

## **Analysis of Areca nut production and export in India**

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### **ABSTRACT**

The Areca Nut is the seed of the areca palm (*Areca catechu*), which grows in much of the tropical Pacific, Asia, and parts of east Africa. It is commonly referred to as betel nut or supari, as it is often chewed wrapped in betel leaves (paan). Areca nut (*Areca nut catechu L.*) is a common masticator nut, consumed by all sections of the population, cutting across caste, region, religion, age and gender in India. Areca nut forms an essential requisite for several religious and social ceremonies and its use dates back to Vedic period with high antiquities. This study is based on Secondary data related to area of cultivation, production, productivity and export performance of Areca Nut in India and the World. Areca Nut is a plantation crop, is cultivated mainly by small and marginal farmers in India. Areca nut is largely grown in the plains and foothills of the Western Ghats extending from Mumbai to Kanyakumari and in the North Eastern region, covering West Bengal, Assam, Meghalaya, Tripura, and the like. 87 per cent of the area under its cultivation across India lies in Karnataka, Kerala and Assam. India exports areca nut and its value-added products not only to neighbouring SAARC countries but also to the Middle East and elsewhere. Till recently, India's exports were mainly confined to the whole areca nut, however, in recent years India has also exported scented supari, pan masala, and the like. The main countries to which such value-added products are exported are UAE, UK, USA, Iran and Kenya. The export of areca nut and its by products from India has almost tripled in a span of 20 years since 1991. India's exports currently reach more than 50 countries in the world. As far as the whole areca nut is concerned the UK, UAE, Maldives, USA and Australia are the major buyers; for split and ground varieties, the USA, South Africa, UK, Australia, Canada and Kenya are the major importers; while for other forms of areca nut Malaysia, Maldives, UK, UAE and Oman are the major markets.

**Key Words :** Aggression, Socio-economic status, Academic performance

### **INTRODUCTION**

In an agrarian economy like India, agriculture occupies a key place in the programme of economic development. For rural Indians, agriculture has become a way of life. This sector is contributing nearly 50 per cent of the National income and plays a significant role in

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the over-all development of this country. When traditional form of agriculture started becoming commercial during the British period, farmers attitude towards agriculture was changed. As a consequence, in the agricultural sector, commercial crops started playing a unique role in the world of agriculture. Among various commercial crops grown in India, the ARECA NUT is one of the predominant crops.

The Areca Nut is the seed of the areca palm (*Areca catechu*), which grows in much of the tropical Pacific, Asia, and parts of east Africa. It is commonly referred to as betel nut or supari, as it is often chewed wrapped in betel leaves (paan). Areca nut (*Areca nut catechu* L.) is a common masticator nut, consumed by all sections of the population, cutting across caste, region, religion, age and gender in India. Areca nut forms an essential requisite for several religious and *social ceremonies* and its use dates back to Vedic period with high antiquities. People in India and many parts of Asia are using areca nut. Reference to areca nut is in Rig-Veda (2000 BC). *Dhanwantari Nighantu* an ancient text of Indian system of medicine mentions the use of areca nut (*Puga*) as one of the five natural aromatics (*Panchasugandhikam*) with pepper, clove, nutmeg and camphor.

It is commodity of conventional, commercial and economic importance. While values in the Asian context, the commerciality is ensured by the fact that it contributes about 21,000 crores of rupees to the gross National product. Besides this, its economic importance is witnessed by 6.25 million of people who make their livelihood through areca industry. On the hand, it is reflected in all religious, social and cultural life of Indians. The cultivation of areanut can be traced from the vedic period. Areca kernel is used mainly for chewing purpose in “Tambula”, “Beeda”, Pansupari’ and “Ghukta”.

Betelnut - Plant Profile

Names

Betel nut, Areca nut (English)

Pakku (Malayalam)

Supari, tari (Bangladesh)

Botanical name : *Areca catechu*

Family : Palmae, the palm family (also known as Arecaceae).



Areca nut is deeply rooted in religious and cultural life of Indian people. It is used by all sections of the population, cutting across caste, region, religion, age and gender in India. The area under areca nut is around four lakh hectares with a production of around 4.78 lakh tonnes. Karnataka and Kerala together account for 70 per cent of area and production of areca nut. In Karnataka, around 2.15 lakh hectares are under areca nut cultivation. Chikmagalur district stands first in both area and production followed by Shimoga, Davanagere districts. At present, areca nut is cultivated in 80 per cent of the taluks in Karnataka, with Kadur taluk ranking first in both area and production, followed by Channagiri and Bhadravati taluks.

