Chapter 2
Structural Transformation and Growth: Whither Agriculture in Nepal?

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Abstract This chapter analyses the pattern of structural transformation in the Nepalese economy and its implications for the agriculture sector and provides policy directions for the future. The chapter highlights the critical role of research, extension and infrastructure to ensure sustainable agricultural growth in Nepal. It also throws light on the emerging opportunities and challenges as the country moves towards a federal political system.

Acronyms

BRICS	Brazil, Russia, India, China and South Africa
DCGE	Dynamic computable general equilibrium
GDP	Gross domestic products
TFP	Total factor productivity

1 Context

Nepal's rate of growth remains disappointing despite its considerable potential. Notwithstanding its natural beauty, geographical location between two of the largest and fastest growing economies in the world, a young population, international goodwill, and competitive strength in generating clean hydro-powered energy in an era of climate change. Nepal's real per capita GDP grew, on average, at an anaemic rate of 1.8% per year between 1965 and 2014. Relative to the performance of several Asian countries in the neighbourhood (see Table 1), Nepal has fared dismally, seemingly trapped in chronic poverty.

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Table 1 Nepal's per capita GDP (constant $, 2010), as a share (%) of other countries

	1960	1970	1980	1990	2000	2005	2010	2015
Bangladesh	72	71	81	89	90	84	78	71
Bhutan	–	–	71	45	38	33	27	27
China	141	127	82	49	26	19	13	11
India	84	75	70	64	58	50	43	38
Sri Lanka	–	40	31	30	25	23	21	19
Singapore	8	4	2	2	1	1	1	1
Thailand	47	31	20	14	13	12	12	12
Lao PDR	–	–	–	77	68	59	52	45

Source World Bank (2016)

There has been inadequate investment in the formation of physical and human capital, with returns constrained by its landlocked position as well as poor governance characterised for over 200 years by exploitative political and economic institutions. While the sectoral composition of the economy has undergone major shifts, notably after 1990, growth remains sluggish. This raises the most important policy challenge: How can per capita productivity be enhanced within and across agriculture, industry and services? What ought to be the nature of structural transformation in Nepal so that its full economic possibilities can be realised?

Economists view structural transformation as a process of reallocating resources among different economic sectors that exhibit varying productivity (Herrendorf et al. 2013). This typically involves, over time, a declining contribution of agriculture in gross domestic product (GDP) and total employment. As people move out of agriculture, they inevitably gravitate towards urban areas in search of higher-paying jobs in the "modern" sectors, such as industry and services. Timmer and Akkus (2008) described this pattern of development as one historical pathway to reducing poverty and enhancing social mobility.

The most dramatic fashion in which the world saw this phenomenon in action after the nineteenth century was the Industrial Revolution in the West and the transformation of East Asian economies, notably China, after the late 1970s. As shown by Brandt et al. (2008), China has reallocated hundreds of millions of people from rural agriculture to urban industry and services. Parts of South Asia, and more conspicuously, Latin America and sub-Saharan Africa have not seen anything on a comparable scale. The process of structural transformation is neither automatic nor guaranteed; it has to be pursued on the back of conscious national policies (McMillan and Rodrik 2011).

Through much of history, agriculture has been the most important source of sustenance. With improvements in technology and infrastructure, other modern sectors emerged, from manufacturing to services, which are now increasingly tradable across borders. In terms of value addition agriculture has lagged behind, even if it remains a reliable source of employment in developing countries at levels that have not yet been reached in the more modern sectors. In 1991, agriculture

accounted for over 80% of employment and nearly half of GDP in Nepal. Today, over two-thirds of employment is generated by the agriculture sector even though it contributes to only about one-third of the value added in national production.

Globally, Fig. 1 illustrates this structural shift. The share of agriculture in total value added in GDP has declined consistently throughout the world. Each dot represents a country at three different time periods (coloured separately for 1994, 2004 and 2014). As income per capita rises, the share of the non-agriculture sector in GDP tends to grow.

Similarly, Fig. 2 shows the sectoral share of employment in agriculture as per capita incomes rise across a worldwide sample. This shift is predictable as long as agricultural productivity is less than competing opportunities in the industrial and service sectors.

These twentieth-century patterns are likely to undergo a shift in the age of sustainable development when issues such as climate change pose an existential threat. While the agriculture sector generally consumes freshwater in large quantities, sustainable agricultural practices are a bulwark against wanton environmental destruction. Within the industrial sector, the nature of production is changing with production being fragmented and becoming less labour-intensive. However, dependence on fossil fuel persists and industrialisation is often secured at a heavy environmental price.

