

Nexus between Agriculture Development and Poverty Reduction in Nepal

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This paper tries to describe the nexus between agricultural development and poverty reduction in the context of Nepal, where a rise in agricultural output significantly contributes in a variety of ways. The study has followed the content analysis technique as a secondary document published the by Government of Nepal and its agencies. It is limiting the Nepalese context by considering agriculture development as an independent variable and poverty reduction as an outcome variable following a descriptive cum narrative design. The minimum similarity index, academic integrity, and professional ethics are considered for their validity and reliability. Findings show that the increase in agricultural productivity in developing economies is often considered a deterministic source to reduce poverty. Despite this, there is a gap between the agriculture growth rate and the trend of poverty reduction from the early days to till date. Both economic growth

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and poverty reduction, in developing countries, are the result of agricultural development. Theoretically, institutional reform and investing in human capital are essential efforts for higher agricultural productivity and poverty reduction in Nepal. Empirically, the supply of essential inputs to the farmers and extension of agriculture marketing with a community cooperative model is inevitable for sustainable agricultural development and poverty reduction, which in turn would be the substantial foundation for sustainable development goals at local to global scale. This study implies that the, role of agricultural growth in the line with reducing the intensity of poverty is considerable. In order to get success in poverty reduction, human well-being, livelihoods, and balance rural-urban development, and make the national economy self-sustaining, the government should develop an investment-friendly climate by developing appropriate policy interventions. This study contributes to the agriculture transformation theories and attempts to fulfill the gaps in empirical and policy level in developing economies.

[**Keywords** : Agriculture development, Poverty reduction, Productivity, Economic development]

1. Introduction

Agricultural productivity growth is vital for high, broad, inclusive and sustainable economic development and poverty alleviation in developing countries. It has a multiplier effect on the economy by multiple ways for example, as an economic activity, as a livelihood, and as a provider to environmental services. Thus, it is considered as a versatile backbone for the structural transformation of a growing economy (de Janvry & Sadoulet, 2021). Despite rising urbanization, extreme poverty is still mostly a deprived rural phenomenon from local to global scale. Poverty is a cross-cutting issues in development domain. It has always been defined as an inadequacy of minimum necessities of a good life. Globally, two third population are poor, residing in rural areas and for livelihoods they depends on subsistence agriculture, forestry, small business, handicraft, livestock, fisheries and allied functions. The key to long-term poverty reduction for the world's poorest nations is shifting to a more diversified economy with higher growth. In developing economies, agriculture sector is a key driving sector of national economy and considered a leading sector that entails to almost all socio-economic activities (Lawal, 2011). However, it is rising agricultural output that has enabled underdeveloped nations to take the first step of the ladder to affluence and gear the economic

prosperity (DFID, 2005) which ultimately pressurized the reducing the poverty in reality.

The oldest industry in the world is probably agriculture. When we go through the human civilization, our ancestor started as a hunting and food gathering strategy, to seek their basic needs, then according to law of change, they started to food gathering technique via sedentary practice and became a cultivator. With the march of time, when human society became success to invention of science and technology in agriculture, for instance, innovation of plough and steam engine by James Watt (early 18th century) then traditional agriculture practice was turned into modern and systematic way (Badi and Badi, 2004). As a result, farming evolved into a more communal activity whereby individuals had to settle disputes and share the plough and its animals (Harford, 2017).

A series of agricultural and allied activities, for instance, production of crops, livestock, horticulture, sericulture, agronomy, agro-forestry, plantation, dairy and dairy products, mining, fishing, bee-keeping, rural electrification, storage and the rearing pigs collectively constitute agriculture. As a broad spectrum and system of production, it has significant impacts on tenant's livelihoods (Badi and Badi, 2004) and becomes an indivisible part of rural life. It is indeed, the agriculture sector can contribute to rural income, employment, livelihoods, food security and nutrition, food rights, fodder, agro-tourism and raw materials for agro-based industries.

