

# Indo-Nepal Trade Relations in Agricultural Commodities

Divya Pandey<sup>1\*</sup>, Punit Kumar Agarwal<sup>2</sup>, Santosh Kumar<sup>3</sup>  
and Rakesh Singh<sup>4</sup>

<sup>1</sup>DES&M Division, NDRI, Karnal, Haryana-132001, India.

<sup>2,4</sup>Department of Agricultural Economics, Institute of Agricultural Science, BHU, Varanasi-221005 India.

<sup>3</sup>NCAP, New Delhi-110012, India.

\*Corresponding author: Divya Pandey; [divya2006ag\\_eco@gmail.com](mailto:divya2006ag_eco@gmail.com)

Paper No. 185

Received: 18 June, 2014

Accepted: 21 July, 2014

## Abstract

India and Nepal are the neighboring countries which have strong trade ties among themselves. More than 43% of total agricultural import of Nepal comes from India. The present study was undertaken to examine the present status and composition of agricultural trade between India and Nepal and impact of treaty on trade. The competitiveness and trade intensities were also analyzed. Revealed Symmetric Comparative Advantage (RSCA) was measured to find out the comparative advantage of India and Nepal in global market. It was found that after signing the treaty in 1996 India has emerged as a major trading partner of Nepal. The share of India in Nepal's total export of agricultural commodities went up from 21% in TE 1995 to about 56% in TE 2011. Comparative advantage was calculated for six agricultural commodities (jute, pulses, spices, wheat, tea and fresh vegetables). Over the years, the comparative advantage of jute exports of Nepal decreased and India outsmarted Nepal. Nepal had high comparative advantage than India in pulses export. Compound annual growth rate of pulse production in Nepal was found negative (-3%). Therefore, the comparative advantage in pulse export was because of export of processed pulses. The agro climatic conditions of Nepal favor tea production which was apparent from the compound growth rate of production (13.7%) and increasing positive values of comparative advantage. It was concluded that the treaty has boosted the trade between India and Nepal. Therefore, it was suggested to maintain the treaty in the interest of both countries.

**Keywords:** Trade Intensity Indices, Revealed Symmetric Comparative Advantage (RSCA)

Export of agricultural products has long been serving as an important source of foreign exchange to India's exchequer through substantial amount of export all over the world. The globe trade environment has gone a drastic change after the entry of WTO as an international regulatory body on transnational

trade of goods and services that had its impact on India's exports of agricultural commodities too. Subsequently, the agreement on Sanitary and Phytosanitary (SPS) measures has emerged as a major determinant of the flow of the agricultural products.

India and Nepal are the neighboring countries which have strong trade ties among themselves. More than 43% of total agricultural import of Nepal comes from India. Since independence India and Nepal have maintained their trade relations though encountering few difficulties. India and Nepal initiated their relationship with the 1950 Indo-Nepal Treaty of Peace and Friendship and accompanying letters that defined security relations between the two countries, and an agreement governing both bilateral trade and trade transiting Indian soil. The treaty allowed for the free movement of people and goods between the two nations and a close relationship and collaboration on matters of defense and foreign affairs. These accords cemented a "special relationship" between India and Nepal that granted Nepal preferential economic treatment and provided Nepalese in India the same economic and educational opportunities as Indian citizens. In the mid-1970s, Nepal pressed for substantial amendments in its favor in the trade and transit treaty. In 1978 India agreed to separate trade and transit treaties, satisfying a long-term Nepalese demand. In 1988, when the two treaties were up for renewal, Nepal's refusal to accommodate India's wishes on the transit treaty caused India to call for a single trade and transit treaty. Thereafter, Nepal took a hard-line position that led to a serious crisis in India-Nepal relations. After two extensions, the two treaties expired on March 23, 1989, resulting in a virtual Indian economic blockade of Nepal that lasted until late April 1990. The special security relationship between New Delhi and Kathmandu was reestablished during the June 1990, the two countries signed new, separate trade and transit treaties and other economic agreements designed to accord Nepal additional economic benefits.

In 1996 a Trade Treaty was signed between the two countries. It resulted in phenomenal growth of bilateral trade from ₹ 28.1 billion in 1995-96 to ₹ 204.8 billion in 2008-09. While the Nepalese exports to India increased from ₹ 3.7 billion to ₹ 40.9 billion, the Indian exports to Nepal increased from ₹ 24.4 billion to ₹ 163.9 billion during the period -1995- 2009. In 27 October 2009 Nepal and India signed the revised 2009 India-Nepal Treaty of Trade and Agreement of Cooperation to Control Unauthorized Trade in Kathmandu. The treaty will be valid for 7 years, 2 more years than the earlier treaties. It will be extended automatically every seven years, to be revised again. According to the figures for the Nepalese fiscal year (ending July 2012), bilateral trade with India stood at ₹ 21812.8 crores which accounted for 65.1% of Nepalese total external trade. India and Nepal have a treaty of transit, which confers transit rights through each other's territory through mutually agreed routes and modalities. The Transit Treaty was renewed on 5 January 2013 for 7 years. In October-November 2011 the two countries have also concluded the Bilateral Investment Protection and Promotion Agreement (BIPPA) and the Double Taxation Avoidance Agreement (DTAA) which provide legal framework for enhancing Indian investment into Nepal and further integrating the two economies.

It is evident from the significant increase in the volume of trade between the two countries that the trade relations between the two countries are sturdy and thus the present study was undertaken to find out that up to what extent the treaty is determining the bilateral trade of agricultural commodities. In the production of which agricultural commodities India and Nepal have the comparative advantage.

