

INDUSTRIALIZATION AND GLOBAL VALUE CHAIN PARTICIPATION: AN EXAMINATION OF CONSTRAINTS FACED BY THE PRIVATE SECTOR IN NEPAL

Yurendra Basnett and Posh Raj Pandey

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ABSTRACT

The world's trade landscape is being shaped by global value chains, which present new opportunities as well as challenges to developing countries. While large developing countries are leveraging the benefits of global value chains, smaller economies have been less successful. In this paper we examine the constraints faced by Nepal, a land-locked least developed country, in participating in global value chains. We find that weak and ineffective industrial policy has led to de-industrialization, which in turn has reduced productive capacity. The high cost of transport and energy, inadequate provision of public goods and low levels of investment reduce the country's ability to participate in global value chains. As a land-locked country, Nepal is dependent on regional neighbors for access to global markets. Shallow regional integration, the prevalence of non-tariff barriers, and inefficient transit trade further disadvantage Nepal.

Keywords: industrial policy, global value chain, Nepal

JEL Classification: O530

I. INTRODUCTION

Advances in technology, transportation and communication are constantly reorienting the pattern of global trade. They have contributed to the global fragmentation of production processes and have allowed firms to source competitively as well as to add value to factors of production located at a distance. As a result, global trade increasingly consists of *trade in tasks*. In other words, while in the past the vast majority of trade took place between producers and consumers (i.e., in final products), 80% of world trade is now between producers or firms.

When Adam Smith wrote about production specialization using the example of a pin factory, the production of pins took place largely in a single country and under a single roof. Today, not only the sourcing of the material (which applied even in Adam Smith's time) but also the production, assembly, and marketing of parts of the pin can take place in different countries. For instance, Toyota—the world's largest car manufacturer in 2012—has pioneered lean production systems using a global network of suppliers. As costs for 3-D printers decrease and they become globally accessible, this will further contribute to the global fragmentation of production processes and increased trade in value adding.

This changing context of global production and trade will have important implications for developing countries and producers located within them. As external markets for exports change so, too, will opportunities for production and trade at home. This makes it necessary to look at global trade from the outset through the refined lens of global value chains (GVCs). Policymakers and firms in developing countries will need to assess linkages to and location within GVCs as well as the productive capacities needed to move up the value chain. The governance of a GVC, likely to be defined by the lead firm, will determine the terms of participation as well as the benefits it will confer.

Participating in and moving up GVCs will be important for economic development. It will help to generate productive activities, which in turn will contribute to increasing income and employment. It could also lead to dynamic benefits such as investment and upgrading of productive capacity, contributing to economic diversification and resilience, backward linkages leading to broad-based economic growth, and knowledge creation that helps increase skills. Effective industrial policy will be critical in increasing the competitiveness of an economy to participate in GVCs.

While large developing economies have leveraged GVCs for their economic growth and diversification, smaller economies have been less successful in doing so. This raises an important development concern about global convergence and divergence being shaped by GVCs, and the risk of further marginalization of smaller economies.

This paper looks at the constraints—both behind and beyond its borders—that Nepal, a least developed land-locked economy with limited participation in both global and regional value chains, faces in participating in GVCs. The analysis in the paper is based on recent and relevant publications, key economic data, and interviews with policymakers and stakeholders. The research also included case studies of two leading firms in Nepal which present the views of the private sector.

With regard to behind-the-border factors, the paper argues that shallow productive capacity, high transport and energy costs, inadequate provision of public goods, and low levels of investment have constrained Nepal's ability to participate in and benefit from GVCs, and that ineffective and weak implementation of industrial policy has meant that these constraints remain unaddressed.

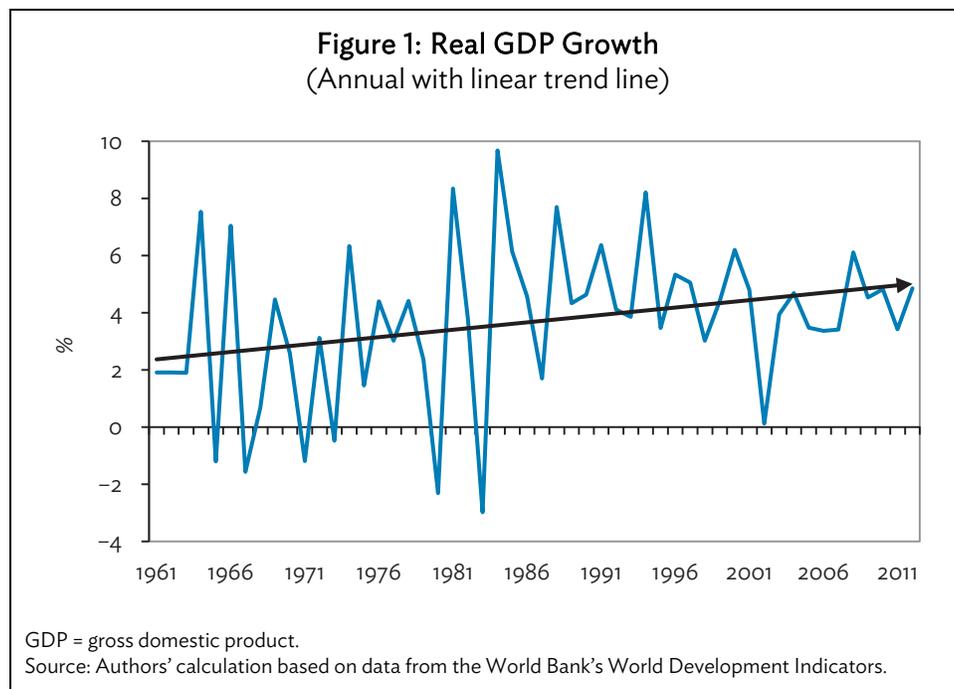
As a land-locked country, factors beyond Nepal's borders also have important implications for production and trade competitiveness, which in turn can influence its participation in GVCs. This paper argues that Nepal is part of the least integrated region in the world with limited regional supply chains. Transit trade is via a single, over-congested port in India (Kolkata). Trade flows are hampered by the presence of pervasive non-tariff barriers beyond the border.

II. PROFILE OF THE ECONOMY

A. Weak Economic Growth and Transformation

Sustained and inclusive economic growth in Nepal has failed to materialize because of a lack of meaningful structural economic transformation. Economic output in Nepal remains weak and narrow.

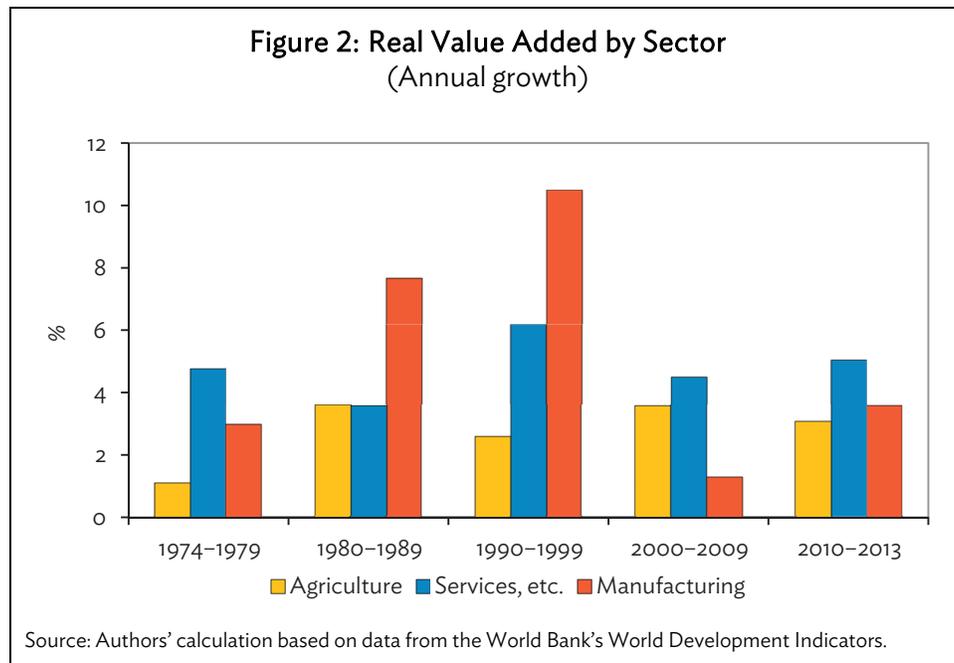
Historically, economic growth in Nepal has been low, averaging about 4% per year since the early 1960s but with large variances from year to year (Figure 1). Overall, the economy grew by 2.5% in the 1960s, 3.7% in the 1970s, 4.1% in the 1980s, 4.8% in the 1990s, 4.1% in the 2000s and 4.4% since then. The low growth rates in the early and late 1970s were largely because of the oil crisis and low agricultural yields resulting from bad monsoons. Economic growth remains very low for an economy that is starting from a shallow economic base.



Agriculture is the dominant economic sector, accounting for over 50% of value added until the early 1990s, and provides the largest source of livelihoods (over 60% of the people are employed in the sector). Its share has, however, been gradually declining, and currently stands at 32.6% of total economic output (CBS 2014). Indicators of agriculture's performance in Nepal—agricultural gross domestic product (GDP) growth, yields for major crops and labor productivity—reveal little change in structure and productivity in recent decades (Basnett et al. 2014). The composition of agricultural trade also indicates little progress in improving competitiveness and moving up the value chain. For

instance, although Nepal is the world's third-largest exporter of ginger, the price received for Nepalese ginger on world markets is much lower than for ginger from other countries (Basnett et al. 2014).

The manufacturing sector, driven by public investments, witnessed two episodes of high growth—in the 1980s (7.7%) and early 1990s (10.5%). As economic policy shifted in the early 1990s, leading to reductions in public investments, the sector contracted to levels below those in the 1970s. The average annual growth in manufacturing value added in the 2000s was 1.3%, down from 3.0% in the 1970s, but picked up to 3.6% during 2010–2013 (Figure 2). However, without economic reform—in particular addressing physical constraints (i.e., infrastructure and energy)—and effective implementation of industrial policy, sustained growth in manufacturing is unlikely.



The service sector grew in 2010–2013, but has yet to regain the level achieved in the 1990s (Figure 2). Recent economic reforms have helped to expand the sector (Section III.A), which accounts for about 20% of total employment (second only to agriculture). The service sector also accounts for the highest value added per worker, at about \$1,486. The equivalent figure for agriculture is \$316 and \$110 for manufacturing (Basnett et al. 2014). Tourism and banking dominate the formal service sector, and more recently, there has been growth in service providers for temporary Nepalese labor migrants to the Middle East and Southeast and Northeast Asia.

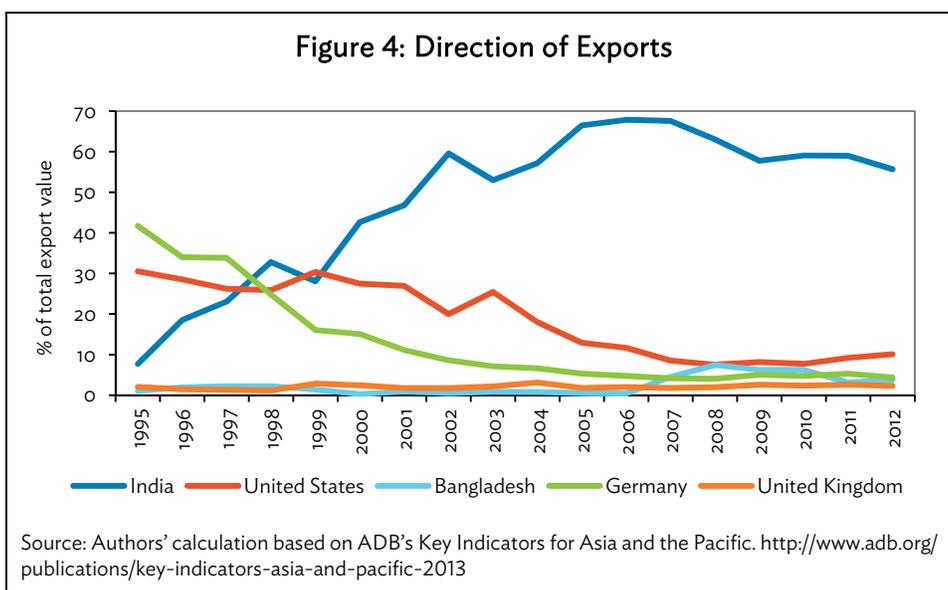
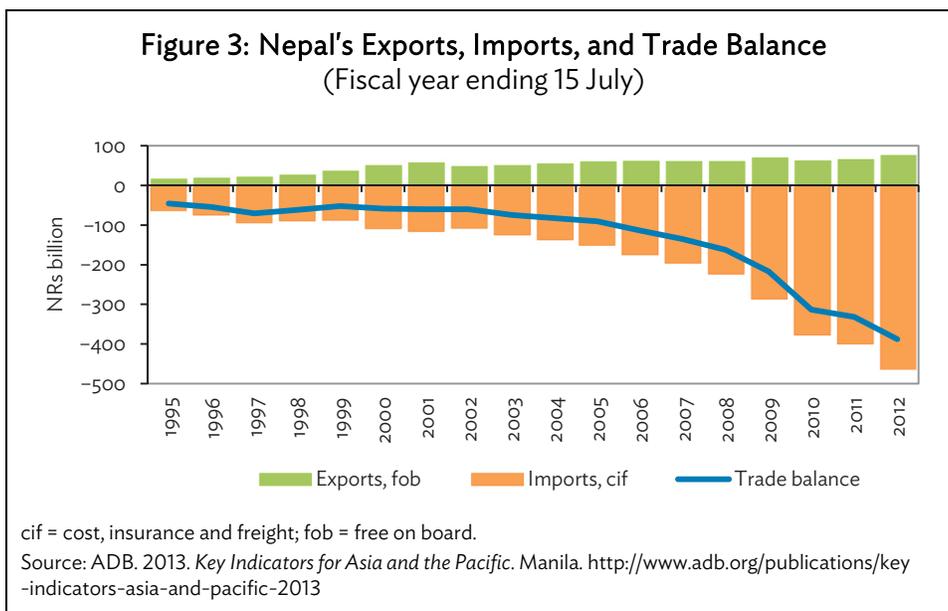
B. Increasing Trade Imbalance

Trade, which accounted for about 19% of GDP in the 1960s, accounted for 38.8% in 2012.¹ But this substantial increase has been overwhelmingly driven by imports; exports have remained stagnant. This has led to an increasing trade imbalance (Figure 3). Appendix Tables A.1 to A.5 provide details of Nepal's major export and import items.

