Understanding the barriers to Access and Use of Mechanical Equipment in a Feminized Agricultural Climate

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UNDERSTANDING THE BARRIERS TO WOMEN FARMERS ACCESS AND USE OF MECHANICAL EQUIPMENT IN A FEMINIZED AGRICULTURAL CLIMATE

Abstract

In the past few decades, the outmigration rate of Nepal has escalated. With mostly male members of agricultural households leaving for work abroad, agricultural patterns in the country have changed. The burden of most of the agricultural work has fallen on women, who struggle to balance farming with household and reproductive labor. This feminization trend calls for a change in the way the government supports the agricultural sector of the country, by making and amending policies to cater better to the needs of women farmers. This is crucial step in encouraging them to consider farming as a means of substantial income, thereby discouraging the migration of families from rural areas to major cities and empowering women. In the Agricultural Development Strategy (ADS) launched by the Ministry of Agricultural Development in 2015, which strives to increase the agricultural productivity of the country, one of the key listed goals is mechanization of agriculture. By supporting farmers with adequate, easy to use tools and equipment, farmers' involvement in commercial agriculture is expected to improve. This paper examines if the efforts to mechanize agriculture are considering the feminization trend of agriculture. Are women the focus of multiple equipment training and distribution programs launched by large national and international agencies, or are they in the back seat? Do women in rural areas have access to technology that are comfortable and culturally appropriate? This paper seeks to answer these questions by conducting extensive literature analysis and interviews on the barriers between women and agricultural technology, and accordingly, propose some policy recommendations to the Ministry of Agricultural Development.

Keywords: *women, feminization, technology, needs assessment, access, participation, extension services*

List of Abbreviation

ADS	Agricultural Development Strategy
APP	Agriculture Perspective Plan
CSISA-NP	Cereal Systems Initiative for South Asia
DADO	District Agriculture Development Office
DDRC	District Disaster Relief Committee
DoA	Department of Agriculture
DoLS	Department of Livestock Services
FAO	Food and Agriculture Organization
GIDA	Ghana Irrigation Development Authority
ICIMOD	International Centre for Integrated Mountain Development
INAGEP	Innovation and Agro Entrepreneurship Program
INGO	International Non-Government Organization
IPM	Integrated Pest Management
MoAD	Ministry of Agricultural Development
NARC	Nepal Agricultural Research Council
NGO	Non-Government Organization
PMAMP	Prime Minister Agriculture Modernization Project
WOCAN	Women Organizing for Change in Agriculture and NRM

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I. Introduction and Background

Although they contribute to a significant portion of the GDP, most farming practices in Nepal remain for subsistence. This can be attributed to a myriad of socio-political and environmental factors. Some of the common problems faced by farmers in the country are inadequate access to resources such as seeds and modern technology, inability to find markets, and climate change (Malla, 2009; Tamang et. al, 2014). The conglomeration of these factors, combined with other political factors, has led to an increasing outmigration rate. Family members, mostly men, are permanently leaving their families in their home country in search for better job prospects. As a result of this phenomenon, the agricultural sector has become feminized (Gartaula et. al., 2010). In addition to reproductive work, women in families have taken the burden of the agricultural work that, in most cases, used to be led by male members of the family. Literature on this topic point to several injustice and social exclusion issues following this trend. Because of increased workload, women tend to be forced to give up their time they would spend on other activities contributing to their skill development. Some are even forced to move into urban centers to escape poverty and food insecurity. These patterns, scholars suggest, might be slowing down the country's agricultural productivity (Tamang et al., 2014). The question then becomes, how should the nation respond to this feminization trend? ICIMOD (International Centre for Integrated Mountain Development) recommends that, to reduce women farmers' workload by increasing efficiency, the government should promote "women-friendly, time-saving and inexpensive agricultural and household technologies". Some other barriers to women's access and use of technology are represented in figure I below.