This chapter presents three main messages. First, Nepal exhibits a peculiar pattern of structural transformation, in which agriculture shrinks, and manufacturing peaks prematurely before declining, a dramatic consequence of policy discontinuity and armed conflict. Second, the move-away from agriculture represents

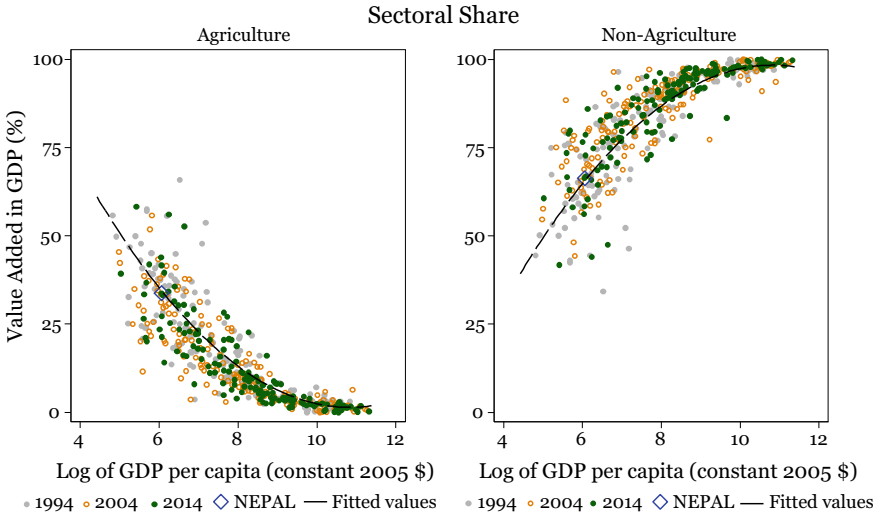

Fig. 1 Sectoral share of value-added and per capita income (worldwide). *Source* World Bank (2016)

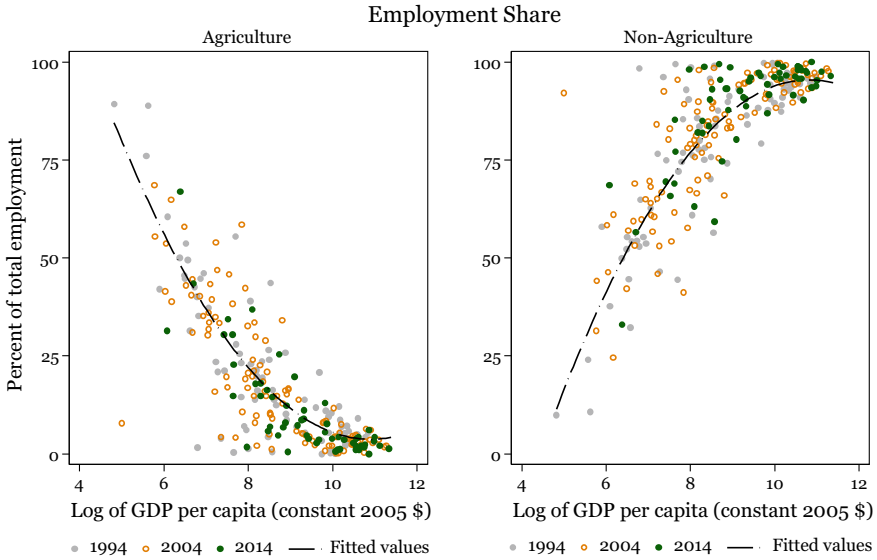

Fig. 2 Sectoral share of employment and per capita income (worldwide). *Source* World Bank (2016)

more of a transient, back-and-forth shift than a lasting transformation towards services which, in turn, comprise of both high- and low-productivity sectors. Third, Nepal's tepid transformation has meant that inequality has not risen, but it might in the future, necessitating continued investments to make agriculture a moderating economic force for equity.

In the subsequent sections, we present selected international evidence within a broad framework of the connection between structural transformation and growth, analyse the process of structural transformation in Nepal, and conclude with some policy directions.

2 Structural Transformation and Growth: Evidence and a Framework

The literature on structural transformation is vast and documents how the pace of structural transformation determines the nature of economic growth across countries. It primarily asks what motivates the reallocation of resources across economic sectors, and how shifts in the share of employment impact the value added of economic activities?

While the literature generally affirms the concept that the process of structural transformation is about shifting labour and other productive resources away from agriculture towards industry, and subsequently into services as the country develops

Table 2 A typology of structural transformation, institutional capabilities and growth

Speed of structural transformation			
		Slow	Fast
Institutional capabilities	Low	Stagnant growth (Africa, Nepal)	Episodic growth (Group of 83)
	High	Slow growth (Latin American countries)	Rapid, sustained growth (East Asian countries)

Note Authors' sketch based on Rodrik (2013) and Hausmann et al. (2004)

(Duarte and Restuccia 2010), this has also been questioned by some. What kind of economic growth this process generates is argued to depend crucially on idiosyncratic country conditions.

