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RESEARCH ARTICLE

FUTURE TRENDS OF AGRICULTURAL EXPORTS IN INDIA

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ABSTRACT

Exports have played an increasingly important role in India's economic growth in the last two decades. Demand for green agricultural products is a stimulant growth for input markets. This paper forecasting the Agricultural exports in India. The secondary data were collected from the websites of DGCIS. The collected data were analyzed using the trend analysis method and predict the future trends of agriculture exports, where some of the product shows positive growth and some were in negative signs. This analysis helps to alert the policy makers and the people involved in this occupation to predict the future trends.

INTRODUCTION

Agriculture is the backbone of Indian economy, providing employment to 52% of its workforce. The agriculture and food processing sector plays an important role in enhancing the growth of the economy, as it is an important source of raw material for the industrial sector. Today, India is one of the leading producers of milk, fruits, cashew nuts, coconuts and tea in the world. It is also well known for the production of wheat, vegetables, sugar, fish, tobacco and rice. The Government's special efforts to encourage export of food grains in recent years through grant of World Trade Organization compatible subsidies has lead to India becoming one of the leading exporters of food grains in the international market [Blecker and Razmi, 2009].

Agriculture Exports in India

Growth in India's agricultural exports has exceeded the rise in exports of other products. Through the past few years, these products have constantly seen a rise in their share in the export basket, primarily due to the huge stocks resulting from mega output, as well as good turn government policies. During this four-year period, overall exports recorded 93 per cent growth. The share of agricultural commodities in India's overall export basked rose to 10.66 per cent in 2012-13 from 7.06 per cent in 2009-10.

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According to the World Trade Organization (WTO), global export of agricultural and food products stands at $1.66 trillion, out of which India's shares are 2.07%. This indicates India is a net exporter of agricultural products. The country ranks 10th in terms of global agricultural and food exports. The exports of agriculture products have touched US$ 44.59 billion in the period April 2013- February 2014. Exports of processed fruits and vegetables and other processed food exports touched US$ 5.24 billion, fresh fruits and vegetables showed US$ 1.45 billion, cereals at US$ 10.54 billion, and animal products registered US$ 5.36 billion amount of exports in the same period of 2013-14. India's agrarian culture and varied regional climate have made a significant contribution to the global food basket [Wignaraja, 2011]. Globally, India holds the top position in the following food segments:

- Largest producer of milk in the world (127.9 million tonnes) which is 16.43% share of total milk production in the world.
- India has the largest buffalo population (111 million) which is 58% of the world's buffalo population.
- It is the largest producer of mangoes in the world (15.03 million tonnes) contributing 40.48% of the world's total mango production.
- It occupies the second position in fruit (81.28 million tonnes) and vegetable production (162.19 million tonnes)
- It is the second-largest producer of fish in the world (over 9 million tonnes)
- It is also the largest producer of bananas (30.28 million tonnes)

Objectives

- To know about the current scenario of agricultural exports in India.
- To analyze the restrictions in agriculture exports in India.
- To predict the future trends of agricultural exports in India.

Review of Literature

"The growth momentum in India's agricultural exports is expected to continue in the next few years, with an increased share of processed food, including mango pulp, dried and preserved vegetables, and meat and poultry items. Factors such as reduced transaction costs, time, better port gate management and fiscal incentives contributed to this upward trend. With continued focus on issues such as food safety and compliance with international standards, we can surely reach new heights"

- **Piruz Khambatta**, **chairman and managing director, Rasna [**http://commerce.nic.in/eidb/ergn.asp**]**.
"Agricultural exports growth will continue in the future, too, with improved prospects and favourable long-term policy support," - **Anand Sharma**, **Commerce Minister [**http://earnometer.com/commodity/exchg3.html**]**

Indian Agricultural Export Restrictions

The government of India restrict some of the agricultural exports in various periods are given below may also reason for the changes in quantity of export in future.

Wheat

On February 9, 2007, the government banned exports of wheat and wheat products until December 31, 2007, a prohibition that was later extended indefinitely.

Non basmati rice

Effective October 9, 2007, the government banned exports of all non basmati rice to ensure adequate rice availability in the domestic market. On October 31, 2007, however, because of the demands of rice exporters, the outright ban on exports was replaced by an MEP of $425 per ton, which was later increased to $1,000 per ton on March 27, 2008.

Basmati rice

Effective March 5, 2008, an MEP of $950 per ton was imposed, which was gradually increased to $1,200 per ton on April 1, 2008. In addition, an export tax of Rs. 8,000 per ton was imposed at that time. On January 20, 2009, the MEP was lowered to $1,100 per ton, and the export tax was abolished.

Corn

On March 5, 2007, the government banned exports of corn by the private sector and channeled exports only through state trading enterprises for a period of six months. Effective July 3, 2008, the government banned exports of corn through October 15, 2008.

Vegetable oils

On March 17, 2008, the government banned exports of vegetable oils. This prohibition was extended to March 16, 2010.

