

ONION

1. Introduction

Onion (*Allium cepa* L) is extremely important vegetable crop not only for internal consumption but also as highest foreign exchange earner among the fruits and vegetables. It occupies an area of 1064 thousand ha, with production of 15118 thousand tons. The export of onion during 2011 -12 was 13,09,863.26 thousand tons with a value of Rs 1,722.85 crores.

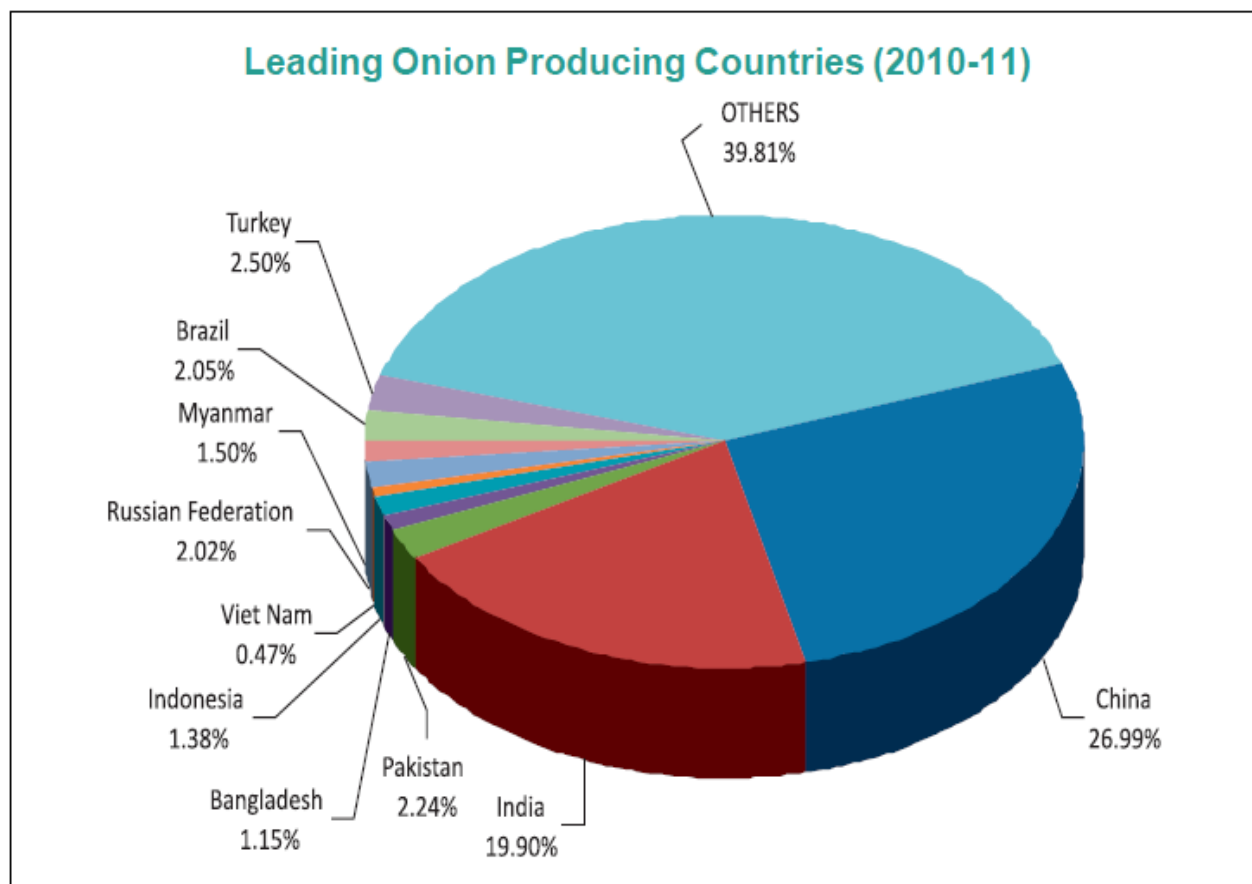
World Scenario

India is the 2nd largest producer of onion, in the world next only to China but the productivity of onion in India is very low i.e. 14.21 tons/ ha as compared to China and other countries like , Egypt, Netherlands, & Iran etc.

