DAMC

Why are growers unable to tap the raw material demand of the local agro-industries?

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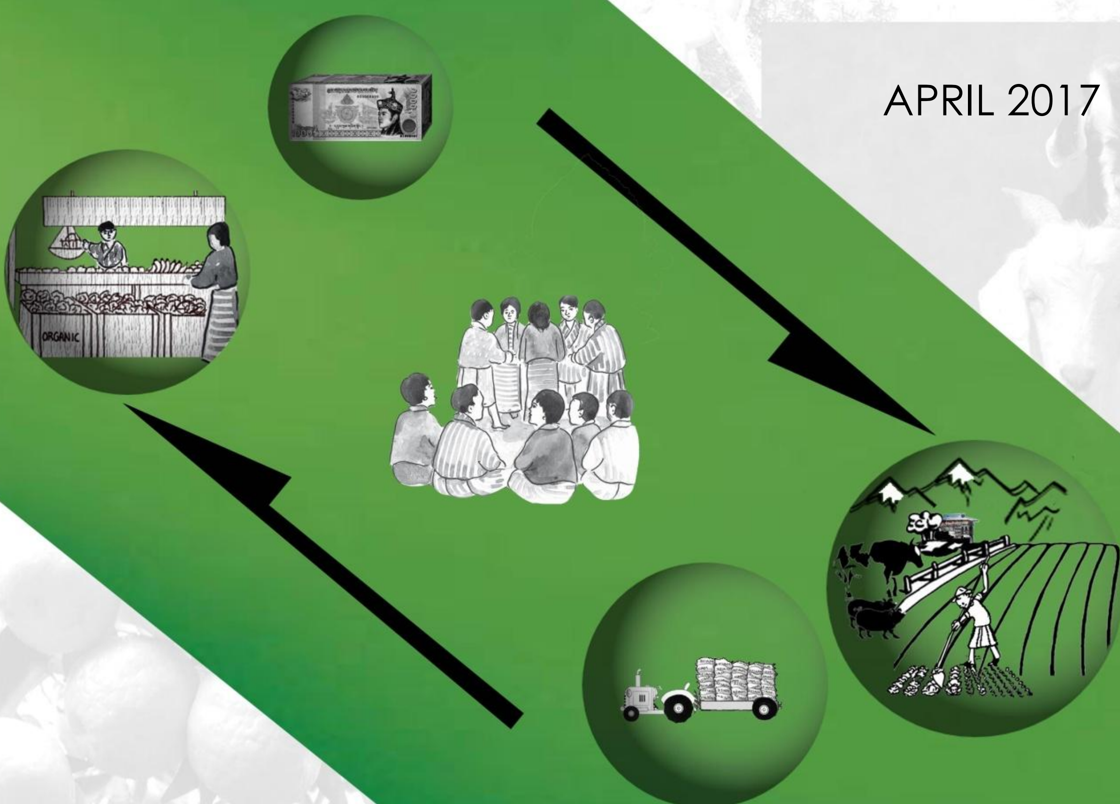

Market Information & Research Division
Department of Agricultural Marketing & Cooperatives
Ministry of Agriculture & Forests
Thimphu, Bhutan
PABX +975-2-322909, 335741,331638 Fax:+975-2-324898
www.agrimarket.gov.bt

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1. Background

The Natural Resources & Environment Committee (NREC) of National Council of Bhutan had raised concern that the agro-processing firms in the country are not sourcing their raw materials locally. The Ministry of Agriculture and Forests was asked to review agriculture policy and strategies that pertain to marketing and linkages with agro-processing firms in the country.

The Department of Agricultural Marketing & Cooperatives (DAMC)as the agency responsible from RNR marketing undertook this study to validate the concern raised and also to find out the reasons for these agro-processing firms not sourcing their raw materials from within the country and suggest recommendations.

2. Objectives:

The main objectives of the study are as follows:

1. To validate and determine reason(s) why the Bhutanese agro-processing firms are not sourcing raw materials from Bhutanese farmers, and
2. To provide necessary recommendation on how to possibly improve the business relationship for the benefit of both parties.