World production of areca nut was 8.54 lakh tonnes with an area of 7.03 lakh hectares. India's share in production is a mammoth 55 per cent. The productivity of areca nut in China is 225 per cent higher than that of India. In Karnataka, the investment made on areca nut gardens by farmers is forty thousand crore rupees. The annual expenditure is Rs.2750 crores. Areca nut provides income and livelihood security to more than three crore people in India. The annual compound growth rate of consumption (five per cent) is more than that of production (4.2 %) hinting at the demand – supply gap. India exported 1750 tonnes of areca nut and its products to more than 40 countries during 2009-10. India also imported 40,000 tonnes of areca nut valuing Rs. 100 crores at Rs.25, 000 per tones in 2009-10.

#### **Export performance of Areca Nut :**

Not only our neighboring SAARC countries but also Middle East and other Muslim countries have become an assured destination for the value- added areca nut products. Demand for these products has been fast increasing globally, especially among the people of Indian / Asian origin. Export of areca nut products from India has almost tribbled in a span of 20 years since 1991. India's export currently reaches more than 40 countries in the world. During 2009-10 India exported nearly 1750 tonnes of areca nut in the forms of splits nuts (13 %), whole nuts (37 %) and value added forms like scented *Supari* (50 %). Major destinations of these items are Malaysia, Maldives, UAE, Nepal, UK, Sri Lanka, South Africa, Canada and Kenya. Interestingly, the demand is increasing gradually in the developed world also including USA, UK, Canada, Australia, Thailand, Singapore and France, that too for the products such as Ghutka and *Panmasala*. The *panmasala* and scented *supari* are exported to countries like UAE, Afghanistan, Canada, Mexico, Saudi Arabia, Singapore, UK and the like. The UAE has been major market for Indian *panmasala*, accounts for 50 per cent of export from India in recent years. The UK, Canada, Saudi Arabia and USA stand next to UAE in import of Indian *panmasala*.

#### **Agencies instituted in production of Areca Nut :**

The Central Areca nut and Cocoa Marketing and Processing Co-operative Limited or CAMPCO was found on 11 July 1973 at Mangalore. The organisation working on principles of co-operative was found to mitigate the sufferings of areca nut and cocoa growers in Indian states of Karnataka and Kerala. The CAMPCO has now extended its services to other states of India like Assam and Goa also. The CAMPCO has now become multi state co-operative under relevant Indian laws. The organisation is mainly into

procurement, marketing, selling and processing of areca nut and cocoa. The company also provides guidance for farmers for growing areca nut and cocoa. The company plans to enter into natural rubber business also. The company has set up a chocolate manufacturing plant in 1986 at Puttur of Dakshina Kannada district of Karnataka. The plant produces chocolates and other products of cocoa both under its own brand and also for Nestle. The company plans to increase production of choco chips by setting up of new plant.

#### **Statement of problem :**

Areca nut is a tropical crop. It is capable of growing under variety of climatic conditions. In India, it is extensively used by large sections of the people and it is very much linked with religious practices. India is the largest producer of areca nut and at the same time largest consumer also. Demand for areca nut products has increased steadily in India. The production aspects begin from the harvest and end before it is marketed, major issues related to the production aspect of areca are harvesting, plucking, drying, grading, dehusking. So the areca nut production is one of the important tasks for the producers. The marketing is another difficult task to be undertaken by the areca nut producers are storing, grading, practices of second sale, gutkha banning. There is no proper fixed price for areca nut. The various channels of distribution are required to reach the consumer. Hence, the present study.

#### **Objectives of the Study :**

1. To know the cultivation of areca nut, production process in India.
2. To study the area, production and productivity of areca nut in India and
3. To analyze the export performance of areca nut in India.

### **METHODOLOGY**

This study is based on Secondary data related to area of cultivation, production, productivity and export performance of Areca Nut in India and the World. Data related to the study have been collected from the Annual Reports of Food and Agriculture Organization, (1997-2014) Rome, Hand Book of National horticulture Board of India (2014), Haryana, Annual Reports (1997-2014) of Directorate of Areca nut and Species Board, Calicut. The period covered is from 1997-98 to 2014-15. In order to study the various objectives and make inferences, statistical tool of analyses like percentage, annual growth rate, mean, standard deviation and Co- efficient variation are used in the study.