Showing Major Onion Producing Countries of the World

County	Area (000ha)	Production (000MT)	PRODUCTIVITY (MT/HA)	%age Share % SHARE OF WORLDPRODUCTION
China	930.21	20507.76	22.0	26.99
India	1064.00	15118.00	14.2	19.9
Pakistan	124.70	1701.10	13.6	2.24
Bangladesh	117.56	872.08	7.4	1.15
Indonesia	109.47	1048.23	9.6	1.38
Viet	101.70	355.30	3.5	0.47
Russian	88.00	1536.30	17.5	2.02
Myanmar	78.90	1137.90	14.4	1.50
Brazil	67.25	1556.00	23.1	2.05
Turkey	62.69	1900.00	30.3	2.50
OTHERS	1227.02	30244.54	24.6	39.81
World + (Total)	3971.51	75977.21	19.1	100.0

Source: Indian Horticulture Database, 2011



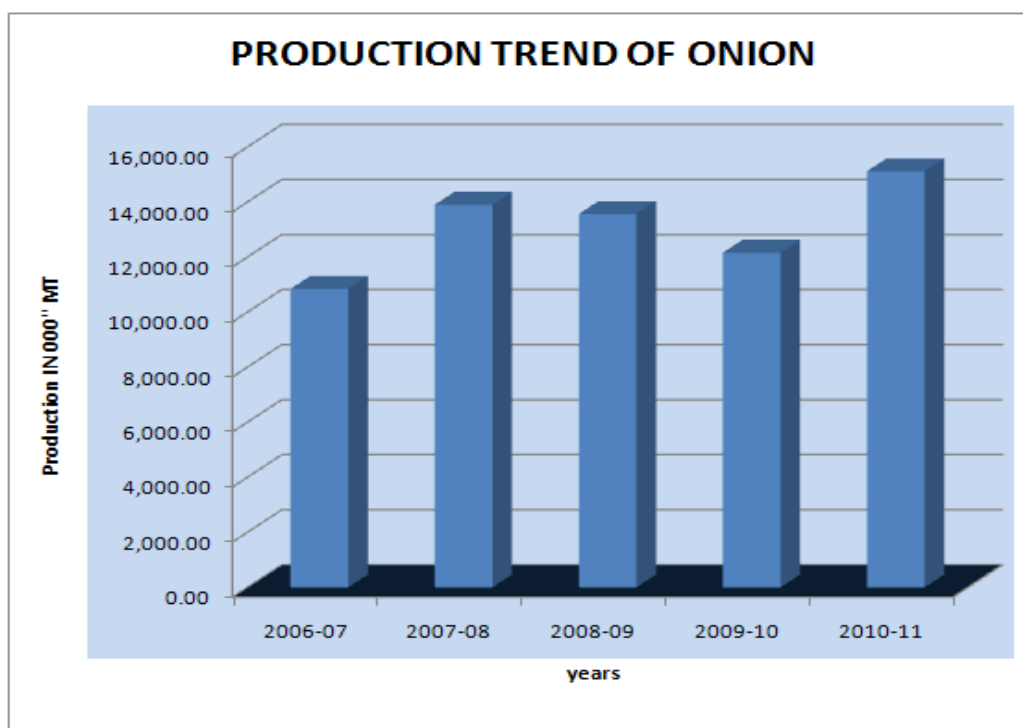
India Scenario

There is a sizeable increase in acreage and production of onion in India. In terms of area, there is an increase from 768 thousand ha in 2006-07 to 1064 thousand ha in 2010-11, while in terms of production it has increased from 10,847.00 to 15,118.00 thousand tons. The details are given below in table.

