

# Youth and Women in Agriculture

Economic Development and Food Security in South Asia



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Regional Expert's Consultation Meeting on "Youth and Women in Agriculture for Economic Development and Food Security in South Asia" held on 9-11 June 2019, Kathmandu, Nepal.

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**There is no tool for development more effective  
than the empowerment of women.**

**- Kofi Annan**

**Every generation needs a new revolution.**

**- Thomas Jefferson**



## Foreword



Agriculture is an important source of economic development and poverty alleviation in the developing countries including South Asia. The contribution of youth and women to agricultural development and improving food system is indispensable in the countries where majority of the people depends on agriculture for their livelihoods. The region is home for one fourth of the world's population and more than 65% people residing in the rural areas. Globally, most young people (around 85%) live in the developing countries where agriculture is the main source of income and, more pronounced in South Asia.

In order to assess the women and youth engagement in agriculture and their contribution for economic development and food security in the South Asia region, a regional consultation meeting on "Youth and Women in Agriculture: Economic Development and Food Security in South Asia" was jointly organized by the SAARC Agriculture Centre (SAC), Bangladesh; Asian Farmers' Association (AFA), Philippines; Ministry of Agriculture & Livestock Development (MOALD), Nepal; and ActionAid Bangladesh held on 9-11 June 2019, Kathmandu, Nepal.

This book is the output of this regional consultation meeting. I believe this book is useful for analyzing the current situation, constraints and challenges, and opportunities for enhancing youth and women in agriculture. This volume helps to researchers, academia, professionals, extension workers, policy makers and governments for formulating policies to empower youth and women in agriculture. This book mainly includes the role of youth and women to promote climate resilient smart agriculture, policies and practices for attracting youth and women, challenges and opportunities to youth and women in agricultural development and food security, which is the most burning issue in SAARC Member Countries.

I would like to acknowledge the valuable contributions made by the focal point experts of SAARC Member Countries in preparing a comprehensive country papers; Asian Farmers' Association, Philippines; Ministry of Agriculture & Livestock Development, Nepal; and ActionAid Bangladesh for their invaluable supports in organizing the program. The contribution of Dr. Md. Younus Ali, Senior Technical Officer, SAARC Agriculture Centre (SAC); Dr. Rudra Bahadur Shrestha, SPS (Policy Planning), SAC; and Ms. Fatema Nasrin Jahan, SPO, SAC for their outstanding contribution in this endeavor.

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## Acknowledgment

The present volume “Youth and Women in Agriculture: Economic Development and Food Security in South Asia” is the output of a regional consultative meeting on “Youth and Women in Agriculture for Economic Development and Food Security in South Asia” organized by the SAARC Agriculture Center (SAC), Bangladesh; the Asian Farmers Association (AFA), Philippines; the Ministry of Agriculture & Livestock Development, Nepal; and the ActionAid Bangladesh during 9-11 June 2019, Kathmandu, Nepal.

The representatives from governments of the SAARC Member States, experts, researchers, policy makers, farmers’ organizations, and cooperatives participated in the program along with innovative ideas and experiences that contributed to publish this book. We are pretty sure that this volume would be useful to formulate policies on strengthening the youth and women for economic development and food security in the South Asian countries.

We would like to express our sincere gratitude to the SAARC Agriculture Center (SAC); the Asian Farmers Association (AFA); Ministry of Agriculture & Livestock Development, Nepal; ActionAid, Bangladesh; the SAARC Member States, particularly the Ministry of Foreign/ External Affairs and Ministry of Agriculture; SAARC Secretariat; National Focal Point Experts; and Farmers Organizations for their contribution.

Last but not the least, we would like to express our gracious appreciations to Mr. Bhojraj Sapkota, Senior Crop Production Officer, MOALD for his outstanding and untiring contributions in coordinating and organizing the program successfully.

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## Acronyms

ABIC	Agribusiness Incubation Center
AEC	Agro Enterprise Centre
AIM	Atal Innovation Mission
ARYA	Attracting and Retaining Youth in Agriculture
CGIAR	Consultative Group for International Agricultural Research
CIGs	Commodity Interest Groups
CIWA	Centre Institute for Women in Agriculture
CSA	Climate Smart Agriculture
CSO	Civil Society Organization
EDP	Entrepreneurship Development Programs
FMCL	Farm Machinery Cooperation Limited
FPO	Farmer Producer Organization
FYP	Five Year Plan
GAP	Good Agricultural Practices
GeSI	Gender and Social Inclusion
HYV	High Yielding Varieties
ICAR	Indian Council of Agricultural Research
ICT	Information & Communication Technologies
IFAD	International Fund for Agricultural Development
IFS	Integrated Framing System
LFPR	Labor Force Participation Rate
MoU	Memorandum of Understanding
NARC	Nepal Agriculture Research Council
NCDC	National Cooperative Development Corporation
OGOP	One Gewog One Product
SAARC	South Asian Association for Regional Cooperation
SAC	SAARC Agriculture Centre
SAP	School Agricultural Program
SDGs	Sustainable Development Goals
SETU	Self-Employment and Talent Utilization
SME	Small and Medium Enterprise
TL	Truthfully Labeled
TNA	Training Need Assessment
URC	User Right Certificate
WHO	World Health Organization
YBC	Youth Business Cooperative



## Highlights of the Book

This book is an output of a regional experts' consultation meeting on "Youth and Women in Agriculture for Economic Development and Food Security in South Asia" jointly organized by the SAARC Agriculture Center (SAC), Bangladesh; the Asian Farmers Association (AFA), Philippines; Ministry of Agriculture & Livestock Development, Nepal; and ActionAid, Bangladesh during 9-11 June 2019, Kathmandu, Nepal.

The SAARC Member States' National Focal Point Experts, invited experts, authors, editors and publishers have ownership of this book. This book emphasizes on enhancing the economic development and food security in South Asia through the meaningful participation of youth and women in agriculture.

This book focuses on the participation of youth and women in agriculture, constraints and challenges at the country level, country-specific opportunities, prospects and policies in promoting youth and women in agricultural development.

The key suggested interventions include: i) Gender sensitive program and budgeting, implementation, monitoring and evaluation; ii) Access to finance for agribusiness and agri-enterprises development to the youth and women farmers; iii) Availability of inputs including improved seeds, irrigation, women friendly equipment; iv) Strengthen the efficient marketing system; v) Capacity building of youth and women for adopting improved technologies; vi) Incentives for efficient value chain development; vii) Increased investments in R&D; and viii) Effective coordination among the concerned stakeholders including farmers, traders, processors, and end markets.

This book will be useful for the farmers, researchers, academicians, development professionals, policymakers, governments, international organizations, development partners, and civil societies to gain the synergetic efforts for empowering youth and women in agriculture in South Asia.

## Contents

<b>Foreword</b>	v
<b>Acronyms</b>	vii
<b>Highlights of the Book</b>	viii
<b>Regional Perspective Paper</b>	
Chapter 1 Youth and Women Engagement for Agricultural Development in South Asia <i>Asim Kumar Sarker</i>	1
<b>Country Perspective Papers</b>	
Chapter 2 Youth and Women in Agriculture for Economic Development and Food Security in Bangladesh <i>Abubaker Siddique</i>	13
Chapter 3 Youth and Women in Agriculture for Economic Development and Food Security in Bhutan <i>Laxmi Thapa</i>	19
Chapter 4 Youth and Women in Agriculture for Economic Development and Food Security in India <i>S. K. Srivastava</i>	37
Chapter 5 Youth and Women in Agriculture for Economic Development and Food Security in Maldives <i>Gasith Mohamed &amp; Rudra Bahadur Shrestha</i>	63
Chapter 6 Youth and Women in Agriculture for Economic Development and Food Security in Nepal <i>Sirish Pun &amp; Rudra Bahadur Shrestha</i>	75
Chapter 7 Youth and Women in Agriculture for Economic Development and Food Security in Pakistan <i>Babar Malik &amp; Rudra Bahadur Shrestha</i>	101
Chapter 8 Youth and Women in Agriculture for Economic Development and Food Security in Sri Lanka <i>T.M.P.G.S.P. Tennakoon</i>	115
<b>Report of the Expert's Consultation Meeting</b>	127
<b>List of the Participants</b>	130



## Chapter One

# Youth and Women Engagement for Agricultural Development in South Asia

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### Abstract

*Agriculture is the most important sector for the economic development in South Asia. The role of women and youth in agricultural development is invaluable in the region. As the youth and women have considerable contributions to agricultural labor, while a huge number of the labor force is underperforming due to lack of social recognition, gender discrimination. Lack of education hinders them to utilize modern technologies effectively for agricultural development. In South Asian countries, there is a traditional belief that women should not work outside rather engage in household chores. Furthermore, the participation of women farmers in decision making for the economic activities including agricultural production and marketing activities is dismally low. The women and youth farmers are encountered constraints in financial accessibility to start and run the agribusiness and agri-enterprises. Without financial resources, they can't purchase the assets required for accelerating business activities. Innovation is necessary to develop agricultural products and introduce new approach to ensure more efficient farming. Public and private research programs are crucial for improving farming practices and make agriculture more efficient and economically viable.*

**Keywords:** Agriculture, economic development, food security, South Asia, women and youth

### 1. Introduction

Agriculture is an engine of economic growth and poverty alleviation in the developing countries where women and youth play crucial role, although women face several social and economic constraints for entering into business or other professional activities. The governments are providing some opportunities to attract women in the agriculture sector to achieve the goal of economic growth and ensure agricultural development. With the participation of women, the overall food security will be strengthened. However, their life is more complex in the rural areas since they need to manage house and engage in other activities to earn livelihood. In the South Asian countries, women are often face

discrimination in the workplaces (Ogunlela & Mukhtar, 2009). They face severe constraints in starting a business or get wages lower than men counterpart, which restrict them to participate in economic activities. The situation is changing for women due to the change of business environment and culture. Female education rate is increasing in rural areas in South Asian countries, which is helpful for increasing the skills and qualification of women and make them competent enough to work in different environments. The governments also take necessary steps such as lower tax, loans with lower interest and free training to increase women involvement in the agricultural development.

Youth has significant role in the political, economic and social transformation of a country (Mitra & Verick, 2013). Generally, people aged 16-40 are considered youth. The South Asian countries includes Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka is the home of about 25% population of the world. As all the countries are developing economies, these are not strong enough to employ the skilled or unskilled young generation. Most people from the villages migrant to urban areas in searching job opportunities. Attracting the youth to agriculture can be a good strategy to reduce unemployment rate and ensure agricultural development towards making the agriculture profession more attractive to the young generation by the government.

Due to the advancement of modern technology, the overall social environment has changed. The young generation is more attracted to the social media where they communicate with a group of people. Utilizing the social media for promoting agriculture and educating the youth will be a very cost-effective approach. Farming is considered as hardworking, which reduces the interest of young generation in agriculture. Increasing awareness about the benefits of agriculture is necessary to encourage the youth to build their career as a farmer. Most of the young and educated people consider profession other than agriculture due to social image of this profession, which is another constrains in agricultural development. Modern media have important role to play in developing the image of agriculture. Most of the countries also do not have enough opportunities for education and training, which also reduces the involvement of youth in agriculture. Modern technology should be used to teach the students on agriculture focusing entrepreneurship and developing skills.

Access to land is a very scares resource for women and youth farmers in South Asia. Most of the rural people are below the poverty line and they do not avail land for farming (Gulati et al., 2007). Providing them credit opportunities with lower interest rate is necessary for improving the growth of agricultural development. Women also face some constraints getting credit from financial

organizations. The government should encourage women in agriculture and provide them credit with low interest rate. This can be the most effective strategy of attractive youth and women in agriculture. Indeed, farming is not a very profitable in South Asian countries. Agricultural products are in better price in the retail markets but the farmers get a very low value of their products. Wholesalers and retailers earned more profit in selling the products. Thus, the government has important role in controlling the price of agricultural products so that the farmers make the agriculture more profitable.

## **2. Situation of Women and Youth Engagement in Agriculture**

In South Asia, agriculture is not considered a very prestigious or high paying profession. About 79% of people in the region prefer other jobs than that of agriculture. Women has significant role in the overall agricultural labor, family labor or entrepreneurs but due to lack of opportunities and incentives they are not performing according to their ability. More young people are moving to cities and to abroad for the search of jobs which is alarming for rural economy. A larger number of people depend on agriculture for their livelihood in the region (Walrath et al., 2015). Due to massive urbanization, the overall agriculture in the region is decreasing. Industrialization and the development of other sectors make people prefer other profession than farming. For example, in Bangladesh, about 48% people are directly dependent on agriculture and women have significant part in the agricultural development.

Agriculture is associated to all major manufacturing and service sectors and has larger role to the GDP in South Asia. The population living in this area faces higher level of poverty, food insecurity and malnutrition. Women are more vulnerable to poor nutrition, especially during child birth. In order to ensure healthy child, the nutrition of women must be improved (Choudhry, 2017). Youth involvement in agriculture in the South Asian countries is still very low. Skilled and educated youth people are more interested in urban jobs where they are paid more, which makes agriculture less attractive. The low participation of skilled women and youth are the primary reason of underperforming the agricultural sector.

## **3. Approaches for Youth and Women in Agricultural Development**

The governments of South Asian countries have the priority objectives of improving the agriculture and food system. For example, Pakistan has introduced a matching grants scheme for agribusinesses in under-performing sectors of agriculture value chains to encourage mobilization of private

investments. The goal of this program is to provide support to the underperforming industries. They provide up to 50% costs of business and technological support to develop the agricultural sectors (Jasra et al., 2011). Some programs and projects related to rural youth and women in agriculture-based enterprise development are discuss below:

### **3.1 Agriculture Loans Facilities**

Most of the poor farmers in the rural area are constrained by lack of lands and enough financial resources. Getting credit from commercial banks is hard for them since they do not have bankable collaterals, difficult banking documentations and lengthy procedural requirements of the financial institutions. Bangladesh has introduced an effective credit system for the farmers. A new credit opportunity has been introduced only for farmers where they can get loans at 2% rate of interest with ease procedure.

In Pakistan, due to the lack of loan opportunities, the farmers avail loan from informal sources with high interest rate. These sources of lending loan are more exploitative. The government has developed a digitalized solution for providing easy credit opportunities to the farmers by making partnership with micro-finance banks. They have developed a website to simplify the procedure for availing credit. The interest payments are subsidized by the government to encourage farmers in agriculture sector.

### **3.2 Advisory Services – Capacity Development**

Another reason behind the underperforming agriculture sector is the lack of proper training and advisory services. Most of the farmers in the rural areas are uneducated and they have limited knowledge about the modern farming technologies. Lack of training and development for women and youth has been a huge challenge. In order to solve this problem, the government of Pakistan has conducted training programs. In the country, overall, only 35% of rural women between ages of 15-64 years are literate (Agrawal, 2013). The country has introduced ICT based training programs for women and youth.

### **3.3 Investments in Agriculture Based Enterprises**

The agriculture sector of South Asia lacks of investment from the national and international investors. Public and private organizations should invest more in agriculture sector to develop the industry. Technological development can also help the industry by introducing new procedures, seeds, fertilizers, irrigation, technologies and information that will make farming more efficient. Private investors should be encouraged to invest more in agriculture. Pakistan has announced a matching grants scheme for agribusinesses in under-performing

sectors where about 40% of the loans should be given to youth and women entrepreneurs

### **3.4 Women Farmers' Group**

Communication among the women farming community is needed to improve the participation of women in agriculture. Modern technologies such as the internet and social media can be useful for providing training and build a community with farmers. Women farmers can develop website or mobile app where more farmers can connect and share information. In South Asia, there is no platform where women can raise their voice and communicate with each other. By developing women farmers' community will help them solve different problems and get support.

### **3.5 Youth Farmers' Group**

The advancement of modern technology has made new products such as smartphones and computers available to poor people. With the internet some social media are introduced and gained greater popularity. Social media can be used to create a group with youth farmers. A youth group was created in Bhutan in the name of Youth in Agriculture Program (YiAP) aiming is to provide support to women and youth farmers.

### **3.6 Information and Communication Technologies (ICT)**

Technology is crucial in every aspect of our society. Educational institutes can improve the learning process by utilizing modern technologies. Video conferencing, ICT, networking and social media can be useful providing formal education and training. Technologies can also help reduce the costs of business transactions, increasing agriculture's profitability.

### **3.7 Strengthen Higher Education in Agriculture**

The opportunity of higher education in agriculture is required to make skilled and educated farmers. Due to the lower image of agriculture, very few young students choose to have higher education in agriculture which means most of the farmers working in agriculture are unskilled and underperforming (Katyay & Katyay, 2018). The South Asian countries also have very little opportunities to provide formal education and training to young farmers. To empower women and youth farmers the opportunity of higher education in agriculture is necessary.



### **3.8 Use of Technology**

The lack of education hinders them to utilize modern technologies effectively in both business and individual life (Kelker, 2009). Due to the ignorance in technology they suffer from various health hazards in workplace. For example, farmers need to work with various chemicals, radiation and biological contaminants. Since they have very little knowledge about the bad effects these factors, the government has important role in making women friendly technologies and introduce training programs to enabling them utilize technologies in farming. Proper training will enhance their knowledge, working efficiency and work productivity and finally help them to reduce drudgery.

## **4. Women and Youth to Promote Climate Smart Agriculture**

Agriculture sector of South Asian countries are vulnerable to climate change. Most of the farmers in the rural area need to fight against climate change and natural disasters. For example, in Bangladesh many farmers lost their lands due to river bank erosion (Mondal, 2010). Some farmers have lost their interest in farming due to flood, drought and other natural disasters especially small farmers. These farmers do not have the financial ability to start over again. The governments of the SAARC countries working to reduce river bank erosion and help the farmers adapt with the climate change. The bad environment also makes farming for youth and women more challenging. They prefer other jobs due to the increasing risk in agriculture. Keeping in view to adaptation of climate change, the women and youth are engaged in home doing other jobs such as poultry, dairying and goat farming. Youth and women now access to modern technologies that they can use to share information and adopting climate smart agricultural crop varieties and technologies. In India, larger number of interventions have developed on 'climate smart' to ensure long term benefits. Smart agriculture practices will make them more climate resilience and improve the overall production. In order to make agriculture climate smart, alternative use of land; agroforestry; silvi-pasture management; integrated farming system; watershed management; and construction of water harvesting structures.

Other countries such as India, Nepal and Bhutan are also vulnerable to the impacts of the climate change. The agriculture sector of Bhutan is at high risk due to melting glaciers, glacial lake outburst. Frequent flood and drought greatly damage the agriculture and crops. The government of the country is working for new innovation method of farming to reduce the risk created from environmental factors. Livestock is an integral component of farming systems in Sri Lanka and women play a major role in raising livestock and poultry (Birner, 2018). Youth farmers are more energetic and have the will to success. They

innovate new ways of forming is harnessing the skills and energy of youth to facilitate growth in the agricultural sector in more innovative ways.

## **5. Policies and Programs to Promote Youth and Women in Agriculture**

Youth generation rarely enter in agriculture if they are educated and have the qualification to have other jobs (Brooks et al., 2013). The reasons behind this are the high risk of climate change and natural disaster in South Asian countries. Youth and women also face some barrier as entrepreneurs. Finance is an important constraint faced by women and youth when starting a business. Without proper financial resources, they cannot purchase assets required for accelerating business activities. Women face more complexities when getting loan from banking institutors. Specific policies are required to help women farmers' easy access to credit.

- The *National Agriculture Policy 2018* of Bangladesh provides some specific opportunities to rural farmers. The opportunities include empowering women, family nutrition security, crop production, post-harvest crop management, agro-industries training, and technological support. The contribution of women and youth farmers in rural economy is recognized and youth farmers club is created to provide support to new farmers.
- Bhutan has *Food and Nutrition Security Policy 2014*, focus on promoting youth and women in agriculture sector. The policy is developed to empower women in farming, developing the value chain of agricultural products. It also provides youth and women sustainable access to micro-credit with small interest. The country also developed *Renewable Natural Resource Marketing Policy, 2017* with a view to recognizing the effective role played by women in the agriculture sector. They provide opportunities to women and small farmers to develop their business and contribute in the national food security (Ramachandran, 2013). Bhutan has developed vocational education and training up to Diploma in Agriculture is provided by the College of Natural Resources. The country also developed educational system for the unemployed youth in rural area. The program is developed by Rural Development Training Centre, MoAF.
- India has developed a PM-KISAN scheme for assuring income support to the farmers. The scheme was implemented in 2018 to provide financial support to poor farmers annually. The country has developed value-addition to agricultural production to ensure that the farmers are paid properly and the supply chain management of agricultural products is efficient. The country also promotes self-employment and talent utilization.

- Climate change and natural disaster are the major problems in India. The country has developed 45 Integrated Farming System (IFS) to help the farmers adapt with the climate and recover from the natural disasters. The government has allocated more than 30% funds for women under various major schemes.
- Agricultural education for women and youth is required to improve the skills and technical knowledge of women (Brooks et al., 2013). Modern technologies such as the internet and social media can be used for providing training and build a community with farmers. Most of the farmers in South Asia are not well educated so providing proper training and education will help them enhance their capability to use modern technology in business. Bangladesh has developed some free training centers for providing basic knowledge about farming.
- Nepal has developed *Agriculture Development Strategy in 2014*, Prime Minister Agriculture Modernization Project in 2017 in line with *National Agriculture Policy, 2004*. All these policies and program are congenial towards enhancing the women and youth engagement in agriculture.
- Pakistan has developed an Agribusiness Incubation Center to promote entrepreneurship and innovation among youth and women. The country provides low interest funding opportunities to farmers and provides free training and education. The objectives of the Agribusiness Incubation Centers are promoting agricultural technology to farmers ensuring efficient farming and providing them support to generate entrepreneurship.

## **6. Challenges and Opportunities on Women and Youth Engagement in Agricultural Development**

Women has pivotal role in the agricultural development and rural economy. Their contribution in agriculture should be recognized properly. Women face some social and religious constraints that hinder their performance in the agriculture sector (Bano, 2009). In South Asian countries, there is a traditional belief that women should not work outside rather engage in household chores. They have less scope of decision making for their own career development. Gender discrimination is intense in these countries for example women are paid lower than men in jobs and they also face higher challenges when starting a business. Very few women and youth possess land that they can use for agriculture. The challenges and opportunities in youth and women in agriculture are as follows:

## **6.1 Challenges**

- Insufficient access to knowledge, information and education.
- Limited access to land to the women and youth farmers.
- Inadequate access to financial services.
- Inadequate access to markets.
- Limited involvement of women and youth in policy decision making levels.
- High risk in agriculture profession faced by farmers.
- Reduction of malnutrition and, hunger and improve nutrition.

## **6.2 Opportunities**

In order to develop agriculture-based enterprise, the South Asian countries should undertake some initiative. Some countries such as Bangladesh and India have establishing agriculture-based enterprises. The farmers are provided both financial and non-financial support such as land management, crop diversification, technological support and low interest credit. Some training programs are also introduced by the government to help the farmers utilize modern technology in farming and gain efficiency. People are also losing their interest in farming due to the complexities in farming. In order to maintain food security, some initiatives must be taken by the governments. For example, increasing awareness about the important of farming can be helpful to motivate youth and women in farming. Most of the farmers in the rural area are poor and do not possess enough lands for farming. Provide them credit opportunities with low interest will increase their interest in agriculture (Abedullah et al., 2009).

