

AGRICULTURAL EXTENSION SERVICE DELIVERY IN PROVINCIAL AND LOCAL GOVERNMENT OF NEPAL: AN INTEGRATIVE LITERATURE REVIEW

K. Tamang* A. Neupane and M. Jaishi

Institute of Agriculture and Animal Science, Tribhuvan University, Nepal

*agrikamalataamang@gmail.com

ABSTRACT

Three tiers government system as new structured governance transformation in Nepal has opened up an opportunity for making agricultural policies especially at the province and local level to promote bottom-up approach of agricultural extension delivery system. Restructuring of extension system has also led the way to multiple challenges in achieving the goals and vision of various strategies and plans. The paper discusses the emerging issues and challenges of agricultural extension service delivery in the changing institutional and policy context. Through an integrative review of literatures, the paper discusses the prospects of agricultural extension service system in federal context and highlights the gaps in current extension service delivery mechanism. The paper concluded that with the implementation of federal system based on the rule of law, federal governance, balanced power-sharing and values, it has opened up an opportunity for making agricultural policies at the province and local government level and thus promoting the participatory, demand driven agriculture planning and implantation. However, Nepalese agriculture extension service delivery has been facing difficulties in transforming itself in the changed context due to lack of the coordination between the layers of government, niche-based expertise, long term visualization and capitals. There are very few studies and research regarding the structural reorganization of extension system in Nepal. In this context the paper aims to identify the background, prospects and challenges faced by agricultural extension system of Nepal in federal context.

Keywords: *constitution, extension, federalism, restructure*

INTRODUCTION

Extension has helped the communities sustain their livelihoods by dealing with their problems and issues (Sivakumar & Sulaiman, 2016). The term extension includes the wider range of learning and communicating activities from different discipline like agriculture, agricultural marketing, health and business studies which are organized by educators for the welfare of rural people. The general meaning of agricultural extension is the application of new knowledge and scientific research to agricultural practices through the farmer education (Hossain et al., 2014). It also refers to advisory services for dissemination of information regarding improved seeds, soil quality, tools, water management, crop protection, agricultural practices and livestock, management and application of this knowledge on the farm. The primary role of agricultural extension is to improve farmer decision making and skills needed to apply agricultural innovations to raise productivity, potentially contributing to agricultural development and higher incomes for improving the living standard of farmers (Anderson & Feder, 2004; Norton & Alwang, 2020; Swanson & Rajalahti, 2010).

Agricultural extension also known as agricultural advisory services plays a crucial role in raising agricultural productivity, enhancing food security and improving rural livelihoods. Over the past four decades, extension has increasingly moved from a traditional emphasis on technology transfer and farm management information supplied by the public sector to a broader public and private advisory service mode, addressing topics such as marketing, environmental sustainability, pest diagnostics, and risk management (Norton & Alwang,

2020). Extension provides a vital support service for rural producers meeting the new challenges facing agriculture: transformation in the global food and agricultural system, including the rise of supermarkets and the growing importance of standards, labels, and food safety; growth in nonfarm rural employment and agribusiness (Raidimi & Kabiti, 2019).

Agricultural development relies heavily on an effective agriculture extension system. Despite the significant efforts made by the extension system, there are still several problems and issues that require attention so that it functions more efficiently and effectively. One of the major challenges for the agricultural extension system is how to serve the bulk of the rural poor and socially disadvantaged groups who had long been neglected by extension and other services (Anderson & Feder, 2007). Other problems are: inadequate linkage among research and extension, education of farmers and other stakeholders, poor infrastructural development, insufficient number of extension personnel, etc. (DOE 2005). Nepal's agricultural extension system used to have a top-down approach with high vertical accountability but less priority to farmers.

The Constitution of Nepal 2015 defines Nepal as a democratic republic with provision of three tiers of government: federal, provincial, and local having 753 local governments, 7 provincial governments, and one federal or central government. Federalization has opened up an opportunity for making agricultural policies at the province and local government level and thus promoting the bottom up approach (Kyle & Resnick, 2019). With the implementation of federal system, most of the extension functions that were previously under the Ministry of Agriculture Development (MoAD) and its central and district level units have been now vested in the province and local levels. Strengthening linkages between agricultural research, extension and education will also play a crucial role in revitalizing extension services in the changed context.

