From Evidence to Policy: Supporting Nepal's Trade Integration Strategy

Policy Note 2

Nepal Integration into Value Chains: Stylized Facts and Policy Options

Guillermo Arenas

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EXECUTIVE SUMMARY

Nepal's National Trade Integration Strategy 2015 (NTIS 2015) recognizes the importance of value chains for export development and includes as one of its goals to "identify key binding constraints to maximize the benefits of participation in increasingly important regional and global value chains" (NTIS 2015). This note identifies key obstacles faced by firms to better integrate into value chains based on data analysis and interviews with firms in key export sectors in Nepal and builds on that analysis to provide policy recommendations based on international experiences with trade reforms and good practices observed elsewhere. Policy recommendations are linked to export sectors prioritized by the NTIS 2015 and, although mainly cross-cutting in nature, also provide granular information like a list of products with high potential for increased trade with the northern states of India.

This note analyzes five stylized facts that characterize Nepal's integration into regional and global value chains. First, Nepal could be better integrated into value chains. Even though its exports have high import content, Nepal is not a good supplier to regional and international value chains and is largely missing on the growing trade in intermediate products. Second, imported inputs are key for the vast majority of exporters and greater use and variety of imported intermediary inputs is correlated with higher exports, diversification of destination markets and higher quality of exports. Third, restrictive policies towards FDI compound the challenges the country faces in attracting foreign investment that can be crucial for increasing productivity, accessing new markets, and upgrading the quality of exports. Fourth, although there are some exports of high quality products, the average quality of most agricultural products prioritized by the NTIS 2015 is average. Finally, recurring import rejections in developed countries could pose a reputational risk for Nepal's exports and result in lower export prices and higher costs for exporting.

Based on the analysis presented on the first part, the note identifies four policy areas that present opportunities to spur export growth and increase participation in regional and global value chains. First, Nepal should facilitate access to imported inputs by reducing tariffs on key raw materials and intermediate products. Second, efforts should be made to develop linkages for Nepalese firms to integrate into value chains in northern Indian states bordering Nepal. Third, strengthening national infrastructure and services that support export compliance with international standards will boost competitiveness and facilitate entry into international value chains. Fourth, a strategy to reposition selected export products on high quality low volume segments will help Nepal increase exports.

The report is structured in four sections. The first section is an introduction. The second section presents five stylized facts about Nepal's exports that are related to value chain participation. The third section proposes some policy recommendations to address the issues highlighted in the analysis. The last section concludes.

1. Introduction

The rise of global value chains (GVCs) is one of the most important transformation in global trade and investment occurred in the last decades. Once concentrated among a few large economies, global flows of goods, services, and capital now reach an ever larger number of economies worldwide. Falling transport costs due to important innovations such as containerization, lower trade costs achieved both through a general reduction in tariffs worldwide and by the proliferation of trade and investment agreements, the ICT revolution, and trends in global business to outsource "non-core" business functions paired with a drive towards cutting costs on goods produced for export, have led to "second unbundling" of globalization in the 1990s and 2000s (Baldwin and Lopez-Gonzalez 2015).

Nepal's National Trade Integration Strategy 2015 (NTIS 2015) was developed with the objective of enhancing the contribution of the trade sector to growth and to overcome the constraints and challenges associated with trade development and export promotion. The NTIS 2015 prioritizes twelve export potential sectors/products, nine related to goods (cardamom, ginger, tea, medicinal and aromatic plants, fabrics and textiles, leather, footwear, pashmina, and carpets) and three to services (semi-skilled and skilled professional services, IT & BPO and IT engineering, tourism).[1] The NTIS 2015 recognizes the importance of GVCs for export development and includes as one of its goals to "identify key binding constraints to maximize the benefits of participation in increasingly important regional and global value chains" (NTIS 2015).

This note explores some stylized facts about Nepal's integration in GVCs and identifies policy recommendations in cross-cutting areas that relate to most of the export sectors prioritized by the NTIS 2015. These recommendations are not meant to be specific to individual value chains or products and are based on the challenges identified through data analysis and interviews with firms in key export sectors and based on good practices observed elsewhere. The report is structured in three sections beside the introduction. The second section presents five stylized facts about Nepal's exports that are related to GVC participation. The third section proposes some policy recommendations to address the issues highlighted in the analysis. The last section concludes.

2. Nepal's Exports – Five Stylized Facts

Fact 1. Nepal could be better integrated into global value chains as a supplier of intermediate goods that are used in other countries' exports

A country's level of participation in GVCs can in part be assessed based on both its forward and backward integration. Forward integration, or indirect value added (IVA), refers to a country's share of value added embodied in other countries' exports – i.e. producing intermediates that you export to other countries, who will then add further value and export them as finished products or further stage intermediates. Backward integration, or foreign value added (FVA), is the share of foreign value added embodied in a country's exports – i.e. intermediate inputs imported from other countries that you then add value to and export as finished products or further stage intermediates. Backward integration provides access to quality inputs, which contributes to downstream competitiveness; it also has significant potential to deliver productivity spillovers through access to global frontier technologies. As such, backward

[1] The NTIS 2015 also highlights other sector with potential for the country including coffee, fruit juice, ready-made garments, semi-precious gems and stones as well as mentions products that are a continuation of the NTIS 2010, namely, honey, lentils, instant noodles, handmade paper, silver and jewelry, iron and steel, and wood products.

integration tends to be particularly important for developing countries as it links to a number of measures of structural transformation. Similarly, forward integration is an indicator of integration into value chains and also provides opportunities to benefit from technology spillovers.

An international comparison shows that Nepal has the lowest participation in GVCs through downstream linkages compared with other countries in the region (Figure 2). Less than a fifth of exported domestic value added from Nepal ends up in third countries' exports which is related to Nepal's relative specialization in final good exports in both agricultural (tea, ginger, coffee, cardamom) and manufacturing sectors (apparel and other textile goods like carpets and pashminas). On the other hand, the share of foreign value added in Nepal's exports is the highest in South Asia doubling that of Pakistan and Bangladesh and even higher than India's. The cross-border trade with India and high reliance on inputs from this country due to the landlockness of Nepal could be behind this trend. Some of the most important export products to India - like cement, steel products and industrial textiles - exhibit low domestic value addition as these industries set up in Nepal to import intermediate products and re-export them after minimal transformation basically taking advantage of large differences in tariffs for final products between India and Nepal (**Table *2***). However, other export industries like instant noodles, biscuits and agro-processing seem to incorporate more local value added into their exports to India.