3. Study Area:

There is only a handful of medium-scale and large-scale agro-processing enterprises that have the capability to absorb significant quantity of agricultural produce.

Table I: List of enterprises and their main products

Name of Enterprise	Main products
Bhutan Milk & Agro Ltd. (BMAL), Phuentsholing	Fruit based drinks, Milk & Mineral Water
Zimdra Food Private Ltd. (ZFPL)Phuentsholing	Fruit based drinks, Mixed Fruit juice, Apple & Mango juice
Bhutan Fruits Product Private Ltd. (BFPL), Samtse	Fruits based drinks, jams, sauce, ketchups and pickles
Bhutan Agro Industries Ltd. (BAIL), Thimphu	Fruits juices and fruit-based drinks, pickles, jams, mineral water

4. Methodology:

Information was collected through a survey questionnaire comprising of both qualitative and quantitative questions.Visits were made to the company headquarters to collect first-hand information. The information collected was analyzed and interpreted.

5. Discussion and Recommendations

Amongst the industries surveyed, BAIL is the largest purchaser of locally grown produce, with procurement amounting to Nu. 7.1m in 2016; followed by BFPL.Together, these two industries locally sourced produce worth Nu. 8.61m in 2016. ZMPL and BMPL is entirely dependent on imported raw materials and do not source locally. Their main imports are fruit concentrates, fruit pulp, sugar, fresh milk and powdered milk – most of which are not available locally or if available, in very limited volume, such as fresh milk.

For BAIL, the largest procurement by far is fresh apples. In 2016, 450MT of fresh apples worth Nu. 6.63m were purchased from local farmers, followed by orange pulp prepared by the local Integrated Food Processing Plants (IFPP) (Table II).

Table II: Products sourced locally by BAIL in 2016

	Produce	Quantity (Kg)	Rate per Kg	Value (m Nu.)
1	Orange Pulp	9,588.5	30	0.288
2	Apple	453,597	14.62	6.632
3	Apricot	41	3.5	0.00015
4	Mango	1,056	10	0.011
5	Mango Cubes	236	14	0.003
6	Orange	4,225	10	0.042
7	Peach	4,208	9.8	0.041
8	Pear	3,557	8.24	0.029
9	Plum	3,082	3.5	0.011
10	Strawberry	133	100	0.013
11	Ginger	722	20	0.014
12	Asparagus	74	110	0.008
				7.093

The BFPL procured a limited range of locally grown produce, with fresh mandarin (orange) being the largest item procuredin terms of both value and volume (Table III).

Table III: Products sourced locally by BFPL in 2016

	Produce	Quantity (Kg)	Rate per Kg	Value (m Nu.)
1	Mango	327.44	8.59	0.003
2	Orange	95,533	14.99	1.432
3	Potato	7,921	10.94	0.087
				1.522

For most commodities, the price offered by agro-industries is lower than other markets, be it the export market, the Centenary Farmers Market or even at the auction yards. The exception is the price offered by BFPL for its asparagus imported from India, which could be because it is a variety different from the one grown locally.

The best apples and oranges grown in Bhutan are exported to Bangladesh and India while those that do not meet the export quality standards are normally sold locally or to agro-industries. The average export price of apples according to the Bhutan Exporters Association in 2016 was Nu. 33.45 per kg; while farmers were paid around Nu. 15 per kg for mediocre quality to Nu.25 per kg for superior quality fruits.

The situation is similar for oranges, with agro-industries providing a good alternative for the un-exportable fruits. The actual farm gate price for oranges is not readily available, since a vast majority of the business deal is already done when the fruits are still on the trees. It is difficult to know which party - the buyer of the orchard owner - gets a better business deal in this kind of arrangement, but apparently this system suits the orchard owners too since they are paid cash in advance.