¹ World Bank. World Development Indicators. <http://databank.worldbank.org/data/views/variableselection/selectvariables.aspx?source=world-development-indicators>

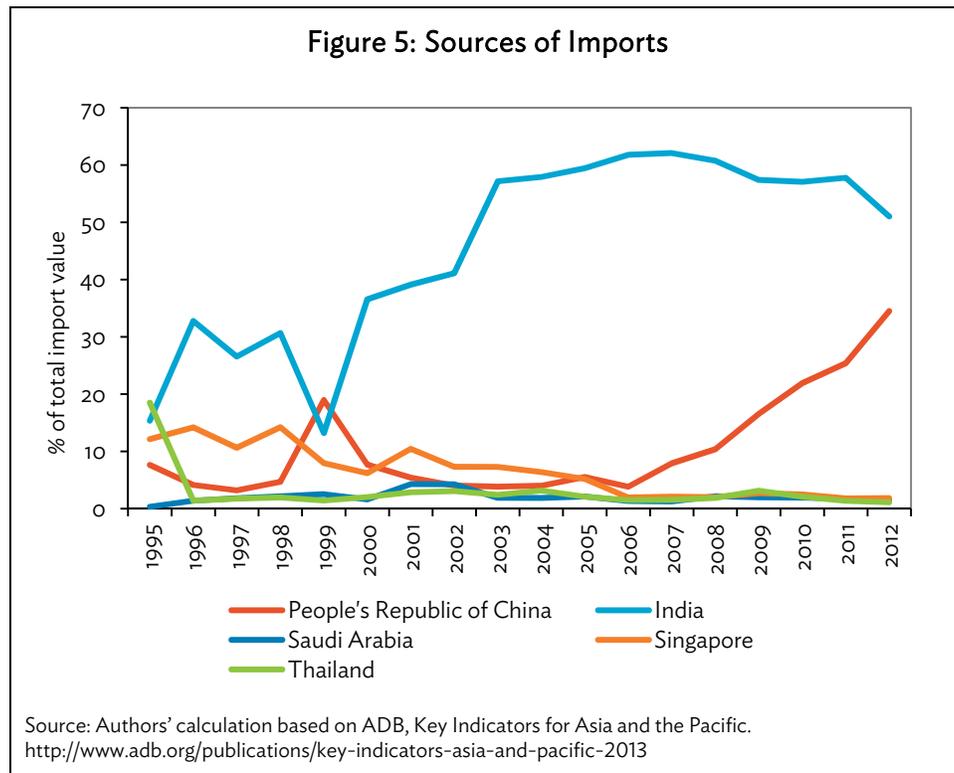
Weak productive capacity, a narrow export basket, lack of trade diversification and high costs of trade facilitation are some of the reasons behind Nepal’s inability to expand exports. Imports have increased with increases in private consumption. The growing trade deficit has been assuaged by large-scale remittance inflows, which was equivalent to 25% of GDP in 2012.

Figure 4 shows the direction of Nepal’s exports since 1995. India is overwhelmingly Nepal’s major export destination, accounting for over 50% of total exports. Very little of Nepal’s exports to India is linked to its export value chain. The major items exported to India are textiles, zinc sheet, jute goods, polyester yarn, cardamom, thread, and juice (Appendix Table A.2). Other major export destinations include Bangladesh, Germany, the United Kingdom, and the United States. Carpets, ready-made garments, pashmina and pulses are the major export items to the rest of the world (Appendix Table A.3).



The major destinations shown in Figure 4 also demonstrate the importance of two factors in driving Nepal's exports. First, as a land-locked country with weak trade infrastructure, geographic proximity is important, as reaching markets further afield increases costs and reduces competitiveness. Second, trade preferences play an important role in all of Nepal's export markets, but especially those in the United States and Europe, as they help mitigate the impact on export competitiveness of costs arising from distance. Furthermore, the fixed exchange rate regime in India has undermined Nepal's export competitiveness and concentrated imports from India.

Figure 5 shows the major sources of Nepal's imports. Again, India is the largest, followed by the People's Republic of China (PRC), Saudi Arabia, Singapore, and Thailand. Petroleum products, billets, transport equipment, medicine, and machinery spare parts are the major import items from India (Appendix Table A.4). Gold, crude, soybean oil, telecommunication accessories, electrical goods, and machinery parts are the major import items from the rest of the world (Appendix Table A.5). As with exports, geographic constraints and inadequate trade infrastructure, as well as poor trade facilitation in regional trans-shipment ports, limit import options and make imports costly. Imports are essential not only for consumption but also for production, and lack of import competitiveness undermines Nepal's ability to expand production and increase export competitiveness.



C. Minimal Private Sector Participation in Global Value Chains

Table 1 draws on the 2013 Enterprise Survey data² to highlight the key characteristics of, and the problems faced by, the private sector. The majority of the firms in the survey are domestically owned, with only about 0.1% being foreign owned, which is in line with the limited foreign direct investment

² The survey included 482 firms. For further information see <http://www.enterprisesurveys.org/Methodology>

(FDI) inflows to Nepal. Only 8.2% of firms have an internationally recognized quality certification,³ which is important for participation in GVCs.

Limited participation in regional and global value chains is reflected in firms' sales as well as input figures. Of total sales, 97.0% is domestic, 1.8% is direct exports, and 1.2% is indirect exports. A sizeable proportion of firms use inputs that are of foreign origin (44.9%), but as a proportion of total inputs, domestic inputs (72.3%) far outweigh foreign inputs (27.6%).

A number of factors constrain the private sector in participating in regional and global value chains (discussed in the rest of the paper). Table 1 highlights one critical constraint—energy shortage, and its implications for productive activities. Firms reported that 17.0% of annual sales are lost due to electricity shortage, which in turn has led to the adoption of inefficient mitigating measures—50.5% of firms own or share generators.

Table 1: Firm Characteristics in the Manufacturing Sector, 2013

General	
Age (years)	14.2
Proportion of private domestic ownership in a firm (%)	99.5
Proportion of private foreign ownership (%)	0.1
Innovation and Technology	
Firms with an internationally recognized quality certification (%)	8.2
Firms using technology licensed from foreign companies (%)	1.6
Trade	
Proportion of total sales that are domestic sales (%)	97.0
Proportion of total sales that are exported directly (%)	1.8
Percent of firms using material inputs and/or supplies of foreign origin	44.9
Proportion of total inputs that are of domestic origin (%)	72.3
Proportion of total inputs that are of foreign origin (%)	27.6
Infrastructure	
Average loss owing to electrical outages (% of annual sales)	17.0
Percent of firms owning or sharing a generator	50.5

Source: Data from 2013 World Bank Group Enterprise Survey. <http://www.enterprisesurveys.org/>

III. INDUSTRIAL POLICY IN NEPAL

A. Brief Historical Overview

Prior to 1980, Nepal's industrial policies were designed to promote import substitution and export-oriented industries. With the adoption of the International Monetary Fund and World Bank economic stabilization and structural adjustment programs in the 1980s, a major change in the direction of industrial policy took place.

The Eighth Development Plan (1992–1997) of Nepal marked a shift in the development paradigm. Under the Plan, the state-directed and -controlled economic system pursued for the previous 30 years was to be gradually phased out and a policy of development through a free market-

³ i.e., ISO 9000, 9002 or 14000.

oriented economic system adopted (National Planning Commission 1992). As part of a broader economic liberalization program, the Government of Nepal announced a new industrial policy in 1992, which emphasized deregulation, encouragement of competition, and reliance on market forces in the allocation of resources for the manufacturing sector. In the same year, a new Industrial Enterprise Act was enacted. The major thrust of these policy and regulatory changes was the emphasis on market-driven strategies and the recognition of private initiative and enterprise as a primary driver of the economy.

Nepal has taken a number of measures to promote private investment in the industrial sector. The registration process has been simplified, the information required for registration has been drastically reduced, and the government has committed to completing the registration process within 21 days of application. Industries in remote areas receive partial exemption from income tax and excise duty. Fruit processing, cider and wine enterprises in specified districts, with fixed capital of less than Nepalese rupees (NRs) 2.5 million, are exempt from excise duty and value-added tax (VAT). Policies have been introduced which allow for a higher rate of depreciation on machinery and equipment used by industries, exempt exports from domestic indirect taxes, and permit reimbursement of customs duties and VAT on imported inputs if sales are made to export houses or in convertible currencies within Nepal. The policies guarantee that no industries shall be nationalized.

The government has set up two institutions to improve the implementation of the industrial policy.

1. The Industrial Promotion Board coordinates the formulation and implementation of policies, rules and regulations related to the industrial sector. It is chaired by the Minister for Industry and comprised of representatives from various government agencies, the private sector, and experts.
2. The One-Window Committee provides facilities and concessions to industry through a single service point coordinated by the Director General of the Department of Industry.

Nepal took a number of steps to attract FDI. For example, the Foreign Investment and Technology Transfer Act of 1992 allows foreign investment of up to 100% equity in all sectors except for cottage industries, industries producing arms, ammunition and explosive materials, and a few service industries. Repatriation of the sales proceeds from FDI, as well as dividends, is permitted in convertible currency, and payment of principal and interest on foreign loans is guaranteed. Foreign investors are granted national treatment with regard to facilities and incentives. All required information and facilities are provided from a single point, a one-window system, for FDI (Government of Nepal 1992). Nepal has joined the Multilateral Investment Guarantee Agency, which provides guarantees to foreign investors against non-commercial risks like currency transfer, expropriation, breach of contract, and war and civil disturbance in the host country.

Reform in the trade sector included the rationalization and reduction of tariffs, and the abolition of import restrictions. Export procedures were simplified, with facilities for duty-drawback, bonded warehousing, and simpler documentation requirements. Export duties were exempt. Cash incentives for exports were recently introduced. Nepal joined the World Trade Organization (WTO) and the South Asia Free Trade Agreement (SAFTA), and also signed a Nepal-India trade treaty, which provides duty-free market access to all Nepalese products.

Reforms were also introduced in the tax structure and the tax administration. A system of VAT was introduced and personal income tax brackets were reduced to just two: 15% and 25% (Basnett et

al. 2014). Similarly, corporate tax was fixed at 25%, except for banks and other financial institutions at 30% (Mahat 2005, Khanal et al. 2005). Dual exchange rates were abolished. The current account balance was made fully convertible. The banking sector was deregulated and commercial banks were allowed to hold foreign exchange abroad. The national air policy allowed private airlines to operate in both domestic and international routes.

B. Recent Reforms

There have been a number of recent policy reforms that have significant bearing on industrial development. These include Trade Policy (2009), Nepal Trade Integration Strategy (2010), and Industrial Policy (2010).

The major features of Trade Policy 2009 include the following (Ministry of Commerce and Supplies [MOCS] 2009):

- lead role for export promotion has been assigned to the private sector, limiting the role of the state to that of guide, facilitator, and regulator;
- reducing transaction costs through the development of infrastructure and trade facilitation measures;
- legal and regulatory reforms to enhance competitiveness, both regionally and globally;
- enhancing linkages between the export sector and other sectors of the economy;
- provision of incentives for export-oriented industries, including simplified import procedures for raw materials, export trading houses, exemption from custom duties and domestic taxes, and a product development fund;
- establishment of export processing zones and special economic zones;
- identification of products with comparative advantage and export promotion programs for these products; and
- develop required skills and technology for export development.