## **7. Recommendations**

- Providing the opportunities of gaining knowledge and skills to the youth and women should be the top most priority.
- Women and youth should be encouraged to participate in agriculture and SME businesses. They should be provided proper technical and financial supports from the government.
- The government should provide low interest credit opportunities to the farmers.
- The government should have minimum support price scheme for some important crops.
- Women face challenges in selling the products to the market. They should be provided enough opportunities to access the local markets and get appropriate price for the products.

- In order to increase the profit to the farmers, direct marketing system should be introduced. The government should control the markets in the market failure condition of agricultural products and connect urban and rural consumers in order to develop efficient value chain and supply chain.
- Formal training is needed for women and youth to improve the skills and technical knowledge of women. Modern technologies such as the internet and social media can be used for providing training and build a community with farmers.
- The public and private sector should work together to transfer technologies and improve the traditional practices of farming.
- The gender discrimination in workplace must be eradicated for both agricultural and industrial sector. If women can work with their full potential within a gender friendly environment, they will be able to reach their goals.
- The majority of the farmers working in agriculture are unskilled and underperforming. Improving the image of agriculture will be very helpful for empowering youth and women in the agricultural sectors.

## **8. Conclusions**

The role of women and youth in the agricultural development in South Asia is unavoidable. Agriculture sector is not performing at optimal level due to some social, financial and technical constraints. Young generation is not inclined to enter in agriculture, women are paid lower than men in jobs and they also face higher challenges when starting a business. The scarcity of lands, low credit opportunities and natural calamities are the main challenges in agriculture. In order to maintain food security of South Asian countries, some initiatives must be taken by the governments. Farming is a hard-working profession but the farmers are not paid properly as they should be. Although the government has introduced some free training and development programs, people cannot take full advantage. Proper dissemination of information is required to improve awareness in improved agricultural technology. Both government and private sectors should focus on research and development of agricultural technologies and improve the current agricultural practices.

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## Chapter Two

# Youth and Women in Agriculture for Economic Development and Food Security in Bangladesh

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### Abstract

*Women and youth in Bangladesh are the integral part of almost all of the agricultural development activities in the fields of crop production, homestead gardening, livestock and poultry rearing. Rate of participation in agricultural employment shows up-streaming growth for women, while the youth decline downwards. Women are suffered from different types of discriminations in social-cultural and economic sphere. Women discrimination reflects in their lower education level, less income, limited control over their own income, poor access to inputs and resources as compared to men. Achieving women and youth farmers' economic empowerment, the intervention should focused on: capacity development, networking and organizational development, innovations on friendly technologies, financing and marketing system, support to cope with climate change shocks, and recognition women's work. Strengthening their capacity through agricultural education, research, extension and rural farming is utmost essential.*

**Key Words:** Farmers' recognition, economic empowerment, friendly technology

### 1. Background

Bangladesh, a country located in the South Asian region surrounded by India on all sides, except Myanmar (Burma) bordering the far southeast region and Bay of Bengal to the south. Bangladesh is the eighth most populated country in the world, having a population above 160 million people in 1, 47,570 km<sup>2</sup> with population density of almost 1,000 people per kilometer. The population of Bangladesh has been increased rapidly since its independence in 1971. This large increase in Bangladesh's population, notably from the 75 million in 1971 and in late 20<sup>th</sup> century to 160 million populations in 2019, is mainly due to the improvement of literacy rate, reduction of gender disparity, declination of maternal and child mortality rates, better medical services and immense public health campaigns. It is estimated that there are high proportions of young age population below the age of 15 years and reproductive woman between the ages of 15 years to 49 years, which is 39% of the total female population in the country.



These two facts indicate the potential population boom in the future. In fact, a country's growth potential is built on the basis of age structure of its population. Presently, the age structure of Bangladesh is heavily pyramidal with a large base of young population. If viewed positively— it would increase the working force of the country, while viewing negatively— it would exert more burdens on the resources of the nation which is already over-suffocated. As per population, area and resources dilemma, the country is over populated and has already created a stress on the national economy.

The economy of Bangladesh is agriculture based; nearly half of the population is engaged in agriculture and rural farming. Gradual increase in population has squeezed the agricultural lands; lands once used for cultivation are now used for infrastructure, building houses and accommodations for the increasing population. Decreasing trend of land for cultivation and in search of better opportunities, part of the rural population are migrating to the urban areas and are creating social and socio-economic stresses on the cities' amenities.

The over-sized population has thrown a severe challenge for the future development of the country's economy exerting huge pressure on environment and available resources, limiting agricultural growth and food grains production through reduction of arable land due to diversification to housing and non-agricultural purposes; raising requirement for food grains and increasing the number of poor population, thus slowing down the rate of poverty reduction.

## **2. Situation of Youth and Women in Agriculture**

In 1971, about 85% of the total population were dependent on agriculture. The youth section of population, aging 15 to 39, was obviously a big part of agricultural labor force where women also used to play vital role. Women in particular, were generally engaged in post-harvest crop collection and husking, vegetable gardening, home poultry, cattle feeding.

Bangladesh has now a population of 160 million, which is more than double in 50 years. But the ratio in agriculture has been observing a rapid decrease in course of time due to massive urbanization, industrialization, development of service sector and other commercial activities. Agricultural lands are also reducing alarmingly. Now in Bangladesh, 56% people are depending on agriculture for their livelihoods. But though the percentage of agriculture dependent people has been decreased, the ratio and volume of agriculture production has been increased from 10.59 million tons of rice production in 1971 to 36.28 million tons in 2018. About 31.18 million (34.8%) women and 31.99 million (35.7%) youth of the total population engaged in agriculture (Table 1),

which indicates that the women and youth are playing a vital role in agricultural development.

Table 1. Engagement of women and youth population in agriculture

Total Population of Bangladesh	Population Engaged in Agriculture	Breakup of total Population Engaged in Agriculture		
		Women in Agriculture	Youth in Agriculture	Other than Women and Youth Engaged in Agriculture
160 million (100%)	89.6 million (56%)	31.18 million (34.8%)	31.99 million (35.7%)	26.43 million (29.50%)

Source: BBS (2018)

### 3. Programs on Youth and Women in Agriculture for Economic Development and Food Security

Recognizing to the contributions of women and youth in agriculture, Government of Bangladesh has undertaken many initiatives to support them in farming, establishing agro-based enterprises. Government has enacted many policies, rules and regulations on agricultural land management, water management, rain water harvesting, crop diversification, high value vegetables production, fertilizer management, development of agricultural technologies, climate sensitivity agriculture along with promotion of agro-based industries and business. Department of Agricultural Extension and other concerned Departments are providing trainings, dissemination of technologies, providing machineries and other inputs to farmers and agro entrepreneurs, particularly to assist women and youth.

Some major programs in relation to strengthening the capacities of women and youth are:

- Gender equity policy paper 2016 has been endorsed by the government.
- Grievance cells in every regional department have been set up to combat sexual harassment and other abuses of women farmers.
- Training on new technologies is being provided (576,561 women farmers have so far trained up).
- Credit program for women entrepreneurs has implemented and disbursed USD 2.35 million to 46,324 women farmers.
- Women scientists are being sent to abroad for higher education through different projects.
- Support programs to capacity building of women entrepreneurs (3, 10,446 women have so far been supported through different ways and programs).

As a result of those efforts, the share of agriculture in GDP is around 15% in 2017/18. Despite the booming development in industrial and service sector, agriculture generates 40.06% of the total employment in the country. The production by crops are presented in Table 2.

Table 2. Last ten years agricultural crop production in Bangladesh

Year	Agricultural crop production (in lakh tons) /(in lakh bale for Jute)							
	Rice	Wheat	Maize	Potato	Pulses	Oilseed	Vegetables	Jute
2006	265.30	7.35	5.22	41.61	2.75	3.29	20.33	46.19
2009	313.17	8.49	7.30	52.68	1.96	8.40	29.08	46.78
2018	362.79	11.53	38.93	103.17	10.31	9.70	159.54	88.95

Source: MOA (2019)

During the last five years, 621020 women have taken training on capacity building, high yielding crop production technologies, food processing and preservation, packaging, agricultural information technology and about 24,452 women have obtained training on homestead gardening under the Ministry of Agriculture.

The Department of Agricultural Marketing under the Ministry of Agriculture has created 23,466 women entrepreneurs through different projects. Ministry of Agriculture has ensured the women participation (at least 30%) in the formation of each farmer’s marketing groups. Bangladesh has achieved self-sufficiency in cereal food grains (rice, wheat, maize), tuber crop (potato) and vegetables. The Bangladesh has been able to save foreign currency by minimizing import of food grains. At present, the country in a path-way of exporting additional rice and potato to global market; in 2017/18 the country has earned USD 674 million through export.

#### **4. Policies and Programs for Women and Youth in Agriculture**

The updated *National Agriculture Policy, 2018* has created opportunities for rural agricultural workforces. The specific opportunities in terms of empowerment of women in agriculture in the fields of women labor forces, family nutrition security, crop production, post-harvest crop management, agricultural business, agro-industries training, and technological support with the ultimate objective of empowerment of rural women in agriculture have been created. In the policy, opportunities for youth has also been created and the contributions of rural youth forces has been recognized, ‘youth farmer club’ provision has been made, high yielding and high value crop production, small scale agro-industry establishment, investment in agriculture and other important opportunities and

avenues have been provided in the *National Agriculture Policy, 2018* for women and youth agricultural work forces. The women and youth have been encouraged to engage in agro-processing, agro-industries, modern and mechanized agriculture for commercialization of agriculture from subsistence agriculture.

## **5. Challenges and Opportunities on Women and Youth in Agriculture**

Bangladesh like some other countries in SAARC has religious and social constraints that limit women participation in mainstream agriculture and related activities. The traditional belief is that women should not be involved in work beyond the boundaries of their houses; they should only be engaged and responsible for house-keeping, nursing of their children, take care of male members of the family. They have lack of social recognition and less scope in decision making. There is gender discrimination and unequal wages. Disparity and unequal ownership, particularly of land property, social values for women than male members of a family. A huge number of youth are landless and lacks in financial support. Moreover, they have lack of education and technical knowledge. A countable number of youth are migrating from agriculture to other commercial activities for more remuneration.

Despite the facts, it is very encouraging that the government is creating more opportunities to attract women and youth in agriculture sector. More budget provisions on training and technological supports are allocated in 7<sup>th</sup> Five Year Plan. There are provisions for giving value and recognition to women labor and ensure equal wage in the revised *National Agriculture Policy, 2018* along with incentives and increasing supports to agro- business, credits and soft bank loans have been provided.

## **6. Recommendations**

Based on the discussion above, following recommendations are derived:

- Promoting commercialization, modernization and mechanization should be placed at the top most priority.
- Women and youth should be encouraged to involve in agribusiness, SME (small and medium enterprise), small-scale agro-processing, and agro-mechanization with technical and financial support from the government through cash incentive, soft bank loan at low interest rate.
- Government should provide subsidy to agricultural machineries for entrepreneurship development to women and youth.

- Government may undertake pilot program towards allotment of government owned lands particularly to landless women and youth for agricultural farming.
- Women and youth should have an easy access to the local markets for getting appropriate market price of agricultural products and produces.
- Easy and favourable loan incentive for the women and youth entrepreneurs. This will have a good impact and safeguard for the women and youth entrepreneurs to run their agribusiness successfully.
- Agricultural insurance scheme to the rural women and youth for their crop failure in case of natural calamities.
- Awareness build-up and agricultural information support programs should be strengthened.
- Rewards and recognitions system to be established to attract and encourage the women and youth.

## **7. Conclusions**

Women and youth are the driving forces in agricultural farming; they have been playing pivotal role in promoting agricultural growth and economic development of the country. Government initiatives, social awareness, NGO activities and supports, involvement of private sector in agribusiness can bring more encouragement among the women and youth that would contribute to achieve the targets of national development. Safety, security and recognition to the women and youth in agriculture should be taken into consideration of priority areas for extending government support with a view to livelihood improvement of the rural women and youth.

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## Chapter Three

# Youth and Women in Agriculture for Economic Development and Food Security in Bhutan

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### Abstract

*This paper is based on secondary information and literature review. As women and youth are the major labor force in agriculture, the government of Bhutan has given higher priority to strengthen the capacity of this labor force. Focused projects such as Commercial Agriculture and Resilient Livelihoods Enhancement Program (CARLEP) have supported for the formation of women farmers' groups for increasing the production of vegetables that are marketed through the Farmers Groups–School–Linkage channel. The intervention clearly demonstrates that economic empowerment of women can contribute to food security and economic development. Similarly, the Farm Machinery Corporation Limited (FMCL) has supplied gender-friendly farm machineries including on-the-job training to youth. Effective development partnerships between civil society organizations such as Bhutan Association of Women Entrepreneurs (BAOWE) and women have proven to be mutually reinforcing. There is an optimistic increase in number of youth taking up farming especially cultivation of vegetables, fruits such as kiwi mushrooms and banana. These positive trends however are confronted by decreasing farm labor availability, crop damages by wildlife, low productivity, lack of assured irrigation, low rural female literacy rate, loss of agricultural land and low access to credit further worsened by the impacts of climate change. The cascading effects of low literacy rate of women farmers leading to their inadequate access to agriculture information, recording, banking and safe transportation cannot be ignored.*

**Keywords:** Agriculture, economic empowerment, food security, women, youth

### 1. Background

Bhutan is an agrarian economy where majority of population lives in rural areas and depends on agriculture, livestock and forestry. Agriculture sector plays a vital role in Bhutan's economy by providing employment to the largest section of the population, contributing to the Gross Domestic Product (GDP) and food security. A major challenge is the loss of cultivable agricultural land for different

purposes. From a previous cultivable area of 2.9% (2010) of the total country's land area as of 2016 this has been documented at 2.76% (MoAF, 2017).

In terms of employment by economic sectors, agriculture is the principal segment for absorbing 57.2% of total employment (RMA, 2018). It further characterized that the employment in agriculture sector is by low skilled laborers and having minimum contribution to total output with labor productivity three times lower than the average annual overall labor productivity of Nu 474,245<sup>1</sup> in 2016. A large share of rural populace depended on agriculture, which also recorded higher poverty incidence, compared to non-agriculture workers in the urban areas (NSB, 2017).

In 2017, agriculture contributed 15.17% to the total economy, i.e., as measured by the GDP compared to 41% in the initial phases of planned development (NSB, 2018). Bhutan continues to experience trade imbalances including in agricultural products. In 2018, Bhutan imported agricultural products worth over US\$ 9 million (DAMC, 2019). Consequently, the government to keep rural farms farmed, combat rural-urban migration and ensure food self-sufficiency or food security, has consistently and consciously invested significantly in infrastructure development such as irrigation canals, farm roads, farm shops, electric fencing, marketing outlets, and plastic houses across the country.

In addition, further boosting in agriculture production has been creating an enabling policy and financial environment as well as institutional mechanisms deepening the reach through effective research and extension linkages. The Ministry of Agriculture and Forests (MoAF) is mandated to enhance food and nutrition security in the country. An important intervention the ministry with an outlay of around US\$ 14 million will implement during the 12<sup>th</sup> Five Year Plan (FYP) is the "Organic Flagship Program", which aims to commercialize organic production (NOP-ARDC, 2018). Essential features of the flagship program are to provide access to bio-inputs and organic seeds, develop an organic value chain and market system, and develop and operationalize organic certification systems. It has set an organic production target of eight selected commodities for export and four for domestic consumption, produce approximately 254,000 tons of bio-inputs within five years and generate approximately 1,500 new jobs and engage around 33,000 farmers across the country (GNHC, 2019).

Women in Bhutan continue to play a major role in agriculture development. They are involved all along with the value chain of agriculture production starting from production at farm throughout the post-harvest management and processing to market. Further, women especially in rural areas multi-task in the

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<sup>1</sup> Nu is Bhutan currency equivalent: US\$ 1= Nu 70

value chain, in family activities and as rural employees and as rural enterprisers. Youth are the most productive group and have a crucial role in advancing agricultural development which could be capitalized by creating such opportunities, building up their capabilities.

## 2. Situation of Youth and Women Engagement in Agriculture

### 2.1 Women’s Engagement in Agriculture

Women represent 48% (346,692 people) of Bhutan’s population (Table 1). It has a rural population of 452,178 persons representing 62% of the total population of 727,145 persons (NSB, 2017). Of the total working age population of 340,236 persons, the number of economically active (comprising all persons above the age of 15 years and above) females are only 132,183 persons (or 39%). Of this, there are 86,395 women employed in agriculture of which 7,485 female youth are employed in this sector (MoAF, 2017). Compared to 2005 the number of persons employed in the agricultural sector increased by 34% in 2017. The agriculture sector employed more than 59% of women (Table 1).

Table: 1. Population characteristics status

<b>Parameter</b>	<b>Status</b>
Total national population	727,145
Total female population	346,692
Economically active female population	132,183
Economically active population employed in agriculture	145,691
Economically active female population employed in agriculture	86,395
Number of youth	143,701
Number of female youth employed in agriculture	7,485

Source: NSB (2017)

About 60.4% of 158,513 regular households are landowners, which means that they own any type of land which is 73% in rural areas with a mean land holding of 2.22 acres per household (NSB, 2018). Majority (92%) of households in the country have access to the nearest road head in less than 30 minutes compared to 63% in 2005 indicating households improved access to market and mobility.

In order to support farmers, particularly women and youth in the economic empowerment, the Department Agriculture and Marketing (DAMC) has been encouraging farmers to set up cooperatives. Women and youth participation in agriculture cooperatives and farmers’ groups has steadily increased in the last few years with the overall female numbers of 3,610 in farmers group and 1,137



women involved in cooperatives (Table 2). Currently, there are 170 farmers' groups and 34 cooperatives in Bhutan (DAMC, 2019).

Table 2. Women involved in agriculture cooperatives and farmers' group

<b>Sex</b>	<b>Cooperatives</b>	<b>Farmers' group</b>
Male (No.)	1,358	4,304
Female (No.)	1,137	3,610

Source: MoAF (2017)

## 2.2 Youth's Engagement in Agriculture

Youth comprise 20% of Bhutan's population of which the number of female youth are 67,947 persons or a mere 9% of the total national population (MoE, 2011). Young people as the most productive group have a crucial role in advancing the agriculture sector, which could be capitalized by creating such opportunities, building up their capabilities to translate these into practices changes and benefits and motivating them to join agriculture sector. However, it is worth mentioning that the increasing trend in the young people apparently leaving the rural farms in search of jobs in towns has created trouble for the farms in the countryside which are facing labor shortages, driving the wages up thus increasing the whole production prices.

Recognizing the trend, the government has emphasized wherever feasible farm mechanization, and has set up the FMCL, a state-owned enterprise, which is mandated to import, distribute, hire and provide maintenance services of farm machineries. FMCL is regularly providing on-the-job training to youth for operation of agriculture machineries. The Ministry of Education (MoE) in collaboration with MoAF started the School Agricultural Program (SAP) in 2000, catering to students from classes nine to twelve. From 2018, it is an integral part of their formal education—thus opening an opportunity for those who are interested in taking up agriculture. Additionally, the Ministry of Labor and Human Resources (MoLHR) in collaboration with MoAF has also been piloting a program to recruit youth in agriculture as farm attendants.

In order to empower the youth in marketing of the agriculture products, DAMC established the Youth Business Cooperative (YBC) in 2012 wherein the youth are involved in the marketing of Renewable Natural Resources (RNR) products. More and more youth are now increasingly involved in agriculture businesses. There are already two registered Youth Agriculture Cooperatives and more than ten registered youth groups involved in agricultural farming and agrobusinesses (DAMC, 2019).

### **3. Best Practices on Youth and Women in Agriculture-Based Enterprise Development**

#### **3.1 Success Story: Women Farmers' Group**

Yoekhar Vegetable and Marketing Group, Mongar formed in 2013 is a success case of women-led farmers' group formed by 11 females and 1 male growing seasonal vegetables, such as cabbage, cauliflower, chili, brinjal, ginger, peas, radish, pumpkin, cucumber, carrot, beans and potatoes. The group marketing of these vegetables mostly to the Yadhi Central School through a 'Farmer-School Linkage' program. The group reported that the ready/assured market has been the key pull factor in group cohesion and steady production of the vegetables.

The location of the village with access to the Mongar- Trashigang highway and the small town of Yadhi has added the market assurance. Similarly, from the record maintained by the extension agent, the group as of 2016 had saved Nu 267,248 (US\$ 3,818) in their group saving account, summing up the savings since the first formation of the group. The group earns a minimum of Nu 1,500 (US\$ 21) at one supplying week to the Yadhi Central School. The project was initially supported by CARLEP, IFAD.

#### **3.2 Success Story: Youth Farmers' Group**

Three youth of Tshimasham in Chhukha district started in 2015 vegetable farming in a plot of 80 decimals in the name of "Youth in Agriculture Program" (YiAP). They reaped a bumper harvest in 2018. They sold their products to Gaedu College of Business and earned Nu 70,000 (US\$ 1,000) (Kuensel, 2016). From 80 decimals the farm has been extended to 2 acres (0.81 ha). The program was supported by UN University International of Agriculture Studies, Japan. This farm was recently used to test new mini power-tiller from FMCL. Today, farming has been downsized due to labour intensive and tiresome work. Therefore, women and youth friendly farm machineries would encourage them to go for agriculture.

#### **3.3 Wongminang-UrkaDetshen**

*Wongminang-UrkaDetshen* is a women farmers group in Boomdeling Gewog (block) of Trashiyantsi *Dzongkhag* (District) who are involved in production of local chili variety named *Urka Bangla*. This group produces their own chili, uses green-house solar dryer and processes pickles from the local variety. According to the group, pickling has higher advantages over dried chili and fresh chili sale. Total of 20 kilograms fresh chili fetches US\$ 25-30 while the same quantity of chili can fetch up to US\$ 123. Dried *Urka* chili fetches about US\$ 21-23. This

initiative was supported by CARLEP, District Agriculture Sector (DAS), Agriculture Research Development Centre (ARDC) Wengkhari and Integrated Food Processing Plant.

Besides reducing post-harvest losses during peak season and generating additional income, the group also conserves traditional chili variety. In 2018, the group produced 46 tons of Urka of which most were processed through drying and pickling. With support from CARLEP, DAS extended the initiative to another two communities extending the Urka chili group to two more groups (Table 3).

Table 3. Urka chili groups and the proportion of female members

Name of group	Block/Gewog	District/ Dzongkhag	No. of Members	
			Male	Female
Wongminang-UrkaDetshen	Boomdeling	Trashiyantsi	1	17
Bamdhir-UrkaDetshen	Boomdeling	Trashiyantsi	3	16
Bhimkhar-UrkaDetshen	Yangtse	Trashiyantsi	0	26

Source: CARLEP (2019)

Currently the growers sell their pickle products as branded products of the district in the local market and “One Gewog One Product” (OGOP) outlet in Thimphu. This practice has benefited women farmers to become local entrepreneurs.

#### **4. Youth and Women for Agricultural Development and Food Security**

Responsible investment in agriculture is building a country’s future. Agriculture has vital role in the economic empowerment, promoting safe food and agriculture for a healthy future generation. In Bhutan, youth unemployment rose from 9.6% in 2013 (MoLHR, 2013) to 12.3% in 2017 with female youth unemployment standing at 13.2% and unemployment in urban areas at 4.9%, which is more prevalent than in rural areas of 1.9% (MoLHR, 2017). This grim increasing unemployment scenario in the urban areas facing stiff competition among the rising number of job seekers is increasingly influencing youth to return to their farms—within a conducive policy and financial environment young farmer entrepreneurs have started semi-commercial vegetable production, kiwi farming, asparagus farming, mushroom farming and attracting more into this agribusiness. Mass cultivation of chili a premium cash crop by women farmers in Bhutan has boosted their income enabling them to invest in their family for a decent living and children’s education.

