

Agriculture Transformation in Bhutan: From Peasants to Entrepreneurial Farmers

ABSTRACT

Bhutanese farmers practised integrated self-subsistence farming comprised of crop production, livestock production, and use of forest products. However, it is shifting towards semi-commercial and commercial farming in the recent decades. Study on agriculture transformation is valuable to understand the evolution of Bhutan's agriculture systems. Thus, the current study reviews five components of agriculture responsible for transformation from peasants to entrepreneurial farmers. The five components are urbanization (1), farm mechanization (2), community institutions (3), high-value products (4), and youths' aspiration (5). Given the current rate of globalization and improvement in the agribusiness environment, entrepreneurial farmers are likely to boost in Bhutan. Thus, relevant stakeholders must strive to create a conducive agribusiness environment in the country.

Keywords: Agriculture transformations, entrepreneurial farmers, Bhutan

1. INTRODUCTION

Bhutan is popularly known for the philosophy of Gross National Happiness, where happiness, instead of the Gross Domestic Product (GDP), measures the country's growth. It is a small landlocked country in the eastern Himalayas between India and China. It lies between the latitude of 26°40' and 28°15' N and longitude of 88°45' and 92°10' E with a total geographical area of 38,394 km² (1). Its geographical dimension stretches by about 300 km (east-west) and 150 km (north-south) with elevation ranging from about 100 to 7,500 meters above the sea level. The country consists of 20 Dzongkhags (districts) and 205 Gewogs (sub-districts). According to the National Statistical Bureau [NSB] (2), the projected population in 2016 was 779,666. Due to its high range of altitude, there are six agro-ecological zones ranging from the wet subtropical zone (100-500 meters) to alpine zone (3,600 meters and above). Accordingly, temperature, precipitation, and vegetation vary along the elevations making suitable for a variety of crops and animals (3). As such, Bhutan is an agrarian country with more than half of her population directly depends their livelihood on agriculture. Agriculture is the backbone and development engine of rural farmers in Bhutan. Indeed, agriculture is one of the five jewels of the country and it contributed 16.52 % to the GDP in 2016 (2).

Bhutan remained self-imposed isolation until the 1960s (4) and remained unchanged for centuries. It was only in the 1960s, the country officially opened its borders to the outside world. Bhutan's efforts towards agricultural modernization started since the first five-year plan (1961-1966) (5). Ever since then, many areas of developments are remarkably in progress. Amongst others, agriculture development is one area experiencing a major transformation. The self-subsistence farming characterized by the indigenous knowledge and backyard farming dominated the agriculture practices in Bhutan. Over the time, the agriculture sector has been receiving continuous support from the Royal Government of Bhutan (RGoB) and taken a greater height. The traditional closed self-subsistence farming is transforming into semi-commercial farming. Furthermore, today, few commercial agriculture productions are emerging in the country. Agriculture is shifting from traditional village-centric farming in the past to the market-based farming, integrated into national and global social systems.

Numerous socio-economic factors cause agriculture transformation from peasants to entrepreneurial farmers. These transformations are still in the process; and given the current willingness of farmers to accept change and other external forces, the transformation is likely to continue. The study of these transformations is valuable to understand the evolution

of agricultural systems in the country. This review will not only inform the history and present status of the agricultural development but also help to understand the future agriculture development in the country. The scope of this article includes five components of agriculture transformations in Bhutan as shown in Figure 1.

