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DISCUSSION PAPER

COMMERCIALIZATION OF AGRICULTURE IN NEPAL

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INTRODUCTION

Associated with low level of economic growth, Nepal is characterized as a country with a large portion of rural population, high poverty rate and subsistence agriculture. On various levels, all of these factors are interconnected. About eighty percent of the country's population lives in rural areas and agriculture is their primary livelihood where the rural poverty rate is over three times that of urban areas, 35 percent compared to 10 percent (NARC, 2010). This poverty rate can be associated with the subsistence nature of the major means of livelihood in these areas, agriculture. Seventy-eight percent farm holdings have been reported to be producing mainly for home consumption. The proportion of holdings that produce mainly for sale is not even 1 percent, while little over 21% farm families use their farm produce almost equally for both sale and home consumption (CBS, WB, DFID, & ADB, 2006). However, even when such a large portion of the population is into agriculture, being self sufficient on food has also not been a reality for a large section. An estimated 60 percent of households cannot meet their own food needs, especially in mountainous areas, and agricultural production only meets food requirements for three-to-eight months per year (NARC, 2010). Hence, the involvement of the majority of the population in agriculture is very important to analyze in context of social and economic development of Nepal. Agriculture, which employs two third of the country's labor force and contributes to more than one third of Gross Domestic Product (GDP), is the main source of food, income and employment for the majority, especially for the rural population. Hence, agricultural sector is key in issues of economic growth, poverty alleviation, better living standard of the Nepalese people and overall Human Development.

In this context, Commercialization of agriculture has been proposed as a feasible option for economic growth and poverty alleviation. Since the formulation of the Fifth Five-Year Plan (1975–80), agriculture has been the highest priority because economic growth was dependent on both increasing the productivity of existing crops and diversifying the agricultural base for use as industrial inputs (Savada , M. A. , 1991). The adoption of the 20- year Agriculture Perspective Plan (APP) in 1997 reflects the emphasis the government has given on the agricultural sector and its commercialization.

However, despite all efforts to bring about revolutionary changes and growth in the agriculture sector of Nepal, the attempt has not fully translated into reality. Hence, from policy issues to institutional challenges to practical bottlenecks, this paper attempts to analyze various aspects of commercialization of Agriculture in Nepal.

RATIONALE

With a huge percentage of the population in Nepal living under conditions of abject poverty and social deprivation, poverty alleviation is the biggest long-term development challenge for the government. To meet this challenge, Nepal has to focus on achieving a high level of economic growth. Currently, the economy is largely remittance driven and it has been yet another challenge to get the remittance money invested in the productive sector which could escalate the much needed economic growth of Nepal. In this context, agriculture commercialization has been looked upon as an important option in development agendas, both economic and social. While the share of agriculture in total gross domestic product (GDP) has been declining over the years, it still contributes to one-third of the GDP. But then, over the years the overall economic growth rate and the agriculture sector growth have been going downhill. Since agriculture contributes to more than one third of the GDP, this sector not being able to grow as planned has hampered the picture of broader economic growth of Nepal. Overall economic growth rate declined from 4.8 percent in the 1990s to 3.2 percent during 2001-2006. Agriculture virtually stagnated -- agriculture sector growth rate was 2.7 percent per annum in the 90s and 2.8 percent during 2001 to 2006. Marred by low labor productivity, agriculture is not able to contribute to the economy its due (33 percent share of GDP with 66 percent of country's labor force employed in the sector (Karkee, M., 2008). Hence, this stagnation in the agriculture sector has a huge part in impeding the economic growth of Nepal and fight against poverty and thus commercialization of agriculture has to be extensively discussed.

While discussing the agriculture sector of Nepal, there are opportunities and challenges both. Nepal hosts

diverse agro-ecological zones and is promising for exports of off-season horticulture, niche products, and non-timber forest products like medicinal plants. Located between India and China where more than one third of the world population live, there is a huge market. Nepal's recent entry into the WTO presents opportunities too. However, this comes with challenges such as meeting food safety rules, animal health regulations, and quality standards and other clauses. In terms of challenges, a mountainous terrain and poorly developed road network restrict access to markets, constraining agricultural growth and diversification into higher value added and non-farm activities. Weak and poorly integrated institutions and inadequate technical support for supply chain development have further limited marketing opportunities.

For the last few decades, the Government has given high priority to the development of agriculture and a lot of external support has been poured in to the sector as well. Despite this, the performance of the sector has been disappointing and agriculture production figures have remained stagnant. This poor performance has been attributed to institutional weaknesses, which have led to lack of prioritization, poor delivery of inputs, inefficient utilization of human and financial resources, fragmentation of land ownership etc. However, there is considerable scope for expanding agricultural production, which could improve agriculture to raise rural incomes and create a multiplier effect for the development of other sectors in addition to having an immediate impact on the reduction of poverty.

