

Report to the 18th Session of the National Council



Review of Agriculture Policy by Natural Resources & Environment Committee (NREC)

Committee composition:

Jigmi Rinzin, (MP, Pemagatshel Dzongkhag) – Chairman
Nima Gyeltshen, (MP, Thimphu Dzongkhag) - Deputy Chairman
Tshering Dorji, *Thrizin Wom* (MP, Haa Dzongkhag) – Member
Pema Tenzin, (MP, Chhukha Dzongkhag) - Member
Rinzin Dorji, (MP, Punakha Dzongkhag) – Member
Pema Dakpa, (MP, Zhemgang Dzongkhag) – Voluntary Member
Sangay Tshering, Staff - Research Officer
Karma, Staff – Committee Secretary

Legal Mandate

The review is based on the mandate provided for in the Constitution of Bhutan and the National Council Act under the following articles:

Article 10.2 of the Constitution provides the basis for parliamentary review of national policies and strategies where it says:

“Parliament shall ensure that the Government safeguards the interests of the nation and fulfills the aspirations of the people through public review of policies and issues, Bills and other legislations, and scrutiny of State functions.”

The Constitution in Article 11.2 further confers specific additional powers on the National Council to *“act as the House of review on matters affecting the security and sovereignty of the country and the interests of the nation and the people that need to be brought to the notice of the Druk Gyalpo, the Prime Minister and the National Assembly”*.

Similarly, Section 7 of the National Council Act states:

“The National Council shall ensure that the Government safeguards the interests of the nation and fulfills the aspirations of the people through public review of policies and issues, Bills and other legislation, and scrutiny of State functions.”

Further, Article 10 of the National Council Act highlights the review function of the National Council as follows:

“In exercising its review function, the National Council shall:

- a) Review and comment on the policies, plans and programmes of the government;*
- b) Review performance of the government;*
- c) Review implementation of resolutions and laws; and*
- d) Review issues of national importance.”*

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Background

Agriculture sector (crops, livestock and forestry) has been the backbone of the economy of the country until the establishment of the hydropower projects and the advent of tourism industry. Considering the fact that 70% of the population lives in rural areas with 66 % of the total households¹, it is of utmost importance for the National Council members, as a legislative body, to understand the agriculture production situation in the country.

There are various legislations, polices and strategies in place to facilitate agriculture production. However, increase in imports of agriculture produce, numbers of *Gungtongs* in the villages, and reports of increasing fallow land areas in the Dzongkhags have been some major concerns of National Council. Perhaps, this could be due to the lack of appropriate agriculture policies and strategies in place. Or, there could be problems in the implementation. Thus, the National Council recognized a need to understand the agriculture scenario at the national level.

Against this backdrop, the National Council decided, during the two-day retreat in Paro in 2013, to conduct a thorough review of agriculture policy and strategies. The House accordingly entrusted the Natural Resource and Environment Committee (NREC) to review the existing legislations, policies and implementation status of the Government on RNR sector to understand if there are adequate and appropriate policies in place. The Committee is entrusted to report to the House on the impacts these policies have affected on the livelihoods of the farming people.

Problem statements

The 11FYP recognizes the vital role of RNR sector to promote equitable development through enhancing rural prosperity and poverty alleviation. But the sector's growth had remained insufficient to adequately address rural poverty, attain food security and to sustain the overall economic growth. In fact, the growth in agriculture had remained hovering between 0.85% and 2.41% in the last five years as opposed to growth range of 3.06%-12.48% for secondary sector and 0.3%-15.21% for tertiary sector for the same period. Further, the sector's share of GDP has reduced from 24% in 2004 to 16% in 2013².

11FYP also mentions that the sector's full potential is challenged by low productivity due to issues such as acute shortage of farm labour

¹*Bhutan Living Standard Survey 2012 Report*

²*ADB Report, 2016*

driven by outbound rural-urban migration, loss of arable land to urbanization, difficult terrain, fragmented land holdings, loss of crops to wildlife, lack of access to market and agricultural credit, climate change and natural disasters, post harvest management issues and subsistence nature of farming. Consequently, dependence on import of food and food grains remain high and returns to farmers remain small as a result of higher costs of production and low economies of scale.

Today, agriculture sector employs 56.6% of the labour force in the country, equating to 192,281 persons from the total of just 339,569 persons³. And, there are paradoxical reports of farm labour shortage when the nation is witnessing the highest youth unemployment in the country.

In light of the above issues, the following questions were framed as bases to pursue the review exercise.

- i. As we import more food items than we export, what are the measures to achieve food sufficiency through reduction or import substitution?
- ii. Study the impediments that had hampered the agriculture sector's contribution to GDP and its resultant sluggish growth rates. What are the existing policies and measures initiated by Government to ensure growth in agriculture sector?
- iii. What are the existing policies and measures of Government in place to solve challenges faced by RNR sector?
- iv. What are the existing policies and strategies of government to attract youth to take up farming?
- v. Update on implementation of the 4 strategies of 11FYP to achieve the four broad objectives of RNR sector.

Literature review and field visits

Various documents on agriculture (legislations, policies and strategies) were referred and presentations were sought from several implementing agencies. Field visits were conducted.

Stakeholder consultations

Series of stakeholder consultations were held during the last four months from July to October. Individual meetings were held with the following organizations:

³*Labour Force Survey, 2014*

- i. Department of Agriculture;
- ii. Department of Livestock;
- iii. Department of Forest and Park Services;
- iv. Department of Agriculture & Marketing Cooperatives;
- v. Policy & Planning Division, Ministry of Agriculture & Forest;
- vi. Department of Revenue & Customs, Ministry of Finance;
- vii. Farm Machinery Corporation Ltd. (FMCL), Paro;
- viii. National Seed Centre, Paro;
- ix. National Post-Harvest Centre, Paro;
- x. Bhutan Alpine Seeds, Paro (private sector);
- xi. Regional Poultry Breeding Centre, Paro;
- xii. College of Natural Resources, RUB, Lobesa;
- xiii. Agriculture Research and Development Centre, Bajo, Wangdue;
- xiv. Centenary Farmers' Market, Thimphu;
- xv. Agriculture Research and Development Centre, Yusipang, Thimphu;
- xvi. Bhutan Agro Industries Ltd., Serbithang, Thimphu;
- xvii. Food Corporation of Bhutan Ltd., Phuentsholing;
- xviii. Regional Revenue & Customs Office, Phuentsholing; and
- xix. Bhutan Agriculture & Food Regulatory Authority, Phuentsholing.

The Committee had conducted twenty-three meetings between July and October 2016 in connection to this review.

Committee's observations and recommendations

The report is presented under four headings, viz. Policy and Strategies, Resource allocation, Access to credit for Agriculture, and Institutional setup for policy implementations. At the end of each observation, recommendations are provided.

1. Policy and Strategies

The development of RNR Sector was guided by the objectives of successive FYPs (Five-Year Plans) and Bhutan Vision-2020. From 1st FYP to 7th FYP (1992-96), the focus was on food self-sufficiency and from 8th FYP (1997-2001) onwards, the policy shifted to food security. There is a comprehensive RNR sector policy 'Food and Nutrition Security Policy of Kingdom of Bhutan 2014' with a vision: *"all people living in Bhutan at all times have physical, economic and social access to safe and adequate nutritious food for a healthy and active life contributing to realization of Gross National Happiness"*.

The goals of this RNR policy are:

- *Ensure availability of safe and adequate varieties of food to meet food requirements of the population at all times;*
- *Enhance physical, economic and social access to safe, affordable and adequate food;*
- *Promote appropriate consumption practices and enable optimum utilization of food by all; and*
- *Sustain conducive and stable environment for availability, accessibility and utilization of food.*

However, most technical people in the field level were not fully aware of this policy. In fact, some of the implementing agencies were even contesting with the Policy and Planning Division (PPD) if the Food & Nutrition Security Policy of 2014 was a mother policy of RNR sector.