Pulses

Effective June 22, 2006, the government imposed a ban on the export of pulses, with the exception of kabuli chana (garbanzos).

Milk and milk products

On February 9, 2007, the government imposed a ban on exports of skimmed milk powder, skimmed milk food for babies, whole milk, whole milk for babies, and other milk products until September 30, 2007 [*Source http://www.archive.india.gov.in/citizen/agriculture/index.php?id=30; http://www.fao.org/docrep/article/Agrippa/658_en-04.htm; indexp/18headgenReportmonth_combine.aspx]: Aradhey, India: Oilseeds and Products, April 16, 2009, 22; Govindan, India: Grain and Feed, February 20,2009, 15; Govindan, India: Grain and Feed, February 20, 2008, 7; and Dhankhar, India: Dairy and Products, November 5, 2008]

MATERIALS AND METHODS

The study based on secondary data compiled from various published sources. This study is based on secondary sources. Secondary data is collected from DGCIS, Government of India Reports, Ministry of Agriculture reports, books, articles, and Economic Survey of India. The data were collected from the period of 2009 to 2014. Trend analysis is a mathematical technique often used to predict future events. In this study the past records of Agriculture exports data were collected from Director General of Commercial Intelligence & Statistics (DGCIS report, 2009- 2014) were analyzed using Ms-Excel (2007).

Analysis and Interpretations

A series of observations of a random variable (Agriculture exports data) have been collected over some period of time. This analysis helps to determine if their values generally increase or decrease (getting "better" or "worse"). In statistical terms this is a determination of whether the probability distribution from which they arise has changed over time.

Trend analysis is a special case of regression analysis where the dependent variable is the variable to be forecasted and the independent variable is time

Equation for a trend line, $F = a + bt$

Where as,

- F – forecast,
- t – time value,
- a – y intercept,
- b – slope of the line

$b = (n\Sigma XY - \Sigma X\Sigma Y) / [n\Sigma X^2 - (\Sigma X)^2]$

This equation describes a straight line, where Y represents exports and X represents time. Linear regression is slow to recognize turning points and step function shifts in demand. Linear regression fits a straight line to the data, even when the data is seasonal or better described by a curve. Forecast specifications: n equals the periods of exports history that will be used in calculating the values for a and b. Using the above formula the future trends of agriculture exports in India were predicted.

The below given Table 4.1 gives the detail of Indian agriculture exports [http://www.ibef.org/exports/agriculture-and-food-industry-india.aspx], this data was derived from the report of DGCIS for the year 2009 to 2014. Using the trend analysis formula i-e using the past record the future exports for the period 2015 to 2020 was predicted. Below given Fig. 4.1 describes the graphical representation of table data. The trend line shows that some of the agriculture products such as millet, cocoa, pulses, wheat are in the positive line. Some of the products exports were shows negative line such as meat, groundnut, fruits and vegetables exports will be decline.

Table 4.1. Forecasting the Agriculture Exports for the Next Six Years

Product / year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Other Meat	1165	1029	317	194	268	234	-171.6	-306.0667	-335.3911	-496.9852	-701.4304	-864.5088
Processed Meat	674	922	576	796	508	105	210.1333	-6.511111	-142.5452	-368.0998	-482.9817	-595.2316
Animal Casings	1716.9	1804.72	1011.22	645.84	352.2	223.58	-259.8773	-668.3409	-906.9207	-1233.141	-1588.084	-1960.467
Fruits / Vegetable Seeds	8434	11622.33	15205.81	17168	19338.58	6830	14808.88	13459.86	11636.95	10142.46	9411.91	10757.08
Floriculture	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poultry Products	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cocoa Products	5863.88	9077.54	16678.58	19083.35	16229.24	13713.57	19751.86	19917.94	19131.09	19705.48	21454.84	22723.83
Sheep/Goat Meat	53072	12301	10937	15287	22608	16516	7035.933	13887.42	12769.25	9860.88	6967.145	7134.011
Milled Products	72740.53	99101.17	171123.8	273546.3	419263.8	293802.7	438418.5	503576.8	553097.4	593148.6	638131.3	726898
Pulses	100125	209019	173503	202665	345553	167098	277023.4	275513.1	295693	297085.4	290521.3	336904
Processed Vegetables	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dairy Products	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fresh Fruits	475760	446761	487999	534619	525224	282342	390276.1	353657.8	294257.9	235872.5	202175.6	200752.7
Misc Processed Items	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cereal Preparations	172204	213584	299616	292693	319554	200087	294663.2	283399.9	262205.1	258801.1	256917.7	274883
Processed Fruits & Juices	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Groundnut	340256	433762	832619	535637	509751	374058	514346.7	433497.7	313801.2	327083.6	294594	268349.6
Fresh Vegetables	2032402	1660245	2040454	2343881	2291751	1396721	1862863	1835629	1625662	1443419	1384467	1438503
Other Cereals	2881216	3220088	4072570	5441306	4637536	2795835	4360843	4195009	3803427	3410463	3539343	3731635
Wheat	30	397	749625	6514815	5572025	2638249	6146307	7148833	7590650	7296912	8513912	9883005
Guargum	217411	421434	702731	406323	601971	464582	617181.1	581697.4	551416	618919.4	603603.8	639904.2
Non-Basmati Rice	139546	100681	3991768	6687851	7148472	5277880	8844146	10145428	10552583	11297472	12664703	14267160
Basmati Rice	2016871	2330250	3169446	3459829	3754102	2192187	3364299	3298293	3085933	2985961	2990915	3250891
Buffalo Meat	490396	726655	984957	1076103	1365643	989547	1389270	1450334	1498338	1571370	1639024	1807150

