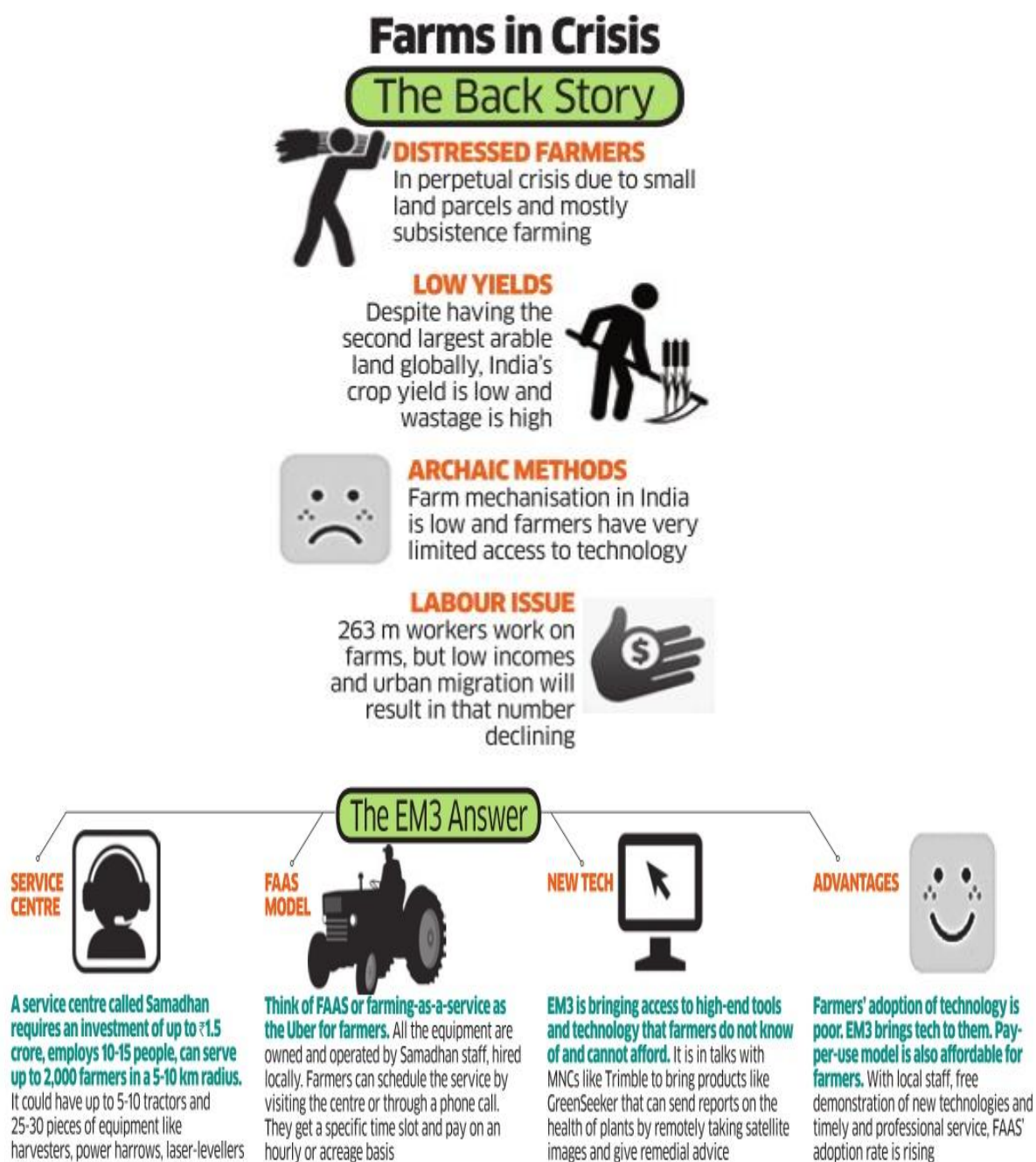
## 2. Agriculture : Innovation needed in crop insurance

India's farm sector is burdened with the malaise of far **too much ill administered subsidy** and far **too little investment**. An insurance scheme that deepens this disease is eminently avoidable. The government should open up the futures and options market on farm commodities and seek innovative solutions from insurance companies.