The 2010 Nepal Trade Integration Strategy identifies 12 products (seven agricultural and five industrial) with export potential, and contains measures to address supply-side issues, non-tariff measures in export markets, trade facilitation and strengthening of trade related institutions (MOCS 2010). The Investment Board was set up to mobilize large domestic and foreign private investments and manage public-private partnerships for industrialization, infrastructure development, and job creation (Government of Nepal 2011).

The 2010 Industrial Policy seeks to increase exports of industrial products by improving productivity and quality, to increase the industrial sector's contribution to the national economy, to adopt and utilize new technology, and to develop human resources and entrepreneurship skills for industrial development. The policy provides special concessions and facilities to export-oriented industries, industries established in the special economic zone, industries on priority lists, and industries in least developed regions in the country.

The industrial policy identifies the following as priority industries: agriculture- and forest-based industries; cottage industries; construction services; energy-oriented industries; mining industries; adventure tourism; industries producing cement, medicine, and energy-saving instruments; and industries processing hospital waste. It also seeks to establish an investment promotion fund, a technology development fund, a sick industries revival fund, and an industrial investment protection

fund (to compensate non-business and non-commercial risks) in partnership with the private sector. However, the necessary legislation is not yet in place to enable these provisions of the 2010 Industrial Policy, as well as policies for the establishment of the special economic zone, to be implemented.

C. Formulation and Implementation Process

The Ministry of Industry (MOI) is responsible for making and enforcing policies on industrial development, including those related to foreign investment, development and transfer of technology, industrial promotion and protection, patent design and trademarks. The government does not have a well-defined procedure for policy making nor are its records accessible. As a result, the authors interviewed current and former government officials and private sector representatives in order to understand the industrial policy formulation process, in particular, the 2010 Industrial Policy.

The impetus for developing a new industrial policy, to replace that of 1992, arose from changes in the global economic landscape, increased competitiveness, and Nepal's membership in the WTO and SAFTA. The MOI established a task force to coordinate the formulation of the new industrial policy. The task force included key experts as well as representatives from private sector agencies such as the Federation of Nepalese Chambers of Commerce and Industry, the Confederation of Nepalese Industries, and the Federation of Nepalese Cottage and Small Industries.

The draft policy prepared by the task force was discussed with stakeholders from the private and public sectors, and the MOI solicited comments and feedback on the draft from relevant government agencies and the private sector. According to a task force member, none of the government agencies, other than the Ministry of Finance (MOF), forwarded written comments, and those received from the MOF were limited to revenue and expenditure implications, and did not cover industrial promotion or suggestions on improving the overall effectiveness of the policy. Once the comments received had been incorporated, the MOI finalized the draft and forwarded it to the Council of Ministers for approval.

The above process indicates the government's willingness to formulate industrial policy in a consultative manner and to elicit information from private sector stakeholders in order to address specific market failures. However, the coverage of the consultation was not sufficiently wide, and some of the private sector representatives were of the view that the process was exclusive and limited to small group of influential parties.

The responsibility for implementing industrial policy lies with the Department of Industry, although the Department of Cottage and Small Industries, under the Ministry of Trade, administers small and cottage industries. In addition, the institutions created under the policy—the Investment Promotion Board and the One-Window Committee—are responsible for their assigned duties.

IV. EFFECTIVENESS AND IMPACT OF INDUSTRIAL POLICY

A. Declining Productivity and De-industrialization

The purpose of industrial policy is to address market failures and problems of coordination in an economy. As these pervade all sectors of the economy—agriculture, services and manufacturing—an industrial policy needs to include all economic sectors to be effective. For instance, Chang (2009) has shown the importance of industrial policy and industrialization for agriculture growth and

development. Rodrik (2004, p. 3) defines industrial policy as a “strategic collaboration between the private sector and the government with the aim of uncovering where the most significant obstacles to restructuring lie and what type of interventions are most likely to remove them.” The industrial policy in Nepal has not been effective in addressing market failures and problems of coordination.

As already indicated in Figure 2, the performance of manufacturing in Nepal has been dismal. The growth of manufacturing value added and its share in GDP remain below the 1995 level (Table 2). Although the sector experienced a short period of strong growth in value added during the 1990s, growth rates since then have been very much lower. The sector is weak, the manufacturing base is narrow, and capacity is currently underutilized. In 2013 the sector utilized 70.4% of its capacity, down from 80.7% in 2009.⁴ Nepal continues to experience a steady decline in the share of manufacturing value added to total output (Table 2).

Table 2: Manufacturing Performance

Description	1995	2000	2006	2013
Share of manufacturing value added in gross domestic product	9.3	9.9	7.6	6.5
Growth of manufacturing value added ^a	14.0	6.4	0.3	3.2

^a Average for the last 5 years.

Source: Central Bureau of Statistics. National Account Statistics (various years).

The number of manufacturing units has declined over the period. According to the national manufacturing census surveys of 1997, 2002, and 2007 (the latest available) there were 3,557 manufacturing firms in 1997, 3,213 in 2002, and 3,446 in 2007 (Central Bureau of Statistics [CBS] 1997, 2002, 2007). Though there were fewer firms in 2007 than in 1997, there were more than in 2002. This is because many manufacturing firms had closed by 2002 because of intensified insurgency, the dilution of preferential treatment in export markets, and growing competition from imported products. More firms were engaged in the manufacture of food and beverage, printing and publishing, wood, chemical, rubber and plastic, non-metallic mineral products, electrical machinery and apparatus, and furniture in 2007 than in 1997, whereas the number manufacturing leather, paper, and fabricated metal products, among others, declined substantially during the same period (CBS 1997, 2007). Except for shoes and cement, most manufacturing firms are underutilizing their capacity and operating below 2002 levels (Appendix Table A.6).

Nepal’s manufacturing sector is dominated by low-tech, labor-intensive products such as fabricated metal products, grain mill products, vegetable oils and fats, food products, non-metallic mineral products, plastic, beverages, tobacco, and textiles. These products account for more than 80% of manufacturing value added. Available information indicates that the production of vegetable oils and fats, textiles, garments, paper and paper products has declined in absolute terms in recent years (Appendix Table A.7).

The overall total factor productivity (TFP) of manufacturing firms was lower in 2002 than in 1997, but had increased by 2007. In 1997, manufacturers of chemicals and chemical products, electrical machinery and apparatus, and wood and wood products had an average TFP higher than one—a benchmark for greater productivity. In 2002, only firms engaged in publishing, printing, and reproduction of recorded media had attained this level of TFP. By 2007, jute, carpet, pashmina and

⁴ Data from 2013 World Bank Group Enterprise Survey. <http://www.enterprisesurveys.org/>

textile factories; sawmills and plywood factories; lube oil and lubricant industries; electronics manufacturers; and producers of medical instruments had recorded a TFP of more than one (Table 3).

Table 3: Average Total Factor Productivity

Nepal Standard Industrial Classification Code	Types of Industry	1997	2002	2007
15	Manufacture of food products and beverage	0.35	0.18	0.69
16	Manufacture of tobacco products	-0.33	0.04	-0.55
17	Manufacture of textiles	0.94	0.94	1.17
18	Manufacture of wearing apparel, dressing, and dyeing of fur	0.11	0.08	0.49
19	Tanning and dressing of leather, manufacture of luggage handbags, saddlery, harness, and footwear	-1.02	0.25	0.64
20	Manufacture of wood and wood products	2.78	0.70	1.14
21	Manufacture of paper and paper products	0.28	0.07	0.36
22	Publishing, printing, and reproduction of recorded media	-0.54	1.27	0.26
23	Manufacture of refined petroleum products	-2.43	0.83	1.28
24	Manufacture of chemical and chemical products	1.45	0.35	0.69
25	Manufacture of rubber and plastic products	0.77	0.27	0.46
26	Manufacture of other non-metallic mineral products	0.75	0.59	0.55
27	Manufacture of basic metals	-2.74	0.16	0.68
28	Manufacture of fabricated metal products	0.33	0.03	0.57
29	Manufacture of machinery and equipment	0.79	0.13	0.23
31	Manufacture of electrical machinery and apparatus	1.56	0.31	0.47
32	Manufacture of radio, television, and communication equipment	-2.65	0.70	1.07
33	Manufacture of medical precision and optical instruments	n/a	n/a	2.85
34	Manufacture of motor vehicle	-2.87	0.14	0.11
35	Manufacture of other transport equipment	n/a	n/a	0.68
36	Manufacture of furniture	0.73	0.20	0.69
Overall		0.69	0.43	0.72

n/a = not available.

Source: United Nations Development Programme 2014.

Despite its strategic location between the second- and third-largest economies in the world (the PRC and India), membership to the WTO and SAFTA, and a preferential trade agreement with India, Nepal's export performance has been miserable. Export growth is lagging far behind import growth and exports' share in GDP is shrinking (ADB 2014). The share of manufacturing products in total exports had declined in 2012 compared to 1995 (Table 4). Most of the exports are concentrated on India, which accounts for over 50% of total exports, and in a few light manufacturing products such as textiles and fabrics, iron and steel, ready-made garments, non-ferrous metals, and agriculture products such as cardamom, tea, and ginger. Moreover, the degree of product specialization is declining and existing export capabilities are not advancing (ADB 2014).

Table 4: Exports of Manufactured Products
(% of total export value)

Description	1995	2000	2012
Chemical products	1.2	7.8	5.4
Machinery and transport equipment	0.1	0.5	1.4
Other manufactured goods	82.4	60.0	63.3
Total	83.7	68.3	70.1

Source: United Nations Conference on Trade and Development (UNCTAD) 2013a.

Expanding the manufacturing base and productivity remains important in increasing the economy's ability to engage in greater value-added activities and to participate in regional and global value chains. In 2013, despite weak performance, the manufacturing sector recorded stronger labor productivity growth (4.9%) than services (3.7%),⁵ reversing the position in 2009 when labor productivity growth was 2.1% in the manufacturing sector and 2.4% in services.

B. Inability to Address Market and Coordination Failures

Industrial policy in Nepal has been unable to restructure the economy to achieve higher levels of productivity and growth. A central reason for this is its inability to address market failure. Historical constraints to industrial development and GVC participation remain because of inadequate and incoherent policy instruments and weak industrial policy management capability.

1. Inadequate and Incoherent Policy Instruments

The rationale for industrial policy is, among other things, to improve competitiveness, encourage innovation and technological change, and correct market failure. Nepalese industrial policy attempts to intervene at functional and sector levels, but functional level policy instruments—technological, entrepreneurship, human resource development, etc.—are not backed up by adequate resource allocation. Similarly, the instruments chosen at the sector level are partial exemptions and rebates on taxes, which may not adequately address the market failure and boost industrial development. In addition, industrial policy has turned into a pseudo investment policy because strategic thrusts are provided by periodical planned documents and annual budgetary policies, which are sometimes incompatible with the announced industrial policy. For example, the facilities and concessions, in terms of tax rebates and exemptions provided by the industrial policy, were repealed by the income tax law and the annual budgets. Moreover, other sector policies—for example, monetary and financial policy, agriculture development policy, trade policy, energy policy, tourism policy, foreign investment policy, etc.—rarely establish strong linkages with industrial policy.

2. Weak Industrial Policy Management Capability

Announcement of a policy is the manifestation of a state's intention, but such intention can become reality only when that state is also capable of managing and implementing policies effectively. In addition to existing government structures—the MOI and its departments—new institutions/mechanisms have been created to support and expedite the implementation of industrial and related policies. However, the industrial policy management capabilities of the Nepalese state are lacking when measured against the four dimensions—strategic capability, capability to establish rules

⁵ Data from 2013 World Bank Group Enterprise Survey. <http://www.enterprisesurveys.org/>

for market-based competition, capability to deliver services effectively, and capability to avoid political capture (Table 5). Such low state capacity has not only resulted in a failure of coordination between government entities but also between the government and the private sector, and between the government and development partners. In addition, incoherent policies are also a result of the lack of capability to define strategic priorities.

Table 5: Indicators of Industrial Policy Management Capability

Indicator	Scale	Score/Rank	Source
Strategic capability			
Steering capability	1 (low) to 10 (high)	3.3	BTI
Consensus building	1 (low) to 10 (high)	4.8	BTI
Capacity to establish clear rules			
Transparency of government policy making	1 (worst) to 7 (best)	3.7	GCI
Contract enforcement	Rank/189	139	DBI
Capacity to deliver service effectively			
Government effectiveness	-2.23 (worst) to 2.21 (best)	-1.0	WGI
Wastefulness of government spending	1 (worst) to 7 (best)	2.7	GCI
Capacity to avoid political capture			
Control of corruption	Rank/180	143	CPI
Judicial independence	1 (worst) to 7 (best)	3.3	GCI
Favoritism in decisions of government officials	1 (worst) to 7 (best)	2.7	GCI

BTI = Bertelsmann Transformation Index, CPI = Corruption Perception Index, DBI = Doing Business Indicators, GCI = Global Competitiveness Index, WGI = Worldwide Governance Indicators.
Sources: Bertelsmann Transformation Index. <http://www.bti-project.de/bti-home/>, Transparency International. <http://www.transparency.org/research/cpi/overview>, World Bank. <http://www.doingbusiness.org/> and <http://info.worldbank.org/governance/wgi/index.aspx#home>, World Economic Forum. <http://www.weforum.org/issues/global-competitiveness>

Furthermore, industrial policies are not yet evaluated systematically and independently. Although the National Planning Commission does evaluate the industrial sector periodically, there is no rigorous evaluation of core instruments of industrial policy and their impact. Thus, policy documents rarely provide the reason why a particular policy instrument—for example, tax exemption—is chosen, and as a result, ineffective policies get carried forward from one policy document to another.