In general, an agriculturally dominated poor country has never been success to reduce poverty, through subsistence agricultural system, in particular, no country has ever done it without accelerating the agricultural productivity in its initial stage of development. It reveals agriculture is the gateway point of economic growth and poverty reduction in a growing economy. For this, agricultural development efforts in many developing countries should realize the nexus between higher agricultural productivity and economic growth in their development strategies in order to have the greatest impact on poverty. Countries that have successfully decreased poverty have had strong agricultural expansion, especially increased productivity. A country would be able to feed its expanding population, create jobs, earn foreign currency, and supply raw materials for companies based on agriculture if its agricultural sector was robust and effective (Adhikari, 2015).

In Nepal, agriculture sector has been contributing to more than 60.4 percent households for their livelihoods (NPC, 2020), 65 percent employment (MoAD, 2022) and accounted around 26 percent share to gross domestic product (GDP) (MoF, 2022). Prior fiscal years revealed a large contribution of government spending on agricultural to the country's GDP, compared to Nepal's negligible domestic savings and foreign direct investment in the sector (Adhikari, 2015). These statistical picture shows that, the backbone of economic development is the agriculture sector in Nepal. In order to raise production and productivity, prior efforts to improve and reform the sector in a scientific manner must be intensified because it contributes to high and inclusive economic growth (NPC, 2020). Since early days to till date, it is popularly accepted, agriculture sector has been considering as the major yardstick of national economy, basically livelihoods, gross domestic production, saving and export. Although, agriculture sector has multiplier effect in relation to country's overall development (Ogen, 2007) however, both natural and anthropogenic factors have been affecting the level of agricultural development. This paper focused to examine the linkage between agriculture development and poverty reduction in Nepalese context.

2. Issues of the Study

Since early days to till date, land resource has been becoming a hope and glory of rural people, especially in developing countries. Farmer's daily life deeply and emotionally attached with arable land. In Asian context, development means rural development in general and agriculture development in particular, since most of the people in Asia live in rural areas occupying subsistence farming as a chief source of livelihoods. For low and middle income countries under the current global capitalistic economic system, appreciable increase in agriculture production is not only inseparable organ of economic development but also equally valuable to overcome the existing poverty and unemployment (Govinda et al., 2011).

History has demonstrated, agriculture played a significant role in Asia's relative success in eliminating poverty thanks to a strong commitment to developing agriculture through assistance for the efficient development of irrigation and the use of new technology (DFID, 2005). Nepal's agriculture is still in its early stages of development. Although agriculture employs the bulk of the people, it

is a low-productivity, low-competitive industry with minimal adoption of new technology. The majority of land is used to grow grains, there is a growing food trade deficit, and malnutrition is on the rise. Some industries, including those that process dairy, poultry, tea, vegetables, fisheries, and poultry, demonstrate dynamism, but generally, these encouraging indications aren't enough to uplift a lot of people just yet involved in agriculture to escape poverty, significantly reduce hunger, and ensure nation's ability to eat (MoAD, 2015).

The national development strategy of Nepal has been adopted in accordance with the long-term goal of establishing a society free from all forms of poverty in order to achieve high economic growth and economic and social equality for the reduction of poverty (MoF, 2021). During the Nepal's long-term economic vision (2020-2044), the general structural plan calls for raising the agricultural and service sector to 30% and 61 percent of GDP, respectively, while lowering the contribution of the agricultural sector to 9 percent (NPC, 2020). The fifteenth five year plan (2019/20-2023/24) of Nepal, proposed cooperative and community farming will boost agricultural output and productivity. Due to its complexity, food security considered as a multi-dimensional issues and requires convergent efforts form local to global scale. Among others, ending hunger, enhancing food security and nutrition, and promoting sustainable agriculture is a leading sustainable development goals (2015-2030). To guarantee the security of food and nutrition, agriculture will be modernized, mechanized, and industrialized (NPC, 2020). Recognizing the importance of food and nutrition security, the Constitution of Nepal (2017) has guaranteed food sovereignty. The Right to Food and Food Sovereignty Act (2018) has been enacted for the implementation of this provision. Despite these policy level practices, it is more challengeable, due to the impact of the Covid-19 pandemic, which is more severe than the economic loss brought on by the disastrous earthquake in fiscal year 2014-15, Nepal's economic growth has turned negative by 2.12 percent for the first time in the last 20 years (MoF, 2021). In Nepal, production, distribution, and the labor market are just a few of the economic sectors that have been impacted. As a result, poverty, inequality, and unemployment have all worsened.