#### **Processing of Areca Nut :**

##### ***Types of Areca Nut processing:***

There are mainly two types of processing of areca nut, viz., chali (ripe sun dried nuts) and red boiled type (tender or mature nuts). Chali is mainly produced in Dakshina Kannada and parts of Uttara Kannada districts. Chali is used in the preparation of scented supari and is greatly demanded in Northern India. Different types of red boiled nuts are prepared in other parts of the state to meet market demand. About 20 per cent of total areca production in the country is consumed as ripe fruit.

The areca nut farm can also be intermixed with banana, mango, jack, coconut, cocoa,

ginger and pepper without affecting the main crop depending on the type of the soil, temperature and water availability. Areca nut plant starts yielding from 7th year till it is of age 40. After that, it becomes uneconomical to maintain it. As the trees grow older, a smaller tree would be planted adjacent to the old trees to make the farm sustainable harvesting season is usually from September till January in three phases. The dried areca nut is non perishable agriculture product and it can be stored for any length of the time.



**Step 1: Getting ready for work**



**Step 4: Storing and Transporting**



**Step 2: Harvesting the fruits from the tree**



**Step 5 : Peeling to Get the Kernel**



**Step 3: Separating the fruits from the bunches**



**Step 6: Boiling the Kernel**



**Step 7: Sun Drying the Boiled Kernel**



**Final Areca Nut**

### **Total area, production and export of Areca Nut in India :**

The areca nut palm, *Areca catechu* L. is the source of the common masticatory nut, popularly known as areca nut. Areca nut is one of the most important commercial crops in the Southeast Asia. The cultivation of areca nut can be traced back to Vedic periods. Areca nut was even used in Ayurvedic and Ethane veterinary medicines. Popularly known as betel nut or supari, areca nut grown in India, China, Bangladesh, Myanmar, Thailand, Malaysia, Indonesia, Philippines and Srilanka. India ranks first in areca nut production in the world. In India the cultivation of areca nut is mostly confined to Karnataka, Kerala and Assam. It is also cultivated to a small extent in Tamil Nadu, West Bengal, Maharashtra, Andhra Pradesh, Meghalaya, Goa, Tripura, Puducherry, Mizoram, Andaman and Nicobar Islands. The share of Karnataka, Kerala and Assam in terms of total area under cultivation and production is around 83 percent. Karnataka stands first both in terms of area and production followed by Kerala and Assam. The area under areca nut cultivation has increased more rapidly in India.

## **RESULTS AND DISCUSSION**

### **Total area of Areca Nut cultivation in India :**

The total area of areca nut cultivation and its annual growth rate during 1997-98 to 2013-14 is presented in Table 1. India is the traditional areca-growing country in the world. At the time of partition, during 1947, nearly half of the area under areca nut was lost to Pakistan. As a result, the country faced the shortage in supply of areca nut during the early fifties. The increasing internal demand was made good by import of areca nut from Sri Lanka and Malaysia in the beginning. Hence, the Government had encouraged the expansion of area under areca nut cultivation on a large scale and provided liberal financial assistance, through co-operatives and scheduled banks, for its cultivation. Consequently, the production of areca nut increased steadily and the country achieved the self-sufficiency by early 60's.

The total area of areca nut cultivation in terms of thousand hectares has increased from 273.4 in 1997-98 to a maximum of 450.7 hectares in the last year of the study period, it shows that area of cultivation of areca nut has increased more than one and half time within 17 year period of the study. The annual growth rate of area of areca nut cultivation has

registering both positive and negative sign in terms of thousand hectares. The maximum of total area of areca nut cultivation growth has registered a positive sign of 8.13 per cent 2001-02 and the lowest minimum recorded a negative sign 99.2 per cent of the last year of the study period.