V. GLOBAL VALUE CHAIN PARTICIPATION AND PRIVATE SECTOR EXPERIENCE

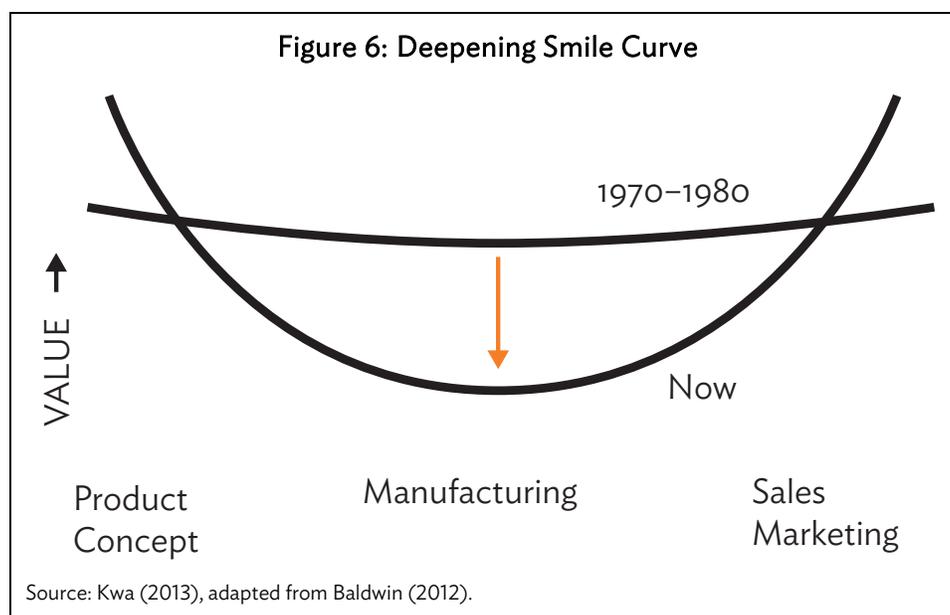
A. The Importance of Global Value Chains

GVCs are important as they shape global trade flows. The current global trade patterns are a network of GVCs (UNCTAD 2013b). Production processes are organized increasingly around GVCs; the lead firms that drive GVCs determine the location of the various stages of production across countries (Basnett 2013). Hence countries, and firms located within them, are *trading in tasks*—in other words, providing inputs into a larger GVC. More than half of manufacturing inputs are intermediate goods, and more than 70% of service imports are intermediate services (Organisation for Economic Co-operation and Development [OECD] 2013).

The emergence of GVCs presents both opportunities and challenges to developing countries. They can benefit from inserting into a GVC through specializing in one stage of the production, or task, which can provide a fast route towards global integration. However, participating in a GVC means overcoming barriers to entry, and climbing the value chain can be a challenge for least developed countries (Nissanke 2010). Some GVC governance structures can facilitate this process but others may hinder it (Keane 2013). For example, there may be particular challenges for those countries that find themselves situated within a GVC characterized by an overall captive structure of governance. This structure may arise when a few buyers can source from many suppliers, reducing the latter's bargaining power. Suppliers to captive GVCs may also find themselves less facilitated in functional upgrading, compared to process/product upgrading.

Furthermore, the upgrading processes of low-income/least developed country firms in GVCs depend not only on conventional development policies (e.g., skills, technology, and investment policy) but also on the way in which firms interact across borders, which governments can influence in the interests of promoting development (Basnett and Keane 2013).

The management of the integration process of producers into different types of value chains determines the benefits or the costs. Keane et al. (2014, p. 18) argue that failure to engage in structural transformation and deepening of production capacities could mean that countries get caught in (i) supplying raw materials and (ii) being sites for low value-added manufacturing tasks. Furthermore, given that lead firms tend to retain high-value functions such as design and marketing within core countries (often where their headquarters are located), some suggest that the 'smile curve' developed by Baldwin (2012) has deepened in recent years (Kwa 2013).



New evidence suggests that the costs of trading matter even more for GVC participation now than in the past. This is of greater importance to a land-locked country like Nepal. In order for developing countries to participate effectively in and benefit from GVCs they will need help in building appropriate capacity. For instance, developing countries will need support in:

- diversifying and increasing value-added exports;
- formulating strategic industrial policies to address market failures;
- improving logistical infrastructure to reduce trade costs and improve trade competitiveness;
- lifting non-tariff barriers to trade and strengthening capacity to meet technical barriers to exports; and
- improving coordination between countries to alleviate inefficiencies at the ‘whole of the value chain’ level. (For further discussion, see Basnett 2013.)

Wignaraja (2013) poses an interesting question: can small and medium enterprises (SMEs) participate in global production networks? This is of the utmost relevance for a country like Nepal, where the private sector is overwhelmingly dominated by SMEs. In examining SMEs in the Association of Southeast Asian Nations (ASEAN), Wignaraja finds that the following factors determine their participation in global production networks:

- foreign equity;
- access to parent’s accumulated learning experience of export production, sophisticated technologies and management experience;
- levels of human capital and an educated workforce;
- international quality certification; and
- access to commercial bank credit.

Wignaraja (2013, p. 301) finds that a “high degree of trust among firms is regarded as a critical ingredient for developing market-led production networks ... it encourages positive collective action behaviour among firms—such as sharing of sensitive information, pooling of technical knowledge and joint production and marketing activities—which is critical in technologically intense, efficient production networks.” Very few firms in the Nepal Enterprise Survey have foreign equity (0.1%, Table 1), and as a result, access to knowledge on export production, sophisticated technologies and management is limited. The number of firms with international quality certification is also very low (8.2%). Lack of access to credit and workforce skills are not binding constraints to growth in Nepal (ADB/Department for International Development [DFID]/International Labour Organization [ILO] 2009). Furthermore, the case studies below highlight that physical infrastructure shortcoming (high cost of electricity and poor transport systems) are a major supply-side impediment to participating in global production networks.

B. Case Study: Gorkha Tea Estate

1. Tea Production in Nepal

Tea cultivation in Nepal began in 1863 with the establishment of the Ilam Tea Estate in the eastern hills of the country. The first factory was built in Ilam in 1878, but the government recognized the economic importance of tea only in 1966, when it established the Nepal Tea Development Corporation. The government also designated the five eastern districts in Nepal as a ‘Tea Zone’ in 1982.

Tea production is divided into two major groups—conventional and organic. The conventional method of production uses chemical fertilizers and pesticides; the organic method does not. Conventional tea cultivation mainly takes place at elevations of 3,000– 7,500 feet (United States

Agency for International Development 2012). There has been a steady growth in plantation areas and total production over the past 7 years (Table 6). Between 2006 and 2013, the area planted with tea increased by 15.9% and production by 35.7%.

Table 6: Tea Plantation and Production

Year	Tea Plantation (hectares)	Tea Production (kilograms)
2006/2007	16,420	15,167,743
2007/2008	16,594	16,127,490
2008/2009	16,718	16,208,127
2009/2010	17,127	16,607,555
2010/2011	17,451	17,437,933
2011/2012	18,149	18,726,000
2012/2013	19,036	20,588,145

Sources: Ministry of Agriculture and Development (MOAD) 2013, National Tea and Coffee Development Board. <http://www.teacoffee.gov.np>

Of the total 20.6 million kilograms (kgs) of tea produced in Nepal in 2012/2013, 14.7% was of orthodox tea⁶ and the remaining 85.3% was of cut, tear, and curl (CTC⁷). The plantation areas of CTC and orthodox tea were 10,250 hectares (has) and 8,786 has, respectively. Much of the land used to produce CTC is part of large tea estates, whereas that for orthodox tea is predominantly owned by small farmers. Tea is grown mainly in the eastern region. The major production area for CTC is Jhapa in the low-lying Terai plains, whereas the hilly districts such as Ilam, Panchthar, Dhankuta, and Tehrathum are the major areas for the production of orthodox tea (MOAD 2013).

2. Gorkha Tea Estate

Gorkha Tea Estate (GTE), which started in 1992, is one of the largest tea companies in Nepal, and exports to Germany and India. It is the first Nepalese tea factory to be certified as organic by the Institute for Marketecology (IMO)—a European organic standard. The GTE garden and factory, at an altitude of 1,676 meters above sea level, spread over more than 20 has in Ilam District (in the eastern part of Nepal, bordering India). GTE produces black, organic, and specialty teas, branded as Sunderpani Gold, Sunderpani Special, Dimethyltryptamine (DMT) Classic, Oriental Pekoe, and Sunderpani Soul. The estate produced 72,000 kg of tea in 2012/2013 of which 94.5% was black tea. The average annual growth rate of tea production during the period 2008/2009–2012/2013 was 15.8% (Table 7). In addition to its own estate production, GTE also procures organically grown green leaves from about 300 local small farmers.

⁶ Orthodox tea refers to either hand-processed tea or tea that is rolled with machinery in a manner that mimics hand-rolling.

⁷ Machine-processed in a way that chops the leaves into uniformly-sized bits that are typically used for low-grade teabags.

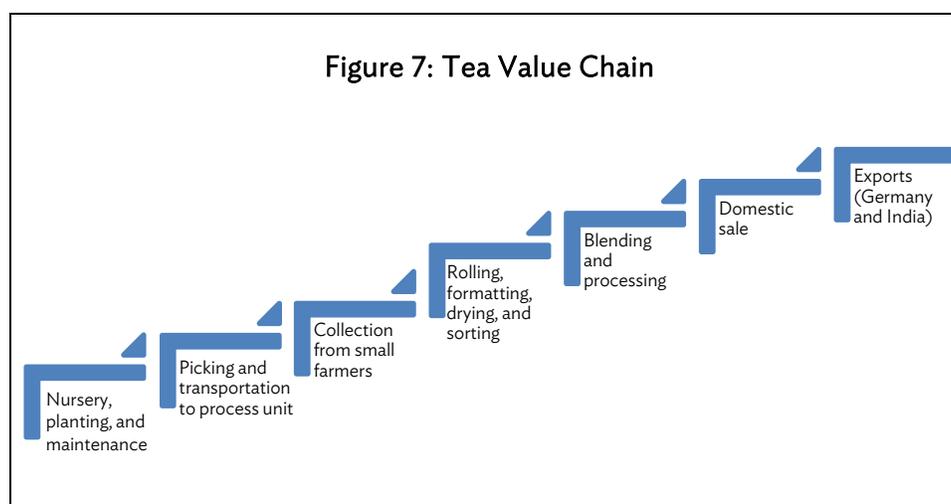
Table 7: Gorkha Tea Estate Production
(Orthodox tea, kilograms)

Description	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	Average Annual Growth (%)
Black tea	39,025	50,550	59,100	65,025	68,050	14.9
Green tea	750	1,250	1,450	2,300	3,000	41.4
White tea	200	250	355	500	750	39.2
Specialty tea	45	50	95	175	200	45.2
Total	40,020	52,000	61,000	68,000	72,000	15.8

Source: Gorkha Tea Estate.

3. Mapping the Value Chain

The production and distribution process involves input supply, production, transportation/ collection, processing, blending and packaging, and marketing both for domestic and export markets (Figure 7). The required inputs are either supplied by local agro-vets and fertilizer distributors or imported from India.



Source: Interview with Udaya Chapagain, Managing Director of Gorkha Tea Estate, Nepal, in April 2014.

The production process begins after a green leaf is picked. The quality of tea depends primarily on the type of leaves picked and the way in which they are handled. Depending on the type of tea to be produced—green, orthodox or CTC—different processing methods are employed. Once tea leaves are picked and collected, they are sorted and graded before packaging into either air-tight, moisture-proof cardboard tea chests or paper bags, which are then sent to domestic wholesalers and retailers or exported.

a. Production Process

Tea production is a long process that begins with the management of seeds and planting. The crop is ready for harvesting only after 4 years–5 years. Tea plants require regular pruning, skiffing, and manuring. GTE employs local laborers to perform all necessary tasks.