Table 2 presents a typology of the links between institutional capabilities and the speed of structural transformation and the quality of economic growth it might produce. Countries with low institutional capabilities and a slow speed of structural transformation end up with stagnant growth, as in the case of sub-Saharan Africa. Nepal, too, would belong to this category. In the main, Latin American countries have middle-income status and have acquired decent institutional capabilities over decades, but the speed of structural transformation has been slow, producing slow growth. This is particularly noticeable in comparison with East Asian countries whose rapid catch-up went hand in hand with the notable transformation of agrarian economies into globally integrated manufacturing powerhouses. Developing countries with less sophisticated institutional capabilities but a move towards faster transformation have seen growth spurts that were not sustained, as documented in Hausmann et al. (2004).

Based on the experiences of Asian economies, Foster and Verspagen (2016) stated that structural transformation largely depends on labour productivity and the rise in incomes. It is not necessary that the agriculture sector needs to lose labour and resources in the process of structural transformation. Additionally, Fagerberg (2000), using a sample of 39 countries covering 24 industries for the period of 1973–1990, points out that mere structural change on average has not been conducive to productivity growth. Those countries, however, which have chosen and managed industries amenable to the adoption of sophisticated technologies, such as electronics, have experienced higher productivity growth than others. Thus, this argument is that productivity of labour, overall, and not necessarily its move across sectors, has caused structural transformation.

Fan et al. (2003), too, concluded that structural change contributes to growth by reallocating resources from low-productivity sectors to high-productivity sectors and while this often implies a move from agriculture to manufacturing, it is neither necessary nor sufficient.

McMillan et al. (2014), taking a regional perspective, stated that structural change in Africa and Latin America since 1990 has, in fact, tended to reduce economic growth, while it has been found to be positive in the context of Asian economies. The authors argue that much of the difference in overall labour

productivity growth among the three developing regions is due to different patterns of structural change. In Asia, labour moved from low- to high-productivity sectors; this was just the opposite in Latin America and Africa, with labour drawn towards the natural resource sector, which slowed growth, which was also partly attributable to "Dutch Disease" (n.b. **Dutch disease** is the negative impact on an economy of anything that gives rise to a sharp inflow of foreign currency, such as the discovery of large oil reserves. The currency inflows lead to currency appreciation, making the country's other products less price competitive on the export market).

In the context of Asian countries, rapid growth of income per capita in recent decades can be explained by two schools of thought. The first group argues that "fundamentals", namely, inputs and capital accumulation better explain the growth phenomenon than productivity growth, as discussed in Krugman (1994). The second group posits that Asia's growth was a direct result of factor productivity growth caused by the adoption of imported technology and rapid structural change reflected in growing firm size and areas of specialisation (Nelson and Pack 1999; Romer 1993).

Breisinger et al. (2009) evaluated sources of accelerated growth and structural transformation using a recursive dynamic computable general equilibrium (DCGE) model, focusing on Ghana where manufacturing growth is constrained by its high dependency on agricultural inputs indicating the need for diversification, as the service sector can merely support, rather than drive economy-wide growth. They suggest that agriculture will remain as the key source of growth to lift Ghana to middle income status.

Briones and Felipe (2013) stated that Asia has experienced a slower decline in the share of agriculture in employment compared to other regions. Rapid growth both in labour and land productivity on the one hand, and a shift from agricultural to high-value products, i.e. agriculture-led industrialisation, caused the pace of structural transformation to pick up in the region.

Chen et al. (2011), using a stochastic frontier sectoral production function, described how China's manufacturing sector experienced robust growth as a result of persistent structural reforms initiated since 1978. The paper suggests that the structural change contributed substantially to total factor productivity and output growth, but its rate of contribution fluctuated over time.

Another strand of literature has attempted to establish a causal link between international trade expansion and economic growth in relation to the process of structural transformation. Based on the Chilean experience of 30 years, de Piñeres and Ferrantino (1997) suggested that structural change over the long run diversifies trade. Similarly, Khalafalla and Webb (2001) employed the vector autoregressive analysis using Malaysian quarterly trade and GDP data from 1965 to 1996 to argue that structural change adjusts the source of growth itself and alters the dynamics of export–growth relationship. In this study, primary exports, including agriculture, had a stronger direct impact on economic growth than the impact of manufactures.

The rapid transformation of East Asia has long fascinated development economists, particularly the fact of cheap labour constituting the base of competitive exports which propelled manufacturing productivity. Diao et al. (2006) showed that

Thailand's economic growth, comparable to other neighbours, drew heavily on learning-by-exporting as labour-intensive manufacture forged links with, and vastly expanded domestic backward linkages. The authors use a Ramsey model to explain the structural shifts from agriculture to exportable manufacturing, facilitated by openness. This was also the case in South Korea as found by Uy et al. (2013) in studying the importance of international trade in structural change, having analysed the productivity and trade cost shocks in South Korea, 1971–2005.