Showing the Area Production and Productivity of Onion in India

YEAR	AREA (000' ha)	PRODUCTION (000' tons)	PRODUCTIVITY (tons/ha)
2006-07	768.00	10,847.00	14.1
2007-08	821.00	13,900.00	16.9
2008-09	834.00	13,565.00	16.3
2009-10	756.20	12,158.80	16.1
2010-11	1064.00	15,118.00	14.2

Source: Indian Horticulture Database, 2011



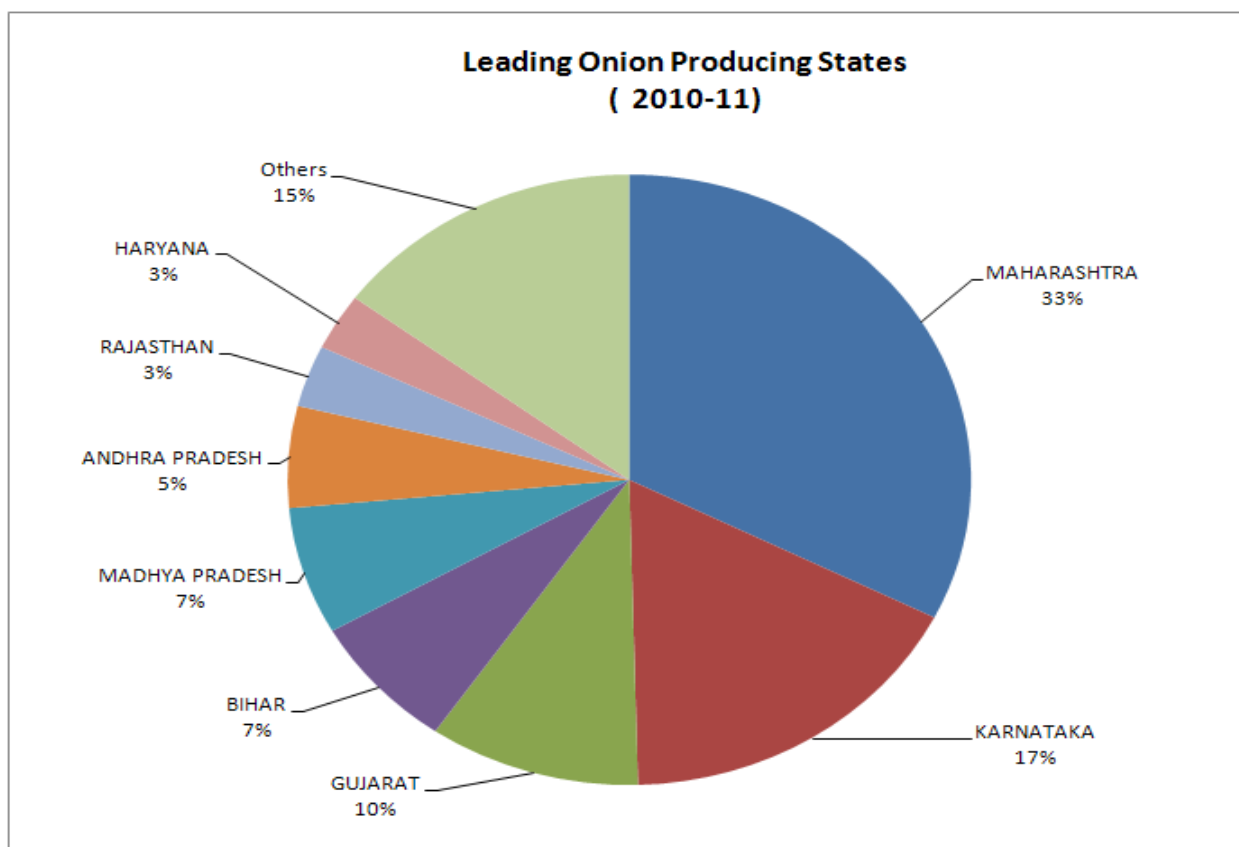
2 . Major Producing States With Production of Last Three Years

Maximum onion production takes place in Maharashtra (4905.0 thousand tons) state followed by Karnataka (2592.2 thousand tons), Gujarat (1514.1 thousand tons.), Bihar (1082.0 thousand tons.), Madhya Pradesh (1021.5 thousand tons.) and Andhra Pradesh (812.6 thousand tons). In Rajasthan, Haryana and Uttar Pradesh it is grown to some extent i.e. 494.2, 453.9 and 368.6 thousand tons respectively. The details are given below in table.