Of the total youth in Bhutan, their participation in agriculture contributes to only 5% (NSB, 2017). Specific data on the engagement of youth in agriculture is not available. The program for youth employment through agriculture farming and entrepreneurs started lately. Young people as the most productive group have a crucial role in advancing the agriculture sector.

Rural educated youth through the His Majesty's Pilot Project called "User Right Certificate Land Reform System (URS)", which aims to enhance land productivity, provide employment for youth and promote commercial farming started cultivating 6 ha of fallow land. They have been growing asparagus, chili, cole crops, soybean and upland paddy with intensive inputs and technical assistance from the Department of Agriculture. URS project helped the youth to stay in rural areas, lead a life of entrepreneurs and provide a livelihood for family and help Bhutan in the overall achievement of agriculture development.

The MoE in collaboration with MoAF started SAP in 2000, for involving youth (students from classes nine to twelve) in agriculture thereby opening an opportunity for those who are interested in taking up agriculture as a career, farming and agribusiness. With the support of SAP, six schools can now produce sufficient vegetables, poultry and dairy for school. This will drastically contribute to the reduction in the import of vegetables thereby contributing to economic development.

The MoLHR in collaboration with MoAF has also been piloting a program to recruit youth in agriculture as farm attendants. This has provided the youth with employment and economic empowerment and contributed to country's overall economy by providing labor force in agriculture economy.

With support from DAMC, a youth business cooperative under the name "**Youth Business Cooperative (YBC)**" was established in 2012. These youth are involved in marketing of agriculture products. The project aims to bring innovation in youth employment approaches and support country's socio-economic development, improve business opportunities for young population and improve livelihood, and eventually contribute food security.

Women play a significant role in Bhutanese agriculture economy and agriculture labour force. Consequently, their contributions to agriculture output are undoubtedly significant although difficult to quantify with accuracy. About 59% of women are actively involved in agriculture in the country. Bhutan has taken a major step in supporting them, especially in formation of cooperatives and entrepreneur's development.

In Bhutan, agricultural cooperatives are making differences by empowering small-scale farmers particularly women by boosting agriculture production and

country's agriculture economy. Women led cooperatives such as the Wongminang-Urka Detshen, Bamdhir-Urka Detshen and Bhimkhar-Urka Detshen of eastern Bhutan engage women throughout the value chain of the traditional chili variety production, processing and marketing. The involvement of women in the value chain intervention has now enhanced the income of women. Similarly, Yoekhar Women Vegetable and Marketing Group, Mongar sell their produce in local market and schools which have helped reduce vegetable import from India. In addition, school students are now fed with local fresh chemical free vegetables.

Another successful woman led agribusiness is the three open markets in Thimphu, which are independently run by women. With support from BAOWE, a group of marginalized urban women run the vegetable markets where local vegetables are sold. This opened an additional market access, which absorbs the local produce for the farmers of the vicinity. In addition, it has created livelihoods for marginalized women.

## **5. Youth and Women to Promote Climate Smart Agriculture**

Bhutan is vulnerable by the climate change effects. Climate change is characterized by the risks related to melting glaciers, glacial lake outburst floods such as of 1994 incident, frequent flash floods, droughts leading to migration, drying of water sources leading to water scarcity, increased insect pests and diseases and windstorms leading to substantive crop damages in the country. All these lead to food insecurity affecting human well-being.

Dynamic agriculture policies and practices engage youth in food security through enhanced production and productivity and practicing crop diversity, improve soil health and make it climate smart. It is a principle matter to enhance their capabilities to contribute to economic stability and food security by advancing their access to land, inputs, tools, research and extension, financial services, education and training, markets and information.

Women in Bhutan have multiple obligatory functions in the family therefore they play an equal role in promoting climate smart agriculture. Women as mothers look after household chores, nurse children, manage water, collect firewood, grow crops, sell products and save seeds. It is again a principle matter to advance their access to inputs, tools, research and extension, financial services, education and training, markets and information thereby enhancing their capabilities to contribute to economic stability and food security.

Bhutan's 12<sup>th</sup> FYP has incorporated climate smart component in agriculture sector that also includes promotion of organic agriculture through young entrepreneurs promoting climate smart agriculture farming.

Some of the Climate Smart Agriculture (CSA) practices in Bhutan and often led by women farmers include use of drought tolerant upland rice varieties, disease resistant early maturing varieties, traditional varieties of vegetables and cereals. In eastern Bhutan intercropping maize with soybean, and other legumes; sustainable land management such as terracing so that soil conservation and nutrient management is effected; and ridge system of planting potatoes in the rugged and steep terrains of eastern Bhutan which are largely women-led.

The revival and promotion by women farmers, e.g., under the Samdrup Jongkhar Initiative (SJI) of the cultivation of native crops such as foxtail, small and finger millets, is climate smart. Similarly, the plan of the Royal Government of Bhutan to revive and promote the wide scale cultivation of buckwheat in Bumthang is another climate smart intervention reaching to all farmers including youth and women farmers. Similarly, three farmers' groups led by women in Boomdeling Gewog of Trashiyangtse district are leading on seed selection and conservation of the traditional chili variety named *Urka Bangla*.

The Rural Development Training Centre (RDTC) under the MoAF is enhancing community capacity for biodiversity conservation and livelihood improvement through eco-based farming, which will build the capacity of rural farming communities to effectively and sustainably manage the natural resources and adapt to the impacts of climate change, as well as publishing Climate Smart Curriculum Framework. The target beneficiaries are farmers especially youth and women.

## **6. Gender Sensitive Value Chain Practices**

Bhutanese women play a major role in agricultural development more so in the current focus on semi-commercialization of vegetable production. IFAD funded partnership project (CARLEP) implemented by the IFAD and the Royal Government of Bhutan has documented the vital role women play along the entire value chain including post-harvest handling (74%) and marketing. More women farmers are members of vegetable groups than men— a significant development that has substituted imports with locally grown cash income generating vegetables.

A second feature of this development has been the introduction of gender-friendly mini power tillers not only substituting conventional use of oxen for ploughing and land preparation but more importantly enabling women farmers

to enter the value chain at the land preparation stage of the cultivation of vegetables.

Another conspicuous feature of the above development has been the empowerment of women to decide the sale, fix the prices and determine the market. The promotion of linkage between schools and farmer groups along with associated development of contiguous collection centre, sale counters and of recent, the opening of farm shops have all contributed as pull factors for semi-commercialization of vegetable production and thereby economic empowerment of women.

Rice is the most important cereal crop in Bhutan and is often equated with food security. The production was 86,385 tons in 2017 (NSB, 2017). The participation of women in various paddy cultivation activities in both organic and conventional is substantial. As compared to men the major contribution of women in both production systems related to paddy transplanting (99%) followed by winnowing (91%), weeding (89%) and harvesting (79%). While women are not generally involved in fertilizing, they are also nominally 1-3% involved in ploughing, puddling and irrigation (Tashi, 2015). In the rice value chain women (76%) lead in most of the production chain that range from nursery sowing, transplanting, weeding, winnowing and harvesting (Figure 1) Women also lead the marketing of agriculture produce. Rice is sold by women to retailers and vendors and in Bhutan most rice vendors are women.

Furthermore, women actively and single-handedly add value to rice in terms of “flattened” rice (*sip* in national language Dzongkha), popped rice (*zaw* in Dzongkha) and oil fried rice chapati (*maekhuin* Dzongkha) which fetch premium price in the local market.

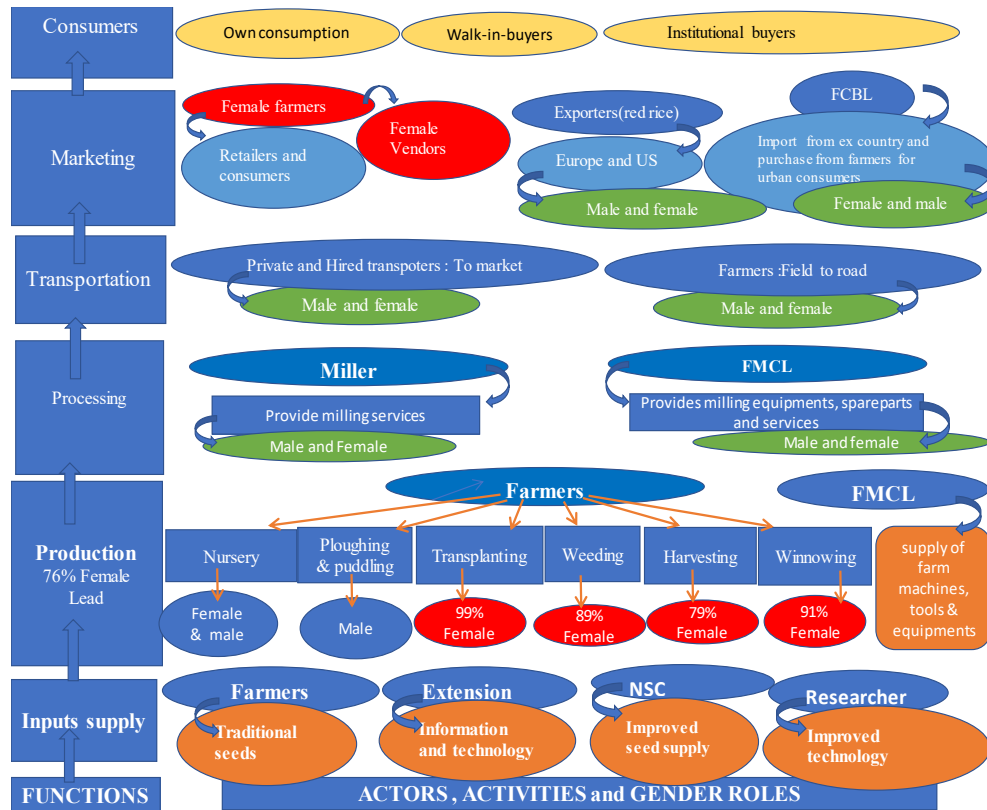


Figure: 1. Value chain map of rice in Bhutan

Source: Ghimiray (2006) & Tashi (2015)

## 7. Policies and Programs for Youth and Women in Agriculture

- *RNR Marketing Policy, 2017*, rationalizes augmenting the important and efficient role played by women in agricultural marketing, enable smallholder farmers to contribute to food security and support capacity building of aspiring youth in selected value chains as a part of on-the-job training arrangements.
- *Food and Nutrition Security Policy 2014*, amongst others, envisions promotion of agro-based and non-farm based rural enterprises for employment and income generation and improvement of sustainable access to micro-credit to smallholders, women and youth.
- *National Youth Policy, 2011* enshrines encouraging young people to take up farming as an acceptable form of self-employment.



- Formal vocational education and training up to Diploma in Agriculture is provided by the College of Natural Resources (CNR), Royal University of Bhutan.
- Vocational education and training to rural and unemployed youth in agriculture awareness program is provided by RDTC, MoAF.
- Japan Social Developed Fund (JSDF) supports with US\$ 1.25 million the “Generating Youth Employment and Community-based Enterprise Development” project of the MoAF in promoting the establishment or upgrading of existing youth-led, managed, and operated business enterprises in six districts of South-western Bhutan including, Chhukha, Dagana, Haa, Samtse, Trongsa and Wangdue.
- Financial support for cooperatives, groups and individuals are provided through almost all the banking services of Bhutan including Rural Enterprise Development Corporation Limited (REDCL), which is the largest bank supporting rural farmers with collateral free low interest (4%) loans to entrepreneurs.
- BAOWE, a vibrant Civil Society Organization (CSO) is supporting women agriculture entrepreneurs, disadvantaged and marginalized women.
- DAMC and DoA are supporting the formation of youth and women farmers’ groups.

## **8. Challenges and Opportunities of Youth and Women in Agricultural Development**

### **8.1 Challenges on Youth and Women in Agricultural Development**

- Only 20% of farmers have access to credit from formal financial institutions. Thus, increased access to credits from formal financial institutions.
- Low value addition of farm produce including inadequate packaging remains a chronic bottleneck.
- Even though few youth are taking up agriculture most view agriculture as unproductive involving hard labor–this mind-set remains a major challenge to promote youth in agriculture.
- Low literacy level of rural women poses the challenge of adopting technologies including access to technologies, knowledge of agriculture extension services and new information as they are engaged in household chores compared to men.
- Inadequate access to market is another challenge faced by youth and women.

- Wild-life encroachment, pest and diseases and lack of processing equipment and storage facilities discourage youth and women taking up of agriculture.
- Leadership position of women in farmers group is rising but still low not allowing them to take appropriate decisions.
- The rugged terrain constrains youth and women from using agricultural machineries discouraging youth to take up agriculture.
- The reduction in farm labor availability due to rural urban migration and government policy of 100% school enrolment.
- Lack of assured irrigation leading to crop failure and demotivates young and women farmers.

## **8.2 Opportunities on Youth and Women in Agricultural Development**

- Organic production will be implemented by youth in LUC programs, which operate as a group. In the selected *Dzongkhags* farmers will be organized as groups/cooperatives to produce the selected organic commodities. This will help in producing the required production volume and ease the marketing. The bio-input and other organic farm inputs will be operated as the enterprise by private sector/ PPP/ FDI or farmers group/ cooperatives/ government agencies (NOP-ARDC, 2018).
- To ensure the integrity, ethics and fairness that constitute the core principles of organic farming it is important to ensure voluntary group participation. Group participation and group-based production will help in instituting group stewardship, collective commitment and assurance of quality. As there are already functional LUC programs, reorienting them to organic production systems will not be difficult to start with. The LUC focal will facilitate engagement of such LUC program in organic farming.
- Promotion of tourism through the supply of locally produced organic farm produce to hotels thus creating a market.
- Promotion of ICT in agriculture linking government to citizen services, research and extension thus providing weather related services, market information, pest surveillance system facilitating the youth and women to take advantage of these services to timely introduce mitigation measures.

## **9. Recommendations**

### **9.1 Research and Development**

- Train women and youth on production of niche commodities like asparagus, vegetables and other market-oriented commodities. This area is highlighted by the 12<sup>th</sup> FYP for commercialization of agriculture crops.
- Educate women and youth on the latest technology in all aspects of value chain of selected agriculture crops.
- Introduce more gender-friendly agriculture machineries.
- Promote high yielding pest and disease resistant and climate resilient crops.
- Promotion of organic farming to women and youth farmers.
- Sharpen the integration of gender differences and equity goals in the development and testing of technologies to intensify production and add value of the selected crops—focusing on entrepreneurial men and women who have the potential to move out of poverty in the short to medium term.
- Identify agro-livelihood opportunities, analyse the distribution of resources and vulnerability to risk, and understand social issues that affect gender roles, values, norms, and rules.
- Address impediments such as lack of prioritization of research and development agenda, fragmentation along disciplinary lines, poor coordination and inadequate public funding.

### **9.2 Policy**

- Higher investments are needed to motivate youth to adopt agriculture as their profession.
- Formulate policies on cross-cutting issues of agriculture, safe food system, nutrition security and rural poverty.
- Create more job opportunity in agriculture and in agribusiness, SMEs and agro-based industries.
- Involve women and youth in decision-making processing in agricultural R&D, and economic activities.

### **9.3 Extension Service**

- Deepen the inclusion of women in agriculture related trainings and education.
- Empower women and youth in facilitating women farmers' access to finance to invest in climate-resilient and time-saving assets.
- Enhance women farmers' and youth's access to agriculture information.

- Expand opportunities for female farmers to participate in and move up the climate-resilient agricultural value chain.
- Promote leadership of rural women in shaping laws, policies, and strategies on all issues that affect their lives such as flagship program initiatives to combine the topics of gender equality and climate action by bringing women's leadership to the forefront.
- Create opportunities for women and youth to attend regional trainings.

## **10. Conclusions**

Bhutanese women and youth are an integral part of Bhutan's sustainable socio-economic development and household food security as more than half of the women population employed in agriculture. Existence of inclusive policies supported by desired institutional mechanisms provide the overarching framework and opportunities for youth and women to participate in agriculture for economic development and contribute to food security. Targeted interventions in partnership with development partners have been designed to enhance knowledge and skills of youth and women to (pro) actively engage in agriculture. It is bearing fruit yet at a lower than desired pace.

External factors such as the reduction in labor availability, followed by crop damages by wildlife due to a very strong conservation law, low farm productivity, lack of assured irrigation, loss of agricultural land to non-agricultural purposes and low access to credit and other financial services exacerbated by the impacts of climate change seriously impede the small gains being made. The aging population of Bhutan is a concern in agriculture. Data on youth in agriculture in Bhutan is not available although it is apparent that their involvement will contribute to the economy and food security of the country. It is further compounded by a low literacy rate of women farmers who face the obvious challenges of understanding and practicing access to agriculture information, recording, banking and safe transportation. Empowering them through appropriate capacity building measures such as blended learning, coaching and mentoring, communication, customized trainings and exposures would further motivate them to contribute to economic development.

## **11. Way Forward**

On the basis of discussion in the previous section, following way forward measures are derived.

- Bhutan in the next few years is expected to see almost 63,000 youth entering the jobs in the labour market (GNHC, 2019). Agriculture is one sector that could absorb and gainfully employ these youth. Although there are

conducive policy environment and enhanced financial access, agriculture is not very attractive to the youth. SAP is one way to tap this potential. Further explore ways and means to enhance their capabilities and groom them to be farmers for, e.g., in the College of Natural Resources, including entering the agriculture sector as members of groups and cooperatives as well as employing youth.

- Agriculture is hard work and more so in rugged terrains of Bhutan. These drive away youth. One way to attract them is develop/ diversify gender friendly tools and machinery throughout the value chain and another means to motivate would be to enable knowledge exchange through exposure trips to successful interventions in the SAARC region.
- Women with low literacy levels and many youth are seldom aware of government policy support and projects helping the groups engaged in agriculture. To deepen the reach and raise awareness set up real-time information center at the lowest administrative level.
- Currently, many initiatives on women and youth engagement in agriculture are piecemeal, may be overlapping and not collated. Facilitate organizing such significant initiatives under a single women and youth knowledge platform, nationally and regionally.
- Empower youth and women on all along the value chain through regular appropriate capacity building measures such as blended learning, coaching and mentoring, communication, customized trainings and exposures.

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## Chapter Four

# Youth and Women in Agriculture for Economic Development and Food Security in India

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### Abstract

*Youth and women both play major role in agriculture and allied sector. They play a pivotal role in agriculture as agricultural labor, as farmers, co-farmers, family labor, as managers of farms and agri-entrepreneurs. But worldwide woman's hard work has mostly been unpaid. At the same time, the interest of youth especially rural youth is declining towards agriculture. Though India is the hub of young mass but majority of them are unemployed. For economic development of the country, it is very much important to uplift the socio economic condition of youth as well as women. Agriculture and allied sectors addresses the need of food security, alleviating malnutrition and economic development. There are many opportunities for strengthening youth and women in economic empowerment. To end hunger, achieve food security and improve nutrition security, promoting sustainable agriculture is foremost important. Keeping above in view, the government of India is having various schemes, policies and programs which motivate youth mass and women farmers to establish enterprises for income generation. Doubling farmers' income is also an important aspect where focus has been given to increase income by 2022 through improved farming models and technologies. There is also a wider scope for farm women to start horticulture based enterprise for strengthening their livelihood and nutrition through processing and value addition. Apart from these attention, needs to be paid to understand the barriers which hinders the nation from achieving its goals related to economic development and food security, which leads the empowerment of youth and women through agriculture in India. Since youth and women in agriculture is the emerging area of research, capacity building of all the stakeholders is required for the development functionaries, research scientists/ managers who are directly or indirectly linked with them.*

**Key words:** Economic development, food Security, malnutrition, women and youth in agriculture



## **1. Background**

In India, rural youth constitutes about 41% of total population of India. In the present scenario, the interest of rural people especially rural youth is declining towards agriculture. This noble profession of agriculture is taking the back seat among different sources of farmers' income due to decreasing profit when compared with total cost of production. The youth are more energetic, productive and receptive to new ideas and advanced technologies. Aging may not be a serious menace for India as yet, but the same cannot be said about its farm sector. Hardly 5% of the youth are engaged in agriculture though over 60% of the rural people derive their livelihood fully or partly from farming and its related activities. Clearly, the modern youth are disenchanted with agriculture and are shunning it as a profession. The farming population is consequently, getting old. It bodes ill for the future of agriculture as it may hold it from growing to its full potential. India is an agriculturally dominated country or it will not be wrong to say that India lives in villages. On the basis of last few years studies it has been observed that only 20% youth of rural families are directly engaged in the agriculture as a source of employment which is an indicator of grim situation of agriculture in future.

Most of the developing countries depend on agriculture for livelihood and food security. Agriculture needs manpower, if the manpower split into gender wise, amazing fact is that the women contribution is greater or equal to men. Women are the backbone of agricultural workforce but much of their work goes unrecognized. In India, women's involvement in agriculture is complex and diverse. They participate in wide ranging activities in agriculture and at home. There is a considerable variation in women's participation across regions from north to south, across socio-cultural and economic groups, across agro-ecological and production systems. Most of the tedious and back-breaking tasks in agriculture, animal husbandry and households are done by them yet, women are considered as secondary workers in the economic scenario. A greater proportion of rural women works in agriculture as compared to men. As men migrate to urban areas and to non-farm sectors, women's responsibility both as workers and as farm managers has been growing, leading to an increased feminization of agriculture. Women as farmers, laborers and entrepreneurs are the driving force of India's farmland. In 2018, the agriculture sector employs 80% of all economically active women in India; they comprise 33% of the agriculture labor force and 48% of the self-employed farmers. In spite of their large contribution women continue to remain invisible in the rural economy of India.

## **2. Youth & Women in Agriculture for Food Security**

India presently has the largest population of youth (356 million between 10-24 years) in the world (UN, 2014), even larger than China (269 million). As per MOE (2017), a significant proportion of youth aged 14–18 years are working (42%), regardless of whether they are enrolled in formal education or not. Of these, 79% work in agriculture, almost all on their own family's farm. Yet only 1.2% aspire to become farmers. Currently, when it comes to selecting livelihood sources, agriculture is relegated to the last position. More recent figures indicate that 76% would prefer to undertake some other vocation instead of farming. The 24% who would be interested to continue, would do so only because it was their ancestral tradition. Most rural youth are not inclined to return to agriculture; with 35% of the Indian population in 15–35 years age group and 75% of those residing in rural areas, rampant migration to cities is threatening the future of agriculture and food security and the development of jobs has sent distress signals regarding who will manage farming in the times to come (MOE, 2017).