Table IV: Difference in the cost of production and the average price offered by BFPL (2016)

Produce	Price offered by BFPL per kg (Nu.)	Av. Cost of Production (COP) per kg (Nu.)***	Difference between the COP and price offered by BFPL (Nu.)	Price difference (%)
Asparagus	220	39.5	180.5	456.962
Carrot	6.04	18.5	-12.46	-67.3514
Ginger	35	19.5	15.5	79.48718
Fresh Chilly	9.1	16.7	-7.6	-45.509
Green Pea	42.04	20.2	21.84	108.1188
Tomato	2.75	16.5	-13.75	-83.3333
Orange	14.99	8.5	6.49	76.35294
Potato	10.94	13.4	-2.46	-18.3582

*** Source: Department of Agriculture

For most produce with the exception of asparagus, green peas, ginger and orange, the prices offered by the BFPL are even lower than the actual cost of production (See Table IV). It would also not make any business sense to sell anything below the cost of production.

The BFPL therefore imports a vast majority of its fresh produce from India. In 2016, they procured only Nu. 1.5m worth of oranges, mango and potato locally while importing produce worth Nu. 10.4m. It is obvious that Indian farmers are able to produce and supply fresh produce at a much lower cost as compared to Bhutanese growers.

The price offered by BAIL is not much different from the BFPL. Apart from asparagus and perhaps oranges, the rates offered does not attract Bhutanese growers except when the growers find no alternative market (See Table V).

The BAIL procured Nu. 7.1m worth of fresh produce and orange pulp locally in 2016. While they also imported almost Nu. 10.0m worth of raw materials from India, it was mostly fruit concentrates which are not available locally. They also purchased fresh chili worth Nu. 0.09m from India during 2016 probably because of the very high costs of chili in the local market.

Table V: Difference in the average cost of production and the price offered by BAIL (2016)

Produce	Rate offered by BAIL per kg (Nu.)	Av. Cost of Production (COP) per kg (Nu.)***	Difference between the COP and price offered by BAIL (Nu.)	Price difference (%)
Apple	14.62	14.5	0.12	0.827586
Orange	10	8.5	1.5	17.64706
Ginger	20	19.5	0.5	2.564103
Asparagus	110	39.5	70.5	178.481
Fresh Chili	13.52	16.7	-3.18	-19.0419

*** Source: Department of Agriculture

The BMAL and ZFPL do not use fresh produce as raw materials and imports everything in the form of concentrates.

The difference in the cost of production (calculated by the Department of Agriculture and Department of Livestock respectively) and the average farm gate or local market prices looks reasonable for most crops, considering the high costs of labour for harvest, post-harvest handling and transportation. However, the market price is highly inflated for crops such as asparagus, green chili and tomato (Fig. I).

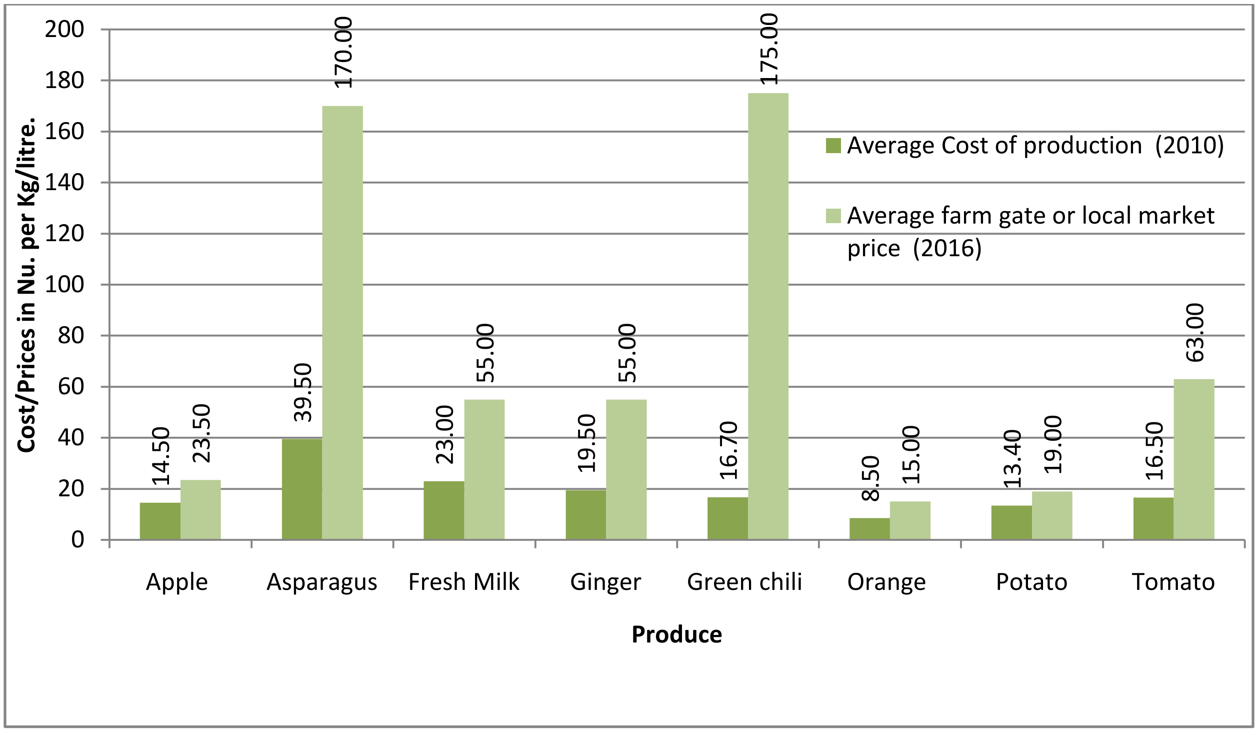
The average retail price of green chili at Nu.175 per kilogram, is almost 950 percent over the actual cost of production. Such inflated price clearly indicates a sellers' market, wherein demand far outstrips supply. In the past, this gap in supply would have been filled in by import from India, thereby providing an alternative source and keeping prices low.