Area, Production and Productivity of Leading Onion Growing States in India

STATEWISE AREA, PRODUCTION AND PRODUCTIVITY OF ONION									
State	AREA IN 000' HA			PRODUCTION IN 000' MT			PRODUCTIVITY HA/MT		
	2008-09			2009-10			2010-11		
	Area	Production	Pdy.	Area	Production	Pdy.	Area	Production	Pdy.
Maharashtra	250.00	3932.50	15.70	200.00	3146.00	15.70	415.00	4905.00	11.80
Karnataka	165.10	3031.80	18.40	141.30	2266.20	16.00	190.50	2592.20	13.60
Gujarat	57.60	1409.60	24.50	43.40	1078.60	24.90	62.00	1514.10	24.40
Bihar	51.60	946.60	18.30	53.00	972.00	18.30	53.30	1082.00	20.30
Madhya Pradesh	53.00	881.80	16.60	57.30	952.30	16.60	58.30	1021.50	17.50
Andhra Pradesh	39.00	662.60	17.00	39.00	662.60	17.00	47.80	812.60	17.00
Rajasthan	41.00	369.10	9.00	45.00	742.50	16.50	49.00	494.20	10.10
Haryana	18.80	347.90	18.50	18.40	330.30	17.90	22.20	453.90	20.50
Others	158.00	1982.60	12.55	158.70	2008.30	12.65	165.80	2242.20	13.52
Total	834.20	13564.50	16.30	756.20	12158.80	16.10	1063.80	15117.70	14.20

Source: Indian Horticulture Database, 2011



3 . Description Of Commercially Grown Varieties

Shows The Varietal Characteristics Of Commercially Grown Onion Varieties

Variety	Characteristics
Agrifound Dark Red	The crop is global round in shape, big in size and dark red in colour.T.S.S. is 12- 13 brix and storage quality is medium.
Agrifound Light Red	The crop is global round in shape, big in size and light red in colour.T.S.S. is 13- 14 brix and storage quality is good.
Agrifound Rose	The crop is flattish round in shape, 2.5-3.5 cm in size and scarlet red in colour.T.S.S. is 16-18 brix and storage quality is good.
Agrifound Red	The crop is 5-6 bulblets clump in shape, 2-2.5 cm in size and brick red in colour.T.S.S. is 9-10 brix and storage quality is good.
Pusa Red	The crop is flattish round in shape and red in colour.Storage quality is very good.

4 . Good Agricultural Practices (GAP)

- Use of hybrid seeds
- Nutrient and water management
- Plant protection
- Weed management
- Better post harvest management

5 . Harvesting Season of Crop in Leading States

	Lean season		- Peak season
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State	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Maharashtra												
Gujarat												
Bihar												
Karnataka												
Andhra Pradesh												
Madhya Pradesh												
Rajasthan												
Haryana												
Uttar Pradesh												

***The Above Graph Shows Harvest Pattern In Leading Onion Growing States**

Source: Indian Horticulture Database

6 . Arrival Pattern in Market

The requirement of onion is almost constant throughout the year and availability of fresh onion is limited to 7 or 8 months and there is lean periods when prices shoot up because of poor storage conditions available in the country. The main availability seasons in different parts of country are given in table. There are three main seasons of onion production namely (i) Kharif crop (ii) late Kharif (iii) Rabi crop

Details of Arrival Pattern of Onion in Leading States

S.No.	States	Cropping season	Availability
1	Maharashtra and Gujarat	Kharif crop Late Kharif Rabi	October – December January – March April – June
2	Tamil Nadu, Karnataka and Andhra Pradesh	Early Kharif Kharif Rabi	August October – November March – April
3	Rajasthan, Bihar, Uttar Pradesh, Haryana, Punjab, West Bengal and Orissa	Kharif Rabi	November – December May - June