In addition, there are many policy instruments applicable at individual and community levels. These are

- i. A 10% input-subsidy for supply for seed, seedling, fertilizer, pesticides, animal feed, farm machineries with free transportation.
- ii. A cost-sharing mechanism, with Government: Private cost-sharing ratio of 40:60 for poly house, 30:70 for livestock inputs, 70:30 for livestock shed materials, 20:70 for fencing materials and machineries for pasture development, 50:50 for small scale post harvest infrastructure materials, and 50:50 for electric fencing materials.
- iii. Minimum price support and transportation subsidy for enhancing the development of marketing and cooperatives.
- iv. Revised and updated national irrigation policy.
- v. Promotion and facilitation of commercial farming and gender friendly mini tillers through FMCL, Paro.

There are some initiatives currently awaiting approval from the Government, such as

- i. Crop Insurance Policy, which is currently under advanced proposal stage with RICBL.
- ii. Agriculture Marketing Policy (draft).
- iii. Land Development Strategy (under consideration)

The above policy instruments are reinforced through the following strategies in the 11FYP document.

- *Targeted and commodity focused interventions;*
- *Foster transition from subsistence to commercial agriculture;*
- *Ensure an enabling environment; and*
- *Promote private sector participation and contract farming.*

Status of implementation of RNR policy and strategies are discussed under four sub-heads, viz. food availability, food accessibility, food utilization, and food stability.

1.1 Food availability

Food availability is maintained through domestic production and distribution of imported foods.

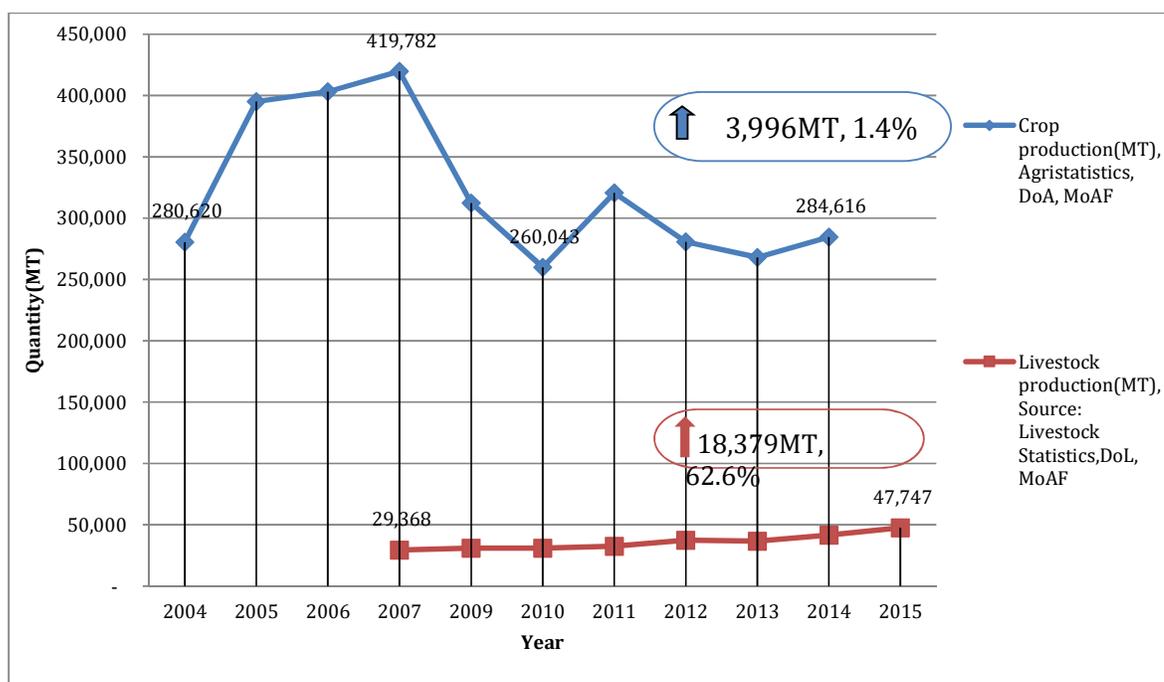
The Bhutanese dietary composition in 2015 comprised cereal crops (rice, maize, wheat, barley, minor cereals) with 87% followed by livestock products with 7% and then by fruits and vegetables with 6%⁴.

1.1.1 Domestic food productions

Figure 1 below shows the quantity of domestic food productions from 2004 till 2015. The domestic crop (cereals, vegetables, fruits and cardamom) production was 280,620 MT in 2004 and had increased to 419,782 MT in 2007 from where it had steadily declined to 284,616 MT by 2014. Comparing between 2004 and 2014 figures (10 years), the domestic production had only marginally increased by 3,996 MT (1.4% only) but it had decreased by 32.2% from 2007 to 2014. However, as regards the livestock products (dairy, meat and wool), the production had gone up from 29,368 MT in 2007 to 47,747 MT in 2014 (i.e., 62.6%). The egg production, live animals supply and planting materials are not included.

⁴Power Point presentation, DoA, 22 July 2016

Figure 1: Domestic food production in terms of quantity



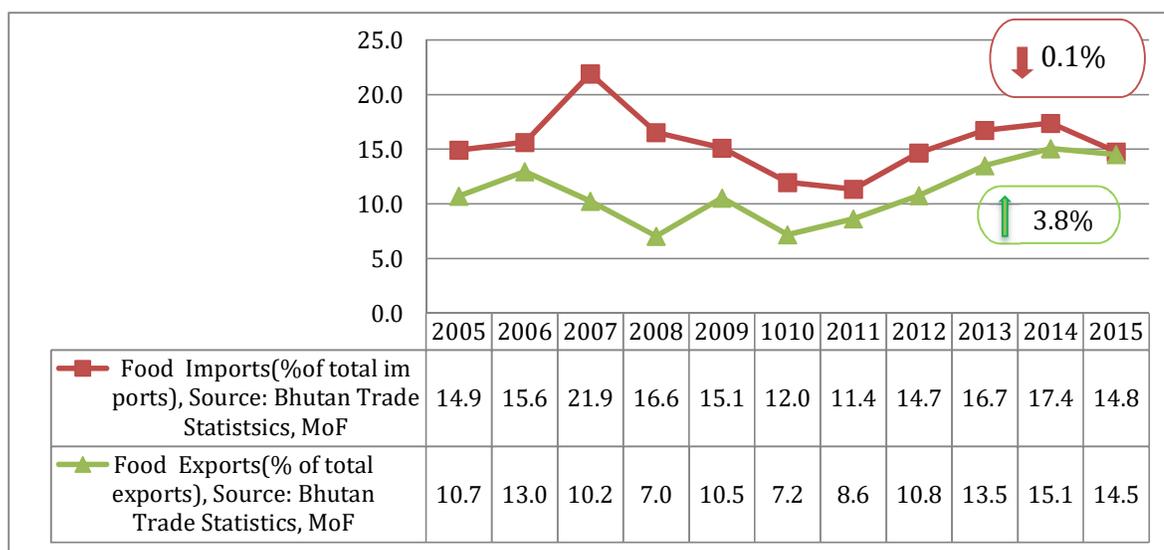
1.1.2 Export and import of food

Table 2 below shows the total food exports and imports over the last ten years from 2005 to 2015.

As seen in Figure 2 below, the percentage of food imports has more or less remained the same in 2015 from 2005 (14.8% and 14.9% respectively). The highest import was in 2007 with 21.9% when in the same year the domestic production started to decline (refer Figure 1). As regards the food export, it had increased by 3.8% in ten years from 2005 to 2015 (10.7% and 14.5% respectively).

To sum up, import of food was consistently higher than the export in the last ten years. However, the gap has narrowed by 2015 with 14.8% import and 14.5% export.

