Market system analysis of the mechanization subsidy program in the Gandaki Province:

A case of mini tiller subsidy program in Pokhara Metropolitan City

स्थानीय सरकार सबलीकरण

Australian Aid

The Asia Foundation

The Australian Government – The Asia Foundation Partnership in Nepal

POKHARA RESEARCH CENTRE

Market system analysis of the mechanization subsidy program in the Gandaki Province: A case of mini tiller subsidy program in Pokhara Metropolitan City

Pokhara Research Center (PRC)

November 15, 2024

Author
Binita Subedi
Researcher
Pokhara Research Centre

Surakshya Pokhrel
Researcher
Pokhara Research Centre

Published by
Pokhara Research Centre
Pokhara-11 Fulbari, Gandaki Province, Nepal
Tel.: 061-587111
Email: centre.pokhara@gmail.com
Website: *www.pokharacentre.org*

November 2024

This publication is published with the support of the Sub-national Governance Program implemented under a strategic partnership of the Australian Government Department of Foreign Affairs and Trade and The Asia Foundation. The views expressed in this publication do not necessarily represent the views of the Australian Government or The Asia Foundation.

Acknowledgment

On behalf of the Pokhara Research Center (PRC), I extend my sincere gratitude to all those who contributed to the successful completion of this study, Market System Analysis of the Mechanization Subsidy Program in Gandaki Province: A Case of Mini Tiller Subsidy Program in Pokhara Metropolitan City. This research represents a significant step in understanding the effectiveness of agricultural subsidies and identifying ways to enhance their impact on smallholder farmers in our province.

First and foremost, I would like to express my sincere gratitude to the Sub-national Governance Program implemented under a strategic partnership of the Australian Government's Department of Foreign Affairs and Trade and the Asia Foundation. Without their generous support this study would not have been possible. Their commitment to evidence-based policy reform and governance strengthening has been instrumental in shaping our work.

I also extend my appreciation to the Ministry of Agriculture and Livestock Development of Gandaki Province, the Department of Agriculture Directorate, Agriculture Knowledge Centers of the Province and Pokhara Metropolitan City for their collaboration and valuable insights. Their engagement in sharing data, facilitating discussions, and providing feedback has been crucial in ensuring the study reflects the realities of the subsidy program.

Our heartfelt thanks go to the farmers, cooperatives, and agricultural machinery vendors who participated in key informant interviews and group consultations. Their firsthand experiences and perspectives provided us with a grounded understanding of the challenges and opportunities within the mechanization subsidy system.

I am deeply grateful to the dedicated research and design team at PRC, whose commitment to rigorous analysis and policy-driven solutions made this report possible. Their hard work, critical inquiry, and perseverance have been the foundation of this study.

Finally, I extend my gratitude to all stakeholders who believe in the power of research to inform policy decisions. It is our hope that this study will be a stepping stone for further analysis and rigorous research on sustainable agricultural subsidy programs in Gandaki Province and contribute to finalizing the interventions required to maximize the effectiveness of agriculture subsidy programs through provincial initiative in the context of federalism.

Sujan Regmi
Executive Director
Pokhara Research Centre

Table of Content

Introduction and rationale

This knowledge product is published with the support of the Subnational Governance Program implemented under a strategic partnership of the Australian Government Department of Foreign Affairs and Trade and The Asia Foundation. The views expressed in this knowledge product do not necessarily represent the views of the Australian Government or The Foundation. The research conducted by the Pokhara Research Centre applies market system development (MSD) approach to analyzing the constraints that make the mapping of effectiveness a challenge for the provincial authorities. The PRC partnered with the provincial agriculture ministry and after discussing the major issues in the agriculture sector with the agriculture development directorate under the ministry, the PRC team selected the said topic.

The major research problem presented by the directorate during the discussion was concerned with identifying the causalities of the ineffectiveness of the subsidy program of the government in yielding the desired outcome in the agriculture sector. However, after the preliminary research, the PRC team realized there were not enough data to actually assess that. Upon further exploration, we found out that there is a huge gap in the data and information mechanisms that ought to be addressed alongside with other supporting functions.

To address these gaps the study provides a detailed intervention plan targeting each of the four major constraints with an analysis of constraint and their root causes for better understanding. It has also identified the key actors responsible for each intervention and the coordination required to implement the interventions successfully.

The study adopts a somewhat unconventional approach by applying market systems analysis to a government-led subsidy program, a model traditionally associated with market-driven sectors. While most market system studies aim to stimulate private sector-led solutions, this research instead seeks to enhance the effectiveness of existing public subsidy systems. The goal is to improve current mechanisms to optimize subsidy utilization and ensure long-term sustainability. Rather than advocating for increased subsidies, market system development approach has been used in this research to identify a better functioning efficient system for government programs.

By focusing on strengthening foundational systems, including data management, intergovernmental coordination, and monitoring and evaluation, this research takes a holistic approach. The intention is to create a more effective, adaptable and sustainable subsidy framework that eventually reduces dependency on external financial support, paving the way for a more resilient, self-sustaining market ecosystem in the agricultural mechanization sector. In doing so, the study demonstrates that even within publicly funded initiatives, applying market-oriented solutions for the long-term benefit the smallholder farmers and local economies.

The role of Pokhara Research Center (PRC) in this initiative is to identify key government stakeholders and evaluate the most relevant program changes needed to enhance government effectiveness. PRC will then work alongside these stakeholders and other market actors to implement these improvements. By facilitating the efforts of government agencies, PRC will support the province in maximizing the benefits of targeted subsidy

programs, ultimately promoting a more resilient and efficient agricultural mechanization system in Gandaki Province.

Methodology and scope

The study employs market systems development (MSD) approach tailored to the unique dynamics of a subsidy-based agricultural mechanization program integrating desk research, key informant interviews (KIIs), and group consultations as tools for information collection. The mechanization subsidy program under the larger agriculture subsidy program of the province has been chosen for the purpose of study as a mechanization-related subsidy programs are one of the largest subsidy programs led by the government besides input subsidy and infrastructure-related subsidy. With an aim to cover most of the subsidy programs under the jurisdiction of the provincial government within multiple research cycles, the team selected the mechanization subsidy system for the first cycle. For the case study, the mini-tiller subsidy program under the mechanization efforts has been chosen on the basis of the reach and coverage of the mini-tiller subsidies within the province which as per the sources from the directorate of agriculture in the province is the highest of all other mechanization subsidy programs. Considering the time and resource limitations, the team selected Pokhara, Kaski for the case study.

The information was primarily collected through group consultations. The interviews were conducted with stakeholders across multiple tiers, including provincial and local government officials, farmers, farmer groups, farmer cooperatives, machinery vendors, and repair and maintenance service providers. The KIIs were mostly useful in gathering in-depth insights into subsidy distribution, effectiveness, and barriers to implementation.

Group consultations with the farmer groups were conducted to dig deeper into the challenges they faced as end users along with their understanding of the effectiveness of the received subsidy programs. For the purpose of this research, among all kinds of subsidies in mechanization, subsidy in mini-tiller was selected. The group consultations and a few KIIs were centered on the mini-tiller subsidy recipient of Pokhara Metropolitan City. The KIIs and group consultations were supplemented by secondary data analysis through desk research. Desk research was conducted to analyze the existing reports, available government records, existing laws and programs along with understanding the history of mechanization efforts and challenges that persist overall country.

Study limitations

The study faced limitations primarily due to the unavailability of any recorded information or reports concerning subsidy programs besides the list of people and institutions who received it. All the analysis thus was dependent on the information obtained through group consultations and KIIs. With no information available on the use of the subsidy from the respected institutions and lack of resources specifically, time to reach all the parts of the province, the researchers had to mostly rely on the findings of the group consultations and KIIs conducted among the recipients of the mini-tiller subsidy in Pokhara. Again, for the lack of information, the study mostly relies on self-reported data from farmers, government officials, and other stakeholders, which might introduce biases. Respondents might have overestimated or underestimated the impact this study tried to assess due to various factors.

Further, due to limitation of time, step by step process of undertaking the said activity has not been designed. It will be designed in the next stage of the project in consultation with the respective actors identified in the intervention plan.

Background of mechanization subsidy

Agriculture policies of Nepal and almost all the plans periods have been prioritized subsidies to increase production, improve food security, meet food self-sufficiency, decrease import substitution, ensure environmental sustainability and reduce poverty. In line with this objective, the Ministry of Agriculture and Livestock Development of the Government of Nepal, through its provincial and local government outlets, provides production incentives every year in the form of technology-related production inputs and market infrastructures, allocates a significant portion of its annual budget to agricultural subsidies. Provincial government and Local governments both distribute the agriculture subsidy directly at the grassroots level, identifying eligible farmers and providing timely support. They also oversee agricultural development projects like irrigation and agro-processing.

The distribution and regulation of these agricultural subsidies are guided by national policies, provincial laws, and local-level directives such as the National Agriculture Policy (2004), Agribusiness Promotion Policy (2006), Agriculture Perspective Plan (1995-2015), Agriculture Development Strategy (2015-2035), Prime Minister Agriculture Modernization Project (PMAMP 2016-2025), Subsidy Management Procedure (MoALD, 2023), Budget and Program Implementation Integrated Procedures (2077), Program operation criteria related to grant assistance in mechanization (2077) and Budget and Integrated Procedures for Program Implementation 2081 of Gandaki Province. In recent years, the budget for agricultural subsidies has included substantial allocations for providing targeted financial and technical assistance across various domains. The average subsidy rate remains 50-75%, contingent upon its intended purpose[1].

Table 1: List of different types of subsidies available in Nepal[2]

Program	*Description*
Agricultural Subsidies	**Subsidy on Agricultural Inputs:** fertilizers, seeds, tunnel construction, sprayer, mulching plastic and agriculture tools. **Subsidy on Irrigation Systems:** installation and maintenance of irrigation systems, such as drip and sprinkler irrigation, infrastructure (storage facilities, processing units, collection centers, krishi ambulance), agricultural mechanization.
Price Support	Minimum Support Price (MSP) for certain crops to protect from market fluctuations.
Agricultural Credit Schemes	**Loans through banks:** NRB and commercial banks offer concessional loans to farmers for crop production, livestock, and infrastructure, with low-interest rates and flexible repayment terms. **Agricultural Development Bank (ADB/N):** provides credit facilities to farmers, cooperatives, and agricultural enterprises through various loan schemes, including working capital, farm mechanization, and seasonal loans.

1 Bhandari, T. (2023). Assessment of Government Policies, Farm Subsidies, and Agriculture Growth. State, Society and Development: PMPD Perspectives, 125-136.

2 Ministry of Agriculture and Livestock Development. (2022/23). Krishi tatha pashupanchi bikash pragati pratibedan (2022/23) https://moald.gov.np/publication-types/progress-report/manbarsik

Program	*Description*
Crop Insurance	Premium subsidies for crop to help farmers mitigate risks related to natural disasters such as floods, droughts, and hailstorms.
Livestock Support Program	**Livestock Insurance:** provide financial support in case of livestock loss due to diseases, accidents, or natural disasters **Livestock Development Subsidies:** subsidies on inputs like vaccines, feed, and breeding materials to improve livestock productivity and health.
Agricultural Infrastructure Development Programs	The government provides financial support for the construction of infrastructure such as rural roads, cold storage facilities, and agro-processing units, which are essential for improving market access and reducing post-harvest losses. **Small Irrigation and Water Management Projects:** Financial assistance is offered for small-scale irrigation and water management projects to enhance agricultural productivity, particularly in water-scarce regions.
Youth & Women Program	Specific subsidy schemes aimed at engaging youth in agriculture and empowering women farmers, often through training programs, loans, and support for female-owned enterprises.
Cooperative Support Programs	Financial assistance, including grants and low-interest loans, is provided to these cooperatives to help them improve storage, marketing, and processing facilities, thereby increasing farmers' access to markets.
Contract Farming and Market Linkage Programs	The government has promoted contract farming models, where farmers can secure guaranteed prices and markets for their products. Financial support to facilitate the establishment of these contracts and improve market linkages.
Agricultural Extension and Capacity-Building Programs	Financial support for training programs, workshops, and seminars aimed at improving agricultural practices, business skills, and farm management.
Climate-Smart Agriculture (CSA) Programs	Financial incentives for adopting sustainable farming techniques such as agroforestry, organic farming, and the use of climate-resilient crops.