7. (a) Concentrated Pockets

Shows Concentrated Pockets of Onion Growing States

State	Districts
Maharashtra	Nasik, Ahmednagar ,Pune, Sholapur
Karnataka	Dharwad ,Chitradurg, Gadag, Haveri, Bagalkot, Davengere
Andhra Pradesh	Kurnool, Medak, Rangareddy, Cuddapah, Mehboobnagar.
Uttar Pradesh	Varanasi, Patan, Kanpur ,Lucknow, Allahabad, Faizabad
Tamil Nadu	Coimbatore, Perambadur, Namakkal ,Dindigul Anna, Thirichirapalli, Periyar
Gujarat	Bhavnagar, Surendranagar
Punjab	Ropar and Ludhiana

(b) Catchment Areas of Market

Showing the Details of Catchment Areas of Market of Onion in Leading States

States	Districts (Market)	Blocks
Maharashtra	Nasik	Kalvan, Peint, Igatpuri, Sinnar, Niphad, Yeola, Nandgaon, Satara, Furgana, Dindori, Melgaon,
	Ahmednagar	Srirampur, Sangamner, Akola, Rahuri, Nevasa, Parner, Pathardi, Srigonda, Karjat
	Pune	Junnar, Ambegaon, Ghod, Rajgurunagar, Wadgaonsirur, Mulshi, Welhe, Purandhar, Bhore, Baramati, Indapur, Daund, Sasw
	Sholapur	Karmala, Barsi, Madha, Mohol, Mangalwedha, Singole, Malsiras, Pandharpur, Akalko
Karnataka	Dharwar	Hubbali, Kundgol, Navalgund, Yadwad, Kalghatgi, Kargod, Kamdali
	Bagalkot	Jamkhandi, Mudhol, Hungund, Badami.
	Devengere	Harpana, Lalli, Harihar, Vasana, Honnali, Channagiri, Nyamati, Matti.
Andhra Pradesh	Kurnool	Emmiganuru, Kappagalu, Alur, Adoni, Atmakpur, Pattikonda, Dhoni, Koilkuntla, Banganpalli, Allagadda
	Mehboobnagar	Kollur, Keshampat, Mughalgidda, Karnul, Wanparti, Atmakur, Gadwall, Alampur, Kolhapur, Achampet, Kondangol
	Rangareddy	Marpali, Vikarabad, Tandur, Pargi, Ibranimpatan, Shahabad, Doma, Maisaram, Miryan, Nancherla
Uttar Prades	Varanasi	Sindhora, Babatpur, Phulpur, Cholapur, Mirzaurad,
	Kanpur	Bithurh, Maharajpur, Narwal, Sarsaul, Bindhnu, Bhimser
	Lucknow	Mal, Rahimabad, Bhauli, Itaunja, Mahoma, Nagram, Nigohan, Sisendi, Bijnaur, Utrahthia, Gosainganj, Jugganar, Chanhat, Bani, Alamnagar, Kakori, Bhauli
Tamil Nadu	Coimbatore	Muttuppalaiyam, Avinashi, Tiruppur, Palladam, Udumallaip pettai, Pollachi, Valparai.
	Thiruchirapalli	Manachanallur, Musili, Thothiyam, Lalgudi, Turayur, Manap prai, Srirangam
Gujarat	Bhavnagar	Botad, Valbhipur, Umralla, Gadhda, Gariadhar, Palitana, Man dir, Ningara
Punjab	Ludhiana	Raikot, Samrata, Khannakhamanoi, Paayal, Nurpur, Bhundri

8. Criteria and Description of Grades

According to AGMARK standards Onions are classified into following classes :

Showing AGMARK Standards and grade designation of Onions

Grade Designation	Grade Requirements	Provision Concerning Sizing	Grade Tolerances
1	2	3	4
Extra class	Onion shall be of superior quality. They shall be characteristic of the variety and/or commercial type. The bulbs shall be: - firm and compact; - unsprouted (free from externally visible shoots); - properly cleaned; - free from swelling caused by abnormal development; - free of root tufts, however, onions harvested before complete maturity, root tufts are allowed. They shall be free of defects, with the exception of very slight superficial blemishes, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package.	As per table 'A'	5% by number or weight of onion not satisfying the requirements of the grade, but meeting those of class I grade or, exceptionally, coming within the tolerances of that grade.
Class I	Onion shall be of good quality. They shall be characteristics of the variety and/or commercial type. The bulbs shall be: - firm and compact; - unsprouted (free from externally visible shoots); - properly cleaned; - free from swelling caused by abnormal development; - free of root tufts, however, onions harvested before complete maturity, root tufts are allowed. The following slight defects, however, may be allowed, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package. - a slight defect in shape. - a slight defect in colouring; - light staining which does not affect the last dried skin protecting the flesh, provided it does not cover more than one-fifth of the bulb's surface. - Superficial cracks in and absence of part of the outer skins, provided the flesh is protected.	As per table 'A'	10% by number or weight of onion not satisfying the requirements of the grade, but meeting those of class II grade or, exceptionally, coming within the tolerances of that grade.