Inputs used by GTE include composted farmyard manure; vermicompost; fermented plant extract; and IMO certified fertilizers, pesticides, and insecticides; examples include Annapurna (bio-fertilizer), Nalpark (bio-NPK), Nisarga (*Tricoderma Viride*), Sparsha (*Pseudomonas Fluorescens*), and Baba (*Beauvaria Bassiana*). While some of the required inputs are produced on the estate itself, the majority are either procured locally or imported from India (which is the major import source because of relatively low transport costs, availability of IMO-certified materials, and assured regular supply). For instance, vermicompost and IMO-certified bio products and agro-vets are purchased from nearby markets. The rest of the inputs, including packaging materials, are imported from India. Material inputs are brought from India to an entry point—Kakarbhitta—and are transported by road to the production unit in Fikkal, Ilam.

b. Value Addition

The quality of tea and the price it fetches on the market depend on the quality of the green leaves. At present, the factory uses green leaves—either organic or conventional—produced in its own garden, along with supplies from about 300 small farmers. The price of orthodox green leaves is determined by the price of orthodox tea in the Indian market. For organic green tea leaves, the price is negotiated and determined by the contract agreements between the factory and the farmers.

Once collected, green tea leaves are processed in a factory located in Fikkal, Ilam. It takes about 5 kg of green leaves to make 1 kg of tea. The cost of manufacturing depends on the type of tea and the production volume. The cost of production for organic tea is about 60%–70% higher than that for orthodox tea. GTE also produces green tea, oolong tea, and blend tea with herbs such as lemongrass, mint, cinnamon, ginger, etc. White tea and handicraft tea are also made in small quantities and sold at premium prices. Packaging ranges from normal to special handcrafted packages, but normally tea chests are used for export. For retail packaging, a variety of gift packages provide value addition.

4. Market

Most of the tea produced is exported; about 65% of total production is exported to India and close to 30% to Germany. The rest is sold on the domestic market. Tea products enter both India and Germany duty free. Consignments destined for India are transported by truck in containers, taking 3 hours–4 hours to reach the customs point in Kakarbhitta from the factory site in Fikkal, Ilam. The customs clearance cost for orthodox tea is about NRs13,000 per truckload (10 tons), which includes charges and duties at customs, agent charges, bank charges, and other expenses. The average price offered for Nepalese organic orthodox tea in Kolkata is around NRs400/kg–NRs450/kg against an estimated cost of NRs250/kg–NRs300/kg. However, the price can vary considerably depending upon the type and quality. For European markets, cargo is sent by air from the international airport in Kathmandu.

5. Competitiveness-related Issues

Its large share of the export market is testament to the competitive strength of GTE. A key factor in providing a competitive edge in the export market is the ‘quality’ of the product—achieved through proper pruning, careful picking, shorter picking rounds, timely pest and disease control, adherence to relevant good agricultural and manufacturing practices, and International Standards Organization/IMO certification. However, several factors—low-quality inputs from local suppliers, unavailability of inputs (mainly organic manure, certified organic fertilizers, bio-pesticides and bio-

insecticides) and delays in the delivery of inputs, in particular, imported inputs—make it difficult to maintain the quality of the product.

The following factors constrain production and competitiveness in the tea industry:

- insufficient irrigation facilities, a shortage of labor owing to outward migration, and the demands of the labor unions;
- lack of technical support from the government and private institutions; for example, the absence of laboratories to measure residue levels, heavy metal and radiation, and to carry out other tests necessary for international export;
- delays in consignment because of lack of access to product testing laboratories, located mainly in India and Germany;
- inadequate transportation facilities to transfer products from farm to factory;
- absence of storage facilities required to maintain the freshness and quality of green tea leaves;
- outdated machinery used for processing; and
- high energy costs and frequent power shortages.

Government policies and incentives have played a positive role in increasing competitiveness, but there exist distortions in the implementation of policies and functional support is lacking. The factory has benefited from exemption from the land ceiling,⁸ rebates on land registration fees and land revenues, subsidies for organic certification, and cash incentives for export. However, the requirement to export in convertible currency in order to benefit from the cash incentives disadvantages companies exporting to India, as exports are in Indian currency. The support provided by the Nepal Tea and Coffee Development Board is laudable, but the Board lacks adequate technical expertise.

6. Growth and Investment

The preference for organic and orthodox tea is increasing globally, and as agro-climatic conditions in the area in which GTE is located are favorable for the production of orthodox tea in particular, there exists a high potential for growth. In addition, its proximity to Darjeeling, India—internationally renowned for producing top-quality tea—gives the firm the advantage of relatively easy access to the quality inputs and superior technologies needed for the production of high-quality tea. However, multiple factors currently restrict the firm's competitiveness, all of which must be addressed in order to exploit its true growth potential.

- With respect to production/processing, the need to import inputs from India, inadequate infrastructure, energy shortages, the high cost of technical expertise, shortage of labor and unrest in the workforce, and environmental degradation contribute to high production costs and low productivity in comparison to India and Sri Lanka.
- The lack of adequate market information and proper accreditation laboratories, warehousing problems, inconsistent product quality, high packaging costs, and low product differentiation severely affect product marketing strategies.
- With regard to policy, Nepalese tea producers receive minimal government support compared with Indian tea producers: a non-supportive tax policy—no tariff and VAT exemption on inputs; a difficult and complex financial system; and lack of research and

⁸ Nepalese law prohibits individual land-holdings above 11 bighas (about 8 hectares). Tea farmers are exempted from this.

extension services, and access to information regarding market trends, price movements, quality requirements, changes in consumption habits, etc.

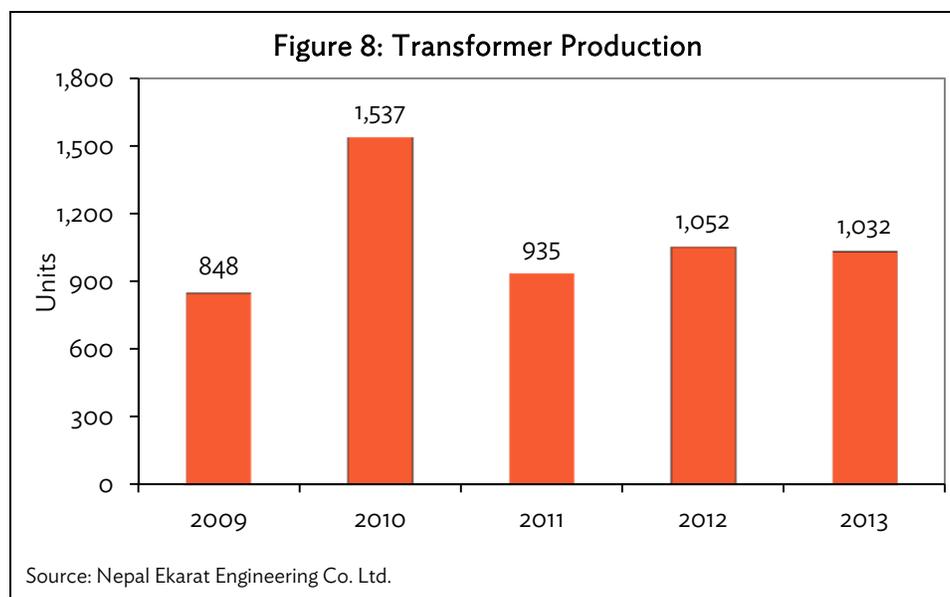
C. Case Study: Nepal Ekarat Engineering Company

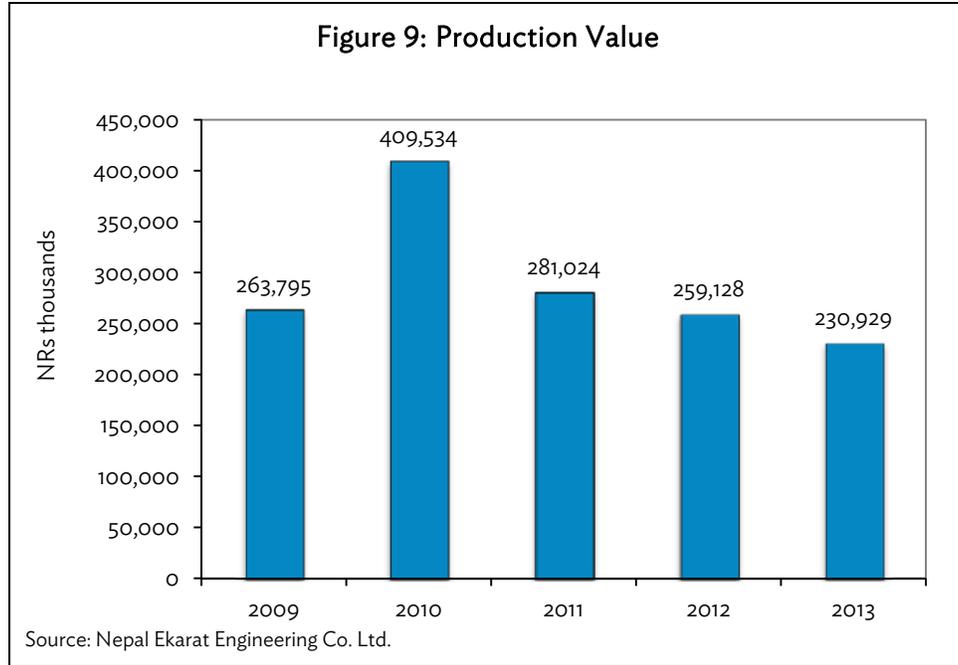
Nepal Ekarat Engineering Company, established in 1990, is a joint venture between Nepalese entrepreneurs and Ekarat Engineering Public Co. Ltd., Thailand, specializing in the production of electrical transformers. The company manufactures and supplies up to 5 megavolt-ampere (MVA) and 33 kilovolt (kV) class distribution transformers and automatic voltage stabilizers under the brand name 'NEEK'. It is also engaged in the repair and maintenance of power transformers up to 10 MVA 3-Phase, 33/11 kV and up to 5 MVA 3-Phase, 132/11 kV. It is the largest manufacturer of distribution transformers in Nepal. The plant is situated in Hetauda, in the central region, and it employs more than 132 workers.

The company is equipped with core-cutting and coil-winding machines, a dehumidification chamber and a high-voltage testing laboratory. Its products are certified under ISO 9001:2008 and ISO 14001:2004, and it follows the quality and the environment management system in every aspect of the manufacturing process. It has also achieved NS quality 166. Its production capacity is 2,000 units per year and 200 MVA per year, however, actual production is 1,000 units per year owing to various factors related to demand and supply capabilities.

1. Production

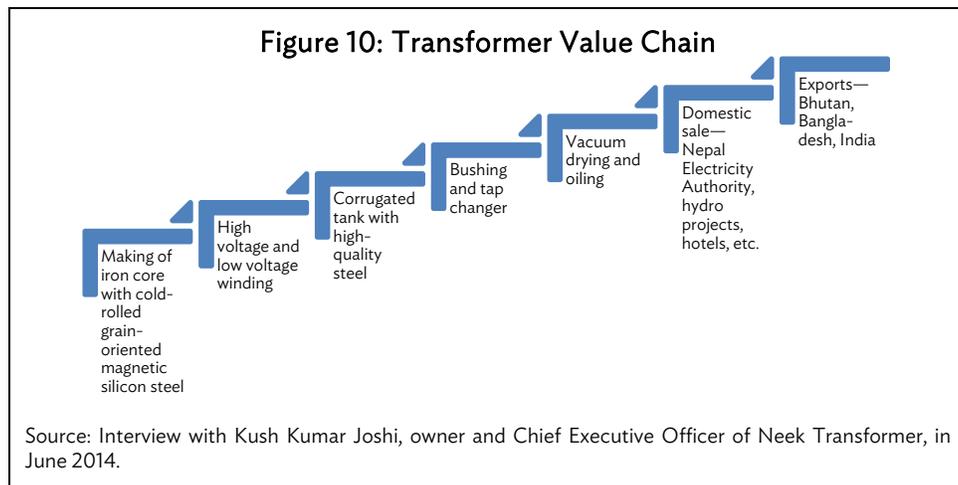
As its products are for industrial and commercial use, the company produces 1 kilovolt-ampere (kVA)–10 MVA, 11–33 kV Class transformers only on order. The production data show that total production of transformers fluctuated during the period 2009–2013, increasing by more than 80% in 2010, declining by 39% in 2011, increasing by 12.5% in 2012, and declining by about 2% in 2013 (Figure 8). As a result, the production value also fluctuated, although unit values declined—indicating increasing competition in the market (Figure 9).





2. Value Chain

The production of a transformer starts with the making of iron core, for which cold-rolled, grain-oriented, magnetic silicon steel sheets are used. The second stage is winding of round enamel-insulated copper conductors to form layer-type and disc-type high-voltage coils. Once winding is completed, the tank and cover with oil drainage outlet, corrugated sidewalls, and an upper frame are made, and the components welded together. A leakage test is performed on the tank and the internal surfaces are painted by sand blasting. In order to provide a constant output voltage, regardless of voltage fluctuations on the input system the high-voltage windings are provided with the tapings connected to an off-circuit tap-changer. A Buchholz relay and dial thermometer are also provided to protect the transformer from damage by internal short circuits and faults. In the final stage, the core assembly and tanks are placed in a vacuum oven chamber to extract the accumulated moisture. Immediately after drying, the transformers are tanked and filled with pre-dried, degassed transformer oil (Figure 10).