## Objectives

- (1) To examine the present status and composition of agricultural trade between India and Nepal.
- (2) To find out the trade intensity indices between India and Nepal.
- (3) To study the comparative advantage of India and Nepal in trade of major agricultural commodities.

## Research Methodology

Data on trade was collected for both countries for the period used in the study (1987-2011). Data on import and export of agricultural products was collected from official website of FAO (<http://faostat.fao.org>). Trade intensities were calculated for five years viz. 1987, 1991, 1996, 2002, 2007 and 2011. Six agricultural commodities were selected for revealed comparative advantage analysis.

### *Status and composition of agricultural trade*

Simple percentages were used to find out the per cent share of India's and Nepal's export to Nepal and India respectively out of total agricultural exports of India and Nepal for TE 89, 92, 95, 98, 01, 04, 07 and 11. Same analytical technique was used to find out the per cent share of imports of both the countries for the same TE.

### *Trade intensity Indices*

Several statistical indices can be used to measure trade between the two nations. One such index is the trade intensity index. Intensity Indices capture the extent to which the home country prefers to export/import from its trading partners in comparison to the rest of the world. The trade intensities are of two types export Intensity Index (EII) and Import Intensity Index (III) and they were worked out as follows:

$$EII_i = \frac{x_j / x_{iw}}{M_{jw} / (M_w - M_{iw})}$$

$$III_i = \frac{m_j / m_{iw}}{X_{jw} / (X_w - X_{iw})}$$

where,

EII = Country i's export intensity index

III = Country i's import intensity index

x<sub>ij</sub> = Country i's exports to country j

- $X_{iw}$  = Country i's total exports to the world
- $M_{jw}$  = Country j's total imports from the world
- $M_w$  = World total imports
- $M_{iw}$  = Country i's total imports from the world
- $m_{ij}$  = Country i's imports from country j
- $X_{jw}$  = Country j's total exports to the world
- $X_w$  = World total exports

### Comparative Advantage

Revealed Comparative Advantage' (RCA) is a measure of international trade specialization. It identifies the comparative advantage or disadvantage a country has for a commodity with respect to another country or group of countries. The original index of RCA was formulated by Balassa (1965) and can be written as-

$$B = \frac{(X_{ij} / X_{ik})}{(X_{wj} / X_{wk})}$$

where,

- $X_{ij}$  = Exports of country 'i' of commodity 'j'
- $X_{ik}$  = Exports of country 'i' of a set of commodities 'k'
- $X_{wj}$  = Exports of world 'w' of commodity 'j'
- $X_{wk}$  = Exports of world 'w' of a set of commodities 'k'

While computing RCA for India and Nepal separately 'i' represents India and Nepal accordingly, 'j' refers to any of the selected agricultural commodities 'k' represents total agricultural exports.

When RCA assumes a value greater than unity for a given country in a given commodity, the country is said to have a revealed comparative advantage in that commodity.

However, RCA suffers form problem of asymmetry. The index is made symmetric, following the methodology suggested by Dalum *et al.* (1998). The new index is called 'Revealed Symmetric Comparative Advantage' (RSCA).

$$RSCA = (RCA-1)/(RCA+1)$$

This measure ranges between -1 and +1

## Results and Discussion

### *Status and composition of agricultural trade*

The exports, imports of India and Nepal and their per cent share in the various TE are shown in table 1. As is evident from the table, that after signing the treaty in 1996, India has emerged as a major trading partner of Nepal. Before treaty, the total export of agricultural commodities from Nepal to India was 20485 thousand \$ in TE 95 which increased up to 125172 thousand \$ in TE 2011 registering an increase of more than fifty times compared with the value of export in 1994.. The export from India to Nepal also increased significantly after treaty.. After treaty, India's share in the total import of Nepal increased significantly from 12.72 in TE 95% to 43.82% in TE 2011. Therefore, it is concluded that the treaty has facilitated the bilateral trade significantly.

**Table 1. Composition of export and import of agricultural commodities between India and Nepal**

Triennium Ending	Exports and Imports (values in '000 \$)			
	India		Nepal	
	Export to Nepal	Import from Nepal	Export to India	Import from India
1989	21669 (0.90)	13281 (0.85)	13281 (21.90)	21669 (20.55)
1992	13444 (0.59)	14241 (1.33)	14241 (26.58)	13444 (10.02)
1995	19017 (0.47)	204845 (1.12)	20485 (20.87)	19017 (12.72)
1998	19945 (0.35)	42845 (1.48)	42845 (57.41)	19945 (8.44)
2001	27492 (0.55)	103190 (2.86)	103190 (66.35)	27492 (12.21)
2004	75839 (1.33)	77710 (1.65)	77710 (35.65)	75839 (23.19)
2007	166820 (1.48)	118186 (1.72)	118186 (70.06)	185575 (44.04)
2011	241377 (1.10)	88929 (0.66)	125172 (56.39)	313613 (43.82)

Figures in parentheses show the % of the total exports and imports to the world of the respective country

### *Intensity of Trade*

Export and import intensity indices reflect the ratio of the share of India's trade with Nepal relative to the share of world trade destined. An index of greater than unity is an indication of larger trade flow between India and Nepal and an index of less than unity have been interpreted as smaller trade flow than expected between both nations

It is evident from Table 2 that all export and import intensity indices are greater than one for both countries India and Nepal. Thus, it shows that there are stronger trade ties between India and Nepal. Export intensity of Nepal to India is high but after the signing of trade treaty in 1996 the intensity has decreased and the intensity of export of India has increased after the signing of treaty in 1996.

