

TRENDS IN BACKWARD LINKAGES AND DOMESTIC SOURCING OF RAW MATERIALS BY AGRO-INDUSTRIES

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In the history of economic development, the emergence and growth of agro-industries characterize the transition from a subsistence oriented agricultural economy to an industrial economy. In this process, forward and backward linkages play an important role. Some economists argue that the key to faster economic growth lies on promoting industries with extensive forward and backward linkages (Hirschman 1958). Others argue that simultaneous investment in the development of several related industries is needed for the industrialization of a nation, a phenomenon known as balanced growth strategy in economic literature (Rosenstein-Rodan 1943, Nurkse 1953). In a closed economy, agro-industries provide an important market for domestic primary agricultural products through backward linkages. In an open trading regime, however, the presence of such linkages depends on many factors including the competitiveness of domestic agricultural sector.

The purpose of this chapter is to review the extent of backward linkages of agro-based industries in Nepal and to identify opportunities and constraints for promoting the use of domestic raw materials. Also some preliminary implications of the WTO Agreement on Trade-Related Investment Measures (TRIMs) in this area are discussed with some recommendations for strengthening backward linkages.

The chapter, organised in four sections, overviews the development of agro-industries in Nepal and documents major raw materials used and their sources; identifies constraints to increasing the use of domestic raw materials and presents some emerging developments that promote their use; explores the consequences of the WTO TRIMs in this area; and draws some conclusions.

OVERVIEW OF AGRO-INDUSTRIES AND SOURCING OF RAW MATERIALS

Agro-Industrial Development in Nepal

In 2000/01, manufacturing industries contributed about 10% of the GDP.⁷⁶ The sector is dominated by agro-based industries. It is interesting to note the developments in this area that occurred over several decades. Simple agro-based industries such as grain milling, weaving cotton clothes, oil extracting, sugarcane crushing, etc. have been in existence in Nepal for a long time, while modern industrialization process is said to begin with the passage of the Company Act and the establishment of Biratnagar Jute Mill in 1936. Jute remained the main foreign exchange earner for a long time. Other early industries included sugar, textile, cigarette and modern grain and oil mills. The foundation of the modern carpet industry was laid in the early 1960s when the Swiss Agency for Technical Assistance

⁷⁶ The Industrial Enterprise Act, 1992 defines manufacturing industries as “industries which produce goods by utilizing or processing raw materials, semi-processed materials, by products or waste products or any other goods.”

(SATA) provided financial and technical support to Tibetan refugees in carpet weaving (see www.nepalcarpet.org). The textile and garment industry developed much latter, largely due to the Multifiber Agreement of 1974, under which, by early 1980s, some developing countries like India were already using their full import quota, while others including Nepal were not fully utilizing the quota. As a result, the quota-constrained Indian producers began to invest in Nepal's textile and garment sector for export and the industry grew rapidly. Presently, however, Nepali entrepreneurs dominate the industry (see www.ganasso.org).

More recently, Nepal's agro-based manufacturing industries have begun to produce some internationally popular brands of soft drinks and beers as well. Nepalese noodles have emerged as popular snacks even in the rural Nepal replacing traditional snacks. To cater to the needs of the expatriates and the newly acquired food habits of the Nepal's middle to high-income consumers, domestically produced products like breads, mayonnaise, cheese, potato chips, peanut butter, chilli and tomato sauces, tomato ketchup, etc. can be seen in grocery stores. Fruit juices in tetra packs have also begun to appear. One such juice manufactured by a joint venture company, is gaining popularity in Indian market also. Vegetable ghee has emerged as an important export item.

Tables 1 and 2 present some indicators on the status of development of manufacturing sector. Table 1 on medium and large agro-based manufacturing industries shows the following changes during 1996/97 and 2001/02:

- The number of industries fell from 49% of total industrial establishments to 43%;
- The value added by these industries declined from 68% in to 65%;
- However, value added rose from about Rs.15 billion to about Rs. 21 billion; and
- The number of employees as a proportion of the total number of employees in manufacturing industries also fell from 61% to 51%.

Table 1: Main indicators of medium and large manufacturing industry

Indicator	1996/97			2001/02		
	All manufacturing	Agro-based industries	% Agro-based	All manufacturing	Agro-based industries	% Agro-based
<i>Number of:</i>						
Establishment	3,557	1,740	49	3,213	1,377	43
Persons engaged	196,708	119,683	61	191,853	99,162	52
Employees	187316	114,674	61	181,943	93,663	51
Inputs (Rs. million)	33052	20372	62	62206	34808	56
Outputs (Rs. million)	54927	35299	64	94811	56080	59
Value added (Rs. million)	21875	14926	68	3,213	1,377	43

Source: CBS, 1998, 2001.

The CBS census of medium and large manufacturing industries covers all manufacturing establishments with more than 10 persons engaged. The Industrial Enterprise Act 1992 defines small, medium, and large industries as industries with a fixed asset of up to an amount of 30 million rupees, greater than 30 and up to 100 million rupees, and more than 100 million rupees respectively.

Table 2: Main indicators of small manufacturing industries

Indicator	1991/92 CBS Survey			1999/00 CBS Survey		
	All manufac- turing	Agro- based in- dustries	% Agro- based	All manu- facturing	Agro- based industries	% Agro- based
<i>Number of:</i>						
Establishment	46,418	30,141	65	43,671	26,165	60
Persons engaged	140,784	87,524	62	121,270	63,247	52
Employees	54,081	31,866	59	46,051	21,731	47
Inputs (Rs. million)	4,967	2,984	60	19,271	15,421	80
Outputs (Rs. million)	7,531	4,475	59	25,946	19,838	76
Value added (Rs. million)	2,564	1,491	58	6,675	4,417	66

Source: CBS

In the case of small industry category (Table 2), the following are the key trends observed during 1991/92 and 1999/2000:

- The number of establishments as percent of total establishments fell from 65% to 60%;
- However, total value added rose markedly to reach Rs 4.4 billion in the second period;
- The share of value added by these industries also rose from 58 to 66%.