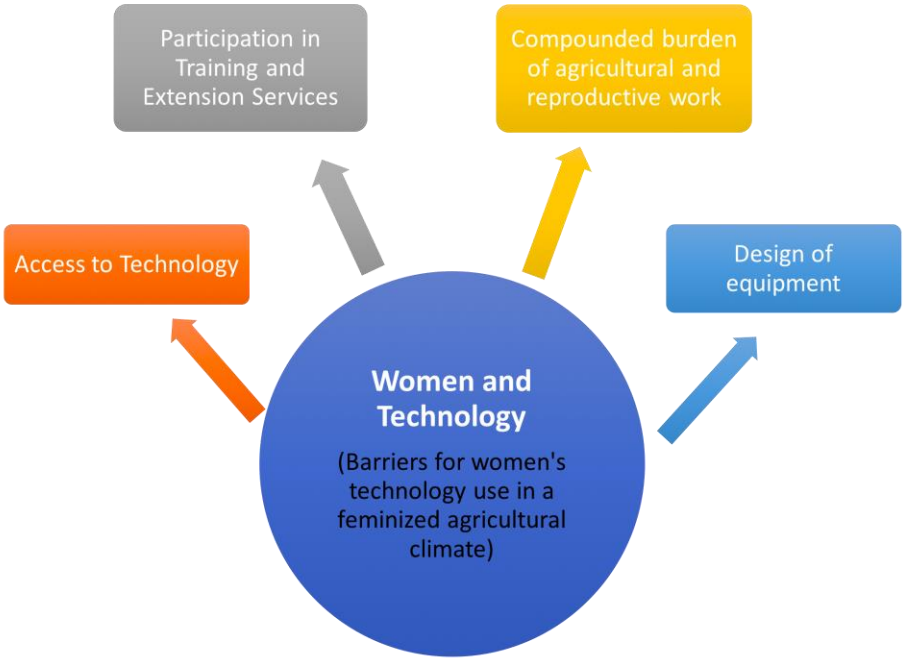

Figure I. Graphic showing the barriers to women's use of technology in a feminized agricultural system of the Mid Hills of Nepal

This paper will present some of the pressing issues related to technology access and use that Nepali women in the agricultural sector face. Then, a review of the most recent policies put forth by the Ministry of Agricultural Development concerning women in the sector will be conducted. The Prime Minister Agriculture Modernization Project (PMAMP), a project in conjunction with the Agricultural Development Strategy will be paid special attention to. One of its main goals is to promote commercialization of agriculture through development of infrastructure and technology. With assistance and guidance from the ministry, this paper presents an evaluation of the implementation of these projects by checking the status and impact of research, training and programs beings delivered to agricultural communities. This was examined at a macro level, for eg, how are large subsidies, for agricultural equipment increasing

women participation in the labor force. Then, the impact of a equipment (mini tiller) distribution program launched by CIMMYT as part of its Earthquake Recovery Program, bilaterally with the government, was assessed. This was done through interviews with beneficiaries of the program. Further in the paper, an international case is studied to draw parallels with the status of women and agricultural technology in Nepal and to extrapolate some important lessons. On the basis of the findings, appropriate policy recommendation are provided to the Government of Nepal.

A. Literature Review

Kelker (2009) investigation of the implications of feminization in developing countries in Asia shows that there are two issues that are common among all; Women have "much poorer access, control and ownership of land, and other productive resources" and they lack adequate access to "public services such as training, extension and credit". Technologies, Kelker notes, are designed specifically suited for men and mostly for irrigated land.

Nepalese women face very similar problems. In 2008, Women Organizing for Change in Agriculture and NRM (WOCAN) released a report that studied women leadership in Nepal's agricultural sector. In a feminized agricultural system, they see social position of women as a major hindrance to their leadership development. Ownership of land, access to inputs and other services are identified as enablers that contribute to women's successes in the field. The absence of these factors, therefore, encumber agricultural productivity (Ghale, 2008).