Women play major role in agriculture and allied sector as agricultural labour, as farmers, co-farmers, family labour, as managers of farms and agri-entrepreneurs but worldwide her hard work has mostly been unpaid. There are lot of variations in involvement of women in agriculture, which is based on their culture, economic status, regions and crop selection. While the men are moving to cities for better occupations, the women are taking care of cultivation and sometimes they used to work as farm labour to support their family needs. The weaker section of the women used to market their products such as selling vegetables and other food crops in farmers market or door to door. Most of the women cultivators are involved in food crops rather than cash crops since cash crops need more marketing efforts which are traditionally taken care by men. The women in higher socio economic sections are not involved directly in cultivation or livestock and they used to help in labour administration, supporting activities and accounting. As per Census 2011, the workforce participation rate for women at the national level stands at 25.51% compared with 53.26% for men. In the rural sector, women have a workforce participation rate of 30.02% compared with 53.03% for men. As per census data of 2001, share of total women workers in agriculture was 71.8% in 2001 and has come down to about 65% in 2011. The percentage share of female operational holders has increased from 11.70 in 2005/06 to 12.78 in 2010/11. However, the multifarious nature of their involvement in farm and households makes it is very difficult to assess the exact contribution both in terms of magnitude and its nature as well as the absence of reliable and relevant gender disaggregated data. Some of the gender statistics on work participation in India are in Table 1.

Table 1. Key gender statistics on work participation in India

Parameters	2011 (%)
Overall work participation rate (both men and women)	39.8
Work participation rate amongst women	25.5
Work participation rate amongst men	53.2
Agricultural cultivators to total workers	24.6
Agriculture laborers to total workers	30.0
Women cultivators amongst total cultivators	30.3
Women agriculture laborers amongst total agriculture laborers	42.7
Cultivators amongst men workers (men)	24.9
Cultivators amongst women workers (women)	24.0
Agriculture laborers amongst total men workers (men)	24.9
Agriculture laborers amongst women workers (women)	41.1

Source: Census (2011)

It has been found that in rural India, the percentage of women who depend on agriculture for their livelihood is as high as 84%. In 2009, 94% of the female agricultural labor force in crop cultivation were in cereal production, while 1.4% worked in vegetable production, and 3.72% were engaged in fruits, nuts, beverages, and spice crops. Women's participation rate in the agricultural sectors is about 47% in tea plantations, 46.84% in cotton cultivation, 45.43% growing oil seeds and 39.13% in vegetable production. While these crops require labor intensive work, the work is considered quite unskilled. Women also heavily participate in ancillary agricultural activities.

India is the second largest populous country in the world. This has enjoyed steady economic growth and has achieved self-sufficiency in grain production in recent years. Despite this, high levels of poverty, food insecurity and malnutrition persist. India is home to a quarter of all undernourished people worldwide, making the country a key focus for tackling hunger on a global scale. The health and nutritional status of Indian women are becoming worse due to the prevailing culture and traditional practices. They are generally vulnerable to poor nutrition, especially during pregnancy and lactation. It has been observed that the dietary intake of rural pregnant women was lower than the recommended level. Usually low weight infants are born to mothers with under nutrition and poor health. The incidence of anemia was found to be highest among lactating women followed by pregnant women and adolescent girls.

## **2.1 Prevalence of Malnutrition in Rural India**

In the last five decades the rate of decline in under nutrition has been slow; the mortality rate has come down by 50% and the fertility rate by 40% but the

reduction in underweight rates is only 20%. In 2016, 38.7% of children under five were defined as 'stunted' (of below average height), a strong indicator of chronic malnourishment in children and pregnant women, and a largely irreversible condition leading to reduce physical and mental development. Malnourishment within the adult population is also severe, with approximately 15% of the total population defined as malnourished. The issue of malnutrition in India is complex, and determined by a combination of dietary intake and diversity, disease burden (intensified by poor sanitation and hygiene standards), and female empowerment and education. Improvements in dietary intake alone will therefore be insufficient to eliminate malnutrition, however it forms an integral component alongside progress in other social and health indicators particularly sanitation. Maternal mortality remains stubbornly high in India as compared to many developing nations due to lower socioeconomic status and cultural constraints as well as limiting access to health care. Severe anemia accounts for 20% of all maternal deaths in India.

India has achieved self-sufficiency in food grain production, however the access is still an issue since the per capita availability of food grain is decreasing specially after 1990s. Malnutrition is still prevalent in the significant level of population, especially in rural areas among which the most vulnerable are children, women and elderly especially of lower income groups. India has the highest number of severely malnourished children in the world. About 39% of rural women in the age group of 15–49 years suffer from chronic energy deficiency and 58% are anemic. Among rural children in the 6–35 months category, 81% are anemic and 41% are stunted, 49% are underweight and 20% suffer from wasting which are indicators of chronic and acute under nutrition. Stunted growth is a primary manifestation of malnutrition in early childhood. Food security is still a challenge for the government to achieve the national targets. The high levels of malnutrition are pointers to the poor state of maternal and child healthcare services in the country. Only 44% of children in 12–23 months category were reported to be fully vaccinated, and 5% had not received any vaccination (NFHS-3). Infant and child mortality rates are higher in rural areas of India.

### **3. Youth & Women in Agricultural Enterprise Development**

With an expected rise in global population to around 8 billion by 2025 on one hand and the ageing agriculture profession coupled with declining interest of youth on the other, is a serious concern today. In this context, the role of youth in accelerating agricultural growth cannot be underestimated. In fact, those nations have progressed much faster where youth has been motivated and involved in creative, secondary and specialty agriculture, which should be

supported well by an enabling policy environment. It is urgent need to take crucial reform measures in agriculture sector at ground level to make profession of agriculture a profitable venture so that rural youth may adopt agriculture as a source of employment.

Different schemes run by Government of India to attract rural youth towards agriculture have succeeded to a limited extent. This can be realized by promoting agriculture related ventures such as dairy farming, bee-culture, mushroom cultivation, sericulture, fish-farming etc. along with crop cultivation. Rural youth should be provided training at Panchyat level for taking up these agri-based income generating units as per their interest and availability of resources along with proper financial support at low interest rate from concerned banks and other institutions. More practical approaches at the ground level need to be taken for sustaining the interest of rural youth in agriculture such as formation of self-help groups, farmers clubs, commodity interest groups (CIGs) etc. and their linkage with different banks mainly NABARD for financial support at low interest rate for starting various agriculture related enterprises. In addition to this different Krishi Vigyan Kendra (KVKs) functioning mainly under different state agricultural universities doing excellent job by providing vocational training to rural youth including both male and female to start-up different agriculture related income generating units in the villages.

In view of the critical role of women in the agriculture and allied sectors, as producers, concentrated efforts are made to ensure that benefits of various programs will reach them. The following schemes for women enterprise development are briefly discuss below:

### **3.1 Mahila Udyam Nidhi Scheme**

This scheme is offered by Punjab National Bank and Small Industries Development Bank of India (SIDBI), this scheme launched in 2015 to support women entrepreneurs to set up a new small-scale venture by extending loans up to INR 10 lakh to be repaid in 10 years. SIDBI also includes a five year moratorium period. The interest depends upon the market rates. Under this scheme, SIDBI offers different plans for beauty parlors, day care centers, purchase of auto rickshaws, two-wheelers, cars, etc. It also assists with upgrading and modernization of existing projects. To be eligible for the Mahila Udyam Nidhi scheme, the cost of the project must not exceed INR 10 lakhs. In such cases, a soft loan (a loan, typically one to a developing country, made on terms very favorable to the borrower) limit of up to 25% of the project cost, subject to a maximum of INR 2.5 lakhs per project is provided for deserving women entrepreneurs. The soft loan would be repayable within 10 years (inclusive of initial moratorium period of not more than five years). However,

the period of repayment of soft loan will be co-terminus with that of term loan sanctioned by a scheduled bank.

### **3.2 Annapurna Scheme**

This scheme is offered by the State Bank of Mysore for those women entrepreneurs who are setting up food catering industry in order to sell packed meals, snacks, etc. The amount granted as a loan under this scheme can be used to fulfill the working capital needs of the business like buying utensils and other kitchen tools and equipment. Under this loan, a guarantor is required along with the assets of the business being pledged as collateral security. Further, the maximum amount of money that is granted is INR 50,000 which has to re-pay in monthly installments for 36 months, however, after the loan is sanctioned, and the lender doesn't have to pay the EMI for the first month. The interest rate is determined depending upon the market rate.

### **3.3 Stree Shakti Package for Women Entrepreneur**

This scheme is offered by most of the SBI branches to women who have 50% share in the ownership of a firm or business and have taken part in the state agencies run Entrepreneurship Development Programs (EDP). The scheme also offers a discounted rate of interest by 0.50% in case the amount of loan is more than INR 0.2 million.

### **3.4 Bharatiya Mahila Bank Business Loan**

This loan was launched in 2013, which is a support system for budding women entrepreneurs looking to start new ventures in the fields of the retail sector, loan against property, MICRO loans, and SME loans. The maximum loan amount under this loan goes up to INR 200 million in case of manufacturing industries and also a concession is available to the extent of 0.25% on the interest rate and interest rates usually range from 10.15% and higher. Additionally, under the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE), there is no requirement of collateral security for a loan of up to 10 million.

### **3.5 Dena Shakti Scheme**

This scheme is provided by Dena bank to those women entrepreneurs in the fields of agriculture, manufacturing, micro-credit, retail stores, or small enterprises; who are in need of financial assistance. The interest rate is also decreased by 0.25% along with the maximum loan amount of INR 2 million for retail trade; education and housing INR 50,000 under the microcredit program.

### **3.6 Udyogini**

This scheme is offered by Punjab and Sind Bank so as to provide women entrepreneurs involved in agriculture, retail and small business enterprises to get loans for business at flexible terms and concessional interest rates. The maximum amount of loan under this scheme for women between the ages of 18-45 years is INR 0.1 million but your family income is also taken into consideration and is set at INR 45,000 per annum for SC/ST women. Cent Kalyani Scheme – launched by Central Bank of India with the aim of supporting women in starting a venture or expanding or modifying an existing enterprise.

### **3.7 Cent Kalyani Scheme**

This scheme is offered by the Central Bank of India with the aim of supporting women in starting a new venture or expanding or modifying an existing enterprise. This loan can be availed by women who are involved in village and cottage industries, micro, small and medium enterprises, self-employed women, agriculture and allied activities, retail trade, and government-sponsored programs. This scheme requires no collateral security or guarantor and charges no processing fees. And the maximum amount that can be granted under the scheme is INR 10 million.

### **3.8 Mudra Yojana Scheme for Women**

This scheme has been launched by the Government of India for individual women wanting to start small new enterprises and businesses like beauty parlors, tailoring units, tuition centers, etc. as well as a group of women wanting to start a venture together. The loan doesn't require any collateral security and can be availed as per 3 schemes:

- i) Shishu – loan amount is limited to INR 50,000 and can be availed by those businesses that are in their initial stages.
- ii) Kishor – loan amount ranges between INR 50,000 and INR 0.5 million and can be availed by those who have a well-established enterprise.
- iii) Tarun – loan amount is INR 1 million and can be availed by those businesses that are well established but require further funds for the purpose of expansion.

If the loan is granted, a Mudra card will be given to beneficiary which functions the same way as a credit card however the funds available are limited to 10% of the loan amount granted.

### **3.9 Orient Mahila Vikas Yojana Scheme**

This scheme is provided by Oriental Bank of Commerce to those women who hold a 51% share capital individually or jointly in a proprietary concern. No collateral security is required for loans of INR 1 million up to INR 2.5 million in case of small-scale industries and the period of repayment is 7 years. A concession on the interest rate of up to 2% is given.

## **4. Youth and Women for Agriculture Based Economic Empowerment**

It is important to study the needs, aspirations and perceptions of youth and women with regards to agriculture. The results of such studies can be analyzed properly for assisting young men and women in the areas such as professional farming of plants and animals, management of emerging business opportunities, evaluation of markets and consumer demands and monitoring of the business progress, being part of a network of a producer group. Awareness generation is a major aspect in agriculture for establishes ventures through of crop/ animal production, input and service provisioning institutions and schemes, farm machinery management, produce handling and processing, markets and consumer. Special training programs on production of high value, low volume products adapted to controlled and uncontrolled conditions need to be launched under the sponsorship of Agriculture Skill Council of India.

### **4.1 Converting Agri-farmers to “Agri-entrepreneurs”**

Development departments should institutionalize youth-specific schemes facilitating unhindered access to financial services. Role of civil society bodies in organizing the aspiring young men and women is equally important. Skill based entrepreneurship (social forestry, dairy, agriculture like horticulture, livestock including small animal husbandry, poultry, fisheries) is the need of hour in which capacity building of youth and women in agriculture and allied sector should be for economic empowerment. Success in emerging specialty agriculture depends upon quick growth in marketing and trade. Elimination of existing barriers via real-time transfer of information on right decision support products, markets and consumer demands by infusing the state-of-the-art ICT tools would be crucial. Building women’s enterprises through (E- Mahila Haat, FPO, Incubation Centre) are the possible areas for economic development.

### **4.2 Link Social Media to Agriculture**

The rise of social media and its attraction among young people with access to the appropriate technologies could be a route into agriculture if the two could be



linked in some way. Utilizing social media to promote agriculture and educate young people could go a long way in engaging new groups of people into the sector.

### **4.3 Improve Agriculture's Image**

Farming is rarely portrayed in the media as a young person's game and can be seen as outdated, unprofitable and hard work. Greater awareness of the benefits of agriculture as a career needs to be built amongst young people, in particular opportunities for greater market engagement, innovation and farming as a business. The media, ICT and social media can all be used to help better agriculture's image across a broad audience and allow for sharing of information and experiences between young people and young farmers.

### **4.4 Strengthen Higher Education in Agriculture**

Relatively few students choose to study agriculture, perhaps in part because the quality of agricultural training is mixed. Taught materials need to be linked to advances in technology, facilitate innovation and have greater relevance to a diverse and evolving agricultural sector, with a focus on agribusiness and entrepreneurship. Beyond technical skills, building capacity for management, decision-making, communication and leadership should also be central to higher education. Reforms to agricultural tertiary education should be designed for young people and as such the process requires their direct engagement.

### **4.5 Use of Information and Communication Technologies**

ICT can be used to educate and train those unable to attend higher education institutions but it can be used as a tool to help young and women to spread knowledge, build networks, and find employment. Such technologies can also reduce the costs of business transactions, increasing agriculture's profitability.

### **4.6 Empower People to Speak up**

If we are to enable women and youth to transform agriculture then the barriers to their engagement, such as access to land and finance, need to be addressed. National policies on farming and food security need to identify and address issues facing young people. As such youth need to become part of policy discussions at the local and national levels, whether as part of local development meetings, advisory groups or on boards or committees.

### **4.7 Technological Empowerment of Rural Women**

In our country, women perform multifarious activities in the home, farm and allied activities, which include milking of animals, cleaning animal sheds, mud plastering of house & preparing cow dung cakes for fuel, fetching of water &

other house hold activities are not only fatiguing but also time consuming (Jamal, 1994). They perform these activities in their own convenient posture like sitting, standing, bending or squatting without realizing the harmful effect on the body. Due to this ignorance women might be suffering from various health hazards. Mostly farmwomen are likely to be faced physical, mechanical, chemical, biological, psycho social, accidental hazards. Given the specific needs of women, most work places do not take care to protect the reproductive health of women workers. Elimination of exposure to chemicals, radiation, biological contaminants, poor working posture and stressful working conditions is yet to be prioritized. In order to empower technically and improve the women farmers' productivity, they need to have proper farm training and capacity building programs to compete various challenges in their rural livelihood. There should be more emphasis given to designing, modifying and refining women friendly tools and equipment to reduce drudgery among rural farm women. The women friendly technologies should be made available to the rural women in lower cost or in subsidies. The training of technical knowledge, skill and expose them in field condition is very much required for the rural women to perform their job best. This will ultimately enhance their knowledge, working efficiency and work productivity and finally help them to reduce drudgery.

#### **4.8 Policy Intervention and Institutionalization**

Since an intervention like "Sun-Rise Agriculture Enterprise" is a potent strategy to attract and sustain the youth in agriculture and to generate new jobs, it calls for a comprehensive backing (institutional, financial, legal) of public policymaking bodies (NITI Aayog) and Ministry of Agriculture and Farmers' Welfare Ministry in that the core concerns of youth are addressed effectively.

### **5. Youth and Women to Promote Climate Smart Agriculture**

Indian agriculture is suffering from various problems like uneven rainfall, low productivity, low income, inadequate quality inputs, unstable market prices and another threat is climate change. Due to this youth are losing their hope towards agriculture in recent days. India has world largest youth population, around 356 million youth constitute 28% of country's population. NSSO reported that given a chance around 60% of farmers are wish to leave agriculture, losing more than 2000 farmers every single day since 1991, the overall number of farmers has dropped by 15 million and coupled with increasing in Farmer suicide percentage over the years. As per 2016, every 15 minutes a farmer commit suicide due to unforeseen situations. If this kind of situation continued, in future we have to depend on foreign countries for foods, and our economy will be worsening.

This indicates that the agriculture workforce is shifting from primary to secondary and tertiary sectors. That means over the years the agriculture workforce is shifting from farm to non-farm sector. The reduction in agriculture youth may be due to higher income from other activities risk involved in agriculture, attractive salary or wages from other non-farm sectors/ industries and urbanization. To retain youth, especially uneducated youth in agriculture, the government and all the stakeholders should combine together and facilitate in terms of finance and technical supports. In India, conduct need based skill development trainings, marketing and rental infrastructure facilities in the initial stages until individual or institution is able to face the competition.

Women play an important role in food production. Agriculture interventions, considered 'climate smart', should therefore provide long-term benefits for women. In other words, when we look at the value and practicality of different approaches to climate smart agriculture, it is important to understand the gender aspects of their impact. Climate-smart agricultural practices have the potential to increase farmers' productivity and resilience, reduce or remove greenhouse gases, and enhance achievement of food security and development goals. The best technological innovations, management practices and interventions contribute both to climate change adaptation and mitigation. Following solutions towards Climate Smart Agriculture are given below:

### **5.1 Alternative Use of Land**

Agricultural land use planning includes appropriate interpretation of soil resource database and assessment of soil-site suitability for agricultural crops. Proper selection of crops coupled with appropriate management practices is of tremendous importance for increasing production and profitability of farming community. This becomes more significant while planning for fallow lands. Scientific land use planning along with proper implementation are the tools for enhancing farmers' income in agrarian society.

### **5.2 Agroforestry**

Agroforestry is defined as a land use system which integrates trees and shrubs on farmlands and rural landscapes to enhance productivity, profitability, diversity and ecosystem sustainability. It is a dynamic, ecologically based, natural resource management system that, through integration of woody perennials on farms and in the agricultural landscape, diversifies and sustains production and builds social institutions. As the land-holding size is shrinking, tree farming combined with agriculture is perhaps the only way forward to optimize the farm productivity and thus, enhancing livelihood opportunities of

small farmers especially for the women. Agroforestry interventions can be a potent instrument to help achieve the 4% sustained growth in agriculture. In short, trees on farm or agroforestry are uniquely place for achieving multiple objectives, especially the food, nutrition, employment, health and environmental security. It is contended that an ever-green revolution is unlikely without a major groundswell of growing trees on farms.

### **5.3 Silvi-Pasture Management**

Women play a major role in this area. The fuel wood, fodder, timber and other resources obtained from arable land are not sufficient. They have to travel for long distance and it also involves carrying heavy loads which is drudgery prone. Therefore, there is a need to develop a Silvi Pastoral Model or models with protein-rich tree species which provide nutritious fodder to the livestock in nearby localities.

### **5.4 Agri-Horticulture (Integrated Farming System)**

The emergence of Integrated Farming System (IFS) is an alternative development model to improve the feasibility of small sized farming operations in relation to larger ones. IFS refer to agricultural systems that integrate livestock and crop production or integrate fish and livestock and may sometimes be known as integrated bio systems. In this system, an inter-related set of enterprises are used so that the waste from one component becomes an input for other enterprises of the system, which reduces cost and improves production and thereby income. Integrated farming systems seem to be the possible solution to the continuous increase of demand for food and nutrition, income stability and livelihood upliftment particularly for small and marginal farmers especially by women with little resources.

### **5.5 Watershed Management**

The Panchayatiraj department under different State Government launched various programmes and adopted different schemes for economic enhancement of rural women. Watershed management is one of the major schemes where women's participation is more visible and they were cultivating various agri produces in those watershed areas.

### **5.6 Construction of Water Harvesting Structures**

More investment is needed to increase women's access to infrastructure and technologies, including labour- and water-saving technologies to free their time and increase agricultural productivity. To develop appropriate technologies, the gender division of tasks needs to be analysed in the local socio-cultural context. Issues to consider are: who decides on the irrigation practices at farm level; what

knowledge, strength, time and funds are required by men and women; and whether women have equal access to inputs, considering their operational capacity and strength, and infrastructure needs in both large-scale irrigation schemes and smaller-scale initiatives (i.e. build a bridge in large irrigation scheme to facilitate their access to markets), and involving them in construction and maintenance activities for their empowerment.

Apart from various schemes the agriculture department introducing various packages of practices which can be adopted by farm women. Awareness is being generated for adoption and promotion of organic farming and also giving more emphasis on crop diversification from low to high value crops. Promoting gender-responsive climate-smart agriculture practices through ICT is also an emerging area which can fulfil the need of information and communication through digital solutions.

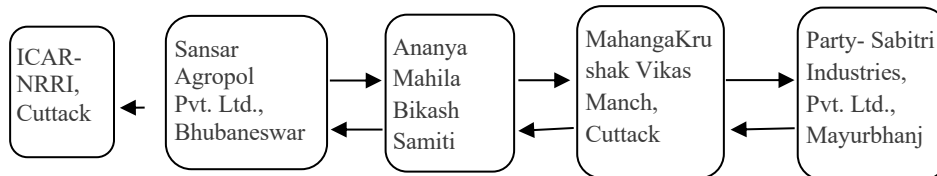
## **6. Best Gender Sensitive Value Chains Practices**

Among the various approaches to increase farm income and promote entrepreneurship, the prospect of value chain is being advocated in agriculture and allied sectors. Dr. Trilochan Mohapatra, Secretary (DARE) & Director General (ICAR) (former Director, ICAR-NRRI) first made an attempt to operationalize in rice. According to him, the rice value chain besides having the fundamental benefits have some added prospective which were: i) Rice will continue to dominate the farm production for various socio-economic and cultural reasons in spite of poor financial gains and market glut; ii) Demand in the national and international market for quality rice is quite apparent; iii) Apart from farmers other stake holders can join the chain leading to creation of additional employment; and iv) quality and specialty rice varieties developed by research institutes can spread quickly with less investment in extension. Having the above logic in view, the planning for the model was initiated.

**The Process:** The objective of the rice value chain was to promote large scale cultivation of high quality rice varieties of this institute in contiguous patches, undertake its processing and trade so that the consumers have access to its premium quality and all the parties involved in the value chain are benefitted. The first party i.e., ICAR-NRRI, Cuttack in consultation with rice processor and trader decided the variety *Geetanjali*, a long slender grain aromatic rice to include in the rice value chain. The institute being the developer of the variety and having knowledge about its characteristics is involved in its maintenance and production of quality rice. The institute provides breeder seed of *Geetanjali* to a seed company for production of foundation seeds to be used by the participating farmers in the chain. Another group of stake holders in rural areas like farmer

and farmwomen associations are involved, which need to undertake survey of the rice ecology, motivate farmers to participate in the chain, monitor the production and arrange lifting of production by the rice processor-cum-trader. The final party in the process is the rice processor and trader who lifts the production from the production site and make immediate payment to the farmers at a price better than the MSP. The processor-cum-trader finally takes the responsibility to maintain the quality and take up market strategy including pricing to create a market demand for the rice variety. The responsibility and benefits for each party have been decided and agreed upon through a Memorandum of Understandings (MoUs).