This together with the fact that the number of workers fell indicates some increase in productivity.

The CBS survey of small manufacturing industries covers all manufacturing establishments with less than 10 persons engaged.

In recent years, the production of vegetable ghee, noodles, soft drinks and tea are also growing fast (Table 3). Between 1987-90 and 1999-02, the production index for vegetable ghee, tea, noodles, squash and beer grew by 1498, 530, 310, 294 and 269%, respectively. Similarly, the indices for sugar, jute goods, biscuits, soft drinks, animal feed, liquor, shoes, and cigarette increased by 176, 132, 108, 103, 86, 71, 63, and 14% respectively. By contrast, the production of cotton textiles, processed leather, and shoes declined during the same period.

Raw Materials and their Sources

In 2001/02, medium and large manufacturing industries purchased about Rs. 57 billion worth of total raw materials of which about Rs. 27 billion (47%) came from agro-based sources, up from Rs. 10 billion in 1991/92 and Rs. 14 billion in 1995/96.⁷⁷ Table 4 shows major raw materials used and their sources for selected agro-industries. It is evident that the number of agro-industries that derive most raw materials from domestic sources is in the minority. Even industries that use traditional agricultural products such as maize, wheat, tobacco and mustard have begun to rely on imported raw materials, which is what is seen as a matter of concern. In value terms, cotton and cotton products top the list of raw materials used by in-

⁷⁷ The CBS lists only selected raw materials and so these figures could underestimate the sourcing pattern to some extent.

dustries in Nepal with an average value of import of Rs. 3.3 billion during the 1997/98-2000/01, followed by wool and wool products (Rs. 2.5 billion), crude palm oil (Rs. 2.4 billion), paddy (Rs. 1.8 billion), and silk and silk products (Rs. 1.7 billion).

Table 3: Production of major agro-based industrial products
(three year averages)

Product/Type	Unit	1987-90	1990-93	1993-96	1996-99	1999-02
Noodles	Tonne	1600	2085	3922	5148	6565
Biscuits	Tonne	4521	5856	6375	9264	9385
Squash	000 litre	586	1136	1983	2411	2312
Sugar	Tonne	28721	54776	50107	45246	79223
Tea	Tonne	1289	1454	2267	2392	8126
Animal feeds	Tonne	12328	11948	15799	19833	23115
Vegetable ghee	Tonne	5365	5903	12223	20205	58285
Soft drinks	000 litre	15996	13262	12802	19684	25682
Beer	000 litre	6132	12366	16664	18061	22626
Liquor	000 litre	2223	3042	2403	3082	3811
Cigarette	Million sticks	6009	7167	7464	7795	6821
Bidi	Million sticks	528	239	145	269	204
Cotton clothes	000 metre	7419	6589	5280	3336	2272
Jute goods	Tonne	13874	15669	23137	46782	32189
Processed leather	000 sq. ft.	8475	9830	9744	10656	3143
Shoes	000 pairs	430	1121	678	568	701

Source: Economic Survey 2003, Ministry of Finance, Kathmandu.

Table 4: Raw materials used by selected agro-industries

Industry	Major raw materials	Sources of raw materials
Animal Feed	Yellow maize	50% import
Flour	Wheat	60% import
Noodle	Wheat flour	Mostly domestic
Biscuit	Wheat flour, sugar, vegetable ghee	Mostly domestic
Mustard Oil	Mustard seed	66% import
Vegetable ghee	Crude palm oil	Fully Imported
	Crude soybean oil	Mostly imported
	Sesame oil	Mostly domestic
Dairy	Raw milk, Powder milk	Mostly domestic
Sugar	Sugarcane	Mostly domestic
Fruit juices	Fruit pulps/concentrates	Fully imported
Cigarettes	Tobacco	65% imported
Beer	Barley Malt	Mostly imported
Liquor	Cane Molasses	Mostly domestic
Leather	Raw hides and raw skins	About 80% domestic
Leather footwear and goods	Processed leather	50% imported
Carpet	Woollen yarn, cotton yarn	Mostly Imported
Textile	Cotton yarn, woollen yarn	Mostly Imported
Garments and Apparel	Cotton clothes	Mostly imported
Pashmina	Pashmina, silk	Mostly imported

Source: Based on interviews with agro-industry representatives, August –September 2003.

The top five agricultural raw materials domestically sourced are paddy, fresh milk, sugarcane, *pashmina* yarn, and pulses, while the top five imported raw materials relate to the vegetable oil and textile industries. The variation in sourcing is indeed very wide. While carpet and garment industries import over 95% of their raw materials, others like the dairy industry relies on less than 5% of imported materials. In the case of fruits industry, most of the main raw material - fruit concentrates – is imported from India and other countries.

A food and beverage industry imports concentrated mango pulp from India for its mango drink product, as it is required to use a particular variety of mango which is not grown in Nepal. Another company, which is known for its herbal products imports, concentrates of pineapple and orange juices from Brazil and mango pulps from India for its brand of *Juices*. It uses Alfanso variety of mango, which is also not available in Nepal (see also Chapter 16 on fruits in this volume).