Figure 2: Food exports and imports in terms of value



1.1.3 Utilization of land for cultivation

The total agriculture area is only 2.93% of the country's total land area of 38,394 Sq. Km, which translates to 1,125.50 Sq. Km (281,375 Acres)⁵. As per the National Land Commission (NLC), Bhutan has 448,165 acres of land under Chuzhing and Kamzhing available for cultivation.

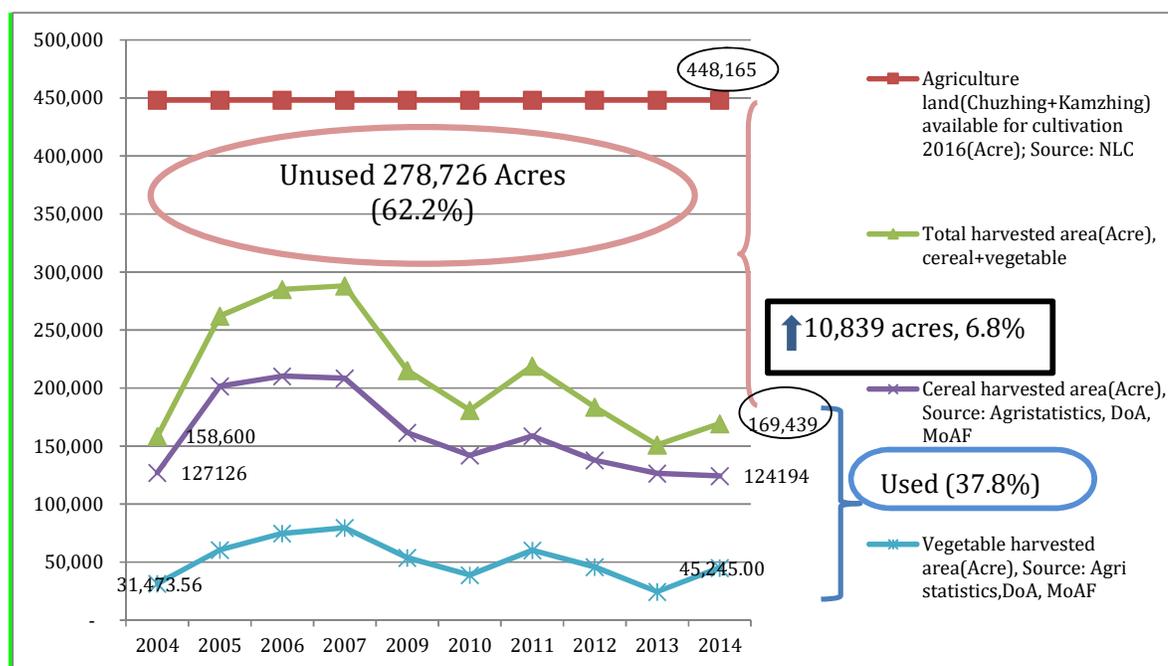
Figure 3 below shows the details of land utilization from 2004 to 2014.

As seen below, the total land usage had gone up by 6.8% from 158,600 acres in 2004 to 169,439 acres in 2014. From the total available land of 488,165 acres for cultivation under Chhuzhing and Kamzhing, only 37.8% is actually used for cultivation, i.e., 45,245 acres for vegetable cultivation and 124,194 acres for cereal production. This leaves us with a whopping 62.2% (278,726 acres) of the land area remaining unused. Further, utilization of land has actually decreased from 2007 for both cereals and vegetables.

The existing policy instruments implemented have not been instrumental for increasing the crop production and land utilization.

⁵Statistical Yearbook of Bhutan 2015, P.99

Figure 3. Land utilization for crop (cereals and vegetables) production



1.1.4 Chuzhing utilization for paddy production

As rice is the main staple food for Bhutanese, an analysis is done on the utilization of Chuzhing from a total of 75,736 Acres⁶ available in the country.

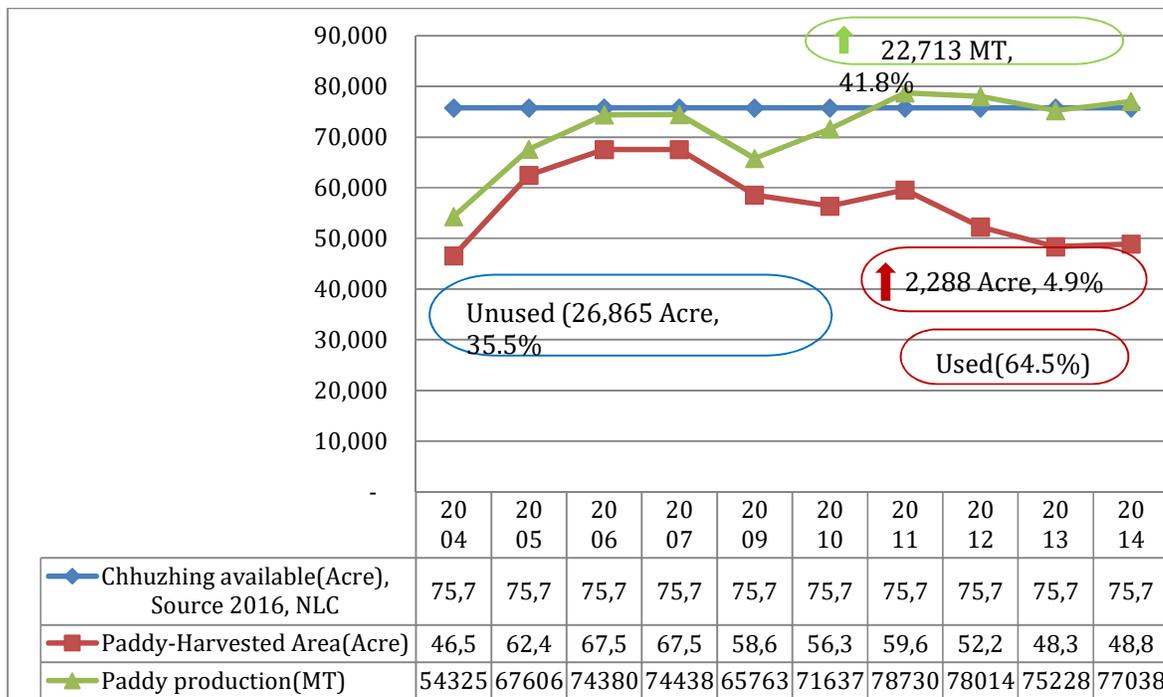
As shown in Figure 4 below, Chuzhing area cultivated for paddy production has increased from 46,585 acres in 2004 to 48,873 in 2014, i.e., an increase by 4.9%. The area of cultivation has again decreased from 2007 onwards when it was 67,564 acres. This again shows that a total of 26,865 acres (35.5%) of the Chuzhing available is not being used for paddy cultivation. However, it is encouraging to note that the paddy production has actually increased from 54,325 MT in 2004 to 77,038 MT in 2014 as opposed to the decrease in the area used for paddy cultivation.

This increase in yield could perhaps be due to investment in irrigation, improvement of rice variety and/or farm mechanization. Based on approximate computation of average paddy yield in 2014 at 1,576 Kg/acre (77,038 MT divided by 48,873 Acres), cultivation of the entire 75,736 acres of Chuzhing could have produced a total harvest of 119,360 MT of paddy in 2014, which is an increase of 55% in production. However, the intensification of rice production through

⁶National Land Commission, 2016

double-cropping where feasible especially below mid-altitudes had not really been scaled up.