Figure 1. Domestic Value Added in Third Country Exports

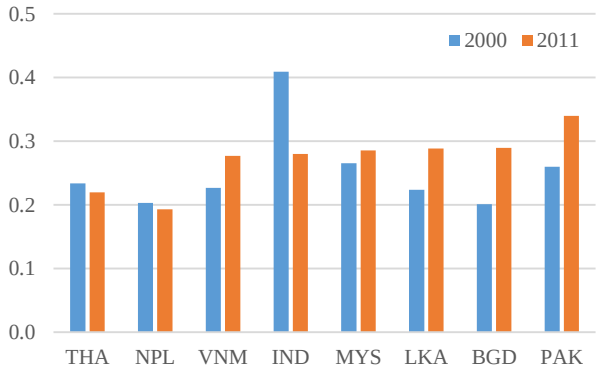
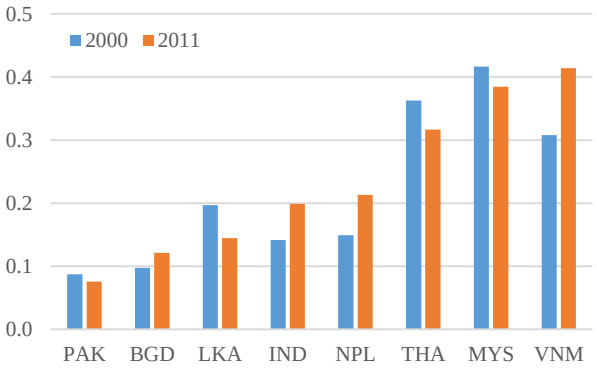


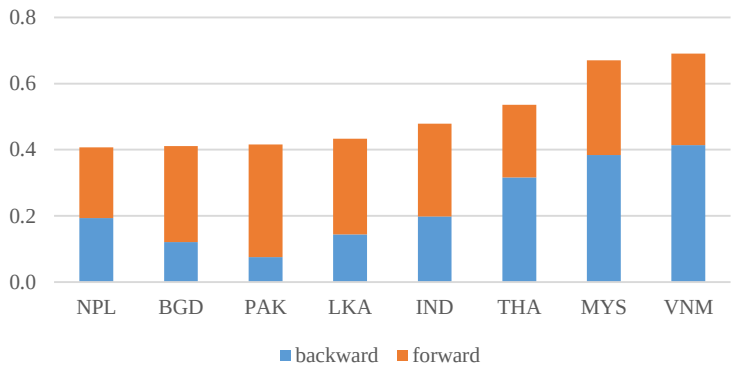
Figure 2. Foreign Value Added in Gross Exports



Source: Authors' elaboration with data from EORA

Nepal's overall participation in GVCs is low although more balanced than its comparators. The GVC participation index combines the measures of forward and backward integration, indicating the extent to which a country participates in vertically integrated production (Koopman et al. 2010). The higher the foreign value added in gross exports and the higher the value of inputs exported to third countries and used in their exports, the higher the participation value. Nepal shows the lowest GVC participation among comparators. The decomposition of the GVC participation index into its upstream and downstream component is consistent with Nepal having a low participation in GVCs as a supplier final goods but with a high use of imported inputs for its exports. Countries that are more integrated into GVCs like Malaysia, Thailand show higher levels of participation and higher levels of participation through upstream linkages – which reflect a high use of imports in their exports.

Figure 3. GVC Participation Index (2011)



Source: Authors' elaboration with data from EORA

Fact 2. Imported raw materials and intermediate inputs are key for the performance, quality and diversification of exporting firms

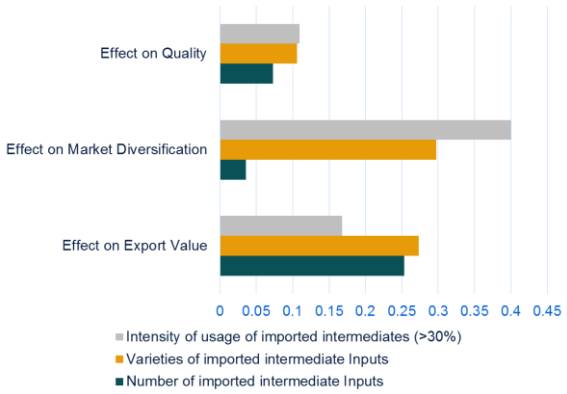
Imported inputs are key for the vast majority of exporters and especially for some products highlighted by the NTIS 2015. More than ninety percent of Nepalese exporters directly import some of the products necessary for production of exports. Several industries prioritized by the NTIS 2015 rely on significant imports of a variety of raw materials and intermediate inputs for growth. For example, footwear exporters import more than twenty raw materials (leather, glue, soles, accessories, etc.) mainly from India, China, and Thailand, pashmina exporters import wool and silk from China and India, and hand-woven carpet manufacturers source most of their wool, silk and dyes from New Zealand, China and Switzerland, respectively.

The ability to source inputs at competitive prices irrespective of origin could help firms become more competitive in international markets. In most developing countries, imported intermediate inputs are of higher quality than domestic varieties and embody technology and knowledge that leads to higher firm productivity and improved quality of final products. Since imported inputs enhance firm productivity, they also play a role for firm export performance. Furthermore, in manufacturing industries linked to GVCs like apparel and footwear, in which the quality of the final product depends largely on the quality of the inputs, lead buying firms often directly source the material form a small group of preferred suppliers which highlights the importance of facilitating exporters access to inputs from anywhere in the world.

In Nepal, greater use and variety of imported intermediary inputs is correlated with higher exports, diversification of destination markets and higher quality of exports. We analyzed the impact of firms' use of greater number and varieties of imported inputs on export performance measures using firm level data for 2011-2014 (Annex 1). The results reveal significantly higher export values, larger number of destinations, and relatively higher product quality than average for exporters that import more products, more varieties, and a larger share of imports from outside the region. For example, firms that import more than 30% of intermediates from outside members of the South Asian Association for Regional Cooperation (SAARC) have 16.8% larger export values, export to 40% more destinations, and have unit values that are 10% higher on average than other firms. These estimates provide some evidence that the foreign

technology embodied in imported intermediate inputs and their higher sophistication have a beneficial effect for the exporter performance in Nepal.

Figure 4. Export Performance Premia for Exporter-Importers in Nepal



Source: Source: Authors' elaboration with data from Nepal's Customs

Fact 3. Nepal faces challenges to attract FDI due to restrictive policies and risks inherent to the country

Foreign Direct Investment (FDI) is crucial to improve competitiveness of manufacturing and services sectors in Nepal. FDI is crucial for accessing new markets, upgrading the quality of the export basket, and create more and better jobs, and ultimately to create and sustain prosperity. FDI has been considered a catalyst for growth and development due to possible spillovers to the local economy, especially in countries with low capital accumulation. Such spillovers can range from innovation (through faster transfer of know-how and state-of-the-art technologies), increases in productivity, sophistication and competitiveness, and a broader product choice for consumers, among others.