- a) Insurance companies must offer realistic policies, without obscure conditions that make successful claims the exception, rather than the rule.
- b) An open-ended subsidy from the Centre on the insurance premium is not the way
- c) The scheme, should clearly prescribe the conditions under which claims can be made, and state how the losses would be assessed.
- d) A valued policy, wherein the sum insured includes the input cost plus say , a profit of 10% makes better economic sense for farmers.

They should recover the insurance cost from consumers and through higher productivity

- e) Products must be made available to individual farmers, whether they own the land or not. Past schemes have assessed localities rather than individual farms for loss.



Apr 23 2016 : The Economic Times (Delhi)

### 3. The Strong Case for Legalising Tenancy

Article edited for main points only.

#### Needed for consolidation and subsidy reform

If the government is serious about transforming agriculture, it must legalise land leasing. Landholders must be able to lease out land without the fear of losing ownership. This is possible by enacting a legislation that will set out the broad framework for states to make land leasing and tenancy legal. The shadow of zamindari no longer looms over rural India. The farmer now needs land consolidation for economies of scale.

- a) Tenancy was abolished post Independence with the aim of creating an equitable and efficient agrarian economy. The restrictive laws of the 1960s and 1970s made tenancy informal, insecure and inefficient.
- b) Though agriculture accounts for 14% of the GDP, it employs 49% of the total workforce, and 64% of the rural workforce. The overdependence has resulted in high level of fragmentation of landholding, coupled with the limited transfer of workforce to non-agriculture sectors, leading to low per capita rural incomes, inefficiencies and persistent poverty.
- c) Legal land leasing will encourage big landowners as well as owners of tiny plots too small to be viable on their own to lease out land without the fear of losing ownership.
- d) Those thus freed up from cultivation can move into new occupations. Leased in contiguous, tiny plots will permit efficiencies that would improve productivity. Legalising land leasing will pave the way for efficient and targeted subsidy disbursement to the actual farmer rather than to the landholder.

Besides reducing leakages, inefficient use of inputs like fertilisers or restricting crop option, the income support option is also WTO-compliant.

- e) Legal sanctity will enable tenant cultivators to access institutional credit, insurance and a host of support services. It will allow for farmers to form companies that will improve their access to markets and higher incomes.
- f) Tenancy is alive in rural India 10% of the 140 million farms are cultivated by tenant farmers the lack of a legal framework has meant insecurity, low incomes and lifelong poverty for them. Legalising land leasing will change this, allowing for a true rural transformation

4. The Agriwatch Agri Commodities Index The base for the Index and the all sub-Indices is 2014 (=100). The **nine Commodity Group Indices** that constitute the Agri Commodities Index now stand as follows:

- 1. Cereals Index: 94.47,
- 2. Pulses Index: 163.58,
- 3. Vegetables Index: 66.67,
- 4. Edible Oils Index: 100.92,
- 5. Oilseeds Index: 111.77,
- 6. Condiments Index: 126.83,
- 7. Sweeteners Index: 102.51,
- 8. Fibres Index: 93.15 and
- 9. Non-Food Articles Index: 66.37.



3.	4.	<p>11. Major crops cropping patterns in various parts of the country,</p> <p>a) different types of irrigation and irrigation systems storage</p> <p>Monsoons and changes in winter temperatures in 2015                      Three key reasons for concern on monsoon uncertainty                      Pump based irrigation : lowering of water table                      Let's Put Agriculture back on track' article</p> <p>National Watershed Management Project                      'Blame it on Flawed Agri Policy, Too'</p>	
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5. Eight States were drought hit in 2015 :

a) UP,

- b) MP,
  - c) Maharashtra,
  - d) Orissa,
  - e) Jharkhand,
  - f) Karnataka,
  - g) AP,
  - h) Telangana.
6. The past two kharif (summer) seasons were hit by weak monsoons while heavy unseasonal rains and hailstorms affected the intervening rabi crop over large regions of Punjab, Haryana, UP and Rajasthan.
7. Experts said high winter temperatures could impact tillering (side growth) of wheat and could lower yields if the temperatures continue to remain above normal. High temperatures in March could affect grain formation in wheat, which would then be in the milking stage.
8. **Wheat** has been grown this year in over 35 lakh hectares in Punjab and about 24 lakh hectares in Haryana. The states are the country's biggest contributors of wheat.
9. In Rajasthan, farmers have been hoping in vain for minimum temperatures to drop below 5 degrees C and ground frost to form, as these conditions are good for **wheat, barley, peas, grams and mustard**.
10. The lack of winter rain has also worsened the groundwater situation in UP, where 52 districts, or two thirds the state's area, faced a drought last year.
11. Irrigation has also suffered because of the **decline in the water table**.