Program	Description
Export Promotion and Value-Added Agriculture	Includes subsidies for value-added agricultural processing, such as packaging and branding, to meet international market standards.

The aim of these support programs are designed to boost the agricultural sector's production and productivity, improving smallholder farmers' incomes, particularly through agricultural inputs and crop production. While both agro-products and livestock are supported, the main priority is enhancing food security and boosting crop productivity. Subsidies primarily target fertilizers, seeds, irrigation, and crop insurance to lower production costs and increase yields. Though livestock development, dairy, and poultry for rural income diversification are also emphasized, crop production especially staples like rice, wheat, and maize remains the top priority for national food security. Likewise, High-Value Cash Crops such as cardamom, coffee, and tea for export promotion and horticultural crops (fruits and vegetables) are supported to meet rising domestic and international demand.

The government of Nepal (GoN) has set various targets for increasing agricultural production through its policies and strategies. In the cereal sector, which includes rice, maize, and wheat, the government aims for 4.84 mt, 4.5 mt and 3.34 mt increase in productivity by 2029/30. For horticultural crops such as fruits and vegetables, the target is 12.08 mt and 16.61 mt increase in commercial productivity by 2029/30. Additionally, in spice crops like cardamom, ginger, turmeric, garlic, chilies and onions, the government aims for a 9.11 mt increase in its productivity by 2029/30, focusing on strengthening Nepal's position in international markets in terms of export value[3].

In the current fiscal year, only NPR 21.23 billion of the NPR 40.16 billion allocated by the federal government for the agriculture sector has been utilized[4]. Likewise, in the previous fiscal year 2022/23, of the NPR 45.48 billion allocated for agricultural subsidies, NPR 39.50 billion was spent[5]. However, there has always been considerable debate regarding the effectiveness and efficiency of the subsidy programs to address the problem of farmers in Nepal, necessitating a comprehensive evaluation through frameworks like the MSD approach. Agricultural subsidy policies have achieved failure as well as success in achieving their goals depending on their modality, their targeting, and their delivery mechanism.

3 National Planning Commission. (2081). *Shorau yojana (2081/82-2085/86)*. https://www.npc.gov.np/images/category/240607021743%E0%A4%B8%E0%A5%8B%E0%A4%B9%E0%A5%8D%E0%A4%B0%E0%A5%8C%E0%A4%82%20%E0%A4%AF%E0%A5%8B%E0%A4%9C%E0%A4%A8%E0%A4%BE.pdf

4 Ministry of Finance. (2023/24). Economic Survey (2023/24) https://mof.gov.np/uploads/news/file/1716811279_Economic%20Survey%202080_81.pdf

5 Government of Gandaki Province Ministry of Economic Affairs. (2081). *Bajet tatha karyakram karyanayan sambandhi yekikrit karyabidhi 2081*. https://mof.gandaki.gov.np/publication/

Market systems analysis of the agriculture mechanization subsidy

A market system is a complex network of individuals, institutions, relationships, and rules that interact to produce and deliver products or services to consumers. In a well-functioning market system, core market functions like supply and demand operate seamlessly alongside supporting functions and a robust regulatory environment. These components are interconnected and influence each other, creating a market that ideally promotes efficiency, resilience, and inclusivity.

Applying the MSD framework to the subsidized agricultural mechanization program in Gandaki Province, Nepal, offers a structured approach to assess the program's strengths and weaknesses within its broader market system. The MSD framework helps identify systemic barriers and leverage points for sustainable change. By examining each component of the market system—core functions, supporting services, and the regulatory environment—we can pinpoint specific areas where the market may be failing and propose solutions that generate long-term benefits, especially for farmers.

This analysis further guides the design of interventions that create long-term benefits for farmers as well as government institutions to reform and refine their programs and policies related to agriculture machinery subsidy. The larger objective is to establish a more sustainable, inclusive, and resilient market for mechanized agricultural tools in the region, ultimately leading to increased agricultural productivity and improved livelihoods.

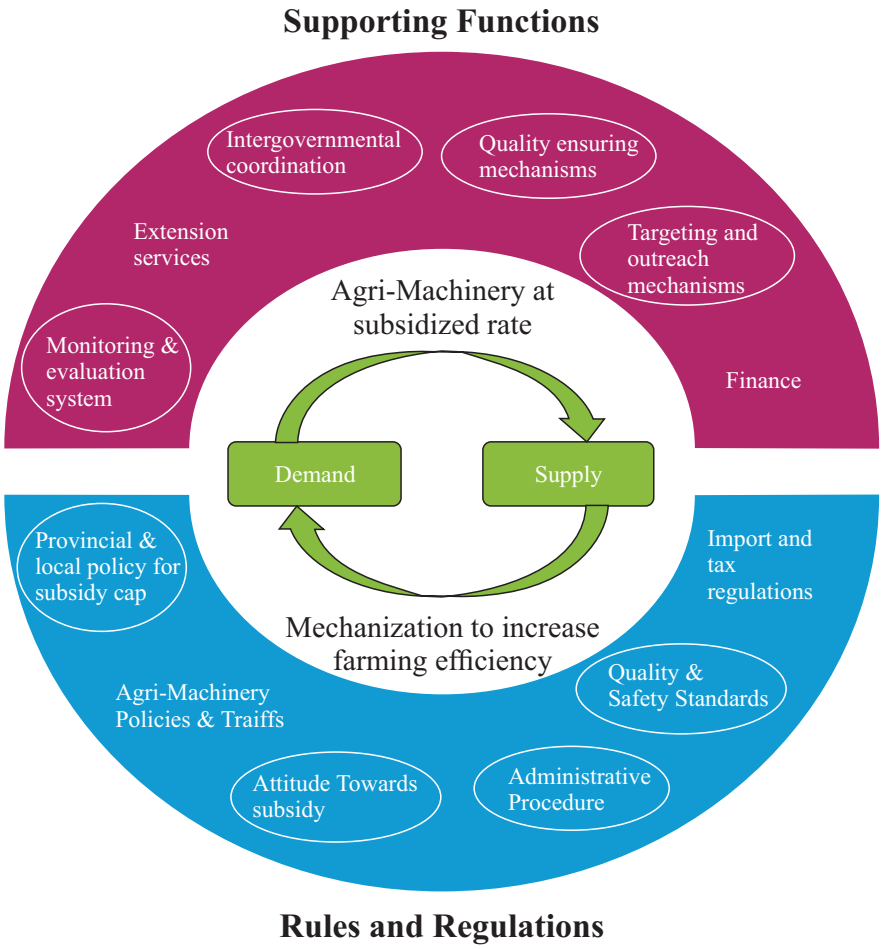


Figure 1: Market system analysis of the agriculture machinery subsidy program

Key components of the market system

1. Demand Side:

Provincial and local policy for subsidy cap: This indicated that government regulations are limiting the amount of subsidies available for agriculture machinery. This can affect the demand side by influencing the affordability of the high cost or good quality machinery for farmers.

Attitude towards Subsidy: This highlights the farmer's perception of subsidies and their impact on purchasing decisions.

Administrative Procedure: In this case it affects the demand side as the complexity of administrative procedure can impact the number of applicants being eligible for the subsidy program.

2. Supply side

Agri-Machinery Policies & Tariffs: Government policies and tariffs on imported machinery can affect the supply and cost of machinery in the market.

Quality & Safety Standards: These standards can influence the quality and reliability of machinery, affecting both supply and demand.

Import and Tax Regulations: These regulations can affect the cost and availability of imported machinery, influencing supply.

3. Supporting functions

Intergovernmental Coordination: Effective coordination between different government levels is crucial for implementing policies and ensuring consistency in regulations.

Quality Ensuring Mechanisms: These mechanisms help maintain quality standards for machinery, which can influence consumer trust and demand.

Targeting and Outreach Mechanisms: These mechanisms are important for reaching out to farmers and providing information about available machinery and subsidies.

Finance: Access to finance is essential for both farmers to purchase machinery and suppliers to invest in production and distribution.

Extension Services: Extension services can provide farmers with technical knowledge and support, increasing their ability to use machinery effectively.

Monitoring & Evaluation System: A robust monitoring and evaluation system is necessary to track the impact of policies, programs, and interventions on the market.

Defining the core market function

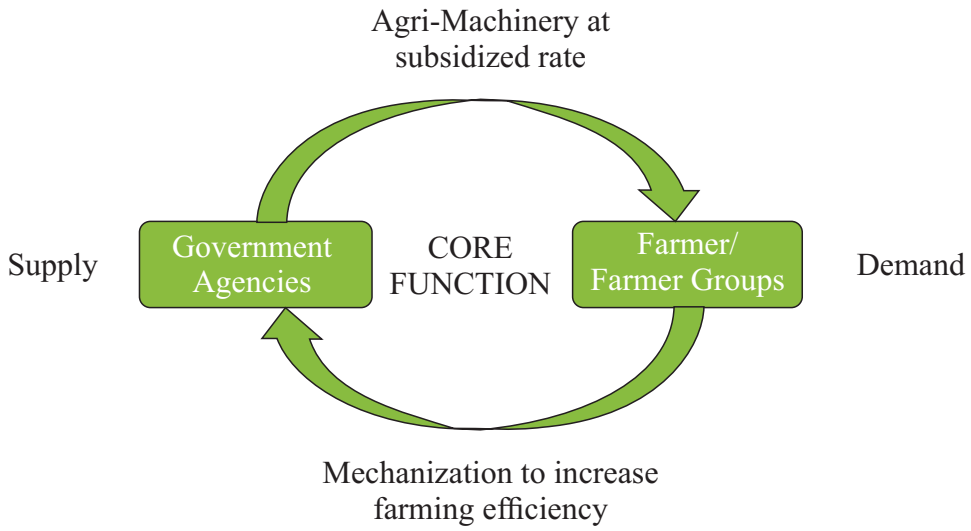


Figure 2: The core function of agriculture mechanization subsidy system

As per the Agriculture Mechanization Promotion Policy 2014, the core function of the subsidized mechanization program in Gandaki Province is to accelerate agricultural productivity and efficiency. By introducing modern agricultural machinery and equipment, the policy program aims to:

Reduce Labor Dependency: Minimize reliance on manual labor, freeing up farmers' time and reducing drudgery.

Enhance Land Productivity: Optimize land utilization through efficient tillage, planting, and harvesting practices.

Improve Crop Quality and Yield: Minimize post-harvest losses and ensure timely harvesting, leading to higher-quality and higher-yielding crops.

Increase Farm Income: Reduce production costs, increase output, and improve market access, ultimately boosting farmers' incomes.