While the cost of production of fresh produce in Bhutan is comparatively higher than in India due to higher costs of inputs, labor and transportation, there is a general perception that Bhutanese farmers always expect a higher price than what it is really worth. The concerned agencies are already determining the costs of production and disseminating such information and also devising methods to keep production costs low, such as through farm mechanization. If farmers are persuaded about the price they can get for their labour, there will be a greater sense of contentment.

There would also be a positive impact, if the local agro-industries that source locally move up the value chain, expand or diversify. Among other things,the quality of the final product will be determined by the quality of the raw materials used. Apart from the domestic market and lower segments of the market in India and Bangladesh, a vast majority of our value-added products may fail to meet the high quality standards that are demanded in developed markets.

To improve, not only would they need to invest in more advanced technology but also utilize good quality fresh produce as raw materials. If such a technological transformation does occur, agro-industries would be able to capture greater market share, increase their returns and eventually pay higher price for raw materials. This in turn would be a catalyst for Bhutanese growers to invest for higher farm productivity.

Figure I: Average value in local markets as compared to the Cost of Production



Note: Average farm gate prices used for apple, orange and tomato. Average CFM price used for other commodities

Fruit juice concentrate is extensively used by agro-industries in place of fresh fruits, because it makes economic sense. In 2016, ZFPL alone imported various types of concentrate from Europe and China worth Nu. 14.3m.However, fruit concentrate manufacturing plants are extremely capital intensive and would require very large volume of raw materials and high capacity utilization to make it cost-efficient and may not be a viable option for a considerable period of time in Bhutan.

On the other hand, pulp production is a fairly simpler technology and the investment costs are not prohibitive, though volume of raw materials available for processing and the capacity utilization would still count. There is still ample scope for increased production of fruit pulp locally, by investing in better and higher-capacity technology. The three large companies combined utilize approximately Nu. 19.03m worth of fruit pulp; from which only a miniscule 1.51 % is supplied by local fruit pulp manufacturers.

There is a definite mismatch between what the farmers are able to supply be it in terms of price and volume and the need of the agro-industries. One way of guaranteeing that the agro-industries get their raw materials without fail is to enter into contract farming. Contract farming is nota new idea and was tried by BAIL in the past. This system gradually phased out because many contract farmers failed to keep their side of the contract in many instances - particularly when the market prices for fresh produce were higher than the contract price. Nonetheless, with the advancement in farming technology and the Royal Government's nudge towards commercialization, contract farming can make a comeback - with little changes in the contract terms and conditions including the price of the final produce.

3. Acknowledgement

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