Food and Agricultural Trade in the GCC: An Opportunity for South Asia?

Houcine Boughanmi, Sarath Kodithuwakku and Jeevika Weerahewa

Abstract

The purpose of the present study is to assess the export potential of food and agricultural items from South Asian Association for Regional Cooperation (SAARC) countries to the Gulf Cooperation Council (GCC) countries. We investigated the pattern of trade between the two regions using trade data for HS 1-24 categories and also estimated a gravity equation to determine the factors affecting bi-lateral trade relationships. We extracted UN ComTrade data on exports from the Trademap and obtained data on gravity variables from the ARTNeT for 2012. WITS database was used to retrieve data in trade intensities. The results of the descriptive analysis show that meat & edible poultry meat offal, cereals, sugar cane and beet sugar and processed tobacco products are the major agricultural products imported by GCC countries from the world and Saudi Arabia and UAE account for about 80% of the total agricultural imports by GCC. Only India and Pakistan are among the top 5 exporters of any of the top 10 agricultural imports of GCC. At HS 2 digits level, SAARC supplied more than 30% of the import requirement of product groups categorized under the HS 3,9,14 and 10 in 2012. India accounts for 80% of the total SAARC exports to GCC. It occupies 62%, 55% and 27.94 of market shares of total rice, meat of bovine animals and sugar cane and beet sugar imports of GCC respectively whereas Pakistan occupies 24% of total rice imports of GCC. Cereals account for about 40% of the total agricultural exports to GCC by SAARC countries. GCC countries depend on few suppliers for their major food and agricultural imports while SAARC countries have a substantial concentration over top three product groups exported to GCC. Analysis of indicative trade potential and trade intensity index revealed that India is in an advantageous position to achieve more gains from increasing GCC-SAARC food and agricultural trade. The results of the estimation of the gravity equation indicate that the conventional trade cost variables have significant effects on total and food and agricultural trade. There is a tendency for more trade between SAARC-GCC countries. Among the major SAARC exporting countries, Sri Lanka and India have high potential for increasing food and agricultural exports to GCC countries.

Key words; Gravity model, Agricultural Trade, GCC and South Asia

Food and Agricultural Trade in the GCC: An Opportunity for South Asia?

Introduction

Bilateral trade between the countries of Gulf Cooperation Council (GCC) and the countries of South Asian Association for Regional Cooperation (SAARC) has a long history dated back to the Silk Road. Although characterized by periodical leaps and bounds, trade between GCC and SAARC remains brisk. In the modern context the prominent trade relationship between these two regions arise due to the vital position of GCC as the leading oil-based energy exporter and due to the ever increasing demand for energy from SAARC region contributed by the emerging economies such as India. Apart from this trade linkage another potential avenue for inter regional trade between GCC and SAARC countries are available due to the dependence of GCC countries on food and agricultural imports. The inherent climatic conditions of the GCC countries restrain the agricultural production in the region leading to the reliance on food and agricultural imports.

The GCC is a political and economic union of Arab states namely Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the Unites Arab Emirates. The GCC was formed in 1981 in order to strengthen the members' economic, social and political ties by harmonizing regulations in various fields including economy, finance, trade and customs. This region accounts for 47 million population and extends through 2410.7 thousand square kilometers. SAARC consists of eight South Asian member states namely Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. South Asia, with the greatest number of poor rural people is one of the regions that are worst affected by poverty and hunger whereas 70% of the population live in rural areas. In South Asia, agriculture sector employs about 60% of the labor force while contributing to 22% of the regional GDP (WDR, 2008). With this background agriculture sector has an integral role in the development process of the region.

While the SAARC region has a substantial importance for the domestic agriculture, GCC has its interest lies on stabilized food supply. The gap between the agricultural production of GCC countries and the consumption has gone up substantially in recent years. The GCC nations are shifting their agricultural policies away from the nationalistic goal of food self-sufficiency towards more flexible and broad based efforts including the reliance on imports to ensure food security[1]. The relative positions of the two regions i.e. GCC as a net food importer and SAARC as an agricultural and food producer open an avenue for vibrant trade relationship. Furthermore, having a large portion of the population depends on agriculture-based livelihoods; SAARC region can achieve encouraging welfare gains through enhanced

[1] For example Saudi Arabia, which has become self-sufficent in wheat and a world exporter, decided in 2008 to gradually phase out its wheat production and rely totally on wheat imports by the end of 2016 in order to conserve its non-renewable water resources.

foreign exchange earnings while GCC can achieve benefits due to stabilization of food supplies. Given the above backdrop, the overall purpose of the current study is to investigate the potential export opportunities that exist for the countries in SAARC region to cater to growing demand for food and agricultural items in the GCC countries. The present study will specifically examine:

(i) The changing pattern of import sources of food and agricultural items of the GCC countries paying special attention on South Asian countries over the past decade using concentration ratios and trade intensity index
(ii) The changing pattern of export destinations of food and agricultural items of the South Asian countries paying special attention on GCC countries over the past decade using concentration ratios and trade intensity
(iii) The determinants of food and agricultural trade between the two regions using a gravity model
(iv) The existing trade potential across various country pairs in the two regions using a simulation exercise coupled with gravity estimates

The paper is organized as follows. The next section will present a brief review of previous studies on emerging inter regional trade between GCC and SAARC regions. Section 3 is devoted to the methodology in which concepts, measures, data and data sources are explained. Section 4 will present and discuss the results. Section 5 will conclude and provide some policy implications.

Emerging Inter Regional Trade between GCC and SAARC: Evidence from Previous Studies

Asia and GCC have emerged as important exporters in the world trade. Asia has successfully positioned itself as the centre for the manufacture of goods for export and the GCC remains the top region for energy exports. According to Al-Tamimi (2013), GCC-Asia trade relations have grown substantially over the past few years and Asia accounts for nearly 60 per cent of GCC's total foreign trade. GCC countries see Asia as one of the most important strategic market for its energy exports and Asia would account for up to 90 per cent of oil exports from the Middle East in the future. Further emerging economies of China and India have opened avenues for enhanced trade relations between GCC and Asia. In a tectonic shift, by 2030, Asia will have surpassed North America and Europe combined in terms of global power, based upon GDP, population size, military spending, and technological investment (National Intelligence Council, 2012). Prospectus of potential trade gains for SAARC is also quite scintillating as India the prospective third economic giant by 2030 and the other member countries have achieved a satisfactory economic growth and trade liberalization and as the region's role as a food and agricultural producer.

GCC-SAARC economic relations are characterized with new strategic geo-economic interactions involving energy and petro-dollar investment flowing east from the Gulf and

cheap consumer goods, knowledge driven technologies and migrant labor, flowing west from South Asia (Pradhan, 2010). Between 2004 and 2008 trade volumes between the GCC and SAARC have increased more than six-fold. Much of the incremental demand for GCC exports going forward - not just for oil and gas but also petrochemicals, base metals and services such as finance and tourism - are coming from SAARC and the Asia region as a whole Pradhan (2010). Pradhan (2006) noted an increasing trend of bilateral trade between India and GCC countries. While the overall trade relations between GCC and SAARC are prospering in recent time, researchers have also paid an insight on food and agricultural trade in recent studies.