Key stakeholders involved in agriculture machinery subsidy market system in Gandaki Province

1. Federal government

Ministry of Agriculture and Livestock Development (MoALD): Federal government authority responsible for formulating policies and managing agriculture programs, including subsidies. The government in 2014 introduced the mechanization promotion policy. Further the mechanization and commercialization of the agriculture sector is also a key priority as per the Agriculture Development Strategy (2015-25). The federal government is responsible to transfer conditional funding or grants to the province and local levels and prepare procedures for the operation of the subsidy program. Based on the propriety of the proposal and the program, there is a provision in the grant program implementation guidelines that can give a maximum of 50 percent subsidy on machinery

tools. Mechanization related subsidies are currently granted to farmers through PMAMP, provincial government subsidy programs and the local level subsidy program.

Prime Minister Agriculture Modernization Project (PMAMP 2016 - 25): The government launched PMAMP in 2016. The project has been facilitating the expansion of the concept of pocket, block, zone and super zone in order to commercialize agriculture through production in these designated areas. The project supports in buying the agriculture equipment and machinery required for the successful commercialization efforts through capital subsidy. The project further supports in availing the fertilizers, good quality seed, irrigation facilities and technical support service for the designated area under the project.

2. Provincial government

Cabinet of Ministers: Each year, the cabinet reviews and approves the program, setting specific objectives and goals to align with provincial agricultural priorities. These objectives may focus on areas such as promoting sustainable farming practices, increasing mechanization, supporting smallholder farmers, or improving productivity for specific crops. By setting clear goals, the cabinet ensures that the subsidy program is strategically directed and aligned with broader economic and agricultural development plans within the province.

Agriculture Development Directorate**:** The directorate plays a crucial role in the implementation and oversight of the agriculture mechanization subsidy program. It is involved in conducting various research concerning the agriculture programs run in the province. Based on the studies it supports reforming and guiding the program formulation process. It also conducts oversight functions of the 11 AKCs in the Province and is responsible for various partnerships and liaisons including with the educational institutions for undertaking any kind of supporting activity.

Agriculture knowledge centers: These 11 centers, one in each district, are responsible for selecting subsidy recipients and overseeing the distribution process. They play a key role in educating farmers on subsidy schemes by disseminating details on eligibility, criteria, and application procedures. Additionally, the centers are tasked with monitoring and evaluating the impact and effectiveness of the subsidy program, ensuring that resources are allocated fairly and in line with provincial agricultural goals. For the same field technicians are appointed. These technicians visit the applicants field prior to granting subsidy to check if they fulfil the eligibility requirement and after the subsidy is received for evaluation and monitoring.

3. Local government

Agriculture development division: The Agriculture Development Division is responsible for managing all aspects of agricultural subsidies under the jurisdiction of the local government. This division oversees the entire subsidy application process, including verifying farmer eligibility, processing applications, and distributing subsidies. Additionally, the division provides support and guidance to local farmers, ensuring they understand the subsidy programs and can access the resources they need. The division also monitors the impact of subsidies at the community level, evaluating how effectively they enhance agricultural productivity and align with local agricultural development goals.

4. Private sector

The private sector is actively involved in importing, selling, and servicing agricultural machinery. Companies also provide training on machinery operation and maintenance.

Vendor: Vendors are integral in ensuring that the farmers have access to the machinery products for purchase and the government has a reliable supplier group in place. The vendors are called by the provincial as well as local authorities to list themselves so that they can be eligible to supply/sell the farmers with the machinery.

Repair and maintenance: services like repair and maintenance and timely servicing of the machinery and equipment is handled in most of the cases by the repair and maintenance businesses. Only few times do the consumer themselves do small repair and maintenance required.

Fuel centers: the fuel centers supply the machinery operators with petrol and diesel as per the requirement of the machinery.

Farmers; cooperatives and Associations: The subsidy is available to Agriculture cooperatives, registered agriculture groups and individual farmers that are registered as commercial farmers. The machinery that is provided to the agriculture groups and cooperatives are accessed by the farmers on need basis and the use is scheduled so that it can be accessed via all those who need it. The cooperatives and agriculture groups charge certain amount per hour

Financial institutions: The financial institutions support the financing need of the farmers and farmer groups by providing them with the access to finance their purchase of the subsidized machineries. Since even subsidized machinery often requires significant investment, financial institutions offer loans to cover remaining costs, making mechanization more accessible for farmers who may not have the upfront capital. Additionally, by offering low-interest loans or flexible repayment terms, they make it easier for smallholder farmers to invest in machinery that enhances productivity.

Constraint analysis

In this section, based on the market system analysis approach, key constraints to the effectiveness of the mechanization subsidy program has been analyzed. The focus of this section is identifying the challenges within the market system of agriculture mechanization subsidy program by mapping the supporting functions and the systems within them.

1. Targeting and outreach

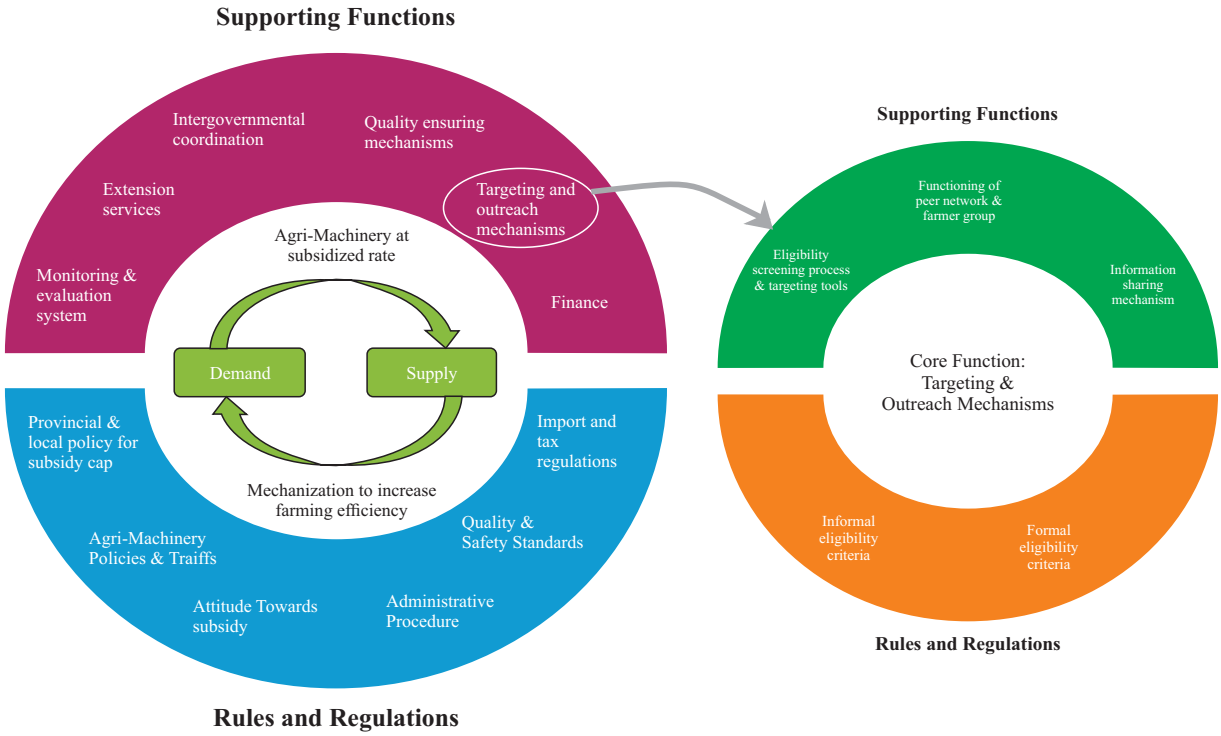


Figure 3: System mapping of targeting and outreach mechanisms

Eligibility screening and targeting tools: Targeting mechanisms often lack detailed, data-driven frameworks to prioritize marginalized groups effectively. Without ongoing needs assessment surveys, the program struggles to adapt to changing regional demands. For example, certain regions might have specific machinery needs due to unique terrain or crop types, but without frequent assessments, subsidy offerings remain static and may fail to meet actual needs.F

Eligibility criteria: As per the integrated procedures for budget and program implementation 2024[6], the only criteria for being eligible to receive mechanization subsidy is that you either have to be a registered farm or a registered farmers group/cooperative. Besides this there is no formally written eligibility criteria in any of the government policies.

6 Ministry of economic affairs, Gandaki Province. (2024). *Bajet tathaa karyakram karyaanvayan sambandhit ekikrit karyevidhi, 2081.* https://molcpa.gandaki.gov.np/view-pdf/pdf-integrated-procedures-for-budget-and-program-implementation-2081

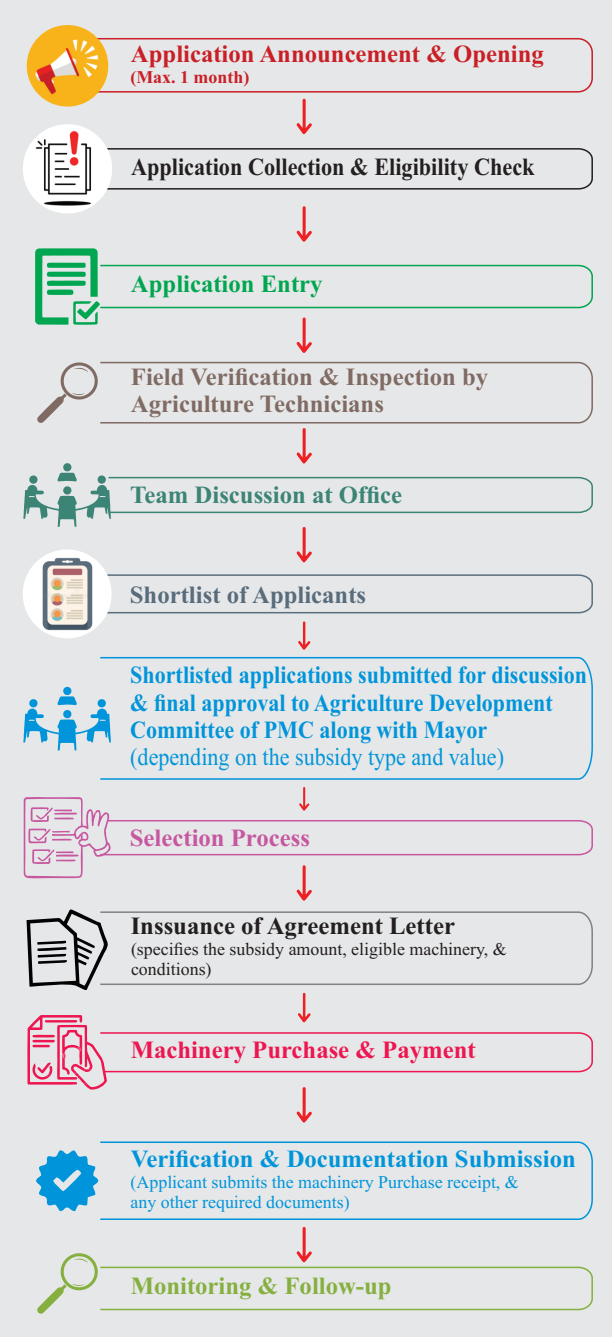


Figure 4: Application & Selection process for mechanization related subsidy at the PMC