A Guardian article suggests that research and technology are not aimed at women even though they are the larger demographic involved. A survey conducted by the Food and Agriculture Organization (FAO) found that only 3% of women used mechanical equipment compared to 8% men in Nepal. The demands are different so the government needs to plan accordingly. Institute for Integrated Development Studies, a think tank situated in Kathmandu,

suggests that agricultural research and training could cut poverty. For example, a dehusking machine for finger millet (kodo) would be more efficient and women friendly. Researchers suggest that designing technology congruous to the needs of the farmers would result in "higher uptake of a technology, and more would benefit from the technology for the family". Only 10% of agriculture researchers are women. Women are less educated than men, so that must be taken into consideration, since the level of education can affect their access to information and training. If the government launched programs based on the different needs of women in different agricultural communities and making necessary training and tools available, then they could do a all of the agricultural work themselves, according to a woman farmer and chairperson of community maize seed production committee in Palpa district.

B. Problem of Participation in Extension Services

Subedi (2008) investigates the low participation of women in agricultural training and extension programmes and attempts to identify the reasons to improve their lack of involvement in District Agriculture Development Office (DADO) training programs. Through conducting a series of studies and field surveys in Kavre district, the paper tries to pinpoint the barriers that about 72% of women involved in agriculture face in improving productivity, and thereby, enhancing the agricultural sector of the country. Women farmers as well as extension service workers were interviewed Subedi found that participation in extensive services such as trainings and information sessions were highly male dominated due to various socio-cultural and political factors that affect women. 78.57% of women faced constraints such as the distance to the training center, compounded by the problem of lack of transportation, distance to the training center, burden of household and livestock, and the lack of female extension workers in trainings. As a result, 71.42% of women farmers suggested that their participation could improve if

trainings were conducted in spots more accessible to them and appropriate times of the day were set. Similarly, 60% of extension workers also prioritize spot trainings. Subedi recommends that, in order to see an improvement in women farmers' participation rates, it is important for extension workers to be not merely trainers but facilitators, which can be done by developing extension programs that are congruous with the needs, potential capacity and the resources available to the farmers (Subedi, 2008).

Gharti Magar(2011) performs a similar study in Dhikura VDC of Arghakhanchi district that assesses the gender equitability of government agriculture extension programs. His sample included fifteen men and fifteen women farmers whom he surveyed and interviewed used gender analysis approach to analyze. He observed that farmers usually joined agriculture groups initiated most often by local political leaders — women primarily for the purpose of receiving credits and incentives, and men for extension services. Even though Gharti Magar found that the involvement of women in agricultural groups was higher than men, they had less overall participation in extension services such as training for machinery, Integrated Pest Management (IPM) etc. As women had more burden of work due to reproductive responsibilities, the development of low cost handy machinery was seen essential to reduce their workload and increase efficiency, such as a mini tiller or a paddle rice thresher. Women seemed to be only making decision regarding activities that they took charge of, like poultry rearing or crop storage. It was observed that farmers got more agricultural advice from indirect sources such as neighbors and relatives than extension workers. As more than 50% of women reported not being visited by any extension workers and farmers, in general, were not satisfied with the current services provided and their delivery system. Farmers reported that the extension workers were not usually present in the field, the timing and the content of the services were not suitable, and that they

were only men, which hindered women farmers from attending these services. An overall assessment conducted by Gharti Magar revealed that the extension services provided in this district were less than adequate. Ineffective management of the extension programs coupled with their inability to encourage women to participate demonstrated the lack of needs assessment of the people in the area of interest (Gharti Magar, 2011).

These case studies are supported by government data on participation represented in Table I below. It shows the findings of the Annual Progress Report by the Ministry of Agricultural Development on participation in gender inclusion programs in from fiscal year 2070/71 to 2072/72. It shows that participation of women in these programs had decreased 36.5% in 2 years. The statistic looks similar for men. These are alarming numbers, considering the Agriculture Perspective Plan (APP) was in session, and was supported by the Women and Gender Inclusion Office. While the numbers clearly reflect the decline, the report fails to outline the reasons behind it. This would be interesting to explore in further research on this topic.