Class II	Onions which do not qualify for inclusion in higher grade but satisfy the minimum requirements. They shall be reasonably firm. The following defects, however, may be allowed, provided the onion retain their essential characteristics as regard the quality, the keeping quality and presentation. - defects in shape; - defects in colouring; - early signs of shoot growth visible from outside(not more than 10% by number or weight per unit of presentation); - traces of rubbing; - slight marking caused by parasites or disease; - small healed cracks; - slight bruising, healed, unlikely to impair keeping qualities; - root tufts; - stains which do not affect the last dried skin protecting the flesh provided they do not cover more than half the bulb's surface; - Cracks in the outer skins and the absence of a part of the outer skins from not more than onethird of the bulb's surface, provided the flesh is not damaged.	As per table 'A'	10% by number or weight of onion not satisfying the requirements of the grade but meeting the minimum requirements.
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PROVISION CONCERNING SIZE

Size is determined by the maximum diameter of the equatorial section, in accordance with the following table:

Size Code	Diameter (in mm.)	Difference between the diameter of the smallest and the largest onion in the same package (in mm.)
A	20-Oct	5
B	21-40	15
C	41-70	20

9. Packaging & its details

(a) For Exports

Packing size wholly depends on the importing country requirement. Some of the netted poly bag sizes have been given below for different countries. Generally there are 60 fills per 10kg bag of onion.

Showing the Packing Specifications of Some Countries

S.No	Importing Nation	Pack size
1	Malaysia and Indonesia	10 kg
2	Srilanka	25 Kg
3	Singapore	8 Kg
4	Philippines	20 Kg
5	Gulf countries	5 Kg, 10 Kg, 15 Kg and 20 Kg

Source: NIAM, Jaipur

Size of Onion Required by Different Countries

S.No	Country	Size(mm)
1	Middle East and Gulf(Dubai, Sharjah, Doha, Muscat, Bahrain, Dammam, Saudi Arabia, Kuwait)	40 – 60
2	Malaysia, Singapore, Port Kelang & African Ports	25 – 30
3	Sri Lanka	25 – 30
4	Bangladesh, Pakistan & Nepal	25 – 30
5	Europe	60 – 70
6	Japan	60 – 70

Source: MSAMB, Pune

(b) For Domestic Markets

For domestic markets, onions are packed in gunny bags.

10 . Distribution of Produce from Primary to Terminal Market

- Onion produced in Maharashtra and Gujarat finds major markets in Bhopal, Jaipur, Lucknow and Delhi from where it is distributed in Northern states like HP, Uttarakhand, J& K , Punjab and Haryana.
- Onion produced in Southern states (like Karnataka and Andhra Pradesh) are consumed in Southern states and nearby markets.

11. Exports and Export Potential

A. Domestic strengths for Exporting Onion

Domestic strengths for exporting onion are detailed below:

- India is next to China in onion production.
- Production of onion is almost throughout the year barring one or two months.
- Wide varieties of onions are cultivated in the country.
- More than 45% of total onion production takes place in Maharashtra, Gujarat and Madhya Pradesh states which is very conducive for exports
- Three Agri Export Zones have been established in Maharashtra, Karnataka and Madhya Pradesh states.
- Export facility centre along with modern packhouse has been set up to facilitate export of onions at Indpur near Pune.
- An irradiation unit has been established at Lasalgaon (Nasik) to inhibit sprouting in onions.
- Onion growers have been trained on scientific farming of onion in Maharashtra and in Karnataka (rose onion growers).
- In Maharashtra state, MSAMB has disbursed subsidy to farmers for developing onion storage structures for prolonged shelf life
- There is a good research support, as NRC for Onion and National Horticulture Research and Development Foundation are located in Maharashtra it self.