Production of transformers requires a variety of inputs such as silicon steel, copper, transformer oil, tap changer, corrugated fins, and magnetic silicon steel. The quality of the materials, their price and timely delivery are the major criteria for selecting suppliers. Most of the inputs are imported from abroad—silicon from Singapore and India, transformer oil and corrugated fins from Malaysia and India, and tap chargers from Turkey. Copper and magnetic silicon steel are sourced in Nepal. It is estimated that the domestic value addition in the production process is in the range of 30%–35%.

3. Market

It is estimated that total demand for distribution transformers in the country is about 3,000 units a year. Of these, 40% is supplied by domestic producers and the rest is imported. Ekarat Engineering has about a 33% share of the domestic market. Its major client is the Nepal Electricity Authority (NEA), and it also supplies hydropower projects, hospitals, shopping complexes, hotels, and industries.

The company has also exported transformers to Bhutan, Bangladesh, and India. However, in recent years, it has been reluctant to enter into export markets because it lacks confidence in its ability to deliver on time and avoid penalties owing to fears that political demonstrations and *bandha* (the shut-down of all activities by the agitating political party), road blocks, labor problems, unavailability of electricity, etc. could destabilize its supply chain. The product gets duty-free access to the Indian market, but the Indian government agencies' policy of giving preference to domestic producers in the procurement of transformers and other heavy electrical equipment has deterred the company from exporting to India.

Since the product is bulky and is for either industrial or commercial uses, the company supplies directly to its clients without going through a distributor or retail outlets. It has adopted business-to-business marketing strategies, with the use of information and communications technology, and personal contacts.

4. Competitiveness-related Issues

Its large share in the domestic market is evidence of the company's competitiveness. A high-quality product, meeting international standards, achieved through the use of quality raw materials, a carefully monitored production process, and thorough inspection and testing is the key to its competitive edge. Despite availing itself of initial tax breaks, duty drawbacks, and export subsidies, the company suffers from a number of disadvantages that reduce its competitiveness, particularly in securing inputs, bottlenecks in the production process, and access to financial markets.

- The tariff structure is perverse. The rate levied on some of the inputs required for the production of a transformer is higher than that levied on the transformer itself, implying a negative rate of protection.
- Manufacturing of transformers is an energy-intensive process. With increasing load-shedding in the electricity supply, the company has two options—either to build its own captive source of energy with thermal/fossil fuel power generators, or to pay high electricity tariffs with demand charges. Either option increases the cost of production.
- Nepal's fixed exchange rate regime with India has eroded the competitive edge of Nepal in both domestic and Indian markets. With an inflation rate in Nepal higher than in India, Nepal's currency is undervalued relative to the Indian currency. Furthermore, the flexible

exchange rate regime with the rest of the world has resulted in the devaluation of the Nepalese currency and high costs of imported inputs.

- The syndicate in the transport sector has resulted in high costs not only in accessing inputs but also in the delivery of the finished product.
- Unreasonable wage demands, supported by major political parties, have delinked wage increases from productivity and efficiency. This has resulted in a significant rise in per-unit cost of production.
- In order to incentivize exports, a system of export credit with an interest rate lower than the market rate has been instituted, but the company has not been able to benefit from the scheme because of the short duration of the financing.
- NEA is a major buyer of transformers. However, as a government entity, it has to follow government procurement guidelines, including global bidding. The company cannot compete with international bidders who cross-subsidize their products and quote at below the cost of production in order to get a foothold in the Nepalese market. Such anti-competitive practices pose a great threat to the sustainability of the company.

5. Growth and Investment

On the one hand, Nepal has approximately 42,000 megawatts (MWs) of hydroelectric potential, of which 639.6 MW have been developed; on the other, current demand for electricity outstrips supply, and will continue to increase (Basnett et al. 2014). Such a mismatch in supply and demand, and the government's announced policy to bridge the gap, indicates a high potential for growth in the transformer industry. In addition, the fast pace of industrialization in South Asia and the increasing demand for energy also augur high growth potential in regional markets. The industry can exploit these opportunities if the right kinds of infrastructure and policies are in place.

- With respect to a supportive business environment: adequate provision of energy for production by NEA, human resource development (in particular skilled technical manpower), prompt and effective government decision making process, and flexible labor policy are keys to the growth of the industry.
- With regard to policy: preference in government procurement, a positive effective rate of protection, competition in transport markets, a competitive exchange rate, and a pragmatic scheme for export finance would do much to assist the industry's growth.

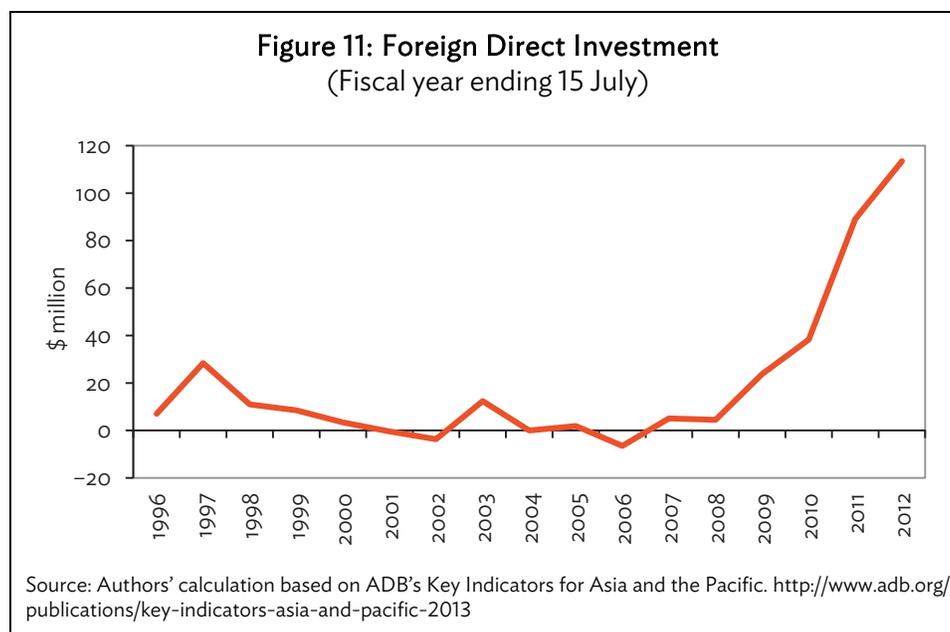
VI. CONSTRAINTS TO INDUSTRIAL DEVELOPMENT AND GLOBAL VALUE CHAIN PARTICIPATION

A. Behind-the-Border Constraints

1. Weak and Uncertain Investment Regime

Until 2008, FDI into Nepal was low, but it has since been increasing (Figure 11). Between 2008 and 2012, FDI increased by an annual average of 160%. In 2013, the PRC overtook India as the largest source of FDI.⁹ Total investment from the PRC currently stands at \$174 million.

⁹ See <http://www.thehindu.com/news/international/world/china-is-largest-fdi-source-for-nepal-overtakes-india/article5618081.ece>



Increases in FDI reflect the economic reforms Nepal has undertaken to improve the investment climate. These include: bilateral investment treaties,¹⁰ streamlined processes for investment (large investments benefit from one-stop facilities¹¹), easier access to business visas, and clearer provisions for investment repatriation.¹² As a result, Nepal has improved its position in the 'Doing Business' rankings. For instance, the same number of procedures (seven) are required to start a business in Nepal, as in the rest of South Asia, and the process takes only marginally longer than the South Asia average (17 days in Nepal, 16.2 in South Asia).

While these improvements in both FDI flows and the investment climate are welcome, Nepal started from a very low foreign investment base. Moreover, thus far, a single country—India—has been the source of the vast majority of the FDI inflows. Most of the investments have been small and not of the type that builds productive capacity and competitiveness, and helps the economy participate in regional and global value chains¹³.

Banga (forthcoming) finds that India's economic growth is not sufficiently linked with Nepal; on the contrary, there is a divergence in the two countries' growth trends. The pattern of trade is such that Nepal exports raw materials to India and imports final products. The absence of manufacturing value-chain linkages between the two countries means that growth in India does not feed through to growth in Nepal. This is an important finding, as India remains Nepal's largest trading partner as well as one of its biggest investors.

Sustaining the reforms aimed at improving the investment climate will be vital to attracting foreign investment. While increasing flows is paramount for a country that is starting from a low base, the type and quality of investment also needs attention. The recent rise in foreign investment in the

¹⁰ Nepal has bilateral investment treaties with Finland, France, Germany, India, Mauritius and United Kingdom. See http://unctad.org/Sections/dite_pcbb/docs/bits_nepal.pdf

¹¹ See <http://www.investmentboard.gov.np/>

¹² See http://www.doind.gov.np/documents/pdf/doi_brochure.pdf

¹³ Recent proposed Indian investment of \$1.6 billion in the production of hydroelectricity will help partly meet domestic energy demands as well as generate electricity for export to India.

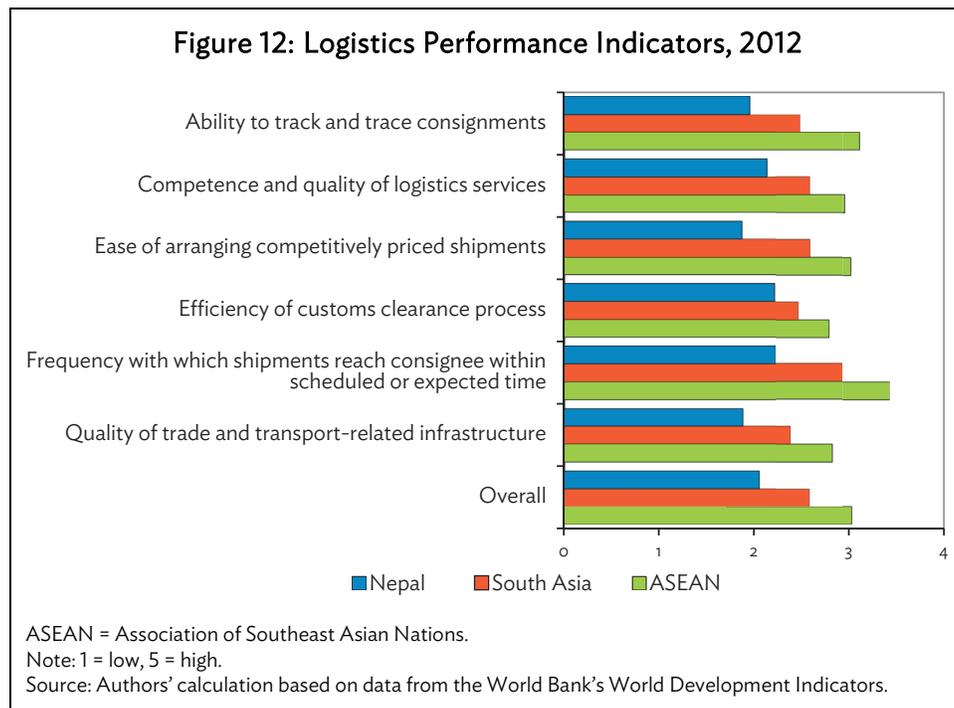
hydroelectric sector will help the economy overcome the energy crisis and contribute to the expansion of production. But Nepal also needs to attract foreign investment in value-added activities, in particular, in the manufacturing sector. This will require a more targeted approach, which in turn will require a more effective industrial policy and strategy.

2. Inadequate Infrastructure

Nepal's ability to participate in and benefit from GVCs is constrained by the lack of adequate physical infrastructure. The Global Competitiveness Report 2013–2014¹⁴ ranks Nepal 144th out of 148 countries on the stock and quality of infrastructure.

Lengthy export and import times in Nepal point to weak trade infrastructure. According to data for 2013 from the World Bank's World Development Indicators, it takes 42 days to export in Nepal, while South Asia's average is 33 days, and the ASEAN average is 17.3 days. To import, it takes 39 days in Nepal, 34.3 days in South Asia, and 17.5 days in the ASEAN.

Figure 12 compares logistics performance of Nepal with that of South Asia and the ASEAN. Nepal lags behind both in all of the indicators. The figure also serves to highlight two important issues. First, Nepal is a member of a region—South Asia—in which trade performance logistics are lagging, which further accentuates Nepal's internal inadequacies. Second, Nepal's worst score is on the 'infrastructure quality' indicator.



¹⁴ See <http://www.weforum.org/reports/global-competitiveness-report-2013-2014>

Productive capacity, in particular the ability to engage in value-adding activities, is undermined by the inadequacy of production-related infrastructure such as transport and energy.

Road and air are the only available modes of transport in Nepal. Proposals have been put forward to develop a railroad network along the southern east–west corridor, where much of the country’s industry is located. However, despite being listed as a priority project by the government, this has yet to materialize because of lack of financial resources and technical skills, as well as weak administrative capacity to manage the contractual and implementation process. At present, only 32 km of rail network is available.

The road network is limited and inefficient. There is only 121 km per square km of road network in Nepal, compared with 2,226 km in India and 2,079 km in Bangladesh (Basnett et. al. 2014), and much of the available road network is not paved. Furthermore, cartels operate monopoly prices along different road networks.

