



# Ethiopian Gender Dynamics in Dairy Production along the Climate Smart Dairy Value Chain

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## Abstract

Both men and women have a significant contribution to agricultural related activities in the African continent, although the contributions of women are not usually explicitly recognized in official statistics and documents. Like different African countries, Ethiopian women traditionally have been subject to socio-cultural and economic discrimination that resulted in fewer economic and social opportunities than men. Furthermore, 80% of them reside in rural areas where farming and livestock herding are primarily engaged in subsistence agriculture. Therefore, this review paper summarizes the gender dynamics in relation to climate smart dairy value chain to acknowledge the implications of gender roles and responsibilities for the development of dairy sector. It mainly focuses on providing clues for policy makers and different development practice to improve benefits to women via indicating gender related constraints and gender allied policies and program launched in the country.

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## Introduction

Gender issues fundamentally shape the totality of production, distribution, and consumption but have often been unnoticed in value chain development [1]. Despite the fact that women play a significant role in agricultural productivity, contributing about 40–60% of all agricultural related labour [2], women suffer from unequal access to resources, services, information and capacity-building opportunities. FAO [3] acknowledged that dairy production and marketing are one of the areas where both men and women are involved, however we need to take remark on the gender biases remain prevalent in the dairy sector.

Even if women, men and children provide labour for different livestock-related activities, gendered roles are not set in stone and are open to change for different social, economic and environmental related reasons [4]. Kristjanson [5] recognized that, although there is clear division of labour and business activity the society use the women labour at times where shortage of labour to perform men's tasks. In addition to their role in agricultural activities, women are also responsible for the vital household tasks such as caring of children, cooking, fetching water and fuel wood and cleaning the house as part of their household responsibilities, which realize that they would be work for about 10–12 hours per day both in the wet and dry seasons [6].



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While value chain approaches is adopted as strategy for reducing poverty by enhancing economic growth, few have considered how gender issues affect value chain, since women are predominantly engaged in the dairy production and marketing [7]. As a result of this, an important consideration those interventions aimed at promoting women inclusion in value chain development need to take into account.

Despite the crucial role of the livestock sector including dairying in the Ethiopian economy, reviews on gender aspects of dairy value chains are relatively scarce. The main purpose of this review paper is to contribute to the knowledge base about implications of gender roles and responsibilities for the development of the dairy sector by indicating gender related constraints and gender allied policies and program launched in the country.

### **The concept of gender dynamics**

“Gender” refers not to male and female, but to masculine and feminine that is, to qualities or characteristics that society ascribes to each sex. People are born female or male, but learn to be women and men. Perceptions of gender are deeply rooted, vary widely both within and between cultures, and change over time. But in all cultures, gender determines power and resources for females and males [8]. Correspondingly, gender equality is a state in which women and men enjoy equal rights, opportunities and entitlements in civil and political life. It implies equal participation of women and men in decision making, equal ability to exercise their human rights, equal access to and control over resources, and the benefits of development, and equal opportunities in employment and in all other aspects of their livelihoods [8].

Since the 1990s, policymakers and development practitioners have highlighted the critical importance of gender mainstreaming in the design, implementation and evaluation of programmes across a range of social and economic sectors. However, there was failure to recognize the difference between men and women in their roles, needs and inequities, which poses a serious threat to the effectiveness of agricultural development [8]. Additionally, there has been wide agreement that gender inequalities and lack of attention to gender in agricultural development contribute to lower productivity, lost income and higher levels of poverty [9]. The gender gap in agriculture is a pattern, in which women in agriculture have less access to productive resources, financial capital and to advisory services compared to men [10]. To inform programs and policies for effective design and delivery of innovative new technologies among smallholder households, and to make fair distribution among both women and men, clarifying gender issues is being critical option hence thus contribute to both poverty reduction and sustainability [11].

Edmunds et al. [12] recognized that, gender relationships and dynamics can influence the way new technologies and methodologies are designed and delivered. The reason behind this reality could be specific roles, responsibilities and interests among women and men across different production systems and areas of production, being leading to different a response that leads to new production technologies and methods of production. Thus may give structural gender inequalities and might result in unequal benefits of women and men from the technologies designed and delivered to improve the production and productivity. In addition, valuing and utilizing women’s knowledge can also lead to the development of new technolo-

gies, management practices, organizational forms, and political strategies that are effective in encouraging sustainable and low emission agricultural development [11].