Agriculture's contribution to Nepal's GDP has been declining over time. Unfortunately, rather than manufacturing or industry having quickly overtaken agriculture in productivity increases, the

decline in agriculture has been caused by static or declining productivity in the agricultural sector itself. Therefore, policymakers continue to be concerned with how to achieve a steady increase in agricultural productivity. The agriculture development strategy [(ADS) 2015-2035], a long term perspective plan, which serves as a blueprint for the entire development of the agriculture sector and sustainable development goals (2015-2030) have been adopted as guiding principles. The rights enshrined by the Constitution of Nepal (2015) has also been taken into consideration. To make the sector competitive, ADS places a strong emphasis on commercialization, mechanization, and diversification of agricultural and livestock products (NPC, 2020).

It is sometimes claimed that increasing agricultural output in emerging nations will decrease poverty more effectively than equal development from other industries. Growth in production must benefit someone because it brings in more money; nevertheless, it need not always be the poor (Warr & Suphannachart, 2021). There is broad consensus on a basic prerequisites required to agriculture development such as access to sufficient inputs, infrastructures, incentives, motivation, investment on human capital as well as good policy measures, scientific land reform and agricultural research that fosters gainful employment, generating non-agricultural growth and so on. Compared to other countries in South Asia, agriculture in Nepal has grown much more slowly. In order to augment family earnings, a large portion of the young generation either migrates to India and overseas as a labour migrants. This is a result of the poverty trap that many rural farmers are trapped in (Devkota & Upadhyay, 2013). However, there is much debate in relation to comparative importance and what the government ought to do to support them in substantial manner. Among the development practitioners, policy makers, planners and intellectuals have strong debates with regard to pillars of national development in Nepal, arguing different sectors such as agriculture, tourism, forestry, hydropower and so forth. Under this debatable context, this paper examine the role of agriculture in poverty reduction in Nepal focusing on what are the problems of agriculture? And what is the linkage between agriculture and poverty reduction?

3. Objective

The focus objective of this paper is to describe nexus between agriculture development and poverty reduction in Nepal.

4. Methods and Materials

This paper, methodologically, was proceed using content analysis technique as a secondary data published by Government of Nepal and its agencies, for instance, National Planning Commission (NPC), Ministry of Agricultural Development (MoAD), Ministry of Finance (MoF), Central Bureau of Statistics (CBS) and Scholarly published national and international research articles, reports and synopsis paper. This paper is limiting the Nepalese context considering agriculture development as an independent variable and poverty reduction as an outcome variable while employing a descriptive cum narrative design. Ethical considerations, for instance, minimum similarity index, academic integrity and professional ethics were followed for its validity and reliability.

5. Theoretical Foundation

Voluminous prior literature including empirical and theoretical have made by the classical and neo-classical economists have logically been argued that the development of agriculture sector and its productivity power directly contribute to higher economic growth and poverty reduction(Cervantes-Godoy & Dewbre, 2010).