There is, however, an extensive air transport network—34 airports, a competitive domestic airline market, and 29 international airlines operating out of Kathmandu to some 22 cities in Asia and Europe. Notwithstanding the fact that air transport is relatively more expensive than road and rail, the air transport infrastructure has not been upgraded—leading to excessive congestion and safety risks. Air transport can provide a cost-effective option (the important role Kenyan Airways has played in bringing Kenyan cut flowers to European markets daily is an example), but for such possibilities to be realized, Nepal needs to develop its international airport infrastructure to enable larger aircraft, in particular, large cargo planes, to land.

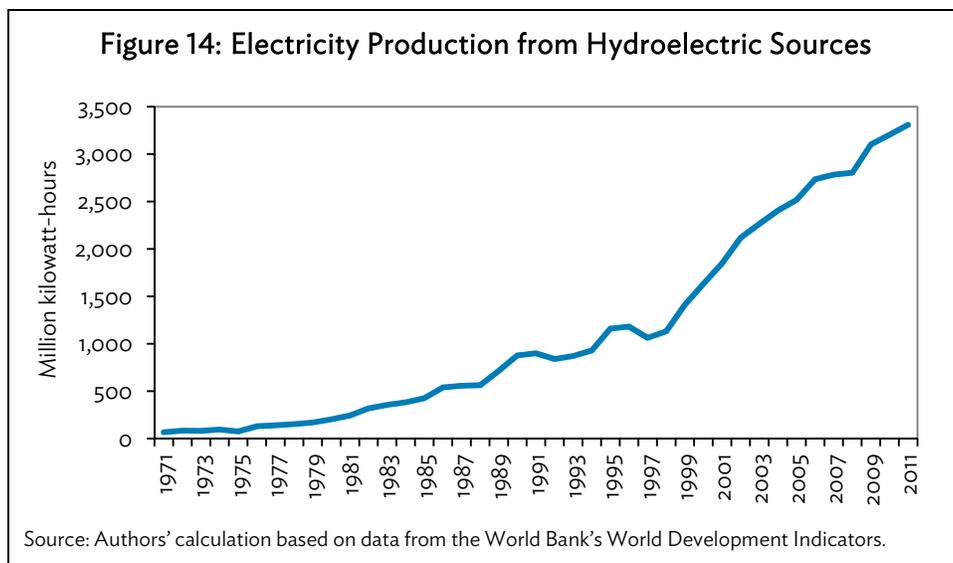
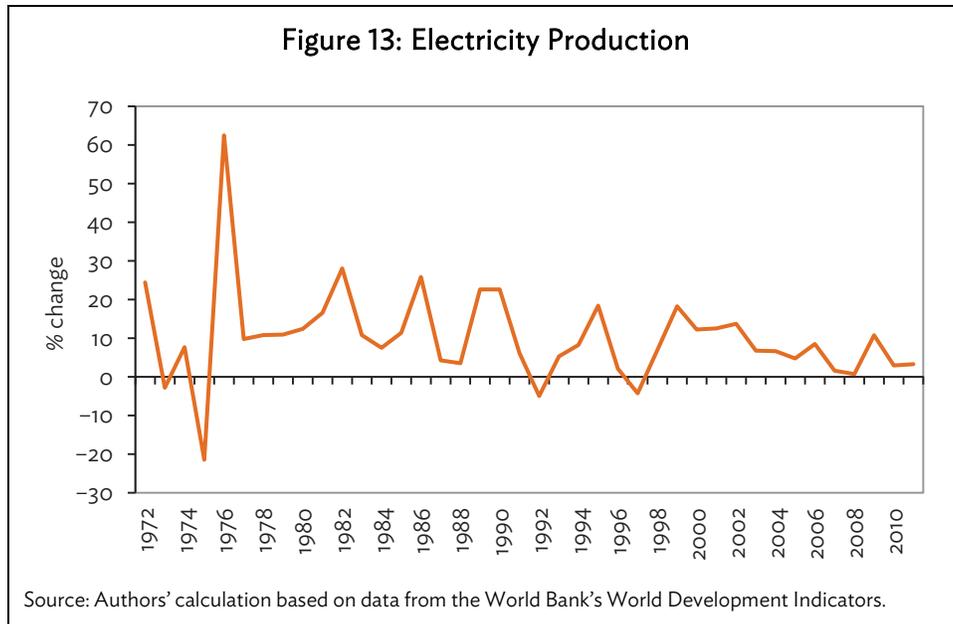
It is financially impossible for Nepal, a resource-poor country, to address all these production-related infrastructure challenges simultaneously. The country’s topography and land scarcity add to the challenges of organizing production efficiently. Other countries in Asia have successfully used ‘special economic zones’ to address such challenges in a targeted and manageable way. Nepal’s few industrial zones, created in the 1970s/1980s (Appendix Table A.8), are in a dilapidated state owing to lack of policy attention and public investment. Policies for upgrading and expanding infrastructure have not been implemented.

3. Energy Shortage

The high cost and shortage of energy in Nepal undermines production and value-added activities. Petroleum and electricity are the major sources of energy for non-farm production (with wood being an additional source for farm production).

Consumers in Nepal pay on average \$0.093 per kilowatt-hour (kWh). This is 115% higher than tariffs in India and Bangladesh, 43% higher than those in Pakistan, and 18% higher than those in Sri Lanka (Basnett et al. 2014). Domestic electricity production is low with little change from year to year (Figure 13). Since 1997 there has been a noticeable increase in the supply of hydroelectricity (Figure 14), driven by increased investment.

Shortage of electricity has led to producers using generators during power outages. This has huge cost implications for production. Discussions with manufacturers revealed that in the last 10 years, energy costs have increased on average from NRs6 to NRs24 per unit of output due to electricity shortage.



According to the World Bank's recent Enterprise Survey, the firms surveyed experienced an average of 8.7 power outages per month (compared with, for example, the 4.1 per month reported by respondents to Sri Lanka's 2011 survey). Each time there is a power outage production is halted to shift from national grid electricity to generators. The irregular supply of oil for running generators has led many to hold reserves, further increasing the cost of production.

ADB/DFID/ILO (2009) estimate that to increase the electrification rate to India's level (the rate in Nepal is currently 60% of that in India) would require an investment of \$1.5 billion (at 2006 prices), and to increase both the electrification rate and consumption levels would require \$5.1 billion (at 2007 prices). Further investment will also be required for upgrading transmission infrastructure. In 2008/2009, the government allocated \$163 million, which falls far short of what is required.

The root causes of the high cost and shortages of electricity were analyzed in a recent study commissioned by DFID-Nepal (Basnett et al. 2014, p. 66). Some of the key findings are set out below.

- The lack of transmission lines limits investment and the distribution of electricity in the country. This is linked to regulatory inefficiencies and conflicts of interest in the NEA.
- There is insufficient market information on the costs of electricity, the capacity of people to pay for electricity and demand for it. This means that subsidies are not applied efficiently, limiting infrastructure investment opportunities and the profitability of energy producers.
- There is no clear government strategy with regard to growth and the role of energy, which means that investments are undertaken on an *ad-hoc* basis and that the NEA is locked in to power purchasing agreements (PPAs) that it cannot afford, reducing its capacity to invest in infrastructure such as transmission lines.
- Regulatory systems are not streamlined. Currently, the NEA acts as a procurer, distributor, and generator of energy (placing it in competition with the independent power producers (IPPs) it is meant to buy electricity from), which acts as a disincentive to investments that may benefit its ‘competitors’. It also means that IPPs are less secure and demand more cumbersome PPAs as a safety net—which reduces the NEA’s profitability.

4. Coordination Failure

This paper has discussed the main constraints to Nepal’s industrial growth and ability to participate in regional and global value chains, and has argued that the country’s investment regime, infrastructure and energy situation are unfavorable to increasing productive activities. But these constraints are not new, so why have they not been effectively addressed? In this section we argue that the reason is a failure to coordinate policy formulation and implementation. Thus, this section also seeks to highlight the importance of paying attention to the *politics* of policy formulation and implementation.

Coordination failure undermines the economy’s ability to achieve the optimal equilibrium—a point where all resources (physical, human, environmental) are put to the best use to achieve the best return. The productivity of a firm depends not only on its own efforts and abilities but also on the actions of other firms, as well as the availability of public goods such as infrastructure and regulation that promote productive activities (Rodrik 1996 and 2004, Kydd and Dorward 1994, Hoff and Stiglitz 2001).

In Nepal, coordination failure has arisen due to lack of effective policy and implementation by the state (i.e., intra-governmental coordination) as well as between actors in the economy. As a result, policies are partially implemented and public goods are underprovided. The implications for the economy are that investments in the productive sector are miniscule; the private sector is wary of expanding businesses (many preferring to expand in neighboring countries); productivity and productive capacity are low; product chain linkages to the region and elsewhere are minimal; and the ability to add and upgrade value is absent.

Basnett et al. (2014) analyzed the critical coordination failures in Nepal by examining coordination within the government, within the private sector, between the government and the private sector, and between the government and donors. It analyzed coordination in the formulation of policies as well as in the implementation processes. Below we highlight the key findings of that study.

- The economic reform program in Nepal did not create complementary policies and implementing institutions that would have helped lay the foundations for long-term growth. As a result, basic government functions in fuelling economic activities are either not provided or are inadequate.
- The 1990s reform agenda focused on “getting the prices right” and substantial progress was made in reducing tariffs and deregulating prices. Labor market deregulation and exchange rate adjustments, in particular, the exchange rate with India, remain an unfinished business.
- There is mismanagement in the distribution of the benefits of economic reform and growth; and exclusion of certain regions, ethnic groups and castes, and women. Distribution of income is skewed.
- Low governance effectiveness—the government’s inability to implement its own policies—combined with political instability are sources of coordination failure.
- There is coordination failure within the private sector. Business associations are weak in identifying externalities and spill-over effects, and sectors where collective action would have the highest pay-off. Individual actors have shown herd behavior that undermines industry-wide competitiveness, for instance in the garment, pashmina, and real estate businesses.
- There is coordination failure between the government and donors. There is a high degree of fragmentation of aid, with many stand-alone projects, vertical funding, and direct implementation.

B. Beyond-the-Border Issues

There are factors beyond Nepal’s borders that have huge implications for its ability to participate in and benefit from global and regional value chains. Examining these is important, given Nepal’s geographical constraints and its reliance on other countries for trans-shipment. For instance, discussions with manufacturers in Nepal revealed that the cost of importing inputs from Kolkata (Nepal’s major trans-shipment port) was the same for Indian and Nepalese firms, but that the costs involved in transporting the goods to Nepal were substantially higher than those incurred by their Indian competitors.

1. Shallow Regional Integration

Nepal belongs to a region that is one of the least integrated in the world—South Asia. Intra-regional trade in South Asia accounts for only about 5% of the region’s total trade; the equivalent figure for ASEAN is 25% (Razzaque and Basnett forthcoming).

Banga and Razzaque (forthcoming) analyze textile and clothing supply chains in South Asia. They find that the region hosts many low-cost suppliers of inputs who are also global suppliers. But despite the availability of low-cost suppliers within the region, global imports for many of the identified inputs outweigh regional imports for many individual South Asian countries. They conclude that market forces alone are insufficient in developing regional supply chains. The findings of their analysis shed some interesting light on policy.

- Developing regional supply chains does not necessarily undermine backward linkages as most of the inputs were being sourced globally.

- They rule out the possibility of trade diversion from regional value chains on the basis that most of the suppliers in the region are global suppliers and hence, globally competitive.
- They also find that South Asian countries are less open to the region than they are to the rest of the world.

2. Non-tariff Barriers

Tariffs, within the South Asian region, as well as globally, have reduced substantially. For Nepal, the shifting nature of regional and global trade barriers is presenting new challenges. On the one hand, Nepal is experiencing a sharp erosion of its tariff preferences; on the other, non-tariff measures, in both regional and global export markets, are on the rise.

Table 8 shows the share of various non-tariff measures in total non-tariff barriers in the South Asian region. Sanitary and phyto-sanitary standards (SPS), technical barriers to trade (TBT), and other related measures account for 86.3% of all non-tariff barriers in the region. Although SPS and TBT requirements are particularly applicable to Nepal's exports, which are predominantly agro-based, meeting them requires specialized technical skills and sophisticated laboratories, which are beyond Nepal's capacities. Nepal currently depends on regional technical facilities, which are mostly in India. Apart from the use of such facilities being expensive, the private sector in Nepal also has to contend with delays in addition to the multiple tests that increase costs and reduce export competitiveness.

Table 8: Share of Non-tariff Measures in all Non-tariff Barriers in the South Asian Association for Regional Cooperation

Non-tariff Measures	Share in all non-tariff Barriers (%)
Sanitary and phytosanitary standards, technical barriers to trade and other related measures	86.3
Tariff quotas	9.8
Anti-dumping measures	7.4
License requirements	5.3
Countervailing measures	1.2

Source: Rahman and Razzaque forthcoming.