This paper reviews the performance of agricultural extension service delivery in Nepal, especially after having structural changes happen in the country new emergence of federal system of government. The paper contributes to the discourses on local governance and policy implications bearing in mind the following research questions: i. what is the current structure of agricultural extension delivery system in three tiers of government? ii. What are various opportunities and issues in the changing structural arrangements for agricultural extension service delivery?

MATERIALS AND METHODS

Literature review is an established research genre in many academic discipline (Schryen et al., 2015). The study is based on integrative literature reviews, the concept synthesized and retrieved from various sources; books, research articles, journals, and online sources to grasp the context of agricultural extension delivery system in new governance system of in Nepal in general. Particularly, the provisions of schedule (6), schedule (8) and schedule (9) of Constitution of Nepal (2015) related to the agriculture development and extension were extensively reviewed. As an expansion and updated of previously published articles on the theme this method acknowledges the growth and appeal of this form of search to the scholar and identifies the main captures of the themes (Torraco, 2016). It has made a thorough analysis on prospects and problems of restructuring of system and its provision on agricultural strategies and plans.

RESULTS AND DISCUSSION

Background and context of agricultural extension in Nepal

For the agricultural development in Nepal, agricultural extension has played an important role. Agricultural development has been started in Nepal after the establishment of Krishi Adda in 1921 AD latter which was upgraded into Department of Agriculture. With the establishment of the Department of Agriculture (DOA) in 1925 AD, the agricultural extension is believed to be started in the early 1920s. As cited in, Suvedi & McNamara (2012), formal agricultural extension began in 1952-54 with the establishment of community development program (Suvedi & Pyakuryal, 2001). However, the first five-year plan was formulated in 1956 in Nepal is an official nationwide start-up of agriculture development in the community. After this, the systematic effort towards national development was started. In 1952, Tribhuvan Village Development Program was implemented with the assistance of USAID in which the agriculture extension program was first included. Then subsequently other approaches were started like Zonal Agriculture Development Office (ZADO), District Agriculture Development Office (DADO), and engagement of field level extension workers-Junior Technicians (JT), and Junior Technical Assistant (JTA) (Hossain et al., 2014).

The traditional extension approach was based on the “trickle-down” theory of dissemination of technologies. The major assumption of this theory was that if the new technology or innovation is introduced to a small number of “progressive farmers”, “leader farmers” and so on, the diffusion of the technology will be automatically then there will be multiplier impacts of intervention (Hossain et al., 2014). Delivery of extension service in Nepal is generally through public institutions like DOA. It is one of the initiative institutes for delivering extension services in Nepal (Suvedi & McNamara, 2012). Until the autonomous body Nepal Agricultural Research Council (NARC) was established, DOA coordinated both the research and extension service in Nepal (NARC, 2010). In 1990 restoration of the multiparty democratic government system was established in the country which gave Nepal a new multiparty democratic constitution in 1991, which appropriately recognized decentralization as a means to ensure optimum involvement of the people in governance (Hossain et al., 2014).

Nepal adopted federalism under a new constitution promulgated in 2015. The Constitution of Nepal 2015 defines Nepal as a democratic republic and provisions three tiers of government: federal, provincial, and local (GoN, 2015; Jaishi et al., 2020). According to Riker (1975), as quoted by Brown (n.d.), “federalism is a political organization in which the activities of government are divided between regional governments and a central government in such a way that each kind of government has some activities on which it makes final decisions”. Nepal has adopted the “holding together” pathway, which refers to multicultural, heterogeneous countries that devolve certain powers and transform into federations to avoid complete dissolution and conflict (for instance, Belgium, Ethiopia, India, Nigeria, and Spain). In Nepal, there are 753 local governments, 7 provincial governments, and one federal or central government since the last democratic election held in November 2017 (Bhattarai, 2019). There are different types of political, fiscal, as well as administrative powers that have been provided to the local and provincial governments, while there are also concurrent powers with the federal government (Bhattarai, 2019). According to the current Constitution of Nepal, 22 political, fiscal, and administrative powers are given to the local government, 21 to the provincial government, 35 to the federal government, and as well as 15 concurrent

powers are shared between the local, province, and federal government and 25 are shared between federal and provincial government (Government of Nepal, 2015).