Economists argued that agriculture plays an important role in development. Lewis (1954) who suggested that “there are large sectors of the economy where the marginal productivity of labor is negligible, zero, or even negative.” According to Lewis (1954), asserted that labour resources are tied to the primary sector with subsistence wage rate, and are a driving force for industrial development. Developing countries are dualistic in nature as such subsistence and capitalistic sector. Owing to surplus capital is available in capitalistic sector, transforming surplus labour forces form subsistence sector to capitalistic sector would resulting industrial development in capitalistic sector without reducing the average production in subsistence sector.

The contribution of agriculture sector to poverty reduction and economic development explanation made by Johnston-Mellor (1961) is still remain applicable for developing economies where agriculture dominated dualistic economy is exists. They suggested that the contribution of agriculture to overall economic transformation by multiple ways including i) agriculture provides food demand for rapidly growing population; ii) agricultural sector helps to minimize

imported capital goods by exporting primary goods and iii) agricultural sector influence to creates abundant chances to establish local market for the non-agricultural sector. Thoma Robert Malthus (1789) states in his theory, over population are always harmful. In contrast to Malthus, Esther Boserup (1981) believed ‘necessity is the mother of invention’, and asserted that increase in population pressure acts as an incentive to developing new technology and producing more food (Borjenson, 2007). Nevertheless, slower rates of population increase offer better chances for boosting living standards in developing nations. Schultz (1964) argued that “once there are investment and efficient incentive farmers will turn sand into gold (Lekhi, 2005)”. Transformation of traditional feudalistic production system which has low productive power into modern having higher productive through investing on human capital, land reform and supplying sufficient modern inputs can significantly contribute to poverty reduction in many developing countries.

6. Result and Discussion

6.1 Problems of Agriculture

In many developing economies, poverty, inequality, agriculture stagnation, malnutrition, food security and local economic development are ongoing challenges. Nepalese economy is not far from these issues. In Nepalese context, agriculture is characterized by dominance of small and marginal farm holders following traditional and indigenous farming technology which is regarded as low yielding technology (Devkota & Upadhyay, 2013). A series of problems and challenges are collectively pressurized on behalf of the accelerating path of agriculture development and poverty reduction in Nepal. For instance, ineffective coordination and collaboration among the stakeholders, low production and productivity, weak supply and distribution systems, uncontrolled food price hiking, geo-political structure, global warming, climate change and other natural disasters (de Janvry & Sadoulet, 2021), weak public awareness, shrinking local and indigenous seeds and inputs, brain-drain, brown-drain, uncontrolled rural-urban migration, excessive use of pesticides, dominating role of middlemen, agriculture as an inferior job, and so forth.

Over the last 10 years, population has been increasing at 1.35 percent annually (CBS, 2012) and currently 0.93 percent (CBS, 2021)

while agricultural land has decreased by 129 thousands hectares (CBS, 2013). Increasing population coupled with declining agricultural land and stagnant productivity of major cereals has led to food and self-insufficiency in some districts of the country. Out of 77 districts in Nepal, 34 district still facing the food crisis and experiencing self-insufficiency in food production (MoAD, FAO & WFP, 2020). Traditional land management hinders rather than helps communities implement sustainable land-use planning. The country's overall governance has been hampered by a lack of efficient land-use regulation and planning processes.

The efficient and timely use of inputs is the foundation of agricultural development. In order to use inputs, capital is crucial, thus farmers who lack it are unable to do so on time, which lowers crop yields. The main issues are a lack of resources and supplies necessary to increase agricultural output, as well as inadequate physical infrastructures such irrigation, highways, agricultural markets, cold storage facilities, warehouses, and collection centers (NPC, 2020). Over the years, the intensity of poverty in Nepal is continuously decreasing, it is not by the other factors but by the remittances. Prior research, government report, plan, policy, synopsis, and national and international conferences conclude that, the following are the major bottlenecks of Nepalese agriculture development which ultimately stimulate the intensity of poverty.