3. Inefficient Transit Trade

As a land-locked country, Nepal depends on trans-shipment via India for trade with the rest of the world. It also depends on India for regional, overland trade. This inescapable dependence has restricted Nepal's trade diversification. India has also in the past used it for political leverage. For instance, during 1989–1990 India imposed a trade blockade. While trade flows have been normalized since, the experience of the blockade has left a legacy of uncertainty concerning Nepal's trans-shipment routes. While such drastic measures are unlikely to be repeated, Adhikari and Kharel (forthcoming) highlight a number of challenges that Nepal faces with India on transit trade.

- Although the transit treaty requires duty insurance (to hedge the risk of trade deflection and the resulting loss of customs duties for India) only for goods deemed sensitive by the Indian government, the list of such goods is not made public to Nepalese traders. The

monopoly of the Kolkata-based office of the Indian National Insurance Company Limited to issue duty insurance policies means that premiums are high.

- Transit through India is subject not only to central government regulations and formalities but also those that are in force in individual states. Further, although the Indian road freight market is generally competitive, Nepal has not been able to benefit fully because of the enforcement of minimum freight tariffs for the transportation of Nepalese cargo in three Indian states bordering Nepal, namely Uttar Pradesh, Bihar, and West Bengal. Nepalese cargoes are subject to state taxes as well as bribes.
- Administrative “red tape,” gross inefficiency, and over congestion—resulting in delays, higher turnaround times, detention, and demurrage—are rife in Kolkata and Haldia ports, the gateways for Nepal’s third-country trade.

Nepal has established inland ports in the east and is linked to the ports at Kolkata and Haldia by rail. This was expected to reduce the cost of transit trade from 12%–15% to 8%–10% of the cost, insurance, and freight total, and the journey time from 10 to 3 days. However, a “through bill of lading,” which would avoid or reduce customs clearance in Kolkata and Haldia, is not yet available. Nepal has long sought access to alternative ports in India and some in Bangladesh, but this has so far come to nothing. Such access (to ports in Bangladesh, including for geographical and political reasons) will have to be negotiated with or via India.

VII. LESSONS FROM NEPAL: THE IMPORTANCE OF EFFECTIVE INDUSTRIAL POLICY

The analysis in this paper highlights the following as critical constraints to industrial development and GVC participation in Nepal:

- weak and uncertain investment regime;
- inadequate infrastructure;
- energy shortage;
- coordination failures;
- shallow regional integration;
- non-tariff barriers; and
- inefficient transit trade.

The case studies of tea (for agriculture) and transformers (for manufacturing) identified further constraints at the horizontal level—an overvalued exchange rate (in particular with India), lack of information about markets, lack of accredited laboratories—and at the industry level—lack of skilled technical manpower, and a perverse tax structure. One of the key insights from the second case study is that government procurement could be an industrial policy instrument for technology-based manufactured goods.

Many of these problems are not new, but they have remained unresolved because of weak industrial policy and implementation. What Nepal’s industrial growth strategy is, and how economic policies relating to trade, infrastructure, the exchange rate, etc. can support industrial development, remain incoherent. The national (as well as donor) failure to give priority to industrial development, coupled with weak public administration capacity to implement policies, is at the root of Nepal’s inability to lift constraints to industrial development and GVC participation.

How can these constraints be alleviated, industrial development triggered and participation in GVCs improved? Domestic reform will be required to tackle behind-the-border constraints, and improvements will be required at the subregional level to address beyond-the-border constraints.

Improve public administration capacity to coordinate and implement industrial policy. The present industrial policy contains all the ingredients necessary to support industrial development. However, weak coordination and implementation by the MOI meant that the policy has been unable to address the constraints and support industries. Without substantially enhancing the capacity (technical and human) of the MOI, it will be difficult to implement the industrial policy effectively.

Develop a result-oriented industrial development strategy. The present industrial policy is a well-intentioned but very broad framework to promote industries. In a country with weak coordination capacity, such a broad framework fragments limited resources, thereby undermining the effectiveness and impact of the policy. Nepal needs to use its limited resources selectively and strategically, which will involve identifying and regularly updating priority industrial products and sectors. Supporting policies need to be coherent and closely linked to deliver the strategy.

Use South Asia Subregional Economic Cooperation (SASEC) as a platform to tackle beyond-the-border constraints. SASEC brings together in project-based partnership, Nepal's immediate neighbors—India, Bhutan, and Bangladesh. SASEC can help deepen subregional and regional integration by improving trade facilitation, trade infrastructure, and trade in energy.

APPENDIX: TRADE AND MANUFACTURING DATA

Table A.1: Commodity Trade by Standard International Trade Classification Group, 2011/2012

Description	Value (NRs 10 million)
Exports	
Food and live animals	1,004.70
Tobacco and beverages	7.57
Crude materials and inedible	165.33
Mineral fuels and lubricants	0.00
Animal and vegetable oil and fats	19.51
Chemicals and drugs	182.94
Manufactures classified chiefly by material	2,548.33
Machinery and transport equipment	19.93
Miscellaneous manufactured articles	907.88
Imports	
Food and live animals	2,490.85
Tobacco and beverages	180.35
Crude materials and inedible	1,146.54
Mineral fuels and lubricants	6,325.58
Animal and vegetable oil and fats	1,197.67
Chemicals and drugs	3,344.87
Manufactures classified chiefly by material	7,263.00
Machinery and transport equipment	5,396.81

Source: Ministry of Finance (2013).

Table A.2: Major Exports to India
(NRs 10 million)

Description	2011-2012	Share (%)
Textiles	311.04	13.10
Zinc sheet	292.89	12.34
Jute goods	271.17	11.42
Polyester yarn	256.20	10.79
Cardamom	198.54	8.36
Thread	195.74	8.25
Juice	180.70	7.61
Galvanized iron pipe	124.48	5.24
Copper wire rod	72.34	3.05
Tooth paste	71.03	2.99
Catechu	66.29	2.79
Medicine (Ayurveda)	58.22	2.45
Oil cake	46.67	1.97

continued on next page

Table A.2 continued

Description	2011–2012	Share (%)
Plastic utensils	43.30	1.82
Noodles	36.97	1.56
Ginger	27.83	1.17
Ghee	28.09	1.18
Magnetic silicon pipe	21.22	0.89
Live animals	16.77	0.71
Soap	16.91	0.71
Pulses	13.51	0.57
Rice bran oil	11.49	0.48
Herbs	4.87	0.21
Cattle feed	2.93	0.12
Pashmina	2.46	0.10
Jute cutting	1.00	0.04
Mustard and linseeds	0.63	0.03
Chemicals	0.53	0.02
Dried ginger	0.22	0.01

Source: Authors' calculation based on Ministry of Finance (2013).

Table A.3: Major Exports to the Rest of the World
(NRs 10 million)

	2011–2012	Share (%)
Carpets (hand-knotted woolen)	693.80	36.90
Ready-made garments	400.63	21.31
Pashmina	323.03	17.18
Pulses	249.70	13.28
Hides and skins	72.35	3.85
Nepalese paper and paper products	58.73	3.12
Handicrafts	51.01	2.71
Medicinal herbs	19.77	1.05
Ornaments	11.00	0.59

Source: Authors' calculation based on Ministry of Finance (2013).

Table A.4: Major Imports from India
(NRs 10 million)

	2011–2012	Share (%)
Petroleum products	9,225.56	44.81
Magnetic silicon billet	1,943.73	9.44
Transport equipment	1,705.10	8.28
Medicine	1,038.34	5.04
Other machinery spare parts	834.20	4.05
Clod roll sheet (in quail)	746.79	3.63

continued on next page

Table A.4 continued

	2011–2012	Share (%)
Electrical goods	700.98	3.40
Magnetic silicon ware rod	676.10	3.28
Hot roll sheet (in quail)	554.26	2.69
Chemical fertilizer	450.65	2.19
Threads	413.25	2.01
Agricultural tools and spare parts	414.58	2.01
Chemical liquids	407.29	1.98
Cement	330.01	1.60
Vegetables	258.95	1.26
Cloth (cotton and others)	241.05	1.17
Paper	227.81	1.11
Tobacco	191.68	0.93
Aluminum ingot	128.96	0.63
Horlicks and other milk products	97.91	0.48
Steel plate	0.87	0.00

Source: Authors' calculation based on Ministry of Finance (2013).

Table A.5: Major Imports from Other Countries
(NRs 10 million)

	2011–2012	Share (%)
Gold	2,577.04	27.71
Crude soybean oil	996.23	10.71
Telecommunication accessories	845.90	9.10
Electrical goods	731.16	7.86
Other machinery and parts	719.75	7.74
Computer parts	615.03	6.61
Polythene granules	578.67	6.22
Silver	437.09	4.70
Transportation equipment	285.93	3.07
Chemical fertilizer	229.13	2.46
Medicine	197.61	2.13
Threads	188.71	2.03
Copper wire rod, scrape and sheet	187.52	2.02
Paper	175.78	1.89
Petroleum products	168.21	1.81
Airplane spare parts	140.61	1.51
Cloth (cotton and others)	127.52	1.37
Raw wool	65.72	0.71
Crude palm oil	31.26	0.34

Source: Authors' calculation based on Ministry of Finance (2013).

Table A.6: Capacity Utilization of Selected Industries
(%)

Description	Fiscal Year									
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012
Sugar	43	42	42	32	34	31	31	32	32	32
Cigarettes	94	90	87	87	88	88	91	92	92	92
Beer	66	65	68	72	74	n/a	78	80	80	52
Matches	62	63	64	64	64	n/a	58	58	58	58
Shoes	26	27	45	64	65	66	70	72	74	74
Cement	46	39	49	39	42	41	45	50	56	57
Jute products	71	67	68	72	72	n/a	66	66	67	67

Source: Ministry of Finance (2013).

Table A.7: Manufacturing Production Index

Major Industrial Group	Weight (%)	Base Year 2008/2009 = 100		
		2009/2010	2010/2011	2011/2012
Vegetable, oils and fats (vegetable ghee, mustard oil, soybean oil)	9.61	98.08	94.81	84.43
Dairy products (processed milk)	1.91	109.87	108.17	110.02
Grain mill products and animal feeds (rice, wheat flour, animal feed)	9.34	91.95	99.08	111.28
Other food products (biscuit, bread, sugar, chocolate, noodles, processed tea)	6.45	104.02	107.77	123.29
Beverage (liquor rectified, beer, soft drink)	6.72	124.12	135.84	146.08
Tobacco products	6.66	101.78	125.08	119.15
Textiles (yarn, cotton clothes)	6.31	93.88	70.84	70.52
Other textiles (woolen carpet, jute goods)	4.17	89.29	92.90	102.32
Garments	1.17	115.24	116.74	96.87
Tanning and dressing of leather (processed leather)	0.53	1,555.65	100.87	81.45
Saw milling and planing of wood (wood sawn)	0.67	109.52	58.66	52.96
Wood products (plywood)	0.60	112.61	116.30	106.48
Paper and paper products	2.57	94.97	77.30	83.96
Refined petroleum products (lube oil)	1.04	105.56	11.57	98.44
Basic chemical products (rosin)	1.19	111.30	106.51	80.28
Other chemical products (paint, medicine, soap)	5.35	100.89	110.65	121.08
Plastic products	5.75	101.71	94.10	112.57
Non-metallic mineral products (bricks, cement)	7.92	104.48	133.63	122.98
Other fabricated metal product (iron rods, billets, galvanized iron pipe)	11.71	107.78	111.53	112.57
Casting of metals (domestic metal products, aluminum products)	0.86	89.04	115.51	118.31
Structural metal product	7.17	101.91	110.69	135.94
Electrical wire and cable	1.74	102.84	138.31	154.13
Furniture	0.56	99.98	104.37	103.66

Source: Ministry of Finance (2013).

Table A.8: Status of Industrial Estates

	Date of Establishment	Area (Thousand square meters)	Number of Industries in Operation	Number of Closed Industries	Number of Industries Under Consideration	Investment from Industrialists (NRs 10 million)	Employment
Balaju	1960	341	97	8	26	312	3,506
Hetauda	1964	1,440	63	17	14	502	2,415
Patan	1964	149	102	5	5	170	1,586
Nepalgunj	1974	118	30	1	4	195	867
Dharan	1973	103	24	1	9	30	706
Pokhara	1975	255	61	10	5	183	1,945
Butwal	1977	221	62	7	2	170	1,480
Bhaktapur	1979	36	35	2	0	59	825
Birendra Nagar	1982	45	22	0	6	2	163
Dhankuta	1985	32	n/a	n/a	n/a	n/a	n/a
Gagendranarayan Singh	1988	149	2	1	1	2	40

n/a = not available.

Source: Ministry of Finance (2013).

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Industrialization and Global Value Chain Participation

An Examination of Constraints Faced by the Private Sector in Nepal

This paper examines the constraints faced by Nepal, a least developed landlocked country, in participating in regional and global value chains. It analyzes key economic data, reviews recent and relevant publications, and draws on interviews with policymakers and stakeholders. The paper identifies behind- and beyond-the-border factors that reduce competitiveness and the ability of the private sector to participate and benefit from regional and global value chains. It also conducted case studies with two leading firms in Nepal.

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