Duarte and Restuccia (2010) investigated the role of sectoral labour productivity using an unbalanced panel of 29 countries for the period 1956–2004. They find that productivity difference is large across countries in agriculture and services compared to manufacturing, but these productivity gaps narrow substantially in agriculture, relative to services, over time.

There are some studies focused on North and South American economies. For example, Katz (2000) identified that the "catching up" and "lagging behind" industries during 1970–1996 comparing the cases of Argentina, Brazil, Colombia, Chile and Mexico with those of the USA. This research shows that economic reforms did not result in major discontinuity with the past trend of structural transformation.

After the 1990s, the traditional post-war understanding of structural transformation as a linear process of transforming resources from agriculture to services, via manufacturing, has changed. The approach today is that it is the inherent enhancement of productivity that determines structural transformation. The standard shift-share analysis is inadequate to measure the contribution of sectors to accelerations in productivity, and growth accelerations are explained by productivity increases within sectors, not by reallocation of employment to more productive sectors (Timmer and de Vries 2009). Country experiences vary by income levels as well. Even among the largest developing countries, such as Brazil, Russia, India, China and South Africa (BRICS), evidence is mixed: China, India and Russia benefited from increasing productivity from reallocation of labour sources, but this was not the case in Brazil (de Vries et al. 2012).

3 Structural Transformation of the Nepali Economy

Most countries begin their journey of accelerated structural transformation from a critical juncture in history, triggered by internal or external jolts, such as territorial invasion, economic crisis or the arrival of enlightened leadership. These historical triggers however need favourable initial conditions, from a decent educational base, urbanisation, or strategic opening to external trade and investment. In Nepal, despite hundreds of years of existence, suitable climatic diversity and wide spread awareness about the importance of agriculture, this sector has not yet seen a productivity overhaul.

The problems in Nepali agriculture are well known. The nation continues to rely on rain-fed traditional agriculture, with less than one-fifth of cultivable land

irrigatable throughout the year. Public inputs, such as fertilisers, seeds, research and extension services are inadequate. Complementary infrastructure in the form of rural roads and electricity are expanding, but have not reached the levels necessary to support commercialisation and the reaping of scale economies. Financing instruments remain unsophisticated with the reach of concessional credit and insurance still largely confined to urban and peri-urban areas. And not all that is produced enters the market because of post-harvest loss, high cost of entry into the markets, weak managerial skills and the low supply of labour in rural areas due to workers migrating over the past decade.

Part of the challenge is that investments going into agriculture have declined over decades and have shown only a modest uptick in recent years, in contrast to manufacturing which is shrinking in relative terms (Table 3). This is problematic because agriculture and manufacturing remain sectors that can provide gainful employment to the masses. Because they are not expanding and not absorbing young people in large numbers, Nepal has seen migration on an epic scale over the past decade. In 2016, on average, about 40,000 people left the country every month in search of temporary employment opportunities abroad. Furthermore, it is the remittances sent by these workers that have fuelled growth in investment in services. The high growth services subsectors are transportation and communication, followed by education and health.

Figure 3 portrays the status of rural and urban employment in 1995 and 2010 to support the hypothesis of an unusual pattern of structural transformation occurring in Nepal. First, agriculture remains a dominant source of employment in the country: In 2010, around 80% were employed in agriculture in rural areas, and 33% in urban areas. Second, the number of people on regular wages is low in rural areas, at about five per cent; an overwhelming majority being self-employed. Third, a new form of agriculture is actually picking up in urban areas even as it shrinks in rural areas. Self-employed agriculture is, in fact, the largest sector of employment in urban areas. We hypothesise that this could be a result of migrant returnees who do not choose to return to their villages but instead apply their knowledge, exposure and capital to a new vocation, particularly in the Kathmandu Valley and surrounding areas like Kavrepalanchowk, Nuwakot, Dhading and Gorkha.[1]

Figure 4 shows that the sectoral contribution of agriculture in urban employment has dropped from 21.6% in 1995 to 4.9% in 2010. Even in the rural areas during the same period, it decreased by almost 50%. Wage employment in services has also seen a decrease, even though it still accounts for close to half of all wage employment. Further, the share of professional employment has increased

[1]We acknowledge that some of the above findings might be distorted by the fast evolving official classification of which local government units are villages and which are deemed to be municipal. At present, there are 217 municipalities in Nepal of which only 58 existed until 2014. Our data are for 2010. The other 72 were established in May 2014, 61 in December 2014 and 26 in September 2015, respectively.