Gender roles are shared cultural expectations, which are performed by individuals based on their society identified gender [13] and the role of gender is being behavioral tasks and responsibilities that are considered appropriate for women and men because of social cultural norms and beliefs [1]. In Ethiopia, women traditionally have been subject to socio-cultural and economic discriminations that resulted in fewer economic, educational and social opportunities than men, furthermore, 80% of them reside in rural areas, where farming and livestock herding families are primarily engaged in subsistence agriculture [6]. Study undertaken by Gawayia [14] illustrated that, woman in sub Saharan Africa; including Ethiopia performed over half of the rural action and delivering around 60-70% of the food in this region. However, they give most of the work in farming creation, their get to and control over gainful assets is incredibly constrained because of disparities built by patriarchal standards [15].

### **Social and economic importance of gender**

Evidences indicated that, women contribute significantly not only to agricultural production but also they are responsible for the vital household tasks such as caring of children, cooking, fetching water and fuel wood and cleaning the house as part of their household responsibilities in the African continent including our country, although these contributions are not usually unambiguously recognized in different ways of documentations like official statistics [16]. Despite the fact that, women play a significant role in agricultural productivity, that they contributing about 40–60% of all agricultural related labor [2], women suffer from unequal access to resources, services, information and capacity-building opportunities [6]. That women do not get regular updates about new farming practices and technologies renders them reliant on information being passed on to them from their husbands, other men, or ideas gleaned through their informal networks [17,18]. Technology adoption among women is also constrained by limited resources to afford the technology compounded with limited availability of credit or savings, and low levels of awareness. Aregu et al. [17] suggested that, pre-meditated measures have been put in place to provide women all the required information, knowledge and skills in improving agricultural productivity and marketing initiatives, unless it is unrealistic to expect sustainable agricultural growth.

In Ethiopian some studies showed that the contribution of rural women in productive, domestic and community-related activities seem to be fail to appreciate, are often misunderstood and rendered invisible especially to national and regional some statistical values [19]. However, as Holden et al. [20]; Kasa et al. [21] reported on the recent land certification program, that have been given equal rights to women and men in land rights, indicated that the land certification program has improved the productivity of plots owned by women more than those owned by men.

Likewise, barriers like access to capital and technologies influence gender equality, and especially women’s, participation and benefits from value chains [22]. Often, women have lower access to capital and technologies than men [10], which decreases their participation in levels of the value chains with the highest economic returns and limits them to lower profit nodes [23]. Land is an important form of collateral for formal credit

[24]. As very few women own it, thus cannot use it as collateral, they have a lower access to financial services than men. Access to financial services is especially critical for women in terms of enhancing their ability to participate in value chains beyond producer roles to include, for example, the ability to add value to agricultural produce [24].

Many governments in Africa have now started to take policy measures to recognize and enhance the contributions of women in economic growth in the continent. Policies and development programs and projects are embracing inclusive value chain development approach to ensure that young people and women enhance their contribution and benefit from economic growth [6]. Correspondingly, there seems to be strong political commitment in Ethiopia to ensure inclusive economic growth that would result in better gender equality to improve their economic benefit. Various national programs, such as the agricultural growth program (AGP), have made explicit provisions to benefit women including young people [25].

### **Gender division of labor in dairy farming**

In many countries including Ethiopia, across smallholder households, dairy production is an activity of family operation in which all members of the family including men, women and children contribute to production, processing and marketing activities [3]. The study that carried by FAO [4] recognized that, both of men and women were involved in dairying activities, but they can participate in different ways and likewise they face different constraints. However, to compare the study finding on men's and women's presence in dairy value chain or market channels, there is insignificant and limited literature are available [26,4]. There are claims that women have a predominant role in dairy production, processing and marketing; however, little has been documented to date about genders role and relationship in Ethiopian dairy sub-sector [27].