#### 06.04.2016 Failure of monsoon for two years

12. The monsoon accounts for 80% of the country's total rainfall and contributes to more than 50% of water requirements for farming. In



the past five drought years barring the last fiscal, markets posted positive returns during June-August period (the peak monsoon period) and in the second half of the calendar year.

13. **A drought year is when** deviation from normal rainfall is more than 10%. The median return of markets during the monsoon period in the previous five drought years was 5.4% and the average rainfall deviation was 16.8%, according to the data compiled by ETIG.


14. There **are three key reasons** for the rising concern among investors:

- a) **First**, in at least past 50 years, India never faced drought for three consecutive years, which raises uncertainty if monsoon were to falter in 2016.
- b) **Second**, water levels in India's 91 large reservoirs have depleted by one-third from the year ago levels. If monsoon is erratic, it would impact water availability for industrial and agricultural use.
- c) **Third**, a deficient monsoon will compress farmers' income more. In the current year, it will be the fourth crop produce in a row that will turn cash negative for farmers in case of an inadequate monsoon. Nearly half of the country's population is dependent on farm income and it contributes about 18% to the country's GDP.

**Want A Good Monsoon**  
Market Return and Rainfall Deviation

	Rainfall Deviation (%)	Sensex Return(%)	
		June-Aug	June-Dec
2003	-19.2	0.64	6.84
2005	-13.8	7.38	36.56
2010	-21.8	5.57	17.68
2015	-12.3	7.91	11.40
2016	-14.3	-5.62	-6.22
Median return	-16.78	5.37	18.12

Source: compiled by ETIG



**‘Let’s Put Agriculture back on track’** Views of Ashok Gulati, INFOSYS Chair Professor for Agriculture , ICRIER, On Economic Survey 2016 ( Main points only)

15. [The Economic Survey of 2015-16](#) puts an optimistic agri GDP growth of 1.1% for this year, on top of last year's minus (-) 0.2%, thus making it less than half a percent growth, on average, in the last two years.

Even in 2016 Indian farmers and policymakers have to rely on vagaries of nature for what will happen to Indian agriculture, which is the main occupation of almost half the workforce in the country. [India has underinvested in irrigation and water management.](#)

Survey talks of giving good incentives to grow more pulses at home. But [without any effective procurement system](#) or any [meaningful reforms in agri marketing](#).

Crop [incentives are skewed](#) in favour of rice, wheat, and sugarcane, and we have surplus of all these three, the other crops remain almost orphan crops.

[Drip irrigation and fertigation](#) have been there for decades, and have not picked up much momentum precisely because water, power and fertilisers are highly subsidised. Can 'cooperative federalism' be brought in here?

[Pricing and subsidy reforms](#) need innovative solutions.

- a) Can farmers be rewarded for saving water, power and fertilisers?
- b) Can they be given equivalent cash transfers directly to their accounts and then the pricing of these inputs is made market based?

Everyone knows that almost free power and water (highly subsidised) is the main reason behind this.

The Survey recognises the paradoxes in water utilisation in Indian agriculture, and shows [how India is a "net exporter of water" through agriculture.](#)

16. 10.04.2016 Extracts from ET (Delhi) article 'Blame it on Flawed Agri Policy, Too' by Naresh Chandre Saxena former secretary of the Planning Commission

A flawed agricultural policy is a bigger causative factor in the collapse of farm and dairy production in semi-arid regions.

The policy approach to agriculture since the '90s has been to secure increased production by subsidising inputs such as power, water and fertiliser; and by increasing the minimum support price, rather than by building new capital assets in surface irrigation, rainwater harvesting, improving credit for smallholders and evolving new drought-resistant technologies. This has shifted the production base from low-cost regions to high-cost ones, causing an increase in the cost of production, regional imbalance and an increase in the burden of storage and transport of produce.