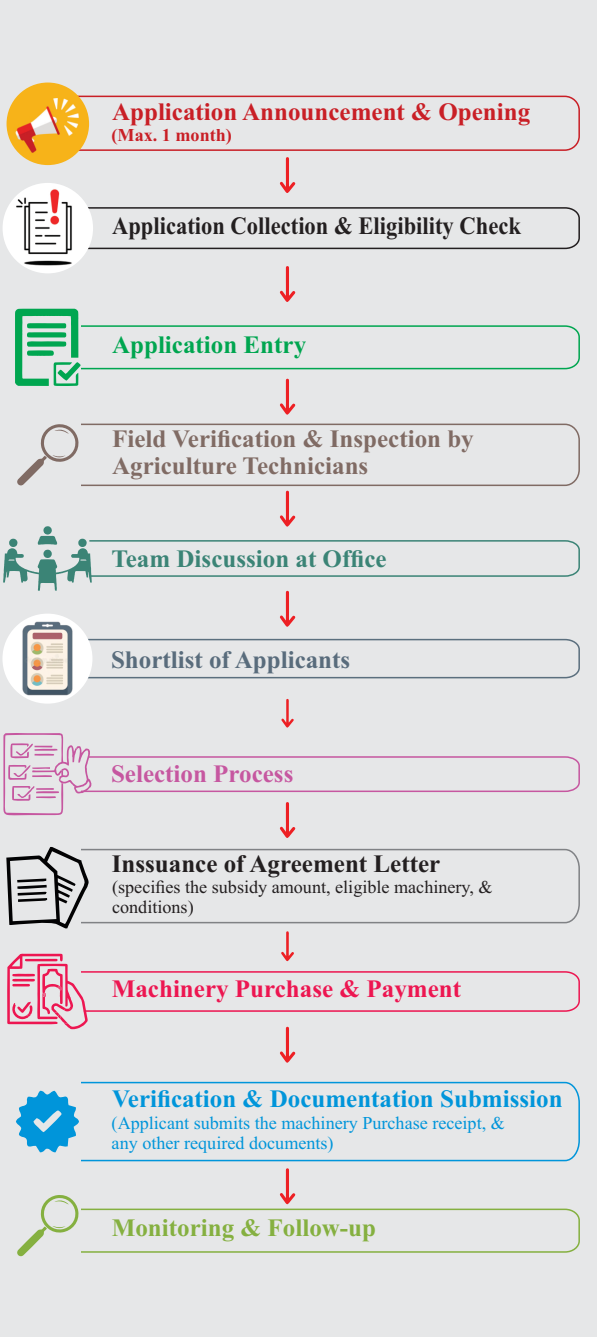


Figure 5: Application & Selection process for mechanization related subsidy at the Province

Further, due to the lack of formal eligibility criteria, the eligibility screening process is sometimes narrowly focused informally. For instance, as noted in the key informant interviews conducted during our case study regarding the mini tiller subsidy program in Pokhara, Gandaki Province, applicants are often screened based only on whether they have previously received specific equipment (such as a mini-tiller) rather than on a comprehensive assessment of their current needs, economic background, or operational capacity. This approach limits the program's ability to prioritize the most in-need farmers or those who would benefit most from mechanization.

Administrative procedures: One of the eligibility requirement for applying to subsidy program is being officially registered at the respective government authority. However, being registered requires visits to multiple government authorities, submission of multiple documents which is another hassle and payment of fees at these multiple authorities[7]. Further the process consumes a lot of time which usually a farmer does not have. In such a case the small holder farmers refrain from registering themselves which completely renders them ineligible. This and the lack of robust demographic and geographic data, subsidies may inadvertently benefit larger farms or better-connected regions, while smallholders and those in marginalized or remote areas remain underserved. This inefficiency reduces the program's ability to address the unique mechanization needs of smallholder farmers.

Peer network and farmer groups: Peer networks and local farmer groups are currently only serving as the middlemen who receive the subsidy and facilitate the farmers in using it. However, they could serve as effective information and support hubs, guiding farmers through the application process along with serving as a great information dissemination medium to reach the farmers in remote and rural areas as well. However, these networks are often underutilized in the program's formal outreach strategy. This oversight reduces the program's potential to benefit from grassroots support systems, which could alleviate burdens on official personnel and expand the program's reach more efficiently

2. Quality assurance

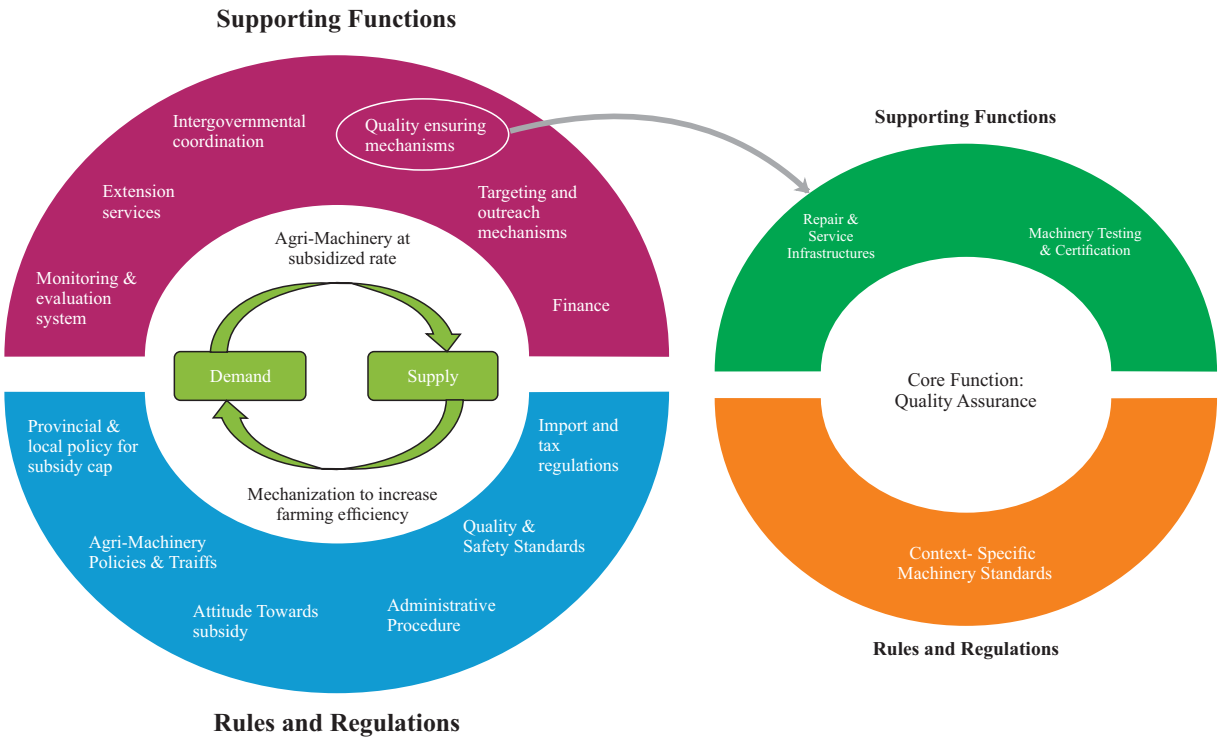


Figure 6: System mapping of quality ensuring mechanisms

7 Pokhara Research Center. (2024). MCSIs in Gandaki Province: The province-level policy instruments and challenges facing them. https://pokharacentre.org/wp-content/uploads/2024/03/MCSI-Paper.pdf

Machinery testing and certification: The testing and certification of machinery is not available throughout the country. The effectiveness of the machinery subsidy program is contingent upon the quality of the machinery product that is used and most importantly the reliability of the same product. Many research have also indicated that the establishment of specialized testing centers and regulatory frameworks is essential for the development of a robust machinery market[8]. Quality control mechanisms around the world such as certified testing centers are proven to verify machinery durability, safety, and performance before distribution to farmers. Testing centers also provide certifications for machinery meeting specific standards, ensuring consistent quality across various brands and models. However, for the lack of it there is no assurance of quality machinery products available to farmers.

Further, a significant constraint in Nepal's agricultural machinery subsidy market system is that higher-quality machinery, which typically has greater durability and efficiency, is often priced beyond the cap set by the subsidy program. This limitation forces farmers to choose lower-cost machinery options that meet the subsidy limits but may lack the durability and effectiveness needed for long-term productivity. Studies suggest that, due to the price cap, farmers frequently end up purchasing machinery with reduced functionality or shorter lifespans, which results in higher long-term costs due to repairs, frequent replacements, or underperformance in agricultural task. Additionally, lower-cost machinery often does not meet the specific needs of Nepal's varied agricultural landscapes, especially in hilly and remote areas, where robust equipment is crucial. The lack of flexibility in subsidy caps can limit access to better-suited machinery, restricting farmers' ability to maximize output and efficiency. Research also points to the need for locally manufactured or adapted machinery to better serve diverse terrains, which could reduce costs and improve quality, but support for this is minimal under current subsidy structures.

Development of standards and specifications: Despite multiple efforts at mechanizing the agriculture sector of the country including the formulation of the Agriculture Mechanization Promotion Policy 2014, the country has failed to generate specifications and proper standards for machinery purchase that ensures no sub-quality machinery enters the market.

Landscape and topography: The landscape and topography of the country demand topography-specific standards. A study conducted focusing on mechanization and its impact on Nepali households[9] found that the tractors that are helpful in terai may not be equally helpful in the hills of Nepal. The study further outlined that the relative lack of flatlands like terai and ruggedness was the main reason behind the difficulty in using tractors for agriculture and the productivity gap between terai and hills. For machinery used in diverse terrains (like Nepal's hills and plains), quality standards must be tailored to account for local conditions, ensuring that equipment can withstand regional environmental challenges. Further, Nepal's diverse agricultural landscapes, including hilly, plain, and remote terrains, require machinery adapted to specific conditions.

8 R Solovyev et al. (2022). Increasing agricultural automation in conditions of international integration. https://iopscience.iop.org/article/10.1088/1755-1315/954/1/012077/pdf

9 Takeshima, H. (2017). Overview of the evolution of agricultural mechanization in Nepal: a focus on tractors and combine harvesters. https://cgspace.cgiar.org/server/api/core/bitstreams/67a374c9-4c04-45c5-ab94-3691d2c8e361/content

Climate resilient machinery: The subsidy program of the government has introduced a climate-smart agriculture subsidy. However, mechanization in agriculture has absolutely been missed from this kind of subsidy program. There has been thus no effort being made in introducing climate-resilient machinery standards and emphasizing low carbon emitting machinery in agriculture.

Gender sensitivity: Agriculture mechanization efforts have also not been fully gender inclusive, despite the mechanization policy 2014 outlining women farmer empowerment as one of the four goals of mechanization. The mechanization policy only focused on introducing and increasing the number of machines used in agriculture without much focus on who uses it and where it is used.

The female farmers of Kaski, who were the beneficiaries of the mini-tiller subsidy program of the Gandaki Province have found the machinery physically too taxing to operate, making it quite challenging to utilize the machines effectively. The mini-tillers provided to the all-female agriculture cooperative group, while useful as an equipment they are not quite practical for these female farmers because it requires use of heavy physical force to be able to operate it and transport it from one part of the land to the other. The subsidy on machinery purchase doesn't exactly empower women farmers but rather makes them dependent on male members of the society in order to operate the machinery. Not just female farmers it was a major challenge also faced by male farmers according to our group consultations. However, in the case of female farmers the heavy machinery is inoperable by themselves. On top of that the uneven land they have to till makes it impossible for them to operate it. The women farmers have been tackling this challenge mostly by tilling their farms during the time of the day when male members of the family are available to work the field. This way, they have to be dependent on their male counterparts for farming. This is problematic since women farmers who were supposed to be empowered as a result of mechanization are becoming more and more dependent on the men of the family because of the 'women-unfriendly' machines. However, the issue of heavy machinery becomes particularly problematic in rural areas where many men are engaged in foreign employment.