Since the government's endorsement of Nepal Agriculture Perspective Plan (APP) of 20 years (1995-2014), various contexts, policies and institutional provisions have changed. The conflict situation that emerged after 1996 and the recent political changes after the second People's Revolution 2006 have changed the larger context of development. Similarly, private sector and non-government sector have now become more involved in the APP's plan duration. Similarly, institutional changes have taken place, which has brought about devolution of agricultural extension services to the District Development Committee (DDCs) under Local Self Governance Act, 1999. Likewise, Nepal's recent membership in World Trade Organization (WTO), endorsement of the new Agricultural Policy 2004 and other sectoral policies like Water Resource Strategy 2002, Irrigation Policy 2003, Fertilizer policy 1999, amendment of the Forest Act 1992 in 2002 and deregulation of fertilizer trade etc. are some important changes that have taken place during the time period. These have directly or indirectly influenced APP's implementation. While some of these policies and institutional arrangements are consistent to APP, others may contradict. Hence, it is important to analyze this massive plan on various levels. Some important questions in this regard are, in this changing context, is APP still significant, relevant and well performing? How successful has it been so far and what are the factors that have contributed to the performance of APP? The recent National Agricultural Policy, which updates the APP, places commercialization, private sector led development, and trade at the forefront of the development agenda and on the light of these questions and contextual developments, this issue needs to be discussed extensively.

Commercialization of Agriculture has been deemed necessary for a long time in the growth planning of Nepal. However, it requires action along several factors that include policy support, capacity building, investment in research, human resources and agricultural infrastructure, market information for producers and more.

STATUS UPDATE

Agriculture is the most dominant sector of the economy employing more than 70% of the workforce and generating about 33% of the total GDP whereas industries and services account for 15% and 52% of the GDP respectively. The central challenge for rural development in Nepal is to shift from subsistence to a commercial economy (CIA Fact book).

Nepal's agriculture is largely based on low-value cereals and subsistence production, with a mere 13 percent of output traded in markets. Although there is considerable scope for increasing productivity and value-added the sector's current 40 percent share in national GDP is declining (The World Bank Group, 2011). Despite an increasing reliance on remittances from laborers abroad, the absence of economic opportunities outside subsistence agriculture keeps most Nepalese poor. As World Development Report, 2008, suggests improving productivity agriculture and shifting people from agriculture is essential for taking out people from extreme

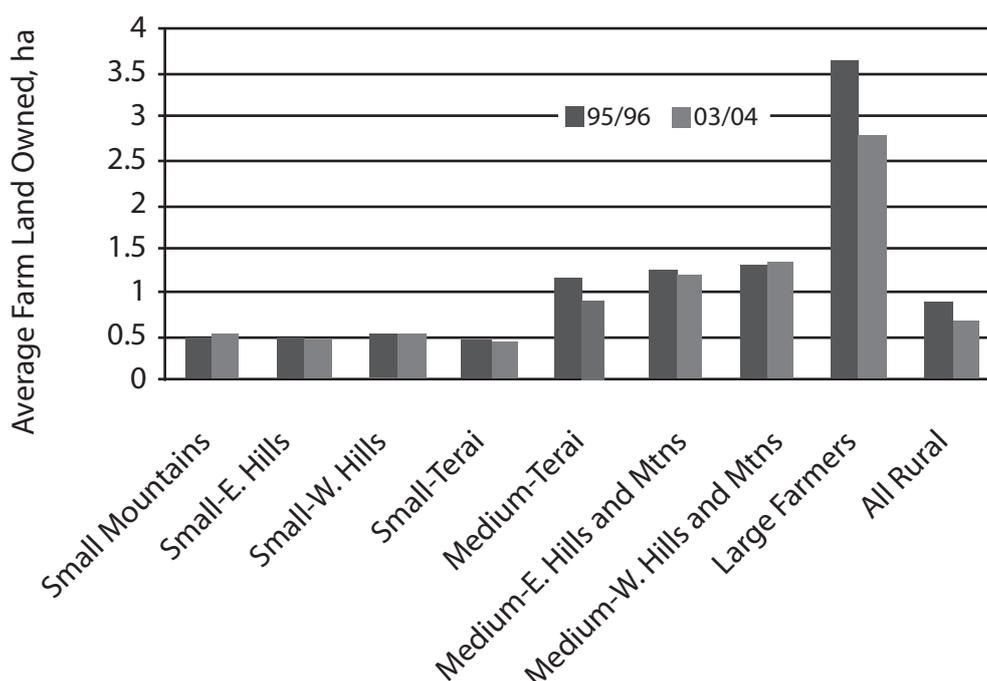
poverty and hunger and achieving Millennium Development Goals. Therefore, creating opportunities in non-farm sector and improving productivity and value addition in agriculture through commercialization is important.

Investment is the most essential component to transfer subsistence sector of agriculture into productive sector. As per the report of the UN Conference on Trade and Development (UNCTAD), foreign direct investment (FDI) in agriculture tripled globally in eight years, from US\$ 2 billion in 2000 to US\$ 6 billion by 2008 despite the global recession. To facilitate FDIs globally in this sector, principles for responsible agricultural investment (RAI) have been developed under the aegis of the World Bank, International Fund for Agricultural Development (IFAD) and Food and Agriculture Association (FAO). Even Nepal has lots of potential in agriculture sector but the unfavorable investment policy and political unrest Nepal is not being able to attract foreign investment to a satisfactory level.