Table 3 Sectoral investment (per cent of total investment)

Year	Agriculture	Manufacturing	Services
2010	11	12	77
2011	11	11	78
2012	11	11	78
2013	11	10	79
2014	12	9	79
2015	13	6	81

Source Aryal (2016)

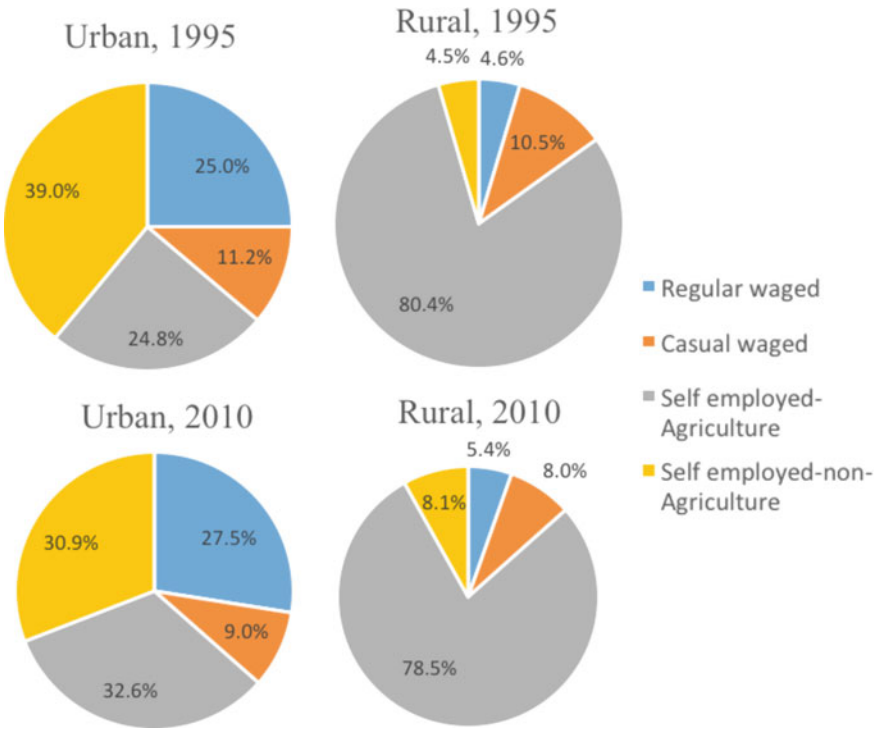

Fig. 3 Forms of rural and urban employment in 1995 and 2010. *Source* Tiwari et al. (2016)

three-fold and employment in manufacturing—in contrast to investment going into the sector—has doubled over the 15 year period. This could indicate a heightened focus on low-productivity, low value-adding modes of production. In rural areas, wage employment in agriculture has declined to about half during this period and much of the displaced labour has shifted to services and construction, where the employment share grew from 8.6 to 20.4%.

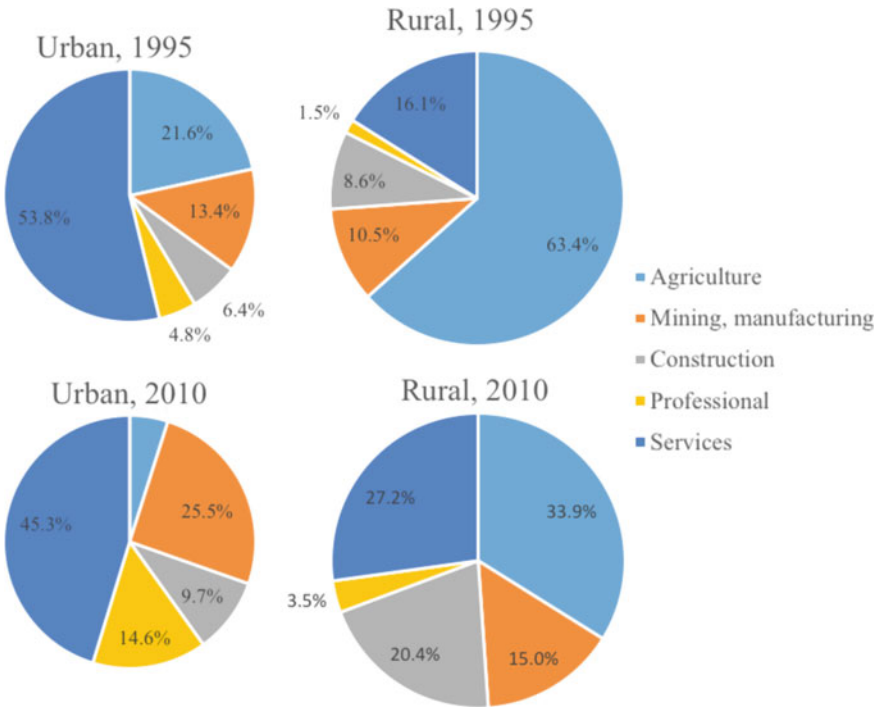

Fig. 4 Composition of employment in rural and urban areas, 1995 and 2010. *Source* Tiwari et al. (2016)

