

# A Survey: To Estimate Food Wastage Periodically

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**Abstract-** India is that the world largest producer of the many fruits and vegetables however there still exist vast gap between per capita demand and provide attributable to huge waste during post-harvest storage. The maximum amount of the post-harvest loss information for developing countries was collected over 30 years past, current international losses can not be quantified. The analysis highlighted the size of the problem, the scope for improved system efficiencies and also the challenges of touching behaviour modification to scale back post-consumer waste in affluent populations. And there square measure several downside that government visage attributable to that downside loads of meals get wasted. Issue associated with food wastage square measure mentioned. Some of the problems are: poor transportation system, lack of temperature controlled by vehicles, improper offer food chain, inaccessibility of cold storage. Hence a proper offer chain management in fruits and vegetables must be improved altogether the supply by adopting best international practices in storage, packaging, handling, transportation, worth other service etc. Government and personal operators have to be compelled to be part of hands to enhance the physical infrastructure, info sharing and also the service required for quality improvement of the provision chain.

**Keywords:** Demand, Supply, Temperature, Cold Storage, Supply Chain

## I. INTRODUCTION

Asian Nation is that the world's largest producer of many contemporary fruits and vegetables, milk, major spices, fresh meat, few fibrous crops like jute, many staples such as millets, purgative seed etc. and ranked amongst the world's 5 largest producers of over 80% agricultural produce things, together with several money crops like coffee and cotton.

India's huge geographic area let alone varied climate conditions facilitates to grow a range of fruits and vegetables. The Government has created several efforts to rein in food wastage however clearly, the depth of the matter is specified the impact of those efforts is hardly up to the mark. Some of country also facing that problem "Wastage of Food". However several of country overcome from that downside like France has passed unanimous legislation requiring supermarkets to either offer unsold food to charity or send it to farmers to be used as feed and chemical. Similarly, institutions in Canada are recovering unused and unspoiled food from retailers, makers, restaurants and caterers and causing them to charities.

And the biggest issue is transportation system, India's most food is offer through transportation. The conditions at this major wholesale market, that has modified very little in

decades, replicate one of the biggest threats to food security in Asian nation, particularly because the pace of urbanisation needs a lot of food to be dropped at cities. With India's farm-to-fork networks still dominated by politically cogent ancient traders and tiny outlets, the country has struggled to modernise its food supply chain and attract large-scale investment into cold-storage, cold trucks and alternative fashionable provision. As a result, much of India's agricultural output rots – or seriously degrades – before reaching shoppers, when hunger and deficiency disease stay.

According to estimates by the UN's Food and Agriculture Organization (FAO), regarding 40 per cent of India's contemporary fruit associate degreed vegetables – value an annual \$8.3bn about – perishes before reaching shoppers. Each year, some 21m metric tonnes of wheat, particularly grain – associate degree quantity nearly up to Australia's total annual production – rots in India as a result of improper storage within the custody of the government-controlled Food Corporation of India. Asian nation isn't distinctive within the level of its losses. However the magnitude of food losses in Asian nation dwarfs those in alternative countries, given the country's size and also the scale of its farm output, whereas context during which this food goes to waste is additional way more serious. In recent years, Indian food costs have up at double-digit levels, pinching the budgets of the many working-class urban families in an exceedingly country wherever food still accounts for a mean of 31 per cent of monthly house expenditure. In 2012, metropolis determined to allow up to 51 per cent foreign direct investment in supermarkets and alternative fashionable food outlets – that several say is that the necessary front-end to create a contemporary food-supply chain work. "If you can aggregate demand, you can aggregate supply, build scale and make sure investments within the middle pay off," says Bijou Kurien, former president and chief government of Reliance Retail, one of India's largest modern retailers. So from this number's or values we can say that transportation is major downside.