Table 1. Power, authority and accountability of agriculture sector among three tiers of government

Federal government	Provincial government	Local government
Schedule (9) Concurrent powers	Schedule (6) State powers	Schedule (8) Local level power
<ul style="list-style-type: none"> • Cooperative • Agriculture • Electivity, water and irrigation • Forest wild life, birds, water users, environment, ecology, biodiversity • Disaster management • Landless squatter management • Royalty from natural resources 	<ul style="list-style-type: none"> • Forest, water, environment • management • Agriculture and livestock management, trade business and industrialization • Management of trust 	<ul style="list-style-type: none"> • Cooperative institution • Management of Local service • Local market management • Rural roads, agriculture roads, irrigation • Agriculture and animal husbandry, agro-product management, animal health • Agriculture extension • Disaster management

Source: Jaishi and Paudel (2020)

Three tiers of government: Agriculture service delivery

The extension system of Nepal is pluralistic. In the education sector agriculture education is provided by the institution of Tribhuvan University (TU), Council for Technical Education and Vocational Training, (CTEVT), Agriculture and Forestry University, Purvanchal University, Far Western University. In public extension service delivery is operated and handled under the Department of Agriculture (DOA) in MoAD and the Department of Livestock Services in the Ministry of Livestock Development (MoALD). The research activities are mandated under the single public government agency the National Agriculture Research Council (NARC). The private sector also playing the important role in providing extension services like providing improved seeds, pesticides, and artificial insemination for livestock. There are numbers of NGOs like CEAPRED, FORWARD, SEWAK, ANSAB, SADP Nepal, PLAN Nepal which are providing extension services in remote areas (Kyle & Resnick, 2016).

The Federal Ministry of Agriculture and Livestock Development (MoALD), which is the main body for agriculture development in Nepal is comprised of three central departments, central laboratories, and commodity development centers, and national priority projects, such as the Prime Minister Agriculture Modernization Project (PMAMP). There are altogether nine central agencies, three under MoAD, and six under departments. One of the most remarkable changes in agricultural institutional reform is the establishment of the Ministry of Land Management, Agriculture and Cooperatives (MoLMAC) in each province. This ministry operates the agriculture and livestock development, related directorates, province-level laboratories, Agriculture Knowledge Centers (AKC), Veterinary Hospital, and Livestock Expert Centers at the district level. The Agriculture Knowledge Centre has replaced the earlier structure District Agriculture Development Office (DADO) and District Livestock Service Offices (DLSO) with a significant reduction in their roles

and responsibilities. There are 44 AKCs (Agriculture Knowledge Centre) and 9 ADOs (Agriculture Development Offices), AKCs of Karnali Province replaced by ADOs except that of Surkhet District under the provincial level Directorate of Agriculture Development (DAD), whose authority is to obtain and diffuse innovative and necessary technologies and supply associated support services to producers and agribusinesses (Krishi Diary, 2077).

In the case of local government, the structure consists of an Agriculture Development Division which has been established to support technology generation and transfer activities. To cover all at the then local level Agriculture Service Centers (ASCs) under local government were expanded 753 local authorities. Currently, the agriculture sector is under the concurrent right of and local level. Farmers can get all the input and services from the program and projects implemented by all three tiers of government. The figure 1 given below shows the schematic diagram of agricultural extension under federalism.