3.1 Peculiar Pattern of a Mere Shift, Not Transformation

Based on findings above, Nepal exhibits a peculiar pattern that defies a globally stylised fact. The twentieth-century consensus was that the process of structural transformation involves a "manufacturing hump" as resources move away from agriculture into manufacturing before declining. This has not been the case in Nepal. As can be seen from Fig. 5, the value added from agriculture now is exceeded by the service sector, significantly fuelled by remittances sent by migrant workers who in the absence of foreign employment opportunities might have remained in the subsistence agricultural sector (see Fig. 6).[2] Remittances have buoyed economic activities in the service sector of both varieties: highly efficient and productive subsectors like banking, finance, aviation and telecom, as well as services like wholesale and retail trade, hotels and restaurants characterised by high degrees of informality.

[2]Remittance inflows into Nepal today stand at over 30% of GDP. This trend accelerated after 2001, when armed conflict gripped rural areas and intensified in urban areas, instigating migration of young people to the cities and abroad.

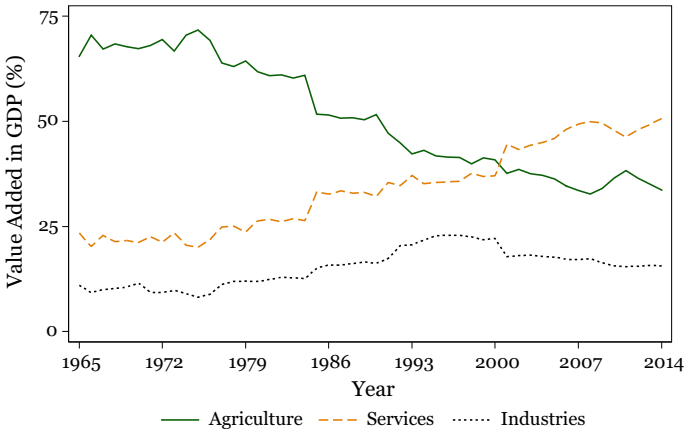

Fig. 5 Sectoral value added, 1965–2014. *Source* World Bank (2016)

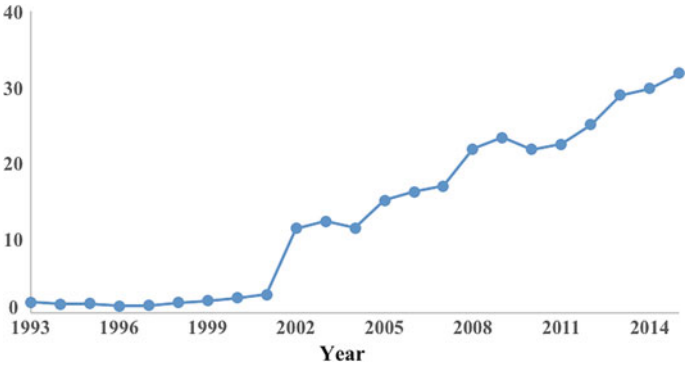

Fig. 6 Remittances as a share of GDP (%). *Source* World Bank (2016)

Changes in the structure of sectoral employment, value added, and output jointly account for the pattern of structural transformation. If we look at the growth of the sectoral value added, all sectors are stagnant, reflecting poor performance in the productivity of the labour force, as shown in Fig. 7. The same cohort of unskilled or semi-skilled workers appear to be moving away from, and into, agriculture, overseas employment, or informal services. A mere shift of resources or value added from one sector to another sector has not translated into better economic performance, and overall output growth has not exceeded five per cent in real terms over the past 20 years.

An area where Nepal's experience mimics that of other Asian countries is in the gradual fragmentation of landholdings. While the prominence of agriculture is declining, the number of farms is increasing and the average farm size is decreasing. This indicates that the rate of exit from agriculture is slow. This implies that the

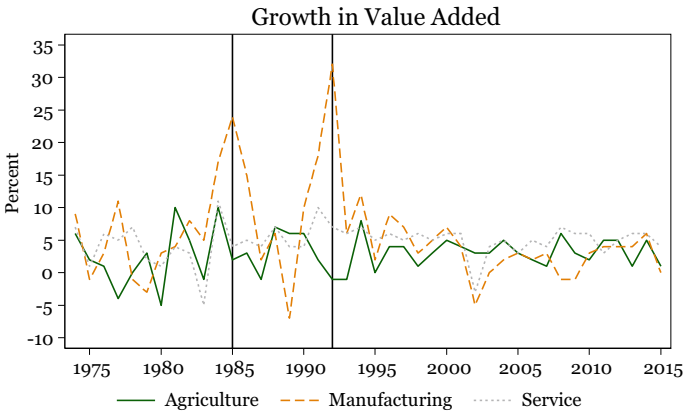

Fig. 7 Growth of sectoral value added, 1974–2015. *Source* World Bank (2016)

productivity gap between the agricultural and non-agricultural sectors and the incomes of farmers and non-farmers are likely to diverge.