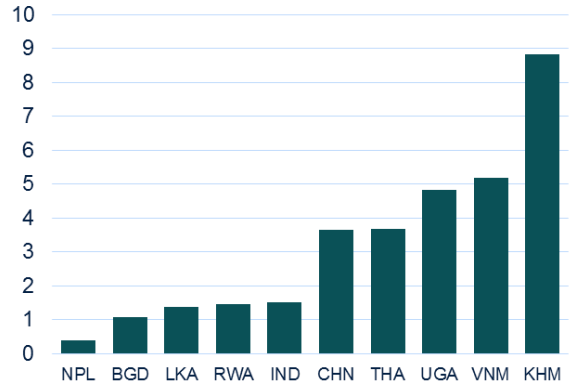
Restrictive policies towards FDI compound the challenges that small landlocked countries like Nepal face to attract FDI. At less than 1% of GDP, Nepal's FDI inflows are the lowest among comparator countries in relative terms (Figure 5). Although this result could be partially explained by perceived risks that firms face operating in the country, it is clear that the investment regime in Nepal is more restrictive than other countries with similar income per capita as measured by the Investment Freedom Index2 (Figure 6). Among the most salient restrictions affecting foreign investment in the country are the cumbersome processes on the repatriation of funds and the lengthy processes needed to hire foreign workers. Regarding the former, while the law does provide foreign investors the right to repatriate funds related to foreign investment, in practice repatriation is difficult and obtaining approvals is a lengthy process. (World Bank 2015b).

Entry barriers to foreign investment include foreign ownership limitations, sector caps, a long negative list and restrictions in non-equity modes of investment. Although Nepal has allowed fully foreign

[2] The Investment Freedom Index evaluates a variety of restrictions that are typically imposed on investments like different rules for foreign and domestic investment; access to foreign exchange; restrictions on payments, repatriation, transfers, and capital transactions; in some, certain industries are closed to foreign investment.

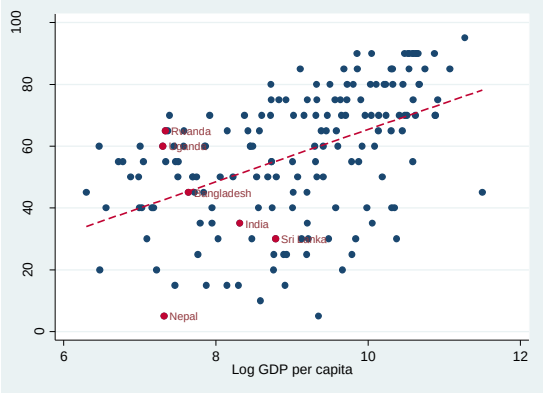
ownership in most sectors, it retained a foreign ownership limit of 51% in some selected sectors, such as legal, accounting and engineering services and imposed an even lower foreign participation limit in banking and finance. Additionally, despite eliminating the minimum investment requirement of US$ 200,000, the new Foreign Investment Policy (FIP) significantly expanded the negative list to include poultry, fishery, print and electronic media which in practice limits the amount of foreign investment entering Nepal and constrains the ability of important sectors of the economy, including manufacturing, to attract FDI. Restrictions in non-equity modes of investment, such as franchising, in which there is significant technology, training and skills transfer, face additional delays and costs during entry and operations in Nepal. In particular, slow and arbitrary approval processes, dual registration procedures, delays in trade mark registration, greater difficulties in remitting royalties and technical fees, are among several obstacles faced by these type of investments. (World Bank 2015b).

Figure 5. Foreign Direct Investment (% GDP)



Source: WDI

Figure 6. Investment Freedom Index



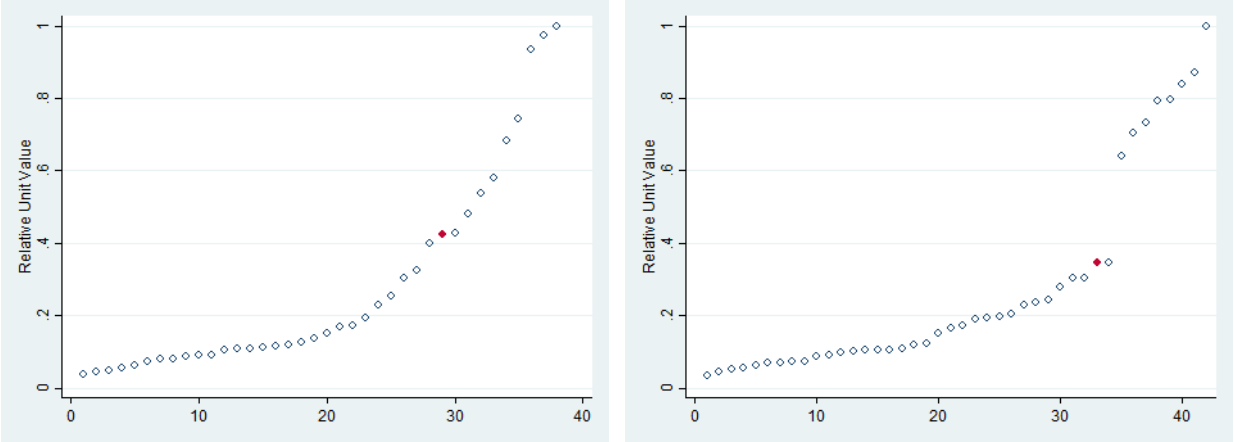
Source: Heritage Foundation's Economic Freedom Index and WDI

Fact 4. Quality upgrading is needed especially in agricultural products highlighted in the NTIS

The quality of most agricultural products prioritized by the NTIS 2015 is average or low. Figure 7 show the relative quality of Nepal's exports of tea and coffee compared to all other countries that exported those products to Germany in 2013. The x-axis plots the position of each country's exports from the lowest to the highest in quality (unit value) with the highest to the right and the y-axis indicates the average unit value (US$ per kg) obtained by exports from each country. For both coffee and tea, Nepal's exports are positioned halfway through the quality distribution with an average unit price that is approximately 40% of that of the top exporting country. As a major producer of agricultural exports, Nepal has the opportunity to expand its agricultural exports by rising the value of the products it currently exports – especially since the quality of some important agricultural export products is lagging in the most important export markets.

Figure 7. Quality Ladder: Relative Unit Values in Germany (2013)

Black tea (HS 090240) **Coffee (HS 090111)**

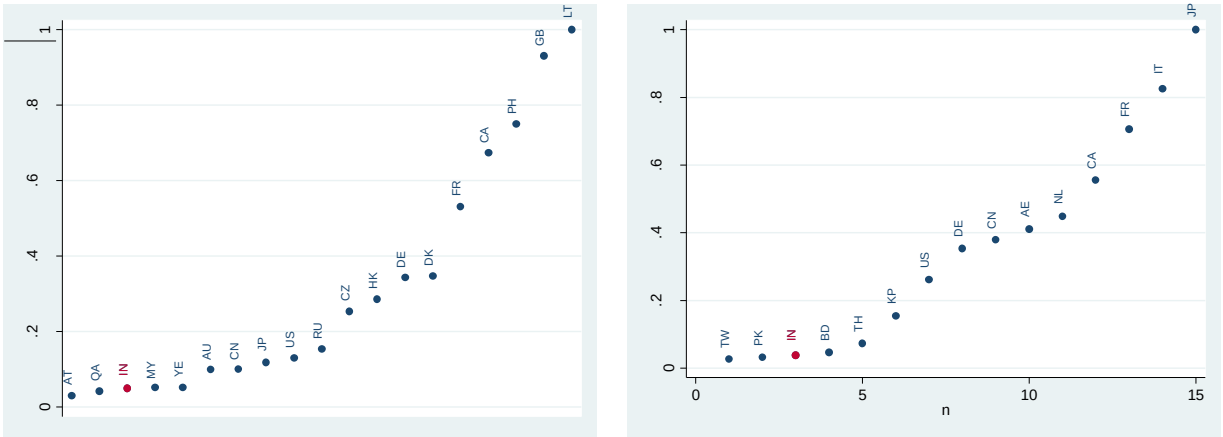


Source: Authors' elaboration with data from Nepal's Customs

A dual quality distribution is another important characteristic of some agricultural exports in Nepal. Figure 8 shows the relative unit values of Nepali exports of tea and coffee to different destinations ordered from the lowest in the left to the highest in the right. Even though the relative unit values of these products are only average in international markets, there seems to be a dual price structure in which some firms export high-volume low-price products (mainly to India) while other firms manage to export low-volume high-price exports to other destinations (EU, US, Japan). However, the presence of exporters that rely on high quality niche segments for growth is not exclusive to the agricultural sector as anecdotal evidence suggests that some ready-made garments and pashmina producers in the country specialize in fulfilling high quality small orders.