Machinery repair and servicing infrastructure: in cases of remote places, machinery repair and servicing centers are not easily accessible and there is always a high transportation cost attached to it. Even in places where the infrastructure is in place and easily accessible, subsidy recipients have complained about the excessive charge of repair and spare parts that hurt their finances. The lack of proper context specific specifications also exacerbate the constraint relating to repair and servicing infrastructure. Machinery intended for one region may not be resilient enough in another, leading to equipment breakdowns and loss of efficiency. For instance, machinery that functions well in the plains may not be durable enough for hilly areas, where robustness is crucial due to rough terrain and limited accessibility for repairs.

3. Monitoring and evaluation:

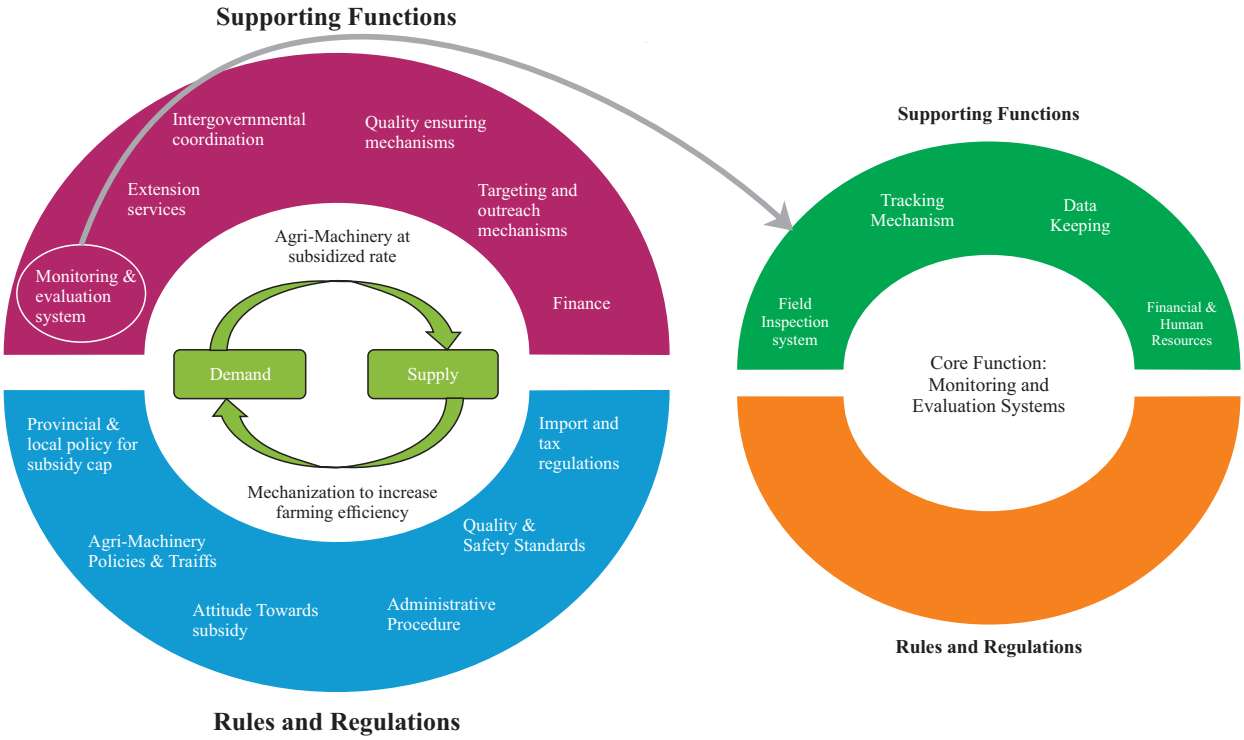


Figure 7: System mapping of monitoring and evaluation mechanisms

The monitoring and evaluation of agricultural mechanization subsidies, as highlighted in the discussions appear to be a significant constraint in the effective utilization of these subsidies. Despite a structured process for awarding subsidies, the lack of a comprehensive M&E system limits the capacity to ensure that the subsidies lead to sustained improvements in agricultural productivity and economic wellbeing

Inconsistent follow-up and inspections: While field inspections and follow-ups are conducted by the Agriculture knowledge center at the provincial level and Agriculture Division at Pokhara Metropolitan City (PMC), these inspections are inconsistent and lack formalized metrics or timelines. As per the KII conducted with the officials, Inspections might occur directly or indirectly, and often without standardized, periodic schedules (annual, biannual, etc.). This inconsistency in monitoring diminishes the ability to track the actual impact of the subsidy and whether it effectively meets the needs of the farmers over time. Further, there is no mechanism for feedback collection from the end users and when and if it is collected there is no prompt adjustment to the program.

Lack of performance tracking mechanisms: The performance tracking of the subsidy programs is limited to conversations with the recipient and the field inspections. There aren't any systemic tools for tracking how funds are allocated and whether they are achieving their intended outcomes. Further, the M&E efforts that are in place lack clear, specific success metrics, focusing primarily on the access of the subsidized machinery to all the applicants rather than on the proper utilization of the machinery in question. The performance tracked by the field inspectors assigned by the relevant institutions is more often than not based on word of mouth as per our KII. The inspection team often set the criteria of success of the subsidy program as all the land of the farmer being cultivated. This

is a very narrow matrix for mapping the success of the program and does not ensure the effective utilization at all.

Limited data on usage and impact: Comprehensive data on the actual usage of subsidized machinery and its impact on farm productivity are often not collected. Consequently, policymakers lack insights into the effectiveness of subsidies in achieving mechanization goals or improving productivity, making it harder to justify ongoing or additional funding.

Under-resourced M&E units: The government authorities have cited that there isn't enough resources for the relevant authority to conduct effective monitoring and evaluation so they make do with what resources they already have. Further monitoring teams are often under-resourced, lacking both skilled personnel and technology to gather and analyze data across diverse geographic regions. This lack of resources is especially challenging in Nepal's varied topography, where regions like the hills and mountains have unique mechanization needs and require tailored M&E efforts.

4. Intergovernmental coordination:

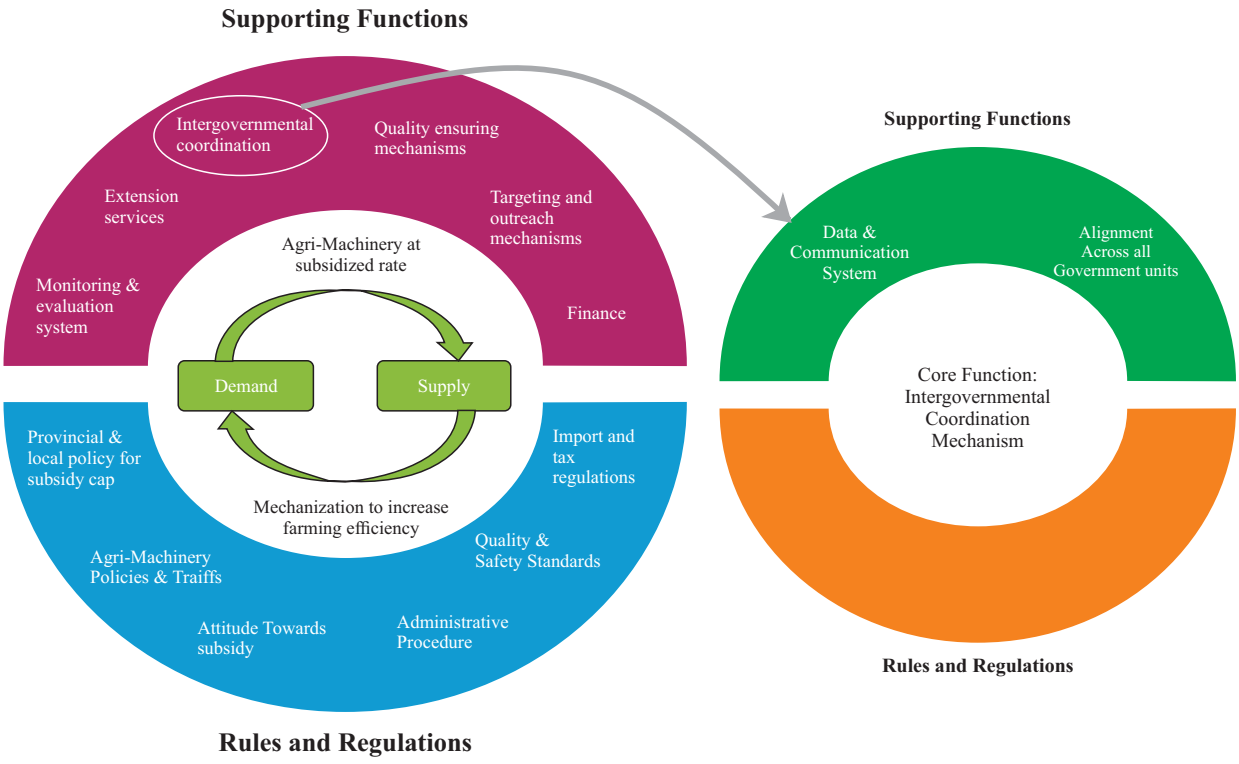


Figure 8: System mapping of intergovernmental coordination mechanisms

Alignment across government tiers: Each level of the government has a distinct role in impleting the subsidy program, and they are not intended to overlap. However, both provincial and local authorities have been carrying out the same function: distributing mechanization subsidies. The local level does this through their agricultural divisions, while the provincial level distributes subsidies via knowledge centers located in each district of the province. As such double the technical and human resource is being used for the same program. Again for the lack of formal criteria, both tiers of the government have their own interpretation of the eligibility of the applicant. This fragmented approach, where

different levels prioritize different objectives, creates inconsistencies and inequities in program access. Multiple subsidy programs offered by various levels of government can create redundancy and confusion. It might increase the number of recipient as such but might not increase the effectiveness of the program.

Centralized data and communication systems: Establishing centralized platforms for data sharing and communication between agencies allows seamless information flow across government tiers. A unified system for tracking applications, fund disbursements, and equipment utilization data provides clear visibility into the program's progress. This coordination aids in monitoring subsidy impact, reduces administrative delays, and enables rapid adjustments to program requirements based on shared insights, making the program more responsive and transparent.

Root cause analysis

This section summarizes the core constraints that impact the effectiveness of subsidy programs and their root cause. It maps the constraint, its effects or symptoms and then the root cause of the constraint in that order.

Table 2: Constraint and its root cause mapping

Constraints	*Symptoms (Effects of Constraints)*	*Roots (Systemic) Cause*
1. Monitoring & Evaluation (M&E)	- Limited tracking of subsidy impact and usage - Inconsistent follow-ups and adjustments based on field insights	- Inconsistent inspection schedules and lack of formalized metrics by AKCs and local divisions - No structured feedback loop for end-users to adjust programs in response to emerging needs
2. Lack of Performance tracking mechanisms	- No comprehensive data on subsidy effectiveness in improving productivity	- Reliance on basic conversations and field inspections as primary tracking methods. - Absence of clear success metrics, focusing mainly on land cultivation without deeper productivity analysis.
3. Limited data on usage and impact	- Difficulty in justifying funding and assessing program's productivity impact	- No systematic data collection on machinery usage or productivity increases - Limited access to data collection tools and resources for analysis, especially in hilly and remote areas.