B. Exports

Export of onions from India has increased at a fast rate in last five years. Export has increased from 10,08,606.50 tons in 2007-08 to 13,09,863.26 tons in 2011-12. An increase of 30% in exports has been recorded given below in the table :

Export of onion in Last Five Years

India Export Statistics		
Product Group: Fresh Onions		
Qty in MT, Value in Lacs		
Year	Quantity(tons)	Value(in Rs. Lakh)
2007-08	10,08,606.50	1,03,577.88
2008-09	16,70,186.32	1,82,752.21
2009-10	16,64,922.37	2,31,942.97
2010-11	11,82,324.21	1,77,928.61
2011-12	13,09,863.26	1,72,285.37

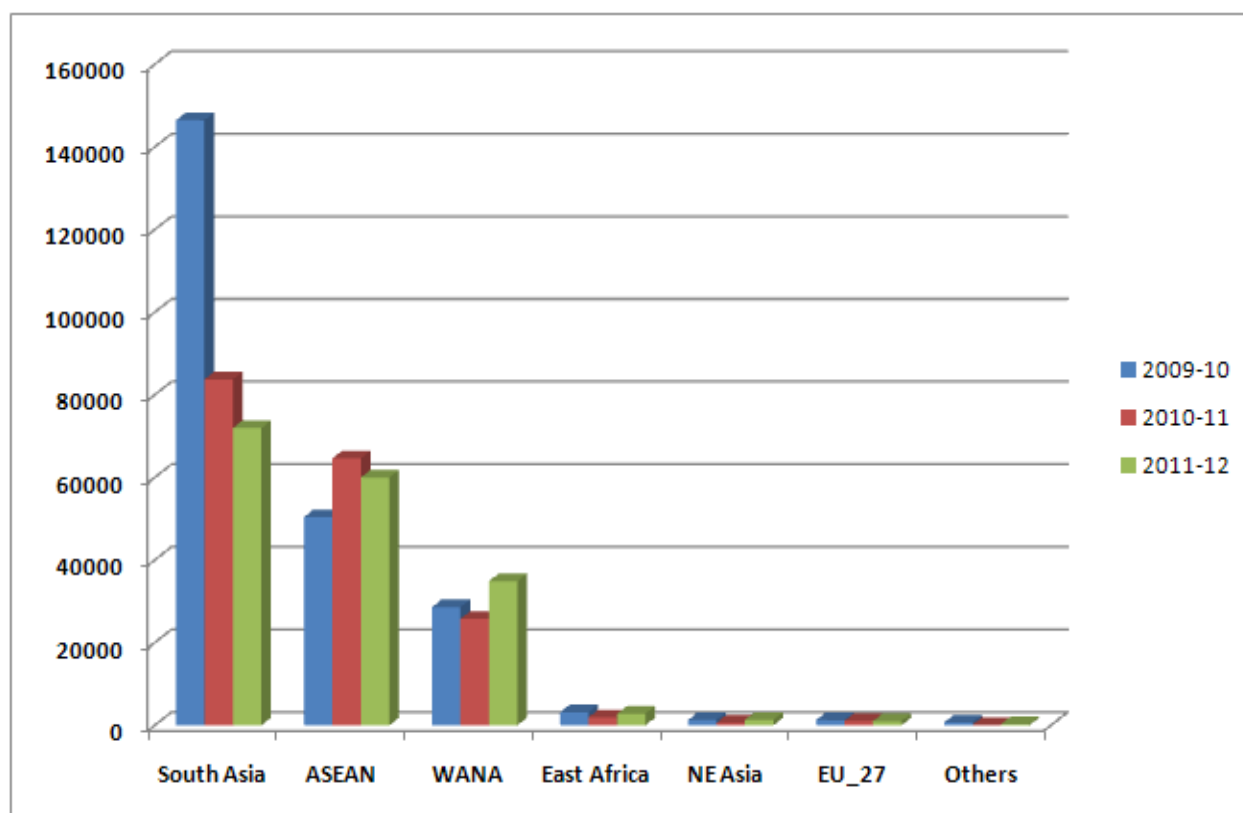
Source: DGCIS



Region wise Export of Onion for Last 3 Years

Region wise Export Statistics						
Quantity in MT;Value in Rs.Lacs						
Product: FRESH ONIONS						
Region Name	2009-10		2010-11		2011-12	
	Quantity	Value	Quantity	Value	Quantity	Value
South Asia	1037334.13	146474.71	590640.61	83726.36	583252.09	71958.18
ASEAN	354579.34	50427.41	366162.66	64634.85	400493.86	59997.11
WANA	235752.94	28612.68	201793.04	25756.19	289559.90	34893.79
East Africa	16908.44	3186.43	11343.37	1938.10	16953.03	2796.09
NE Asia	9233.07	1288.88	3756.72	634.41	9511.55	1340.98
EU_27	7760.41	1266.29	7706.14	1098.58	7665.04	1017.78
Others	3354.04	686.55	921.66	140.14	2427.78	281.45
Total	1664922.37	231942.95	1182324.20	177928.63	1309863.25	172285.38

Source: DGCIIS Annual Export



C. Measures for Enhancing Competitiveness for Exporting Onion

Following steps must be taken up on priority for enhancing competitiveness for exporting Onions:

- Domestic production needs to be enhanced (by adoption of high yielding varieties and modern agricultural practices) with consistency, so that export of onions can be made on regular basis. Because, exporting on regular basis helps in increasing volumes and farmers also get remunerative prices.
- Contract farming needs to be adopted for export purposes.
- Expansion of area under onion in early kharif, kharif and late kharif needs to be taken up so that quality onions are available for export on regular basis
- Farmers need to be supported (in addition to existing support) for developing storage facilities, for enhancing storage period.