The increasing dependence of GCC on food and agricultural exports is vastly shown in the literature (Pradhan 2010, Woertz, 2010 and Intini *et al*. 2012). The "food gap" in the GCC (in recent years has gone up substantially due to growing populations (Pradhan, 2010). According to Intini *et al.* (2012) food imports constitute 60-90% of food consumption in the GCC and demographic growth is expected to reach 53.4 million by 2020 making at least one fifth of the people in Bahrain, Oman, Qatar and Saudi Arabia food insecure. Another catalyst for enhanced GCC-SAARC trade relations in food and agriculture trade is that around 6.5 million South Asians live in the GCC, making them the single largest expatriate community (17% of the total resident population of GCC). According to Karayil (2007), those immigrants have a significant effect on the trade relations between India and GCC. The growth in food demand by the GCC countries, along with the structural changes in the food consumption patterns due to migrant population is a potential opportunity for the SAARC countries, which are rich in agricultural resources. Currently countries like India, Pakistan, Bangladesh, and Sri Lanka are the main suppliers of rice, wheat, sugar, and live animals to the GCC region (Pradhan 2010). While there are substantial evidences for emerging food and agricultural trade between GCC and SAARC in trade literature, the determinants of trade flows between these two regions are also subjected to researchers' scrutiny.

Various studies that found their theoretical base on the gravity model in international trade have paid an insight to the determinants of the trade flows between GCC countries and their trading partners (Pradhan, 2006 and Insel and Tekce, 2009). Insel and Tekce (2009) found that there were significant aberrations of the conventional signs of the coefficient of the trade determinants like distance. This is due to the characteristics of the main commodities of trade and the geographical situation of the GCC countries. Authors conclude that the composition of trade flows for each GCC countries between their partners have changed over time and they have developed new economic relations after 2001. Pradhan, (2006) found that the magnitude of India's export potential is highest with Oman, followed by Qatar, Bahrain, and Kuwait and the used model specifications consistently showed no export potential with UAE, and Saudi Arabia. Moreover, when the regional trading dummy (RTA) was replaced dummy with the value of one, i.e., presuming there is an RTA; the results showed sharp increase in the magnitude of India's export potential to Oman, Qatar, Bahrain and Kuwait implying the significant effects of bilateral trade agreements for enhanced trade gains.

In tune with the existing literature in the area of migration–trade link, Karayil (2007) also illustrates the strong immigrant preference effect for their home-country products in a gravity analysis within the context of India and GCC trade. Hence, the expatriate population of South Asia in GCC countries plays a vital role in the demand for food products by GCC. Boughanmi (2008) who assessed the trade potential of Gulf Arab countries using the same model concludes that the level of the GCC intra-trade has not changed significantly during 1993-2004 and had probably reached its full potential during the first decade of the GCC creation. Trade with the Mashreq countries were more than expected, while it is less than expected with the Maghreb countries despite the implementation of the GAFTA a decade ago. The GCC trade with the European Union and the US was found to be quite intensive although no formal trade arrangement existed between the GCC and both blocs for the time-period used in the analysis. He suggested that the newly signed trade arrangements are promising in enhancing new opportunities of trade in the GCC region.

Behind the rosy story of a prospective greater economic integration between GCC and SAARC some constraints also lie. The trade profile is not so diversified and also heavily concentrated on the consumption patterns and consequent imports of goods catering to the South Asian expatriates living in the GCC and GCC's energy exports (oil and gas) to the subcontinent (Pradhan,2010 and Karayil, 2007). Furthermore, the widely speculated trade relations between the regions can be hampered by structural barriers too. GCC countries face formidable barriers, in terms of higher duties on their exports to South Asia in general and India in particular while exports from South Asia face a nominal duty of 5 percent and in many cases a lower rate ranging from 1.5 percent to 2 percent in the GCC (Pradhan, 2010).

Methods of Analysis

The changing pattern of import sources of food and agricultural products of the GCC countries and the changing pattern of export destinations of food and agricultural products of the SAARC countries over the recent period (2008-2012) was analyzed using market share, concentration ratio and trade intensity index. In order to analyse the potential and the determinants of food and agricultural trade between GCC and SAARC Indicative Trade Potential (ITP) indicator and gravity model in international trade analysis were used respectively.

Concentration ratio

Export or import concentration ratios reflect the degree to which a country’s exports/imports are concentrated on a small number of products or a small number of trading partners. In the theoretical realm the imports/export concentration concept was evolved from the seminal contributions including the Prebisch-Singer hypothesis (Prebish, 1950, Singer, 1950) and the arguments advocated by Rosenstein-Rodan (1943) who viewed economic diversification rather than specialization as a determinant of economic development. The reason behind the

preference and the advocating for market diversification is the perceived benefits of the diversification for a country. Minimizing the risk of market instability is a major reason for the benefits from the diversification (Samen, 2010a). Market diversification could therefore help to stabilize export earnings in the longer run (Ghosh and Ostry, 1994; Bleaney and Greenaway, 2001). Though the export side is more focused in the trade literature, it is important to notice that in the import side also there is an importance to this concept. For an instance, in the current study the concept of market diversification in imports side can be used to test whether the trade pattern (imports) of GCC countries has changed recently in such a way that these countries are depending on few countries on food and agricultural imports. If the concentration on few importers is high then these countries are prone for market instabilities and such a threat will pose greater economic, social and political implications. The current study focuses on these dual aspects of market concentration in the context of GCC and SAARC trade relations.

In the empirical realm, market concentration can be analysed using indicators such as Herfindahl index and concentration ratios (Reis and Farole, 2012 and World Trade Organization, 2012). The current study used concentration ratios for the analysis of the trade patterns of GCC and SAARC i.e. imports of food and agricultural products of GCC from the world and SAARC region and the exports of food and agricultural products by SAARC to the GCC. The top 3, 5, and 10 products and markets as a percentage of total exports/imports can be presented to depict the concentration among products and markets respectively (Reis and Farole, 2012). The higher the magnitude of the ratio the higher the dependence of an exporting country/importing country on few trade partners is.

Trade Intensity Index

The trade intensity statistic is the ratio of two export shares. The numerator is the share of the destination of interest in the exports of the region under study. The denominator is the share of the destination of interest in the exports of the world as a whole. Trade intensity index takes a value between 0 and $+\infty$. Values greater than 1 indicate an 'intense' trade relationship. Trade intensity index provides the information on whether or not a region exports more to a given destination than the world does on average. It is interpreted in much the same way as an export share. It does not suffer from any 'size' bias, so we can compare the statistic across regions, and over time when exports are growing rapidly. The measure has been used since the 1940s in numerous analyses of the direction and level of international trade (Brown, 1947, Kojima, 1964, Drysdale and Garnaut, 1982 Anderson, 1983 and Yeats, 1998). In this study both of the trade intensity i.e. for overall trade and agricultural trade were used to investigate the prospect for the SAARC countries in increasing trade relations with GCC.