Figure 8. Quality Ladder: Relative Unit Values of Nepal Exports by Destination (2014)

Black tea (HS 090240) **Coffee (HS 090111)**



Source: Authors' elaboration with data from Nepal's Customs

Fact 5. Recurring refusals of imports in processed food and herbal medicine products which are highlighted in the NTIS 2015

Import rejections at the border are a rough indicator of compliance capacity and can highlight areas in the quality infrastructure that need to be improved. If a country has high rejection rates in all markets for all or most of the commodities they export, these suggests systemic deficiencies and the need to strengthen their overall compliance capacities or quality infrastructure. Similarly, if a country faces substantial import rejections in particular markets, this possibly indicates challenges to comply with specific technical regulations in specific export markets.

Nepal has a relatively few cases of import rejections in the main developed countries for which reliable data exist. It is worth highlighting, however, that the number of import rejection per US$1 million of agrifood imports is low on average in these countries (0.019 rejections per US$1 million of imports) and that Nepali exports to these destinations are already low. The products that face the highest rejections are processed food and medicinal herbs and supplements, two sectors highlighted in the NTIS and as a result it could be harder to consolidate these products in international markets. Import rejections are due to several reasons possibly related to poor handling of products before shipping (e.g. aflatoxin and decomposing/unfit foods) or to lack of standard compliance (e.g. labelling/misbranding, absence of approved drug application). These patterns suggest that the compliance problems faced by Nepal are not commodity-specific but are across the board.

Recurring import rejections could pose a serious reputational risk for Nepal's exports and result in lower export prices and higher costs for exporters. Joujean and Le Vernoy (2012) found a negative relationship between unit prices and refusals on export markets – a clear indication that a country's reputation in international markets suffer if it fails to comply with import regulations. Systematic violation of import standards and subsequent rejection could also increase the cost of exporting for domestic exporters. For example, whenever a country of firm is found repeatedly violating US regulations, the FDA issues alerts and implements procedures that result in 100% sampling process of products from that particular country for as long as the alert is active even if corrective actions have been put in place. Because the burden of proof that a product is safe for human consumption changes to the exporter, this creates new costs in the form of new testing or certifications that had to be procured by the exporter (Buzby at. al. 2008).

Table 1. Import rejections of Nepali products in foreign markets (2011-2015)

	Rejections	Main products	Reasons for rejection
United States	22	Herbal supplements and medicines; spice (chili) sauces and powder; processed vegetables, fruit marmalades and preserves, pet food	Drug without an approved drug application; labelling/misbranding; decomposed/unfit food
Japan	6	Spice (chili) sauces and powder, silver jewelry	Aflatoxin; non-conformity with material standards (lead)
European Union	5	Buckwheat flour, medicinal/food supplements, processed/pickled vegetables, pet food	Higher levels of arsenic, lead and mercury; high levels of erucic acid; undeclared gluten

Source: Authors' elaboration with data from US FDA, EU's RAFSS, and Japan's Ministry of Health, Labor and Welfare.

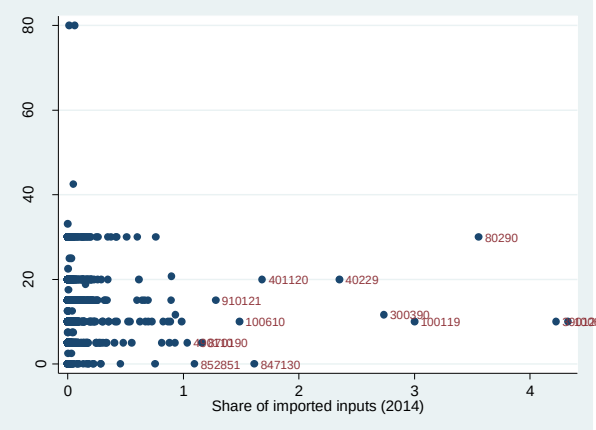
3. Policy Options

Policy Option 1. Facilitate access to imported inputs by reducing tariffs on key raw materials and intermediate products after carefully considering the impact on fiscal revenues

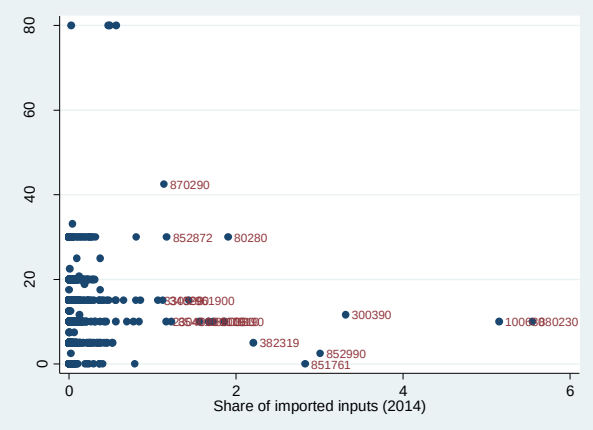
Non-trivial tariff duties are levied on key inputs imported by export sectors highlighted by the NTIS 2015. Figure 9 shows in the y-axis the most-favored nation (MFN) duties charged for the key imported inputs used by exporters in some of the priority sectors in the NTIS 2015. For example, some of the main inputs for the production of pashminas, animal fine hair (HS 510211) and woolen yarn (HS 510610), pay a tariff of 5%, while plastic packing materials (HS 392390) and fruit concentrate (HS 200899) – two key inputs for the production of fruit juices - pay tariffs of 25 and 15%, respectively. While direct exporters may be entitled to a duty drawback (that still entails filing costs), many firms that 'apparently' sell to the domestic market may effectively be exporting since they are selling to tourists in Nepal. Pierola et. al (2015) show that that firms exposed to higher tariff and non-tariff measures import fewer inputs and exhibit lower import variety.