Dairy production is exceptionally important for women, since it may provide a regular income stream and thus contribute to household food security [11]. Generally, women involved in several activities of the dairy production and activities along the dairy value chain (like collection, processing and marketing of milk and milk products). Thus, the gender division of labor in dairy farming indicate that women farmers play a predominant players and roles in dairy farming activities like milking, watering, cleaning out the pens, and feeding the animals [28-31] while, men tend to have a larger role in activities related to animal health, such as artificial insemination and seeking veterinary treatment, and in marketing of live animals and meat. Even if women, men & children provide labor for different livestock-related activities, gendered roles are not set in stone and are open to change for different social, economic and environmental related reasons [4].

In general, the government of Ethiopia is committed eagerly to achieve the gender equality, to meet this objective specific attentions are being taken in its constitutions and policy initiatives like agriculture and rural development policy [4,32]. While dairying activities and value chain approaches are being adopted as strategy for reducing poverty by enhancing economic growth, few have considered how gender issues affect and affected by those approaches, since women are predominantly engaged in the dairy production and marketing [33,7].

### **The roles of gender in dairy production**

In Ethiopia, there is an increasing awareness on the impor-

tance and traditional roles of women in dairy production [32]. Dairy production provides women with a regular daily income, vital to household food security and family wellbeing. According to FAO [4] report on the gender division of tasks in livestock production and management, the roles and responsibilities are varying between commodities, locations and the wealth of the household, it is possible to make some broad generalizations.

Since in many African countries, dairy production is a function of family members' activities, both men and women were involved, but all of the family members could participate in different ways and responsibilities, similarly they face different constraints along their responsibilities of dairy production activities [4]. Different authors reported the gender role in different ways, the study done by Brhanu [34] in the southern Ethiopia indicated that, women have higher contribution in the dairying like barn cleaning (66.5%), milking cow (93%), milk processing (76%), milk and butter marketing (70%), dairy animal care (54.7%), and caring for calves (62.7%); however, buying dairy animal (62.6%) is dominated by men. Dawit [35] also reported that 83 % of the milk processing activity was done by the mother with the rest done by rest of family members.

Similarly, Abebe and Gamessa [36] found that women were responsible for barn cleaning, milk selling and feeding and Njarui et al. [37] reported their roles with the assistance of children in milking, feeding and watering of animals. Men's roles were taking care of sick animals, fodder collection and storage. Women tend to be responsible for activities carried out at or near the home, activities required for the day-to-day care of animals, and storing, processing and adding value to livestock products, while men are more often responsible for activities outside the home [19,32,7]. In general, the gender division of labor across the dairy farming activities indicated that women are first line players to dairy production; activities like milking, watering the animal, cleaning out the barn and areas around the pens feeding the dairy animals [29-31].

### **Roles of gender in milk collection and distribution along the marketing chain**

FAO's report recognized that in its study, where women tended to be predominantly involved in the day-to-day management of dairy cattle as well as home-processing of milk into butter and cheese [29,4]. In informal marketing channels, milk is distributed from producers to consumers and milk products mainly in local markets where women are actively participated. In the formal system, milk is distributed by dairy cooperatives and unions, and the private sector [4].

Milk collected at milk collection centers is supplied directly to consumers in the urban towns, and the surplus is collected by large dairy enterprises and transported by bulk tankers to the respective processing plants. These dairy enterprises process and pack the fresh milk collected for distribution to consumers in urban areas through agents and retailers [38]. In the formal dairy value chain, the smallholder dairy farmers deliver both morning and evening milk to the collection points in open fields or sheds every morning. The collection of milk is undertaken by primary cooperatives, agents of the processing plants and traders. Women, men and children play a role in taking milk to collection points, but when the collection time and sites are remote the greatest role is undertaken by men and boys [4].

In relation to participations of dairy activities of collection, transportations and selling of milk, Zemedu [39] reported that

males are dominating with 55% over females, and out of these in transporting milk 51.6 % & 18.5% operated by boys and girls, respectively, while the rest 26.5 % by mother and 4.4% by fathers. According to the milk collectors in Kenya, they receive milk from men more often than women and men are the ones who check and confirm delivery reports from and at the factories [40]. However, in Ethiopia Adama-Asela milkshed women and children mainly provide and confirm reports from collection centers of dairy cooperatives and Micro and Small Enterprises [31].