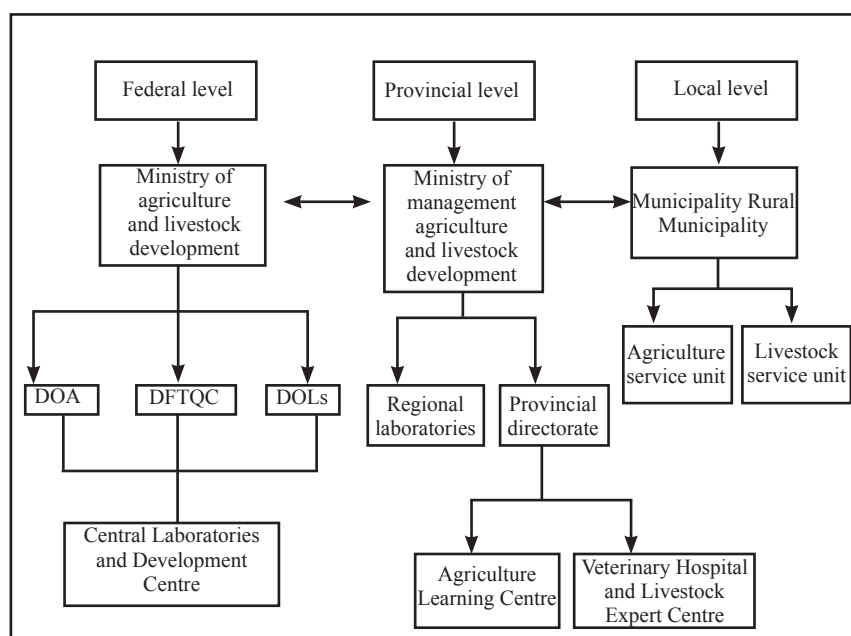


Figure 1. Structural arrangement of agricultural extension system in three tiers of government Nepal (Babu and Sah, 2019).

Note: DOA: Department of Agriculture, DFTQC: Department of Food Technology and Quality Control, DOLS: Department of Livestock Services

Opportunities for agricultural extension service delivery in the changing structural arrangements

The 2072 Constitution profiles significant changes for the governance of the agricultural sector. The “agricultural and livestock development” will be provisioned to operate under a provincial power and agriculture and animal husbandry, agro-products management, animal health, and cooperatives will be local powers according to the 2072 Constitution profile of Nepal. Also, the agriculture term is described in the list of concurrent powers of the federal, provincial, and local levels (Jaishi and Paudel, 2020). The local government has the authority in decision-making on extension service delivery. The executive power of the local level is vested in the village and municipal council (Jaishi & Paudel, 2020). They have the

power to direct, control, and conduct the governance system. Therefore, it may benefit the local people in receiving the extension advisory services easily. There is the potential for greater bottom-up accountability to elected local leaders rather than to the line ministries in Kathmandu under the new constitution. In this way, extension could be better targeted to farmer's needs in a particular agro-ecological or regional area (Kyle & Resnick, 2016). Local governments should contribute financially to extension activities to make this accountability effective (Swanson, & Rajalahti, 2010). The current relationships between agricultural service providers and local politicians could significantly clarify by these accountability relationships. In terms of coordination, the reforms offer great opportunities specifically; elected local bodies could facilitate greater collaboration among public, private, and civil society extension officers.

Effective and efficient extension service delivery to farmers can be established and maintained with the utilization of local powers and local resources by applying principles of good governance and accountability which can enhance agricultural productivity and uplift the living standards of farmers (Dahal et al., 2020). The functions of the local government to arrange timely supply of seeds, fertilizers, pesticides, and service delivery to the citizens and also ensure their participation in finding people needs if performed properly can be effective in overall agricultural development. Under the new Constitution, extension workers will be employed as civil servants and will be recruited under a provincial-level Public Service Commission. This helps to reduce the degree to which agents are rotated geographically by limiting their movement to provinces rather than across the entire country which can improve the efficiency of extension worker to some extent (Kyle & Resnick, 2016). Involving citizens in determining local and specific public needs, supplying required goods and services to farmers, inclusive development of agro food system at local and national level by ensuring participation of youths, women, poor and marginalized people are some functions of local government which have various prospects in improving the livelihood of farmers (Jaishi et al., 2020).

Problems of execution of agricultural extension delivery system through local government

The results of decentralized extension have been found mixed in developing countries (Smoke, 2001; Sujarwoto, 2017). Decentralization has improved participation and control over extension service delivery by local communities but in many developing countries extension programs still face challenges of inadequate local funding, dependence on unreliable and untimely central government grants, difficulty in attracting and retaining staff at the local level, and corruption and funds capture by local elites (Bashaasha et al., 2011). Nepalese agriculture extension service delivery has been facing difficulties in transforming itself in the changed context. One of the most serious problems with the provincial and local governments is the lack of proper understanding of governance, institutionalization, and human resources management (Dahal et al., 2020). The apex body for agriculture development, the Ministry of Agriculture and Livestock Development (MoALD), has been split and then merged time and time again (Babu & Sah, 2019).