Following table demonstrates the low agricultural productivity growth of Nepal in comparison to other countries:

Crop Yields (mt/ha)	Rice Paddy	Wheat	Sugarcane	Pulses	Maize
Nepal					
Mountains	1.9	1.6	14.0	0.8	1.7
Hills	2.5	1.8	23.7	0.8	2.0
Terai	2.6	2.4	41.8	0.8	2.3
India					
Uttar Pradesh	2.0	2.6	58.2	0.9	1.1
Punjab	3.7	4.2	57.9	0.9	2.7
Vietnam	4.9		55.0	0.7	3.7
China	6.3	4.5	82.5	3.0	5.4

Similarly, the productive use of land has been very limited in Nepal. Average land holding declined from 0.88 ha in 1995/96 to 0.66 ha in 2003/04. 57% of the farmers own less than 0.5 ha of land whereas 16% don't own any land at all. Following table shows the status of access to land in Nepal:



LEGAL FRAMEWORK OVERVIEW

Agriculture Perspective Plan

Nepal Agriculture Perspective Plan (APP) which was prepared for 20 years starting from 1995 is the government's pNepal Agriculture Perspective Plan (APP), which was prepared for 20 years starting from 1995, is the government's primary policy for agriculture modernization and growth. APP was prepared with the technical assistance from the Asian Development Bank (ADB) to be implemented from the Ninth Five Year Plan (1997/98-2001/02). In 1996, a National Support Committee (NSC) was established at the National Planning Commission (NPC) to oversee the implementation of APP. Besides, an Independent Analytical Unit (IAU) was also established at the NPC with ADB's technical assistance, which acted as a secretariat to the NSC. The primary objective of IAU was to monitor the implementation of the Agriculture Perspective Plan.

The Tenth Plan (2002-2007) also endorsed the APP and stressed for the need to increase the productivity of the sources of the agricultural production. The Tenth Plan sought to achieve this objective by integrated use of the inputs and services as envisaged in the APP. It also envisioned gradually expanding and transforming the crop, livestock and commodity specific pocket areas into commercial agricultural growth centers.

APP received wide support from all quarters including political parties, aid agencies, line ministries and key stakeholders actively involved in the development of the agricultural sector. However, it was also criticized for its inadequacies and inconsistencies in addressing a number of issues and priorities related to agriculture sector such as the development of groundwater resources, capacity for rural road development. APP was a key step in addressing the economic growth issues of Nepal. With its broad scope APP addressed 80 percent of the labor force and more than 40 percent of the national Gross Domestic Product. Besides, APP also had commitment to deal with policy, institutional and structural constraints that were related to the poor performance of the economy in general and agricultural sector in particular.

The delayed implementation had a negative impact on the effectiveness of the APP. Change in context, policies and institutions during the implementation phase as opposed to the planning phase has rendered the APP irrelevant and ineffective. Promulgation of the Local Self-Governance Act 1999, deregulation of fertilizer trade, promulgation of Water Sector Strategy 2002, Irrigation Policy 2003, and National Agricultural Policy 2004 are some of the things that had an impact on the implementation of APP.

These changes and the failure to allocate resources efficiently and effectively compelled the government to revisit the APP and made adjustments to accommodate the new context. The Government has committed a more practical, implementable adjusted plan (APP-IAP) in 2004. Agriculture Sector Performance Review (ASPR) has also recommended the government for reformulating APP to adjust its general strategy to accommodate all the changes that took place after the formulation of the APP.

Agro-Business Promotion Policy

Agro-Business Promotion Policy was formulated in 2063 BS with the objective of transforming the current subsistence oriented and dispersed agricultural production system into a modern, sustainable, competitive and commercial production system. The policy intended to reduce poverty through agriculture commercialization along with import enhancement through agricultural development.

The policy incorporated the following programs within the framework of National Agriculture Policy 2004:

- Emphasis on establishment and development of growth centers based on geographical, technical and economic potentials
- Establishment of agro-product export areas, and Business service centers.
- Development of infrastructures required for agro-business promotion such as irrigation facilities, roads, collection centers, cold and frozen storage, cooling chambers, rural electrification etc through collaboration of the government, private sector, non-governmental organizations and civil society.

GOVERNMENT INITIATIVE AND ITS IMPACT

The Government initiated the 20 years strategic plan called as the Agricultural Perspective plan (APP) in 1995. The Primary purpose of APP is to accelerate the growth in the agriculture sector. Its target is to raise the agriculture GDP from 2.96 (1995-96) to 4.88% by 2011-2015 with the technical assistance from the Asian Development Bank (ADB). In July 1996, for the implementation National Support Committee (NSC) was established at the National Planning Commission (NPC). Consequently Independent Analytical Unit (IAU) was established at NPC under the technical assistance of ADB (TA 2618) to monitor APP implementation.