Yet foreign retail giants stay cautions of Asian nation, as a result of varied conditions, together with a demand to supply 30 per cent of their merchandise from small enterprises, and invest a minimum of half their capital in back-end infrastructure. Several Indian states have conjointly same they'd bar foreign-owned stores, separation massive components of the potential market. Currently, just 3 per cent of India's food and groceries

square measure purchased through fashionable retail stores – together with Indian in hand – inhibiting investment in back-end provision. India has developed some fashionable offer chains coupled to food process firms, like Nestlé, Unilever, Pepsi and Del three-card Monte. However these still handle a fraction of the country's perishable food. Per a recent study by the Indian Institute of Management in Calcutta, cold storage facilities square measure out there for simply 10 per cent of India's perishable turn out – and square measure largely used for potatoes – to fullfill India's sturdy demand for chips. The study estimates that India wants storage facilities for an additional 370m metric tons of perishable produce. But with so many obstacles confronting private groups – including a fragmented, tightly controlled market, and various government restrictions – such investments square measure unlikely to happen quickly.

Transportation system should be smart in our country. There square measure several places wherever fruits and vegetables aren't gift in needed amount, Therefore fruits and vegetables square measure foreign from alternative places however attributable to dangerous transit food can not reach on time. The main reason behind this downside is that the rural bad conditioned roads correct roads should be created to beat this type of downside, so wastage of food may be minimised.

## II. IMPORTANCE AND SCOPE OF PRESERVATION

Being perishable in nature 35 to 40% losses attributable to deterioration. Therefore, we should always preserve them for storage. Fruits and vegetables square measure protecting foods. "Everyone ought to consume 85 gm of fruits per day". By conserving the fruits and vegetables, we will merchandise we will relish them in off season. It improves employment of labours. As way scope thinks about, the assembly of fruits and vegetables are accumulated to an outsized extent. Therefore to avoid glut within the market, they'll be processed, preserved and enjoyed in off season. Completely different bi-products may be ready from fruits and vegetables. The importance of fruits and vegetables square measure documented by the Indians as fruits and vegetables have large food worth in Vitamins and minerals which are main source of nourishment and body building. Storage of food material in excellent expendable condition for a extended time while not undergoing any spoilage is a vital necessity. Attributable to significant glut within the market fruits and vegetables get spoiled due to lack of storage facilities. India is a perfect country that all the important fruits and vegetables may be created attributable to varied soils of atmospheric conditions. However, fruits and vegetables square measure low cost within the season and wasted attributable to spoilage at larger extent. By growing fruit and vegetables being they're money crops farmers get a lot of financial gain from the sphere. Therefore, to avoid the spoilage process units square measure to be put in. Goddish losses conjointly occur attributable to improper handling transportation and lack of process and

preservation units. By mistreatment numerous ways shelf –life of fruits and vegetables may be extended and used as material for process units.

## III. SUPPLY CHAIN MANAGEMENT

Supply chain Management represents the management of the complete set of production, manufacturing/transformations, distribution and promoting activities by that a shopper is equipped a desired product. Supply chain management encompasses the look and management of all activities concerned in sourcing acquisition, conversion, and provision management. It conjointly includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service suppliers, or customers. Supply chain management integrates offer and demand management at intervals and across firms. The complete supply chain management may be a worth chain wherever bottlenecks, worth adding factors and liability factors square measure known and self-addressed, therefore enabling the retail organization to possess associate degree economical supply chain. Would like for a supply chain in vegetable promoting says supply chain development not solely advantages the personal sector however conjointly creates spin-offs that stimulate social, economic and environmental property development within the region (employment generation, added worth, minimisation of product losses etc).

The specific gains are:

- Reduction of product losses in transportation and storage.
- Increasing of sales.
- Dissemination of technology, capital and data among the chain partners.
- Better info regarding the flow of merchandise, markets and technologies.
- Transparency of the supply chain.
- Tracking and tracing to the supply.
- Better management of product safety and quality.
- Large investments and risks square measure shared among partners within the chain.
- Productivity Improvement
- High client satisfaction
- Increased profit
- On time delivery

## IV. MARKETING OF FRUITS AND VEGETABLES

Marketing of farming crops is sort of complicated and risky attributable to the perishable nature of the turn out, seasonal production and massiveness. The spectrum of costs from producer to shopper, that is associate degree outcome of demand and provide of transactions between numerous intermediaries at completely different levels within the promoting system, is additionally distinctive for fruits. Moreover, the promoting arrangements at completely different stages conjointly play a vital role in value levels at numerous stages viz. from farm gate to the final word user. These options build the promoting system of fruits to take issue from alternative agricultural commodities, notably in providing time, kind and house

utilities. Whereas the market infrastructure is best developed for food grains, fruits and vegetables markets are not that well developed and markets square measure congested and unhygienic.