As reported by Shrestha (2019), there is a very clear distinction in the power, authority, roles, and responsibilities among the different levels of government but the implementers on the field, have felt some sorts of confusion and dilemma because of the old mindset of centralization and top-down working modalities of the government. Agricultural entities are

operating under short-term working guidelines and are yet to be finalized their terms of reference, which has created confusion on sharing of authority resulting in duplication of programs in some places and lacking in others.

Although municipalities and rural municipalities have spent more than four years of experience, most of them still lacking sectoral plans and master plans of allied sectors (Jaishi et al. 2020). Newly established institutions at provincial and local levels lack experience and expertise in agriculture service delivery along with shortages of human resources with the necessary technical experts which is one of the major problems for effective performance of local government. It is due to the fact that Agriculture Extension Officers want to stay within the central or provincial offices and do not prefer the local government offices. Hence, the numbers of extension agents appointed to these local governments are far less than the required number for quality service delivery to the agriculture sector (Kyle & Resnick, 2019).

Various studies show that due to the execution of the federal democratic structure, ADS 2015 seems paralyzed. Several provisions of ADS need to be amended in the new administrative structure. With the dismantling of DADOs and DLSOs, responsibilities of agriculture services delivery have been assembled under local agriculture units at municipalities and rural municipalities that are not following the ADS vision. Nepal's current agriculture extension service delivery system is passing through several challenges like institutional instability, contradictory power, authorities and control among multiple institutions, weak human resources specifically at the local level, and a shifting policy system. Further, there are poor functional linkages among agriculture institutions at different levels of government (Paudel & Waglé, 2019).

CONCLUSION

Nepal is now practicing the decentralized agriculture service delivery under the new constitution adopted in 2015 comprising seven provincial and 753 local governments, each with their own legislative, judicial, and executive powers. The agricultural extension system of Nepal is still in junction as it tries to adjust in the changing institutional context. The agricultural extension system of Nepal used to have a strong bureaucratic chain with high vertical accountability but less to farmers in the past but with the implementation of federal system, it has been restructured. Federalization has created opportunities for making agricultural policies at the local and provincial government level. Following the adoption of the new constitution, the extension service job has come under the local governments. There are both challenges and opportunities of federal system in agricultural extension service delivery. Due to the division of power and authority to different level of government, many farmers will likely to be benefited in terms of advisory services. The expectation of public in terms of local prosperity, easy service delivery, economic development, local resources utilization, public participation etc. has risen. Although the Constitution of Nepal specifies that the agricultural extension system is exclusively the responsibilities of local government, there is no clear vision on how the extension system will be operated. Major challenges and issues of agricultural extension service delivery are lack of clear distinction of authority, power, roles and responsibilities among different level of government are prominent. The review suggests that if the system is well managed with strong political commitment, better policy and institutional coordination, and good governance, there is great potential to promote the local development with demand-driven agricultural services for economic wellbeing of farmers through cooperation among different tier of government.