### **The role of gender in milk processing**

The basic patterns of milk value addition such as churning soured milk to make butter and dehydrating butter to make ghee in order to regulate milk fermentation are common practices in Ethiopia. Women play a major role in home-processing of dairy products for sale in informal channels [41]. However, milk value addition through these methods is often considered inefficient and it is associated with 'losses' of up to 12 percent due to low rates of butter fat recovery [41,7] and up 20-35% of milk is spoiled as a result of a high transaction costs [42] along the dairy production and marketing chains.

### **The role of gender on ownership and decision making power**

Since livestock are not bounded by complex property right, they are an important asset for women that they can own more easily than other productive assets (especially like land), which disfavor women's ownership [43]. Despite the important role women play in milk production and marketing, although the increase opportunities for commercialization of dairy products in the urban and peri-urban areas of the countries, some cultural aspects in the livestock sector remain unchallenged, including cattle are predominantly seen as male domain and owner.

In relation to gender role, responsibilities and interest owing (having) cattle, women's and men's priorities concerning investing on new technologies and production, as well as their understanding of how food and livelihood security can be attained, are being different. Hence women often consider livestock as a primary contributing to food security while men often consider them as a source of long term investments [44]. Njuki and Sanginga [43] studied on livestock ownership and marketing in Kenya recognized that, women often have a preference of small ruminant like dairy goats and chickens investment since they are not require land ownership and similarly they are managed easily with zero grazing under the cut and carry system (Goats) and can survive with minimum supplementation (Chickens).

The reported evidences in Kenya & Rwanda by ILRI indicated that, the percentage of women ownerships of local cattle breed in higher preference than the exotic once, while men are more likely own exotic cattle, which are usually preferred due to their more productivity even if they requires more inputs [45]. The ability to control and decision making of women's regarding income earned activities on milk selling is influenced by place where, type of market (formal or/and in formal) and how much they sold the products. Very often, women's have a great decision making authority over milk sold in local and informal market [30]. They although tend to have a great control over decision about evening milk sales. However, men seem to be authority on the control of total dairy income in general [46].

### **Gender based constraints in dairy production and marketing activities**

### **Gender access to support services and information**

Livestock extension, input-delivery and financial services staff are usually dominated by men who are most likely to talk with male family members about, for example, how to improve livestock feeding and housing [47]. Women and girls who carry out dairy work as part of family labor receive the relevant information in most cases indirectly. Information and training that are often held for existing groups, such as dairy keeping associations is not equally accessed as members tend to be composed mainly or purely of men [48]. Apart from unequal access to training between men and women, the studies show that even the participation of poor urban livestock keepers in training courses and field days is very rare.

Letty and Bayer [49] found that in some parts of the world, there are cultural barriers to direct communication between male advisors and women, and as a result, women do not have the same access as men to information that could help increase their work efficiency and productivity. IFAD [50] found out that in most African countries women's access to extension services, knowledge, credit and technologies is lower compared to men. Because of changing economic circumstances, women are taking on responsibilities for types of livestock that had traditionally been the realm of men, such as cattle. Therefore, livestock service providers are supposed to notice women's changing roles and give them enough technical, organizational and capacity building support.

### **Access to and control of dairy resources**

Access and control over assets such as land provide economic security, incentives for taking economic risks that lead to growth, and important economic returns including income. Since to accomplish roles that different members of households are responsible to, resources are necessary and gender roles played by different members of households have implication on access to resources. According to Terrillon [51] gender roles assigned to men and women have impacts on their respective access to resources and the power to decide over benefits of using those resources.

Reports reviled that, women in many countries are constrained ownership or control of important resources [49]. Thus, inequality in property rights contributes to women's generally low status and vulnerability to poverty compared with men. FAO [10] reported that in many African traditions, women and their belongings including cattle that they may have received from their parents or purchased themselves are the property of men. Similarly, participation in milk value chain has potential to benefit involved men, women and children in a number of ways like distribution of gain from value chain activities, decision on the use and benefit from recourses, and ownership or control of resources [52]. However, the benefit accrued from participation in milk value chain depends on gendered relationship of involved actors at the household and gendered patterns of benefit distribution in chain does not always translate into gains to all individuals [23].