Because temporary overseas migration is not a sustainable solution to Nepal's slow growth, the country needs to imagine and implement a range of "exit opportunities" for small farmers and landless workers within the country. The potential for increasing employment in the agriculture sector is mixed. In the cereal sector, the employment elasticity has fallen in recent years due to the adoption of mechanisation and capital-intensive farming, particularly in the Tarai. There are, however, better employment opportunities in the production of high-value products like fruits, vegetables and livestock products. These commodities have seen faster growth in recent years due to increasing demand arising from rising incomes and dietary transition. One important need would be to ensure that smallholders compete and participate in these growing markets. This would require investments in rural infrastructure and technology, improvements in marketing and distribution systems, and support for collective bargaining power of smallholders through land pooling, cooperatives and producers' groups.

Manufacturing did see a spike after economic liberalisation in the early 1990s, only to lose momentum during the period coinciding with political upheavals and armed conflict. As evident in Fig. 7, value-added growth in manufacturing had also seen a spike in the 1980s at a time of heavy state investment in industries and widespread protection from imports. Other than these two periods, growth of value added in manufacturing has remained at an indifferent level since the mid-1960s. Therefore, a tepid transformation process marked by a random shift from one sector to the other has not augured well for Nepal's efforts to expedite economic growth.

Furthermore, against this backdrop of lacklustre growth, Nepal stands out as a country where inequality has not exacerbated. According to Tiwari et al. (2016), the Gini index for consumption for Nepal was 0.33 in 2010–11, which is roughly where it stood in 1995–96. This lies at the lower end of the global sample. While inequality in rural areas has not changed much, it has actually decreased in urban areas.

Nepal's economy, it can therefore be argued, has not even embarked on the process of structural transformation at the pace and intensity which inevitably results in the more productive sectors pulling away from the traditional sectors, worsening inequality. The country is probably placed at around the starting point of the Kuznet's curve, which presents an inverted U-shaped relationship between inequality and stages of development. The traditional dominance of agriculture, and a significant inflow of remittances, in an otherwise stagnant economy can explain this pattern of declining poverty, low inequality and the lack of job-creating growth.

4 Future Directions

It is accepted that agriculture-driven growth is more equitable. In Nepal, where a shift towards manufacturing stalled prematurely, and a greater role for services is problematic as it encompasses both highly productive and less productive sectors, an efficiency overhaul *within* agriculture remains a development priority. Building on the achievements and improving the shortcomings of the Agricultural Perspective Plan (1995–2014), Nepal has just approved another long-term Agricultural Development Strategy (2015–2035). The strategy takes a leap from a piecemeal focus on seeds, fertilisers, irrigation and rural roads to the quality of governance, widespread commercialisation and enhancement of productivity. On this basis, the 14th periodic plan of the Government (2016–2019) also anticipates a substantial increase in the production of cereals, fruits, vegetables and fish.

Given Nepal's handicap of being a landlocked country, its manufactures need to divert from bulk exports dependent on shipping to high-value-to-weight products which can be transported via air transport or through low-cost overland containers. This approach will nudge productivity enhancements in agro-processing industries.

The use of modern technologies to forge national and regional value chains across clusters of specialisation would need a fresh impetus. This can be achieved by incentivising all domestic investment to invest in sustainable agriculture. More crucially, the potential of foreign direct investment, a long neglected source of cross-border capital flow in agriculture, needs to be harnessed. Nepal can curtail the mass migration it faces only by providing opportunities to earn decent wages at home.

The role of the state in investing in public areas such as research, extension services and infrastructure is ever more important. Infrastructural development also has cross-sectoral uses as roads built to connect farms to markets can also be availed of by the tourism industry. Nepal's proximity to hundreds of millions of middle class consumers and tourists in India, China and Southeast Asia also presents a potential for a development windfall.

Going forward, however, there will both be an opportunity and a challenge in governance. As the country moves towards a federal political system agricultural productivity can be expedited by provincial and local governments who take greater ownership of public investments. On the other hand, fragmenting of jurisdictions, in the absence of cooperative federalism, could stunt prospects for attaining economies of scale and securing productivity gains in agriculture.