Table 5 shows that the domestic sourcing of raw materials by agro-industries fell from 72% in 1991/92 to 47% in 2001/02. As India's share has not changed (about 16% of the total), the proportion from other countries has increased nearly three-fold. Much of this is explained by the rapid growth of vegetable ghee industry in recent years, as all crude palm oil imports are from third countries.

Table 5: Sources of raw materials of medium and large industries (in %)

Industry type	Nepal	India	Third countries	Total
Agro-based				
1991/92	72	15	13	100
1995/96	68	16	16	100
2001/02	47	16	37	100
Other industries				
1991/92	29	11	60	100
1995/96	22	54	24	100
2001/02	22	44	34	100
All industries				
1991/92	60	14	26	100
1995/96	54	28	18	100
2001/02	34	31	35	100

Source: Based on CBS (1998, 2001 and 2003).

Industries import raw materials in different stages of processing. For example, the import value of raw wool greatly exceeds the import value of woollen yarn and woollen fabrics. On the other hand, the import value of cotton fabrics exceeds that of raw cotton and cotton yarns.

CONSTRAINTS AND OPPORTUNITIES TO INCREASE DOMESTIC SOURCING

The Key Constraints

Non-availability of raw materials

In many cases, raw materials are simply not available in quantities needed by the industries. ANZDEC (2002) found that about 74% of agro-processors surveyed reported this problem. Production of agro-based raw materials has not increased in

line with the increasing demand of the agro-based industries. For example, while the production of cigarette and jute goods has increased over time the domestic production of tobacco and jute have declined. Production of cotton is insignificant and limited to a few districts in the mid-western region. Even cereal-based industries complain about the non-availability of domestic cereals as raw materials. Production of other important raw materials such as wool, silk, and *pashmina* is yet to take off.⁷⁸

Higher prices of domestic raw materials

In certain cases, price of domestic raw materials discourage industries from using them. For example, vegetable ghee can also be produced by using soybean oil, a raw material that is also grown in Nepal although not in adequate quantity.⁷⁹ Yet, vegetable ghee industries prefer to use palm oil because it is cheaper than other kinds of oil. Similarly, because of economies of scale domestic textiles become expensive than similar imported textiles for the production of clothes.

Small scale and scattered patterns of production

It reflects the state of the Nepalese agriculture, i. e. subsistence oriented, growing multiple crops in small plots, small and fragmented land holdings, lack of marketing infrastructures, etc. As a result, the raw materials are not only unavailable in appropriate lots but are also expensive (Koirala et al. 1995). For example, one of the breweries uses barley malt and maize in the 70:30 ratio for its beers but it finds it very difficult to procure maize or barley from Nepal.⁸⁰ Silk and *pashmina* industry officials also argue that although high quality silk and *pashmina* can be produced in Nepal, lack of commercial farming has hampered the growth of these raw materials.

Poor quality of raw materials

Even when the domestic raw materials are available, the quality of raw materials is often poor. Export markets are sensitive to quality. Middle and high-income domestic customers are also becoming quality conscious. One example is the adulteration of mustard oil with a poisonous weed, *Argemone mexicana*. This problem hit Nepalese mustard oil industry a few years ago when a test done by the DFTQC found the presence of this weed in mustard oil. This revelation led to the loss of credibility of Nepalese mustard oil. Many middle to high-income customers of Nepal's mustard oil industry switched to imported sunflower, maize and vegetable oils. The Nepalese mustard oil industry seems to have revived some confidence in the recent years but it has not been able to lure back many of its lost customers. Even now industries hesitate to buy domestic mustard as they think that the incidence of finding *Argemone mexicana* is higher in domestic mustard seeds. Industry sources also complain that oil content of domestic mustard is lower than that of the im-

⁷⁸ *Pashmina* is a fine hair found at the root of coarse hairs on the body of mountain goats (*chyangra*). The hair is "harvested" during September and December. Products such as *pashmina* shawls, scarf, etc. are made from pure *pashmina* yarns or by mixing *pashmina* yarn with silk yarn.

⁷⁹ For example, Shanti brand of vegetable ghee uses soyabean oil only. See the chapter on vegetable ghee by Singh in this volume.

⁸⁰ Discussion with officials of Gorkha Brewery.

ported mustard seeds. Moreover, suppliers of domestic mustard seeds do not clean and grade their products.

Representatives of the tobacco industry report that the quality of tobacco produced in Nepal does not meet their standards. Climatic conditions also limit the possibility of producing quality tobacco in Nepal.⁸¹ The ideal conditions for growing tobacco include long daylight hours, high temperature and dry climate, whereas tobacco is grown in Nepal in winter when the daylight is short. As a result, the same tobacco variety grown in Nepal produces lower quality tobacco than tobacco grown in Andhra Pradesh and Karnataka of India.⁸²

The leather industry representatives accept that their inability to match the quality and price of imported leather is one main reason behind their inability to meet the leather demands of domestic leather goods industry. Poor leather quality is attributed to inefficient leather processing technology and poor quality of raw hides and skins. Industry representatives argue that they do not have the resources to update their processing facilities. Lack of proper breeds of animals, lack of slaughterhouses, and the habit of eating meat with skin intact are also responsible for the poor quality of raw hides and skins.⁸³ Similarly, due to lack of appropriate processing technologies in Nepal, domestic maize does not satisfy the quality standard of brewing company.⁸⁴ Due to lack of twisting facility, pashmina yarn produced in Nepal is of low quality. Garment industries complain that the loom width of national textile is too narrow. Meats slaughtered and processed in Nepal fail to meet the requirements of star hotels. Tomatoes produced in Nepal do not meet the quality required by the processing industries. There are other examples.