REFERENCES

- Anderson, J. R., & Feder, G. (2004). Agricultural extension: Good intentions and hard realities. *The World Bank Research Observer*, 19(1), 41-60.
- Anderson, J. R., & Feder, G. (2007). Agricultural extension. *Handbook of agricultural economics*, 3, 2343-2378.
- Babu, S. C., & Sah, R. P. (2019). Agricultural research and extension system in Nepal: An organizational review. In *Agricultural Transformation in Nepal* (pp. 291-319). Springer.
- Bashaasha, B., Mangheni, M. N., & Nkonya, E. (2011). Decentralization and rural service delivery in Uganda. Internat. Food Policy Research Inst.
- Bhattarai, P. (2019). The new federal structure in Nepal: Challenges and opportunities for quality governance. *External Democracy Promotion Research Network*, 1-6. <https://www.external-democracy-promotion.eu/the-new-federal-structure-in-nepal-challenges-and-opportunities-for-quality-governance/>
- Brown, A.R. (n.d.). *Federalism, in handbook of political science*. https://adambrown.info/p/notes/riker_federalism_in_handbook_of_political_science
- Dahal, H., Karki, M., Jackson, T., & Panday, D. (2020). New state structure and agriculture governance: A case of service delivery to local farmers in the eastern gangetic plains of Nepal. *Agronomy*, 10(12), 1874.
- DoE, (2005). *Proceedings of the national agriculture extension workshop*. Directorate of Agriculture Extension and APPSP, Kathmandu
- GoN. (2015). The Constitution of Nepal 2015. *Nepal Gazette*, 2015(February), Art. 58.
- Gyawali, G. P. (2018). Federalism: Challenges and opportunities in Nepal. *Molung Educational Frontier*, 37-48. <https://doi.org/10.3126/mef.v8i0.22439>
- Jaishi, M., & Paudel, I. (2020). *Social mobilization and community development: Text book for undergraduate and development Practitioner* (1st ed.). Heritage Publications.
- Jaishi, M., Allen, R., & Sahi, L. (2018). Challenges and issues of decentralized agriculture service at the VDC level: Experiences from Okhaldhunga district. *Journal of the Institute of Agriculture and Animal Science*, 90, 79-90. <https://doi.org/10.3126/jiaas.v33i0.20689>
- Jaishi, M., Nepali, P. B., Rijal, S., & Dhakal, B. (2020). Strengthening research-education-extension (R-E-E) linkage in new context of federal structured Nepal. *Responsible Education, Learning and Teaching in Emerging Economies*, 2(1), 1-11. <https://doi.org/10.26710/relate.v2i1.1309>
- Jaishi M., P. B. Nepali and L. Shahi (2018). Agriculture extension under federalism. *Agriculture extension in South Asia (AESAs)*.
- Kyle, J., & Resnick, D. (2019). Nepal's changing governance structure and implications for agricultural development. *Agricultural Transformation in Nepal*, 573-600.
- NARC. (2010). *NARC's strategic vision for agricultural meeting Nepal's food and nutrition security goals through agricultural science & technology*. NARC.
- Norton, G. W., & Alwang, J. (2020). Changes in agricultural extension and implications for farmer adoption of new practices. *Applied Economic Perspectives and Policy*, 42(1), 8-20.
- Paudel, R., & Waglé, S. (2019). Structural transformation and growth: Whither agriculture in Nepal? In *Agricultural Transformation in Nepal*, 11-25.

- Raidimi, E. N., & Kabiti, H. M. (2019). A review of the role of agricultural extension and training in achieving sustainable food security: a case of south africa. *S. Afr. J. Agric. Ext*, 47(3), 120–130.
- Hossain, M.G., Azad, A.K., & Akter, N. (2014). *National agricultural extension systems in SAARC countries: An analysis of the system diversity* (SAC Technical Synthesis Report). SAARC Agriculture Center. <http://www.sac.org.bd/archives/publications/National-Agricultural-Extension-Systems/>
- Suvedi, M., & McNamara, P. (2012). Strengthening the pluralistic agricultural extension system in Nepal. *Lansing: MSU/MEAS/USAID*.
- Suvedi, M., & Pyakuryal, K. (2001). Evaluation of Nepal's agricultural extension. In F.L. Brewer (Ed.), *Agricultural extension systems: An international perspective*. Courier Custom Publishing.
- Swanson, B. E., & Rajalahti, R. (2010). *Strengthening agricultural extension and advisory systems: Procedures for assessing, transforming, and evaluating extension systems* (Agriculture and Rural Development Discussion Paper No. 45). World Bank. <http://www.worldbank.org/rural>
- Timsina, K., Ghimire, Y., Gauchan, D., Sanjel, P., Padhyoti, Y., & Bista, H. (2018). Restructuring agricultural research, extension and education in Nepal's federal system. *Nepalese Horticulture*, 13(1), 79-91.
- Torraco, R. J. (2016). Writing integrative reviews of the literature: Methods and purposes. *International Journal of Adult Vocational Education and Technology (IJAVET)*, 7(3), 62-70.