Figure 9. MFN rates for imported inputs by selected NTIS 2015 industries (2014)

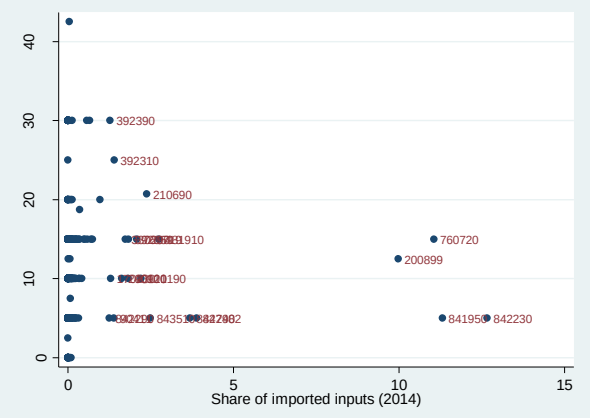
Pashmina (HS 6214)



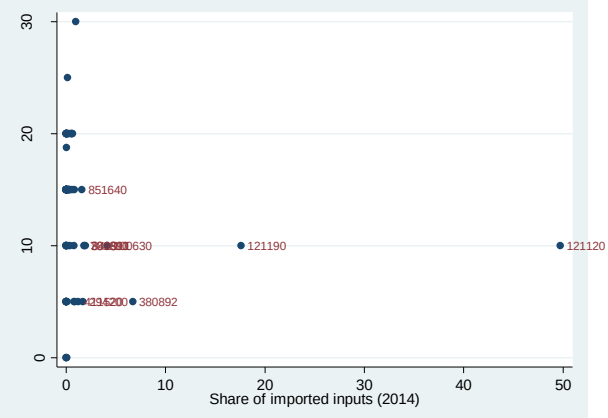
Knotted carpets (HS 5701)



Fruit juices (HS 2009)



Footwear (HS 6401)



Source: Authors' elaboration with data from Nepal's Customs and WTO

The government should reduce or eliminate custom duties on products that are key for the prioritized sectors after carefully analyzing its fiscal implications. Because tariffs represent an important share of fiscal revenues (21.7% in 2013), a selective reduction of tariff duties for the most important inputs used by exporters would need to be accompanied by a detailed analysis of its effect on fiscal revenues and aim to be as revenue neutral as possible. In order to facilitate this prioritization, Table 2 provides the list of the twenty most important products imported by exporters. Additionally, the government should review its policy of levying of tariff on import of industrial raw materials on basis of domestic sales or export whenever the distinction between export and domestic sales is arbitrary, as argued above. For example, pashmina producers pay 5% tariff on yarn is they sell the product in domestic market and only 1% if they export but distinction between selling locally and exporting is artificial as 60% of domestic sales of pashminas goes to tourists – effectively being exported.

Although tariff reduction for key inputs would boost the competitiveness of exporting firms, it could also change the incentives to export in some sectors. A reduction of tariffs in intermediate inputs without a corresponding reduction of tariffs for final goods would increase the effective rate of protection afforded to final goods that use those intermediate inputs. Hence, the tariff rationalization exercise should also take into consideration the effect on this increased effective protection granted to domestic value addition and how it might impact firms' decisions to sell domestically or enter export markets.

Table 2. Main imported products by exporters in Nepal (2011-2014)

HS6	Product	Avg. imports	% imports	MFN rate NPL	MFN rate IND
720719	Other semi-finished products of iron and steel	197.5	4.8	5	15
150710	Soya bean oil	62.3	1.8	5	45
100630	Rice	58.1	1.7	10	70
720839	Iron or steel of a thicknedd of less than 3 mm	56.7	1.6	5	15
100590	Maize	42.5	1.2	10	60
252310	Cement clinkers	39.4	1.1	30	10
721391	Iron or stell of circular cross-section of less than 14 mm	36.9	1.1	18	15
230400	Oil-cake and other solid residues	33.4	1	10	30
720310	Ferrous products obtained by direct reduction of iron ore	31.1	0.9	5	15
390120	Polyethylene	28.8	0.8	10	10
720918	Iron and steel of a thickness of less than 0.5 mm	28.1	0.8	5	15
530310	Jute and other textile fibers	26.1	0.7	5	10
100610	Rice in the husk	23.5	0.7	10	80
120510	Low erucic acid rapeor colza seeds	23.2	0.7	10	30
80290	Other nuts	22.4	0.6	30	100
240120	Tobacco, partly or wholly steemed	22.3	0.6	15	30
120790	Other soybeans	21.4	0.6	10	30
151110	Other soybean oil	20.9	0.6	5	100
70190	Potatoes	20.1	0.6	10	30
390210	Polypropylene	16.3	0.5	10	10

Source: Authors' elaboration with data from Nepal's Customs

Box 1. Tariff Policy Reform in Pakistan

Even within a highly restrictive region, Pakistan stands out with one of the highest simple average tariffs in South Asia at 14.3% in FY 12/13 which is more than twice the level found in other regions of the world. High import tariffs shield Pakistan's domestic producers from international competition and prevent access to cheap imported inputs. Pakistan's tariff structure increased in complexity after 2004 with the introduction of new statutory duty rates, the use of additional and regulatory duties, and the multiplication of statutory regulatory orders (SROs). Furthermore, because SROs apply to some firms in selected industries, this results in an anti-competitive and highly discriminatory business environment. The seven major customs-related SROs affected 25% of imports and generated revenue losses of about Rs. 100 billion (42% of collected customs duties) in FY 2012-13.

The World Bank provided support to the Federal Board of Revenue (FBR) to analyze the tariff structure, quantify the revenue implications of several reform scenarios and come up with plans to rationalize the tariff structure and phase out some of the most important SROs. In particular, two sets of actions were applied in parallel: (i) a 3-year Tariff Rationalization Plan that will reduce the number of statutory tariff rates from eight to four by FY 16/17, with priority given to reducing tariffs on capital and intermediate goods. (ii) a 3-year complementary plan phasing out SROs that aims at removing distortions and levelling the playing field for all domestic producers.

After an iterative process that discussed the several scenarios for tariff duty reduction, FBR agreed to reduce the number of statutory tariff rates and their dispersion. Changes to the tariff schedule introduced in the last two budgets brought the number of standard tariff slabs to five (2, 5, 10, 15, 20 percent) by reducing the customs duty for 341 tariff lines from 30% to 25% in FY14/15 and then reducing custom duties for 1,454 tariff lines from 25% to 20% in FY 15/16. As a result, 95% of tariff lines now lie between 2% and 20% and both the standard deviation and coefficient of variation (standard deviation over mean) declined from 11.9 to 10.7 and from 0.82 to 0.80, respectively. Additionally, the simple average tariff declined from 14.5% to 13.4% between FY 13/14 and FY 15/16.

Policy Option 2. Exploit the potential of regional value chains by developing linkages with manufacturing firms in bordering states in Northern India

Manufacturing exports to India are concentrated in a handful of final goods with little value addition. A few products within a handful of sectors dominate Nepal exports to India. Figure 10 shows that about half of exports to India are accounted by steel products[3] (25%) and synthetic yarn and fabrics[4] (23.1%). In fact, twenty five products belonging to the ten sectors shown in Figure 10 represent about 80% of exports to India in 2011-2014. Little domestic value addition is one of the characteristics of these products. For example, since Nepal does not produce iron or steel, exporters import steel and roll it into final steel products (TMT bars) that are subsequently exported to India. Similarly, since there is no domestic production of the main raw materials for synthetic yarn (oil), textile exporter import plastic pellets or yarn and transform them into fabrics that are re-exported to India.