- ▶▶ Agriculture culture is getting inferior job;
- ▶▶ Brain-drain and brown-drain;
- ▶▶ Climate change and global warming;
- ▶▶ Concentration of land in limited people;
- ▶▶ Deficiency in government plan and policies;
- ▶▶ Deforestation, soil erosion and landslides;
- ▶▶ Fragmentation of land with increasing number of households;
- ▶▶ Haphazard of use of land without keeping in view of its impact in ecology, environment and food chain system;
- ▶▶ Increasing encroachment of public land by different individuals and organizations;
- ▶▶ Lack of workforce to work in the farm;
- ▶▶ No sufficient security, opportunity, empowerment and motivation to real tillers;

- No sufficient urban amenities to rural area;
- Poor physical connectivity between rural and urban areas;
- Political apathy, corruption and effect of crony capitalism;
- Vicious circle of political instability;
- Unsystematic urbanization in plain and highly fertile cultivated land and so on.

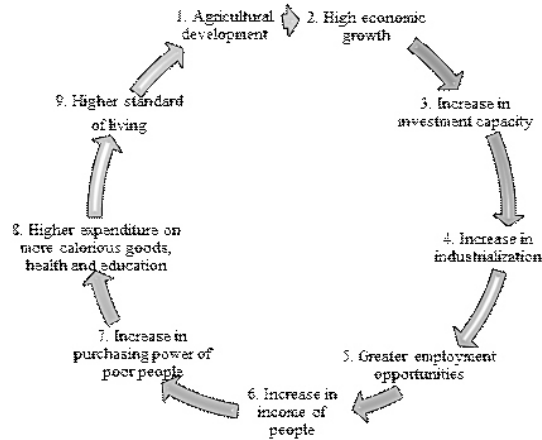
The problems cannot be sustainably addressed without agricultural transformation. Currently, 30 million population are in Nepal (CBS, 2021) and addressing their rapidly increasing food demand; there is no other substantial alternative way except agricultural development. Indeed, a comprehensive strategy that pursues multiple routes out of poverty-such as switching to high-value agriculture, decentralizing non-farm economic activity to rural areas, and providing assistance to help people leave agriculture-is needed to address income disparities in countries that are undergoing transformation. Together with other industries, agriculture can help to accelerate economic development, combat poverty, and preserve the environment (World Bank, 2008).

6.2 Agriculture Development and Poverty Reduction

In the 21st century, agriculture continues to a key tool of poverty alleviation and sustainable economic development(World Bank, 2008). A productivity revolution in smallholder farming is necessary because agriculture is to serve as the foundation for economic growth in developing economies where two-third population rely heavily on agriculture as a chief source of livelihoods. Economic growth plays a leading role in development discourse, although, particularly in recent years, studies have argued that while growth is crucial for reducing poverty but not sufficient. The developing country like Nepal where majority of people survive on agriculture (60.4 percent in Nepal) and accounted significant portion (24 percent in Nepal) of gross domestic product (MoF, 2021) would be the foci base of poverty alleviation and economic development. The role of agriculture in relation to poverty reduction can be examined by both demand-supply approach. The employment intensity of growth, adjustments in the employment structure toward higher productivity sectors, technology, the construction of assets for the poor, etc. are some of the factors that are anticipated to have an impact on the incomes of the poor on the demand side. The ability of

the underprivileged to participate in economic progress and gain access to newly created jobs is a crucial factor from the supply side (Rizwanul, 2004). The linkage between high growth and poverty reduction can be conceptualized by a conceptual framework presented as figure-1 below :

Figure-1 : Linkage between Agriculture Development and Poverty Reduction



Source : Author’s analysis, 2022

In general, agriculture has been successful in supplying the effective global food demand. Agriculture is a multidisciplinary concept that has many benefits for development. It can collaborate with other industries to accelerate economic growth, reduce poverty, generate employment, reduce import of food and preserve the environmental sustainability (World Bank, 2008). Agriculture is the gateway point of economic development and further it leads to multiplier effect to entire economy. In developing countries, agriculture as a primary sector produce raw materials to industrial sector as well as contribute to higher option to economic growth. Good economic growth, no doubt, further stimulate greater investment capacity and lead to industrial development in the economy. Industrial development creates more employment and higher income of the masses. More income is the fundamental basis of saving, capital accumulation, capital formation and strong purchasing power of people. Income for decent living would determine the access to sufficient calorie intake, health, and educational facilities; social identity, inclusion and economic empowerment. Due to this linkage effect, ultimately the intensity of poverty and its multiple forms shall be reduced.