### Patchy Policies

The equity, efficiency and sustainability of the current policies are questionable. Subsidies do **not improve income distribution** or the **demand for labour**. The boost in output from subsidy stimulated use of fertiliser, pesticides and water has the potential to damage aquifers and soils an environmentally unsustainable approach that explains the rising costs and slowing growth and productivity in agriculture.

Policies have **resulted in excessive use of capital on farms**, such as too many tube wells in water-scarce regions. Groundwater, as opposed to surface and sub-soil water, has become the main source of irrigation, leading to more than 30% of the blocks in the country getting classified as semi-critical, critical or overexploited. As there is **no effective control over the digging of tube wells** in water-scarce regions, farmers are borrowing money from informal sources at high interest rates to dig tube wells, but many such borings fail, leading to indebtedness and even suicides. Thus agriculture has become riskier and more capital intensive in the last three decades.

There is a political reluctance to control water-hungry crops in low-rainfall regions, such as sugarcane in Maharashtra and paddy in Punjab. We need to reduce unrestricted mining of groundwater and

ensure stricter implementation of environmentally sound cropping patterns. Drip irrigation and a water sprinkler approach, mulching and bed plantation, and construction of tanks and check dams should be promoted for water harvesting and conservation.

17. **Watershed development programmes:** In a country which gets rain only for less than 100 hours in a year (a year has 8,760 hours), this would be disastrous. Building efficient irrigation systems and water conservation strategies in rain fed regions, through conjunctive use of surface and groundwater. Agriculture in semi-arid regions has to move from traditional, crop-centric farming to agri- pastoral-farm-forestry systems (fruit trees, shrubs, perennial grasses and small ruminants). Watershed development programmes cannot succeed without full participation of project beneficiaries and careful attention to issues of social organisation.

18. **MGNREGA** is characterised by irregular flow of funds and high percentage of incomplete works. As work is left incomplete, bunds are washed away during the monsoon, which gradually accumulates as silt in the riverbed downhill, which in turn affects the nearby check dams.

Better governed states corner most of the funds irrespective of low incidence of poverty in those states. Having better banking systems may be one of the reasons why richer states spend more MGNREGA funds. Government has increased, on paper, the number of days from 100 to 150 for drought affected districts, but in Banda (in Bundelkhand), the average number of days the rural poor got work during 2015-16 was less than 20.



Graphic taken from ET (Delhi ) dated 02.04.2016

Syllabus topic 4.	Food processing and related industries in India Agricultural and Processed Food Products Export Development	
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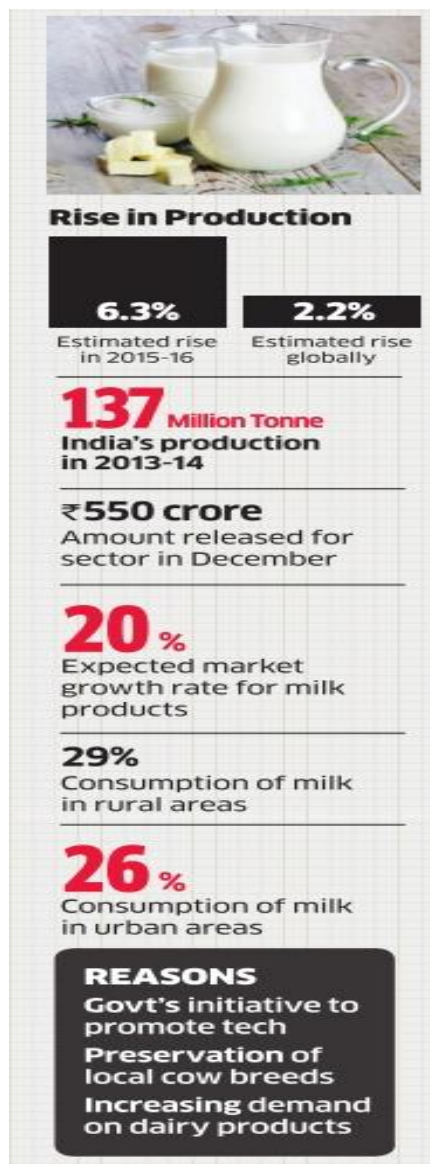
19. **Drop in exports** : After growing nearly five times in the past four years to a record 1.55 lakh tonne, jeera or cumin, export is set for a correction this year. In 2014-15, a third of the jeera produced were shipped, making it the second largest exported spice after chilli, fetching the spice industry over Rs. 1,800 crore.