The compound growth rate of total area of areca nut cultivation in India has recorded only three per cent growth in the 17 years period. The mean magnitude of area of cultivation of areca nut in India has registered 363.78 thousand hectares. The total area of areca nut cultivation has registered above the mean magnitude after 2002-03 and the first six years of the analysis the area of areca nut cultivation has registered below the mean magnitude level. The co-efficient of variation has registered nearly 15 per cent of variation in the area of cultivation of areca nut in India. It shows that the year- wise variation of areca nut cultivation in India has not registered much variation between the years during reference period.

| <b>Table 1 : Total Area of Areca Nut Cultivation in India: 1997-98 to 2013-14 ('000 hectares)</b> |                                    |                    |
|---|------------------------------------|--------------------|
| Year  | Total area of cultivation in India | Annual growth rate |
| 1997-98   | 273.4                              | -                  |
| 1998-99   | 277.2                              | 1.39               |
| 1999-00   | 299.0                              | 7.86               |
| 2000-01   | 314.8                              | 5.28               |
| 2001-02   | 340.4                              | 8.13               |
| 2002-03   | 353.7                              | 3.91               |
| 2003-04   | 364.4                              | 3.03               |
| 2004-05   | 373.7                              | 2.55               |
| 2005-06   | 380.5                              | 1.82               |
| 2006-07   | 381.9                              | 1.16               |
| 2007-08   | 384.9                              | 0.70               |
| 2008-09   | 387.6                              | 6.76               |
| 2009-10   | 413.8                              | 0.46               |
| 2010-11   | 415.7                              | -0.43              |
| 2011-12   | 413.9                              | 7.63               |
| 2012-13   | 445.5                              | 1.17               |
| 2013-14   | 450.7                              | -99.32             |
| CGR   | 3.04                               | -                  |
| $\bar{X}$   | 363.78                             | -                  |
|   | 53.69                              | -                  |
| CV  | 14.76                              | -                  |

Source: National Horticulture Board and Directorate of Areca nut and Spices Development, (DASD) Calicut

### **Total production of Areca Nut in India**

The total production of areca nut and its annual growth rate during 1997-98 to 2013-14 is showed in Table 2. The plantation crop is cultivated mainly by small and marginal farmers in India. Areca nut is largely grown in the plains and foothills of the Western Ghats extending from Mumbai to Kanyakumari and in the North Eastern region, covering West Bengal,

| Table 2 : Total production of Areca Nut in India: 1997-98 to 2013-14 ('000 tonnes) |  |                    |
|--|--|--------------------|
| Year   | Total production of areca nut in India | Annual growth rate |
| 1997-98  | 333.0                                  | -                  |
| 1998-99  | 309.5                                  | -7.06              |
| 1999-00  | 334.1                                  | 7.95               |
| 2000-01  | 372.3                                  | 11.43              |
| 2001-02  | 401.3                                  | 7.79               |
| 2002-03  | 414.3                                  | 3.24               |
| 2003-04  | 437.6                                  | 5.62               |
| 2004-05  | 455.2                                  | 4.02               |
| 2005-06  | 437.6                                  | -3.87              |
| 2006-07  | 481.5                                  | 10.03              |
| 2007-08  | 467.1                                  | -2.99              |
| 2008-09  | 489.4                                  | 4.77               |
| 2009-10  | 481.6                                  | -1.59              |
| 2010-11  | 527.2                                  | 9.47               |
| 2011-12  | 533.7                                  | 1.23               |
| 2012-13  | 608.5                                  | 14.02              |
| 2013-2014  | 630.18                                 | 3.56               |
| CGR  | 3.90                                   | -                  |
| X  | 7714.08                                | -                  |
|  | 90.49                                  | -                  |
| CV   | 1.17                                   | -                  |

Source: National Horticulture Board and Directorate of Areca nut and Spices Development, (DASD) Calicut

Assam, Meghalaya, Tripura, and the like. 87 per cent of the area under its cultivation across India lies in Karnataka, Kerala and Assam.

The total production of areca nut in terms of thousand hectares has increased from 333 in 1997-98 to a maximum of 630.18 hectares in the last year of the study period, it explains that production of areca nut has increased more than two and half time increased within 17 year period of the study. The annual growth rate of production of areca nut has registering both positive and negative sign in terms of thousand hectares. The maximum of total production of areca nut growth has registered a positive sign of 14.02 per cent growth 2012-13 and the lowest minimum as recorded a negative sign 7.06 per cent of the last year of the study period

The compound growth rate of total production of areca nut in India has recorded only three per cent growth in the 17 years period. The mean magnitude of production of areca nut in India has registered 363.78 thousand hectares. The total production of areca nut has registered above the mean magnitude after 2012-13 and the first fourteen years of the analysis the production of areca nut has registered below the mean magnitude level. The coefficient of variation has registered nearly two per cent of variation in the production of areca nut in India. It shows that the year-wise variation of areca nut production in India has not registering wide variation among the years during period of reference



**Total domestic market of Areca Nut in India :**

The domestic market of areca nut and its annual growth rate during 1991-92 to 2013-14 is explained in Table 3. The production of areca nut is confined to a few states, its domestic market is widespread across the country. There are mainly two prominent varieties of areca nut consumed—the chali and the red variety. The chali variety is preferred largely by consumers in Maharashtra, Gujrat, Uttar Pradesh and Madhya Pradesh, while the red variety is preferred in the other parts of India. Till the 1980s, areca nut was consumed mostly in the raw form, while preparing pan or beeda. However, since then, value added products like scented supari, pan masala and ghutka have boosted the domestic market of the red variety.