Figure 4: Chuzhing utilization for paddy production



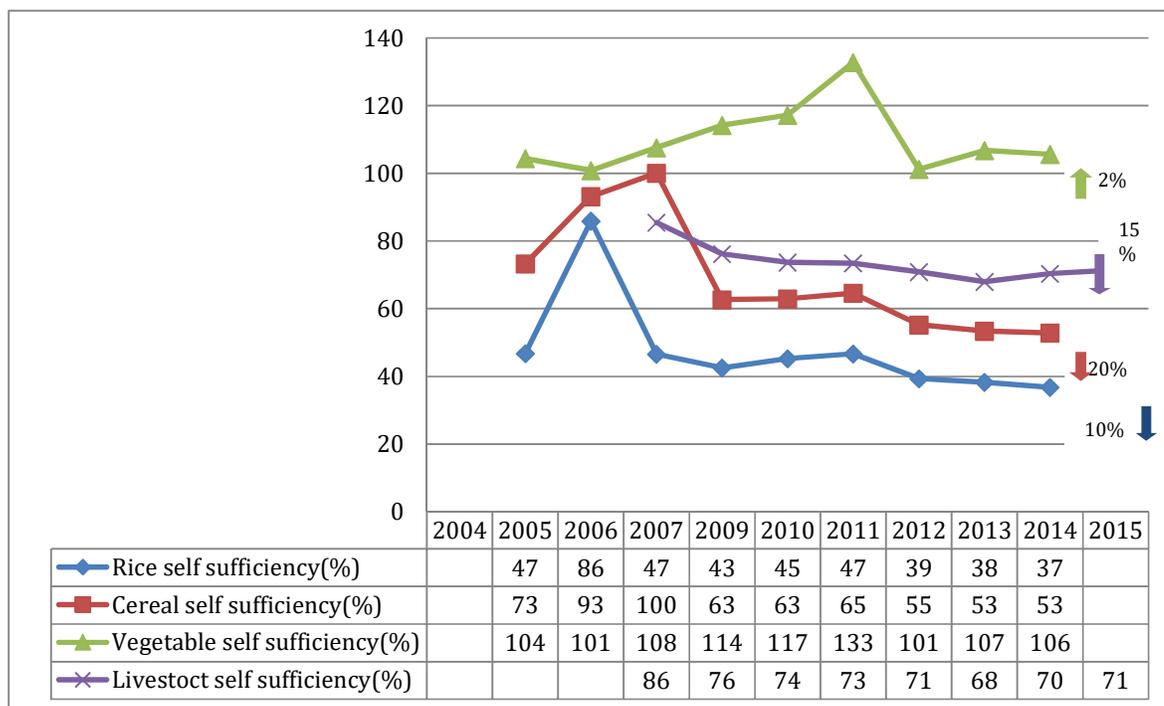
As per Bhutan RNR Statistics 2015, as of 2013, about 92.4% of the total irrigation channels (2,583km) were found to be functional. Semi-functional and non-functional irrigation channels constituted 2.6% and 5% respectively. However, there is no reliable water source for irrigation as most of the water is tapped from temporary sources like rain-fed streams. Further, there is no large-scale rainwater harvesting and water pumping technology initiated.

1.1.5 Food self-sufficiency

In terms of food self-sufficiency, barring vegetable production, no other domestic crop productions are 100% self-sufficient in the country. Figure 5 below shows details of self-sufficiency percentages.

Rice is the most favored staple food and only 37% as of 2014 is met from domestic production of 77,038 MT (Refer Figure 4). It was 47% self-sufficient in 2005 when the domestic production was 67,606 MT (Refer Figure 4). Self-sufficiency had gone down by 10% in 2014 from 2005.

Figure 5. Self-sufficiency ratio agro food products



Source: Agri-Statistics 2005-2014, Livestock-Statistics 2007-20015

As a result, importing of rice continues. But there is a perception that not all rice imports must be entering the country legally. Some import lots must be sneaking into the country without formal recording at the entry gate. On the contrary, there may be possible ‘ghost’ imports of rice, i.e., recording of rice imports at entry gates without physically importing rice into the country. This is mainly to avail advantage of ‘0’ taxed items and to have access to Indian Rupee currencies as rice is one of the ‘0’ taxed items. Owing to time and human resource constraints, the officials of Regional Revenue and Customs Office are not able to conduct physical check of the items declared in the import declaration documents. It was learnt that physical checking of import items would only be conducted if and when there is suspicion. Further, Bhutan Agriculture and Food Regulatory Authority do not have the practice of issuing clearance for rice although the prevailing rules and regulations require them to do so. Thus, there is no proper check and monitoring on the import of ‘0’ taxed items at the entry gates.

Likewise, cereal production in 2005 met 73% of the total requirement. In 2014, it had gone down to 53% (a decrease by 20% in 9 years).

It is encouraging to report that vegetable production is more than sufficient, with 104% self-sufficient in 2005 and 106% in 2014. However, the production is substantially seasonal from June to

November of the year. Surpluses are exported to India through FCB Auction Yards in summer.

For Livestock, it was 86% in 2007 and had decreased to 71% in 2015. Except the egg, rest of the livestock products (meat, fish, beef, pork, chevon and dairy) requirements are met only 50% from the domestic production. However, the intensification of Integrated Livestock farm through establishment of Corporation at Samrang (dairy, poultry, piggery, goat, fishery), poultry intensive farming at Relathang, dairy and native poultry farming at Sersam is under heavy public criticism.

The required forestry products such as timber for construction and furniture and firewood are met from domestic production.

1.1.6 Seasonal vegetable production, import and export (a case study)

In order to get proper perspective of the seasonal vegetable production, cabbage production with its import and export data are highlighted below. While cabbage is available for sale at Thimphu Centenary Farmers' Market (CFM) throughout the year, record with FCB, Phuentsholing, shows that cabbage is auctioned from June to December. There is no import of cabbage between June and December.

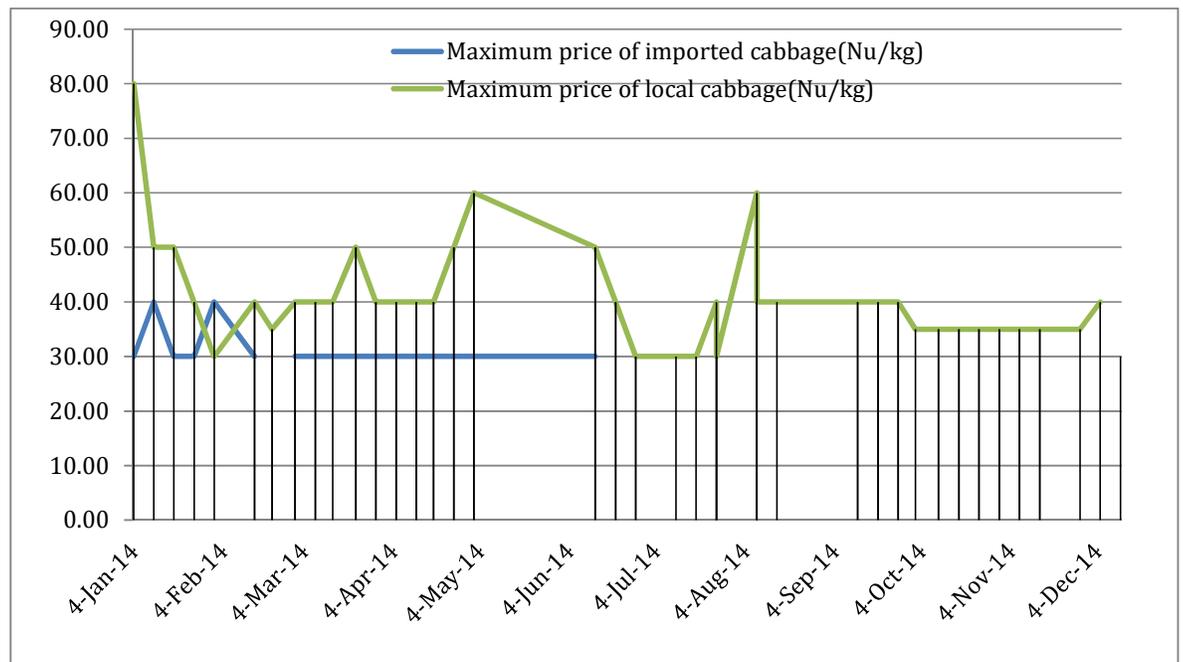
It is also found out that the price of local produce is higher than the imported ones in CFM (price differential ranging from 17% to 167%, See Figures 6a and 6b below). This price differential encourages consumers to prefer imported vegetable to local produce.