Table I: Observing trends in gender inclusion programs launched by the Government of Nepal

Table: Paricipation in gender inclusion agricultural programs

Participation	Fiscal Years			% decrease in 2 years
	2070/71	2071/72	2072/72	
Women	1548966	1376759	983170	36.5
Men	1614397	1371487	1070539	33.7
Total	**3163363**	**2748246**	**2053709**	35.1

Source: Annual Progress Report, Regional Directorate of Agriculture DOA, MoAD 2070/71, 2071/72, 2072/73.

II. Evaluation of impact of machinery (mini tiller) on women

To better understand the relationship of women farmers with technology, it is important that we evaluate the impact of initiatives that have tried to empower women through distribution of mechanical equipment. Cereal Systems Initiative of South Asia is such an initiative launched by CIMMYT Nepal as part of its Earthquake Recovery Program.

A. Description of the program

After the debilitating earthquake on April 25, 2015 USAID responded by providing a $1 million relief and recovery support to CIMMYT's Cereal Systems Initiative for South Asia (CSISA-NP). The program was called Earthquake Recovery Support Program undertaken in collaboration with Ministry of Agricultural Development (MoAD), Department of Agriculture (DoA), Department of Livestock Services (DoLS), Nepal Agricultural Research Council (NARC) and District Disaster Relief Committee (DDRC). The districts that received support were the ones that suffered more damage than others, namely, Dolakha, Kavre, Khotang, Makawanpur, Nuwakot, Ramechhap, Sindhupalchowk, and Solukhumbu. The program was able to provide 58,000 grain storage bags, 25 cocoons for community gain storage, 500 mini-tillers, 800 hand tools, 10.800 rice posters and 10,800 maize posters. Among the eight districts, I wanted to understand the involvement of women with distributed technology, especially the mini-tillers, in the four out of eight districts (randomly chosen) in the table below. The mini tillers were distributed along with additions and spare parts. Mechanics in the area were given workshops and trainings on fixing the mini tillers in their specific VDCs and the capital,

Kathmandu. All the mechanics trained were men. Mini tillers have become popular as women-friendly technology in recent years, owing to their small size and ease of use. It is, therefore, especially interesting to see the reasons that affect their use beyond their design.

Table II. Table showing the number of recipients of mini-tiller in 4 districts

S. No.	District	Mini tiller (No.)	Recipients (No.)				Percentage of women and women cooperatives/ groups recipients of mini tiller
			Cooperatives/Groups - not specified	Women Cooperatives/Groups	Individual Men	Individual Women	
1	Kavre	35	9	2	18	5	17%
2	Solukhumbu	40	30	5	5	0	12.5%
3	Makawanpur	95	86	6	1	2	8%
4	Nuwakot	95	80	12	3	0	13%

B. Method

To understand the use of mini tillers among women in these four districts, I phone interviewed women and cooperatives about the usefulness and impact of mini tiller distributed through this program on their livelihoods. Four cooperatives were interviewed in detail regarding mini tillers as well as general complaints about the government's technological interventions.

Another four mix of individuals and cooperatives were briefly interviewed strictly about the mini tillers. The detailed transcribed interviews of four women cooperatives are included at the end of the report. General findings from conversations with all individuals and cooperatives are included in the sections below.

C. Findings

Table III. Response from women individuals and groups/ cooperatives

District	**Individual/Farmers Group**	**Current use**	**Reason for no use**	**Do women use?**	**Training on spot**	**Problem (mini tiller related)**
Kavre	Sushma Ojha	Yes	N/A	Yes	No	Had to go to Dhulikhel to get training, not many people know how to use
	Krishi Women Saving and Credit Cooperative	No	Unpredictable Rain	Yes	No	No men in the village, so burden on women, but only 4 women in our cooperative know how to use it.
	Susila Kunwar	No	Don't have land empty right now	No	No	Women do not use it. Women did not get training
Solukhumbu	Sunaolo Mixed Farmers Group	Yes	N/A	No	No	Can't use it on most of the land as it is very rocky, so some parts are not working

						well.
	Navajyoti Women and Men Farmer Group	Yes	Didn't use for some time because small rocks broke the equipment	No	No	Not suitable for rocky land, had to weld multiple times to get the "teeth" fixed Mechanics don't know much
Makawanpur	Sundari Women Farmers Group	Yes	N/A	Yes	No	Had to go far to get training. Not a lot of women use it.
	Kaladevi Women Farmers Group	No	Rainfall, haven't really had to use it	Yes	No	Difficult to transport the mini tiller
Nuwakot	Ekikrit Womens Savings and Credit Cooperative	No	Not in a good condition, lost a part	Yes	No	No inspection in the village. A part of mini tiller missing, mechanic does not know how to fix.