After the government's decision to execute the APP beginning from the Ninth Five Year Plan (1997/98-2001/02), it was restructured to assist its integration in the ninth plan. For this, ADB TA 2618 to the Government of Nepal was extended to the original APP drafting institutional JV (JMC and APROSC 1997). Nepal Interim Agriculture Perspective Plan (IAPP) is, thus, a reorganized progressing adaptation for a first five-year phase of the APP (1997/98-2001/02). For the intention of this study, APP means the statements prepared in the APP main text and its supporting annexes; and the statements made in the IAPP (1997/98-2001/02) which this study treats as a natural addition of the main APP.

The Tenth Plan (2002-2007) being the country's Poverty Reduction Strategy Paper (PRSP) approved the APP and pressurized for the requirement to raise the output of the sources of the agricultural production by incorporated use of the inputs and services as visualized in the APP. Furthermore, it also focused on regularly increasing and altering the crop, livestock and commodity precise pocket areas into commercial agricultural expansion centers.

The implementation onset, apart from its delay, different contexts, policies and institutions has changed throughout the execution phase. Official declaration of the Local Self-Governance Act 1999, freeing fertilizer trade from regulation, official declaration of Water Sector Strategy 2002, Irrigation Policy 2003, and National Agricultural Policy 2004 are some of the examples in this respect. These have directly or indirectly prejudiced APP executions. Despite the fact that some of these policies and institutional arrangements are dependable with the APP's envisaged policies, some others disagree with it and even amongst themselves. Similarly, some policies have become outdated because of latest changes in the policy, institutional and regulatory and legal framework arising primarily out of new international treaty obligations and commitments.

INTERNATIONAL EXPERIENCES

New Zealand

Overview

Although population-wise, New Zealand is a very small country, it's a big player in the international agricultural trade. Farmers of New Zealand are highly competitive on the world market even though the government doesn't provide any subsidies or price support mechanisms to them. Dairy products, meat, wood and wood products, fish are the major exports of the country. Over the past 10 years, New Zealand's agricultural sector multi-factor productivity has grown at a rate of 1.8% per year, double the rate for the economy as a whole. As in the longer term productivity is what determines the economic growth and international competitiveness of a country, this growth in productivity in agriculture is going to be important to New Zealand's sustained economic growth.

The gross revenue from the agricultural sector stood at \$18,926 million for the year ended March 2008. Much of this would have been spent in cities and towns whereas \$10696 million was used for intermediate consumption. Similarly, \$2219 million was paid for wages and salaries expenses whereas \$3359 million was spent on interest expenses. New Zealand's agriculture made a contribution of 5% to the GDP i.e. \$8230 million excluding downstream processing. When downstream processing is included agriculture contributes about 15% of total GDP. (http://www.fedfarm.org.nz/about_us/farmingfacts)

Following table shows farming's share in New Zealand's GDP from 1960s to 1990s:

Table 1: New Zealand: farming's share of gross domestic product

March years	Farming (NZ\$ million)	Total economy (NZ\$ million)	Share (%)
1960-61	410	2,813	14.6
1965-66	560	4,012	13.9
1970-71	590	5,832	10.1
1975-76	1,071	11,668	9.2
1980-81	2,161	23,002	9.4
1985-86	2,891	44,719	6.5
1990-91	3,912	73,126	5.4
1995-96	5,009	91,461	5.5
1996-67	4,992	95,206	5.2
1997-98	5,154	98,247	5.2
1998-99	5,188	98,960E	5.2

E = Estimate.

Source: Statistics New Zealand, Ministry of Agriculture.

Reform

New Zealand's agriculture reform which was initiated in 1984 is one the most effective success stories in agriculture commercialization and development around the world. Starting in 1984 New Zealand phased out and discontinued most of its subsidy programs in agriculture in favor of free trade policy. It remains among the few OECD countries to abandon the price systems in agriculture and bring it into the domain of free markets and free trade. As a result of the reforms, New Zealand's agriculture has seen a huge increase in productivity and a larger contribution to other sectors of its economy. Although it faced some problems of adjustments to the new regime in the short term, New Zealand has shown how agricultural producers can adjust to changing market conditions and lower or zero subsidies and yet maintain incomes at reasonable levels.

Prior to the reforms of 1984, New Zealand had a highly regulated financial market which compelled the majority of term farm institutional lending to be done through four trading banks and the farm merchants who were also the sources of seasonal capital. These financiers lacked rural sector financing skills due to which most of the lending decisions were made on the basis of sound financial positions and ability to repay debt. After the reforms however, a major seasonal lending agency set about restructuring firstly its own portfolio, and secondly farm balance sheets.

New Zealand's agriculture reform was initiated and mostly implemented through the 1984 budget. The 1984 Budget made the following provisions for reform:

1. The general principle of the new government that reductions in assistance to land-based industry would occur at the same speed as in other sectors: 'the objective is to reduce or remove subsidies on inputs where these subsidies have discriminated between farmers or between land uses'. The reference to reform at the same speed as other sectors was a veiled warning to the farmers' union that it would be treated equally with other sectors. In the event, the agricultural sector was reformed first, then the finance sector, then the government sector. The labor market came last, some five years later.