It can be seen from the above figure that cabbage import takes place between January and June while domestic production is throughout the year. It indicates that the local production is not adequate to meet the total consumption requirement during January-June of the year. The price of local cabbage is consistently higher than the imported cabbage. As a result, consumers generally opt for imported vegetable thereby discouraging local farmers to produce more. However, looking at the higher price trend of local produce, those who actually produce local vegetable do not appear to be incurring loss since the price of local cabbage is always higher than the imported cabbage. Therefore, it suggests either of the two observations:

- i. the buyers of locally produced vegetable must be very few, i.e., niche market for local produce, which is managed by only few vegetable growers. These local growers may not be targeting at the mass market but to the select niche market, or

- ii. the sellers of the local produce in the market may not be the real growers but the middlemen who buy from villagers and sell in the market at higher price.

Figure 6a: Maximum retail price of cabbage at Centenary Farmers Market, Thimphu 2014



Source: Department of Agriculture and Cooperatives, MoAF

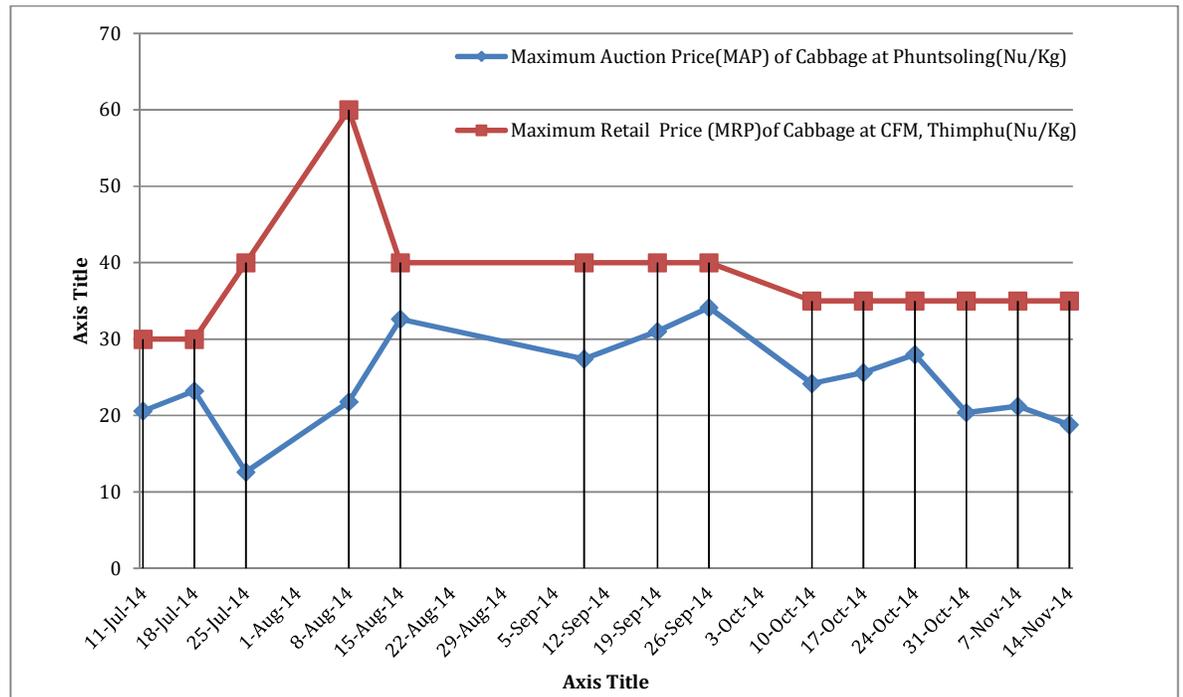
It is also observed that our farmers have not been growing vegetable throughout the year while the statistics support the possibility of year-round cultivation of vegetable in the country. As we have regions ranging from low foothills in the south to high temperate and alpine zones to the north, the distinct climatic zones from sub-tropical to temperate and cold places is suitable for agriculture cultivation throughout the year. Vegetables that can be grown in the north during summer months can be grown in the south during winter months.

Therefore, the import of some of the vegetables can be avoided if our farmers grow vegetables throughout the year. In this regard, it's encouraging to note that the Ministry of Agriculture & Forest has initiated the off-season vegetable production on pilot scale to substitute the imports.

The following Figure 6b further clarifies the price differentials between the locally grown cabbage and the imported cabbage.

The price difference ranges from 17% to 167% between locally produced cabbages and imported lots. It was also observed that the

Figure 6c: Maximum Retail Price at CFM, Thimphu and Maximum Auction Price, Phuentsholing



Source: DAMC, 2014

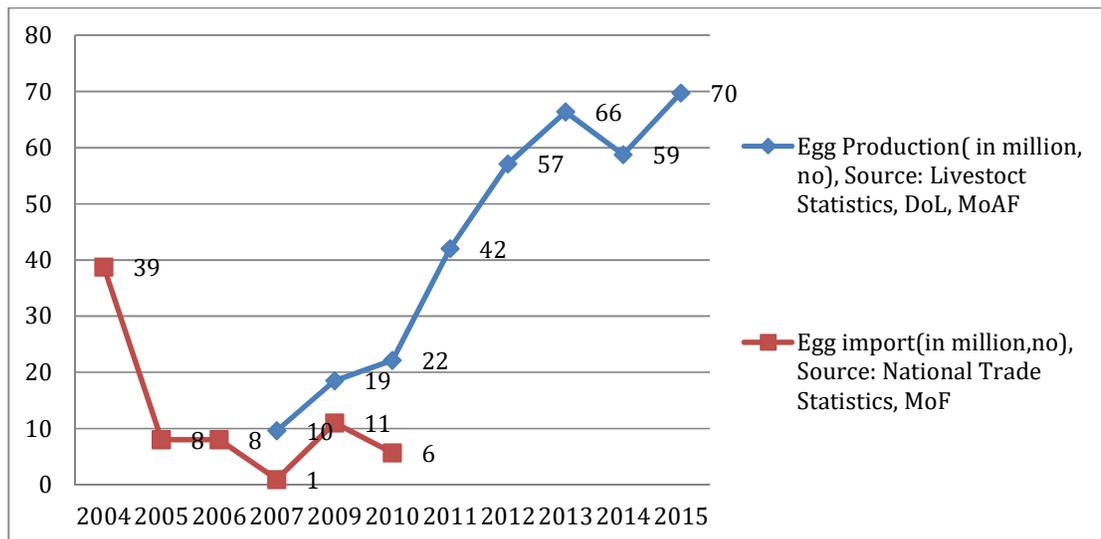
1.1.7 Food Safety

To ensure that food produced are safe for human consumption free of health concerns, the import of eggs was banned since 2010 due to an outbreak of bird flu. This promoted poultry farm culture in the country. The annual domestic egg production was only 8 million eggs in 2007 and 19 million in 2010. As the ban continued, poultry farm business picked up across the country and the domestic production climbed up to 70 million eggs in 2015. Statistics on egg production in the country is shown below under Figure 7.

Similarly, this year some of the vegetable items were temporarily banned from import into the country due to high content of pesticide residues in the vegetable items. Also, recently import of seaweed was banned. Following these import bans, domestic production is expected to increase in coming months and years, just like the egg-scenario.

The Committee is also mindful of the unintended consequences faced by the general consumers of these import-banned products. For instance, pursuant to egg-import ban, local production increased along with price. There is already a public perception that price of local eggs are much higher than the price outside the country.