#### Parties in the Rice Value Chain



**The success of the first cycle:** Under this program, 6.5 quintal (Qt.) of breeder seed of *Geetanjali* was supplied to Sansar Agropol Pvt. Ltd., Bhubaneswar by ICAR-NRRI, Cuttack for multiplication of sufficient quantity of TL seed during the *Kharif-2015*. A total of 49.5 acres were covered under seed production in four different locations of Odisha. About 500 quintals of Truthfully Labeled (TL) seeds were produced by the company for covering about 1000 ha for production of rice during *Rabi 2015-16*. The monitoring team of NRRI visited the different sites of seed production and gave suitable advice to the company for higher yield. A brochure on “package of practices of rice variety *Geetanjali*” was prepared in Odia and distributed to the farmers and the seed grower for their reference. Awareness programs were conducted in selected localities with the participation of scientists of ICAR-NRRI, Cuttack and Miller as a confidence building step.

With the involvement and mobilization by the two farmers groups (3rd and 4th parties), the grain was produced in three clusters totaling 166 acres of Khorda and Cuttack districts involving 82 farmers during dry season/*rabi-2016*. The average yield of the crop was recorded at 4-4.5 tons/ha. After keeping for seed and household consumption, 202 tons of paddy grains were sold by the participating farmers to the 5<sup>th</sup> party i.e., Sabitri Industries at the rate of INR 1,740/- per quintal (i.e., 20% above MSP), amounting to a total of INR 3.5 million. As per the agreement, payments were made to all the farmers within ten days from the date of procurement. Now, the grains are being processed and packed for marketing by the 5<sup>th</sup> party.

## **7. Policies and Practices for Youth and Women in Agriculture**

- i) Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) scheme is launched for assured income support to the farmers. The scheme is being implemented with effect from December 2018 throughout the country. Under the Scheme an income support of INR 6000/ per year is provided to all farmer families across the country in three equal instalment of INR 2000/- each every four months.
- ii) Value-addition to agricultural production is one of the solutions for improving farmers' income. The implementation of *Pradhan Mantri Krishi Sampada Yojana* will result in creation of modern infrastructure with efficient supply chain management. It will not only provide a big boost to the growth of food processing sector in the country but also help in providing better prices to farmers and is a big step towards doubling of farmers' income. The agri-based start-ups and entrepreneurship development need to be promoted and the **Atal Innovation Mission (AIM)** including **Self-Employment and Talent Utilization (SETU)** is government's endeavour to promote a culture of innovation and entrepreneurship.
- iii) The National Cooperative Development Corporation (NCDC) scheme '*Yuva Sahakar*', launched in November 2018 is for encouraging to young entrepreneurs in cooperatives. Newly formed cooperatives will be able to take advantage of the 'Cooperative Start up and Innovation Fund' created by NCDC with liberalized assistance for cooperatives in the North Eastern Region, cooperatives registered and operating in Aspirational Districts, cooperatives with 100% women/ SC/ ST/ Person with disability members. As part of the initiative, NCDC and Agricultural and Processed Food Products Export Development Authority (APEDA) have identified common areas of cooperation and entered into MoU. This collaboration will facilitate in providing better value to the stakeholders in agri and allied sectors through a variety of activities including focus on export in line with the policies of the government.
- iv) Problems related to climate change have been adequately addressed and 45 Integrated Farming System (IFS) models have been developed including all the 15 agro-climatic regions to benefit small and marginal farmers. The ICAR has supplemented the government's "Soil Health Card" initiative and has developed a mini Lab "*Mrida Parikshak*" for soil testing. To promote organic farming and to bring it in the mainstream, 42 organic farming models have been developed.

- v) In order to bring women in the agriculture mainstream, the government has allocated more than 30% funds for women under various major schemes / programs and development related activities. Also, women based activities have been started to reach the benefits of different beneficiary-oriented programs / schemes and missions to women.
- vi) The participation of women in the decision-making bodies at the state, district and block level under the ATMA scheme have ensured their involvement in the planning process.
- vii) A National Gender Resource Centre in Agriculture has developed a women sensitization module to bring about change in the mind-set and behaviour of male program operators. In the team of committed extension personnel under the revised ATMA scheme in 2014, the position of a women coordinator in every state was also created.
- viii) In order to support the food security groups of the women farmers' at the domestic and household level, financial assistance of 2 groups/ per block and INR 10,000 per group/ per year is being given under the amended ATMA scheme 2014/015. In addition to these efforts, special emphasis is being given to women development activities to ensure their participation in the economic and social up-liftment in the field of cooperatives. Regular cooperative education programs of women are being organized by the National Cooperative Union of India through the State Cooperative Societies. As a result of these efforts, 3.147 million women have been benefitted by training from the National Cooperative Union of India in the field of cooperatives in 2017/018.
- ix) To facilitate women's participation in agriculture, women farmer empowerment projects under the National Rural Livelihood Mission have benefitted more than 3.4 million women through 82 projects across 22 states and one Union Territory. In addition, appointment of one women scientist has been made mandatory in 668 KVKs established across the country. Apart from this, it was decided in 2016 that every year 15<sup>th</sup> October will be celebrated as "*Rashtriya Mahila Kisan Diwas*" by the Ministry of Agriculture and Farmers' Welfare.
- x) For empowering women in the agriculture and allied sectors and to increase their access to land, credit and other facilities, the Ministry of Agriculture and Farmers' Welfare, the National Agricultural Policy for Farmers has made several provisions like giving joint lease on both domestic and agricultural land. Alongside this, provisions like issuing **Kisan Credit Cards**, creating livelihood opportunities through crop-livestock practices, agro-processing etc. are part of the agricultural policy.



## **8. Challenges and Opportunities on Youth & Women in Agricultural Development**

To achieve sustainable agricultural production, there are many challenges obstructing the path of development. Youth and women's needs to be considered in agricultural research for harnessing their special skills in production and biodiversity for the benefit for family.

- i) Rural women's access to land, water, education, extension, credit and appropriate technology are the important challenges. Gender equity is also a major aspect has to be ensured in the decision-making process and the relevant policies and programs. Women's participation in decision and policy making at all levels should be the top priority.
- ii) Programs need to be strengthened to bring about a greater involvement of women in science and technology by ensuring that development projects with scientific and technical inputs involve women fully.
- iii) Special measures need to be taken for their training in areas where they develop special skills like use of agriculture technologies, communication and information technology. Efforts to develop appropriate technologies suited to women's needs as well as to reduce their drudgery require a special focus too. To end hunger, achieve food security and improved nutrition and promote sustainable agriculture is foremost important. Extreme hunger and mal-nutrition remains a barrier to sustainable development.
- iv) Poor harvesting practices, as well as food wastage have contributed to food scarcity. In India, it has been observed that over 85% of the rural people are dependent on agriculture and most of them are engaged in the struggle for food security.
- v) To empower women in agriculture and reduce hunger there is a need for agricultural diversification. Crop diversification has been one such mechanism which not only allows farm women to increase their capacity for dealing with climatic uncertainties but also helps them pursue alternative means of income generation and household nutrition improvement. This adds to overall resilience, especially for marginalized groups like women farmers.
- vi) Rural population in India has been facing series of problems, which affect their progress and quality of life. Most significant among these problems are lack of gainful employment leading to food insecurity, illiteracy and poor health. Some of the major challenges are given below:

## 8.1 Challenges

- i) Women play a pivotal role in agriculture as agricultural labor, as farmers, co-farmers, family labor and as managers of farms and agri-entrepreneurs. Despite being the backbone of agricultural economy in developing regions, they remain relatively, unattended group. Less access to education and technology, a host of other socio-economic factors have had an adverse impact on the lives of women farmers and they have often not been able to take advantage of opportunities from new technologies, markets, or contract farming. Rural-urban migration, growing pressure on land, water, agro-biodiversity and firewood and natural disasters associated with climate change have also affected them.
- ii) Rural women have inadequate access to and control over complementary resources like irrigation, credit, water, forest, fuel, fodder, information skill development for tapping the livelihood opportunities of farm women.
- iii) Gender mainstreaming in agriculture encompasses three major aspects: i) Women's empowerment (human capital formation, exposure, leadership, autonomy, self-esteem, and food security); ii) Capacity building in agriculture (dissemination of information and technology); iii) Access to agricultural inputs, technology, resources and services (including land, water and credit besides agri-inputs). Poor implementation of policies and programs and delivery to farm women at different levels are the gaps, which have to be taken care of by the researchers in the domain of policy analysis & program development in gender perspective.
- iv) Globally, prevalence of malnutrition especially in women and children nutrition is an important issue. As per WHO growth standards the higher proportion of children is stunted, wasted and underweight especially in tribal and hilly tracts. Various studies and surveys revealed that malnutrition is the complex problem with multifaceted dimensions factors like poverty, purchasing power, health care, ignorance on nutrition and health education, female illiteracy, social convention etc. Poor livelihood leads to nutritional insecurity, which manifests into malnutrition. Poor delivery mechanism and implementation of mitigating policies to be addressed the food & nutrition needs through various methods / models to combat malnutrition and livelihood security highlighted the need for more focused in different level involving women.

## 8.2 Opportunities

There are many opportunities for strengthening youth and women in economic empowerment. It is foremost important utilize the youth mass in a proper way. To meet the various needs to cope of with climate change, it is important to use the natural and renewable resources properly with suitable models. There are various schemes and programs are made especially for youth and women. It can be availed at their respective locales.

- i) With about 20-30% of the agricultural products, particularly fruits and vegetables, being wasted due to poor handling. Processing of horticultural produce is not only essential but also provides an opportunity to earn additional income. There is also a lot of scope for farm women to start horticulture-based enterprise for strengthening their livelihood and nutrition through processing and value addition.
- ii) Establishment of nutritional-garden is another area to increase the household consumption of nutritional food. Farm families mostly consume cereals and they don't take fruits, vegetables and green leaves. Therefore, there is a need to improve nutritional status of the family members by introducing locally available fruits, vegetable, and green leaves to combat malnutrition of the family members.
- iii) Various horticultural based models, integrated farming system models, integrated pest management technologies, enterprises and schemes can be transferred or promoted to farm women for an employment opportunity and as a source of income throughout the year. In the long run, it will be helpful for sustainable livelihood security of youth and farm women in the field of agriculture and allied sectors.
- iv) Women friendly tools or implements should be designed to reduce drudgery and health hazards. Research and development of agricultural technologies and interventions should begin with an understanding of how men's and women's interests as producers and consumers and work to address the needs of both as equal partners.
- v) Doubling farmers' income is an important aspect where focus has been given to increase income by 2022 through improved farming models and technologies.
- vi) Since women in agriculture is the emerging area of research, capacity building of all the stakeholders is required through sensitization programs for the development functionaries, research scientists/managers who are directly or indirectly linked with them.

- vii) To motivate the young mass for creating their interest towards agriculture as Professional Subject is also an important aspect. It will help them in secure their future by sustainable source of income.
- viii) There are various programs and schemes and implemented by Government of India for starting agri-enterprises, mechanizations with subsidies etc. which will encourage the youth and women farmers.

## **9. Recommendations**

Recently ICAR initiated a programme on "Attracting and Retaining Youth in Agriculture (ARYA)" by realizing the importance of youth in agriculture, especially to maintain the food security of the country. This scheme will be implemented in 25 States through KVKs, one district from each State. In one district, 200 to 300 rural youth will be identified for their skill development in entrepreneurial activities and establishment of related micro-enterprise units in the area of apiary, mushroom, seed processing, soil testing, poultry, dairy, goatry, carp-hatchery, vermi-compost etc. Motivating and Attracting Youth in Agriculture (MAYA) is also initiated by ICAR.

### *i) Direct Marketing*

To form Farmer's Producer Organizations (FPO) at rural areas to increase the profit through agribusiness activities. Marketing of customized agricultural products to connect urban and rural consumers is their needs. Reducing the supply chain and attracting rural youth by opportunities of employment.

### *ii) Technology Support to Youth*

Information kiosk at every Village Panchayth and Helpline Number or guidance portal to be established in each district for rural youth who seek information on agriculture and allied activities. Counselling sessions/ awareness camps at agency level. (Ex. MANAGE).

### *iii) Skill Development Programs*

Institutes to promote farmers and youth in rural areas with a model to train and provide identified skills to make them to take up entrepreneurship boldly and widely (Ex. STRY and FCAC).

### *iv) Public Private Partnership (PPP)*

Need collaboration of institutes with companies to transfer technologies from lab to land which leads to development of agribusinesses in the country and CSR skill development trainings and placements, which creates more employment opportunities to the rural youth. (Ex. Incubation centres and PI industries).

*v) Youth Involvement*

Great need of youth involvement in constituting changes in Indian agriculture, taking their collective feedback and by providing good communication reach, Advocacy and Networks.

*vi) Changing the Image of Agriculture in India*

Parents/ farmers and educational institutes to change image of agriculture as a small occupational activity and inculcate get going attitude in the youth to use their opportunities in agriculture timely.

*vii) Linking Agri-clinic to Every Bank*

To promote Agri-clinic and Agribusiness Centres, each bank has to be linked with development of Agri-clinic center in their area of operation, which creates effective awareness about entrepreneurship in India.

*viii) Target Based Agri-finance*

Banks to set targets, incentives and credit guarantee facilities to avoid bankers from risk in the promotion of Agri-finance by the bankers to farmers and rural youth. This will induce attraction of rural youth towards agriculture.

*ix) Income Generation Activities*

If youth show special interest in value addition and small-scale industries, many opportunities listed out can be profitable for livelihood are such as diary farming; meat production; scheme based inland and marine fisheries and Indigenous production of processing technologies.

## **10. Strategies Required for Addressing Hunger and Malnutrition**

*i) Nutritional Planning*

Nutritional planning involves formulation of a nutrition policy and overall long-term planning to improve production and supplies of food, ensure its equitable distribution and programs to increase the purchasing power of people. This may include, land reforms, proper guidance in agriculture to help farmers to get better yields from their lands, help in proper marketing of farm produce.

*ii) Nutrition Education*

People can be educated on the nutritional quality of common foods, importance and nutritional quality of various locally available and culturally accepted low cost foods, importance of breast feeding, recipes for preparing proper weaning foods and good supplementary food from locally available low cost foods, importance of including milk, eggs, meat or pulses in sufficient quantities in the diet to enhance the net dietary protein value, importance of therapeutic nutrition,

need and advantages of growing a nutrition/ kitchen garden and importance of immunizing children and following proper sanitation in their day to day life.

### *iii) Early Detection of Malnutrition and Intervention*

The longer the developmental delays remain uncorrected, the greater the chance of permanent effects and hence intervention must occur during pregnancy and first three years of life.

### *iv) Nutrition Supplementation*

Usually, biologically vulnerable groups like pregnant women, infants, preschool going and school going children are targeted by various welfare measures conducted by the government. The main objective of nutrition supplementation of infants and children includes treating and rehabilitating severely malnourished subjects and improving the general health and wellbeing of children, increasing the resistance to infectious illnesses and thereby decreasing morbidity, accelerating the physical growth and mental development of children and improving the academic performance and learning abilities of children. Supplementing pregnant and lactating women include preventing anaemia in the mother thus improving her health and the pregnancy outcome, improving calorie intake and prevent low birth weight baby and supplementing calcium to prevent osteoporosis.

## **11. Conclusions and Way Forward**

### **11.1 Conclusions**

Role of youth and women in agriculture and allied sectors can't be ignored. There is a lot of scope in this area where they can secure their livelihood and improve nutritional status of their families. Various horticultural based models, Integrated Farming System models, Integrated Pest Management technologies, enterprises and schemes can be transferred or promoted to farm women for an employment opportunity and as a source of income throughout the year. In the long run it will be helpful for sustainable livelihood security of farm women in the field of agriculture and allied sectors. Women friendly farm tools or implements should be designed to reduce drudgery and health hazards. Research and development of agricultural technologies and interventions should begin with an understanding of how men's and women's interests as producers and consumers and work to address the needs of both as equal partners. Since youth and women in agriculture is the emerging area of research, capacity building of all the stakeholders is required through sensitization programmes for the development functionaries, research scientists/ managers who are directly or indirectly linked with them.

Hunger and malnutrition are the two side's coin going with parallel dimensions. A larger proportion of the country's population are malnourished and anaemic. Some of these factors directly cause malnutrition among people, whereas many others affect indirectly. Significant among these are poverty, unemployment, ignorance and lack of education, lack of access to nutritious food, safe water, sanitation and hygiene, non-availability of reliable and timely data, and sufficient funds etc. Many of the reasons for the occurrence of malnutrition, as well as the solutions to overcome the challenges are known. Therefore attention needs to be paid to understand the barriers which hinder the nation from achieving its goals related to nutrition and carrying out interventions based on identified needs. Accumulating evidence shows that empowering women is not only important in its own right, but also often highly conducive to improving agriculture productivity, food security, and nutrition. Research and development of agricultural technologies and interventions should begin with an understanding of how men's and women's interests as producers and consumers and work to address the needs of both as equal partners. Only gender mainstreaming in agriculture can lead to productivity gains and improve developmental outcomes for the next generation. Let us all make a concerted effort to improve the might of youth and women in agriculture today for more productive and sustainable agriculture.

## **11.2 Way Forward**

- i) There should be strong linkage among SAARC countries through development of institutional mechanisms.
- ii) Setting up a global platform for addressing youth and women issues in agriculture with ICAR-CIWA as Nodal Centre with regional centre in each SAARC countries will be an alternate solution.
- iii) Enhancement in allocation of fund for youth and women in agriculture is foremost important for all SAARC countries.
- iv) Awareness creation on government programme and policies up to grassroots level is the need of hour.
- v) Programmes should be in Mission Mode Approach at country level for development of youth and women in agriculture.

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## Chapter Five

# Youth and Women in Agriculture for Economic Development and Food Security in Maldives

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### Abstract

*The contribution of women and youth are indispensable for agriculture and sustainable food systems. There is a huge potentiality for encouraging youth and women in agriculture and related services in the country. Currently, the participation of youth is limited and women's work is not adequately recognized or valued in its full extent. Notable barriers such as lack of field specific practical education system, lack of women representation at the policy making level and unavailability of necessary data in the country. At island level, there are hindrances due to poor land allocation practices, saturation of expatriate labor, and house-hold dynamics that prevents women and youth participation in agriculture. For youth in particular, lack of career guidance, nonexistence of notable agribusinesses coupled with poor public perception towards agriculture as a career option are obstacles for their participation. The situation could be improved by formulating policies, strengthening agricultural advisory services, and enhancing participation of women and youth throughout the improved value chain developments at the local islands, national level and international level. Hence, policy and program incentives at the island or local level and national level is required to enhance the participation of youth and women in agriculture for economic development and improve food security in Maldives.*

**Keywords:** Youth and women, empowerment, agriculture, food security, Maldives

### 1. Background

A majority of the farms are smallholders and the major part of the foods is produced by small-scale farms and most of them operated by women farmers in the developing world. In most of the family structure, women play a huge role

in day-to-day operations of the farm in addition to household chores (Liebregts et al., 2005). Production and distribution of food has invariably contributed to the development of economies and poverty reduction throughout the world.

The Maldives economy was founded on sectors that were spearheaded by women for many generations, both agriculture and fisheries sector has led the country towards self-sufficiency through the efforts put by women (FAO, 2018). This trend is still prevalent in the Asian region where, in countries like Bangladesh, Bhutan, India, Nepal and Pakistan, high percentage of women are employed in the agriculture sector. Maldives's economy accelerated with the dominated efforts of both youth and women's participation in various developmental areas. Presently, 53% of the Maldives population is below 20 years of age, 49% of whom are women (FAO, 2019a). About 13% of the total of Maldivian labor is employed in the fisheries or agriculture-related primary industries (MOF, 2016). This include off-shoot domestic livelihood activities that include rope weaving, thatch weaving, coconut oil production and other small-scale food processing activities.

Maldives is a net importer and depends on imports for more than 95% of its food consumption (FAO, 2018). Hence, a larger portion of its tourism earning is spent on imports of staple foods (such as rice, flour, and sugar), vegetables (such as root crops), fruits, nuts, seeds, dairy and eggs. Indeed, there has been no in-depth study on youth involvement in agriculture or related activities. According to MOF (2016), many Maldivians are bunched between the low and high poverty line and are thus are vulnerable to fall into poverty. Enhancing youth and women participation in agriculture would contribute for the sustainable food system, improve the food security, and economic development in the country.

## **2. Situation of Youth & Women Engagement in Agriculture**

In Maldives, farm management is mainly carried out by men. The men, as farm owners, and consequently masks the role of women in the country. According to MOF (2016), despite women's involvement in farming, fewer women are recorded to be employed in agriculture (2%) compared to males (14%). In large agribusinesses, this trend is more prominent as men are more aptly regarded as the property owners and as the person responsible for managing finance. The women owned less property (31.3%) than men (65.5%) (FAO, 2019a). Large agribusinesses in Maldives scenario involve producing high-value crops such as banana, papaya, chili, cucumber and pumpkin that are mostly targeted to resort markets. Meanwhile, women largely participate in home gardening, which still remain as the main livelihood activity for rural agriculture dependent populations. Since inland fisheries activities is absent in Maldives, food

production largely involves horticultural production. Subsistence agriculture, both in home gardens and to a limited extent, in plots outside of the home area, provides a variety of produce ranging from traditional starchy crops to fruits and vegetables, as well as being a vital source of nutrients (FAO, 2019b).

As of 2019, there are around 8,000 registered farmers in the Farmers Registry of the Ministry of Fisheries, Marine Resources and Agriculture (MoFMRA). However, it must be emphasized that Island Councils often maintain their own record of farmers at island level and this information will likely show more accurate picture. But there is no mechanism in place for timely update of this data. Most registered farmers produce crops and livestock, gather coconuts and nuts from wild areas in individual islands who would be identified as part of agrarian community. Despite the recorded data on farm owners favoring men over women, it is noted that women participation is significantly higher than men in farmer training and extension programs conducted by the ministry.

### **3. Programs on Youth & Women in Agriculture Enterprise Development and Food Security**

In the earlier days of agricultural extension, farmer training programs were carried out based on Farmer Field School concept. Both youth and women participation were encouraged in these programs. Presently, these programs have been discontinued. The central training and extension facility of MoFMRA has been conducting 'Agricultural Internship Program' that has been attracting youth and women who are tasked to participate in 6-month intensive agricultural training program at Hanimaadhoo Agriculture Center. This program (6 month course) is designed to provide both theory and practical knowledge on most common agricultural crops under the direct supervision of experienced agricultural field officers.

Over the years hydroponics programs in schools and other educational facilities have gained popularity among youth of both genders. This is because of the small hydroponics demonstration activities are cheap to setup and provides more engagement for students. The ministry has been encouraging various youth groups and school clubs through their respective educational institutions to carry out food production activities in a routine manner. Some educational institutions also carry out routine gardening competitions and food fairs as part of their calendar activities. Moreover, there have been NGO's and Start-ups that are involved in innovative food production activities such as urban agriculture. These groups play a tremendous role in attracting youth to farming activities.

Additionally, community gardening is becoming an attractive activity among women in major population centers including capital city Male' and nearby

Hulhumale of the country. Residents in neighboring housing blocks often gather at the common recreational space to carry out farming activities. There is potential for expansion of these activities by redesigning urban areas, which would require participation of city councils and other institutions.