The domestic market of areca nut in terms of thousand metric tonnes has increased from 250342 in 1991-92 to a maximum of 626577 metric tonnes in 2013-14 of the study period, it reveals that domestic market of areca nut has increased more than two and half time within 23 year period of the study. The domestic consumption of areca nut in India has

| <b>Table 3 : Total domestic market of Areca Nut in India: 1991-92 to 2013-14 ('000 metric tons)</b> |   |                    |
|---|---|--------------------|
| Year  | Total domestic market of areca nut in India | Annual growth rate |
| 1991-92   | 250342                                      | -                  |
| 1992-93   | 255671                                      | 2.13               |
| 1993-94   | 270575                                      | 5.83               |
| 1994-95   | 288877                                      | 6.76               |
| 1995-96   | 295094                                      | 2.15               |
| 1996-97   | 307187                                      | 4.10               |
| 1997-98   | 334836                                      | 9.00               |
| 1998-99   | 309267                                      | -7.64              |
| 1999-00   | 333666                                      | 7.89               |
| 2000-01   | 372388                                      | 11.61              |
| 2001-02   | 407817                                      | 9.51               |
| 2002-03   | 407745                                      | -0.02              |
| 2003-04   | 437391                                      | 7.27               |
| 2004-05   | 449005                                      | 2.66               |
| 2005-06   | 478987                                      | 6.68               |
| 2006-07   | 481032                                      | 0.43               |
| 2007-08   | 474528                                      | -1.35              |
| 2008-09   | 479782                                      | 1.11               |
| 2009-10   | 525803                                      | 9.59               |
| 2010-11   | 517634                                      | -1.55              |
| 2011-12   | 532614                                      | 2.89               |
| 2012-13   | 605214                                      | 13.63              |
| 2013-14   | 626577                                      | 3.53               |
| CGR   | 4.07  | -                  |
| X   | 393418.17                                   | -                  |
|   | 112085.09                                   | -                  |
| CV  | 28.49                                       | -                  |

Source: National Horticulture Board and DGCI and S, Kolkata

been fluctuating over the years and registered a maximum in the last year of the analysis. The annual growth rate of domestic market of areca nut has registering both positive and negative sign in terms of thousand metric tonnes. The maximum of total domestic market of areca nut has registered a positive sign of 13.63 per cent in 2012-13 and the lowest minimum as recorded a negative sign 7.64 per cent in 1998-99.

The compound growth rate of domestic market of areca nut consumption in India has recorded only four per cent in the 23 year period. The mean magnitude of domestic market of areca nut in India has registered 393418.17 thousand metric tonnes. The total domestic market of areca nut consumption has registered above the mean magnitude after 2000-01 and the first ten years of the analysis the domestic market of areca nut has registered below the mean magnitude level. The co-efficient of variation has registered nearly 29 per cent of variation in the domestic market of areca nut in India. It shows that the year-wise variation of areca nut in India has not registered a huge variation between years during reference year.

#### **Total export of Areca Nut in India :**

The total export of areca nut and its annual growth rate during 1991-92 to 2013-14 is depicted in Table 4 India exports areca nut and its value-added products not only to neighbouring SAARC countries but also to the Middle East and elsewhere. Till recently, our exports were mainly confined to the whole areca nut, however, in recent years India has also exported scented supari, pan masala, and the like. The main countries to which such value-added products are exported are UAE, UK, USA, Iran and Kenya. The export of areca nut and its byproducts from India has almost tripled in a span of 20 years since 1991. India's exports currently reach more than 50 countries in the world.

The total export of areca nut in terms of thousand metric tonnes has increased from 658 in 1991-92 to a maximum of 4163 metric tonnes in the 2013-14, of the study period; it shows that export of areca nut has increased nearly seven time within 23 year period of the study. The annual growth rate of export of areca nut has registering both positive and negative sign in terms of thousand metric tonnes. The maximum of total export of areca nut export growth has registered a positive sign of 108.29 per cent in 2001-02 and the lowest minimum as recorded a negative sign 50.76 per cent in 1995-96 of the study period.