Currency devaluation in buyers such as China and appreciation of the Indian rupee have hit exports. Even Syria, a jeera producer, which used to buy from India as its output is small, was not active because of the unrest. The industry reckons that exports will drop to below 1 lakh tonne this fiscal unless China and Vietnam up purchases.



20. High temperatures and missing snowfall is also posing a threat to **Himachal 's Rs 3,500crore apple sector**. Experts said rain and snow at this time of the year is crucial as it provides the chilling hours required for good production of apples in the coming season.

21. Rise and fall in production



26<sup>th</sup> March, 2016. Economic Times, Delhi,



1. ‘ King of Good Times is Back’  
by Jayashree Bhonsale

Although it's said that Portuguese general Afonso de Albuquerque, who conquered Goa in 1510, introduced the Alphonso mango in the Konkan coast, scientists at the Balasaheb Sawant Konkan Krishi Vidyapeeth in Maharashtra believe the fruit is a local variety that the Portuguese introduced to the world.

The area under Alphonso has increased to 1.8 lakh hectares today from 30,000 hectares in 1990, thanks to grafting technology developed by KKV. The mango season in India typically ranges from March to August, with the exception of the [variety from Kanyakumari](#) in Tamil Nadu, which [is available year round](#).

Some cultivators have been able to achieve regular and early bearing of fruit using growth regulators, which have helped to expand the Alphonso mango season to three months from two months previously. The north Indian varieties are not as lucky because the winter cold hampers flowering. Only the Dashehari variety from Lucknow has been grown successfully in areas around Hyderabad and yields fruit from April.

Between 2004-05 and 2014-15, the value of mango exports, including pulp, increased almost threefold to Rs.1,144 crore. This was despite a US ban on Indian mangoes from 1989 to 2007 and entry into Australia from 2009.

Today, fresh mango exports stand at Rs. 302 crore, more than a 10th of the total fresh fruit shipments from India at Rs. 2,771 crore. Today, fresh mango exports stand at Rs. 302 crore, more than a 10th of the total fresh fruit shipments from India at Rs. 2,771 crore. The trees flower once in two years, different age of orchards, package of practices



Apr 18 2016 : The Economic Times (Delhi)

## 2. Bank Loans Not Sole Cause for Farm Distress

Edited for main points:

1. Indian farming needs a total revamp to free it from the vagaries of monsoon.



2. A major obstacle the farming community faces is the total dependence on agriculture, which does not provide employment throughout the year due to seasonality of crops. Other activities such as dairy, poultry give a farmer a regular income source.
3. Politicians and lobby groups have blamed rural indebtedness for a spike in suicides among farmers. A much criticised arrangement is the Agricultural Debt Waiver and Debt Relief Scheme, 2008, under which Rs. 71,000 crore of farm loans were written off.
4. Farm income has declined sharply in the past two years as the failure of monsoon for two consecutive years. Loans are also obtained from informal channels at exorbitant rates. Rural distress needs to be analysed in perspective. In addition, the payout under MGNREGA has been hampered due to a shift in the focus of the scheme, from handing out dole to asset creation and digitization of rolls.
5. About half of India's 1.3 billion people are employed in agriculture, which accounts for almost 20% of the nation's \$2 trillion economy. One of the ways to bring farmers out of distress could be increased investments in related areas such as food processing, logistics and irrigation, which will reduce the dependence on rains. Investment has to come in irrigation, cold chain, quality of seeds used.
6. As per Budget 2016, Pradhan Mantri Krishi Sinchai Yojana and a dedicated Long Term Irrigation Fund will be created in National Bank for Agriculture and Rural Development or Nabard with an initial corpus of about Rs. 20,000 crore. This is to bring nearly 28.5 lakh hectares under irrigation
7. Farming should also be treated as industry, because 'industry' status, means focus on effort for efficiencies to increase productivity.

Standard of living in rural areas can change only if productivity increases.

8. Five million tonnes of wheat were reported to have gone missing from Punjab government warehouses. Poorly stored and allowed to moulder, wheat is purchased as food grain and sold as feed grain good only for livestock.