The roles of gender in access to and control of resources also various in the place where they are, type of resources and market channel types. Women in rural areas sell and control income from butter, while women in peri-urban and urban areas sell and control income from milk, and women were also predominantly engaged in selling dairy products in informal, local markets and less engaged in formal processing [4]. However,



there are exceptions to general patterns; when female-headed households are the head of household, they may have considerable decision-making power and may consult the adult males of the household less than a husband might consult his wife in a male-headed household [4], similarly, as renowned by Aregu et al. [19], the female head of a household may enjoy greater control over resources than married women. The male partner in a female-headed household is a passive player, who has usually come into the partnership mainly due to his lack of access to land, financial resources or other assets [27]. In male-headed households, the male head is more involved in selling bigger animals while women are more involved in selling livestock products such as milk, butter and cheese [27].

In Ethiopia, various dairy cooperatives, unions and private dairy enterprises are engaged in the collection, processing and distribution of milk. Report noted by FAO [4] recognized that, women are not heavily involved in formal dairy cooperatives. Aregu et al. [19] also realize that women farmers living in male-headed households often feel excluded by the peasant associations and may be excluded because household membership in such associations is usually represented only by the head of a household. Women participate directly in women's associations but they tend to be social rather than technical, and provide few opportunities for women to gain skills or knowledge [4]. However, Kristjanson et al. [30] and Flintan [53] suggested that a strong women-led producer's organization can play an important role in delivering extension services to poor women livestock keepers.

#### **Access to productive asset and credits**

General evidences showed that women involved in several activities of the dairy production including milk collection, processing and marketing of milk and milk products in all type of milk production systems; however, they have a limited access to assets and credit services in order to improve their productivity [50]. A survey carried by East African Dairy Development Project [45] showed that significantly more men than women had applied for loans from financial institutions and local cooperatives.

Since lack of access to credit and productive assets limits women's opportunities to develop commercial dairy enterprises [11], the formation and strengthening of women savings and credit groups are critical steps toward the creation of women-owned dairy enterprises. In order to support and strengthen women's schemes, program and projects that are supported by nongovernmental organizations offer important alternatives [53]. In general, even if women, men and children provide labor for different livestock-related activities, gendered roles are not set in stone and are open to change for different social, economic and environmental related reasons [51].

#### **The role of gender in climate smart dairy value chain**

Hence milk production is the activities undertaken by all family members; even if both of men and women are involved in dairy value chains, they participated in different ways and face different constraints. The cultural and biological burdens that face women could restrict their participation in social, political and economic affairs. Due to this influence of social, cultural and biological factors they aren't potentially to take part in climate change deals and policy planning. And also hinder their opportunities in mitigating, adapting and coping with the effects of climate change [61].

As stated before, the gender labor divisions of milk production were not balanced; however, the ability to adopt climate smart practices that reduce GHG emissions appears to be affected by gender inequalities [62]. Since the mitigation and reduction of GHGs have a positive correlation with women involvement [63], and women have a crucial role in adapting and mitigating climate change and they must be recognized as essential change agents for climate change. Correspondingly, Campbell and Dinesh [64] also suggested that, the government must further update dairy sector opportunities for women and men and inform policies and interventions that contribute to inclusive and gender-sensitive dairy development.

#### **Gender allied policies and program launched in Ethiopia**

Recently many governments in Africa would have started to take policy measures to enhance women's contribution in economic growth. Hence policies and development programs and projects are embracing inclusive value chain development approach to ensure that enhance the contribution and benefit of women from economic growth [6].

Correspondingly, there seems to be strong political commitment in Ethiopia to ensure inclusive economic growth that would result in better gender equality to improve their economic benefit that various national policies and developmental programs were launch to benefit women including young people. Even if, there are a number of policies and program that developed in Ethiopia, here there would be summarized some of the gender related contents of selected policies as follow:

#### **National policy on ethiopian women**

By having the aim of institutionalizing the political, economic and social rights of women through creating an appropriate structure in government offices and institutions, this policy was adopted in 1993, so that the public policies and interventions are gender sensitive and can ensure equitable development for all Ethiopian men and women [55,56]. Moreover, in addition to expressed its commitment in the policy to eradicate all prejudiced laws and regulations the Government create an enabling environment for the full participation of all members of society in the socio-economic and political sectors, with a special focus on the subordinated position of women [57].

#### **The constitution (1995)**

This Constitution was espoused by having the aims to protect women's access to and control over resources and this Constitution was adopted in 1995 with the inclusion of the fundamental rights of women. Furthermore, regarding property and land rights, the Constitution states that women shall acquire, administer, control, use and transfer their property to the third person with their will.