Indicative Trade Potential (ITP)

The purpose behind the indicator of Indicative Trade Potential is the identification of the products for which there is the highest trade complementarity between the exports of a country and the imports of the target country. The trade potential indicator assumes that the importing country could in principle absorb perfectly all imports from the exporter. With such a strong underlying substitution assumption, the resulting figures are only indicative but can nevertheless be used in order to rank the products (Helmers and Pasteels, 2006). In the current study, the ITP was used to identify the food and agricultural commodities with highest export potential for SAARC countries to GCC countries.

Gravity Model

The theoretical gravity model with exporter and importer fixed effects (Anderson and Van Wincoop, 2003) was used for the analysis of the determinants of food and agricultural trade between the two regions i.e. GCC and SAARC. Tinbergen (1962), who was the founding father of the Gravity Model of International Trade, proposed this particular econometric model and it was formulated along the lines of Newtonian universal gravitation, where trade flow is directly related to the economic size of the countries involved, and inversely related to the distance between them (De Benedictis and Taglioni, 2001). This intuitive gravity model was subjected to theoretical scrutiny and many revisions were done to get rid of the possible biases. The empirical model used in this study is based on the fixed effects model proposed by Anderson and Van Wincoop (2003)

In this study two models were estimated as for total trade and food and agricultural trade separately. The gravity model based on Anderson and van Wincoop (2003) is shown by the following equation:

$$lnexports_{ij} = \beta_0 + \beta_1 lndist_{ij} + \beta_2 comlang\_official_{ij} + \beta_3 colonylink_{ij} + \beta_4 sa\_intra_{ij} + \beta_5 eastasia\_intra_{ij} + \beta_6 gcc\_intra_{ij} + \beta_4 eu\_intra_{ij} + \beta_4 sa\_gcc\_pair_{ij} + F_i + F_j + \varepsilon_{ij}$$

In the above specified model, subscript *i* denotes the South Asian exporting country and *j* denotes the importing country. In the model $exports_{jt}$ is the value of exports from South Asian country *i* to its trading partner *j*. In model 1 value of total exports and in model 2 value of food and agricultural exports were used. $DIST_{ij}$, $comlang\_official_{ij}$ and $colonylink_{ij}$ are the trade cost variables indicating geographical distance, the common official language dummy, the dummy for colonial link in the past respectively. Fi and F_j represent exporter and importer fixed effects respectively. Intra regional dummies were also incorporated to capture the intra regional effect on trade. $\beta 0$ is a constant term that accounts for the effects of unmeasured trade distortions on exports and the error term ε_{ijt} takes care of all the possible measurement errors; the error term is assumed to be independently and identically distributed. In order to preserve degrees of freedom resulting from arithmetic errors the zero export values were converted to very small positive numbers prior to log transformation.

Using the coefficients estimated in the gravity model for food and agricultural trade, major SAARC countries' export potentials with GCC countries were estimated. The ratio of the export potential (P) as predicted by the model and actual exports (A) (P/A) was then used to analyze the export potential of South Asian countries with GCC countries in food and agricultural exports using the actual exports in the year 2012. If the value of P/A exceeds 1, then there is potential for expansion of exports with the respective country.

Data and Data Sources

The Harmonized Commodity Description and Coding System is a multipurpose international nomenclature for the classification of products developed by the World Customs Organization. It is generally referred to as Harmonized System (HS). The HS arranged in 99 chapters, in which first HS 1-24 are agriculture products including animal and animal products, vegetable products and foodstuffs. At the international level, the Harmonized System (HS) for classifying goods is disaggregated at different levels such as 2-digit, 4-digit and 6-digit levels. HS chapters 1-24 were obtained from the TradeMap of International Trade Centre from 2007 to 2012. For the gravity analysis data agricultural trade flows between country pairs were also retrieved from ITC TradeMap. Trade cost variables were obtained from CEPII database. TradeMap gives many trade indicators including ITP at HS 6-digits level. However, for the purpose of brevity ITP was calculated at HS 4-digits after retrieving data from TradeMap. World Integrated Trade Solution (WITS) provides information trade intensity. Wherever necessary, data for trade intensity index was retrieved from this source.

Results and Discussion

Trends and patterns of GCC-SAARC food and agricultural trade flow

Being the largest countries that have the highest population in GCC, Saudi Arabia and UAE are the major importers of agricultural products accounting for about 80 per cent of the total agricultural imports of the region. All the other five nations account for about 20 per cent of the total food and agricultural imports by GCC indicating the obvious dominance of Saudi Arabia and UAE in food and agricultural imports by GCC. Similarly India dominates the food and agricultural exports by SAARC to GCC having the major share which was more than 70 percent between 2007 and 2012 and the share of India has gradually increased up to more than 80 per cent in 2012. From 2007 to 2012, India has consolidated the dominant position while Sri Lanka, Pakistan and Nepal have lost a significant share of the SAARC food and agricultural Exports to GCC (See Appendix Table A1 and Figure A1).

The structure of the food and agricultural imports by GCC is highly diversified and not concentrated on fewer goods as the import share is distributed among many of the

commodities. This may be due to the fact that GCC is barely producing agricultural products domestically and the region is more depending on agricultural imports. Meat & edible offal of poultry meat (HS 0207) cereals such as rice (HS 1006) and barley (HS 1003), cane or beet sugar (HS 1701) and processed tobacco products such as cigars, cheroots, cigarillos & cigarettes (HS 2402) are the major agricultural product groups that contributed to the total imports by major shares. It is noteworthy that more than 50 per cent of the imports are contributed by many of other commodities indicating a lack of concentration over product groups in food and agricultural exports by GCC countries (See Appendix Table A2).

Although the structure of the food and agricultural imports by GCC is more diversified the import sources are few and GCC imports are concentrated on few exporting countries. Table 1 shows that GCC imports are concentrated on few exporting countries for top ten product groups in food and agricultural exports. Apart from barley (HS 1003), cigars products (HS 2402), food preparations (HS 2106), wheat and meslin (HS 1001) and milk and cream products (HS 4020) for all the other top ten food and agricultural product groups GCC countries heavily depend on top three exporting countries where CR3 exceeds 89% per cent.

Table 1 shows that in few commodities SAARC countries are among the top three exporters for GCC. India and Pakistan are the first and second top exporters of rice (HS 1006) to GCC while India is among the top three exporters of meat of bovine animals (HS 2020) and sugar products (HS 1701) to GCC. However, in all the other seven-product groups of the top ten product groups imported by GCC none of the SAARC countries is listed among the top three exporters. Other important characteristic is that U.A.E, Saudi Arabia and Bahrain which are GCC member countries are among the top three exporters of sugar products (HS 1701), milk and cream (HS 4020) , food preparations (HS 2106) and palm oil (HS 1511). This indicates the importance of U.A.E, Saudi Arabia and Bahrain as the significant re exporters in GCC region given the restricted potential for the domestic production of above commodities for those countries.