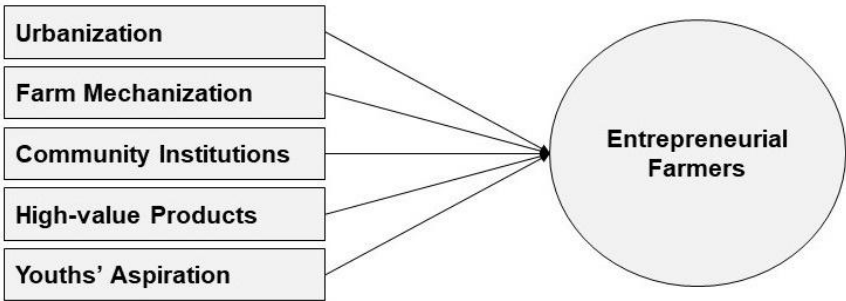


Figure 1. Components of agriculture transformation in Bhutan

2. COMPONENTS OF AGRICULTURE TRANSFORMATION

2.1 Urbanization

Until recently, urban centres in Bhutan were comparatively small and exerted limited or no influence on the agriculture farming. Indeed, rural-urban interactions were minimal and simple. The improvement in transport and communication facilities are making both quantity and quality of interactions multidimensional and complex. One such interaction is rural-urban migration acting like a double-edged sword. It affects both rural communities and urban centres. In rural communities, rural-urban migration causes numerous socio-economic problems, including abandoned households, an ageing population, labour shortages, fallow lands, human-wildlife conflicts (6, 7). As a result, an extended family structure in the past are now replacing with truncated family (old people living alone) and skipped a generation (grandparents and grandchildren). On the other hand, urban population have increased from barely few thousand to 37.9 % in 2014 (8). According to Ministry of Works and Human Settlement (9), the urban population is further projected to increase by 135 % in 2020. Rising urban population causes numerous issues, but not limited to the housing shortage, traffic congestion, crimes, and air pollution (10). Furthermore, Gross National Happiness Commission (11) and National Soil and Services Centre (12) showed that the urban sprawl has extended to agriculture land reducing already the limited cultivable land of 2.93 %.

On the contrary, urbanization creates economic incentives for the local farmers. Although more than half of the country's population is still employed by the agriculture sector (2), employment in other sectors had grown gradually. Non-agriculture sectors in the country are still young, yet they employ a significant number of population, 34.2 % service sector and 8.7 % industry sectors share respectively (13). Proportionately, one can expect that the share of household income from non-agriculture sources will increase. Urbanization also creates new market opportunities for their agriculture products. Increasing urban population means higher demand for cereals, vegetables, and dairy products, thereby, motivating them to produce high-value products to meet the demand of the urban affluent. As such, cultivating of high values crops rearing of high yielding animals are emerging particularly in the peri-urban areas. The Thimphu Centenary Farmers Market in the capital city of Bhutan, vegetable outlets along national highways, and other weekend markets in major urban centres in the country best exhibit the influence of urbanization on farming. As of now, urbanization partially influences farming decisions towards entrepreneurial farmers.

2.2 Farm Mechanization

Bhutan has the rugged mountainous terrains with 49.5 % of its total geographical area with a slope greater than 50 %. The greater slopes make the land vulnerable to soil erosion and thus, unproductive. Moreover, the rugged mountainous terrains kept the communities inaccessible (3). The coverage of motor-able roads, mobile phone network, television, and hydroelectricity in the country improved the flow of goods and services. Nowadays, modern agricultural technologies are the at disposal of Bhutanese farmers.

The rural mechanization in South Asia started 50 years ago (14), however, the journey towards farm mechanization in Bhutan is a recent phenomenon. The RGoB established Agriculture Machinery Centre (AMC) in 1983 to promote farm mechanization appropriate to Bhutan's terrains and ecology. In 2016, AMC was corporatized to provide better services to the farmers and renamed as Farm Machinery Corporation Limited (FMCL) (15). Up until now, FMCL has four regional FMCL delivering services to the farmers of whole Bhutan. With its vision to "Make farming an attractive livelihood

enterprise that is socio-economically and environmentally sustainable”, it provides numerous mechanical services to the farmers (16).

Today, some communities no more use oxen for ploughing agriculture field and it is gradually putting back with modern technologies such as two or four-wheeled power tillers. While traditional agriculture was labour-intensive and undertaken using local labourer in the past, labour shortage in the rural communities is one plausible reason for farmers to opt modern technologies. Another factor responsible for farm mechanization is due to farmers willingness to scale-up their production because of access to the national and global markets. Access to modern agricultural technologies helps farmers to shift from self-subsistence peasants to semi-commercial or commercial farmers in the country. Given the current trend of continuous conducive environment and farmers embracing technological change, entrepreneurial farmers are more likely to emerge in Bhutan.

2.3 Community Institutions

Informal social institutions were there since the early civilizations when hunter-gatherers organized themselves into groups to fulfil their common goals. In due course of evolution, social and economic conditions fostered the development of community institutions in various countries (17). However, the modern way of community institutions like cooperatives and farmers groups started in the early 1880s in England and gradually spread to other parts of the world. (18). As Bhutan remained isolated until the early 1960s, the country still inherits numerous social assets such as the values of togetherness, amity, reciprocity, helpfulness, and care for other living beings (19). Few prominent examples include the labour exchange system within the communities during peak farming seasons, local festivals and rituals (20) and the rotational arrangement of cattle herding in the pasture at the inter-community level (Northue tradition) (21). These examples show that Bhutanese communities heavily depended on informal social institutions characterized by kinship and neighbourhood relationships. In short, cooperation and collaboration are central to the survival of farmers in rural Bhutan. These informal institutions still exist today, but unfortunately, these social capitals are declining in the modern times. For instance, traditional rituals and ceremonies are declining both in frequency and intensity as the younger generations are less interested (22, 23). These days, rural farmers increasingly depend on government institutions and non-governmental organizations.