Unfavorable tariff structure

Nepal's tariff structure shows significant degree of tariff escalation whereby primary agricultural products which include most raw materials also face none or little tariff while tariffs are higher on processed products (see the chapter on market access by Pant et al. in this volume). For example, no import tariff is levied on raw wool while duties of 5 and 15% are levied on woollen yarn and woollen fabrics respectively. The rationale behind this policy is to encourage processed industries at home. While this is the tariff structure that is most commonly found in most developing countries, it is obvious that this policy does not encourage the use of domestic materials over imported ones. There is a difficult trade-off involved – whether to protect primary agriculture at the cost of processing industries, or vice versa.

Other policy issues

The 1992 industrial policy prohibits export of industrial raw materials such as raw hides and skins (including dry salted), and raw wool. The export of rice, wheat, maize, gram, lentils, pigeon pea, black gram, mustard, rapeseed, and *rayo* require a permit from the MoAC (Gill 1996). Also, the government reserves the right to put

⁸¹ The following is based on personal conversation with the technical staff of a tobacco company.

⁸² The strategy of the Nepali cigarette industry is to mix locally produced tobacco with the imported ones.

⁸³ Based on discussions with the officials of the Nepal Leather Industry and Trade Association.

⁸⁴ Discussion with the officials of a brewery.

quantitative restrictions on commodity exports by notifying in the Nepal Gazette⁸⁵. These policies involve important trade-offs – by depressing domestic prices, local agro-industries are encouraged to use local materials, but farmers are hurt as they realize lower prices. Also, over a period, lack of competitive pressure on farmers means that there is less incentive to increase production and improve quality.

Hurdles have also been reported on the inter-district movement of raw materials. Although Octoroi has been abolished, entrepreneurs are required different arbitrary charges while transporting goods from one district to another. For example, one liquor industry entrepreneur was made to pay garbage tax for molasses (principal raw material of liquor industry) while transporting molasses from Everest Sugar Mill at Janakpur to Kathmandu.⁸⁶ The existence of obsolete laws and regulations such as the Essential Commodities Act (1961) and Black Marketing and Other Social Crimes Punishment Act (1975) have been viewed as constraints in the marketing of agricultural products.⁸⁷

Illegal imports: Illegal imports of manufactured products also put domestic raw materials at a competitive disadvantage. Sometimes, informal imports are triggered by an increase in tax on domestic products. As an example, industry sources cite government's imposition of the VAT on mustard oil from this year.⁸⁸ They argue that if the industry tries to pass on VAT to consumers in the form of higher prices of oil, the price of Nepalese oil will be higher than in India, encouraging imports of oil from India through informal channels. Since such smuggled oil does not pay any VAT, it could be cheaper than domestic oil even after adding transportation cost. So, Nepalese industries have to reduce the costs of production of domestic oil by offering lower purchase price for domestic mustard. The lower price, in turn, will reduce farmers' incentives to increase production.⁸⁹ Undervaluation of imported goods at customs has also been reported as a significant disadvantage to domestic raw materials.⁹⁰

Credit constraint: Some Industries also reported non-availability of adequate amount of credit as a constraint in increasing the use of domestic raw materials. For example, during the peak production season, Nepal's sugar industries are compelled to export molasses as the supply from domestic liquor industries ex-

⁸⁵ The government has passed a new rule regarding the export of raw hides and skins and leather. Based on the stages of processing, leather can be classified into four different stages: raw hides and skins; wet blue; crust; and finished leather. The ban on the export of raw hides and skins continues. There are no restrictions on the export of crust and finished leather. However, entrepreneurs wishing to export wet blue leather are required to export at least 30% of the total value of wet blue export in the form of crust, finished leather, or leather goods. This condition has to be met within the same fiscal year of the export of wet blue leather. As per this new policy, the domestic sale of finished leather and leather goods could be counted as export and be used to meet the 30% requirement specified above.

⁸⁶ Personal conversation with Ramesh Shrestha, former president of the Nepal Beverage and Cigarettes Industries Association.

⁸⁷ The Essential Commodity Act gives authority to Chief District Officer to restrict the production, movement, sale, and prices of essential commodities and the Black Marketing and Other Social Crimes Punishment Act limits the profit earned to 20% or less. See Upadhyaya (1998).

⁸⁸ Based on discussions with officials of the Association of Nepalese Rice and Oil Industries and the Nepal Flour Mills Association.

⁸⁹ While industry officials are trying to use this kind of argument to convince government to remove VAT on mustard oil, the real problem in this case is illegal import.

⁹⁰ Based on the discussion with the officials of the Nepal Textile Industries Association.

ceeds demand during that period. At other times, domestic liquor industries need to import molasses. High storage cost discourages both sugar and liquor industries to store molasses for future use. Availability of credit for the storage of raw materials would to some extent help to alleviate these kinds of problems. Leather companies complain that non-availability of credits has discouraged them from upgrading their processing plants.

Deteriorating security situation: Lately, insurgency has also impacted negatively the use of domestic raw materials by disrupting both production and marketing of products. The agricultural sector has also been hit hard by a shortage of labour for production and marketing. Industrialists are also hesitating to make investments in raw materials production.⁹¹

Mismatch of the timing of production and demand: Lack of proper production planning creates a mismatch of the timing of production and demand and scarcity of raw materials. For example, during the peak production season the dairy industry cannot utilize all raw milk and farmers are forced to take milk holidays.⁹² During the lean milk production season, however, the industry cannot obtain adequate raw milk and so has to import powder milk to blend with local fresh milk.⁹³ Due to short growing season, sugar mills cannot procure sugarcane from farmers on time during the harvesting period, while these mills lie idle during rest of the year due to shortage of sugarcane. Similar gluts and scarcity also prevail in other industries based on perishable raw materials like fruits and vegetables.