[3] HS 72 and 73.
[4] HS 54 and 55.

A few large firms dominate most important exporting sectors to India. Figure 11 shows the share of exports to India accounted by the top three biggest exporters in each of the ten export sector described above. Remarkably, in only three sectors (Synthetic yarn – HS 54, Chemicals – HS 38, and Plastic products – HS 39) the market share of the thee biggest firms is under 80 percent while in some sectors (Synthetic fabrics – HS 55, Fruit juices – HS 20, Footwear – HS 64, and Metals (copper) – HS 74) the market share of those firms is equal or close to 100 per cent.

Figure 10. Share of Exports to India by HS 2-digit sectors (2011-2014)

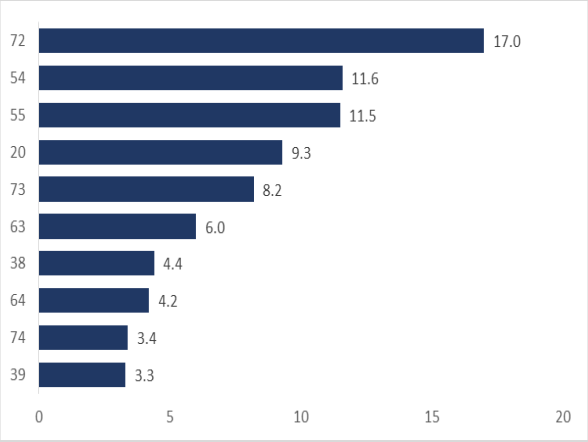
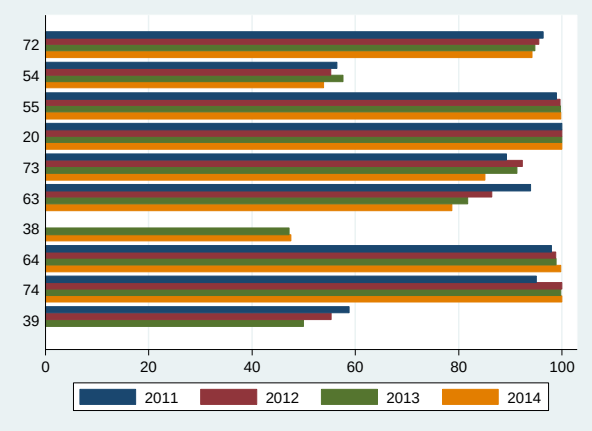


Figure 11. Share of sector exports to India by top 3 firms (2011-2014)



Source: Authors' elaboration with data from Nepal's Customs

The manufacturing sector in northern Indian states could represent an opportunity to start exporting intermediate goods for Nepal. Although high costs of transport and energy, inadequate provision of public goods and low levels of investment reduce Nepal's ability to participate in global value chains, firms in neighboring Indian states could provide an opportunity for Nepali exporters to enter into regional value chains by providing them with intermediate inputs. Table 3 shows the top 25 non-hydrocarbon[5] imported inputs by manufacturing firms in North Indian states bordering Nepal (Uttar Pradesh, Bihar, Sikkim, Uttarakhand and West Bengal). Two issues are worth highlighting. First, Nepal exports to India as a whole seem to be a mismatch for the manufacturing imports structure in Northern India: only 3 of the top 50 exported products to India belong in Table 3 (refined cooper, flat rolled steel, and ferrous waste and scrap). Second, despite this mismatched export and import structures, there are some opportunities for Nepali firms to supply some of these inputs as the country already exports significant amounts of chemicals, articles of vulcanized rubber, soybean oil, natural rubber, and oxometallic salts that are among the most imported intermediate inputs in neighboring states.

More evidence is needed to understand the elements that constraint firms in Nepal to fulfill the demand for industrial products in Northern India. Given the unfulfilled potential for Nepali firms to supply some products to Northern India, there is the need to understand the reasons that explain the absence of Nepali exporter in those regional value chains in order to propose policy measures to address these issues.

[5] Hydrocarbon products – mainly oil and coal – represent about a quarter of imported inputs by manufacturing firms in North Indian states.

Additional analysis using matched customs and business census data and consultations with private stakeholders like the Nepal-India Chamber of Commerce and Industry could provide more insights into the potential issues that prevent exporters from supplying these regional value chains (e.g. inability to supply required quality, large size orders, lack of information, etc).

Table 3. Main Industrial Inputs Imported by North Indian states (2012-2013)

Code	Product name	% imports N. India	Exported by Nepal	Top 50 exports to IND
38230	Industrial diamonds	6.4	No	No
21535	Palm oil	6.4	No	No
41412	Unrefined copper	4.1	Yes	No
41413	Refined copper	3.7	Yes	Yes
41211	Flat rolled steel	2.7	Yes	Yes
47140	Cathode valves and tubes	2.6	No	No
41122	Alloy steel	2.3	Yes	No
39340	Ferrous waste and scrap	2.0	Yes	Yes
49129	Parts and accessories of motor vehicles	1.8	No	No
34140	Carboxylic acids and peroxides	1.8	No	No
34231	Other non-organic chemicals	1.7	Yes	No
36270	Articles of vulcanized rubber	1.6	Yes	No
34232	Phosphoric acid	1.5	No	No
21531	Soybean oil	1.5	Yes	No
45290	Parts and accessories of computers	1.3	No	No
1950	Natural rubber	1.2	Yes	No
34139	Other alcohols and phenols	1.1	No	No
41121	Non-alloy steel ingots	1.1	Yes	No
14210	Groundnuts	1.0	No	No
43122	Automobile engines	1.0	No	No
34240	Phosphates	1.0	No	No
38702	Prefabricated buildings	1.0	No	No
34520	Sulphur	1.0	No	No
34250	Oxometallic salts	1.0	Yes	No
21533	Sunflower seed oil	0.9	No	No
	Top 25 products	**51.8**	-	-

Source: Authors' elaboration with data from India's Annual Manufacturing Survey 2012-2013

Policy Option 3. Improve the National Quality Infrastructure (NQI) to boost competitiveness and facilitate entry into GVCs

Increased compliance with quality and safety standards might allow Nepal to take full advantage of favorable market access in developed countries. Access to large scale international markets for agricultural products can contribute to creating jobs in rural areas and reduce poverty. Nepal has favorable access to developed markets like the US, EU and Japan for agricultural products (in which more than ninety percent of tariff lines do not pay customs duties). However, the inability of exporters to comply with stringent sanitary and phytosanitary standards (SPS) could be preventing it from taking advantage of its preferential access.