4. Under resourced M&E units	- lack of capacity to collect data effectively across regions with diverse needs.	- insufficient staffing, technology, and budget to enable full monitoring across varied topographies in Nepal, such as hills and mountains where tailored M&E is required.
5. Quality assurance (repair and servicing)	- Limited resilience and durability of machinery in certain regions.	- Lack of certified testing centers for durability and safety standards. - Limited repair centers in remote areas, leading to high transport costs and additional financial burdens on farmers for repair and spare parts.
6. Context-specific standards	- Machinery not meeting needs in varied terrains, causing breakdowns and inefficiency. - Unavailability of climate adaptive machinery along with topography and gender specific machinery	- No context-specific standards for diverse topography and population demographics operating the machinery.
7. Subsidy cap limitations	- Farmers incentivized to buy lower-cost, less durable machinery, raising long-term costs.	- Subsidy caps prevent access to high-quality machinery that has greater efficiency and durability. - Lack of flexibility to adjust subsidy caps to accommodate the unique needs of different regions and smallholder farmers.
8. Targeting and outreach	- Large farmer groups but not enough machinery available.	- Incomplete demographic and geographic data to assess real needs.

9. Peer network and farmer groups	- Limited reach in remote areas, reducing accessibility to program information.	- Lack of formal integration of Farmer networks and groups into the subsidy outreach strategy, which would otherwise enable grassroots support and wider reach in information dissemination.
10.Intergovernmental coordination	- Fragmented implementation with redundancies and conflicting criteria.	- Misaligned objectives among federal, provincial, and local levels, leading to duplication and potential exclusion of eligible beneficiaries. - Absence of centralized data systems for consistent, transparent sharing of information and resources.
11. Administrative procedures and eligibility	- Exclusion of farmers unable to complete complex registration requirements.	- Rigid registration process limits accessibility, especially for smallholders. - Without sufficient support, smallholders remain unregistered and thus excluded from subsidy programs.

Vision and intervention plan

This section has outlined a detailed map of the intervention and required activities to see through the intervention plan along with expected outcomes and key actors responsible for the implementation of the said activities.

The intervention plan is not just a roadmap required by the MSD principles but also a necessary tool for the government institutions as our most recent study on budget planning and execution at the provincial level outlined that the lack of a proper well thought out plan and implementation framework prior to formulation of the key programs in annual development programs of the government to be a key challenge impeding effective implementation of the budget[10]. The intervention plan has also detailed the external actors required for the implementation of the identified activities as per the preliminary analysis.

1. Targeting and outreach

Vision: To establish an inclusive and data-driven outreach system that empowers farmers by ensuring they have timely and equitable access to machinery related agricultural subsidies tailored to their specific needs.

10 Pokhara research centre. (2024). Mid-term budget review: fiscal year 2080/81. https://pokharacentre.org/other-publications/mid-term-budget-review-fiscal-year-2080-81/

To achieve the vision stated above, five key aspects of the constraint must be addressed namely, lack of awareness of availability and importance of mechanization in agriculture, lack of targeted outreach, limited access to information and support, limited digital literacy and access to technology, and ineffective outreach strategies and messaging.

Supporting Functions		
Key constraint	**Intervention**	**Activity**
Lack of eligibility screening process and targeting tools	1. Develop a dynamic, data-driven framework to identify and prioritize marginalized farmers groups effectively. This system should integrate ongoing needs assessments to ensure that subsidy programs respond to regional demands and changing agricultural needs, such as terrain-specific machinery or crop-specific equipment. Further, it should align with the government objectives.	1.1 conduct regular surveys and assessments of farmers' machinery needs by region. 1.2 Use data mapping tools to visualize the distribution of needs and adjust subsidy allocations accordingly. 1.3 Implement a feedback loop with local governments to integrate findings from the needs assessment into yearly subsidy planning cycles.
Actors: 1. AKC partnership with local research institutions, NGOs, and agricultural organizations 2. Local government, farmer cooperatives, and farmer groups to collect grassroots data.		
Expected outcome: A well-adapted targeting mechanism.		
Minimum functioning of peer network & farmers group	1. Leverage existing peer networks and farmer groups as grassroots hubs for information dissemination and support. These groups can help guide farmers through the application process, answer questions, and serve as accessible points of contact, especially in remote areas	1.1 Collaborate with farmer cooperatives, community leaders, and local NGOs to integrate peer networks and farmer groups into the official outreach strategy. 1.2 Provide training sessions to equip these groups with the necessary knowledge on subsidy eligibility, application procedures, and available resources. 1.3 Develop incentives or small subsidies for these groups to encourage consistent, high-quality engagement with farmers and to formalize their role in the outreach process.

Actors: Farmer groups, local NGOs, Peer networks, Training institutions		
Expected outcome: Expanded program reach, improved information access for remote and rural farmers, and reduced strain on government personnel by distributing outreach responsibilities to community-based networks.		
Limited access to information and support	1. Strengthening Peer Networks and Farmer Groups for Outreach and Support 2. Community-Based Demonstration Events and Field Days	1.1 Collaborate with farmer cooperatives, community leaders, and local NGOs to integrate peer networks and farmer groups into the official outreach strategy. 1.2 Provide training sessions to equip these groups with the necessary knowledge on subsidy eligibility, application procedures, and available resources. 1.3 Develop incentives or small subsidies for these groups to encourage consistent, high-quality engagement with farmers and to formalize their role in the outreach process. 2.1 Coordinate with local farmer cooperatives, machinery vendors, and agricultural extension officers to hold demonstration events during key agricultural seasons. 2.2 Incorporate live demonstrations, Q&A sessions, and interactive discussions where farmers can learn about the availability and importance of specific machinery tools. 2.3 Develop mobile units that can travel to remote areas to conduct these demonstrations, ensuring equitable access to information.
Actors: 1. Farmer cooperatives, local NGOs, farmer groups to rope in the farmers into a single community. 2. Government officials to train the farmer cooperatives, local NGOs, farmer groups. 3. AKC in partnership with research organizations to develop incentive models.		
Expected outcome: Expanded program reach, improved information access for remote and rural farmers, and reduced strain on government personnel by distributing outreach responsibilities to community-based networks.		

Rules & Regulations		
Key constraint	**Intervention**	**Activity**
Lack of proper eligibility criteria formally	1. Design and implement an eligibility framework based on the results of the surveys and consultations	1.1 In coordination with the farmer groups, cooperatives, local government agencies draw out the potential eligibility options 1.2 Conduct a closed-door meeting to settle for the best of the options selected based on the nature of the subsidy program
Actors: Farmer groups, cooperatives, local government		
Expected outcome: A well-designed incorporative eligibility criteria		
Existence of informal eligibility Criteria	1. Implement and strictly monitor the field surveys	1.1 Incorporate monitoring mechanism into the directives set for monitoring the subsidy program
Actors: AKC		
Expected outcome: Implementation of the eligibility criteria		

2. Quality Assurance

Vision: To establish a robust quality assurance system that ensures the availability of durable, reliable, and efficient agricultural machinery, tailored to the diverse agro-ecological conditions of Nepal.

For achieving the vision stated above, four key aspects of the constraint must be addressed namely, lack of standardized quality control, inadequate machinery suitability for diverse agro-ecological conditions, and limited access to quality repair and maintenance services.

Supporting Functions		
Key constraint	**Intervention**	**Activity**
Lack of standardized quality control	1. Strengthen machinery testing and certification centers and develop quality standards	1.1 Collaborate with Agriculture and Forestry University (AFU), National Agricultural Engineering Research Centre (NAERC), and Agricultural Machinery Testing and Research Centre (AMTRC) to formulate testing standards for agricultural machinery. 1.2 Functionalize the testing and certification facilities 1.3 AKC monitor and enforce regulations and standards
Actors: 1. Collaborate with AKC, AFU, NAERC, AMTRC to develop testing and certification standards. 2. Collaborate with the Federal government to establish and functionalize the already established certification and testing center.		
Expected outcome: 1. Well-equipped testing and certification facility accessible to the province. 2. Use of tested and standard certified agriculture products		
Limited access to quality repair and maintenance services	1. Enhance Repair and Servicing Infrastructure	1.1 Establish partnerships with local cooperatives or farmer groups to manage and operate mobile repair units. 1.2 Provide training and technical support for local mechanics in key repair skills specific to agricultural machinery. 1.3 Develop a subsidy or voucher system to help farmers in remote areas access repairs and parts affordably.
Actors: Technicians and trainers to train local mechanics.		

Expected outcome: Improved access to affordable repair services, reducing equipment downtime and long-term operational costs for farmers in remote areas.

Rules & Regulations		
Key constraint	**Intervention**	**Activity**
Lack of context-specific standards for subsidized agriculture machinery	1. Development of context-specific machinery standards	1.1 Collaborate with Agricultural Tools Factory (ATF) to identify context-specific tools. 1.2 Integrate input from local farmers including women farmers and cooperatives along with climate adaptation experts to ensure standards align with on-the-ground needs. 1.3 Partner with machinery manufacturers and importers to encourage adherence to these standards, perhaps by offering incentives or subsidies for compliant machinery.
Actors: 1. AKC collaborates with ATF, farmer groups, and local government to develop context–specific standards. 2. Universities to help in development of standards and even machineries to address the regional needs.		
Expected outcome: Machinery better suited to local environments, leading to greater operational efficiency, reduced downtime, and longer equipment lifespans.		

3. Robust M&E mechanism development

Vision: Establishment of a responsive, data-driven monitoring and evaluation framework that maps the exact outcome of each and every subsidy provided by the provincial government.

For achieving the vision stated above, four key aspects of the constraint must be addressed namely, inconsistent inspections, unavailability of tracking mechanisms, limited data on usage, and resource constraints.

Key constraint	Intervention	Activity
Unavailability of tracking mechanisms	1. Introduce digital tracking tools for monitoring fund allocation, subsidy distribution, and machinery utilization. 2. Implement a formalized system for collecting feedback from farmers on the subsidy program.	1.1 Deploy an integrated digital M&E platform to log data on each subsidy recipient, machinery type, usage patterns, and outcomes. 1.2 Train all field staff on using this platform for data entry and report generation. The system could include mobile apps for real-time data collection in the field, reducing paperwork and streamlining data flows. 2.1 Set up multiple channels for feedback, such as helplines, and mobile survey apps. 2.2 Ensure that feedback is regularly reviewed and incorporated into program adjustments. 2.3 Organize periodic focus groups and feedback sessions to discuss specific challenges or improvements with farmers, field inspectors, farmer group, cooperatives, vendors and all other relevant stakeholders in the value chain.
Actors: IT company through rigorous process of application calling and evaluation by AKC		
Expected outcome: Expected outcome: A centralized, easily accessible database that provides comprehensive, real-time insights into the effectiveness and reach of subsidies, improving accountability and decision-making		
Inconsistent follow ups	1. Establish standardized guidelines for field inspections with clear matrices and timelines	1.1 Define standard metrics to assess the effectiveness of subsidized machinery use, such as productivity gains, farmer satisfaction, and frequency of use 1.2 Develop a structured, periodic inspection schedule

Actors: AKC		
Expected outcome: Consistent and data-driven inspections that offer a clearer picture of subsidy utilization and impact, enabling adjustments as necessary to meet farmers' needs.		
Limited data	1. Conduct surveys and follow-up assessments to gather detailed data on the practical usage of machinery, and its impact on farm productivity	1.1 Collaborate with local cooperatives, farmer groups, and extention services to conduct periodic surveys among subsidy receipients. 1.2 Data points should include these but not limited to: frequency of machinery use, maintenance needs, crop yield improvements
Actor: AKC should Partner with a local research institution to build the data collection framework and for timely (annual, biannual) data collection it should utilize its partnership with the Pokhara University and other educational institutions through which it has been conducting 5 research projects annually.		
Expected outcome: Increased availability of detailed, quantitative data that allows policymakers to assess whether subsidies meet mechanization and productivity goals, justifying further funding or adjustments.		
Resource crunch	1. Allocate additional funding or restructure the financing and resources to build the capacity of M&E teams	1.1 Invest in hiring more field staff and equipping them with the necessary technology. 1.2 Provide training on M&E methodologies, data analysis, and digital tools to ensure efficient and reliable data collection and analysis. 1.3 Addressing geographical challenges in areas with difficult topography, ensuring the availability of transportation and mobile data access for remote monitoring.
Actor: AKC in collaboration with training institutes, local partners, farmer cooperatives and farmer groups.		
Expected outcome: Well-equipped, skilled M&E teams capable of conducting comprehensive monitoring across diverse regions, particularly in areas like the hills and mountains where tailored mechanization approaches are needed.		