2. The return to market principles would be achieved by:

- phasing out price support
- abolishing input subsidies
- providing credit at realistic interest rates

3. Concessionary farm loans through the Rural Bank would be terminated.
4. Interest rates on government funded rural lending would be progressively brought in line with market rates
5. Use of the Government Loans Account to fund farm lending would be phased out by 1986–87 so that all new borrowings would be funded at market rates.
6. All fertilizer transport subsidies were abolished from the night of the Budget and the fertilizer price subsidy would terminate on 31 March 1986.
7. The first year investment tax allowance for new machinery and buildings was abolished.
8. Services provided by the Ministry of Agriculture were to be charged out at full cost.

The new thrust of agricultural policy was to:

- abolish input subsidies
- phase out farm credit concessions
- increase charges for government services
- reduce distortions in taxation provisions
- charge more realistic interest rates on marketing board trading
- wind up stabilization accounts.

(Source: New Zealand's Budget of 1984)

1985 Statement

As a continuation to the reforms, in a statement in 12 December 1985, New Zealand announced the proposal of phasing out the tax allowance for capital expenditure on farms gradually. The statement said: 'these tax changes go a long way to ensuring that land-based activities are taxed as a normal activity.

They will provide a sound economic basis for continuing investment in the industry in the medium and the long term'.

Marketing Boards

Marketing boards which were a prominent part of New Zealand's agriculture were changed significantly in 1984 to work according to the free market principles. The Supplementary Minimum Prices Scheme was terminated from 30 June 1984. In December 1986, the low interest trading account held at the Reserve Bank by the Dairy Board was withdrawn and \$750 million of the overdraft was converted to a subordinated loan of \$150 million to be paid back to the government. Provisions were made for future operations to be funded through private sector alone.

The government stopped financing the Wool Board as well as The Meat Board and they were directed to raise their finances from private sector. As a continuation to the reforms, the 1986 Budget decided to wind up all the Reserve bank reserve accounts of these boards.

The reforms can be summarized as:

- Farm producers were required to pay commercially determined prices on the inputs they used, to accept product prices determined by free market interchange, to pay the full cost of loan money and to accept stabilization arrangements where the full opportunity cost of funds put aside was met.

China

China is the world's second largest economy and its most populous country, home to 1.3 billion people or 21% of the Earth's total population. Agriculture is an important economic sector of China, employing over 300 million farmers. China is the largest producer of farm outputs in the world. Rice, wheat, potatoes, sorghum, peanuts, tea, millet, barley, cotton, oilseed, pork and fish are the major agricultural products of China. However, it faces a serious challenge in providing food for all of its citizens as it has only 10% of the world's arable land and only one quarter of the average world water resources per person. (OECD, 2005)

"Great Leap Forward" campaign initiated by Mao Zedong in 1958 brought Chinese agriculture under the complete government control. The "Great Sparrow Campaign" which sought to eliminate sparrows from all over the country had a huge negative impact on the agricultural output of the country. Forced industrialization, banning of private food production, compulsory collective eating, and collectivized farming created huge farming inefficiencies which resulted in The Great Chinese Famine. At least 14 million people have been estimated to have died in the famine.

Reform

Agricultural reform has therefore been a major pillar of the fundamental economic reforms undertaken by China since 1978. The reform has resulted in freeing the agricultural sector from the grips of central planning and transitioning towards a market economy. Hitherto prevalent commune system was replaced by the Household Production Responsibility System (HPRS) where individual families lease land from the collectives which ensured almost universal access to land among rural households. This in turn helped rural industries to expand and absorb a large part of farm labor. The reforms have achieved a significant rise in agricultural production together with a dramatic fall in poverty and a significant improvement in the amount and quality of food available.

The Household Production Responsibility System (HPRS) boosted production incentives, encouraged farmers to reduce costs, take risks, and enter new lines of production. Since early 1990s the economy began to grow very rapidly and consumers shifted their preferences from quantity to quality. So a new phase of adjustments started in the late 1990s and in the early 2000s when oversupply emerged on most agricultural markets, causing grain prices to fall and increased exposure to international competition stimulated further structural changes and the main policy objective shifted to raising farmers' incomes.

Although like other OECD nations such as Japan and South Korea, China provides subsidies to its farmers, the subsidy level is quite below these nations. The level of policy support to China's agriculture, measured according to the OECD's Producer Support Estimate (PSE) fluctuated at low levels through the 1990s, rising to 6% of gross farm receipts in 2000-2003, little less than a fifth of the OECD average of 31%. (OECD, 2005)

Green Revolution in East and South Asia

Green revolution was a major step in agriculture modernization and commercialization for Asia, especially for East and South Asia. It focused on agricultural productivity improvement and sought to increase production per hectare through introduction of packaged technology. The revolution was very successful in initiating growth in East Asian and South Asian countries like Vietnam, Korea, China and India.