Table 1: CR3 over the import sources of top 10 food and agricultural imports by GCC at HS 4-digits level -2012

HS code	Commodity	Top 3 Exporters to GCC	CR3 of GCC over import markets
2070	Meat & edible offal of poultry meat	Brazil, France and United States of America	94.04
1003	Barley	Ukraine, Australia and Canada	66.21
1006	Rice	India, Pakistan and Thailand	94.69
1701	Cane or beet sugar and chemically pure sucrose, in solid form	Brazil, India and U.A.E	90.16
2402	Cigars, cheroots, cigarillos & cigarettes	Germany, Switzerland and Turkey	71.10

4020	Milk and cream, concentrated or sweetened	Netherlands, New Zealand and Saudi Arabia	56.75
1001	Wheat and meslin	Australia, Germany and Canada	50.83
2106	Food preparations	Ireland, United States of America and Bahrain	57.41
1511	Palm oil & its fraction	Malaysia, U.A.E and Indonesia	95.10
2020	Meat of bovine animals, frozen	India, Brazil and Australia	89.87

Trade data shows that cereals (HS 02) dominate the food and agricultural exports by SAARC to GCC having a share exceeding 40 per cent between 2007 and 2012. Table A3 in the appendix shows the top 10 commodities exported by SAARC to GCC from 2010 to 2012 at HS 4 digits level. Table 2 shows the variability of the CR3 and CR5 over the period of 2010-2012 for the food and agricultural exports to GCC countries by SAARC at HS 4 digits level. Accordingly, CR3 has decreased from 61 per cent to 51 per cent from 2010 to 2012. Rice (HS 1006), Meat and Bovine animals (HS 0202), Cane or beet sugar (HS 1701) and Tea (HS 0902) are top ranked product groups exported by SAARC to GCC countries in 2010 to 2012.

Table 2: CR3 and top five food and agricultural exports to GCC by SAARC: 2010-2012

Year	CR3	CR5	Top five product groups at HS 4
2010	61.65	67.63	Rice (HS 1006), Meat of bovine animals ; frozen (HS 0202),Tea (HS 0902),Brazil nuts, cashew nuts & coconuts (HS 0801), Dates, figs, pineapples, mangoes, avocadoes, guavas (HS 0804) and Meat of sheep or goats - fresh, chilled or frozen (HS 0204)
2011	53.93	62.45	Rice (HS 1006), Meat of bovine animals ; frozen (HS 0202),Cane or beet sugar and chemically pure sucrose ; in solid form (HS 1701), Tea (HS 0902) and Brazil nuts, cashew nuts & coconuts (HS 0801)
2012	51.17	57.96	Rice (HS 1006), Meat of bovine animals ; frozen (HS 0202),Cane or beet sugar and chemically pure sucrose ; in solid form (HS 1701), Wheat and meslin (HS 1001) and Tea (HS 0902)

When the trade dependence of SAARC on GCC is considered GCC is a major cereal importer for SAARC nations. Though the share of exported cereals to GCC has being reduced over time still about 20 per cent of the total cereal exports of SAARC have being exported to GCC. It is notable that in most of the commodities the importance of GCC as an importer from SAARC has being reduced gradually (Table 3). However, in the product group of sugars and sugar confectionary the trade dependence of SAARC on GCC has increased over time. In 2009, it was just 0.42 percent of total exports of this particular product group exported by SAARC went to GCC but in 2012 it was 3.54 per cent. With these

results, it can be concluded that the overall trade pattern of SAARC with GCC has undergone a significant change recently diminishing the relative importance of the GCC region to SAARC as an importer of food and agricultural products except in the case of sugars and sugar confectionary.

Table 3: Top ten food and agricultural product groups exported by SAARC to GCC as a percentage of total agricultural exports by SAARC

Product code HS 2-digits level	**Product label**	**Agricultural exports of SAARC to GCC as a percentage of total food and agricultural exports of SAARC**			
		2009	**2010**	**2011**	**2012**
10	Cereals	43.67	43.62	33.27	20.99
02	Meat and edible meat offal	7.1	9.71	7.31	6.37
09	Coffee, tea, mate and spices	8.15	9.3	6.96	4.16
08	Edible fruit, nuts, peel of citrus fruit, melons	7.75	7.59	5.73	4.06
17	Sugars and sugar confectionery	0.42	1.22	3.60	3.54
03	Fish, crustaceans, molluscs, aquatic invertebrates nes	2.53	3.09	2.59	2.38
07	Edible vegetables and certain roots and tubers	3.58	4.11	2.73	1.88
23	Residues, wastes of food industry, animal fodder	2.13	2.08	1.79	1.41
24	Tobacco and manufactured tobacco substitutes	1.51	1.63	1.22	1.11
22	Beverages, spirits and vinegar	1.13	1.18	0.94	0.98

Although the dependence on GCC markets for SAARC food and agricultural exports is diminishing with time the dependence of GCC on SAARC food and agricultural exports is being increased gradually. The table 4 shows that the reliance on SAARC food and agricultural exports has being increased between 2007 and 2012 in almost all the product groups. Similarly, the overall dependence of GCC on food and agricultural exports from SAARC has been increased from 13 per cent to 15 per cent from 2007 to 2012. The only product group in which the reliance is reduced is edible vegetables and certain roots and tubers.

Table 4: Share of imports from SAARC countries in the total food and agricultural imports by GCC

Product code	**Product label**	**Share (%)**				
		2007	**2008**	**2010**	**2011**	**2012**
09	Coffee, tea, mate and spices	28.97	28.71	30.86	32.92	40.14
03	Fish, crustaceans, molluscs, aquatic invertebrates nes	27.79	27.11	20.60	25.38	37.52

14	Vegetable plaiting materials, vegetable products nes	22.21	32.42	22.34	30.71	33.70
10	Cereals	31.03	40.72	40.02	38.22	32.29
11	Milling products, malt, starches, inulin, wheat gluten	9.78	16.77	7.90	32.19	26.22
23	Residues, wastes of food industry, animal fodder	7.58	12.13	17.17	22.96	24.00
08	Edible fruit, nuts, peel of citrus fruit, melons	13.33	13.55	13.89	15.03	18.16
07	Edible vegetables and certain roots and tubers	20.29	16.74	13.68	13.40	17.24
17	Sugars and sugar confectionery	7.00	24.64	2.69	11.46	16.80
13	Lac, gums, resins, vegetable saps and extracts nes	11.55	12.51	9.16	15.12	15.59
02	Meat and edible meat offal	14.26	13.12	14.74	13.18	14.91
	Share of total food and agricultural imports of GCC from SAARC	**12.61**	**17.62**	**13.70**	**14.03**	**14.77**

With an opened avenue for SAARC countries to increase food and agricultural trade with GCC countries it is important to know the particular trade performance of the member countries of SAARC with GCC as it is precursor to predict the potential of those countries to exploit the opportunities for trade. Similarly, it is important to know with what kind of products a strong trade potential lies and what is the current situation of trade of those products with higher potential. The following sections are devoted for these purposes.