4. Improved intergovernmental coordination

Vision: To establish a seamless, efficient, and equitable agricultural subsidy program through strong intergovernmental collaboration, enabling timely delivery of support to farmers.

To achieve the vision stated above, five key aspects of the constraint must be addressed namely, lack of coordination and information sharing among government tiers, and lack of alignment across government units.

Key constraint	Intervention	Activity
Lack of coordination and information sharing among government tiers	1. Establish a centralized data and communication platform	1.1 Partner with IT service providers and government agencies to design and implement a secure, user-friendly platform that all tiers of government can access. 1.2 Develop standardized data input protocols and reporting formats to enable seamless integration of data from all levels. 1.3 Conduct training sessions for relevant government officials at each tier to ensure proper platform usage and maintenance.
Actor: 1. AKC, in collaboration with IT service providers, to develop a comprehensive communication, project, and document management system. The technology partner should provide necessary training and user manuals to equip designated officers with the skills to train end-users effectively. 2. A cross functional team of different government departments like AKC, finance, information and technology, accounts to develop and implement the standardized data protocols and formats.		
Expected outcome: Improved transparency and accountability in program implementation, reduced administrative delays, and enhanced monitoring of program progress and impact. The platform would enable quick adjustments based on data-driven insights, improving the responsiveness of the subsidy program.		

Lack of alignment across government units	1. Establish a joint coordination committee	1.1 Form a high-level committee with representatives from federal, provincial, and local governments to oversee the subsidy program. 1.2 Develop a shared vision and strategic plan for the program 1.3 Establish clear roles and responsibilities for each government tier. 1.4 Regularly review and update the program's guidelines and procedures to ensure consistency and alignment.
Actor: 1. Select members of all tiers of government to form a joint committee in order to find out the overlapping of the programs and maintain consistency and alignment. 2. AKC in partnership with a research organization to come up with a shared vision and strategic plan in order to achieve the vision.		
Expected outcome: The formation of a joint coordination committee will result in streamlined resource allocation and minimized redundancy, leading to a more efficient use of funds and better service delivery to farmers. The delineation of roles and responsibilities would allow the provincial government to concentrate on strategic planning, policy formulation, and conducting research to identify and address systemic issues hindering the effectiveness of subsidy programs. While the local government can remain focused on service delivery, direct outreach to farmers, and building strong relationships with farmer groups and cooperatives.		

Conclusion

The findings of the research suggest that in the long term, province's approach to agriculture mechanization subsidies should move from the current model of subsidy distribution to a robust framework centered on monitoring, evaluation, and strategic oversight. Currently, both provincial and local governments play an active role in directly distributing subsidies for agricultural mechanization. This overlap could be the result of similar jurisdictions granted by the constitution to both provincial and local levels in agriculture and livestock development[11]. As per the unbundling of the Constitution of Nepal, the exclusive jurisdiction of the provincial government, Schedule 6 point 20, and the exclusive jurisdiction of local government, schedule 8 points 15 and 18 have Agriculture and livestock development in their purview. In case of the provincial government point 20.1.4 of the schedule 6 matters relating to mechanization along with the development and expansion of agro-equipments fall under the exclusive jurisdiction of the province. However, as per schedule 8 point 15.1.2, technology expansion, technical support, supply of agriculture materials and implementation of agriculture programs fall exclusively under the jurisdiction of the local level. So if we consider this technicality, both tiers have the legal grounds in deciding to disburse mechanization subsidy through their own entities. However, as stated in the unbundling, '*According to the principle of subsidy, higher level government should perform only those tasks which lower level government cannot perform equally well or better. This is because the lower level of agency or local government is closer to the people, is more familiar to the needs and preferences of the taxpaying people, and is more accountable and responsible towards the people. The people themselves can effectively.' monitor and implement the service provided in the local level, this is why these type of work should be assigned to the local government*[12]. This as per the systematic classification of the jurisdiction is crucial to ensure efficiency in work and subsidiarity.

If continued on the grounds of being "technically correct course of action" this overlap will continue to leaving a huge gap in realizing the benefits of the targeted subsidy programs to the country and to the farmer. By stepping back from direct involvement, the provincial government can thus instead dedicate the resources to comprehensive research studies and develop precise guidelines and evidence-based modules tailored to local conditions, such as those for terrain-specific machinery and context-sensitive eligibility criteria. If we look into points 20.1.12 and points 20.1.13 all of this falls under the exclusive jurisdiction of the province and not the local level.

This shift thus would allow for a more targeted and systematic approach, as highlighted by the market systems analysis in the report, which identifies gaps in data management, performance tracking, and quality assurance of subsidized equipment. Rather than

11 Federalism implementation and administration restructuring coordination committee. (2018). *Nepalko sambidhanko anusuchi 5,6,7,8 and 9 ma ullekhit sangh, Pradesh ra sthaniya tahako adhikaarharuko karyavistritikaran sambandhit Nepal sarkaar ma. Pa. bata swikrit prativedan* https://tinyurl.com/29h2f62f

12 Federalism implementation and administration restructuring coordination committee. (2018). *Nepalko sambidhanko anusuchi 5,6,7,8 and 9 ma ullekhit sangh, Pradesh ra sthaniya tahako adhikaarharuko karyavistritikaran sambandhit Nepal sarkaar ma. Pa. bata swikrit prativedan* https://tinyurl.com/29h2f62f

focusing solely on distribution, the province could establish a monitoring and evaluation system that gathers ongoing data on the real-world use and impact of subsidized machinery. Such a system would enable continuous improvement, adjusting subsidies to address the diverse needs of smallholder farmers across the province's varied topographies. This redefined role would empower the government to support sustainable and self-sufficient agricultural mechanization, resulting in a more resilient agricultural market system that reduces long-term dependency on subsidies.

Annex 1: List of KII

S. N.	Name	Designation	Date of KII
1	Manoj Poudel	Agriculture Economic Expert, Directorate of Agriculture Development, Gandaki Province	25th October
2	Dr. Perena Sedai Bhattarai	Director General, Directorate of Livestock and Fisheries Development, Gandaki Province	23rd September
3	Baasu Regmi	Director General, Directorate of Agriculture Development, Gandaki Province	23rd September
4	Binod Sharma	Agriculture Extension Officer of Directorate of Agriculture Development, Gandaki Province	21st October
5	Narayan Pathak	Agriculture Economist of Ministry of Agriculture, Land Management and Cooperatives, Gandaki Province	24th October
6	Bal Krishna Adhikari	Sr. Agriculture Development Officer, DoAD, Gandaki	24th October
7	Milan Acharya	Crop Development Officer, DoAD, Gandaki	24th October
8	Manohar Kadariya	Senior Agriculture Officer, Pokhara Metropolitan City, Kaski	6th November
9	Suroj Chiluwel	Information Officer, Agriculture Development Division, Pokhara Metropolitan City, Kaski	6th November
10	Ramkrishna Aryal	Agriculture Extension Officer, Agriculture Knowledge Centre, Kaski	6th November
11	Uddyam Chautari	Vendor, Pokhara Mustang Chowk	13th November
12	SRT Agro Traders	Vendor, Pokhara Nayabazar	13th November
13	Damodar Adhikari	Agriculture Officer, Agricultural Development Division, PMC	13th November
14	Shiva Poudel	SK Machinery and Pump Suppliers	13th November
15	Sivana Agro Pvt. Ltd.	Vendor, Pokhara, Chhorepatan	13th November

Annex 2: List of farmers & agriculture cooperatives in group survey

S. N.	Name	Affiliated farm	Date of survey
1	Dhan Bahadur Baral	Prabhudham Hariyali Krishi Sahakari Sastha, Arba	30th October
2	Khemraj Subedi	Fusrekhola Krishi Tatha Pashupalan Samuha, Fusrekhola	30th October
3	Shoba Acharya	Armala Sanakisan Krishi Sahakari Sastha, Batulechaur	29th October
4	Krishna Prasad Parajuli	Okhaldhunga Krisak Samuha, Chapakot	29th October
5	Balram Acharya	Farmer, Armala Sanakisan Krishi Sahakari Sastha, Batulechaur	29th October
6	Ekumaya Acharya	Farmer, Armala Sanakisan Krishi Sahakari Sastha, Batulechaur	29th October
7	Anisha Paudel	Okhaldhunga Krisak Samuha, Chapakot	29th October
8	Manoj Subedi	Fusrekhola Krishi Tatha Pashupalan Samuha, Fusrekhola	30th October
9	Gyan Bahadur Baral	Farmer, Aarwa	30th October
10	Santosh Bahadur Baral	Farmer, Aarwa	30th October

Annex 3: Infographic used for Media Campaign

स्थानीय सरकार सबलीकरण

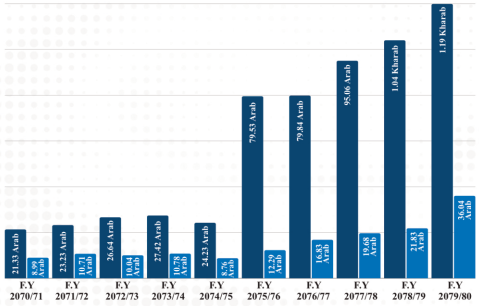
Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Total Portion covered by Subsidies in Agriculture Budget of Nepal



Source: Annual Report of the Auditor General (F.Y. 2070/71 to F.Y. 2079/80)

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

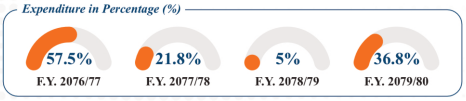
AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Total Portion covered by Subsidies in Agriculture Budget of Gandaki Province

Fiscal Year	Budget Allocated in Agriculture	Expenditure in Subsidy
2076/77	1.92 arab	1.10 arab
2077/78	1.30 arab	28.36 crore
2078/79	1.02 arab	5.11 crore
2079/80	1.02 arab	37.54 crore

Expenditure in Percentage (%)



Source: Annual Report of the Gandaki Province Auditor General (F.Y. 2075/76 to F.Y. 2079/80)

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Types of Subsidies provided by the Government of Nepal

1. Agricultural input & mechanization subsidies

- **Subsidy on Agricultural Inputs:** fertilizers, seeds, tunnel construction, sprayer, mulching plastic and agriculture tools.
- **Subsidy on Agriculture mechanization:** fifty percent cost sharing subsidy for machines like, mini-tillers, chaff cutter, power tiller, threshers etc. it also includes installation & maintenance of irrigation machineries, such as drip & sprinkler irrigation,

Source: Multiple Government Sources

Swipe

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Types of Subsidies provided by the Government of Nepal

2. Livestock Support Programs

Livestock Development Subsidies: subsidies on inputs like vaccines, feed, and breeding materials to improve livestock productivity and health.

3. Price Support

Minimum Support Price (MSP) for certain crops to protect from market fluctuations.