**Table 2. Intensity of trade between India and Nepal**

	1987	1991	1996	2002	2007	2011
<b>Export Intensity</b>						
India to Nepal	31.083	54.796	10.467	14.574	22.959	14.241
Nepal to India	59.986	92.206	103.207	30.770	84.925	55.993
<b>Import Intensity</b>						
India from Nepal	54.0762	85.621	98.771	28.921	80.225	39.941
Nepal from India	28.440	51.078	10.188	13.975	22.299	19.971

Authors' own estimates using data from faostat.org

Similarly, the intensity of import of Nepal from India has increased after the signing of treaty. The import intensity of India has increased till 1996 and after that it has decreased by 2002 but has again increased in 2007.

### ***Comparative Advantage***

#### ***(1) Jute***

The estimated RSCA indices for jute for India and Nepal have been presented in Figure 1. For the period 1987-2007, India was found to have a comparative advantage in jute exports as is evident from the positive values of RSCA, except 1995-96 and 2006 when RSCA was negative.. This deterioration of RSCA during 1995-96 may be because of lower production as indicated in figure 1.1. However, in 2006 it was due to other factors related to trade. In India the compound annual growth rate of production of jute during the period 1987-2007 was 2.3%. Nepal played a dominant role during 1987-2002 when Nepal was found to be outsmarting India. Since 2002 the situation reversed and India Outsmarted Nepal. However, the production scenario of jute in Neal is different and from 200 the growth in production is significant. The compound annual growth rate of jute during 1987-2007 is only 0.1%.

Therefore, it may be concluded that India is enjoying comparative advantage for jute exports and has outsmarted Nepal. It is imperative for Nepal growers and exporters to stay vigilant and undertake all possible steps to correct it.

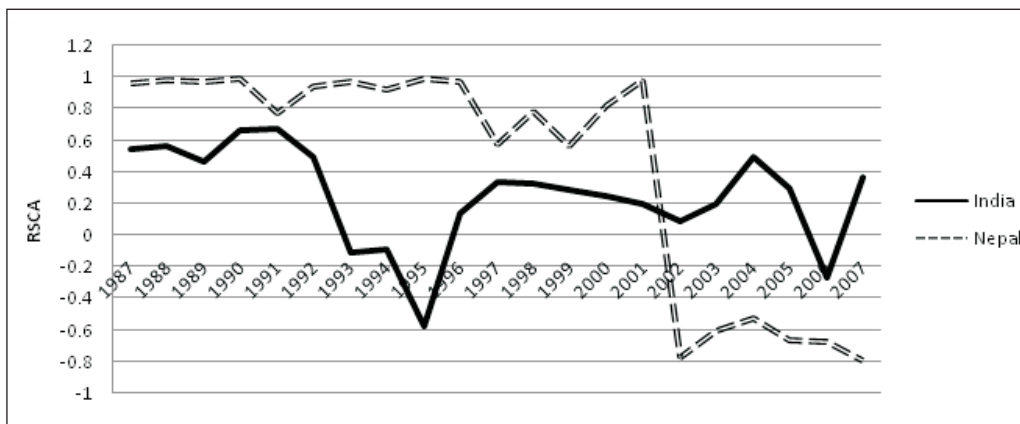


Figure 1. Trends in RSCA estimates of Jute exports from India and Nepal

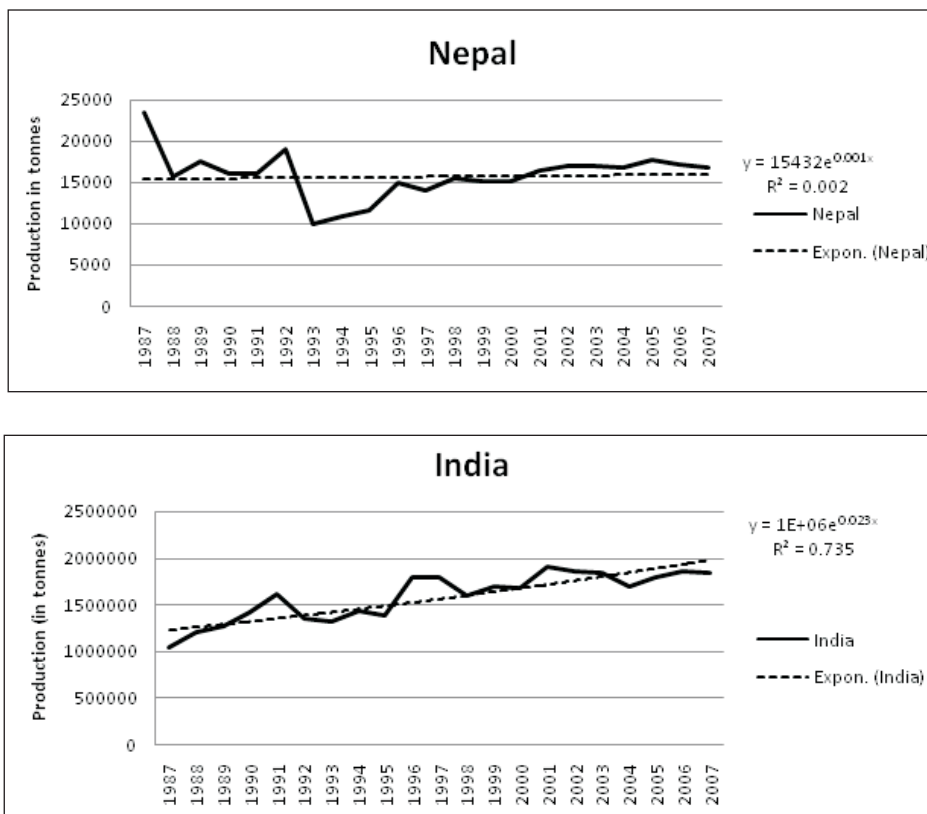
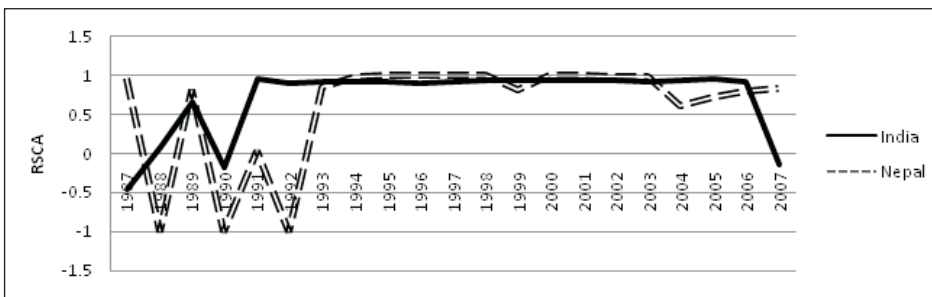