The compound growth rate of total export of areca nut in India has recorded only eight per cent growth within 23 year period. The mean magnitude of export of areca nut in India has registered 1694.26 thousand metric tonnes. The total export of areca nut export has registered above the mean magnitude after 2002-03 and the first twelve years of the analysis, the export of areca nut has registered below the mean magnitude level. The co-efficient of variation has registered 73 per cent of variation in the export of areca nut export in India. It shows that the year-wise variation of areca nut export in India has registered very huge variation between the years during reference period.

#### **Total area of Areca Nut Cultivation in India :**

– India is the traditional areca-growing country in the world. At the time of partition, during 1947, nearly half of the area under areca nut was lost to Pakistan. As a result, the

## ANALYSIS OF ARECA NUT PRODUCTION &amp; EXPORT IN INDIA

| <b>Table 4 : Total export of Areca Nut in India: 1991-92 to 2013-14 ('000 metric tons)</b> |                                    |                    |
|--|------------------------------------|--------------------|
| Year   | Total export of areca nut in India | Annual growth rate |
| 1991-92  | 658                                | -                  |
| 1992-93  | 629                                | -4.41              |
| 1993-94  | 525                                | -16.53             |
| 1994-95  | 823                                | 56.76              |
| 1995-96  | 406                                | -50.67             |
| 1996-97  | 513                                | 26.35              |
| 1997-98  | 664                                | 29.43              |
| 1998-99  | 533                                | -19.73             |
| 1999-00  | 734                                | 37.71              |
| 2000-01  | 712                                | -3.00              |
| 2001-02  | 1483                               | 108.29             |
| 2002-03  | 1555                               | 4.86               |
| 2003-04  | 1809                               | 16.33              |
| 2004-05  | 3695                               | 104.26             |
| 2005-06  | 4113                               | 11.31              |
| 2006-07  | 2268                               | -44.86             |
| 2007-08  | 1472                               | -35.10             |
| 2008-09  | 1518                               | 3.13               |
| 2009-10  | 1757                               | 15.74              |
| 2010-11  | 2486                               | 41.49              |
| 2011-12  | 2676                               | 7.64               |
| 2012-13  | 3776                               | 41.11              |
| 2013-14  | 4163                               | 10.25              |
| CGR  | 8.35                               | -                  |
| X  | 1694.26                            | -                  |
|  | 1244.07                            | -                  |
| CV   | 73.43                              | -                  |

Source: National Horticulture Board and Directorate of Areca nut and Spices Development, (DASD) Calicut

country faced the shortage in supply of areca nut during the early fifties. The increasing internal demand was made good by import of areca nut from Sri Lanka and Malaysia in the beginning. Hence, the Government had encouraged the expansion of area under areca nut cultivation on a large scale and provided liberal financial assistance, through co-operatives and scheduled banks, for its cultivation. Consequently, the production of areca nut increased steadily and the country achieved the self-sufficiency by early 60's.

– The total area of areca nut cultivation in terms of thousand hectares has increased from 273.4 in 1997-98 to a maximum of 450.7 hectares in the last year of the study period, it shows that area of cultivation of areca nut has increased more than one and half time within 17 year period of the study. The annual growth rate of area of areca nut cultivation has registering both positive and negative sign in terms of thousand hectares. The maximum of total area of areca nut cultivation growth has registered a positive sign of 8.13 per cent 2001-02 and the lowest minimum recorded a negative sign 99.2 per cent of the last year of the

study period.

– The mean magnitude of area of cultivation of areca nut in India has registered 363.78 thousand hectares. The total area of areca nut cultivation has registered above the mean magnitude after 2002-03 and the first six years of the analysis the area of areca nut cultivation has registered below the mean magnitude level. The co-efficient of variation has registered nearly 15 per cent of variation in the area of cultivation of areca nut in India. It shows that the year- wise variation of areca nut cultivation in India has not registered much variation between the years during reference period.

#### **Total production of Areca Nut in India :**

– The plantation crop is cultivated mainly by small and marginal farmers in India. Areca nut is largely grown in the plains and foothills of the Western Ghats extending from Mumbai to Kanyakumari and in the North Eastern region, covering West Bengal, Assam, Meghalaya, Tripura, and the like. 87 per cent of the area under its cultivation across India lies in Karnataka, Kerala and Assam.