Emerging Positive Developments for Increased Domestic Sourcing: Although this sub-section will present some new, emerging positive developments, it would be appropriate to note at the outset that one obvious way to expand the use of domestic raw materials is increasing agricultural production and at the same being competitive which requires productivity growth. Although the past experience has not been all that positive in this regard, there are immense potentials. For example, productivity of most agricultural products is low in Nepal relative to those in the neighbouring countries, and for well known reasons, e.g. low level of fertilizer application (30 kg/ha in Nepal versus 116 kg in India and 156 kg in Bangladesh), unreliable irrigation facilities, lower rate of adoption of already known and proven improved farming technologies, and so on.

At the same time, some signs of positive transformation of the Nepalese agriculture are also found. Increase in the production of vegetables, including off-season vegetables, milk and poultry in recent years is noticeable. Farmers in areas such as Ilam, Kavrepalanchowk, Dhading, and Palpa have started commercial farming while those in other areas are eager to emulate. Important raw materials like silk and tea have been identified for promotion, although some also wish to see coffee included in this list (Upadhyaya 2003). The Budget Speech of 2003/04 proposes to help wool and carpet industries by establishing a company that takes initiatives to promote sheep farming and to increase domestic sourcing of wool.

⁹¹ For example, Surya Tobacco Company has stopped contract tobacco cultivation program in Dang district due partly to security reasons.

⁹² Under milk holiday program, the DDC stops collecting milk from farmers for one or two days in a week.

⁹³ It is complained that milk powder that comes in illegally is often of sub-standard or dubious quality.

One key constraint discussed earlier was small and scattered volumes of production, making it expensive for users to collect and use in industries. But even in this area of marketing of raw materials, some successful innovations are emerging. In view of the considerable promises these institutional innovations hold, what follows discusses these trends as well as prospects.

First, dairy and vegetable farmers have joined hands in forming production and marketing groups. A number of such groups have also federated to form cooperatives. This has reduced marketing costs. For example, in 2000/01 more than 70,000 farmers from 27 districts associated with 919 milk producer cooperatives and 33 milk producer groups to supply milk to Dairy Development Corporation (DDC). These farmers bring milk to milk collection centres usually located at the nearest road head and the milk producers cooperatives/groups make arrangement to transport milk from collection centres to 42 chilling centres owned by the DDC in different parts of the country. DDC tankers transport chilled milk to different milk supply schemes where it is pasteurised and converted into various milk products. In 2000/01, the DDC collected about 59 million litres of milk from farmers. In addition, there are about 100 private companies operating in the dairy sector. These companies also make similar arrangement for milk collection.

Similar mechanisms are being developed in the marketing of fruits and vegetables also where growers have formed production and marketing groups. Some of these groups have also formed cooperatives. Fruits and vegetable collection centres have been established in major fruits and vegetable production belts (Box 1). These collection centres consist of marketing sheds, weighing scales, and other

Box 1:

Agriculture Produce Collection Centre, Charaudi

This collection center in Dhusa VDC of Dhading district along the national highway, was built with UNCDF assistance. Vegetable producers from Dhusa VDC and wards 5, 6, 7 of Benighat VDC bring their produce to this center. Charaoudi collection center is managed by a cooperative, the *Krishak Sudhar Falful Tatha Tarkari Sahakari Sanstha*. This cooperative has 250 share holders (farmers and local traders) and five staffs. This is governed by a 15-member board. This center is equipped with marketing sheds and weighing facilities. Farmers harvest their crops in the morning and bring it to the collection center between 1 to 7 hours in the afternoon. Sometimes, farmers need to walk 3-4 hours to reach collection center from their field. Traders from wholesale markets in Kathmandu, Pokhara, and Naranghat come to the center. Price for each product is fixed through bargaining between farmers and traders. It is said these process are determined by prices prevailing in wholesale markets, as well as depending on the supply situation. Purchased products are transported by trucks/buses, usually at night, arriving at the wholesale markets by next morning.

Farmers need to pay about 1% of produce sale and traders pay Rs. 10 per visit to the cooperative. Vehicles are charged at the rate of Rs. 10 per vehicle. About 75% of the produce is purchased by traders and transported to wholesale markets. Farmers themselves deliver about 25% of the produce directly to the wholesale markets. The average trading volume of this cooperative was reported as 20 to 25 tonnes per day. The cooperative also owns a trading space in Kalimati Wholesale Market in Kathmandu. Farmers can use this space and sell their produce directly to retailers by paying 2% commission to the cooperative.

Source: Upadhyaya, Senn and Adhikari (2002).

facilities. These centres are managed by cooperatives/groups of farmers.

The government policymakers and donors also seem to be learning from these experiences. Despite the high political instability, some consistency is maintained in policy reforms. Thus, the 10 years covered by the Tenth and Eleventh Plan periods are declared as agricultural decade. To promote commercialization of small farms the 2003/04 Budget speech proposed to make technology, irrigation, agricultural roads and interest subsidies available if 25 or more farmers get together and register as a cooperative under a new cooperative farming framework. Despite the instability, the donors seem committed to continue their support for the implementation of the APP and the commercialization of Nepalese agriculture.⁹⁴ Second, industries like sugar, fruits and vegetable processing, and cigarette have begun to enter into formal and informal contracts with the producers of raw materials. For example, a joint venture company specialised in herbal products has contracted farmers in different parts of Nepal for herb (*jadibuti*) cultivation. The company provides seedlings, technical assistance and a guarantees market to the contract growers. It meets about 15% of it herbs requirements from these domestic sources and also exports some herbs in semi-processed forms.⁹⁵ A tobacco company procures about 12-14% of its requirements from contract cultivation (Box 2).