References

Aryal, S. (2016). *Pattern of Sectoral Investment*. Unpublished data from Central Bureau of Statistics. Kathmandu, Nepal.

Brandt, L., Hsieh, C.-T., & Zhu, X. (2008). Growth and structural transformation in China. In L. Brandt & T. G. Rawski (Eds.), *China's great economic transformation* (pp. 683–728). Cambridge, UK: Cambridge University Press.

Breisinger, C., Diao, X., & Thurlow, J. (2009). Modeling growth options and structural change to reach middle income country status: The case of Ghana. *Economic Modelling, 26*(2), 514–525.

Briones, R., & Felipe, J. (2013). Agriculture and structural transformation in developing Asia: Review and outlook. *Asian Development Bank Economics Working Paper Series,* (363).

Chen, S., Jefferson, G. H., & Zhang, J. (2011). Structural change, productivity growth and industrial transformation in China. *China Economic Review, 22*(1), 133–150.

de Piñeres, S. A. G., & Ferrantino, M. (1997). Export diversification and structural dynamics in the growth process: The case of Chile. *Journal of Development Economics, 52*(2), 375–391.

de Vries, G. J., Erumban, A. A., Timmer, M. P., Voskoboynikov, I., & Wu, H. X. (2012). Deconstructing the BRICs: Structural transformation and aggregate productivity growth. *Journal of Comparative Economics, 40*(2), 211–227. https://doi.org/10.1016/j.jce.2012.02.004.

Diao, X., Rattsø, J., & Stokke, H. E. (2006). Learning by exporting and structural change: A Ramsey growth model of Thailand. *Journal of Policy Modeling, 28*(3), 293–306.

Duarte, M., & Restuccia, D. (2010). The role of the structural transformation in aggregate productivity. *The Quarterly Journal of Economics, 125*(1), 129–173.

Fagerberg, J. (2000). Technological progress, structural change and productivity growth: A comparative study. *Structural Change and Economic Dynamics, 11*(4), 393–411.

Fan, S., Zhang, X., & Robinson, S. (2003). Structural change and economic growth in China. *Review of Development Economics, 7*(3), 360–377.

Foster, N., & Verspagen, B. (2016). The role of structural change in the economic development of Asian economies. *Asian Development Review*.

Hausmann, R., Pritchett, L., Rodrik, D. (2004). *Growth Accelerations (draft)*. Harvard University, USA: John F. Kennedy School of Government.

Herrendorf, B., Rogerson, R., & Valentinyi, Á. (2013). Growth and structural transformation. *NBER Working Paper 18996*.

Katz, J. (2000). Structural change and labor productivity growth in Latin American manufacturing industries 1970–96. *World Development, 28*(9), 1583–1596.

Khalafalla, K. Y., & Webb, A. J. (2001). Export–led growth and structural change: Evidence from Malaysia. *Applied Economics, 33*(13), 1703–1715.

Krugman, P. (1994). Myth of Asia's miracle. *Foreign Affairs, 73*(6), 62–78.

McMillan, M., Rodrik, D., & Verduzco-Gallo, Í. (2014). Globalization, structural change, and productivity growth, with an update on Africa. *World Development, 63,* 11–32. https://doi.org/10.1016/j.worlddev.2013.10.012.

McMillan, M. S., & Rodrik, D. (2011). Globalization, structural change and productivity growth. *NBER Working Paper 17143, National Bureau of Economic Research*.

Nelson, R. R., & Pack, H. (1999). The Asian miracle and modern growth theory. *The Economic Journal, 109*(457), 416–436.

Rodrik, D. (2013). Structural change, fundamentals and growth: An overview. *Institute for Advanced Study*.

Romer, P. (1993). Idea gaps and object gaps in economic development. *Journal of Monetary Economics, 32*(3), 543–573.

Timmer, C. P., & Akkus, S. (2008). The structural transformation as a pathway out of poverty: Analytics, empirics and politics. *CGD Working Paper 150, Center for Global Development.*

Timmer, M. P., & de Vries, G. J. (2009). Structural change and growth accelerations in Asia and Latin America: A new sectoral data set. *Cliometrica, 3*(2), 165–190.

Tiwari, S., Uematsu, H., Shidiq, A. R., Salazar, C. F. B., Khadka, R. B., & Shrestha, M. (2016). *Moving up the ladder: Poverty reduction and social mobility in Nepal*. Retrieved from The World Bank Group, Kathmandu, Nepal.

Uy, T., Yi, K.-M., & Zhang, J. (2013). Structural change in an open economy. *Journal of Monetary Economics, 60*(6), 667–682.

World Bank. (2016). World Development Indicators. from World Bank. http://data.worldbank.org. Accessed on December 16, 2016.