Sources : DGCIS (QT in MT) - for the period 2009-2014[http://www.ibef.org/exports/agriculture-and-food-industry-india.aspx], 2015-2020 Predicted data by the author

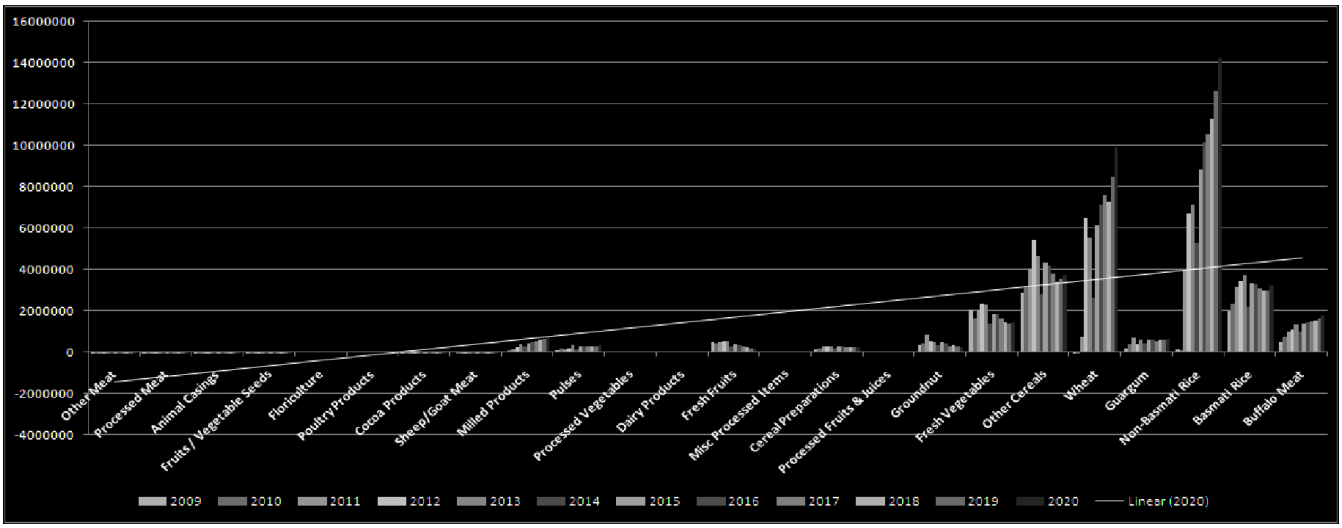

Fig. 4.1. Future Trends of Agriculture Exports in India

RESULTS

The report of DGCIS shows the agricultural products which have been export from 2009 to 2014. Using the trend analysis method the future trends where calculated and this finding gives the quantity of exports in 2020.

- From the above table it is inference that the forecasting trend of agricultural commodity shows positive trends i-e further growth in the quantity of export in Cocoa Products (22723.83), Milled Products (726898), Pulses (336904), Wheat (9883005), Guargum (639904.2), Non-Basmati Rice (14267160), Buffalo Meat (1807150).
- Some products such as Basmati Rice (250891), Cereal Preparations (274883),export was decline in the year 2014 will be slowly stable in the year 2020, Fresh Vegetables (1438503), Other Cereals (3731635), are in the danger line i-e the exports of this products will shows negative trend in future if appropriate control measure is not taken by the government.
- The other major products shows well defined negative trend such as Other Meat (-864.5088), Processed Meat (-595.2316), Animal Casings (-1960.467), Fruits / Vegetable Seeds (10757.08), Sheep/Goat Meat (7134.011), Fresh Fruits (200752.7), Groundnut (268349.6).
- Some of the agriculture export data is not available for the products Processed Fruits and Juices, Processed Vegetables, Dairy Products, Floriculture, Poultry Products and Misc. Processed Items.

Limitations

- The predicted values may change due to government policies, exports norms, environmental changes, demand etc.
- The formula available in the website, quoted in reference is used to calculate the future trends of agricultural exports.

Conclusion

India's share in the world agricultural exports is very low in many items. Indian Agricultural products have been facing competition from Asian countries. Due to globalization and liberalized system, this competition is likely to increase further and new initiatives in agriculture development shall have to meet the emerging challenges. The performance of agriculture after integration with the world markets is linked to the success of exports.

It is worthwhile to undertake a detailed analysis of the response of Indian agricultural exports to the reforms and domestic policy changes and export growth.

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