Box 2

Contract cultivation of raw materials

A multinational tobacco company located in Bara district contracts farmers for tobacco cultivation. This programme was started in 1991. By 2002/03 it covered 300 hectares of land in Bara, Parsa, Rautahat, Sarlahi, and Dhanusha districts involving about 2,000 farmers. The process is as follow. Farmers fill in application forms expressing their interest to participate in the contract cultivation. The company reviews land holding and other capability of the farmers and gives approval. The company distributes tobacco seedlings to farmers on loan basis. In newer areas, tobacco seedlings are distributed free to entice farmers to participate in contract cultivation. The company gives loans to farmers in the form of coupons to buy fertilizers and other inputs from a local cooperative. Farmers do not need any collateral other than the standing crops of tobacco and they do not need to go to bank. Farmers just sign an agreement with the company. Company officials say that the recovery rate of such loans is 99%. Company technicians closely monitor whether or not the farmers follow production practices as recommended and whether or not harvesting, curing, bulking, and grading operations are done on a timely basis. Farmers are given a fixed date for the delivery of graded tobacco to the company. Farmers get paid within 15 days of the delivery of their produce to the company. The company meets about 12 to 14% of tobacco requirements from these sources. About 40% of air cured tobacco used by the company comes from these domestic sources.

Source: Discussion with the officials of the Company.

Third, industries are also growing raw materials in their own farm – on lands either owned or rented by these industries. The herb-based company mentioned above owns a “greenhouse” in Banepa area for growing seedlings and farms in

⁹⁴ Some examples of donors' commitment include ADB's Crop Diversification Project and Commercial Agriculture Development Project, DFID's support to the implementation of APP, and USAID's support for the promotion of tea and coffee crops.

⁹⁵ Discussion with company officials. Dabur Nepal has not been able to initiate similar schemes for its fruits and vegetable products. This may be because these products are easily available from other countries and the company may not have much incentive to initiate domestic production.

several parts of the country for cultivation of raw materials (Rana 2001). Yet another joint venture fruit processing company, owns 6.5 hectare of lands, which meets part of its raw material requirements (see Chapter 16 of this volume).

At the level of individual industries, considering the agro-ecological conditions of the country and the priorities set by the government, Nepal seems to have a comparative advantages in manufacturing industries based on high-value crops such as vegetables and fruits, silk and industries based on livestock and livestock products such as meat, leather and wool. The promotion of these industries would also enhance backward linkages with domestic suppliers of raw materials.

LIKELY CONSEQUENCES OF THE WTO TRIMS AGREEMENT ON DOMESTIC SOURCING OF RAW MATERIALS

The WTO TRIMs Agreement prohibits policies that give unfair advantage to industries using domestic over foreign products. In particular, the Agreement prohibits measures that are in conflict with GATT Article III (national treatment) and/or Article XI (Balance of Payments) (see Annex 1). Like the MFN principle that prohibits discrimination among WTO members, the national treatment principle (Article III) prohibits discrimination among goods of local and imported origins. This provision requires that imported goods receive the same treatment as domestic goods once the goods enter the national market. For example, taxes and internal charges on imported products cannot be higher than on domestic products.⁹⁶ The Annex of the TRIMs Agreement gives examples of investments that contradict GATT principles (reproduced in Annex 1 of this chapter).

Selected key Nepalese policies and Acts are reviewed here in order to examine if there are any inconsistencies with the national treatment requirement of the TRIMs Agreement in the context of the domestic sourcing of agricultural raw materials. The following programmes, policies and Acts are covered: Agricultural Perspective Plan (APP); the Tenth Plan; Industrial Policy 1992; Trade Policy 1992; Industrial Enterprise Act 1992; Income Tax Act 2002; and VAT Act 1995.

The APP, being implemented since 1997/98, is the main framework for agricultural planning in Nepal. It has identified four priority inputs (fertilizer, irrigation, technology, and agricultural roads and rural electrification) and four priority outputs (high-value crops, livestock, agro-forestry, and agro-industry) for accelerating agricultural growth. It proposed a strategy of increasing domestic supply of agro-based industrial raw materials. Also proposed is the development of commodity production pockets based on geo-climatic suitability and comparative advantages of areas and commodities, and then make priority inputs available in those pockets in a packaged form. In all these as well as other aspects, the review of the APP document does not show any contradiction with the spirit of the TRIMs.

The Ninth and Tenth Plans fully embraced the APP. The Tenth Plan recognizes that the major problems of the industrial sector in Nepal include lack of development of domestic raw materials and weak forward and backward linkages. In

⁹⁶ However, the imposition of tariffs on imported goods would not constitute a violation of the national treatment principle.

order to increase investment in industries that utilize local raw materials, the Plan proposed undertaking entrepreneurship and skill development and other promotional measures. It also proposed exempting local development and value added taxes (VATs) incurred in the distribution of animal products for animal related import substituting and export promoting industries that are based on local raw materials. These policies and programmes are also not inconsistent with the TRIMs.

One of the key elements of the Industrial Policy 1992 is “to develop industries utilizing national labour, skills, and resources as well as industries having national importance”. This policy gives a five-year income tax holiday for most manufactured industries starting from the date of commercial production. An additional two-year exemption is given on income tax for industries utilizing 90% or more of the locally available raw materials. This policy also gives a seven-year income tax exemption to industries of national priority. The 1992 Industrial Enterprises Act enacted above policies into enforceable Acts.