Figure 1.1. Production trends of Jute

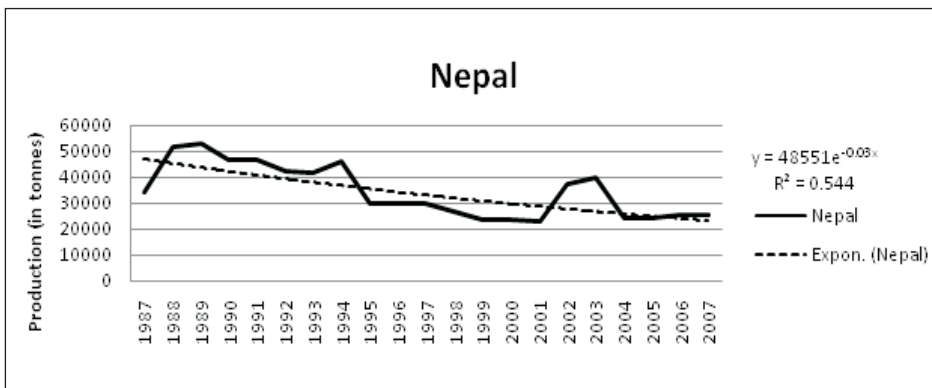
*(2) Pulses*

The comparative advantage of pulse export for India improved during post globalization period. It remained positive and constant during 1991-2006. The annual compound growth rate of India for pulses was found nil. Although emphasis is given on pulse production through various schemes like ISOPOM but the production has not increased significantly. The value again fell in 1990 to -0.18. But in 1991 the comparative advantage again depicted a positive trend and the RSCA value rose to 0.95 and up to 2006 the comparative advantage of India has more or less remained stable, In 2007 the comparative advantage again went down, RSCA value dipped to -0.14.

The comparative advantage of Nepal for pulse exports have been fluctuating over the years, the fluctuations being prominent during the period 1987-1992. From year 1993 the comparative advantage of Nepal has increased and showed a stable trend, the values of RSCA being positive for the period (0.85 in 1993 and 0.84 in 2006). Nepal has had a higher comparative advantage than India in pulse export from 1994-1998, 2000-2003. In 2007 Nepal had high comparative advantage than India in pulses export. Compound annual growth rate of pulse production in Nepal was found negative (-3%). Therefore, the comparative advantage in pulse export was because of export of processed pulses.



**Figure 2. Trends in RSCA estimates of Pulses export from India and Nepal**





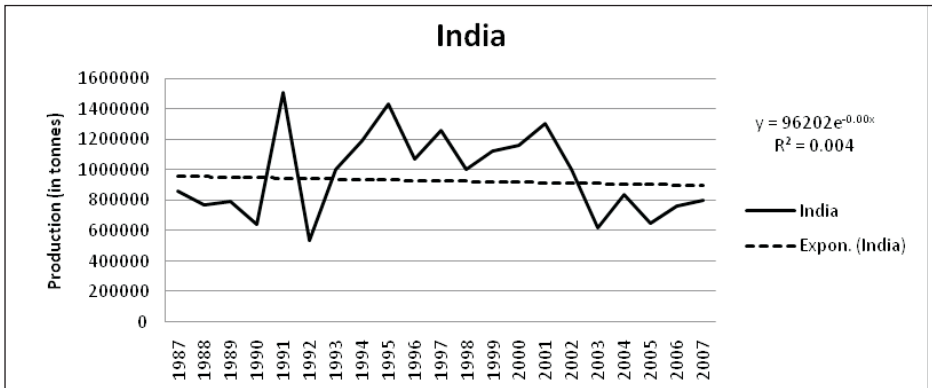


Figure 2.1. Production trend of pulses

(3) Spices

India enjoyed a comparative advantage in its spices export and its advantage has been unwavering over the years (Figure 3). The RSCA value of India for its spice export was 0.81 in the year 1987 and it has almost been the same over the years with RSCA value being 0.79 in the year 2007. However, Nepal’s comparative advantage has been irregular over the years. The value of RSCA of Nepal for spice export was positive in 1987 (0.80) but from 1999-2003 the value became negative and the comparative advantage of Nepal deteriorated. In the year 2004 the comparative advantage again geared up and has shown an increasing trend in recent years. The RSCA value of Nepal was 0.51 in 2007 and in the years to come it can give a competition to Indian spices export.