The table above includes a brief summary of the response from the eight women individuals and cooperatives that were interviewed on the use of mini tiller.

Frequency of use:

Only 4 out of the 8 of cooperatives/ individuals reported that the mini tillers were being used currently. Two respondents attributed failure to use this season to unpredictable rainfall, while two attributed it to bad condition of the tiller. A women's saving and credit group in Kavre

reported that the tiller has just been sitting in their office, because of the monsoon and the effort it takes to move the tiller from one plot of land to another. Ekikrit Cooperative in Nuwakot reported that the mini tiller was not working and had not been fixed.

Suitability for women:

Three out of four cooperatives reported that the women were comfortable using mini tiller. Sunaulo Men and Women Cooperative in Solukhumbu, however, has only men from the cooperative using the mini tiller. The representative of the cooperative said that women found it too strenuous to use the mini tiller, because of its weight and the vibrations. The women's cooperative in Kavre said that they had no alternative, since all their husbands had left for work abroad.

Technical Problems:

The women's cooperative in Nuwakot reported that the tiller had one part missing, without which it could not function. When asked about consulting the trained mechanic, they reported that the he had forgotten how to fix the problem. Others reported that the tillers were in good shape. Both cooperatives in Solukhumbu (Sunaulo) mentioned that the mini tillers were useless on rocky land, which is most of the terrain in Solukhumbu. The tiller doesn't work well as the small rocks and pebbles get stuck in the tilling equipment. Another cooperative in Kavre reported that the mini tiller is useless where land is very steep—it becomes difficult and needs a lot of strength to control, especially for women.

Adaptive Problems:

The women's cooperative in Makawanpur reported that it is difficult to transport the mini tiller from one household to another, that they have to do a lot of preparation as there are no designated paths. The Cooperative faces a lot of problems with technology. They do not have a water motor/pump for irrigation, even after complaining to the district office multiple times. Instead, they received a potato digger that they hadn't asked for, and did not know exactly how to use. The women's cooperative in Kavre mentioned that only four women from the cooperative know how to operate the mini tiller. This is because there wasn't a training organized in their village, and the four women went for training in the nearby village only after they had received the mini tiller. Three cooperatives mentioned that no one had come for inspection of the mini tiller since they distributed them in 2015. No one had come to hear their demands during their monthly meetings either.