Source: Multiple Government Sources

Swipe

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Types of Subsidies provided by the Government of Nepal

4. Contract Farming & Market Linkage Programs

The government has promoted contract farming models, where farmers can secure guaranteed prices and markets for their products. Financial support to facilitate the establishment of these contracts and improve market linkages.

5. Export Promotion & Value-Added Agriculture

Includes subsidies for value-added agricultural processing, such as packaging and branding, to meet international market standards.

Source: Multiple Government Sources

Swipe

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Types of Subsidies provided by the Government of Nepal

6. Youth & Women Programs

Specific subsidy schemes aimed at engaging youth in agriculture and empowering women farmers, often through training programs, loans, and support for female-owned enterprises.

7. Cooperative Support Programs

Financial assistance, including grants & low-interest loans, is provided to the agriculture cooperatives to help them improve storage, marketing, and processing facilities, thereby increasing farmers' access to markets.

8. Agricultural Extension & Capacity-Building Programs

Financial support for training programs, workshops, and seminars aimed at improving agricultural practices, business skills, and farm management.

Source: Multiple Government Sources

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Types of Subsidies provided by the Government of Nepal

9. Agricultural Infrastructure Development Programs

- **Infrastructure for access** — The government provides financial support for the construction of infrastructure such as rural roads,cold storage facilities, and agro-processing units, which are essential for improving market access and reducing post-harvest losses.
- **Small Irrigation & Water Management Projects** — Financial assistance is offered for small-scale irrigation and water management projects to enhance agricultural productivity, particularly in water-scarce regions.

Source: Multiple Government Sources

Swipe

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Types of Subsidies provided by the Government of Nepal

10. Agricultural Credit Schemes

- **Loans through banks** — NRB and commercial banks offer concessional loans to farmers for crop production, livestock, and infrastructure, with low-interest rates and flexible repayment terms.
- **Agricultural Development Bank (ADB/N)** — provides credit facilities to farmers, cooperatives, and agricultural enterprises through various loan schemes, including working capital, farm mechanization, and seasonal loans.

Source: Multiple Government Sources

Swipe

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Types of Subsidies provided by the Government of Nepal

11. Insurance Support

- **Crop Insurance** — Subsidies in payment of premium of insurance for crop to help farmers mitigate risks related to natural disasters such as floods, droughts, and hailstorms.
- **Livestock Insurance** — Subsidies in payment of premium of insurance for livestock in case of livestock loss due to diseases, accidents, or natural disasters

Source: Multiple Government Sources

Swipe

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Types of Subsidies provided by the Government of Nepal

12. Climate-Smart Agriculture (CSA) Programs — Financial incentives for adopting sustainable farming techniques such as agroforestry, organic farming, and the use of climate-resilient crops.

Source: Multiple Government Sources

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Agricultural Subsidy Programs under the jurisdiction of Three Levels of Government

Federal Government	*Provincial Government*	*Local Government*
Agriculture Input Subsidies (fertilizers, seeds, tunnel construction, sprayer, mulching plastic and agriculture tools)		
Subsidy on Agriculture Mechanization		
Minimum Support Price (MSP)		

Swipe

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Agricultural Subsidy Programs under the jurisdiction of Three Levels of Government

Federal Government	*Provincial Government*	*Local Government*
Youth & Women Program (training programs, loans and support for female-owned enterprises)		
Contract Farming and Market Linkage Programs		
Program Description Export Promotion and Value-AddedAgriculture (packaging and branding)		

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Agricultural Subsidy Programs under the jurisdiction of both Federal & Provincial Government

Federal Government | *Provincial Government*

Agricultural Infrastructure Development Programs (rural roads, cold storage facilities and agro- processing units)

Cooperative Support Programs (improve storage, marketing, and processing facilities, thereby increasing farmers' access to markets)

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Agricultural Subsidy Programs under the sole jurisdiction of Federal Government

Federal Government

Agricultural Credit Schemes

Crop and Livestock Insurance

Swipe

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Agricultural Subsidy Programs under the sole jurisdiction of Provincial Government

Provincial Government

Cooperative Support Programs (improve storage, marketing, and processing facilities, thereby increasing farmers' access to markets)

Subsidy on Irrigation System (installation and maintenance of drip and sprinkler irrigation)

Livestock Support Program (vaccines, feed, and breeding materials)

Swipe

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Agricultural Subsidy Programs under the sole jurisdiction of Local Government

Local Government

Agricultural Extension and Capacity-Building Programs

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Key Objectives of Mechanization Subsidy Program

www.pokharacentre.org

स्थानीय सरकार सबलीकरण

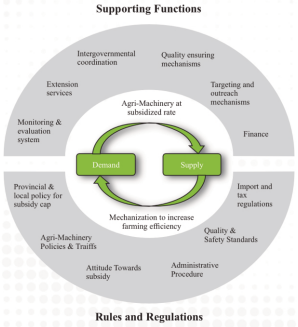
Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Agriculture Mechanization Subsidy Market System : Core Market Function



www.pokharacentre.org

स्थानीय सरकार सबलीकरण

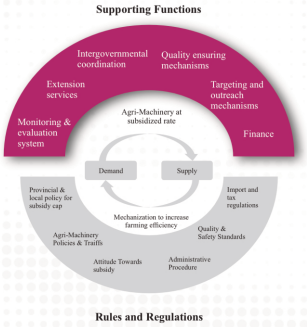
Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Agriculture Mechanization Subsidy Market System : Supporting Functions



स्थानीय सरकार सबलीकरण

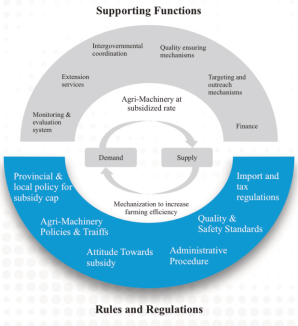
Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Agriculture Mechanization Subsidy Market System : Rules and Regulations



www.pokharacentre.org

स्थानीय सरकार सबलीकरण

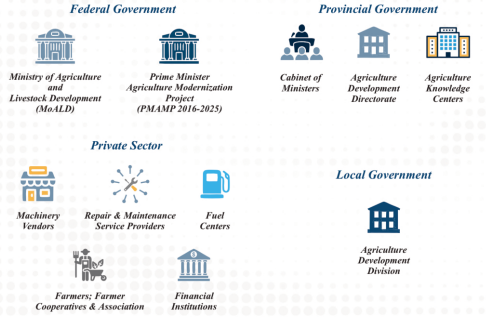
Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Key actors involved in Agriculture Mechanization Subsidy Market System



www.pokharacentre.org

स्थानीय सरकार सबलीकरण

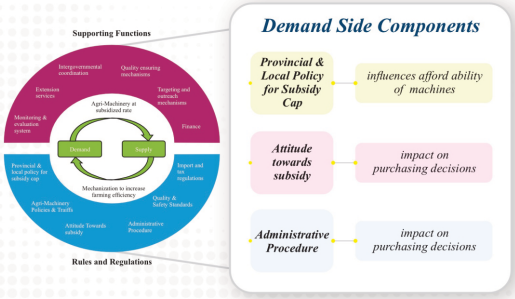
Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Key Components of the Agriculture Mechanization Subsidy Market System



www.pokharacentre.org

स्थानीय सरकार सबलीकरण

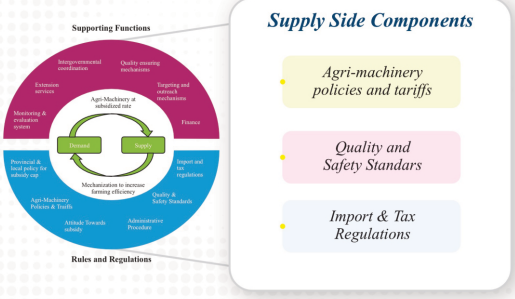
Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Key Components of the Agriculture Mechanization Subsidy Market System



www.pokharacentre.org

स्थानीय सरकार सबलीकरण

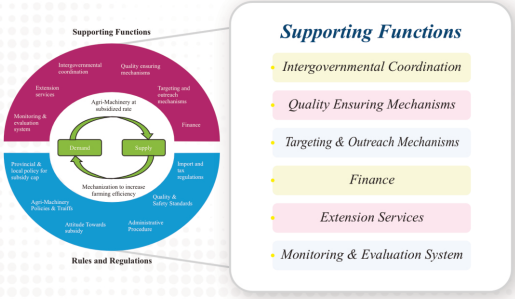
Australian Aid — The Asia Foundation

POKHARA RESEARCH CENTRE

AGRICULTURE SUBSIDY PROGRAM

Gandaki Province

Key Components of the Agriculture Mechanization Subsidy Market System



www.pokharacentre.org

About Pokhara Research Centre (PRC)

Established in 2019, **Pokhara Research Centre (PRC)** is a non-partisan, research-driven think tank organization based in Pokhara, Gandaki Province, Nepal. PRC is dedicated to analyzing and addressing the socioeconomic dimensions of domestic public policy and operates under the guiding principles of economic freedom, good governance, and evidence-based policymaking, with a strong focus on Research, Training, and Advocacy.

Established as a provincial policy think tank, the PRC collaborates closely with the Gandaki Provincial Government, parliamentarians, bureaucrats, and key stakeholders in the private sector to investigate key challenges facing provincial economic progress and drive impactful policy reforms to address them.

The think tank drives policy reform through the PRC approach: Program (P), Research (R), and Communication (C). The first approach focuses on programs and training, where it works directly with parliamentarians and youth to enhance legislative capacity and governance effectiveness. PRC's flagship initiative, the Youth in Policy and Governance Fellowship (YPG Fellowship) identifies and trains promising young professionals, who are then placed as knowledge support to members of the Gandaki Provincial Assembly. This initiative not only strengthens policy formulation and governance capacity but also empowers youth to play an active role in deepening Nepal's federal system. Additionally, the PRC conducts tailored capacity-building programs for women and marginalized MPs, ensuring that provincial leadership is more inclusive, informed, and effective.

The second approach focuses on research, fostering policy reforms through data-driven insights and evidence-based policymaking. PRC's research initiatives span critical policy areas, including but not limited to enterprise development, public finance, parliamentary procedures, taxation, agriculture, tourism, and economic policy reforms. By generating high-quality research the PRC ensures that Provincial policies and governance framework align with the economic realities of the province.

The third approach, communication, is centered on advocacy as an integral part of the PRC's policy reform efforts. Advocacy is not limited to disseminating research findings but is embedded throughout the research process itself to foster accountability, stakeholder ownership, and long-term policy impact. PRC employs a multi-faceted advocacy strategy that includes closed-door meetings, key stakeholder discussions, media campaigns, and informal networking, ensuring that policy recommendations gain traction among decision-makers. Informal networking, in particular, is a cornerstone of PRC's advocacy efforts. Platforms like the PRC-led Gandaki Leaders' Circle (GLC) provide a responsive and solution-driven forum and bring together the representatives from the government as well as nongovernment sectors to discuss and identify the implementable solutions to the challenges facing the provincial economy and policy.

As an established think tank working to strengthen federalism, the PRC is an active partner of international and national organizations, including Atlas Network, the Centre for International Private Enterprise (CIPE), National Endowment for Democracy (NED), The Asia Foundation, the Australian Government's Department of Foreign Affairs and Trade, and the United States Embassy in Nepal. PRC remains committed to bridging gaps in research and governance, fostering evidence-based and transparent policymaking, and contributing to sustainable economic growth in Gandaki Province and beyond.

POKHARA
RESEARCH CENTRE

Pokhara-11 Fulbari, Gandaki Province, Nepal
Tel.: 061-587111
Email: centre.pokhara@gmail.com
Website: www.pokharacentre.org