Different promoting channels:

- Producer-trader-wholesaler-retailer-consumer.
- Producer-trader-retailer-consumer.
- Producer-trader-consumer.
- Producer-consumer.

Benefits of economical promoting system:

- Reduce post-harvest losses
- Enhances farmer’s realisation
- Reduce shopper value
- Promote grading and food safety practices.
- Induce demand-driven production
- Enable higher worth addition
- Facilitate export

V. METHODOLOGY

- India will effectively use technology to script a replacement chapter in prevention of food wastage. The Government will speed up analysis in Nano technology with the assistance of that eco-friendly and healthy food preservation applications may be fictitious that square measure useful in conserving food for extended period and keeping farm turn out contemporary. Additionally to those efforts, the Government should build it necessary for the food retailers across the country to adopt technology standards that enable incentives for the client to get perishable merchandise that square measure approaching their expiration dates. This may facilitate cut back food wastage, maximises grocery distributor revenue, and effectively reduces the worldwide carbon footprint. So as to create progress in reducing the burden of this downside, the Government has to primarily contain the excessive wastage in transportation, improve storage facilities and supply chains. Besides this, the Government should conjointly focus on food process technologies that square measure each advanced and reasonable so food preservation practices may be inspired thereby saving food from wastage.

Methods to scale back food wastage :

1. By beginning food banks
2. By establishing juice factories
3. Transit should be smart
4. Taxes on transport carrying fruits and vegetables should be lessened
5. By organising awareness programs among farmers of various places
6. By increasing the quantity of cold storage
7. By mercantilism fruits and vegetables to alternative countries
8. By beginning cold storage that wants solely renewable sources as it's staple

So, during this paper we’ve got planned our methodology during which we have a tendency to initial collect the info food production in numerous areas. Accordingly, establish what quantity of that created food is wasting. Therefore our motive is to form a Corpus of food production statistics and provides priority per the assembly and wastage quantitative relation. We’ve got to focus on that food item that has highest priority and cut back its wastage. We have a tendency to conjointly specialize in food process technologies that square measure each advanced and reasonable so food preservation practices may be inspired. Our planned model is in Fig. 2.

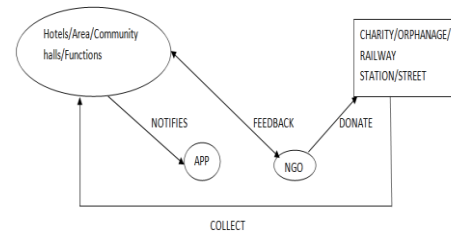


Fig 2. planned system model

Using *Android programming, Nano technology* we will develop a model for this wastage reduction of food.

Stage	
(1)	harvesting—handling at harvest
(2)	threshing
(3)	drying—transport and distribution
(4)	storage
	processing
(5)	primary processing—cleaning, classification, de-hulling, pounding, grinding, packaging, soaking, winnowing, drying, sieving, milling
(6)	secondary processing—mixing, cooking, frying moulding, cutting, extrusion
(7)	product evaluation—quality control: standard recipes
(8)	packaging—weighing, labelling, sealing
(9)	marketing—publicity, selling, distribution

Fig1. Stages of food processing

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## VI. CONCLUSION

For reduction of food wastage, there square measure several obstacles:

- Supply chain bottlenecks
- Transport and storage
- Diverse agro atmospheric condition effects cold storage
- Heavy Glut within the market
- Storage capability and atmosphere
- Tracking and tracing
- Donor lack of information regarding NGO's United Nations agency collect food

So, to scale back this wastage, we've got to use correct ways so most food is saved and this food may be used by people who don't have correct food. And that we square measure mistreatment android language and nano technology for determination food wastage problem of system model of Fig. 2. And can try and add some a lot of modules during this planned system model so food wastage downside won't exist ever.

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