Although as a region SAARC has increased its market share in food and agricultural imports of GCC, this success story is not relevant for all the member countries of SAARC and for all the product groups they exported. Table 5 shows the recent trend of the market share of agriculture as a whole and of the top 5 exported product groups by India, Pakistan and Sri Lanka who are the major SAARC exporters to GCC. The notable gainer in SAARC-GCC food and agricultural trade is India recently as India has been able to increase market share in the imports of GCC of food and agricultural products from 9.12 per cent in 2010 to 12.06 per cent in 2012. India has consolidated its dominant position not only in agricultural exports as a whole but also in all the top 5 product groups exported.

Table 5: Top 5 food and agricultural product groups exported by each major SAARC exporting country to GCC

HS code	**Top 5 product groups exported by each country**	**Market share of each country of GCC's total food and agricultural imports from world**		
		2010	**2011**	**2012**
	INDIA			
	Agriculture	**9.12**	**10.48**	**12.06**
1006	Rice	53.36	65.07	68.43
0202	Meat of bovine animals, frozen	52.85	55.99	57.40
1701	Cane or beet sugar and chemically pure sucrose, in solid form	2.24	12.55	17.65

1001	Wheat and meslin	0.00	2.00	12.58
0801	Brazil nuts, cashew nuts & coconuts	76.64	72.91	86.41
	PAKISTAN			
	Agriculture	**2.73**	**2.66**	**2.38**
1006	Rice	23.90	20.00	19.91
0202	Meat of bovine animals, fresh or chilled	24.29	23.04	27.50
0204	Meat of sheep or goats - fresh, chilled or frozen	6.88	6.92	9.27
0804	Dates, figs, ,pineapples, mangoes, avocadoes, guavas	7.97	10.01	15.04
1701	Cane or beet sugar and chemically pure sucrose, in solid form	0.01	0.01	1.30
	SRI LANKA			
	Agriculture	**0.72**	**0.65**	**0.49**
0902	Tea	30.95	30.50	40.14
2106	Food preparations	1.22	2.62	2.90
0801	Brazil nuts, cashew nuts & coconuts	9.13	13.16	8.05
0803	Bananas and plantains, fresh or dried	0.80	1.56	3.76
2008	Preserved fruits	2.65	2.68	2.12

With the insight paid to the recent trends and patterns of the food and agricultural trade between SAARC and GCC it is useful to investigate into the trade potential between these regions. For this purpose, this particular study used the Indicative Trade Potential (ITP) calculated at HS 4 level of the food and agricultural exports of SAARC to GCC. Table A4 in the appendix shows the top 20 food and agricultural product lines with the highest ITP. Accordingly, sugar products (HS 1701) have the highest ITP followed by wheat and meslin (HS 1001). Inter regional trade of rice which is ranked seventh according to the magnitude of the ITP is in a strong position even in the present context. This can be explained by the Relative Indicative Trade Potential (RITP). When RITP reaches zero it means that one of the trade partner relies heavily upon the other. Accordingly 88 per cent of GCC rice (HS 1006) imports are from SAARC countries and RITP is just 3, which indicates that SAARC has become the niche source for rice for GCC. Hence, the future stability of rice supply to GCC will deeply depend on the trade relations between SAARC and on the rice export performance of SAARC countries.

Though as a region SAARC has a substantial ITP in many agricultural product lines at HS 4 digit level, currently these commodities are exported mainly by India to GCC. Table 6 shows that except animal or vegetable fats in the other four of the top five commodities with highest ITP India has a market share exceeding 90 per cent. Hence, it can be concluded that India has better chances to tap this trade potential by bolstering the trade relationship with GCC countries further. From the top 5 product lines with the highest ITP, in exporting cane or beet sugar (HS 1701), wheat and meslin (HS 1001), Maize (1005) and coffee (0901) to GCC, SAARC countries are taxed at zero rates. Only in animal or vegetable fats (HS 1516), SAARC countries are taxed at 5 per cent rate. Therefore, it can be concluded that SAARC countries face a conducive tariff structure imposed by GCC to tap the trade potential for most of the product groups with highest ITP.

Table 6: Share of member countries of SAARC in exports of product lines with highest ITP in 2012

Product code HS 4-digit level	Product group	Share of SAARC exports to GCC-2012		
		India	Pakistan	Sri Lanka
1701	Cane or beet sugar and chemically pure sucrose, in solid form	93.15	6.85	0.00
1001	Wheat and meslin	99.25	0.75	0.00
1005	Maize (Corn)	94.45	5.55	0
0901	Coffee	99.95	0	0.05
1516	Animal or vegetable fats, oils & fractions, hydrogenated	76.17	23.83	0

Another good indicator to estimate the potential of SAARC member countries to exploit emerging trade opportunities with GCC countries is the trade intensity index. According to table 7 India has all the GCC countries within the top 40 countries with the highest trade intensity index for agricultural trade while Oman is the trade partner with the 10th highest trade intensity index for agricultural trade. Pakistan has UAE as 4th highest trade partner in agricultural trade intensity index however the trade relationships with Oman, Qatar and Saudi Arabia are ranked as lower as 106th, 113th and 116th respectively (See Appendix Table 5). When Sri Lanka is considered the trade relationships between GCC countries is satisfactory when compared to Pakistan but still most of the GCC countries are ranked below 50. It is noteworthy that of the countries in the top 10 list with higher trade intensity index are Arabian states such as Syria, Iran and Iraq but none of the GCC country is in that list for agricultural trade (See Appendix Table A6).

Table 7: Trade partners with top 10 trade intensities and trade intensities of GCC countries for India 2012

Rank	Trade Partner (Total Trade)	Trade Intensity Index (Total Trade)	Rank	Trade Partner (Agricultural Trade)	Trade Intensity Index (Agricultural Trade)
1	Bhutan	3,271.99	1	Bhutan	3,221.55
2	Nepal	2,961.89	2	Nepal	2,563.96
3	Kenya	1,478.01	3	Bangladesh	866.92
4	Sri Lanka	1,464.50	4	Sri Lanka	862.5
5	Bahamas	1,276.02	5	Somalia	835.96
6	Somalia	1,107.01	6	Maldives	793.48
7	Tanzania	1,072.73	7	Guinea	664.89
8	Uganda	1,026.29	8	Senegal	663.04
9	UAE	998.87	9	Liberia	639.14

10	Mauritius	987.37	10	Oman	619.10
15	Oman	693.14	13	Kuwait	595.81
27	Bahrain	396.89	14	Qatar	556.27
31	Saudi Arabia	376.4	17	UAE	537.02
40	Kuwait	307.79	29	Bahrain	371.99
55	Qatar	211.46	34	Saudi Arabia	319.5

Results of the estimation of the gravity model

The descriptive statistics and the data sources of the gravity variables are given in table 8 while the OLS estimates of the models are presented in table 9. The coefficient estimates of the gravity models specified indicate the elasticity estimates with regard to different continuous variables in log form. According to the results, trade cost variables (distance, common official language dummy and colony link dummy) have expected signs and significant effects on the value of total and food and agricultural exports. Most importantly, when the intra-regional dummies are considered, in the model estimations for total export flows South Asia intra regional dummy, GCC intra dummy and South Asia-GCC pair dummy have positive coefficients. In the food and agricultural model, all the intra regional dummies and South Asia-GCC country pair dummy have positive effects of the export flow. In both the export flow of total and food and agricultural trade South Asia-GCC country pair have a positive and significant effect. The positive and the significant effect of the South Asia-GCC variable suggest that both regions are "natural trading partners" and trade flows could be enhanced by the formation of a formal Regional Trade Arrangement between the two regions. Further, the positive coefficient of GCC-intra dummy indicates the significance of the presence of re-exporting countries within GCC countries.