D. Analysis

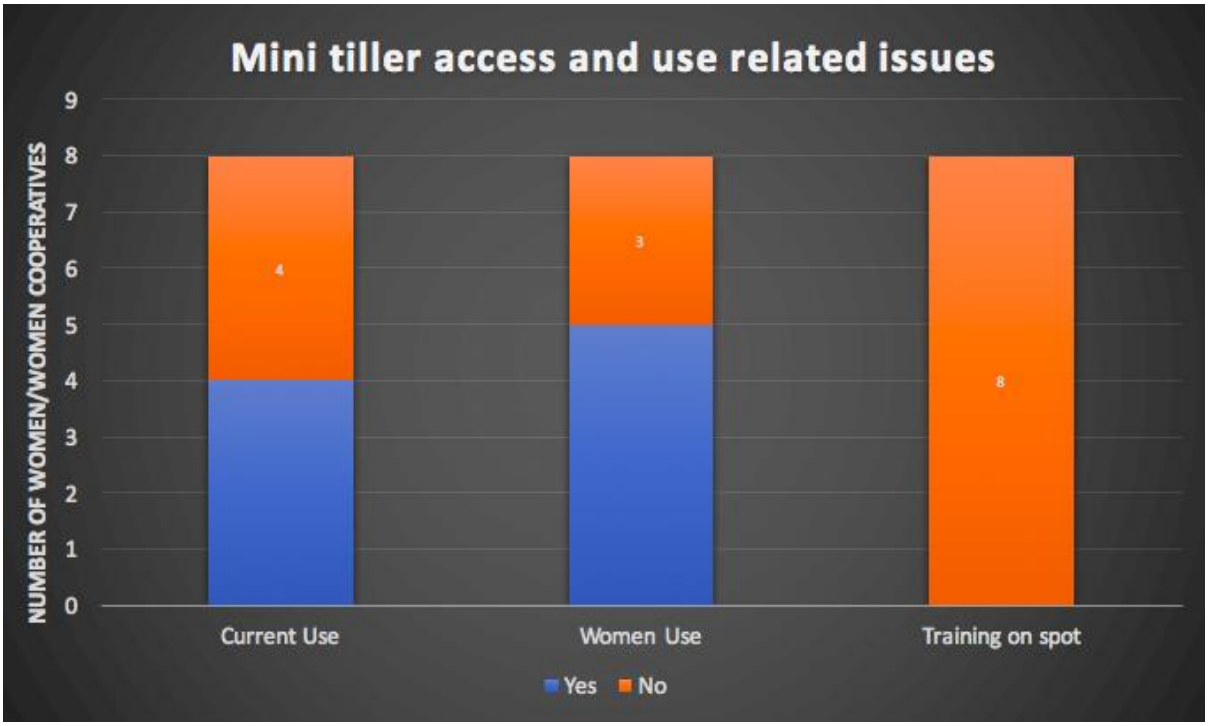

Figure II. Bar graph showing current use, women use, and training provided on spot for mini tillers

Table II. above show the inequitable distribution of mini tillers in all four districts. Only 8-17% of women/women's cooperatives have received mini tillers and training on how to operate them. The men and women who were given these mini-tillers were only the only ones who were trained to use these mini tiller. In the case that the man who has received the mini tiller has out migrated for work, I am unsure if the women have started using the tiller, as the cooperatives reported that there has been no follow up trainings or inspection.

According to the observations from the CIMMYT program, the mini tiller was women friendly, for the most part, and seemed to cut down on the cost and time to till land, and therefore, potentially increase agricultural productivity. However, some technical and mostly adaptive challenges mentioned by the interviewees suggest that there are some loopholes. Although there was no problem of access for these cooperatives, since they have been given the equipment, spare parts and a trained mechanic, there were other barriers that were less apparent. In Solukhumbu, where the land is mostly rocky, a mini tiller cannot be utilized as much. It seems as though there is a lack of thorough understanding of the needs of the farmers. Similarly, the fact that only four women from a cooperative of three hundred women knew how to use the mini tiller suggests that trainings have not reached as many women as it should have. Even the women who had training had to seek it from a neighboring VDC as it was not administered in theirs. Trainings play a big role in making sure the equipment is utilized properly and for a long period of time. Figure II indicates that none of the trainings were provided in the respective VDCs of the individuals and cooperatives. This inaccessibility to trainings might be a potential reason for

lack of use for underutilization of the mini tiller. A good way of empowering women farmers is to make sure the trainings are conducted in close proximity to them, by women trainers to make them feel more comfortable expressing their needs and concern. The lack of women extension workers in trainings and other services is a common theme in national and international literature concerning women's access to technology.

Another problem that was highlighted by all cooperatives interviewed was the lack of inspection and follow up services. Perhaps, because of the commonality of the problem, this is the biggest problem that women have been facing. All cooperatives smooth use of the mini tiller and expected benefit from it the first year, but were hesitant about its consistent use this year. Discontinuation of use of the mini tiller despite better outcomes the previous year suggests a big challenge. This problem could be addressed better if there were bi-yearly or yearly follow ups. All cooperatives reported that they hadn't been contacted for inspection or follow up questions since the distribution of the mini tillers. I think this is a major failure on the part of the agencies involved in this program. There have not been enough impact assessment reports to determine the efficacy of the programs. This makes it difficult to make further developments within the projects. Without monitoring, these programs that take a lot of monetary and social resources, are likely to be not as successful as they are predicted to be.