A strong agricultural sector is the major yardstick of economic development and helpful to reduce poverty at all levels. High and broad economic growth, however, is not a sufficient for fighting against poverty; it is equally vital to consider the pattern and sources of growth as well as how its advantages are distributed among the masses in order to succeed in this endeavor. Agriculture is the gateway of economic prosperity, it is not only developed but also developing economies. It is an economic industry of all industries. Agriculture, as a primary sector, produce and provide essential raw materials to industrial sector.

7. Discussion

Growth of agricultural sector as compare to non-agriculture is , indeed, more important for the people living below the poverty line (Cervantes-Godoy & Dewbre, 2010). Gallup et al., (1997) reported that “every 1 percent increase in per capita agricultural output led to a 1.61 percent increase in the incomes of the poorest 20 percent of the population.” Similar, argument has concluded by Thirtle et al., (2001) “focused on a major cross-country analysis that, on average, every 1 percent increase in agricultural yields reduced the number of people living on less than US\$1 a day by 0.83 percent.” Being more optimistic, Lipton (2004) and Hazell (2005) conclude that “productivity gains are attainable with the correct policies and will have a significant impact on growth and poverty.” Cervantes-Godoy & Dewbre, (2010). China’s surprising victory over absolute poverty was really fueled by the agriculture sector. In Nepalese context, Adhikari (2015), concluded that the Government expenditure on agriculture is crucial for the national economy in relation to livelihoods and employment. Similar finding is found by Warr and Suphannachart, (2021), agricultural productivity growth has indeed contributed to poverty reduction in Thailand. In contrast, Maxwell (2004) “has argued that agriculture plays a limited role in driving growth and reducing poverty”. Similarly, Cervantes-Godoy and Dewbre (2010) argued that people in developing economies who depend on agriculture for a survival are often much poorer than those who involved in other economic ventures. For the majority of developing nations, agriculture has been a significant part of the national economy (Mongues et al., 2012), and it is crucial to almost all social and economic activities worldwide (Lawal, 2011). This paper claims that growth in agricultural incomes obviously

contribute to reduce poverty particularly in Nepal where agriculture considered as a major source of gross domestic product and provide livelihoods opportunities to masses.

8. Conclusion and Recommendation

This paper offers the first systematic analysis of the nexus between agriculture growth and poverty reduction in Nepal. The central claim of this paper is that a reduction in poverty is caused by appropriate improvements in the variables impacting agriculture productivity. In Nepalese context, a bundle of theoretical, empirical and policy level problems are buzzed in course of agriculture development and poverty reduction. Being such a challenges and problems, this paper conclude that, there is a significant positive relationship between agriculture development/growth and poverty reduction in developing economies. Agricultural development has multiplier effects on different dimensions of the development and poverty reduction such as economic growth, investment capacity, employment opportunities, and people's income for decent living, purchasing power parity, access to education and health, and wellbeing. All these variables significantly measures the poverty and human happiness. Thus, to create a food-sovereign and independent economy, the country needs to invest heavily in agriculture which ultimately helps to reduce existing intensity of extreme poverty. The paper recommended that the three tires of governments, private sector, donor agencies, non-governmental organizations and development partners should focused on agriculture productivity by delivering basic facilities to the real tillers on time; and subsequent researchers could explore the institutional setting in relation to agriculture development and poverty alleviation.

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