Table 8: Descriptive statistics of the variables used in gravity estimation

Variable	**Units**	**Source of data**	**Mean**	**Standard deviation**
Value of total exports	US Dollar '000	Trademap	4,267,000.97	24,689,000.02
Value of food and agricultural exports	US Dollar '000	Trademap	479,709.58	2,618,998.31
Distance	kilometers	CEPII	6981.72	4448.99
Common language – official (dummy)	Na	CEPII	Na	Na
Colony link (dummy)	Na	CEPII	Na	Na
Intra regional linkages (dummy)	Na	World Bank	Na	Na

Table 9: Results of gravity analysis for total and food and agricultural trade flows of all countries

Variables	Total trade	Food and agricultural trade
ln_distance	-1.385***	-2.043***
	(-21.75)	(-15.58)
common official language dummy	0.408**	0.621**
	(2.78)	(2.05)
colony link dummy	0.908***	1.915***
	(4.52)	(4.63)
sa_intra dummy	0.937	1.001
	(1.73)	(0.90)
eastasia_intra dummy	-0.170	0.164
	(-0.65)	(0.30)
eu_intra dummy	-0.0633	0.521
	(-0.34)	(1.35)
gcc_intra dummy	1.095*	5.544***
	(1.79)	(4.39)
sa_gcc pair dummy	1.358***	3.330***
	(4.26)	(5.07)
Constant	1.32*	10.95***
	(1.73)	(6.95)
No. of Observations	3106	3106
R squared	0.80	0.67
country fixed effects	Yes	Yes

*** Significant at 1% probability level; ** significant at 5% probability level; *significant at 10% probability level

Table 10 shows the South Asian countries' estimated export potential with GCC countries. Comparatively Sri Lanka has the highest export potential for Bahrain and Oman than the current exports. Pakistan has reached its export potential whereas except for United Arab Emirates, all other values are less than zero. India has seemingly very high potential to export more to United Arab Emirates. All the countries show no export potential with Kuwait and Saudi Arabia.

Table 10: Major SAARC countries' export potential to GCC countries

Exporting country	Importing country	Actual Export (A) (Value in'000 US$)	Potential Export (A) (Value in'000 US$)	Export potential
India	Bahrain	90,270	123,388.16	1.37
India	Kuwait	436,761	320,634.79	0.73
India	Oman	291,859	318,241.85	1.09
India	Qatar	204,543	211,164.63	1.03
India	Saudi Arabia	1,425,207	691,149.06	0.48
India	United Arab Emirates	1,983,290	13,117,026.69	6.61
Pakistan	Bahrain	50,766	4,886.14	0.10
Pakistan	Kuwait	44,320	13,453.77	0.30
Pakistan	Oman	121,990	11,237.73	0.09
Pakistan	Qatar	61,732	8,170.32	0.13

Pakistan	Saudi Arabia	242,993	26,224.99	0.11
Pakistan	United Arab Emirates	374,047	494,510.60	1.32
Sri Lanka	Bahrain	1,348	4,223.08	3.13
Sri Lanka	Kuwait	29,233	10,401.42	0.36
Sri Lanka	Oman	2,065	9,682.43	4.69
Sri Lanka	Qatar	5,853	7,385.96	1.26
Sri Lanka	Saudi Arabia	36,473	27,738.89	0.76
Sri Lanka	United Arab Emirates	105,258	439,461.34	4.18

Conclusion

According to the obtained results, the structure of the food and agricultural imports by GCC is highly diversified and not concentrated on fewer goods as the import share is distributed among many of the commodities. However the export sources are few and GCC imports are concentrated on few exports markets as GCC countries heavily depend on top three countries for most of the food and agricultural imports resulting CR3 ratio exceeds 80 per cent. In few commodities, SAARC countries are among the top three exporters for GCC. India and Pakistan are the first and second top exporters of rice to GCC while India is among the top three exporters of meat of bovine animals and sugar products to GCC.

When the concentration of food and agricultural exports of SAARC to GCC over product groups is considered CR3 has been decreased from 61 per cent to 51 per cent from 2010 to 2012. It can be concluded that the overall trade pattern of SAARC with GCC has undergone a significant change recently diminishing the relative importance of the GCC region to SAARC as an importer of food and agricultural products for many product lines with few exceptions. However, the dependence of GCC on SAARC food and agricultural exports is being increased gradually. The overall dependence on food and agricultural exports of SAARC has increased from 13 per cent to 15 per cent from 2007 to 2012. Further, all the top 20 product lines with highest indicative trade potential for SAARC countries have a value exceeding 100 million US dollars. The Indian dominance in food and agricultural exports and India's higher trade intensity with GCC countries will put India in an advantageous position in this flourishing food as agricultural trade between GCC and SAARC relatively to other SAARC member countries. The results of the estimation of the gravity equation indicate that the conventional trade cost variables have significant effects on total and food and agricultural trade. There is a tendency for more trade between SAARC-GCC countries. According to results of simulated export potential, among the major SAARC exporting countries, Sri Lanka and India have high potential for increasing food and agricultural exports to GCC countries.

References

Al-Tamimi, N.,2013. Asia GCC relations growing interdependence. Institute for international policy studies. Available at<http://www.ispionline.it/sites/default/files/pubblicazioni/analysis_179_2013.pdf> [Accessed 20 December 2013]

Anderson, J., and van Wincoop, E., 2003. Gravity with Gravitas: A Solution to the Border Puzzle. *The American Economic Review*, 93(1), pp. 170–92.

Anderson, K.,1983. Prospects for trade growth among Pacific Basin countries. *The Developing Economies*, *21*(4), pp.376-385.

Brown, A.J., 1947. Applied Economics, London: George Allen & Unwin.

Bleaney, M. and Greenaway, D., 2001. The Impact of Terms of Trade and Real Exchange Volatility on Investment and Growth in Sub-Saharan Africa. *Journal of Development Economics*.65, pp: 491–500.

Boughanmi, H., 2008. The trade potential of the Arab Gulf Cooperation Countries (GCC); A gravity model approach. *Journal of Economic Integration*.23(1), pp. 42-56.