Figure7: Egg production and import



1.2 Food Accessibility

Access to food is enhanced through bringing sellers and buyers closer by creating market places. Markets are promoted through farm road connectivity, setting up of weekend markets, road-side sheds, providing timely pricing information to farmers and vegetable vendors, and through auction yards in the border towns. Basic food essentials are made accessible through commercial groceries and farm shops operated by Food Corporation of Bhutan Limited (FCBL).

Farm Shops at Gewog Levels are operated by FCBL under a temporary arrangement where basic food and essential commodities, including agriculture inputs and market information, are further made accessible at reasonable price to rural population. Further, selection of commodities under buyback contract production and analysis of price fixation at farm shop as per the cost of production is undergoing. However, there is no time frame set for the start of this buy-back mechanism and some of those farms shops seemed to have been established without a proper need-based analysis.

Various postharvest and marketing infrastructure in strategic locations such as Sunday market sheds, sales outlets, road side markets, auction yards, household-level storage, cold storages and processing plants were established. However, construction of improved ambient storage at high pass or mountains along the Highway maximizing the natural night cooling of the storage was not explored. It was also observed that in some Dzongkhags (eg.

Chhukha), many of the roadside market sheds had not benefited farmers as intended. Regarding the management of Sunday markets in the country, there is no formal association or body to look into the affairs of users. And, vegetable vendors and middlemen do not have formal license to do vegetable import. Nor are they required to obtain one. In the process, there is no control mechanism on the import of vegetable and accounting records thereof.

According to Bhutan RNR statistics 2015, 68.35% of the total households are within one-hour walking distance from the nearest motorable road. As of May 2015, 76,484 households are benefited from the total farm road extending to 6,765 Km across the country.

The minimum support price programme, i.e., where the Government will offer the top-up to match or break-even the actual cost of production, had already linked 159 Farmers Groups/Cooperatives with 63 Schools/institutes/mega projects especially in Eastern Dzongkhags. Despite its success, the continuity of this market linkage development was not aggressively pursued throughout the country. Further, there is a poor linkage between the producers (farmers) and the food processing industries due to knowledge gap on demand and supply conditions and market outlet.

1.3 Food Utilization

In order to promote delivery of high nutrient crops the Ministry has initiated production of quality protein maize (Bio-fortified maize), Quinoa (nutrient dense pseudo cereal), Zinc enriched rice, Iron & zinc enriched wheat, heat tolerant maize, vegetable diversity, and different types of fruits and nuts. However, there is no public awareness on the consumption of these high nutrient crops. As a result, there is no production for household consumption, let alone producing for commercial purposes.

1.4 Food Stability

Notwithstanding the volume of production, improved accessibility to market and availability of high-nutrient crops, maintaining an enabling environment for consistent supply of necessary food quantity over months and years is often a challenge. The visible affects of climate change such as drought, floods, storms, hailstones, landslides, and wild animals, pest and diseases destroying crops are some specific challenges that confront the sustained enabling environment for food availability, accessibility and utilization.

Table 8 below shows eleven kinds of physical challenges faced by the farming households.

As shown in Figure 8 below, five most factors affecting the farming households in ensuring food security in 2014 were crop damage by wild animals, labour shortage, insufficient irrigation supply, crop damage by insects and diseases and limited access to market. While a meager 1% of the farming households faced food stability challenges due to landslides and soil erosion, 56% of the farming households face food shortages due to wildlife depredation on the crops. In this regard, the Ministry has, as of May 2015, installed 419 Km of electric fencing benefiting 5,869 rural households in the country.⁷

Owing to these eleven constraints, there are 8% to 24% of farming households facing food shortages through the year (Figure 9). Some 8% of the farming households face food shortage in winter months and in summer months, by June, 24% of the farming households face food shortages.

Therefore, certain sections of farming population have to resort to alternative source of earning for their livelihoods. Table 2 below shows alternative sources of employment to cope with food shortages faced by farming households through the year.

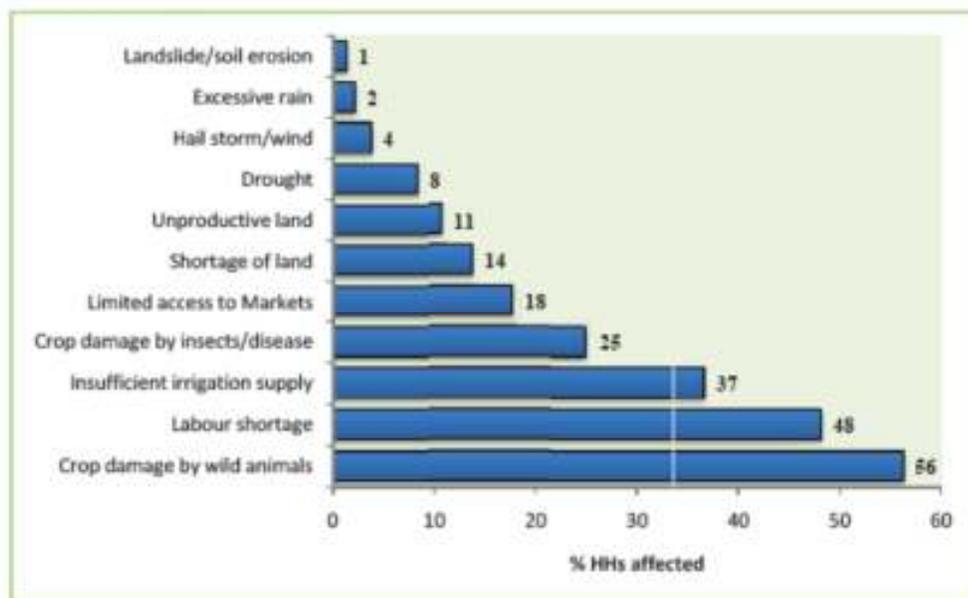
As can be seen in Table 1 below, 15% of the total farming households take up off-farm activities like weaving, pottery, business and petty contractual works as coping mechanism against the food shortage situations, and some of the households resort to selling livestock products, taking up casual works randomly, and selling off forest products.

The crop insurance policy, which is under discussion with RICBL to address crop damages will enhance the food production, accessibility and food stability.

Loss of agriculture land to rapid development and urbanization has put a lot of pressure on agriculture land. As such, about 2000 acres of agriculture land was lost to non-agriculture purposes during 1998 to 2008 (11FYP documents). This is likely to increase in the future with increased development activities.

⁷*Bhutan RNR Statistics, 2015*

Figure 8: Percentage of farming households affected by various constraints in 2014



Source: Agri-statistic 2014

Figure 9: Percentage of farming household facing food shortages in 2014



Source: Agri-statistic 2014

Table 1: Food shortage coping mechanism in 2014

Coping Mechanism used	% HHs
Off-farm activities (weaving, pottering, Business/contact etc.)	15
Sale of Livestock Products	14
Cash remittance from employed members	12
Daily wage(Amount earned from working in others field)	9
Exchange with labour	9
Borrowed from neighbours(cash or agricultural products)	7
Sale of forest products	3

Source: Agri-statistic 2014

Recommendation 1.1

The Ministry needs to revisit the existing policy instruments to facilitate the crop production through maximum utilization of the available land and also need to advocate the mother policy.

Recommendation 1.2

Considering the free trade nature with India, the Ministry needs to upscale the offseason vegetable production through farmers groups and cooperatives and work on the pricing policy or strategy based on the cost of production.

Recommendation 1.3

Learning from the egg experience and to ensure food safety, the Ministry needs to upscale the laboratory testing of both fresh and processed products for quality control.

Recommendation 1.4

The Government needs to put effective measures to protect prime agriculture lands from losing to urbanization and rapid development.

Recommendation 1.5

The Ministry needs to expedite the completion of the draft crop insurance policy and marketing policy in order to facilitate food distribution and stability.

Recommendation 1.6

In order to ensure irrigation system to have high water delivery efficiency, the Ministry needs to scale up investment on irrigation infrastructure development through tapping water from large perennial streams, large scale water storage and water pump, micro-irrigation technologies, and timely maintenance of the existing irrigation channels.