The Industrial Enterprise Act 1992, amended in 1997 exempts income, excise, and sales taxes to cottage industries.⁹⁷ The 1997 amendment has abolished all income tax holidays for other industries; instead, it is stated that the tax on income earned by industries (except few industries in the negative list like beer, alcohol, cigarette, *bidi*) would not exceed 20%. This Act has put agricultural and forest-based industries in the list of industries of national priority and has provided 50% discount on income tax for a period of 7 years from the date of operation.

The amended Act has also a few provisions on raw materials. For example, it is specified that industries that procure 80% or more raw materials from domestic sources and that utilize national human resources are entitled to 10% discount on taxable income. This Act also exempts sales and excise taxes for fruit-based industries established in some remote districts and with a fixed asset of up to Rs. 2.5 million for a period of 10 years for wine and cedar industries and five years for alcohol industries. The Act authorizes the government to exempt sales and excise taxes for these industries for an additional period of three years.⁹⁸

Although some of the above incentives related to the use of domestic raw materials appear inconsistent with the TRIMs, these are not effective in practice. As said above, the Industrial Enterprise Act has also provided a seven-year income tax discount to industries of national priority and since most agro-based industries fall in this category, these industries are entitled to a seven-year income tax discount whether they utilize local raw materials or not.

Moreover, Income Tax Act 2002 annulled most income tax facilities provided by the Industrial Enterprise Act. The former provides income tax discount for only two types of industries. First, industries that employ 600 or more Nepali citizens for the whole year are given a 10% discount on income tax for that year. Second, in-

⁹⁷ In Nepal, excise taxes are levied on a few products like tobacco products, liquor, beer, flavored soft drinks, cement, and plastic goods. Beginning in 1998/99, sales taxes have been replaced by the VAT.

⁹⁸ Although this clause is not directly related to raw materials, the assumption here seems to be that the industries established in remote districts utilize fruits produced in those districts. The districts identified by the Act are: Mugu, Humla, Jumla, Dolpa, Kalikot, Bajura, Darchula, Bajhang, Achham, Mustang, Manang, Solukhumbu, Sankhuwasabha, and Taplejung.

dustries operating in very undeveloped, undeveloped, and least developed regions are given an income tax discount of 30, 25, and 20% respectively for a period of 10 years from the year of operation.⁹⁹ However, the Act is silent on income tax exemptions for cottage industries. Nepal's VAT Act does not discriminate between imported and domestic raw materials, i.e. the same rates are applied.¹⁰⁰

Since the mid-1980s, Nepal has adopted liberal trade and industrial policies, removing all quantitative restrictions on imports and reducing import tariffs (Acharya et al 1998). Import tariffs on most primary agricultural raw materials are low, in the 0-10% range. No import duties are levied on agricultural products imported from India. The average WTO bound tariff is 42%, much higher than current applied rates. Moreover, companies that export products manufactured using imported raw materials are entitled for a refund of import duties under the export duty drawback system, first introduced in 1987.

At the same time, agricultural subsidies have been phased out almost completely.¹⁰¹ For example, subsidies on fertilizers and shallow tube wells have been removed fully. What remain are small amount of subsidies in some areas, e.g. interest subsidy for crops such as tea, subsidies on livestock insurance premium, subsidies on electricity tariff used by milk chilling centres and cold stores, etc. Nepal no longer implements minimum support prices for crops.¹⁰² These reforms were implemented in other context; the WTO does not require the elimination of these subsidies.

To conclude, Nepal has been following liberal economic policies for quite some time. The level of protection provided to domestic agricultural raw materials is fairly low and the Agreement on TRIMs is not likely to make much difference in the context of the domestic sourcing of agro-based raw materials.

CONCLUDING REMARKS

The purpose of this chapter was to analyse issues related to increased sourcing by Nepalese agro-industries of domestic raw materials as against imported ones, and to create and/or strengthen backward linkages. While there is an overwhelming consensus that this is good for the economy, important questions related to competitiveness, especially in the context of globalization and an open trading regime also arise. The first of the two points below stresses on the need for clarifying this issue as there are costs and benefits associated with trade policies that seek to favour the domestic primary sectors or processing industries.

Rationalization of tariffs and protection to primary and processed products: Some economic analysis is essential on this subject to inform policy makers and to educate the public. For example, other things being the same, free trade on raw materials means higher effective protection to processing sectors and

⁹⁹ See Income Tax Act 2002, Article 11(3b). Annex 3 of the Industrial Enterprise Act 1992 lists 22 of Nepal's 75 districts as very undeveloped, 12 as undeveloped and 18 as least developed.

¹⁰⁰ See Article 48(1) of VAT ACT 1995.

¹⁰¹ Domestic support to agriculture is covered in a separate chapter in this volume.

¹⁰² Birgunj Sugar Factory and Cotton Development Board continue to announce minimum purchase prices but these are more of a producer-buyer kind of arrangement than government policies.

thus incentives to industrialization, higher value addition and employment in agro-industries. This is the classic policy of tariff escalation where the tariff on processed products is higher than on primary raw materials. However, this comes at a cost to producers of domestic raw materials, who could be small farmers and poor. Thus, the net contribution could be negative in terms of poverty reduction. On the other hand, a policy that aims to protect primary agricultural sectors with higher tariffs on imported raw materials hurts agro-industries. Being an empirical issue, only good economic analyses can inform policy makers, and the public, about the desirability of one versus the other position. Moreover, the costs and benefits can be expected to vary widely across different commodities and sub-sectors. There is a serious dearth of good policy analyses in Nepal on these trade issues, and so initiating studies and debate on these issues should be a high priority.