De Benedictis, L. and Taglioni,D., 2001. The Gravity Model in International Trade in L. De Benedictis and L. Salvatici (eds.) The Trade Impact of European Union Preferential Policies: An Analysis through Gravity Models. Berlin: Springer

Drysdale, P. and Ross, G., 1982. Trade intensities and the analysis of bilateral trade flows in a many country world: A survey. *Hitotsubashi Journal of Economics*,2(2).

Ghosh, A.R. and Ostry, J., 1994. Export Instability and the External Balance in Developing Countries, IMF Staff Papers, 41, pp: 214–235.

Helmers, C., and Pasteels, J. M., 2006. Assessing Bilateral Trade Potential at the Commodity Level: An Operational Approach. International Trade Centre, ITC Working Paper. < Available at http://legacy.intracen.org/mas/pdfs/pubs/2006-11-itc-wp-bilateral-trade-potential.pdf>

Insel,A., and Tekce, M., 2010. Econometric analysis of the bilateral trade flows in the Gulf Coperation Council countries. Munich Personal RePEc archive. <Available at http://mpra.ub.uni-muenchen.de/22184/1/MPRA_paper_22184.pdf> [Accessed 08 January 2014].

Karayil,S.B.,2007. Does migration matter in trade? A study of India's exports to GCC countries. *South Asia Economic Journal*,8 (1), pp. 1-20.

Kojima, K., 1964. The Pattern of Trade Among Advanced Countries. *Hitotsubashi Journal of Economics*. 5 (1).

National Intelligence Council, 2012 .Global Trends 2030. *Alternatives World*, p. 16.

Pradhan, S.R., 2006. India's *Export Potential to the Gulf Cooperation Council (GCC) Countries: A Gravity Model Analysis*. [pdf] Asia-Pacific Research and Training Network on Trade. Available at <http://www.unescap.org/tid/artnet/pub/gcc_pradhan.pdf> [Accessed 8 January 2014].

Pradhan, S., 2010. Gulf-South Asia economics relations; realities and prospects. Centre for economic policy research. Available at <http://www.globaltradealert.org/sites/default/files/GTA4.pdf > [Accessed 10 January 2014].

Prebisch, R., 1950. The Economic Development of Latin America and its Principal Problems, United Nations, New York.

Reis, J.G., and Farole,T., 2012.Trade Diagnostic Toolkit.The World Bank, Washington, D.C.

Rosenstein-Rodan, P. N., 1943. Problems of industrialisation of eastern and south-eastern Europe.*The Economic Journal*, pp.202-211.

Samen, S., 2010a. A Primer on Export Diversification: Key Concepts, Theoretical Underpinnings and Empirical Evidence, Growth and Crisis Unit, World Bank Institute.

Singer, H.W.,1950. The Distribution of Trade Between Investing and Borrowing Countries. *American Economic Review*.Vol.40.

Tinbergen, J.,1962.An Analysis of World Trade Flows; Shaping the World Economy, edited by John Tinbergen.New York, NY:Twentieth Century Fund.

Woertz, E., 2010, The Gulf food import dependence and trade restrictions of agro exporters in 2008. <Available at http://www.globaltradealert.org/sites/default/files/GTA4.pdf> [Accessed 10 January 2014].

World Bank. *2007*. World Development Report 2008; Agriculture for Development. World bank. Available at <https://openknowledge.worldbank.org/bitstream/handle/10986/5990/WDR%202008%20-%20English.pdf> [Accessed 10 January 2014]

Yeats, A. J., 1998. Does Mercosur's trade performance raise concerns about the effects of regional trade arrangements?. *The World Bank Economic Review*,*12*(1), pp.1-28.

Appendix

Table A1: Food and agricultural imports by GCC countries from world

Country	Percentage of total agricultural imports by GCC				
	2008	2009	2010	2011	2012
Saudi Arabia	38.82	42.12	45.63	46.66	43.23
U.A.E	33.25	37.34	32.28	33.68	36.04
Oman	7.73	7.69	6.10	6.15	7.95
Kuwait	11.31	9.07	7.24	7.28	7.10
Qatar	5.27	n/a	5.41	2.78	3.41
Bahrain	3.62	3.77	3.33	3.45	2.27
GCC Aggregation	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Table A2: The composition of the food and agricultural imports by GCC countries from world

HS code	Product groups	Percentage of Total Agricultural Imports				
		2007	2008	2010	2011	2012
2070	Meat & edible offal of poultry meat	5.69	6.80	6.50	7.18	7.51
1003	Barley	8.87	9.74	5.46	5.01	6.32
1006	Rice	6.39	12.10	7.85	6.95	6.19
1701	Cane or beet sugar and chemically pure sucrose, in solid form	3.69	2.68	5.13	5.12	5.17
2402	Cigars, cheroots, cigarillos & cigarettes	3.84	2.84	3.98	4.30	4.76
4020	Milk and cream, concentrated or sweetened	5.27	5.64	4.00	4.46	4.70
1001	Wheat and meslin	1.57	2.39	2.41	3.01	4.17
2106	Food preparations	3.36	2.33	3.14	3.27	2.54
1511	Palm oil & its fraction	1.92	2.37	2.62	3.02	2.23
2020	Meat of bovine animals, frozen	1.39	1.45	1.68	1.63	2.06
	Rest of Commodities	58.01	51.66	57.22	56.05	54.35
	Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Table A3: Top 10 food and agricultural exports by SAARC to GCC at HS 4 digits level from 2010 to 2012

2010			2011			2012		
HS code	Product group	% of total agricultural exports from GCC-SAARC	HS code	Product group	% of total agricultural exports from GCC-SAARC	HS code	Product group	% of total agricultural exports from GCC-SAARC
1006	Rice	48.05	1006	Rice	42.68	1006	Rice	36.70
0202	Meat of bovine animals, frozen	7.07	0202	Meat of bovine animals, frozen	6.63	0202	Meat of bovine animals, frozen	7.91
0902	Tea	6.53	1701	Cane or beet sugar and chemically pure sucrose, in solid form	4.63	1701	Cane or beet sugar and chemically pure sucrose, in solid form	6.55
0801	Brazil nuts, cashew nuts & coconuts	3.26	0902	Tea	4.61	1001	Wheat and meslin	3.54
0804	Dates, figs,pineapples, mangoes, avocadoes, guavas	2.73	0801	Brazil nuts, cashew nuts & coconuts	3.91	0902	Tea	3.26
0204	Meat of sheep or goats - fresh, chilled or frozen	2.21	2304	Soya-bean oil-cake and other solid residues	2.17	0801	Brazil nuts, cashew nuts & coconuts	3.15
2304	Soya-bean oil-cake and other solid residues	2.08	0306	Crustaceans	2.07	0306	Crustaceans	2.83
0306	Crustaceans	1.79	0804	Dates, figs,pineapples, mangoes, avocadoes, guavas	1.90	2304	Soya-bean oil-cake and other solid residues	2.47
0910	Ginger,saffron,turmeric, thyme, bay leaves & curry	1.56	0910	Ginger,saffron,turmeric, thyme, bay leaves & curry	1.90	0204	Meat of sheep or goats - fresh, chilled or frozen	2.19
0703	Onions, garlic and leeks, fresh or chilled	1.52	1101	Wheat or meslin flour	1.89	0201	Meat of bovine animals, fresh or chilled	2.16
	Rest of products	**23.21**		**Rest of products**	**27.63**		**Rest of products**	**29.22**
	Total	**100.00**		**Total**	**100.00**		**Total**	**100.00**