However, in the recent years, the formal community institutions are emerging in the country. The RGoB enacted first Cooperative Act of Bhutan in 2001 and made amendment in 2009. Later in 2010, the government also established the Department of Agriculture and Marketing Cooperatives (DAMC) under the Ministry of Agriculture and Forest (MoAF). The DAMC facilitates the development of the Farmers' Groups (FGs) and cooperatives in Bhutan (24). Ever since then, cooperative development has been gaining momentum in the country. As shown in Table 1, there are 57 registered cooperatives with 2,336 members and 370 registered farmers' groups with 7,532 members (25).

Table 1. Numbers of Cooperatives (Coop) and Farmers Groups (FGs) in Bhutan from DAMC (25)

Years	Sectors				Total Coop (FGs)
	Agriculture Coop (FGs)	Livestock Coop (FGs)	Forestry Coop (FGs)	Non-RNR Coop (FGs)	
2010	1 (07)	4 (05)	0 (04)	0 (01)	5 (17)
2011	2 (13)	4 (19)	0 (02)	0 (00)	6 (34)
2012	2 (54)	3 (33)	1 (15)	0 (00)	6 (102)
2013	4 (09)	5 (07)	0 (00)	3 (00)	12 (16)
2014	1 (44)	2 (16)	0 (20)	1(01)	4 (81)
2015	0 (39)	3 (13)	0 (01)	1 (00)	4 (53)
2016	0 (24)	3 (18)	1 (00)	2 (00)	6 (42)
2017	4 (10)	7 (14)	0 (00)	3 (01)	14 (25)
Total	14 (200)	31 (125)	2 (42)	10 (03)	57 (370)

The successful institutions improve the livelihood of not only its members but also of non-members in the community (26). Formal community institutions are generally regarded as a vehicle for country's development (27). The RGoB has enormous faith in the benefits of these institutions and creates a conducive environment for the community institutions development. Today, Bhutan experience institutional transformation from traditional kinships and neighbour social networks to formal community institutions. These formal institutions have legally allowed marginal farmers to group together and access business opportunities, which otherwise impossible to exploit opportunities individually. The

institutions guarantee farmers with inputs and outputs market, thereby, encouraging to produce quantity and quality of agriculture products. The successful community institutional arrangement in the country has potential to generate entrepreneurial farmers in the future.

2.4 High-value Products

Agriculture in Bhutan used to be closed self-subsistence farming. Farmers used to cultivate crops just sufficient to feed their family with little or no surplus to trade. To supplement their living, they kept various animals such as cattle, horse, chicken, and pigs for milk, meat, eggs, draught and manures. Yaks and sheep at the higher altitude also provide with wool for clothing. In addition, farmers collected and used a variety of forest products especially Non-Wood Forest Products such as wild vegetables (28). However, in the past, farmers practised integrated self-sufficient farming with low yielding crops and animals. Their farming practices were also based on indigenous knowledge passed through generations. Virtually, farmers did not capitalize on value addition of their products due to lack of adequate market in the past.

One prominent feature of traditional farming includes shifting cultivation. Until the 1990s, farmers practised shifting-cultivation, where, they cleared and burned a patch of forest for the plantation of cereal crops. They use the land for few years and shift to other places allowing the cleared forest to regrow. After following the land for about a decade or more, farmers return to the abandoned land and the cycle continues (29). Amongst others, population growth, forest conservation policies, and better alternative opportunities put an end to the age-old tradition of mass shifting cultivation. Similarly, nomadic herders dominated the livestock domestication, particularly in northern Bhutan. These nomadic herders seasonally migrated from place to place along with their animals (30). Therefore, they had no permanent settlements (31). Due to limited alternative opportunities, nomadic herders still prevail in the pocket of higher mountains in Bhutan. However, farmers in the temperate and the sub-tropical regions have already shifted to the in-house rearing of animals. Marketing of the products used to be barter systems, the exchange of products with products among communities in the country. However, the barter system is reduced to a very minimum level in the country (32). The globalization and technology increase the flow of goods and services both within and beyond the country's geographical boundary.

There is a gradual change towards high-value cash crops and hybrid animals from low yielding ones. Farmers, nowadays, produce agriculture products particularly vegetables which are of high demands from the nearby urban centres. Moreover, owing to the better infrastructures and access to national, regional, and international market drives farming towards commercialization. For instance, low yielding breeds of cattle are gradually being replaced by high yielding exotic breeds such as Jersey and Brown Swiss (31). As shown in Figure 2, shows the rising population trend of improved cattle and declining trend of local cattle. Furthermore, the overall loss of traditional varieties of crops in a time period of about 20 years is said to be 28.57% (33).