The period of 1975 to 1985 was the peak period of the green revolution where in Asia alone yield rates of rice farms doubled. The rates however have declined since then.

While the green revolution was one of the primary engines for agro growth in many economies, the packaged technology was not necessarily extended equally among all rice farmers especially in Asia. Therefore, income inequality among different rice farmers still persists as an issue.

Contract Farming in Uganda

Contract farming can be defined as “agreement between farmers and processing and/or marketing firms for the production and supply of agricultural products under forward agreements, frequently at predetermined prices”. Contract farming has enabled smallholder farmers in developing countries to commercialize their farming operations through the creation of market linkages both domestically and internationally. Numerous case studies from Africa, Asia, Central and Latin America involving agricultural commodities such as sugarcane, cotton, oil palm, rice etc show that farmers with small landholding especially benefit from contract farming. It is so because contract farming allows them the access to production inputs, output markets, market development and other various benefits.

In Uganda the practice of contract farming used to be limited to plantation crops such as sugarcane and tea. But with its success in increasing the profitability of crop farming, reducing marketing risks and most of all opening up new markets both at domestic and international levels has inspired farmers to take up contract farming in other crops as well. Currently, the use of contract farming has spread to other agricultural commodities such as cotton, tobacco, sunflower, maize, organic products (cotton, coffee, sesame etc.), oilseeds, rice, honey, and poultry as well.

CHALLENGES OF NEPALESE AGRICULTURE

Nepalese agriculture primarily consists of small family farms, which are mainly subsistence oriented and yet not capable of supporting the adequate subsistence of the farm families. Food grains dominate the agricultural products with paddy being the primary crop all over the country. Despite more than 70 percent of the workforce being involved in the sector, agriculture in Nepal produces only about one third of the gross domestic product and till this date food self-sufficiency is not ensured. The greatest challenges faced in development of agriculture in Nepal are low productivity rates, traditional farming mechanisms, lack of commercialization and industrialization. Nepalese agriculture production had a virtual stagnation with 2.7 to 2.8 percent average annual growth rates for the past two decades. This is one of the reasons why poverty in Nepal is mostly an agricultural phenomenon.

Fragmentation of agricultural land is a major challenge to the commercialization and development of Nepalese agriculture. The average holding size of a farm is 0.8 ha. Almost half of the total farms have less than 0.5 ha of land, while those with less than 1 ha of land constitute nearly three-fourths of all holdings. And the average holding size of Nepalese farms is getting smaller with time. Between 1961 and 2001, the average holding size has declined by 28 percent (Karkee, M., 2008).

A small segment of Nepalese agriculture has been commercialized and diversified. This segment of Nepalese agriculture, however, is unable to scale up or grow because of the lack of industrialization of the sector. One of such sectors is the dairy products. Until a few years back Nepal used to have ‘Milk Holidays’ due to lack of enough milk processing enterprises. The situation forced dairy farmers to shift to other occupations or raise cross breed cows with lower milk yields. Now with the operation of two private sector enterprises and a public enterprise on milk processing, Nepal is facing a milk deficit of over 300000 liters every day. To fulfill the deficit, importing at least 10000 cows of improved breed is necessary. However, India restricts export of such cows. Talks on senior government level could resolve the issue. If allowed, the import could directly benefit dairy farmers as well as help save the country more than NRs. 10,000,000 everyday.

Several other constraints impede growth in agriculture. Nepalese agriculture still remains heavily dependent on the rainfall for irrigation as the required infrastructures for irrigation are yet to be built. This dependence on rainfall has adverse effects on the consistency of production. Nepalese agriculture is also heavily inclined to water intensive crop agriculture in a situation of inadequate irrigation facilities. Only about one-fifth of irrigable land has access to year round irrigation.

Lack of proper collection centers and storage houses for agricultural products is another major impediment

to growth of Nepalese agriculture. Lack of proper storage facilities is forcing farmers to sell their products at random prices (sometimes even lower than the production costs). They are forced to do so due to the fear of damage of products in the absence of proper storage facilities.

The government's policy of subsidizing fertilizers used in agriculture has resulted in unavailability of fertilizers on time. The shortage has forced farmers to rely on black markets for timely fertilizers. Black markets however impose an exorbitant cost on the farmers due to high prices and inferior quality of the fertilizers.

Agro-climatic diversity offers Nepal hills special comparative advantage in high value agriculture. However, taking advantage of such potential is limited by high transactions costs stemming from poor connectivity, deficiency of economies of scale, grades and quality compounded by weak agricultural R&D capacity (Karkee, M., 2008).

RECOMMENDATIONS

Problems of Nepalese Agriculture should be addressed with a three tier approach. The lower-income segment of the population engaged in subsistence agriculture needs to be provided with subsidies, infrastructures for their growth. Another segment of population engaged in agriculture would benefit more through policies aimed at commercialization of agriculture and doesn't need subsidies from the government whereas the third segment of population already engaged in commercial farming would benefit by policies conducive to industrialization of agriculture.