- Ventilated storage godowns at shipyards need to be constructed for enhancing export of quality onions.
- For enhancing competitiveness for export, India must improve the quality of onions and also take up branding of the product.

12. Storage Fresh

Temperature:	0°C
Relative Humidity:.	65 - 70 %.
Storage Period:.	3 - 5 months
Sensitivity to Low Temperature.	

13. Documents Required for Exports

a).Documents related to goods

- Invoice
- Packing List
- Certificate of origin

b).Documents related to shipment

- Mate Receipt
- Shipping Bill
- Bill of handing
- Airway Bill

c) Documents related to Payment

- Letter of Credit (L/C)
- Bill of Exchange

d) Documents related to quality of goods

- Phytosanitary Certificate
- GLOBALGAP Certification
- Health Certificate

e) Organic Certification

- Certificate indicating material produce is based on organic farming.

f) Documents related to Foreign Exchange Regulations

- GR Form: Documents required by RBI which assures to RBI that the exporter will realize the proceeds of goods within 180 days from the date of Shipment.

g) Other Document

- Bank Realization Certification (BRC): This is the advice given by Foreign Exchange Bank after the realization of money from Importer.

14 . Chain of Events Which Happen up to Shipment

FLOW DIAGRAM OF ESSENTIAL OPERATIONS OF ONION EXPORTERS/PACKERS

- Transported to Packhouse
- Unloading Sorting & Grading Packed in netted poly bag sizes Precooling
- Cold Storage
- Palletizing
- Refrigerated trucks
- Shipment

15. Cost Calculation from Harvest to Packhouse to Port

Cost estimates for exports of onions from India (as per information collected during 2008)

- Procurement Price*:
- Approx. Price (Rs. /kg) : 3.0

*Price of onion varies according to variety, month of procurement

(b) Charges for Treatment, Packing, Transport, etc.(below in table):

Particulars:	40' container (25000 kg)
Nylon Bag (Capacity: 20Kg) Rs. 8/- per bag	8100
Cost of loading & unloading	5000
Cost of pallets	2500
Local transportation	17000
Container Transportation(JNPT - Vashi - JNPT)	7000
Terminal Handling Charges	14885
Total	54485 or Rs. 2.17/kg

Source: MSAMB, Maharashtra