Nepal's quality infrastructure capacity is low compared to similar countries. The Trade Standards Compliance Capacity Indices (TSCCI) focus on the ability of countries to perform the key functions needed for compliance with technical regulations and standards with a specific focus on its relevance for the country's participation in international trade (UNIDO 2015)[6]. Table 4 shows the rankings for Nepal and benchmark countries across the ten compliance functions covered by the indices. The results suggest that Nepal has weak capacity across the board and the lowest capacity compared with countries in the region (Bangladesh, Pakistan and Sri Lanka) and landlocked countries with substantial agricultural exports (Rwanda and Uganda). Nepal is placed in the lowest quintile for food safety capacity and in the second lowest quintile for six of the ten indices including standardization, technical regulations, metrology, and certification, among others.

Table 4. Trade Standards Compliance Capacity Indices (Quintiles)

	Nepal	Bangladesh	Pakistan	Sri Lanka	Rwanda	Uganda
Quality policy/legislative framework	2	3	5	5	4	3
Standardization capacity	2	4	4	5	4	3
Technical regulation capacity	2	2	2	2	4	4
Metrology capacity	2	3	5	4	3	3
Accreditation capacity	3	4	4	5	1	4
Inspection capacity	2	3	2	2	2	2
Testing capacity	3	4	5	5	1	4
Certification capacity	2	4	5	5	4	3
Food safety capacity	1	3	5	5	2	1
WTO-related institutions for technical regulations and standards	3	4	4	4	4	4

Source: UNIDO (2015)

Inadequate national quality infrastructure exacerbates some of the disadvantages that Nepal faces as a landlocked country. Sanitary and phytosanitary (SPS) measures contribute significantly to trade time and costs along the Kathmandu-Kolkata corridor. Anecdotal evidence suggest that import authorities in India will occasionally send samples to laboratories in Kolkata for testing because SPS certificates granted in Nepal are not recognized internationally. Nepal's current SPS system has major capacity gaps and weaknesses in WTO compliance, namely: (i) the SPS system is not risk-based; (ii) the food control system is mainly focused on quality requirements, not on food safety requirements; (iii) SPS agencies and laboratories suffer from frequent rotation of staff; (iv) insufficient capacity in plant pest surveillance and

[6] The TSCCI assess the relative performance of 49 countries across 10 capacity areas related to the overarching policy and regulatory framework, ability to promulgate standards and technical regulations, and the status of metrology, testing, inspection, certification, and accreditation services. Relative scores are grouped into quintiles with the first quintile corresponds to the weakest capacity and the fifth quintile to the strongest capacity.

diagnostics; (v) no capacity to control pesticides; (vi) SPS import inspection is hardly in place and ineffective; and (vii) there is at present no testing capacity and accreditation for food safety parameters in microbiology, pesticide residues, veterinary drug residues, heavy metals, other pollutants and mycotoxins (World Bank 2015c).

Nepal should invest in strengthening services that support export compliance with international standards. Building capacity in institutions charged with inspection and sanitary standards and strengthening the capability and reliability of infrastructure for the control of SPS - especially laboratory infrastructure, analytical testing capabilities and investment on inspection facilities - is critical to enhance the ability of exporters to comply with SPS regulations and reduce rejection rates at the border. For most countries, improving the national quality infrastructure (NQI) entails a broad policy effort that might require investment in national standards institutes, microbiology and chemical testing laboratories, national metrology institute, and national accreditation certification capacity to certify enterprises for international certificates (e.g. ISO 9001, ISO 14001 and ISO 22000), among others (ITC 2011). However, information gathered during interviews and additional research indicate that two targeted interventions could have a great impact in compliance with international standards: standards harmonization and international accreditation.

Nepal should harmonize domestic standards to international ones for products with export potential or at least for those highlighted by the NTIS 2015. There are several instances in which product standards developed by Nepali authorities do not fulfill international standards either because their limits do not comply with international ones or because domestic standards do not include some parameters required in international markets. The misalignment of domestic and international standards for export products limits their growth potential and, in some cases, exclude exports from specific markets. For example, mandatory standards have been adopted for lentils but there is a need to harmonize them with international standards (Codex) by incorporating maximum residue levels (MRLs) for pesticide residues, heavy metals, mycotoxins and other contaminants (NTIS 2015). Likewise, in the case of honey, standards set by the NBSM in terms of moisture content, sugar content, water insoluble solids, among others, are below European and international (Codex) standards which severely limits the number of destinations into which honey can be exported (GIZ 2015). Because the costs of compliance with more stringent international standards might be high for firms focused on the domestic market, the harmonization of domestic standards should target only products that are mainly exported or have export potential.

Support the upgrade in technical competence of testing laboratories for international recognition (accreditation). The capacity of laboratories to test and certify goods for developed markets is uneven. The lack of internationally accredited laboratories that can issue internationally recognized sanitary certificates and test reports makes exporting more costly. Most key agricultural products sold by Nepal are sent to other countries for testing and certification due to weak capacity to test, certify or accredit in the country, and hence increasing the cost of each product and making it less competitive in the global market. The capacity of public laboratories to get accredited should also be improved. For instance, some regional labs of the Department of Food Technology and Quality Control (DFTQC) conduct test for pesticides MRLs needed for key export products but are not internationally accredited which sometimes result in shipments held at the border with India until further test are done in Kolkata.

A comprehensive approach to capacity building in several institutions dealing with quality infrastructure are needed. As previously mentioned, Nepal's lack of capacity to issue credible

phytosanitary certificates is having a detrimental effect on the country's exports. By international standards, plant pest screening and issuance of phytosanitary certificates always needs backup from crop pest surveillance, a reference laboratory, and inspection at production and/or packing locations. Nepal does not have a national reference laboratory for diagnostics of plant pests and diseases and its pest surveillance methodology and coverage are deficient. Hence, without a comprehensive plan to address these deficiencies, investment in screening capacity at the border is of limited use (World Bank 2015c).

Box 2. Country Responses to NQI Challenges: The Case of Uganda

In 1999, the European Union banned all fish imports from Uganda due to a series of incidents in which export shipments were contaminated with microbiological agents and to the inability of the national authorities to guarantee the safety of fish exports. Uganda turned this threat into an opportunity and successfully improved the quality management of its fish sector by changing processing practices and adopting certification processes that helped ensure safety and quality for the final consumers of Nile perch.

The pressure brought upon by the potential loss of the lucrative EU market provided major incentives for stakeholders through the whole value chain to face the problems affecting the sector. The members of the Uganda Fish Processors and Exporters Association (UFPEA), European fish importers, the government of Uganda and the EU worked together and took action to deal with the microbiological contamination issues. The government set up several working group meetings with the participation of UFPEA to design an action plan which resulted in major initiatives to restructure the government agencies responsible for managing Uganda's certification process, match its certification process to the EurepGAP (due to the importance of the EU market for fish exports), streamline regulations and concentrate authority in one department (Department of Fisheries) for certification, restructuring its guidelines and monitoring and inspection systems, and training of inspectors.

At the time of EureGAP certification adoption, no laboratory in Uganda could performs the biochemical tests to check for pesticide residue and samples were send to Belgium for testing. A Belgium private laboratory recognized that there was sustained business for them in Uganda, and opened a laboratory in Kampala which helped streamline the certification process and reduce costs for exporters. Because many exporters wanted to add another layer of quality standards and demonstrate that they were serious about quality, UFPEA adopted a voluntary code of Good Manufacturing Practices (GMPs) and seeks HACCP and ISO 9001 certification for its members with support from USAID and the EU. The result is a more competitive industry than its neighbors and one that has gained a reputation for good quality in Europe.