Farmers engaged in the subsistence farming could be helped through private sector, as private sector is willing and able to help them through loans and technology transfers. Nepalese agriculture could be looked upon through the bell curve approach with subsistence level farming at one end, industrialized farming at the other end and commercialized farming at the middle of the curve. Commercialized farming would occupy the majority of the curve.

Water intensive and external input dependent crop agriculture seems untenable for growth and income sustainability in the context of smallholder agriculture. Government should encourage a shift to high value agriculture from the current subsistence oriented agriculture. High value agriculture could take the pressure off the commonly cultivated food grains such as paddy and increase the opportunities for farmers with smaller land holdings through market expansion within and outside the country. It also gives more value to per unit water application and has higher employment elasticity.

Rather than subsidizing the recurring expenses like fertilizers, the government should focus on facilitating the enhancement of technologies used in agriculture. Providing tax concessions on import of tractors and other agricultural machineries would help to increase farmers' access to these technologies and enhance their productivity.

The government should also work towards increasing the role of private sector in the agriculture sector of the economy. Subsidy on fertilizers, which was intended to assist the farmers, has ended up with negative unintended consequences such as unavailability of fertilizers on time and farmers are being forced to inferior quality fertilizers at exorbitant prices in black markets.

The government in partnership with private sector should establish modern, well-equipped collection centers and storage houses with capacities of holding at least 10 thousand metric ton of each major crop in major market areas such as Jhapa, Chitwan, Bhairahawa and Biratnagar which are also close to agricultural areas. Establishment of such collection centers and storage houses would enable farmers to store their products until they get their desired prices in the market. A 'mundi' (local market for agricultural products) should accompany the collections centers so that buyers and sellers can conduct their transactions easily.

By encouraging the remittance incomes in the rural areas to be invested into high value agriculture, the government could not only boost the productivity and living standards of rural farmers, it could also encourage rural youths to be engaged into agriculture. Agricultural enterprise advisory services, enterprise schemes, enterprise management and skills trainings could be instrumental for attracting rural youths (including the back-home migrants) into agriculture.

The recommendations can be summarized in the following points:

- Three-tier approach should be adopted to address the problems of Nepalese agriculture.
- Mechanisms to ensure the effective participation of Private sector at different levels is imperative to help the farmers engaged in subsistence level farming.
- Government should encourage a shift to high value agriculture from the current subsistence oriented agriculture.
- Provisions of subsidies in agricultural fertilizers should be eliminated in favor of open access to private sector
- Government should establish collection centers and storage houses in major market areas so that farmers can easily store their products until they get proper prices for their products
- Government should provide tax concessions on import and application of machineries and technologies used in agriculture such as tractors.
- The remittance incomes in the rural areas of the country should be directed towards high-value agriculture

POSSIBLE IMPACTS OF THE PROPOSED SOLUTION

The three-tier approach would help the government formulate specific and relevant policies to the different groups of Nepalese farmers. Such approach would be more effective in addressing the problems of different levels and magnitude than the 'one size fits all' approach. Specific policies would help the low-income level farmers through subsidies and other benefits provided by the government. Whereas specific policies designed at the promotion of industrialization of agriculture would help the already commercialized and developed section of Nepalese agriculture.

Implementation of policies to shift the current subsistence oriented traditional agriculture towards high value agriculture would take the pressure off the intensively irrigated cereals and extend the opportunities for farmers with small-scale land-holdings. High-Value agriculture also provides better employment opportunities and less marginal employment rates.

Deregulating the fertilizer sector and elimination of subsidies will allow increased participation of the private sector in fertilizer import and distribution. Competition is likely to increase the availability and decrease the prices of fertilizers. However, deregulation without necessary infrastructure and institutional arrangements would not be very effective. This is shown by Nepal's experience of deregulating the sector in 1990s. Once deregulated, subsidized cheap Indian fertilizers and other adulterated and substandard fertilizers had infiltrated Nepalese market making it hard for the government agency and private sectors alike to sell quality fertilizers. [...] In addition to that, overall supply situation in remote areas could not improve for the obvious reason of high cost of transportation. Thus, while supply situation could not be improved as expected, widespread problems of fertilizer quality also surfaced. (Shrestha, R.K.1991). Challenges like these could have been met through certain measures such as appointing people with the expertise to monitor the quality of fertilizers at the local level. Hence, deregulation that can ensure timely and quality supply of fertilizers to the farmers should incorporate solutions to possible problems.

Establishment of collection centers and storage houses would empower farmers enabling them to withhold sale of their products until they get their desired prices in the marketplace. The farmers can also make transactions without actually moving their goods from one place to another, which reduces the transaction costs. It will contribute to solve the problems of farmers not getting fair prices for their products. However,

proper management and administration of these collection centers and the marketplace is a crucial issue that needs to be thought beforehand extensively.