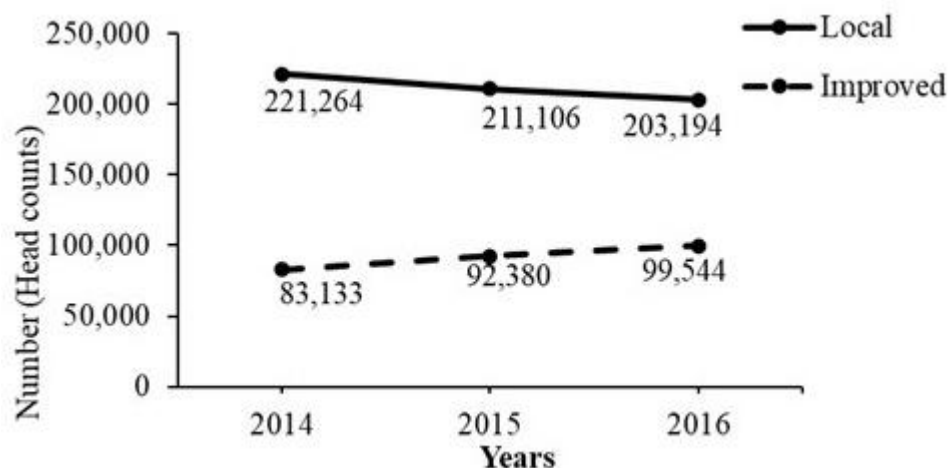


Figure 2. The trend of local and improved cattle in Bhutan from NSB (2)

There are other studies showing a shift in Bhutanese farmers' preferences from low-value crop (wheat) productions to high-value crop (potatoes) (33, 34). Today, one can observe that farmers also grow cash crops such as apples, oranges, areca nut, hazelnut, and cardamom. Additionally, ginger, chillies, red rice, and vegetables are other popular cash crops grown for commercial purposes. Thus, agriculture is transforming towards high-value crops and animals which is also known as value intensification. Another form of emerging agriculture intensification in rural communities is the plantation of vegetable after harvesting paddy. Both value intensification and intensification in the form of double cropping are the indicators of emerging entrepreneurial farmers in the country.

The very recent agriculture transformation is that Bhutan aspires to become 100 % Organic Agriculture (OA). Bhutanese agriculture inherited much of its traditional agricultural practices, which are very much like OA. Due to a smaller scale, it makes difficult for Bhutanese farmers to compete in the international market. Thus, going OA is a value addition for the existing products to gain the marketing advantages. Additionally, OA has numerous other strengths and opportunities. Having said that OA has weakness and threats as well (35). As of now, there is lack of adequate empirical studies on the success of OA in Bhutanese context, thus, future of OA is still unclear (6). Yet, Kobayashi, Chhetri (5) stated that there is a shift in people's consumption patterns and priorities, leading to a material and symbolic re-ordering of agricultural practices. Farmers are likely to adopt OA and derive the intended benefits, provided responsible stakeholders incorporate their products into the national and international market. Therefore, OA will not only encourage farmers to produce organic products for their consumption but also the production of organic products to fetch premium prices. Therefore, the success of OA model has potential to boost entrepreneurial farmers in Bhutan.

2.5 Farming Aspiration

The RGoB motivate youths to take- up agriculture as a preferred career option. Despite concerted efforts, educated lots show reservation to take-up farming upon their graduations. There is a general perception of parents and children that the farming is a difficult and not promising career. Thus, there is a general aspiration in the society that youths should join civil service or at least white-collar jobs after their studies. It reveals that identity as a farmer in Bhutan is still unwelcoming for the educated lots. These beliefs are associated with traditional agriculture practices when it was self-subsistence farming, uneducated farmers, and minimal mechanization.

However, of recent, university graduates are taking-up agriculture as their full-time job and inspiring, their ventures are satisfactory. One such example is "Youth in Agriculture Program" - a commercial vegetable farming initiated by a group of youths (36). It may take some time for society to fully accept farming as a preferred career option, but the journey towards entrepreneurial farmer by educated ones have already begun in the country. One can hope that the success of these youths-initiated farms will inspire other educated lots and likely to have ripple effects. Given the continuous entrepreneurship education (37, 38) and favourable other environments including infrastructures (39) have the potential to motivate youths towards agriculture farming.

3. CONCLUSION

Bhutan remained hidden in the Himalayas until recently and inherits much of its traditional culture and values. The traditional agriculture practice still prevails in the country, but at the same time, various components of the agriculture system are evolving. This article discussed five components of Bhutan's agriculture contributing to the transformation from peasants to entrepreneurial farmers. Agriculture system is in the process of continuous evolution making it difficult to predict future agriculture in Bhutan. However, it is evident that semi-commercial and commercial farmers are replacing self-subsistence peasants. Given the rate of globalization and improvement in agribusiness environment, entrepreneurial farmers are likely to boost in the country.

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