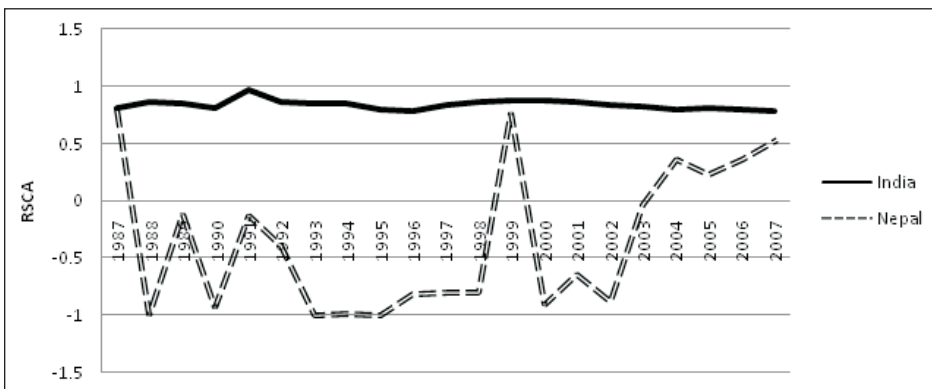
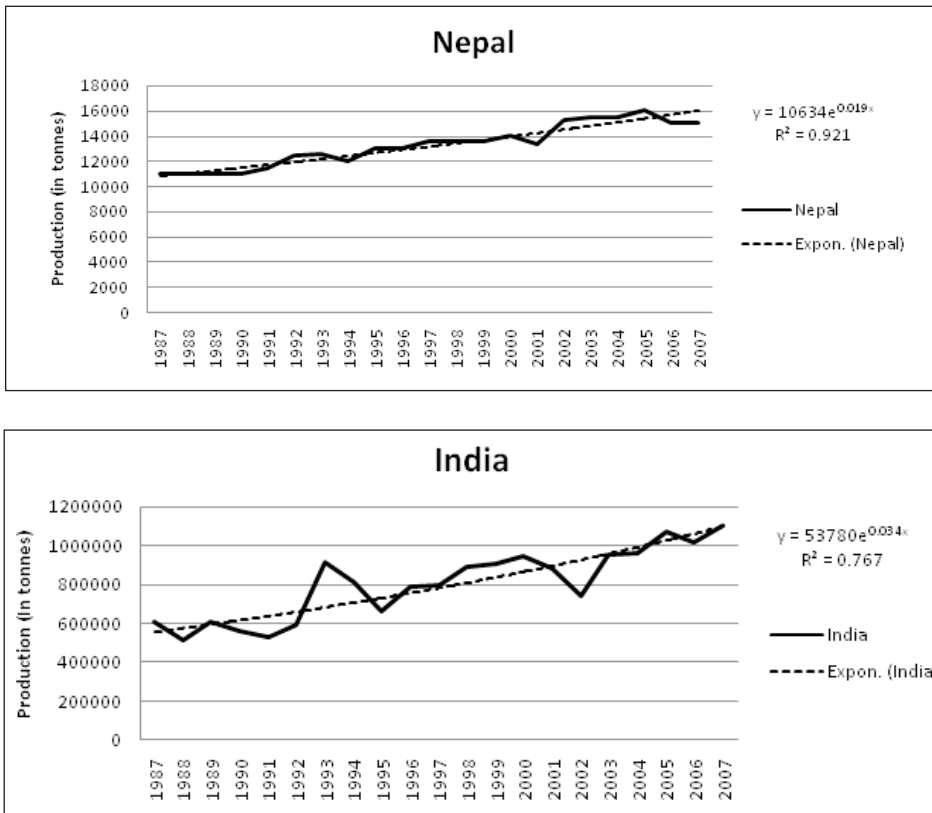


Figure 3. Trends in RSCA estimates of Spices export from India and Nepal



**Figure 3.1. Production trend of spices**

It is evident from figure 3.1 that annual compound growth rate of production of spices in India is 3.4% which is almost double compared with the compound growth rate of spices (1.9%) in Nepal. It is concluded that India has very good position as compared to Nepal in case of spices. This positive RSCA is contributed by better growth in production sector.

*(4) Wheat*

The brief perusal of RSCA estimates in figure 4 reveals the comparative advantage of wheat exports of India and Nepal. Both Nepal and Indian wheat export shows lower comparative advantage. Though Indian wheat exports showed a positive value in RSCA during the period 2001-2004 but then it again dipped to -0.99 in 2007. Nepal had negative values of wheat exports all over the study period.