There are also remarkable women led agricultural cooperatives that work on various agriculture related activities. For example, Addu Meedhoo Cooperatives in the south are involved in selling high value crops to nearby resort islands. Farmers' cooperatives have been heavily promoted by MoFMRA in early 2000's and despite the effort, many of the start-up have discontinued in few years.

Successful women farmers are revered among women and youth as a model to strive for. Gameera Adam of Thoddoo Island is famous country-wide for her contribution to agriculture and food system. Her success in bringing the agricultural products to the markets and was recognized as the **Outstanding Achievement Award** from FAO in 2011. These days she also uses her farm to demonstrate to the younger generation and women that farming can be a good business and provide for a good life.

In a broader policy level, FAO developed a key strategy for Maldives agricultural development based on SDG goals through the **Country Programing Framework 2018-2020**. This framework included ideas for food production pathways to contribute to shared prosperity and household wellbeing and women and youth development (FAO, 2019a).

#### **4. Youth and Women in Agriculture for Economic Empowerment and Food Security**

Women are the most important actors in food chain—beginning from production, marketing and intra household distribution of foods as well as other post-harvest activities. Women therefore remain the center-piece of food security in the developing countries. According to FAO (2019b), as consumers, women are more likely to face difficulties in finding food than men in every region of the world; and as farmers, women face more obstacles than their counterparts in accessing essential productive resources and services, technology, markets and financial assets. In the Islands, majority of productive lands are owned by men. Land allocation regulations are specific for each inhabited island (UNDP, 2013). Thus, Island Authorities need to consider to redesign regulations the rules keeping the fact that a larger number of women and youth are interested to engage in the agriculture fields. As agriculture is the foremost sector with women presence, it could be used to encourage women empowerment by making women as farm owners and in charge of farm finances.

The MoFMRA has launched a credit scheme for agricultural development named 'DhanduNafa'. Women and youth led enterprises are encouraged to apply for the loan schemes of this program. The idea is to encourage women and youth participation in both marginal and popular areas. Few marginalized areas of agriculture including nursery plant production businesses, herb gardens, and composting enterprises are important in the country. If these are improved then it might be a win-win situation for the sector development. Alternatively, youth involvement is encouraged in high-tech agribusinesses such as hydroponics, vertical farming, protected cultivation and aquaponics.

Additionally, there are significant number of tourist activities that take place near production areas. These visitors also enjoy working with locals and experience local life to see the natural beauty of Maldives. This is not fully explored mainly due to large participation of expatriate labor in the farm fields as they are either not interested or cannot make those dealings with the visitors. Women and youth could play huge role in agri-tourism service development. This could include arranging island level harvest festivals, cooking and food tasting festivals, local delicacy preparation events, and scheduled fruit tree planting, hands-on toddy tapping events. Consequently, meaningful participation of youth and women in agriculture and food value chain would contribute to the economic empowerment of this segment of the population and eventually support for the economic prosperity of the nation.

## **5. Youth and Women to Promote Climate Smart Agriculture**

Around 50,000 working age women are outside the labor force who are not available for work or are not seeking work in Maldives (FAO, 2019b). Access to education might be a significant factor for this. Educated women and youth can bring bigger impact to agriculture. However in Maldives, among those enrolled for undergraduate diplomas, women represent about 50% and the percentage of women enrolled in tertiary education and higher-level degree programs drops significantly (FAO, 2019a). Since, there is no higher education institution that provide higher level and tertiary education in agriculture, forestry or related areas, this magnify this challenge for women in obtaining the relevant sectoral education.

Climate change is a looming threat for rural livelihoods more vulnerable to women and youth in Maldives. This is due to the increased flooding, frequent dry periods, increased ground water salinity and sporadic pest incidents that effect food supply and reductions in fresh water. Hence, women and youth need to be at the front line in taking up adaptation practices that are specific to the activities they are involved in.

Various agricultural certification schemes that encompass, at its core, some or all of the elements of climate smart agricultural practices (for example, Good Agricultural Practices–GAP) have been promoted. GAP scheme involves both financial and resource management aspects of farm management. The idea is to increase value of the locally produced items by involving locals (women and youth) to produce food for high value markets. GAP scheme is gradually being taken up by producers across the country and the certificate is being promoted heavily. Similarly, such schemes associated with brands or mottos to attract public are being promoted with labels such as ‘local’ or ‘produced by island women’s development committee’ or ‘island youth club’.

## **6. Best Gender Sensitive Value Chains Practices**

In recent years with advancement of shipping, transport, international trade and digitalization trends, the agriculture sector has developed gradually towards more market-oriented pathway. However, these developments have also created new challenges for producers and especially women in rural areas in participating value-chain activities. For instance, the main market for agricultural products now focus around major cash crops such as chili, watermelon, betel leaf, cucumber and papaya. To obtain competitive advantage of these products, require owning and operating large farms, hence women have been disadvantaged due to their limited access to land, finance and ownership (Shafia, 2012). Thus, access of land and financial resources to the women farmers is crucial in the country.

According to FAO (2016), the food value chain development—production, aggregation, processing and distribution are the core aspects of value creation of the products. Women have been more prone to certain agricultural activities in the islands. Those include, collecting nuts, foraging and managing wilderness for fuel. These activities also build up their social capital due to informal networks with neighbours (Shafia, 2012). Promoting these practices for markets will therefore empower women. For instance, making snacks from local products such as fish, coconuts, breadfruits, moringa, taro and cassava are common small-scale household level activities in most islands. Maldivian ‘*Rihaakuru*’ (fish paste), ‘*Kudhigulha*’ (fish balls fried in oil), *Bondi* (delicacy from coconut sugar) has deep roots and traditional value, which is recognized by both locals and visitors. These production activities are sometimes carried in groups under mutual understanding whereby more resources are shared and total productivity is often improved. Encouraging the scaling up of these practices would be successful in connecting producers of these raw materials (fish, coconut, breadfruit, taro etc.) to the rest of the island community. In Maldives’s context, it is important to promote products that utilizes variety of locally

produced items so that more producers—most likely women, are inclusive in these value-addition activities.

The efficiency of value chain at production level is critically dependent upon the chain's governance structure (FAO, 2016). Governance by local island councils in facilitating safe working conditions, marketing, transport and access to agricultural information and inputs at island level would greatly encourage women participation in these activities.

## **7. Policies and Programs for Attracting Youth and Women in Agriculture**

The *Decentralization Act 2010*, mandates that local councils have a Women's Development Committee (WDC) at the island level, as an integral part of local governance. WDCs has existed at islands as part of active civil organization for decades. After years of inactiveness, they are incentivised to play active role in the island communities. WDCs operate independently, reporting to the island councils. In addition to the civil activities such as island waste management and garden management they also work on women's sports activities. Hence, they can play a huge role in taking up culturally significant profitable agri-business and value chain activities.

Training and extension programs of the MoFMRA encourages women participation in agriculture. According to MoFMRA, it has been noted that women participation is relatively higher in most types of agricultural programs irrespective of the theme of *Agricultural Development Master plan 2010-2025*. Women's participation in the agriculture development programs activities was estimated to be 50% in 2017 (MoFMRA, 2018). But it was noted that the number attended women for longer in duration training were less than that those of men participation. These programs include Agriculture Internship Program, field officer training program that was conducted in India at Tamil Nadu Agriculture University and the Training of Trainers (TOT) Program that was carried out in 2015. Therefore, women often participate in more in one off engagements with technical personnel and continuous interactions can therefore become minimal.

The government has many policies enabling a healthy environment for women and youth lead agribusiness related investments in Maldives. The *Agriculture Strategic Action Plan of 2019-23* (SAP) (GOM, 2019) is in pace of implementation by the MoFMRA. This plan emphasized the hydroponics program, irrigation, urban gardening and value-addition program includes key ideas that focus on women inclusiveness and sustained engagement. Further, SAP activities include; conducting agricultural entrepreneurship programs, providing technical and financial support to existing farmer NGO's and CBPO, promotion



and incentivizing the production of five major crops for import substitution, introducing value addition technologies for women and CBPO, encouraging traditional crop inclusion in production, and establishment of urban gardening areas in Maldives. Moreover, as of January 2019, import duty or tariffs of all imported agricultural and related inputs have been waived at the border in order to make agriculture more accessible for all groups of the community.

Apart from the planned activities, it is widely accepted that all agricultural programs need to be streamlined to attract youth. This includes linking social media to agriculture and in this respect the ministry has, since the start of this year hired a full-time expert as 'media coordinator' who is in charge of releasing timely information and news of on-going and planned activities in an attractive and engaging manner through news outlets and social media. It has been noted more youth engagements and enquires have been received since then. The media coordinator also works with several notable agribusiness in the country in gathering information and promoting their practice so as to improve agriculture's overall image among youth. In addition, last year, the ministry has, in collaboration with Public Service Media (national television) produced and aired a television series of 8 episodes named '*Dhandufangu*' showcasing various prominent agricultural activities that has been carried out across the country.

Additionally, enabling agricultural higher education is crucial in attracting and building skilled youth. The government has on going communication with the Maldives National University and Maldives Islamic University on formulating undergraduate agricultural programs. Moreover, the government recognises the importance of adopting Information Communication Technologies (ICT) in farming. In this respect, the government has been planning to improve national agricultural research infrastructure, especially targeting the enhancement of Hanimadhoo Agriculture Center in the north. With this, the government aims at enabling precision farming techniques including the use of timely weather and climate information in an attractive manner.

It is also crucial to make long-term public investments in agriculture that would pave way to the next generations. Large investments in agriculture are often difficult to obtain. However, the government, in collaboration with International Fund for Agriculture Development (IFAD) has been developing the 'Maldives Agribusiness Project' (MAP). MAP is planned to start in mid-2020 that include many components on basic agri-infrastructure development as well as long-term public awareness programs. This project will also open many employment opportunities for youth and public for work in the northern region of the country. In tandem to this project, the government is planning to formulate a

state-owned agricultural corporation with a broader aim of facilitating producers in all agricultural value chain and supply chain activities.

## **8. Challenges and Opportunities on Youth & Women in Agricultural Development**

There are concerns, however the WDCs have not been fully effective due to a lack of autonomy or mandate, along with lack of infrastructure and financial resources in the country (FAO, 2019a). Despite the supportive policy indicators mentioned above, there is no specific youth or gender specific policy at institutional level for agriculture. The Agriculture Law is still in the process of formulation and the support for gender mainstreaming is yet to be included in the document.

Around 30% of the resident population are expatriates and most of them are healthy young men albeit unskilled, who are heavily involved in agricultural activities that reduce the employment opportunities for youth and women.

As in most countries, women who are divorced, widowed or for other reasons have to support themselves and their family often undertake backyard gardening, taro farming or coconut collection as livelihood activities. These groups often find it difficult to obtain the necessary support in timely manner. They are also likely to be more exposed to pesticides, smoke, extreme weather, improper working conditions, un-supervised and irregular work routine.

Due to the inherent family hierarchy in many islands time-consuming responsibilities at home and hinder women from being involved in activities that are more beneficial. This also extends to, as mentioned above, in owning farmland or assets. Women are also discouraged or find it difficult to value their ideas in the decisions of farm planning.

It is often difficult to recognize the economic value of the work put in by women due to its non-lucrative nature. Women in the islands participate in thatch weaving, coconut collection, harvesting food from mangroves, collection of materials for fuel and numerous post-harvest activities. There are no formal mechanisms in place to value these activities in monetary terms so as to be help compare their involvement.

Women often lack the bargaining power beyond production environment. Intermediaries are often expatriates or men who own transportation vehicles or boats who likely has more say in the prices. Lack of skilled youth and women in agriculture further adds to this challenge in terms of voicing their concerns or having it heard. The challenge in voicing for women and youth affairs extends to the political arena as well; more than a majority of parliament representatives

are comprised of men. The average proportion of women present in island councils are also significantly lower.

The existing NGO's and CBPO's lack the supporting mechanism to work together due to the lack of funding and appropriate assets infrastructure and necessary skill on management and recordkeeping. Due to recent political turmoil some island communities have suffered from lack of social coherence, which has fragmented small communities and make it difficult to work together for a cause due to political differences.

The Maldives, despite an impressive literacy rate of 98%, faces challenges in terms of educational quality. The untrained teachers, regional inequality in teaching standards, emphasis on rote-learning and gender-bias in curricula are some of the problems that this almost universally literate country faces. Also, lack of youth focused mainstream agricultural programs, including non-existence of agriculture in the school curricular is a huge challenge in attracting youth to the sector.

Similarly, there are also very few agribusinesses that can act as aspiring institutions for young entrepreneurs. Lack of key personnel with agriculture and sectoral knowledge in career guidance programs also dispel youth from joining the sector. Public perception towards agriculture and related areas are not well acknowledged or accepted in the general society as a respected career option. Adding to this is the challenge of access to affordable land and credit facilities for youth to start profitable agri-businesses.

## **9. Recommendations**

Ministry of Gender and Family has created the Council for Economic Empowerment of Women. It would be beneficial to coordinate with this council when developing agricultural programs in order to fully capture the needs of women. This would then assist in capacity building of women for better natural resource management and sustainable agricultural production.

Developing multifunctional production systems is imperative for long-term women and youth inclusiveness in the farming activities. In this regard, it would be necessary to design agricultural projects that determine outcomes additional to crop yield and revenue. These additional outcome indicators could pertain to employment and inclusiveness level of women, number of off-shoot activities connected to the main production activities, market linkages, personal satisfaction and well-being of participating beneficiaries.

Multi-functionality could also extends to diversifying production systems that simultaneously improve natural resources, local communities, biodiversity as

well as the economy. These systems of production above all, must also be, profitable enabling good wages for workers so as to attract local work force. The profitability of agribusinesses must be comparable to other prominent sectors such as construction, civil service, transport, tourism and shipping in order to be visible as viable career option for graduates of both genders.

Designing programs should encourage youth and women participation in food production. Therefore, training programs aligning with significant amount of field works and practical activities must be prioritised.

Similarly, there is a need for collecting specific sex-disaggregated and gender quantitative data on agricultural production activities, including on the role of women as contributing family workers. Furthermore, this must be reflected in the collection of census data and translated into evidence-based policy making.

Research to be conducted on climate change and agriculture, gender-sensitive agriculture, barrier of entry to agriculture by youth and women, contribution of youth and women to the economic development, and competitiveness of agriculture sector in the country.

Additionally, promoting crop and farmer insurance schemes to reduce the risks and effects of severe weather and climate hazards on women engaged in agricultural production and processing must be prioritized.

## **10. Conclusions**

Maldives has a large youth population. Proper utilizing this young human resource could have significant contribution for the prosperity of the country. Similarly, if women's engagement in agriculture is strengthened, it could create a responsible society that would actively take part in work towards food security. To create both women and youth inclusive production systems, few critical areas must be addressed. These include the provision of quality sector specific education at primary and secondary level, and enhance the participation of women and youth in policy decisions. Furthermore, some key areas that could enhance the participation of women and youth include: investments in agriculture diversification, urban agriculture, nursery plants production, vertical farming, value-addition and processing programs. Moreover, some central challenges also must be addressed in increasing the employment opportunity for youth and women. These areas include strengthening agriculture labor market and education and awareness creation addressing public perception. Therefore, country wide adoption of climate-smart agricultural practices under a broader sustainable agriculture focus would be a good starting point. Additionally, introducing university level programs for locals on agribusiness, forestry or

similar topics may be help in attracting interested youth and women. Most importantly, the programs of the *National Strategic Action Plan* should be implemented as planned, would encourage women and youth participation in agriculture, and eventually contribute to foster the economic development and improve the food security in the country.

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## Chapter Six

# Youth and Women in Agriculture for Economic Development and Food Security in Nepal

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### Abstract

*Engagement of youth and women in agricultural value chain development is the major issue for economic development and sustainable food system in the developing economies. Despite tremendous efforts made in the past, the performance of agriculture sector has remained inadequate in Nepal. A larger proportion of population employed in agriculture adopting subsistence farming system with traditional technology, higher level of biotic and abiotic risks, low profitability, and irregular markets made this sector less attractive to the youth and women. This triggered the youth male out-migration leaving women in agriculture in rural areas. Policy and program interventions could contribute to revitalize the rural youth and women in agriculture and rural resource based economic development. Agricultural development should be backed up with value addition, processing, branding and packaging along with strong market linkages. Increased investments in research and development, tie-up with practical education system, capacity building of value chain actors, and assurance of markets for the farmers' product could encourage youth and women in this sector. Meanwhile, an integrated efforts should be made by all line ministries, stakeholders and private sectors for the development of agriculture sector in Nepal.*

**Keywords:** Agriculture, out-migration, youth, women, value addition, Nepal

### 1. Background

Agriculture is still a dominant component of the national economy of Nepal. It contributes about 27.59% of the Gross Domestic Product (GDP) in 2017/18. Over the last decade, the growth rate of Agriculture Gross Domestic Products (AGDP) was 3.1% against 5.3% of non-agriculture sector with overall economic growth rate of 4.6%. According to Economic Survey of 2019 (MoF, 2019a), agriculture

growth rate was 2.7% in 2017/18. Still large proportion (60.43%) of population is employed in agriculture sector (CBS, 2014). Majority of the farms in Nepal are small-scale; the average land holding size 0.68 ha and 53% farmers holding less than 0.5 ha. Only 20% farmers have more than 1 ha land. About 4.12 million ha (28%) area is cultivable land of which only 75% land are under cultivation. A total of 1.47 million ha land were irrigated in 2017/18 of the Nepal's total area 147,181 Km<sup>2</sup>.

Rice, maize and wheat are the major crops of Nepal. In horticulture corps, vegetables have been major source of income generation to most of the farmers. Similarly, oranges, banana, apple, sweet orange subsectors are being expanded. Rainbow trout, kiwi, coffee are emerging sub-sectors. In livestock sector, dairy, poultry, piggery, fish are developing as industry. Agro-tourism subsector has been recognized as potential sector. Areas of input industry, market services are being developed gradually.

Nepal has huge trade deficit in agriculture commodities. Nepal's import trade was NPR<sup>1</sup> 985.95 billion; out of this, agriculture commodities shared 17.8% (NPR 175.59 billion) in 2016/17. While, agriculture export was only around to NPR 21 billion, accounted to be 28.6% of total export trade.

Nepal's total population was 26.4 million in 2011 consisting of 51.50% female, 48.50% male, and youth (age 16-40 years) 40.35% (CBS, 2011). Nepal has the opportunity of youth dividend at the moment and can be used for prosperity and development of the country. About 0.5 million youth people enter in the labor market annually, while 11.4% people are unemployed in 2019 (CBS, 2019).

Nepal has witnessed widespread domestic and international migration for decades. A total of 382,871 labor permits were issued to international migrants in 2016/17. Remittance inflows to Nepal have grown tremendously over the past decade increasing from US\$ 111 million in 2000 to US\$ 6.9 billion in 2017. In fact, Nepal's remittance inflows accounted for 28.39% of its GDP in 2017, making Nepal one of the largest (the fourth highest proportion in the world) remittance-receiving countries in terms of percentage of GDP (Misquith, 2018). Till 2018, a total of 4,365,415 youth have entered in foreign employment (MoF, 2019a). The rapid out-migration of male, especially youth has resulted their absence in the rural areas that has desperately affected to the agriculture sector.

## **2. Situation of Youth & Women in Agriculture**

The agriculture sector employs about 74% of the economically active women in the country contributing about 55-82% of the total labor force in agriculture

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<sup>1</sup>NPR stands for Rupees. US\$ 1 = NPR115 (Approximate)

(MoAD, 2017). Indeed, rural Nepal is witnessing a process of feminization in agriculture, which has a deep and wide-ranging impact on agricultural productivity (Kelker, 2009). Feminization in agriculture has two aspects: i) Increased women's participation in agricultural works; and ii) Empowered in decision making process. Previous studies of World Bank (2006) & Tamang et al. (2014) suggested that there has been increased women's participation in agriculture. About 19.71% of households have ownership of land or house or both in the name of the female member of the household (CBS, 2014), indicating that women have limited access to resources for agriculture and economic activities. Some statistical figures regarding women is presented in Table 1.

Table 1. National statistics of gender equity and women empowerment

<b>Indicators</b>	<b>Percentage</b>
Women headed households	25.7%
Women's rights to assets	26%
Women literacy	57.7%
Women-monthly income	NPR 13,630
Men-monthly income	NPR 19,464
Difference in monthly income	NPR 5,834

Source: NPC (2019) and CBS (2019)

Sustainability of growth depends on women and excluded group gaining the power and capacity to control decisions about use of resources. In this context, Ministry of Agriculture and Livestock Development (MoALD) has been given greater priority and necessary efforts to women farmers with policy incentives along with different programs and associated activities. However, the trend of gender responsive budget allocation in agriculture sector seems discouraging. Directly gender responsive budget is in decreasing trend; it was 76.43% in 2012/13, which was decreased to 15.2% in 2018/19 (Table 2). About 12% budget was seen under neutral code in 2019, which was very less in past fiscal years.



Table 2. Gender responsive budget allocation for agriculture sector (NPR '000)

Fiscal Year	Gender Budget Responsiveness – Code No.						Annual Budget
	Directly Responsive-1		Indirectly Responsive- 2		Gender Neutral- 3		
	Budget	%	Budget	%	Budget	%	
2012/13	9,399,388	76.43	2,812,257	22.87	85,496	0.70	12,297,141
2013/14	13,290,164	53.70	11,401,520	46.00	80,000	3.30	24,771,684
2014/15	15,513,168	66.60	7,674,459	33.00	95,551	0.40	23,283,178
2015/16	16,734,281	62.70	9,906,539	37.10	41,760	0.20	26,682,580
2016/17	66,799,512	24.34	20,758,749	75.66	0.0000	0.00	27,438,261
2017/18	6,570,774	27.00	17,691,163	73.00	0.00	0.00	24,261,937
2018/19	3,628,900	15.2	17,361,900	72.5	2,946,500	12.3	23,937,300

Source: MoF (2019b) and MoAD (2018)

The Government of Nepal has provided immense opportunities through different policies and guiding documents in order to empower women in agriculture development activities. The beneficiaries in different fiscal years under the various program and projects of MoALD is presented in Table 3.

Table 3. Beneficiaries/ participation in agricultural program (gender inclusion)

Participation	Fiscal Years- Women Beneficiaries (%)		
	2014/15	2015/16	2016/17
Women	1,376,759 (50.1%)	983,170 (47.9%)	1,049,208 (49.9%)
Men	1,371,487 (49.9%)	1,070,539 (52.1%)	1,051,872 (50.1%)
Total	2,748,246	2,053,709	2,101,080

Source: MoAD (2018)

The MOALD has made mandatory provision in its policy to involve 50% women in its extension and capacity building programs. Women's participation on average were about 50% in different fiscal years. Similarly, youth participations in 2016/17 was around 48% under different development programs implemented by MoALD in different regions (Table 4).

Table 4. Youth and women participation in agricultural program by region (2016/17)

Regions	Total	Youth Participation		
		Men	Women	Youth
Eastern Region	299,044	157,596 (52.7%)	141,448 (47.3%)	136,665
Central Region	775,095	405,375 (52.3%)	369,720 (47.7%)	421,189
Western Region	393,335	190,768 (48.5%)	202,567 (51.5%)	227,949
Mid-Western Region	439,114	212,531(48.4%)	226,583 (51.6%)	152,224
Far-Western Region	194,492	85,771(44.1%)	108,721(55.9%)	68,541
Total Beneficiaries	2,101,080	1,033,731(49.2%)	1,067,349 (50.8%)	1,006,568

Source: MoALMC (2017)

The participation of women and men in capacity development programs under the Department of Agriculture (DoA) is presented in Table 5.