Economic analyses to rationalize export policy including export tax on raw materials: Another well known policy generally favoured by many developing countries, including Nepal and other South Asian countries, is banning or taxing exports of raw materials in order to ensure access to domestic industries at lower prices. But this implicitly taxes farmers and subsidises agro-industries. The net value addition and employment generated, for example, could be positive or negative. In the context of this paper, although an export ban or export tax would encourage the local sourcing of raw materials, such a policy impacts negatively on farmers, and is not in fashion any more in most countries. Yet, such a recommendation is made from time to time. Therefore, it is highly desirable that thorough analyses are done taking into account the full range of likely costs and benefits in order to provide a sound basis for policy makers and to inform other stakeholders, including farmers and industrialists.

Supporting institutional innovations in group and contract farming: One main reason why industries find imported raw materials more attractive is higher transaction costs involved in sourcing these inputs from scattered production bases across the country. There is no easy solution here, yet some promising developments have emerged in recent years. These include institutional innovations in group and contract farming. Also in view of the positive experience in other developing countries, the government should support this process in Nepal through clear policy messages and required legislation, e.g. contract law. This is also a sensitive issue as a contract involves sharing of benefits and risks among industries and farmers, which is why the role of the government as an honest broker is vital. Besides policies and legislation, it is also the obligation of the government to study and analyse experiences with these practices and monitor the progress. This is also essential to inform and educate stakeholders, such as farm associations, NGOs and agro-industries. This should be a regular activity of the MoAC.

Reorienting government agricultural programmes to support market-orientation: That such a re-orientation is essential is not denied any more, both elsewhere and in Nepal. This is also the thrust of the APP, and a number of investment projects on commercialization and diversification are being implemented in Nepal. The MoAC has a full-fledged division for *inter alia* agro-business promotion. The main issue in the context of this, however, is what can be done to connect agro-industries to farmers in order to enhance the domestic sourcing of raw materi-

als. In many interviews with the private sector in the course of this study, it came clearly and strongly that it is the MoAC itself that should play the lead role in both re-orienting its research, extension and other programmes and in reaching out to the private sector. The MoAC also needs to understand that the private sector operates on the basis of incentives. Agricultural research and extension organizations should understand the needs of the agro-industries and develop and disseminate technologies to suit industry needs. Farmers also should be made aware of the needs of agro-industries through extension programmes. This process would be greatly facilitated through close collaboration among farmers, agro-based industries, market intermediaries, and research and extension organizations.

Disseminating the message of being “competitive” to farmers: Although an obvious point effort needs to be made to reduce the costs of production. Farmers need to be sold the idea that ultimately it is the (lower) price and higher quality of their produce that will determine the saleability of their products. Various commodity studies in this volume have also argued that farmers must be told, through extension and education programmes, that the prices they receive from traders/industrialists are often determined at wholesale or export levels and being price competitive is the only way to remain in the market. This does not absolve the government of the responsibility of ensuring that the markets in which farmers produce and sell their products are competitive.

Encouraging smaller industries and investments in remoter areas: Smaller agro-based industries are more likely to use domestic raw materials than medium and large industries. Similarly, industries established in more remote areas would find it more economical to use local raw materials (ANZDEC 2002). Hence, one potential strategy for promoting the use of domestic raw materials would be to encourage entrepreneurs to establish industries near production areas. The best way to attract industries in remote areas is to make available infrastructures such as roads and electricity.

Checking illegal imports: Illegal imports are not just about revenue only. The illegal raw materials imports also undermine domestic production and marketing. Hence undesirable though these may benefit the domestic agro-industries.

Statistics for monitoring and planning: Quality statistics on various aspects of agro-industrial development should be compiled and made available to researchers and analysts. For example, available trade statistics do not show quantities of the products imported from India, which makes comparison of per unit import values (or prices) virtually impossible. The impact of WTO-related provisions on competitiveness of these industries should be monitored continuously.

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Excerpts from the TRIMs Agreement

Selected texts of the Agreement on Trade-Related Investment Measures

Article 2: National Treatment and Quantitative Restrictions

Without prejudice to other rights and obligations under GATT 1994, no member shall apply any TRIM that is inconsistent with the provisions of Article III or Article XI of GATT 1994.

An illustrative list of TRIMs that are inconsistent with the obligation of national treatment provided for in paragraph 4 of Article III of GATT 1994 and the obligation of general elimination of quantitative restrictions provided for in paragraph 1 of Article XI of GATT 1994 is contained in the Annex to this Agreement.

ANNEX: Illustrative List

1. TRIMs that are inconsistent with the obligation of national treatment provided for in paragraph 4 of article III of GATT 1994 include those which are mandatory or enforceable under domestic law or under administrative rulings, or compliance with which is necessary to obtain an advantage, and which require:

the purchase or use by an enterprise of products of domestic origin or from any domestic source, whether specified in terms of particular products, in terms of volume or value of products, or in terms of a proportion of volume or value of its local production; or

that an enterprise's purchases or use of imported products be limited to an amount related to the volume or value of local products that it exports.

TRIMs that are inconsistent with the obligation of general elimination of quantitative restrictions provided for in paragraph 1 of Article XI of GATT 1994 include those which are mandatory or enforceable under domestic law or under administrative rulings, or compliance with which is necessary to obtain an advantage, and which restrict:

the importation by an enterprise of products used in or related to its local production, generally or to an amount related to the volume or value of local production that it exports;

the importation by an enterprise of products used in or related to its local production by restricting its access to foreign exchange to an amount related to the foreign exchange inflows attributable to the enterprise; or

the exportation or sale for export by an enterprise of products, whether specified in terms of particular products, in terms of volume or value of products, or in terms of a proportion of volume or value of its local production.

Source: WTO Uruguay Round Legal Text.