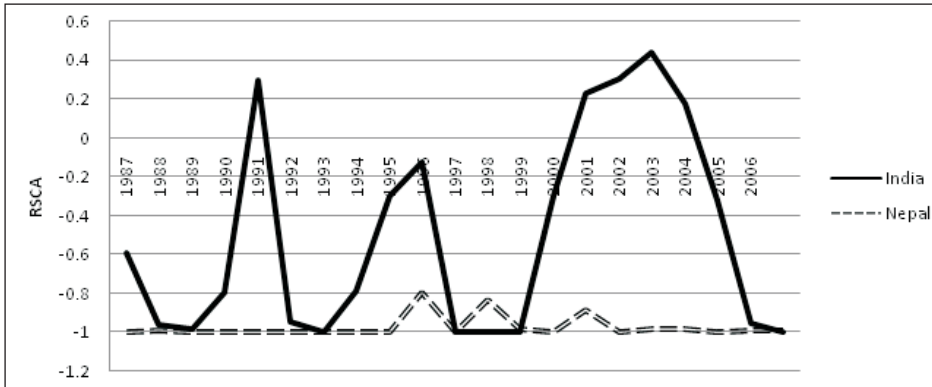


Figure 4. Trends in RSCA of Wheat export of India and Nepal

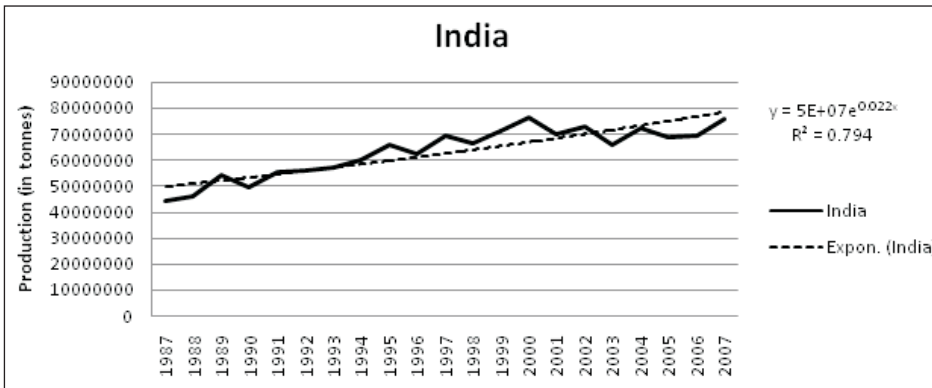
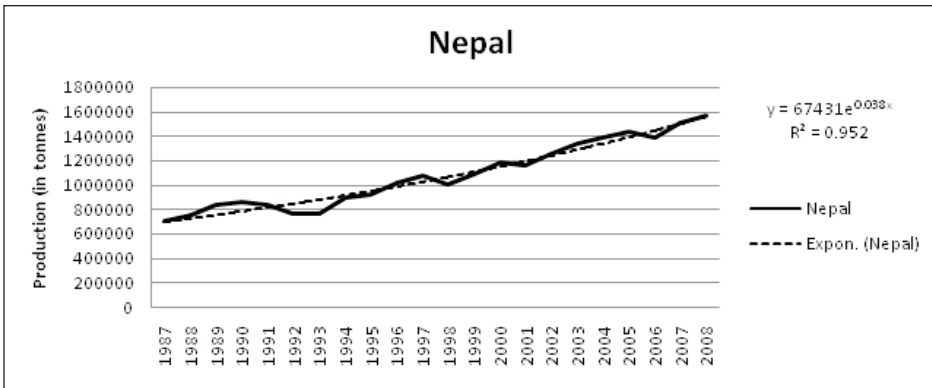


Figure 4.1 Production trend of Wheat

It may be concluded that neither India nor Nepal have comparative advantage in wheat exports except India had comparative advantage during 2001-04. The compound annual growth rate of production of

wheat in India is 2.2% which is very close to the population growth. Wheat being the major food diet the increased production is consumed domestically which is one of the reasons for uncompetitiveness. In Nepal the compound annual growth rate of wheat production is 3.8% but the volume of total production is not sufficient to compete in the global market.

(5) Tea

The RSCA values for India tea exports had positive values except for the year 2003 when its value fell down to -0.05 (Figure 5). Over the years the comparative advantage of Indian tea exports has gone down gradually. The RSCA value of Indian tea export was 0.92 in the year 1987 and in the year 2007 it was 0.71.

The comparative advantage of Nepal tea exports was not good during the initial years till 1994. From 1995 the RSCA value rose to 0.16 and eventually went down to -0.29 in 1998. From 2003 the comparative advantage of Nepal's tea exports have eventually increased and surpassed Indian tea exports. The RSCA value Of Nepal in 2007 was 0.88 which was higher than that of India.

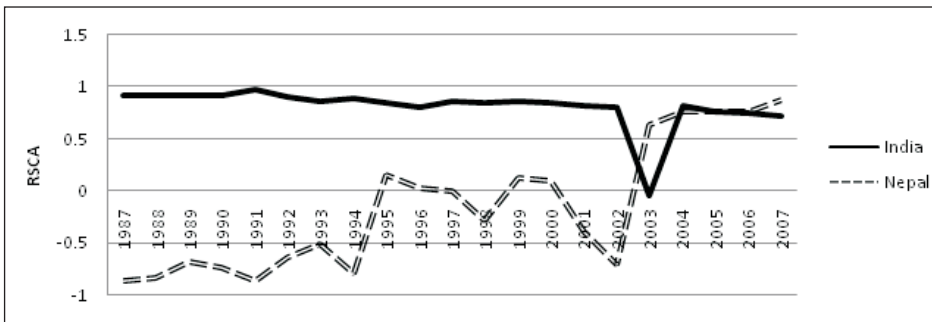
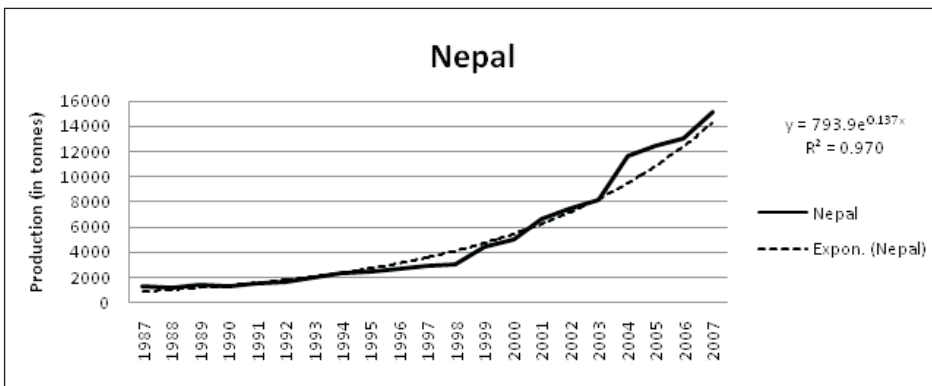