Table 5. Training programs and beneficiaries under DoA's program (2016/17)

Trainings	Beneficiaries with inclusion						
	Women	%	Men	%	Total	D/J <sup>2</sup>	%
Mobile local level	78,766	53.8	67,676	46.2	146,442	42,702	29.2
Service centre level	28,115	52.6	25,358		53,473	15,156	28.3
District level training	10,276	52.6	9,265	47.4	19,541	5,463	30
Total participation	117,157	53.4	102,299	46.6	219,456	63,321	28.9

Source: MoAD (2018)

The MOALD has been implementing different special projects and program aiming food security and agricultural commercialization. Under these programs, women participation and their empowerment has been given high priority. Similarly, youth participation has also been encouraged equally in the commercial intervention. The total women and men beneficiaries under different projects are presented in Table 6.

<sup>2</sup>D: Dalit and J: Janajati (Dalit is Oppressed community and Janajati are Indigenous Nationalities)

Table 6. Direct beneficiaries in some major projects of MOALD (2016/17)

Projects	Beneficiaries	
	Women	Men
Agriculture and Food Security Project (AFSP)	93 %	7 %
Homestead Garden Project (HGP)	82 %	18 %
High Value Agriculture Project (HVAP)	60 %	40 %
Improved Seeds for Farmers Program (KUBK)	76 %	24 %
Irrigation and Water Resources Management Project	45 %	55 %
Promotion of Commercial Agriculture Trade Project	46 %	54 %
Rani Jamara Kuleria Irrigation Project (RJKIP)	79 %	21 %
Community Managed Agriculture Irrigation Scheme	49 %	51%
Raising Incomes of Small and Medium Farmers Project	56 %	44 %

Source: MoALMC (2017)

### 3. Programs and Projects on Youth and Women for Agriculture and Food Security

There were number of projects for youth and women in agriculture based enterprise development. These projects lead by government in collaboration with NGOs, private sectors, cooperatives and farmers' groups. The major projects/ programs focused the youth & women are as follows:

- Youth Focused Program.
- High Value Agriculture Project- HVAP.
- Residential Training Program for Entrepreneur Farmer and Unemployed Youth.
- Presidential Women Up-liftment Program.
- Rural Women Economic Empowerment projects.
- Youth Self-employment Fund.
- Micro-enterprise Development Project- MEDP.

**Short description of these above mentioned programs are as follows:**

#### 3.1 Youth Focused Program (YFP)

Ministry of Agriculture Development (MoAD then) started Youth Focused Program since FY 2013/14, implemented by the Department of Agriculture (DoA), District Agriculture Development Offices. The program provided grant and technology to youth farmers aged 18-50 years. The program supported basically in 4 sub-sector /commodities: mushroom, honey, vegetable and fishery. The program targeted mainly to those youth who are returnee from abroad or

about to go abroad or local youth, especially women, *Dalits* and marginalized groups. The model of the program was based on the applications and business plan from youth and provided the matching grant up to 50% from NPR 40,000 to NPR 180,000. The program on vegetable subsector covered 9,893 youth farmers throughout the country and budget allocated for three years (2013/14 to 2015/16) in vegetable sub-sector was NPR 487.10 million (DoA, 2017).

### **3.2 High Value Agriculture Project in Hill and Mountain Areas (HVAP)**

HVAP was a joint endeavor of the Government of Nepal (GoN) and the International Fund for Agricultural Development (IFAD), which was executed by MoAD in partnership with the Netherlands Development Organization (SNV) and the Agro-Enterprise Center (AEC) of the Federation of Nepalese Chamber of Commerce and Industries (FNCCI). The project run for 6.5 years and phase-out in September 2018. The project worked in 7 value chains: apple, *timur* (Sichuan pepper), goat, fresh vegetable, ginger and turmeric; targeted for 60% women and 25% *Dalit* and *Janjatis*. To ensure gender balance and inclusiveness, the project delivered awareness training on social inclusion and women's empowerment and required each producing organization to be representative of different ethnic groups, youth, women and men, and people from different excluded group of the community. The project benefited to 16,000 household among which, 63% were women and 31% were *Dalit* and *Janjati*. On an average, the annual income of household increased by 37% at the end of the project. Women representation in producer organizations and agribusinesses were the key achievements (HVAP, 2018).

Residential Training Program is conducted for agribusinesses, farmer and unemployed youth. This program is being conducted by GoN/ MoALD and implemented by Nepal Agriculture Research Council (NARC). The project was initiated from 2018/19 and is still in implementation. The main aim of the program is to technically back up the agribusinesses, farmers and unemployed youth and create the employments locally. Another important aim is to increase the access of farmer to the research station and the scientist and make them commercial farmers. In residential training, unemployed youth (25% seat) of age 18-45 are given 7 to 150 days training along with farmers and other agribusinesses. Program arranges all the logistics, food and lodge within the campus of the research offices/centers. Farmers, agribusiness and unemployed youth can apply for the residential training and are selected according to the set criteria in the procedure (NARC, 2018).

### 3.3 President Women Up-liftment Program

The Ministry of Women, Children and Senior Citizen (MoWCSC) started this program from 2016/17. The main purpose of this program is to improve livelihood, entrepreneurial skills of women and empower them. The women are supported for both agriculture and non-agriculture business ventures. In 2018/19, NPR 67.8 million budget was allocated for this program. Out of this, NPR 61.6 million was the budget for livelihood improvement and NPR 7.2 million for the support of sales center for the product produced by women under this program. The proposal had been called from groups, cooperatives or NGOs run by only women of 30 districts from list of low in Human Development Index. The details of projects awarded are presented in Table 7.

Table 7. Projects and areas selected (2018/19)

Sector	Projects	Areas
Agriculture	55	Vegetables, apple, goat, piggery, poultry, peanut farming.
Non-Agriculture	7	Bakery, hosiery, ornamental, himalayan nettle.
Tourism	2	Homestead.

Source: DoWC (2019)

### 3.4 Youth and Small Entrepreneur Self-employment Fund (YSESF)

Government of Nepal established Youth and Small Entrepreneur Self-employment Fund in 2009 to end the unemployment and to create the opportunities of the employment in the country. The Fund emphasized to orient and train the uneducated and unemployed youth, and provide the collateral-less credit in subsidized interest through different banks and financial institutions to employ and increase their income for the betterment of the livelihood. Fund provides subsidized credit to targeted youth individual farmer up to NPR 200,000 and maximum of NPR 5,000,000 to a group of 25 people. Fund targets to the economically deprived group, women, *Dalit*, indigenous nationalities, and conflict victims, youth and communities with traditional skills for commercial farming, agri-based enterprise and service-oriented self-employment. The people of age 18-50 years, educated, semi-educated and illiterate who are not engaged in any occupation, business and income generating activities are also benefited from this scheme. The people self-employed under this scheme from primary cooperatives and financial institutions (FIs) are given in Table 8.

Table 8. No. of people self-employed under the YSESF by March 2018

<b>Banks &amp; FIs</b>	<b>Female</b>	<b>Male</b>	<b>Total</b>
Primary Cooperatives	21,886	25,513	47,399
Banks & FIs	3,548	4,386	7,986
<b>Total</b>	<b>25,434</b>	<b>29,899</b>	<b>55,333</b>

Source: MoYS (2019)

Similarly, the Government of Nepal has been implementing different projects and programs like Raising Income and Small and Medium Farmer Project (RISMFP), Improved Seed for Farmers Program (ISF-KUBK), Agriculture Insurance program, Agriculture Sector Development Project (ASDP), Nepal Livestock Sector Innovation Project (NLISP) are major program which have targeted women and youth people in agriculture and livestock sector.

### 3.5 Prime Minister Employment Program (PMEP)

The Government of Nepal announced in the budget for the Fiscal Year 2018/19 to implement the PMEP with the objective of creating job opportunities within the country and gradually ending foreign migration of Nepali job seekers. The government has allocated over NPR 3.10 billion for this program, from which it aims to provide jobs to 500,000 Nepali citizens in the next fiscal year. The program is being implemented by federal, provincial, and local governments. Each local unit will have an “Employment Service Center” coordinated by a government official deployed by the ministry. Government has sent the employment coordinators to local units. It has started collecting information of unemployed people. Unemployed jobseekers can register their names at their representative ward (local office) under rural municipality or municipality. The registered forms will be collected by the Employment Service Center. Based on the set criteria, service seekers will be selected for the program. PMEP has got three major schemes.

#### *i) At Least 100 Days of Employment in One Fiscal Year*

Nepali citizens of 18 to 59 years of age are given employment for at least 100 days in a fiscal year, in coordination with the private sector, as per their qualification and areas of interest. The government also provides required skills and knowledge for a particular job so that after completing the 100 days, one can move to a permanent job.

### *ii) Livelihood Allowance*

Under this scheme, unemployed jobseekers can register their names to receive livelihood allowance. A person can get this allowance if not even a single member of his/her family has a job with minimum salary or no one in the family is self-employed. Likewise, only a person who belongs to a family earning less than the minimum government ceiling can claim for this allowance. One can receive this allowance from their representative local units.

### *iii) Culture of Appreciation Campaign*

In order to establish a culture of respecting all kinds of work in the country, the government conducts 'culture of appreciation' campaign. Under this campaign, the government creates awareness programs and other various events from which a message of respect to all kinds of work will be conveyed to the public.

## **4. Youth and Women in Agriculture for Economic Empowerment and Food Security**

Many studies confirmed the continuing importance of agricultural development for poverty reduction. Investment in agriculture sector has more impact than those that of non-agriculture sector in poverty alleviation. The growth in agriculture has 2-3 times more effective for reducing poverty than an equivalent amount of growth generated in other sectors (Christiaensen et al., 2011). Furthermore, a study of Christiaensen & Martin (2018) reveals that the comparative advantage of agriculture is more powerful means of trade and economic development for the nation.

Nepal has 18.7% population under the absolute poverty line, which is much higher in rural areas (83% populations are residing), women and marginalized groups of people (CBS, 2011). As Nepal's rural areas are based on agrarian economy, without development of agriculture sector, the national economy won't be improved. In fact, agriculture employs around 60.43% of total labor force. Statistics show that 73.57% woman and 50.50% men labor forces (economically active) are employed by agriculture (CBS, 2014). Thus, it can be concluded that agriculture can play an important role in the food and nutrition security, and socio-economic transformation in the country.

In South Asia, 85% of consumers' food spending is for vegetables, meat, dairy and fish (ADS, 2015), indicating of the higher scope of promoting these commodities as lucrative agribusiness for women and youth. Similarly, rainbow trout, kiwi, coffee are emerging sub-sectors, which has promising market locally and internationally. A huge amount of money (NPR 175.59 billion) was spent in

importing various agricultural products in 2016/17 that can be substituted producing these products domestically in the country.

Additionally, agro-tourism subsector has been recognized as very potential sector in Nepal. Agri-tourism business can create huge demand for local foods. If production can be linked with restaurant and food business that will consumes the local supply of the farmers.

Looking at the above opportunities, country has huge potential for agriculture farming. Diverse climate and topography can provide the opportunity for farming various crops, fruits, livestock husbandry. Similarly, country has different sources of water like river, ponds, and springs. The year-round supply of irrigation will help to increase both production and productivity. Developing mechanization is crucial approach that could increase the efficiency in production and processing value addition of the products that foster the agriculture in the country.

Government has provided supports for agriculture insurance and subsidized credit in agribusiness sector. The commercial banks have to invest their 15% of total loan in agriculture sector. Government has been implementing different agriculture projects/ program for commercialization and food security. This will provides the farmers, especially women and youth with much supports for the farm production to processing and marketing. Nepal can produce especial niche products like organic coffee, natural honey. This can be supplied to local as well as foreign niche market and can be earned premium price. Therefore, our rural areas have different comparative advantages for promoting agribusiness and agro-enterprises that could contribute for enhancing economic development and improving food security and nutrition.

## **5. Youth and Women to Promote Climate Smart Agriculture**

Climate change has direct impact in agriculture from different perspectives. Productivity, quality, resource use efficiency, marketing and food security are the major dimensions, which are directly affected by the climate change. The effects of climate change are projected to create new poverty traps, which will particularly affect those in vulnerable groups, such as women, children and young people. It is also now widely acknowledged that climate change impacts will not be gender neutral.

Escalating global effects of climate change are likely to increase food insecurity in vulnerable areas. Women play a pivotal role in the three components of food security: food availability, food access and food utilization. Meanwhile, men also play a crucial role in food production, although they face far fewer constraints



than women. Men are more likely to have access to productive resources such as land, credit and extension services. In cases of crop failure due to harsh climatic conditions, it is easier for men to leave their farms and search of employment elsewhere leaving women behind to struggle in agriculture to feed their families.

Taking into account gender considerations to address climate change (CC) challenges have been shown to be relevant to achieve equity of CC adaptation strategies (Nelson & Huyer, 2016; FAO, 2010). Indeed, CC consequences could reinforce gender inequalities. Three climate smart agriculture (CSA) pillars (productivity, adaptation and mitigation) need to be looked at gender equality criteria such as social norms, socio-economic factors, livelihoods, people's capacity and access to knowledge, information, services and support to understand intra-households decision making that can shape women's participation in more sustainable practices and implementation of adapting/coping strategies (Howland et al., 2019; Nelson & Huyer, 2016). Therefore, CSA practices have the potential to increase youth and women farmers' productivity and resilience, reduce or remove greenhouse gases, and enhance achievement of food security and development goals. The best technological innovations, management practices and interventions contribute both to climate change adaptation and mitigation. This ultimately hit the economic empowerment of women and youth in rural areas.

Shrestha & Bokhtiar (2019) suggested that the climate hazards in agriculture can be reduced with improved CSA approach consisting of developing stress tolerant and high yielding crop varieties, developing innovative technologies in consistent with changing climate, establishing enabling policy environment towards farmers, forecasting and managing early warning system, building capacity on adaptation and mitigation to climate change, and exploring employment opportunities of the people on farming and non-farming disciplines.

Employment for young people is a critical means for their social, economic, and political inclusion. Agriculture sector constitutes the most important source of employment for women in most of the developing country regions (FAO, 2011). By investing in climate smart agriculture and attracting young people into agribusiness, there is opportunity to address the multiple challenges of climate change. Therefore, young people including women are the carrier of innovative ideas and technologies, which they can promote in their local areas. They usually have great interest to work in innovative (technology driven) climate smart practices. Climate smart agricultural technologies help them to make their agribusiness more profitable and sustainable. Knowledge on climate risks, sensitivity to climatic hazards, adaptive capacity will increase the resiliency and

competitiveness of farmers in the agribusinesses. This will increase more attraction and motivation in the area of agriculture sector.

Finally, it leads to their empowerment socially, economically and politically. Youth and women can integrate and advocate for more and more climate smart methods, resilient practices and approaches for their agribusiness in different level of planning.

ICIMOD and Li-Bird (NGOs) have been developing the Climate Smart Villages (CSVs) in different districts of Nepal. Different CSVs have been developed by the groups of the farmers (youth & women) in support of these organizations. These CSVs have been found very fruitful and are being scaled up in many other places of the country.

## **6. Best Gender Sensitive Value Chains Practices**

The Government of Nepal has envisaged gender issues in different policies and program. The Nepal's Constitution has strongly spelled out inclusion aspect. Accordingly, gender/women issues have been addressed through different projects and programs in agriculture sector by Ministry of Agriculture and Livestock Development. Some of the major gender sensitive practices have been briefly explained below.

### **6.1 Case-1: Business literacy/ HVAP**

HVAP designed Business Literacy Classes (BLCs) to address the knowledge gaps between men and women beneficiary, and to develop the business-related knowledge and skills of women. At the first stage, 252 BLCs were conducted and benefited almost 7,000 women farmers.

#### ***Intervention***

BLC offered a comprehensive package of training on: i) Value chain development and commercial production; ii) Gender, social inclusion and institutional development; and iii) Business and entrepreneurship development. These courses focused on post-literate women farmers, and in each BLC a maximum of 27 persons were invited to participate. This ran during 48 days, with sessions taking place twice in a week for a minimum of 3 hours a day. The key strategy and intervention process considered different steps as:

- i) BLC resource books (3 module package) were developed using in-house expertise.
- ii) Priority was given to women-only/ women-led producer organization (POs) and POs with a high involvement of socially excluded and risk-averse households to conduct BLCs.

- iii) One-woman BLC facilitator (BLCF) selected with criteria: having higher secondary level education, priority to Dalit and Janajati women, and that is nominated by their respective PO. BLCF given a 7-day ToT course prior to facilitating BLCs.
- iv) In each BLC, 25-27 PO members were selected, with priority given to poor women and women from socially excluded groups or risk-averse households. However, BLC participants should be able to read and write their own names.

### **Key results**

**Knowledge and skills**—women have had a better access to training in technical, group management and business aspects. Active participation in the POs—including in VC transactions has deepened as a result of their increased confidence and new skills.

**Increased income**—most of farmer reported an increase in production area, productivity, and an increase in income by more than NPR 30,000 (€245).

**Family consumption patterns**—with increased income, women’s dependency on men has decreased and, in general, they have also been found to spend more on their children’s education, and also on buying more nutritious foods such as meat and eggs. The quality of their clothes and other basics has also improved.

**Participation in local politics and community works**—women’s involvement in decision-making, both within the POs and their households, has positively increased. For instance, 27% of the POs in Salyan and 35% in Surkhet are now headed by women. BLCs have also enhanced women’s political awareness and their leadership capacities. In Surkhet, for example, 50 former BLC participants/facilitators have won the local elections.

**Business and financial management**—BLCs have helped women farmers to maintain their business records by teaching them to use simple calculators, and have taught them to analyze their production costs and their profits and losses, in turn, increasing their bargaining power at the market.

**Technical services**—most importantly, BLCs have enhanced women’s technical skills to the point where some are now working as local service providers such as constructing plastic houses, seed storage, and dipping tanks, on a fee basis. For instance, Goma Budha, a former BLC participant of Devasthal, Salyan, charges NPR 4,000-6,000 for teaching CSV farmers to construct plastic houses.

## **6.2 Case- 2: Technology/HVAP**

High Value Agriculture Project has introduced very important women friendly technologies and equipments through its interventions. The project constructed total 11 solar lift irrigation in the different areas of the project. Farmers especially women had to go long way to collect irrigation water before the intervention. It was cumbersome to do the vegetable farming. Now the facility of solar lift-irrigation has been boon, especially for women to do vegetable farming and has been good source of income. Similarly, project constructed 1 gravity ropeway (capacity 2115 tons) in Kalikot district. This has increased the access of farmers (Rudu and Kamkhet production cluster) to the Khalanga market. Especially, the women farmers have found the distance of market very nearer. This has saved their time now. With taking their produces (apple) they go to market, sell them and come back by before 12:00 to their home. Likewise the project introduced gender sensitive tools and equipment for the agri-farming. They were mini-power tiller to plough the land for fresh vegetable, harvesting pol for apple, gloves, secateur and ladder for timur, solar dryer for ginger value chains.

## **6.3 Case 3: KUBK (Improved Seed for Farmer Program)**

- The operating guideline for contract bidder has made the provision that they should use the work force from the local area where the construction work is done. The contract bidder should ensure that male and female workforce is treated equally in providing the wage. Bidding documents clearly spells out this provision and have made mandatory.
- The program in its design document has targeted women beneficiary to be 50%. Due to different mechanism to promote the women farmers, the program has achieved 82% beneficiary.

## **7. Policies and Programs on Youth and Women in Agriculture**

The strategic importance of youth and women has been spelled out in different policy documents of Nepal. Government has given emphasis for women and youth participation in various aspects of agricultural development. The provisions for women and youth to be encouraged and empowered are briefly discussed below:

### **7.1 Constitution of Nepal (2015)**

The Constitution of Nepal is a milestone for gender equality and is a legal document for women's right. Similarly, the constitution promotes the youth participation in national development. Constitution (Article 38) emphasized the Rights to lineage, safe maternity and reproduction, protection against all forms

of exploitation, positive affirmation for opportunity in education, health, employment, social protection, equality in family matter and property. Some of the major provisions for women empowerment are: altogether 33% parliamentarians should be women and the President, Vice-President, House Speaker and Deputy House Speaker, Chairman and Vice-Chairman of the parliament should be different gender.

In line to the Constitution of Nepal, there are more progressive policies at present regarding women's land ownership. They are as follows:

- Tax exemptions of 25-50% (depending on geographical area) available to women during land registration, provided she does not sell the land within three years.
- Tax exemption of 35% for widows during land registration.
- Tax exemption of 50% when land is transferred within three generations of daughter or granddaughter.
- Joint Land Ownership which can be obtained for just NPR 100.

## **7.2 Fifteenth Periodic Plan (2019)**

The plan has an objective to create equal access of women in resources, means, opportunity and benefits establishing them in leadership role. Similarly, the plan has provisions to promote youth and women in enterprises and business development and provide incentives to increase the access to financial resources.

## **7.3 National Agriculture Policy (2004)**

The policy committed to achieve 50% women participation in every agricultural program as far as possible. It has provisioned the mobile agriculture training to reach close to village and homestead for women farmers. Similarly, policy ensures the flow of information and data regarding women participation. Regarding youth the policy seems very committed to provide training facility for educated unemployed youth to establish and run agribusinesses; priority to cooperative based agro-enterprise and business.

## **7.4 Agribusiness Promotion Policy (2007)**

The policy provides many opportunities for women, marginalized class and Dalit communities. It emphasized to implement the special programs for these group of people to establish and run the agribusinesses. It has made provisions like: credit flow on agribusiness-project based collateral; commercial program for educated unemployed person, retired person or group; tariff subsidy up to 75% for 10 years while importing agricultural machines, equipment, dairy

instruments; electricity subsidy up to 25% for cold storage, cold chain, cold chamber and chilling vat.

### **7.5 Youth Policy (2015) and National Youth Vision for 2025**

Regarding the employment of youth, the policy has envisaged many provisions. Few major provision are:

- In order to increase employment for the youth, entrepreneurship and skill-oriented and vocational trainings shall be provided.
- By creating employment opportunities within the country itself, emphasis shall be laid on agriculture, agro industries, tourism, energy and development of infrastructure.
- Opportunities of full employment for the semi-employed youth shall be created through modernization and professionalization of the agriculture sector.
- Business incubation programs shall be conducted to promote entrepreneurship among the youth.

### **7.6 Gender Mainstreaming Strategy (2006)**

The strategy emphasized to enhance women's skills in commercial agriculture and women's economic empowerment and institutionalization of gender issues at all levels focusing on women's participation in commercial agriculture.

### **7.7 Floriculture Policy (2012)**

The policy has encouraged women and youth to start flower production and flower market. Acknowledging the traditional knowledge and skills of women to use and conserve of agro-biodiversity, women are recognized as promotion of sustainable use of agro biodiversity in agro biodiversity policy, 2007 (First amendment 2014).