Source: Webber and Labaste (2010) and World Bank (2015)

Policy Option 4. Reposition selected products on high quality segments

Improving the quality of Nepali exports should be one of the pillars of a strategy aimed at reigniting export growth in Nepal. The previous section showed that quality upgrading is needed for products prioritized in the NTIS 2015 and that a small number of exporters is already able to export high-quality products to developed countries. Nepal can grow its exports by shipping a greater quantities of products fetching low unit values like is the case with the majority of exports of NTIS 2015 agricultural products to India. Another way the country can increase the absolute amount of exports is by improving the quality of exports and thus the value of exports per unit. The ability to guarantee consistent quality will also build competitive advantage and loyalty from importers because it reduces the risk of trade disruptions due to erratic and irregular quality. By reducing risks, it also allows for investment in value chain development, upgrading and value addition.

Specialization in low-volume high-value segments in specific value chains should also be considered. Some exporters of agricultural products in Nepal (e.g. tea and coffee) have found success by supplying niche markets that pay higher prices for smaller and more consistent orders for their products. Anecdotal evidence suggest that some manufacturing firms have also found similar niches in which direct competition from large-volume producers like China, Vietnam or Bangladesh is not an issue. For example, Himalaya Knitwear sells hand knit woolen hats and sweaters in almost 500 stores in the US, Canada and Japan - including specialized outdoor equipment REI and Bob Ward's – through a partnership with a US company (Everest Designs). Himalayan Knitwear specializes in high-quality hand-knitted products exporting about 600,000 pieces a year that are placed in relatively small orders that large manufacturers in China and India would not handle.

Box 3. Quality Repositioning in International Markets: The Experience of Rwandan Coffee

In response to the steady decline in export revenues from the coffee sector in the 1990s, the government or Rwanda decided to improve coffee positioning in world markets. Rwanda's coffee was considered commodity grade and in order to move to a specialty coffee grade, improvements were needed in three key areas:

- Increase production levels: Because Rwandan coffee production was insufficient to attract global demand, the government decided to substantially increase production by distributing improved inputs, supporting growing associations, replanting coffee trees, and constructing wet-mill stations in main producing regions.

- Improve quality: Repositioning Rwandan coffee on high quality segments started with educating producers on quality and cupping, establishing quality-control mechanisms, investing and technical assistance in wet-mill techniques and operational and financial management.

- Promote the Rwandan band: In order to increase the recognition of the improved Rwandan coffee in international markets, the government decided to establish and improve market linkages through trade-show visits, sharing information about the local and global coffee markets with the private sector and instituting other innovative promotional activities.

Before 2001, Rwanda was unknown in the specialty/high-value coffee sector but today it is a renowned supplier of specialty coffees to the EU and the United States. In 2005, Starbucks selected two privately owned wet-milling facilities for an exclusive distribution program that provided coffee to 5,000 Starbucks retail outlets. Without Rwanda's ability to improve the quality of its coffee beans from ordinary to standard and specialty grades it would have been impossible to reverse the decline in revenues from its exports.
Source: Webber and Labaste (2010)

4. Conclusions

Policymakers in Nepal are aware of the potential of GVCs to increase exports and their critical role in economic growth and inclusiveness. The NTIS 2015 highlights as one of its priorities "to identify key binding constraints to maximize the benefits of participation in increasingly important regional and global value chains" (NTIS 2015). This report presented some stylized facts about Nepal's integration in GVCs and identified policy recommendations in cross-cutting areas that relate to the majority of export sectors prioritized by the NTIS 2015.

A careful analysis of Nepal's export and import data produced five stylized facts that characterize its integration into GVCs. First, Nepal could be better integrated into GVCs. Even though its exports have high import content, Nepal is not a good supplier to regional and international value chains and is largely missing on the growing trade in intermediate products. Second, imported inputs are key for the vast majority of exporters and greater use and variety of imported intermediary inputs is correlated with higher exports, diversification of destination markets and higher quality of exports. Third, restrictive policies towards FDI compound the challenges the country faces in attracting foreign investment that can be crucial for increasing productivity, accessing new markets, and upgrading the quality of exports. Fourth, although there are some exports of high quality products, the average quality of most agricultural products prioritized by the NTIS 2015 is average. Finally, recurring import rejections in developed countries could pose a reputational risk for Nepal's exports and result in lower export prices and higher costs for exporting.

Four policy areas present opportunities to spur export growth and increase participation in GVCs. First, Nepal should facilitate access to imported inputs by reducing tariffs on key raw materials and intermediate products. Second, efforts should be made to develop linkages for Nepalese firms to integrate into value chains in northern Indian states bordering Nepal. Third, strengthening national infrastructure and services that support export compliance with international standards will boost competitiveness and facilitate entry into GVCs. Fourth, a strategy to reposition selected export products on high quality segments that demand in small orders will help Nepal increase exports.

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Annex 1. Export Performance Premium for Exporters in Nepal

We follow the approach used by Pierola et. al (2015) and pioneered by Bernard and Jensen (1999) to estimate the export performance premium with the following basic regression:

$$Y_{it} = \beta D_{it} + I_t + F_i + \varepsilon_{it}$$

where i stand for a firm, t stands for a year, Y_{it} is an export performance measure, I_t are fixed year effects, F_i are firm fixed effects, and ε_{it} is an independent and identically distributed (i.i.d.) error.

Because more than ninety percent of exporters – which account for more than ninety eight percent of exports - import some inputs we are not interested in estimating the effect of importing in exporters (exporter-importer premium) but instead we focus on several dimensions of intermediate inputs that capture the degree to which they represent increased variety and quality. Thus, D_{it} is a dummy variable that represents the number of imported HS 6-digit products (in logarithms), the number of import varieties defined as an HS 6-digit-origin country cell (in logarithms), and a dummy variable for exporters that import more than 30% of their inputs from outside India.

Table 5 shows the results from these specifications which reveal significantly higher export values, larger number of destinations, and relatively higher product quality than average for exporter that import more products, more varieties, and a larger share of imports from outside the region.

Table 5. Export Performance Premia for Exporter-Importers

Log export value			
Log number of products*	0.253***		
	(0.020)		
Log number of varieties**		0.273***	
		(0.012)	
Dummy for >30% non-SAARC imports			0.168***
			(0.012)
Log number of markets			
Log number of products*	0.036***		
	(0.059)		
Log number of varieties**		0.297***	
		(0.057)	
Dummy for >30% non-SAARC imports			0.403***
			(0.037)
Log average unit values			
Log number of products*	0.073***		
	(0.033)		
Log number of varieties**		0.106***	
		(0.019)	
Dummy for >30% non-SAARC imports			0.109***
			(0.016)
Year fixed-effects	Yes	Yes	Yes
Firm fixed-effects	Yes	Yes	Yes

* Products are defined as HS 6-digit level codes

** Varieties are defined as product-country of origin pairs