Recommendation 1.7

There is a need to facilitate the entire value chain starting from agriculture input supply to production, processing, distribution and marketing.

2. Resource Allocation

The agriculture sector is the single largest sector that provides livelihoods to 56.7% of the population⁸. The sector had received top priority from 1FYP (1961-65) to 4FYP (1976-80) in terms of substantial allocation of the plan outlay. The plan outlay for the sector was 6.2% in 1FYP and increased to 38.9% of the plan outlay in 4FYP. Since then the sector's share of the plan outlay had been decreasing. The 11FYP had allocated 6.4% of the plan outlay.

Details of plan outlays and the sector's GDP contribution are provided through Figure 10 below.

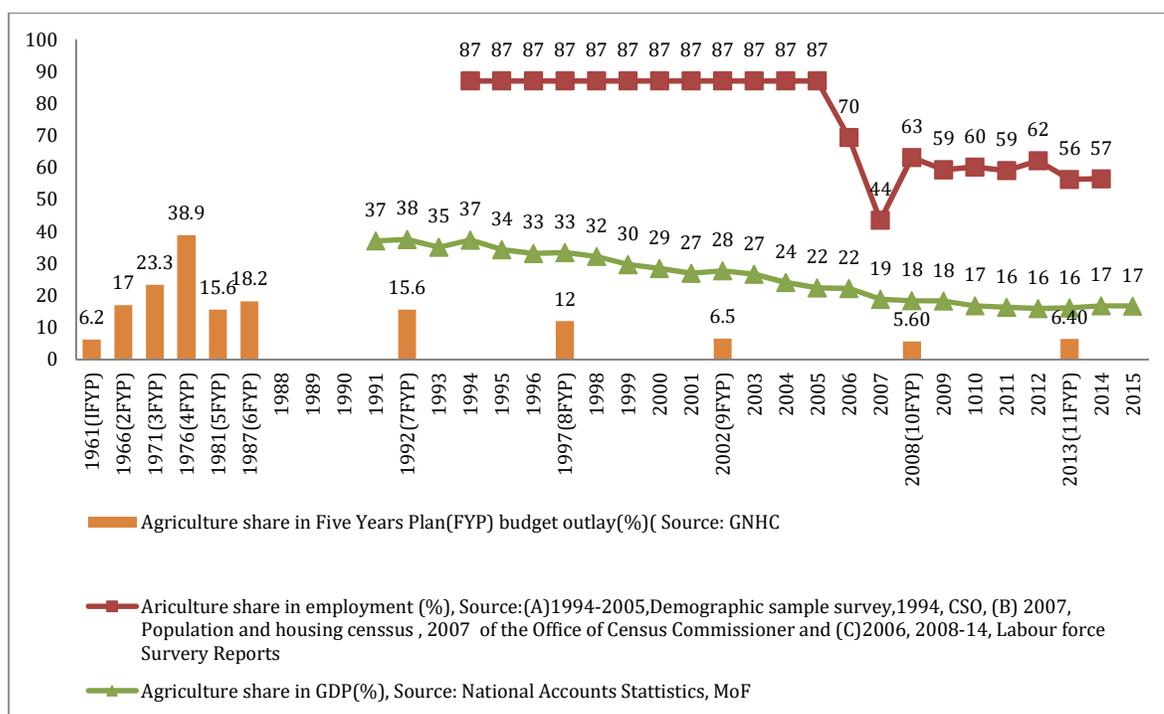
With more than half the total workforce (56.7%) being employed in the sector, there is need to review further on increasing the plan outlay allocations to agriculture sector. It is very clear that an employment criterion was not considered while making the resource allocations among the sectors in addition to the revenue.

There is a sluggish GDP growth in RNR Sector from 5.38 % in 2000 and decreased to 2.40% in 2013⁹.

⁸Labour Force Survey, 2014

⁹National Accounts Statistics, 2015

Figure 10: Agriculture in the economy



Recommendation 2.1

To make the agriculture sector a vibrant economic sector, the Government needs to include employability as one of the factors for allocating the budget among various sectors.

Recommendation 2.2

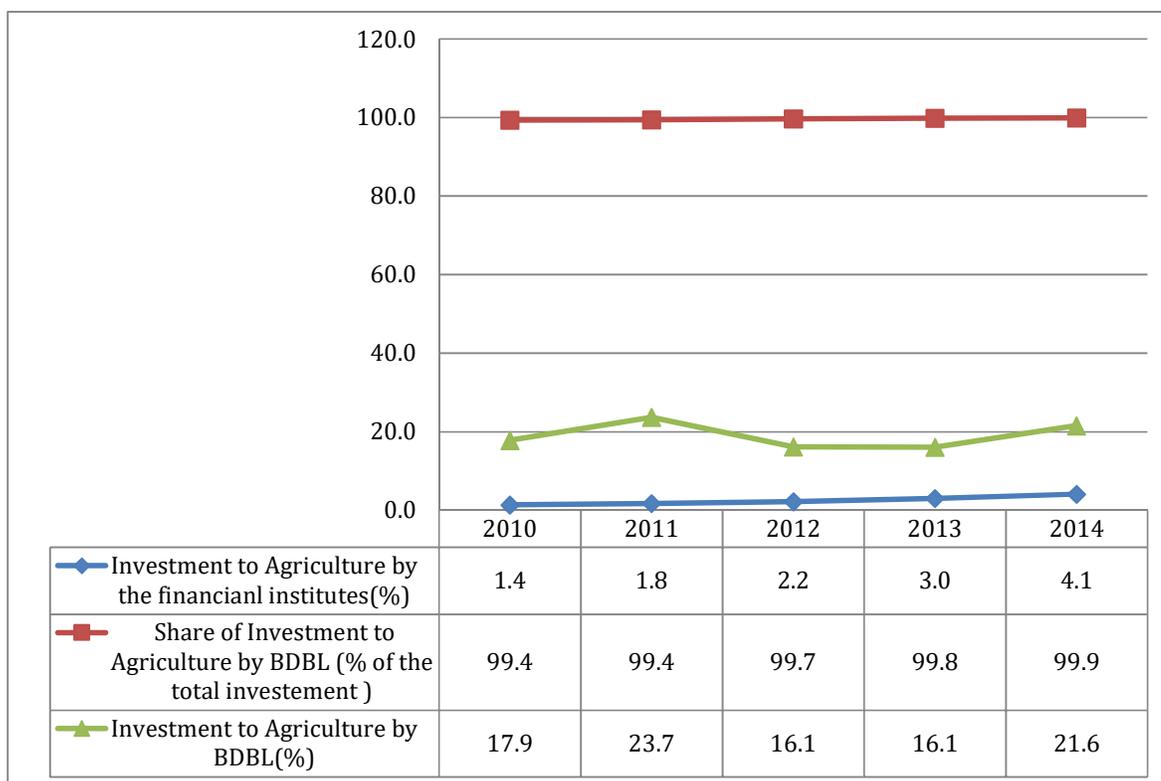
There is a need to increase investment in RNR sector to expedite transition from subsistence to commercial farming, promote private sector participation, and encourage youth entrepreneurship.

3. Access to credit for Agriculture sector

The prevailing public perception rules that agriculture sector is the least invested sector in the economy. Even the government’s 11FYP outlay has allocated just 6.4% for the sector (Nu.13,632 million out of Nu.213,000 million). In 2014, the total credit from Financial Institutions was Nu.2,653.64 million, which is just 4.1% of the total investment (Nu.63,982.05 million).

Details of investments in agriculture by Financial Institutions are provided under Table 2 and Figure 11 below.