Table A4: Top 20 product lines (HS 4) with the highest indicative trade potential in 2012

Product code	Product Group	Market share of GCC in SAARC to world %	Market share of SAARC in GCC imports %	Indicative Trade Potential	Relative Indicative Potential Trade
1701	Cane or beet sugar and chemically pure sucrose, in solid form	16.41	18.77	1,899,066	87
1001	Wheat and meslin	12.25	11.22	1,231,383	88
1005	Maize (corn)	2.95	4.93	701,569	57
0202	Meat of bovine animals, frozen	14.60	57.34	322,449	11
0901	Coffee	6.94	12.98	285,481	47
1516	Animal or vegetable fats, oils & fractions, hydrogenated	1.30	3.99	281,933	99
1006	Rice	24.94	87.89	275,696	3
1515	Fixed vegetable fats & oils & their fractions	0.83	2.27	274,051	36
1905	Bread, biscuits, wafers, cakes and pastries	8.56	3.56	273,867	91
0703	Onions, garlic and leeks, fresh or chilled	23.30	27.13	197,132	63
2304	Soya-bean oil-cake and other solid residues	6.65	42.10	189,934	9
0713	Dried vegetables, shelled	14.58	11.03	179,862	85
2309	Animal feed preparations, nes	1.27	1.47	178,564	85
2106	Food preparations, nes	25.05	5.81	162,367	75
0805	Citrus fruit, fresh or dried	13.71	4.87	157,671	86
2101	Extracts essences & concentrates of coffee and tea	1.99	5.05	126,099	37
0302	Fish, fresh, whole	19.62	15.68	121,399	80
0806	Grapes, fresh or dried	23.18	28.01	110,043	60
0303	Fish, frozen, whole	4.41	26.02	109,848	13
2207	Ethyl alcohol & other spirits (if undenatured then higher than 80%	8.35	18.63	109,808	36

Table A5: Trade partners with top 10 trade intensities and trade intensities of GCC countries for Pakistan 2012

Rank	Trade Partner (Total Trade)	Trade Intensity Index (Total Trade	Rank	Trade Partner (Agricultural Trade)	Trade Intensity Index (Agricultural Trade)
1	Afghanistan	17,466.87	1	Afghanistan	18,397.69
2	South Sudan	15,461.09	2	Angola	144.32
3	Comoros	11,089.36	3	Albania	54.16
4	Somalia	4,272.25	4	UAE	801.88
5	Guinea-Bissau	2,307.03	5	Argentina	11.58
6	Madagascar	2,012.10	6	Armenia	5.32
7	Lesotho	1,901.39	7	American Samoa	39.22
8	Bangladesh	1,571.02	8	Australia	67.46
9	Sri Lanka	1,359.59	9	Austria	0.76
10	Sierra Leone	1,287.73	10	Azerbaijan	146.17
13	UAE	943.49	15	Bahrain	1,693.02
18	Bahrain	521.27	77	Kuwait	482.73
19	Oman	508.11	106	Oman	2,103.35
25	Kuwait	286.78	113	Qatar	1,355.46
26	Qatar	283.37	116	Saudi Arabia	433.69
31	Saudi Arabia	236.07			

Table A6: Trade partners with top 10 trade intensities and trade intensities of GCC countries for Sri Lanka 2012

Rank	Trade Partner (Total Trade)	Trade Intensity Index (Total Trade	Rank	Trade Partner (Agricultural Trade)	Trade Intensity Index (Agricultural Trade)
1	Maldives	5,794.99	1	Maldives	11,247.32
2	Syria	2,788.85	2	Syria	2,605.64
3	Azerbaijan	1,364.30	3	Swaziland	1,104.79
4	Iran	1,049.35	4	Iran, Islamic Rep.	678.88
5	Libya	807.21	5	Libya	657.72
6	Tokelau	797.57	6	Azerbaijan	608.23
7	Jordan	737.63	7	Pakistan	520.26
8	Kuwait	611.56	8	Seychelles	491.28
9	Iraq	604.05	9	Jordan	472.44
10	Pakistan	585.49	10	Iraq	458.83
24	UAE	195.15	14	Kuwait	348.09
51	Bahrain	86.63	16	UAE	434.56
53	Oman	85.89	27	Qatar	242.25
54	Saudi Arabia	83.82	54	Saudi Arabia	83.82
61	Qatar	74.32	60	Bahrain	84.12
			66	Oman	67.21

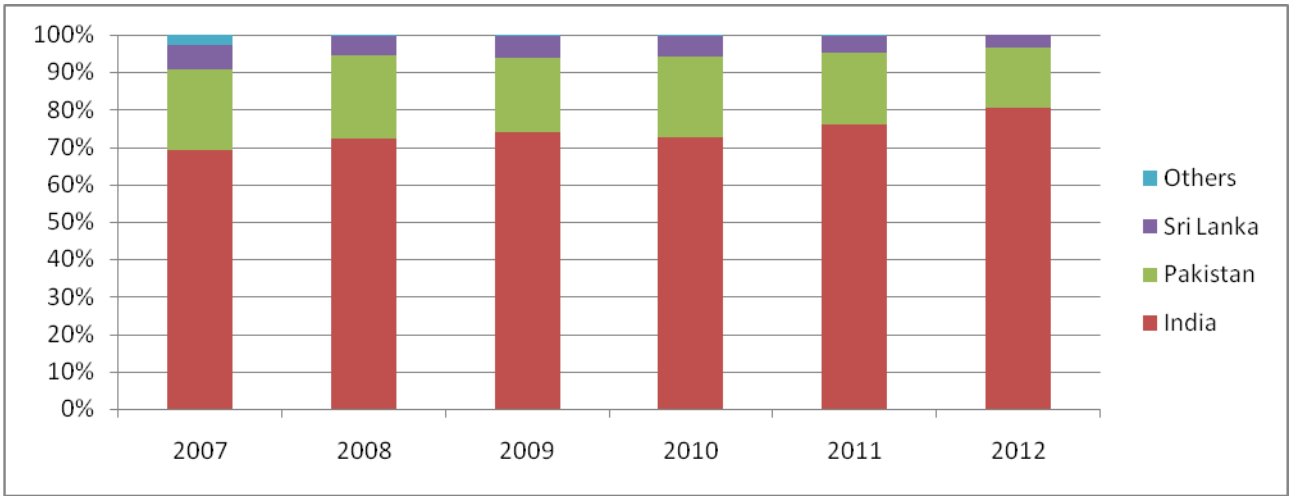

Figure A1: Food and agricultural exports to GCC by SAARC countries: 2007-2012