III. Past and current policies concerning women and technology

A. Agriculture Perspective Plan (APP) - 1995 to 2015

The 20-year old Agricultural Perspective Plan (APP) by the Ministry of Agricultural Development ended in 2015, was launched as a response to decrease of agricultural productivity and overall GDP. During its course, it was able to achieve some goals, but was not able to reach its target productivity and GDP growth, which were predicted to increase employment for poor women, and thereby, reduce poverty. It worked to emphasize sectors in agriculture that were most important to women, but with limited success. APP had aimed for poverty to come down to 14% by 2015, but it lingered at 25% by the end of the plan. This state, as a result of unstable productivity and failure to move to commercial production, has been attributed mostly to "**low adoption of improved agricultural technology**" (Government of Nepal, 2013) (Only an estimated 44.7% of agriculture is commercialized in the country).

B. Agriculture Development Strategy (ADS)

Keeping this in mind, in 2016, the Agricultural Development Strategy (ADS) was launched taking into account the impact and failures of APP. It recognizes the lack of access and adoption improved technology in the agricultural sector and so, makes increase in innovation and technology as one of its primary goals. It recognizes the dominance of women farmers in the agricultural community of the country and proposes women as one of the target groups of its Innovation and Agro Entrepreneurship Program (INAGEP). Following are some of the objectives that addresses the intersection of women, and innovation and technology in the report:

- Sustainability is listed as a key element of the vision of ADS, under which ensuring women's access to various means of production, recognizing their role

as leaders, and improving their position in various structures of public and private sectors are listed as major to-dos to achieve targeted outcomes. Formulating policies for agricultural input supply and distribution that target women has been realized as an effective means to increase access to agricultural inputs. In order to make mechanization options available, a revision of regulation and taxes has been proposed alongside programs for capacity building (Government of Nepal, 2013).

- Inclusion has been listed as another key element to achieve ADS goals. This entails ensuring gender equality by addressing problems such as lack of land ownership rights among women. Currently, only 10% of women in agriculture jointly or personally own land. ADS aims to achieve a 5% growth in this statistic in the next five years. Increase in land ownership can mean more participation in programs and services extended by different agencies, increasing use of mechanical technology in farming (Government of Nepal, 2013).

The focus of the report is largely on empowering women in the agribusiness sector, mainly by improving access to finance. It seeks to launch a Women Agro-enterprise Development Program that would be able to address social, economic and political issues that create barriers for women to efficiently run agro-enterprises.

C. Prime Minister Agriculture Modernization Project (PMAMP)

To focus on agricultural modernization in the country as per the goals of ADS, the PMAMP, a project of 10 years, with a budget of Rs. 5.78 million was launched first in 2016. The plan involves categorizing agricultural land in the country into 2,100 pocket areas of 10 hectares

each, 150 blocks of 100 hectares each, 30 zones of 500 hectares each, and seven super zones of 1,000 hectares. By encouraging farmers owning these large land areas to start commercialization through distribution of mechanized equipment, loans, and other services, the project aims to boost productivity to move toward a self-reliant food economy ("PM agri modernisation project to boost output", n.d.).

IV. International Experience - Ghana

Ghana, similar to Nepal, faces gender gaps in its agricultural sector. In 2014, a gender situation analysis was conducted to identify areas within the sector that gender gaps were being observed. The gaps were both socio-economic as well as technical. It was observed that women farmers were less likely to access credit and financial services than their male counterparts. They were also less likely to access extension services. While 34.4% of male farmers tried to access extension services, only 9.5% of female farmers did so. Similarly, when it came to accessing new technologies in agriculture, only 12% of women had access compared to 33% men. This trend is relatable to the trends described above in Kavre and Arghakhanchi. These is a similar trend in land ownership of women in Ghana— a very small population has land ownership, hindering them from starting their own agri-businesses. What was really interesting and relevant to this paper was the inadequate agricultural engineering services for women. Majority of the equipment and machinery used for farming were not women-friendly, and trainings were geared mostly towards men than women. Another gender needs assessment conducted by the Ghana Irrigation Development Authority (GIDA) showed very similar gender gaps. An interesting observation was made in irrigated farming. Since farming with irrigation systems is really capital