Figure 5 Trends in RSCA of Tea export of India and Nepal



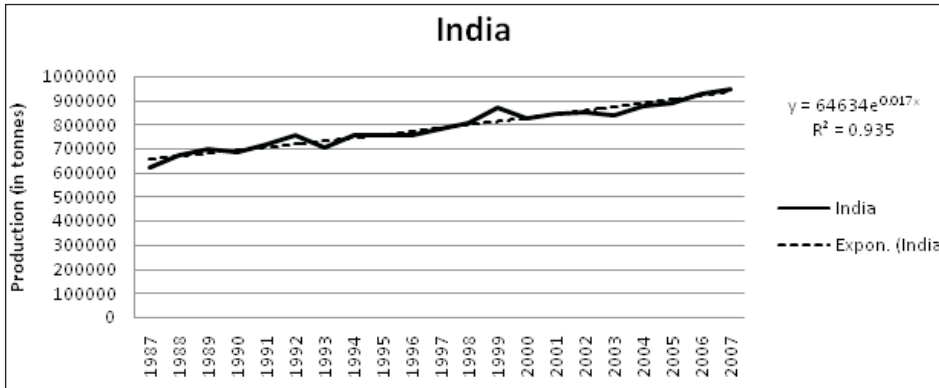


Figure 5.1 Production trend of tea

From figure 5.1 it is apparent that the annual growth rate of Nepal is 13.7% which is far better than the annual growth rate of India (1.7%), and thus it shows its increasing comparative advantage over the years. Since 1998 there has been a steep increase in the tea production of Nepal whereas in India it has remained stable. This shows that agro climatic conditions of Nepal favor tea production and thus it should concentrate on the development and betterment of this crop.

(6) Fresh vegetables

During the period 1987-1996 the comparative advantage if India was detrimental, RSCA value being negative (Figure 6). From the period 1997-2002 the comparative advantage of India geared up. The value of RSCA increased from 0.10 in 1997 to 0.24 in 2002 but it again fell down to -0.13 in 2005. In 2007 the RSCA value was -0.13.

The comparative advantage of Nepal has been fluctuating steeply over the years and it had comparative disadvantage in the vegetables’ export. The values of RSCA were negative for Nepal, in 2007 it being -0.99.

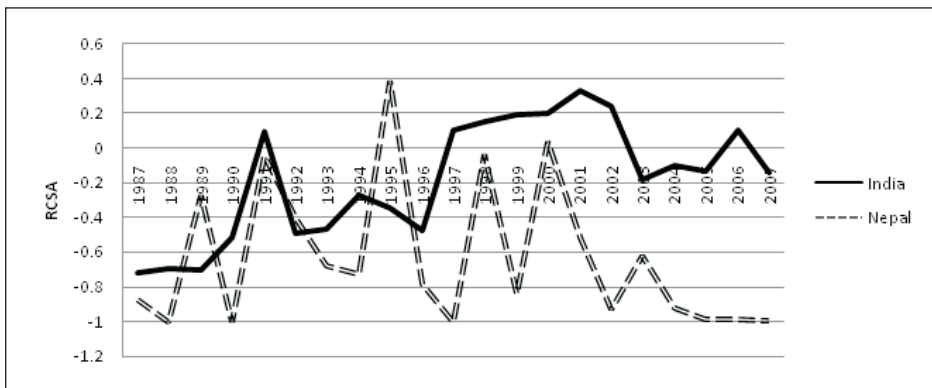
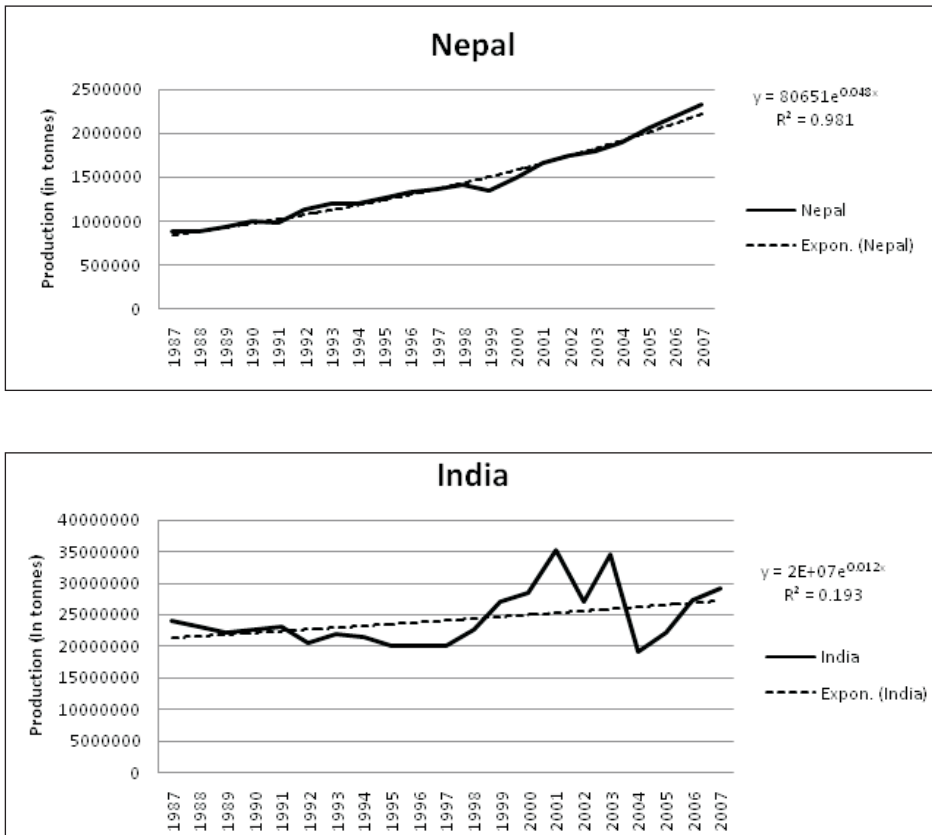