In line with the Constitution, to increase gender consideration and equality new policies and programmes have been formulated and adopted. Uninterruptedly, Ethiopian women are entitled to counteractive, confirmatory and affirmative measures to enable them to compete and participate on an equal basis with men in the political, economic and social life [57,55].

#### **Women's change and development package**

The change and development package was launched by comprising the objectives of smoothen the progress of participations of women in all situations of developmental activities and aimed at facilitating the mobilization of women and enhancing

their participation and benefit from economic, social and political activities. Thus, this package was introduced in 2006 with the aim of facilitating the achievement of the National Policy on Women and stresses the equal participation of women in all sectors [54,56].

### National action plan on gender and development

In promoting the implementation of Ethiopia's commitment to make the platform for Action this National Action Plan on Gender and Development was prepared and launched in 2006-2010 [54,58]. The Plan was later included in the Plan for Accelerated and Sustained Development to End Poverty and currently in GTP.

Plan for Accelerated and Sustained Development to End Poverty was one of the main implementation strategies designed to achieve gender equality in all national development goals, which have twin goals of reducing poverty and ensuring gender equality (as stated by FAO, [4]).

### Growth and transformation plan

To empower the economy of Ethiopia GTP-I (2010-2015) was developed and adopted with five-year national development plan by having emphasis and fundamental pillars on women and youth empowerment. Likewise, the second Growth and Transformation Plan (GTP II) also developed and launched (2015/16-2019/20) [59]. Those plans comprise a specific commitment of increasing women's participation in all aspects of political life and decision making.

Moreover, it promotes women's economic empowerment through reducing violence against women [56,60]. To ensure gender equality in addressing gender issues, the plan have clear strategies, for gender that to be mainstreamed by all sectors and has also created accountability on the implementation of the strategy [57].

Additionally, Development Plan for Women and Children (2011-2028) was developed by comprising specific commitments to increase women's participation in political life and decision making, promoting women's economic empowerment and reducing violence against women as GTP [60]. At woreda level (woreda is the smallest administrative unit of Ethiopia similar to a neighborhood or a localized and delimited group of people which comprises different kebele), the Woreda-based Core Plan was developed to harmonize and support different activities including planning, implementation, resource monitoring, & evaluation and reporting by having catchphrase of one plan, one budget, one report at the woreda, zonal regional and federal levels [54].

### The labor proclamation and the civil servants proclamation

These proclamations prohibit discrimination and encourage affirmative action in recruitment, training and promotion; and protect pregnant women and maternity rights [54,60].

**The revised family law:** When revised in 2004, it established a new standard for equality between women and men [54,58,60].

**The revised criminal code:** This Code was revised in 2005 in harmony with international and regional instruments. It has served as a landmark for gender equality and criminalizes domestic violence, rape, female genital mutilation, abduction and early marriage [54,58,60].

In addition to national policies, the Government of Ethiopia has adopted or endorsed most major international conventions, protocols and treaties related to women and gender equality [55, 58, 56, 60]. The 1995 Constitution states that these instruments are an integral part of the law of the land.

### Conclusion

While women contribute significantly to economic development in our country, they are usually excluded from benefiting from the opportunities of major agricultural and rural development programs and dairy value chain benefits. Agricultural services, such as extension and rural finance, often overlook women, assuming that interventions targeted at the household head. Therefore, premediated measures have been put in to provide women all the required information, knowledge and skill in improving dairy productivity and marketing initiatives to expect realistic sustainable development.

In addition to the insignificant position culturally given to women in dairy value chain development, bottlenecks related to assets, capacity and weak coordination of women related interventions at institutional level in need to be revisited to actively participate women in community level organizations and institutions in order to apply gender equality. Moreover, barriers like access to dairy production functions and dairy technologies influence gender equality.

In general, understanding the roles, opportunities and constraints faced by women is significant and is being a basic step to promote the inclusion of women in the dairy value chain development. Conducting gender related analysis including understanding of dimensions of social capital and networks, and access to technologies and services is compulsory. By understanding thus, different programs and projects may set quantitative targets to include women as beneficiaries of their dairy value chain development interventions.

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