ROLE OF PRIVATE SECTOR

Although agriculture policy started supporting commercialization from 1990s, the role of private sector has not been very high in the case of commercialization and the 12 years of conflict has also discouraged private parties to invest in the agriculture sector. However, due to the peace process, small enterprises to big companies are being attracted towards commercial agriculture. Post war, there has been tremendous growth in the involvement of private sector in the commercialization of agriculture. Coffee, herbal products, poultry farming, vegetables, cereals, rainbow trout, basic seeds, floriculture, ginger and dairy products are some of the products which are being commercialized by private sector.

Poultry sector of Nepal is one of the best examples that have been commercialized by private sector. Since 1990s, private sector has invested around sixteen billion providing job to more than 70,000 young people (Ghimire, 2010). Poultry farming also contributes around four per cent to the gross domestic product (GDP) of the national economy (RSS 2010).

Public-Private Partnership (PPP) Efforts

Agro Enterprise Center (AEC) was established in 1992 with the tripartite partnership between Government, Donor and Federation of Nepalese Federation of Nepalese Chambers of Commerce and Industry (FNCCI). One of the objectives of this center was the instructional development in the private sector investment for achieving High-Value/Low-Volume, cash crop based, market led, export oriented and private sector driven development strategy for Nepal.

AEC has been initiating wide range of programs, in "National Agriculture Policy 2004". Their activities have also been emphasized as potential PPP activities which includes, Research and Development Programs involving Food and Nutrition, Production, Collection, Grading, Storage, Processing and Packaging; Commercial Production, Processing and Marketing; Agro technology extension services; Market Information System (development, expansion and flow); Establishment and management of agricultural product collection centers, wholesale markets and Haat-bazaars. In agribusiness promotion policy 2006, PPP has further emphasized and elaborated the activities including launching of programs delineating specific commercial production areas, organic production and establishing agro-product export areas and business service centers.

One Village One Product (OVOP) program involving GON, FNCCI/Chambers, DDC/VDC; "Commercial Agriculture Alliance" as nonprofit company formed to assist "Commercial Agriculture Development Project" of ADB/GON involving FNCCI, Agro enterprises, DDC, Cooperatives, Market management committees are the recent achievement of public private partnership.

FURTHER DISCUSSION AREAS

As land management is one of the primary issues that needs to be dealt for commercialization and industrialization of agriculture, further discussions and debates on the issue is necessary. Although land fragmentation is widely recognized as having an adverse effect on the productivity of Nepalese farmers, there is no consensus on how to approach the problem among policy makers of Nepal.

The recommendations made in this paper have areas that need to be further discussed. Starting with the three-tier approach in the proposed recommendation, one of the major areas that need to be discussed is the detailed mechanism of making distinction between those low-income groups involved in subsistence agriculture who are deemed as needing subsidies and those are not. The institutions involved in the process

of making distinctions will require a sound research base on facts and data, which could be relied upon to deliver these subsidies. Also important is to discuss how to prevent other groups from taking advantage of the subsidies, which is a prominent case in subsidies, provided in any sector where rather than the targeted groups, other groups take advantage of it. Finally the kind and duration of the subsidies is another detail that has to be discussed. Discussion on either input subsidy would be effective or cash subsidy or other form of subsidy should be done. For a long time in the agriculture sector of Nepal, subsidies have been provided in fertilizers. Due to this, farmers face the problem of not getting the fertilizers on time and also that rather than those for whom the subsidies are intended, other groups with political or other connections take advantage of the provision. Hence, removing subsidies in fertilizers is one of the solutions that will ensure timely availability of the fertilizers to the farmers. However, in the 90's, in the process of deregulation, infiltration of cheap adulterated fertilizers has also been a problem. So the area to discuss is to help farmers ensure that they do not face major loss during the phase where market forces settle. As mentioned earlier challenges like these could have been met through certain measures such as appointing people with the expertise to monitor the quality of fertilizers at the local level.

As for the encouragement of private sector in the case, there are very good examples of how the private sector's involvement has helped in the commercialization of agriculture. These case studies and example need to be studied further to develop a mechanism of involving private sector for the commercialization of agriculture.

In case of providing tax concessions on import and application of machineries and technologies used in agriculture such as tractors, discussion should be done on how to make sure that this provision creates maximum benefit to the farmers. For e.g. in many cases tax concessions might not be enough. Access to credit to buy those machineries in case of low-income rural farmers might also be an important factor.

Finally, an overarching issue in the area of agriculture commercialization in Nepal is the case of infrastructure. Only about one-fifth of irrigable land has access to year round irrigation in Nepal which demonstrates the scenario of inadequate irrigation facilities. Other infrastructural issues are roads, collection centers, rural electrification etc. Without building proper infrastructure, the solutions and recommendations may not be able to produce intended benefits for the farmers. One of the primary reasons for the deregulation in fertilizers being unsuccessful was also due to the high cost of transportation in the rural areas. Hence, infrastructure being a major bottleneck in commercialization and development of agriculture, this has to be discussed in length at different levels. Discussion on role of the government and private sector regarding these issues is of crucial importance.

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