Figure 6. Trends in RSCA of Fresh vegetables export of India and Nepal



**Figure 6.1 Production trends of Fresh vegetables**

As is evident from figure 6.1, the annual growth rate of fresh vegetable production of Nepal is significant (4.8%) but its global competitiveness is trivial and this may be due to high domestic consumption demand. Though India has shown a steady production trend with compound growth rate of 1.2 per cent, its competitiveness has also been wavering and decreasing. Thus, both Nepal and India are uncompetitive in fresh vegetables export in the global market.

**Summary and Conclusion**

India and Nepal are the neighboring countries which have strong trade ties among themselves. The common ethnic, linguistic and cultural identities that overlap India and Nepal have brought both countries together to strengthen the relationship on every front. Indo-Nepal relations in the twenty first century in view of changes in strategic equations and globalization will become more important.

In 1996 a Trade Treaty was signed between the two countries. The performance of agricultural trade was measured before and after the recent treaty which was signed by two nations in 1996. The growth in the export registered an increase of more than fifty times as compared to export in TE 95. The share of India

in Nepal's total export of agricultural commodities went up from 20% to about 56% during the same period. More than 43% of total agricultural import of Nepal comes from India. Comparative advantage was calculated for six agricultural commodities (jute, pulses, spices, wheat, tea and fresh vegetables). Over the years, the comparative advantage of jute exports of Nepal decreased and India outsmarted Nepal. Nepal had high comparative advantage than India in pulses export. India had a very good position as compared to Nepal in case of spices. Neither India nor Nepal had comparative advantage in wheat exports. The agro climatic conditions of Nepal favor tea production which was apparent from the compound growth rate of production (13.7%) and increasing positive values of comparative advantage. Both Nepal and India were uncompetitive in fresh vegetables export in the global market, which was evident from the negative values of revealed symmetric comparative advantage.

The treaty has boosted the trade between India and Nepal. Therefore, it is suggested to maintain the treaty in the interest of both countries. Keeping in view the robust growth and comparative advantage of Nepal in tea sector, the efforts should be made by Nepal to enhance tea production and its trade in global market by satisfying sanitary and phyto sanitary measures (SPS). India should specialize in the production and export of spices and jute.

## References

- AAS Research Team 2013. "The Changing Paradigm of India-Nepal Relations – Prospect and Retrospect". *Association of Asia Scholars*. <http://www.asiascholars.org/asia-news-roundup/india-and-its-neighbours-2013/65-the-changing-paradigm-of-india-nepal-relations-prospect-and-retrospect>.
- Balassa, B. 1965. "Trade Liberalization and Revealed Comparative Advantage". *Manchester School of Economic and Social Studies*. **33**(2):99-124.
- Brown, A.J. 1949. *Applied Economics: Aspects of World Economy in War and Peace*. London: George Allen and Unwin.
- Dalum, B.K. Laursen, K. Villumsen, G. 1998. "Structural Change in OECD Export Specialization Patterns: Despecialization and 'stickiness'". *International Review of Applied Economics*. **12**: 447-467.
- [http://en.wikipedia.org/wiki/1950\\_Indo-Nepal\\_Treaty\\_of\\_Peace\\_and\\_Friendship](http://en.wikipedia.org/wiki/1950_Indo-Nepal_Treaty_of_Peace_and_Friendship).
- [http://en.wikipedia.org/wiki/Economy\\_of\\_Nepal](http://en.wikipedia.org/wiki/Economy_of_Nepal).
- [http://en.wikipedia.org/wiki/India-Nepal\\_relations](http://en.wikipedia.org/wiki/India-Nepal_relations).
- [http://www.nepalmonitor.com/2009/10/nepalindia\\_sign\\_new.html](http://www.nepalmonitor.com/2009/10/nepalindia_sign_new.html).
- Wu, Y. Zhou, Z. 2006. "Changing bilateral trade between China and India". *Journal of Asian Economics*. **17**: 509-518.