Figure 11: Investment to Agriculture by financial institutes



Source: Statistical Yearbook of Bhutan 2015, NSB

Table 2: Credit to agriculture sector

Agriculture	2010	2011	2012	2013	2014
Total	499.45	843.23	1,193.82	1,745.42	2,653.64
% growth		68.9%	41.6%	46.2%	52%

Source: Statistical Yearbook of Bhutan 2015, NSB

Investments in agriculture sector from financial institutions are very minuscule, although it is increasing over the past successive years. The credit to agriculture, in absolute figures, is also growing from year to year. For instance, the credit in 2011 had increased by 68.9% from 2010. In 2014, with a total credit of Nu.2,653.64 million dished out for agriculture sector, it is an increase of 52% from 2013. To ensure credit growth in agriculture sector, there is no mandate from the regulatory authority that would require the Financial Institutes to allocate credit facility to agriculture sector.

Amongst the financial institutions, BDBL is the biggest creditor for agriculture sector. Out of the total credit of Nu.2,653.64 million in 2014, BDBL singularly had invested Nu.2,650.19 million (99.9% of the total credit). Further, BDBL has invested between 16% to 24% of its total investment to agriculture sector from 2010 to 2014.

In addition, the Rural Enterprise Development Corporation Limited (REDCL) has invested total of Nu. 312.3 million: Nu 191.9 million (RFI) and Nu.120.4million (RFII) at 4% interest rate as of September 2015 for agriculture sector¹⁰.

Recommendation 3.1

The ministry needs to explore the establishment of more credit schemes for agriculture in collaboration with REDCL, BDBL and other financial institutions.

Recommendation 3.2

There is a need for the Royal Monetary Authority to statutorily mandate Financial Institutions to allocate certain minimum percentage of their investments to the agriculture sector.

Recommendation 3.3

There is a need to amend Cooperatives Act of Bhutan 2001 (Amendment, 2009) to facilitate establishment of endowment fund for cooperatives.

4. Institutional Arrangement for policy implementations

The Ministry of Agriculture & Forest (MoAF) is supported by four departments, four non-department agencies, and four Secretariat agencies.

The four departments are:

- i. Department of Agriculture (DoA): to provide crop production and post-production services. The department is supported by 3 Divisions, 4 Research and Development Centers and 7 Central Programs;
- ii. Department of Livestock (DoL): to provide livestock production and post-production services. The department is supported by 3 Divisions, 1 Research and Development Center, 6 National Centers and 5 Regional Livestock Development Centers;
- iii. Department of Forest and Park Services (DoFPS): to provide forest and park management services. The department is supported by 6 divisions, 12 territorial divisions and 10 parks, sanctuaries and reserves; and
- iv. Department of Agricultural Marketing and Cooperatives (DAMC): to provide marketing of agriculture produces and

¹⁰REDCL Website

cooperatives development services. The Department is supported by 3 Divisions, 1 Regional Office and 2 Liaison Offices (Kolkota and Dakha)

The four non-department agencies are:

- i. Bhutan Agriculture and Food Regulatory Authority (BAFRA): to ensure quality and safety of food and agriculture related products;
- ii. National Biodiversity Centre (NBC): for conservation and sustainable utilization of Bhutan's diverse biological resources for ecological integrity and socio-economic well being of the country and the world in general;
- iii. Information and Communication Service (ICS) for publishing and dissemination of agricultural related information; and
- iv. Rural Development Training Centre (RDTC) to provide hands-on farming trainings to the farmers.

The four Secretariat agencies are:

- i. Planning and Policy Division (PPD);
- ii. Administration and Finance Division (AFD);
- iii. Human Resource Division (HRD); and
- iv. Internal Audit Unit (IAU).

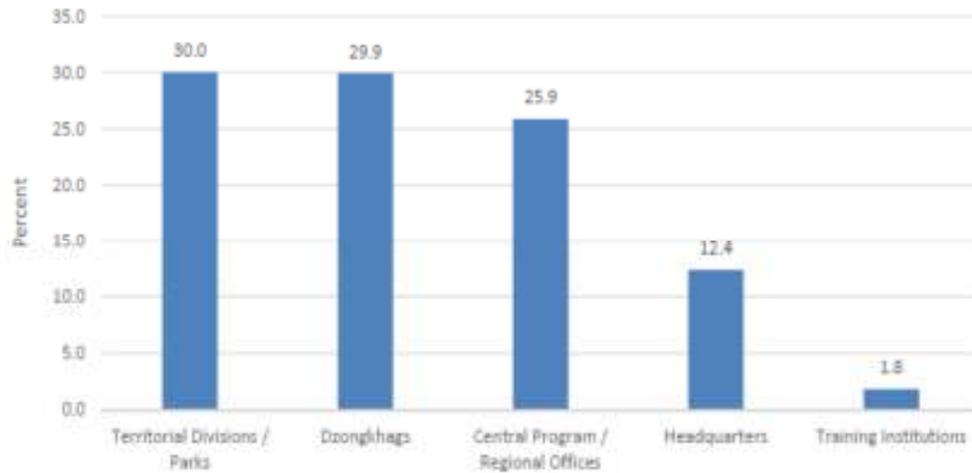
The Directorate offices provides direction on the policy development and implementation, Research and Development Centers concentrates on the developments of appropriate technologies in their respective fields through vigorous researches, and Extension Sectors in the Dzongkhags provides direct technical services to the people.

To promote effective and efficient delivery of agriculture services, the distribution of staff is mostly in the field, which comprises Territorial Divisions and Parks, Dzongkhags and Gewogs, Central Program and Regional Offices. As can be seen in Figure 13 below, 30% of the staff are deployed in Territorial Divisions and Parks, and 29.9% deployed in Dzongkhags and Gewog.

Further, the number of farming household per agriculture staff ranges from 17 in Gasa Dzongkhag to 67 in Samtse and Trashigang Dzongkhag, as shown in Figure 14 below.

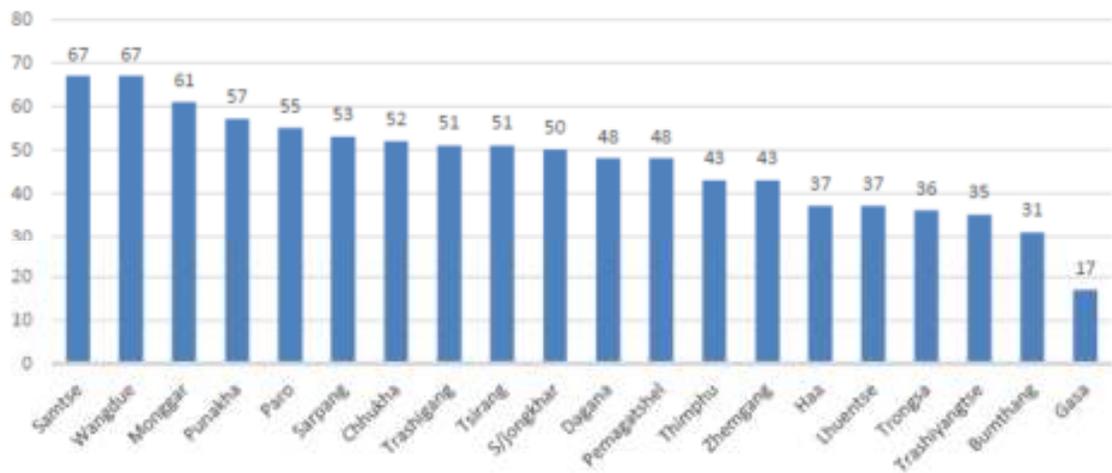
There is no systemic coordination and linkage between and amongst the Directorate at the Centre, Research and Development Centers at Regional and National level, and Extension Offices in 20 Dzongkhags and 205 Gewogs.

Figure 13: Distribution of agriculture staff as of April 2015



Source: *Bhutan RNR Statistics 2015*

Figure 14: No of farming households per agriculture extension staff as of April 2015 (agriculture, livestock and forestry)



Source: *Bhutan RNR Statistics 2015*

Recommendation:

To facilitate effective agriculture service delivery, the Ministry needs to establish systemic coordination linkages between the Directorate, Research & Development Centres, extension officers, and relevant agencies.



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