intensive, women seemed to be less engaged, thereby preventing start of agro-businesses. The extension service providers were mostly men, who would not visit women for training and information dissemination. These gaps were compounded by the heavy burden of work on women. They needed to split their time for agricultural production, processing, reproduction and care-giving activities. The needs assessment reveals some potential reasons for barriers to accessing extension services by women; "Proximity to extension agents, personal perception of the players that they do not need such services at all, lack of knowledge on the existence of such services, inability of people to find service officers." Increasing women's access to extension services can remove a number of hurdles that they face in agriculture and in starting enterprises. Better access to extension services means more access to inputs and markets, higher income and financial stability, an increase in overall food security and nutrition, and most importantly, reduction in poverty. The paper presents a few policy recommendations to narrow the gender gaps in extension service delivery (Aniaku, 2014). The recommendations presented in this paper are important pointers because we can draw many parallels between the situation of extension services Ghana and Nepal.

V. Policy Recommendations

- In general, policies need to be more focused on women. The ADS addresses issues of inequitable development in agriculture by creating a Gender Equity Division that ensures equal distribution of resources by programs. What is required, in the lights of this study, is not just ensuring equal benefit for both genders, but focusing specifically on women, since we have seen a major deficit in participation by women due to variety of factors.

Since it is clear that the agriculture sector is becoming more and more feminized, designing policies that ensure high participation of women, and reduction of their workload is very important.

- A major reform is required in the organization and delivery of agricultural extension services in the country. After designing agricultural services that cater well to the needs of women, the next step is making sure they are implemented well through effective extension services. Even good programs tend to fail when extension services are not accessible for women. There are three ways in which we can ensure extension services are reaching women:
    - ❑ More female extension workers should be employed to encourage women's participation.
    - ❑ Since women have a heavy workload, trainings and services should be organized not too far from neighborhoods, so women do not have to spend time and resources on transportation.
    - ❑ A quota of at least 50% should be set in extension program to ensure that women's needs are met.
- Program policies should be such that they make inspections and follow-ups mandatory for several years after the execution of programs. There has been good progress in designing technology that is easy and culturally acceptable for women to use. In recent years, there have been a number of women-friendly machinery distribution programs but not enough follow up or impact assessment programs. Impact assessments help us monitor women's progress in the agriculture sector that the country definitely needs. Follow ups are essential steps to encourage women's involvement and growth in

agriculture. When there is a clear realization of the benefits of equipment and machinery designed for women, we can take quick steps in helping them get on the ladder for agro-enterprise development.

- The Prime Minister Agriculture Modernization Project shows promises throughout the country for increasing agricultural productivity. With the new projects and programs beings launched as part of this project, it is a good opportunity to pay special attention to the needs of women farmers.

VI. Conclusion

The trending outmigration rate of Nepal has significant consequences on different sectors of society. Especially in agriculture, which continues to be the most important sector for economic development, it has resulted in a feminization trend, resulting in heavy work burden on women. This proves machinery and equipment that make farming easier and more productive extremely necessary. While the government has listed development of innovative technology as part of its recent policies, it has failed to put special focus on empowering women with technology. From my evaluation of a large mini tiller distribution program in four districts, I found that women, even in VDCs where most of the men had left households, were not reaping as many benefits from the program like there was potential for. There were loopholes in many aspects of the program, that could be solved by thoroughly understanding the challenges and needs of women, and designing policies accordingly. My policy recommendations might be of assistance to the Ministry of Agricultural Development in better meeting the needs of women

through technology. I hope they can be incorporating into new upcoming projects under the Prime Minister Modernization Project.

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