– The total production of areca nut in terms of thousand hectares has increased from 333 in 1997-98 to a maximum of 630.18 hectares in the last year of the study period, it explains that production of areca nut has increased more than two and half time increased within 17 year period of the study. The annual growth rate of production of areca nut has registering both positive and negative sign in terms of thousand hectares. The maximum of total production of areca nut growth has registered a positive sign of 14.02 per cent in 2012-13 and the lowest minimum as recorded a negative sign 7.06 per cent of the last year of the study period

#### **Total domestic market of Areca Nut in India :**

– The production of areca nut is confined to a few states; its consumption is widespread across the country. There are mainly two prominent varieties of areca nut consumed—the chali and the red variety. The chali variety is preferred largely by consumers in Maharashtra, Gujrat, Uttar Pradesh and Madhya Pradesh, while the red variety is preferred in the other parts of India. Till the 1980s, areca nut was consumed mostly in the raw form, while preparing pan or beeda. However, since then, value added products like scented supari, pan masala and ghutka have boosted the consumption of the red variety.

– The domestic market of areca nut in terms of thousand metric tonnes has increased from 250342 in 1991-92 to a maximum of 626577 metric tonnes in 2013-14 of the study period, it reveals that domestic market of areca nut has increased more than two and halftime within 23 year period of the study. The domestic consumption of areca nut in India has been fluctuating over the years and registered a maximum in the last year of the analysis. The annual growth rate of domestic market of areca nut has registering both positive and negative sign in terms of thousand metric tonnes.

– The mean magnitude of domestic market of areca nut in India has registered 393418.17 thousand metric tonnes. The total domestic market of areca nut consumption has registered above the mean magnitude after 2000-01 and the first ten years of the analysis the domestic market of areca nut has registered below the mean magnitude level. The co- efficient of

variation has registered nearly 29 per cent of variation in the domestic market of areca nut in India. It shows that the year-wise variation of areca nut in India has not registered a huge variation between a years during reference year.

#### **Total export of Areca Nut in India :**

- India exports areca nut and its value-added products not only to neighbouring SAARC countries but also to the Middle East and elsewhere. Till recently, our exports were mainly confined to the whole areca nut, however, in recent years India has also exported scented supari, pan masala, and the like. The main countries to which such value-added products are exported are UAE, UK, USA, Iran and Kenya. The export of areca nut and its byproducts from India has almost tripled in a span of 20 years since 1991. India's exports currently reach more than 50 countries in the world. As far as the whole areca nut is concerned the UK, UAE, Maldives, USA and Australia are the major buyers; for split and ground varieties, the USA, South Africa, UK, Australia, Canada and Kenya are the major importers; while for other forms of areca nut Malaysia, Maldives, UK, UAE and Oman are the major markets.

- The total export of areca nut in terms of thousand metric tonnes has increased from 658 in 1991-92 to a maximum of 4163 metric tonnes in the 2013-14, of the study period, it shows that export of areca nut has increased nearly seven time within 23 year period of the study. The annual growth rate of export of areca nut has registering both positive and negative sign in terms of thousand metric tonnes.

- The compound growth rate of total export of areca nut in India has recorded only eight per cent growth within 23 year period. The mean magnitude of export of areca nut in India has registered 1694.26 thousand metric tonnes. The co- efficient of variation has registered 73 per cent of variation in the export of areca nut export in India. It shows that the year-wise variation of areca nut export in India has registered very huge variation between the years during reference period.

#### **Concluding Observation :**

Areca nut crop needs nutrients regularly since the crop is perennial in nature. Farmers do not apply nutrients regularly and the crop is also planted with narrow spacing. Intercrops in areca nut are not properly managed with respect to nutrition. Since the crop is grown in acid soils, liming has to be followed regularly to correct the soil pH and to increase the nutrient availability. Annual skipping of nutrient application is not a desirable practice and proper nutrition of areca nut palm helps in improving the crop condition and yield in areca nut.

Even though within India, several states have already banned panmasala, ghutka, and the like, the international demand for these is increasing over the years. It is interesting to note that the demand is increasing gradually in the developed world including USA, UK, Canada, Australia, Singapore, Netherlands and New Zealand. In 2010-11, Kenya imported the maximum value-added products from India followed by UAE, USA, Singapore, Malaysia, UK, and the like.

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