### **7.8 Agri-mechanization Promotion Policy (2014)**

The policy ensures the identification and promotion of women friendly agriculture machines and tools. Similarly, it promotes the machines and equipment that reduce the labor and drudgery. Other important provisions are: capital subsidy for the procurement of machine and equipment; premium subsidy for the insurance of machine operators; VAT or Tariff exemption in procurement of agri-transportation vehicles; tax incentives in annual renewal of tiller, tractor, tanker, refrigerator van and in their third party insurance.

### 7.9 National Seed Vision (2013-2025)

The vision provides 50% employments to women and poor, supports to minimize the entry barriers for women to value chain and improves women's income through value chain.

### 7.10 Agriculture Development Strategy (ADS)

The ADS is a comprehensive strategy for the overall development of agriculture sector of Nepal (2015-2035). ADS recognizes the women farmer and ensures the adequate budget provision for increasing access to productive resources and women's leadership. Further, it recommends equal wage rate for men and women in agriculture labor work. It emphasizes on qualitative participation of women in agricultural programs through strengthening the agriculture extension programs. One of ADS's vision components: inclusive agricultural sector has set target for the women's access to land and coverage of farmers including women by the extension program.

Table 9. Inclusion indicator and target of ADS

Indicators	Existing Situation 2010	Short Term (5 years)	Long Term (10 years)	Long Term (20 years)
Farm land owned by women farmer or joint ownership (%)	10 %	15 %	30 %	50 %
Farmer reached by agricultural program (%)	12%	17 %	22 %	30 %

Source: ADS (2015)

Similarly, the ADS has promoted the growth of small and medium agro-enterprises. Activities like tax incentives to stimulate investment in agro-based enterprises and establishment of “Agribusiness Incubators” are prioritized. Establishing matching grants to promote agro-enterprises innovations, through a number of initiatives are another important aspect of ADS. There are two Promotion Funds under ADS. Innovation Fund for agro-enterprises and coops, oriented to support public private partnerships, and commercial research and development. The core criteria for its usage: the proposal generates “additionality” in outreach to more farmers or primary producers with some form of innovation (product development, process, or technology) that leads to a measurable income increase for producers. Criteria for this scheme would include the need for proposals to have some matching funds from the private sector and coops as a way of ensuring that the research had relatively short term impact. This fund would only be available to private entities and coops.

Agro-Entrepreneurship Programs for youth, women, disadvantaged groups, and disadvantaged areas. In this case the matching grant will target different

groups in rural areas who intend to establish agro-enterprises. The matching grant can be combined with an agro-entrepreneurship capacity building program. Four agro-entrepreneurship programs are:

- a. Youth Agro-Entrepreneurship Program.
- b. Women Agro-Entrepreneurship Program.
- c. Disadvantage Group Agro-Entrepreneurship Program.
- d. Disadvantaged areas (e.g., Karnali).

Each agro-entrepreneurship program will consist of:

- a. A capacity building component in which prospective entrepreneurs are trained and mentored in establishing agro-enterprises.
- b. A competitive matching grant fund through which entrepreneurs can get access to seed money for establishing agro-enterprises in rural areas.

### **7.11 Gender Equality and Social Inclusion Strategy (2017)**

The strategy aimed to implement the gender and social inclusion related issues in ADS, government endorsed gender equality and social inclusion strategy. Gender equality and social inclusion strategy, 2017 recommends for women and marginal farmers targeted development programs for building access to agriculture inputs and services for income generation and capacity enhancement for leadership development.

### **7.12 Integrated Working Procedure on Subsidized Credits (2018)**

The procedure has been implemented through the budget speech of Fiscal Year 2018/19, the government introduced various interest subsidized loan schemes for targeted groups like returnee migrant workers, women entrepreneurs and earthquake survivors, among others. For this, Nepal Rastra Bank has issued 'Integrated Working Procedure on Subsidized Credits 2018'. These schemes include concessional loans of up to NPR 50 million for commercial agro and livestock farming, NPR 700,000 for educated self-employment youth, NPR 1 million for business projects promoted by returnee migrant workers, NPR 1.5 million for women enterprise and NPR 1 million for business promoted by members of 'Dalit' community. Others, who are eligible to get subsidized loans, are earthquake survivors (up to NPR 300,000 to rebuild their houses) and youth (up to NPR 500,000 for higher, technical or entrepreneurship education) (NRB, 2019a). The government bears 5% of interest rate on these loans, while the interest subsidy for loans for women enterprises is 6%. Bank and Financial Institutions (BFIs) are not allowed to charge premium of more than 2% points on their base rate for such loans.



For example, if a bank has a base rate of 10%, which is currently the average base rate of commercial banks, the lending rate will not be higher than 12%. Out of 12% lending rate, the government through the Nepal Rastra Bank (Central Bank) will bear 5% points while the borrower will have to pay 7% interest rates. BFIs will have to give decision on loan applications under these schemes within 21 working days.

### 7.13 Priority Sector Loans (2018)

*Monetary Policy 2018* has made mandatory provision for priority sector lending. The banks and financial institution should channelize their ascertained rate of total loan to the priority sector. The mandatory percentage of loan for different BFIs is presented in Table 10. This provision will help in increasing the investment in agriculture sector and by this the youth and women employed in agriculture can directly be benefited.

Table 10. Mandatory percent of loan for priority and deprived sector (2018/19)

Details	Mandatory (%)
Priority sector loan - Commercial Bank	25%
▪ Agriculture	10%
▪ Hydropower	15%
▪ Tourism	
▪ Export, SMEs, Pharmaceuticals, cement and garment	
▪ Public vehicles running on renewable energy	
Priority sector - Development Bank	15%
Priority sector - Finance Companies	10%
Deprived sector loan - Commercial Bank	5%
Deprived sector to total loan - Development Bank	4.50%
Deprived sector to total loan - Finance Companies	4%

Source: NRB (2018b)

### 7.14 Program and Budget of FY 2019/20

The government of Nepal has given special focus to youth program in agriculture. Total NPR 500 million budget has been allocated to attract youth in collective, cooperative and contract farming in agriculture. To promote the women in farm and off-farm businesses, accessibility in finance and credit is very much crucial. *Monetary Policy 2018* has made priority provision to women to develop the entrepreneurship through increasing their financial accessibility.

Similarly, Administrative Staff College of Nepal has been providing different trainings to government employees of different ranks. Recently the college has

prepared separate training manual for Gender and Social Inclusion (GeSI). It is Manual on Gender Equality and Social Inclusion and Gender Responsive Budgeting – for class II and class III officers of Nepal Government.

### **7.15 Institutional Framework**

Separate institutional mechanism for scaling out and scaling up the issue of women farmers in the country is very much needed. At present, there is Human Resource, Gender Development and Inclusion Section in the ministry of agriculture and livestock development. This section is the focal point of the women related issues of agriculture. Government of Nepal has recently established the National Farmers' Commission. The Commission is responsible to look after the rights of all the farmers including women. Nepal Agriculture Research Council's (NARC) *Strategic Vision 2030* for agricultural research has highlighted the importance of incorporating poverty, equity, and gender concerns in agricultural research. Under the NARC, Socioeconomics and Agricultural Research Policy Division (SARPOD) are looking after women friendly technology development aspect. Government of Nepal has been thinking to strengthen this division as a focal technical unit for addressing the gender issue in Agriculture. Similarly, Ministry of Women, Children and Social welfare, National Women Commission, Federation of Woman Entrepreneurs' Association of Nepal (FWEAN) are the major concerned institutions for the women issues.

## **8. Challenges and Opportunities on Youth & Women in Agricultural Development**

Government of Nepal in its *15<sup>th</sup> Five Periodic Plan* has envisaged 5.4% average growth rate of agriculture sector against the existing 3.4% (NPC, 2019). Within next five years, it has the target of achieving self-sufficiency status in major agricultural commodities. To achieve these targets, agriculture sector should come across different challenges. In general, small holding farmers; risk of climate change and natural disasters; out-migration and labour scarcity; land fragmentation and un-managed urbanizations; year-round irrigation facility; regular and quality supply of production inputs; market infrastructures are the major challenges of Nepalese agriculture sector. Especially, some of the major challenges being faced by youth and women have been given below.

### **8.1 Challenges**

- Credit facilities with ease access to be available to the women and youth farmers for agribusiness and agri-based enterprise development.

- Access of land to the women and vulnerable group of people for agriculture and vegetable production that helps to contribute in income generation and food security.
- Access, availability, affordability of quality inputs (improved seeds, breeds, tools & machines) to the smallholder and women farmers.
- Transforming subsistence to the market-based production and supports for processing technology.
- Agricultural marketing linkage of the farmers' products & market infrastructures including road network.
- Enhancing the competitiveness of agriculture sector reducing cost of production.
- Improve the gender sensitive value chain development initiatives with forward and backward linkage.

Capital is the primary source of investment in agriculture. But the farmers, especially youth who want to invest in agriculture with his/her innovative idea often find it difficult to access the required loan. Different administrative hurdles and collateral criteria has been the challenges for youth and small farmers. Similarly, another challenge is land availability and accessibility. There is no provision of land markets in Nepal. Many youth who are interested in agribusiness don't get the appropriate and sufficient size of land for their business. At the moment, many farmers either do have their own small farmland or have to find land on lease very hardly.

Quality inputs are the prime source of higher and quality productivity. Youth and women farmers are frequently encountered to find quality seeds, breeds and chemical fertilizers in right time and quality in assured way. Since mechanization plays very important role in efficiency of production, they are often costly and not appropriate to their farm size.

Government's extension service is very limited, which covers around 18-20% of the total farmers. Often new technology which caters the markets' demand for production are also very limited. There is huge gap in demand and supply of market oriented technology.

Agriculture production cannot be sustainable without its market. It is the incentive for the production. There are limited market services for rural agriculture production. Transportation facility, storage facility, market information facility are very limited. Unnecessary presence of middle man, their syndicate and un-transparent nature of agri-produce markets have ultimately resulted in low margin in the hand of farmers. Similarly, seasonal roads and remoteness of rural areas have also contributed to failure of market management

on the part of farmers. As a result, the cost of production is increased and made the whole agriculture sector less competitive.

## **8.2 Opportunities**

Despite the different constraints and challenges, still there is huge comparative advantage in agriculture sectors. With the new Federal Structure, all local government units have the power and the right to develop their own economic development policy. Government through its different program and policy has given the agriculture high priority. There is increased investment in the development of market structures like cold storage, whole sale markets, and ware-houses, and super-markets. Private sectors also have been attracted in E-marketing of agriculture products.

The network of bank and financial institutions has expanded in all 753 units of local governments. Lending in productive sectors like agriculture has been given high priority (15% in agriculture). Likewise, road networks are being expanded up to remote areas.

The MOALD and other line agencies have been implementing women and youth friendly policy, program and projects. To manage the agricultural land and check its continuous fragmentation, the bill of land use act is under consideration in the cabinet. Similarly, subsidy programs in agriculture insurance has given relief to most of farmer to manage their production risks. New technologies of production are being imported from private sectors and youth migrants. These all positive initiatives reflect the brighter picture for women and youth in agriculture and consequently significant impacts on improving food security and poverty reduction.

## **9. Recommendations**

Nepal has high comparative advantage in agriculture sector. To take the benefits of this opportunity and generate attractive employments for youth (men and women) in agriculture, and help to economic development and food security, following interventions are recommend at the highest priority.

- i) Research institute, university/ academy, specialized organization should strongly involve in technology development and the market-oriented researches.
- ii) Extension and research authority/ organization should give high priority in updating its training institute and develop technical staff, farmers, and concerned stakeholders in the agriculture value chain.

- iii) Agricultural Knowledge Centers (*Krishi Gyan Kendra*) under province should be developed as a **Center of Excellency**. They should also be established as a call center for farmers' daily problem.
- iv) For primary agricultural extension and different institutions like cooperative, business association, private sectors should be encouraged and mobilized.
- v) Benefits of ICTs and digital media should be developed appropriately. This can be used for produce marketing, price information, weather and climatic information.
- vi) Credit/ loan facilities should be client friendly. Innovative financial products need to be developed and issues of collateral and hassle process should be addressed.
- vii) Contract Farming Act should be in place comprising the land lease provision. This will assist in accessing the land for agribusiness.
- viii) Market services and facilities to be developed. Cold storage and warehouse facilities; proper, reliable and accessible market information (including prices) should be provided.
- ix) Cooperatives should be strengthened for production and marketing that increase the economics of scale in production and marketing in agriculture.
- x) Custom hiring system either by private or by public sector should be established that helps to enhance the mechanization in agriculture.

## **10. Conclusions and Way Forward**

Nepal has made tremendous efforts with strategic vision in agricultural development. However, result has not been achieved at par. A larger proportion of population are employed by the agriculture sector that contributed to improve the food and nutrition security at the household level and synergetic effects to economic development of the nation. Youth and women intend to seek their employment opportunity other than agriculture because of the perishable nature of agriculture—with higher risks, labor intensive, less profitability and little room for career growth. Due to this reason, young people triggered towards out-migration at the rapid trend and women compelled to handle the agriculture farms without having technology and skill. It implied that women's capacity building in agriculture technology could be an appropriate approach for agriculture development in the country. Furthermore, integrated approach of gender equity, technology advancement, access of inputs and access to markets

of the products is crucial in agriculture development. Therefore, the country should create conducive environment and formulate applicable policies that could contribute rural revitalization in agriculture and rural resource based enterprise development, and eventually that could contribute for the economic development and food security in the Country.

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## Chapter Seven

# Youth and Women in Agriculture for Economic Development and Food Security in Pakistan

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### Abstract

*Agriculture is the largest source of employment and livelihood in Pakistan. The outmigration of men for the better opportunities has increased the role of rural women in agriculture sector. The youth has moved out from farming to the non-farming sector (such as business, equipment parts repair, and service) that affected agriculture sector less productive with slow growth rate. The engagement of youth and women in agriculture can be increased by: i) Increasing access of agriculture inputs to women and youth farmers; ii) Improving extension service delivery to the targeted groups; iii) Promoting agro-enterprises in the agriculture value chain; iv) Enhancing access to soft-credit facilities to youth and women; v) Encouraging the private sector to enhance the employment opportunities; vi) Increasing the investments in agriculture from the public and private sectors; vii) Ensuring the markets for the farmers' products; viii) Introducing agriculture insurance scheme that could reduce the risk of the farmers against the crop failure; ix) Adopting of CSA technologies that could increase the resilience in agriculture against the climate change effects; and x) Implementing effective coordination among the concerned stakeholders along the value chain in agriculture. As Pakistan is agriculture based economies, strengthening youth and women contribute to enhance economic development and food security in the country.*

**Keywords:** Women and youth, investment, private sector, policy incentives, Pakistan

### 1. Background

Pakistan is an agriculture-based economy. Agriculture accounts for 19% of the Gross Domestic Product (GDP) and provides livelihood for 42% of the population. This sector is the major source of raw materials for industries in the country. Agriculture-based products account for around three-fourth of total export volume. Cereal and cash crops, including wheat, cotton, rice, sugarcane



and maize constitute a bigger share of the total value and enjoy an added importance due to their higher relevance in ensuring food security. Reliance of textile industry on cotton and export of rice has underlined continued focus on these conventional crops. The share of fairly neglected non-traditional crops—fruit, vegetables, condiments, flowers, pulses and oilseeds is around 10%, in spite of their higher value addition and profitability potential for the farmers and other participants at forward nodes of these value chains.

Over the years, poultry sector has evolved into a medium and large-scale industry, meeting the dietary needs of the population with higher efficiencies across the value-chain. But other categories of livestock sector have remained underdeveloped with millions of cottage-size cattle farms operating across Pakistan. In spite of their inefficiencies, these cattle farms are key source of income and livelihood for poor farm families.

Women are back-bone of the household economy and play a very significant role in agro-base activities in rural areas of Pakistan (Zaheer et al., 2014). However, women farmers are encountered with several constrained. The *Agriculture Policy of Punjab 2018* (GOP, 2018) identifies major challenges faced by the agriculture sector as: i) Underdeveloped marketing practices, where exploitative middleman enjoys high margins of the products; ii) Low yields, less farmers' share and low profitability to the farmers; iii) Lack of diversification towards high-value agriculture in spite of the growth potential; iv) Impact of climate change posing serious threat to agriculture and farm families; and v) Poor skilled human resources. These challenges have made the agriculture less competitive and low level of commercialization putting households dependent on agriculture livelihoods under increasing strain. There is a broad-based realization and acceptance that this sector needs structural changes and reforms (Sathar et al., 2016). However, this has yet to be translated into policy actions so the competitiveness and profitability can be restored. Harnessing the potential of rural women and rural youth has been identified as a key thrust of the agriculture policy, so that the growth resulting from the reforms are both inclusive and sustainable. This paper discussed the situation of agriculture, role of women and youth in agriculture and food system, constraints and challenges encountered by women and youth, and way forward to encourage women and youth in wider perspectives of agricultural development in Pakistan.

## **2. Situation of Youth and Women in Agriculture**

The agriculture sector is connected to all major manufacturing and service sectors and therefore the influence of agriculture is much larger than its current contribution in the GDP. Two-third of the population belongs to the rural areas

and are completely or partially dependent on the agriculture sector, hence the role of agriculture is critical in the well-being of the people. Pakistan is a country with a huge youth population (60% of the population) being under the age of 29 (30% in range 15-29 years). This bulge in youth population is resulting in young adults entering the labor market with unprecedented speed. Figure 1 shows the gradual decline in share of youth in working age population after reaching its peak in 2005. This translates into an increase in share of young adults in working age population beyond 2005, as the youth cross over into the adult age brackets. The huge young adult population can rise the growth rate if harnessed properly creating suitable opportunities with policy incentives for them.

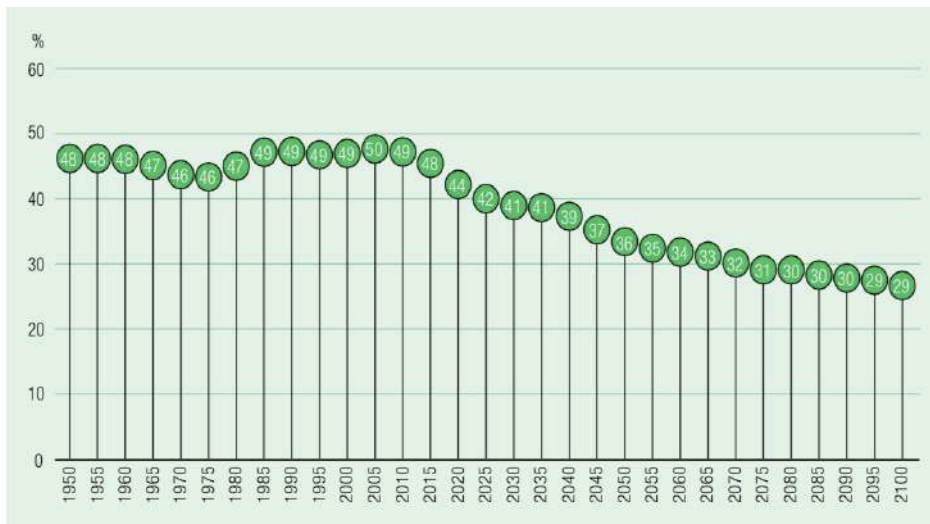


Figure 1. Share of youth in working age population

Source: UNDP (2018)

The involvement of youth in agriculture farming is decreasing trend. Generally, rural youth are not interested in farming activities because of traditional farming practices adopted, the low rate of return to the farmers from agriculture, and low education level of the rural youth. However, rural youth have started to engage in other areas of agriculture value chain including agro-services, agrotechnology and agro-processing sectors. This highlights the potential for creating new employment opportunities in entrepreneurship development for rural youth in these stated areas. Some specific examples for employment preferences of youth are in domestic marketing and trade of agricultural fresh products, handling the products as a middleman with certain percentage of commissioning, transportation of agriculture goods, agro-processing and farm mechanization services etc. Based on this trend of rural youth's engagement, the policy need to be formulated as per the preference of the targeted population.

The contribution of women labor force is much higher than that those of men counterpart (Table 1). The higher percentage of women involvement in agriculture is because of increased trend of men's outmigration for the seeking better opportunities in non-farm sector.

Table 1. Share of agriculture in workforce (%)

Year	Male	Female
2001/02	38.23	64.62
2003/04	37.98	67.21
2005/06	37.23	68.84
2006/07	36.44	72.37
2007/08	36.92	74.96
2008/09	36.95	73.71
2009/10	36.02	74.96
2010/11	36.02	74.96
2012/13	34.13	75.72
2013/14	33.71	73.97
2014/15	33.07	72.66

Source: PBS (2015)

The rural women have been dominated by men counterpart, while the participation rate of women in other non-farm sector has also been increase. The realization that their increased incomes can contribute in the well-being of their families and shift the socio-economic shift upwards. This shift requires focused supports for rural women in: i) Development of relevant skills and knowledge; ii) Financial inclusion and entrepreneurship development; iii) Improvement in connectivity with the input and output markets; iv) Policy incentive supports to women focused value chain developments; and v) Empower women in decision making level. The inclusion of rural women has also raised their influence and independence in operational and financial decision-making in economic and societal phenomenon.

### **3. Youth and Women in Agriculture for Economic Development and Food Security**

The role of youth and women in agriculture has been significantly considered in Pakistan (Begum & Yasmeen, 2011). There is a strong correlation between empowerment of rural youth & women and agricultural development. The agriculture sector and its associated value-chain is the largest source of employment opportunities in the country. The youth being the largest part of the population, directly or indirectly, are related to the agriculture (Eissler &

Brennan, 2015). The youth's participation in farming is low, but they are involved in value-chain sectors associated with the farming. Dependence of rural women in agriculture is much higher compared to men with 75% of rural women, including girls over age of 10 years, are being employed in agriculture. Growth and development in agriculture would mean economic and financial well-being of youth and women (FAO, 2015). Women focused programs including extension and training packages to be given in agriculture that improve the efficiency levels and enhance the household income, and eventually contribute the poverty alleviation (Shrestha et al., 2016).

The climate change poses serious threats to rural youth and women and therefore the CSA policy must have a clear role for rural youth and women. The role must be in design of CSA policy, by engaging them in policy discussion, and also in its implementation. Strengthening women and youth farmers with capacity building and policy incentives along with ease access to finance would contribute for increasing income of farm families and improve food security at the household level.

#### **4. Gender Sensitive Agricultural Development**

In the development sector, both governmental and NGOs often consider supply-oriented approach in gauging rural norms from their own urban standpoints and compared with global standards. The solutions and programs, which come out from supply-oriented approach i.e. rooted in outside biases on complex rural systems, are often ineffective or even counterproductive. Best gender-sensitive value chain practices must be based in compassionate understanding and inclusivity of societies in question.

The extract from the *Punjab Agriculture Policy (2018)* on a program being proposed for empowerment of rural women can be considered as a case study in best gender-sensitive value chain practices (UNW, 2018). The approach suggested in the policy entails to understand training needs of rural women, which makes it need responsive and demand-driven. The outreach mechanism by mobilizing women extension workers is suitable, as the trainings will reach 'close to home' for rural women. The deployment of women extension workers is helpful for the fact that many of them also comes from rural areas and have a better understanding of needs of rural women and will be cognizant of cultural contexts during the trainings. A value-chain approach is taken, with the trainings being offered in farming and value-addition of farm produce, while keeping them relevant to geographical clusters. The trainings will also include honing entrepreneurship skills of rural women.

## **5. Promoting Agribusiness Incubation Center—Attracting Youth and Women in Agriculture**

Rural youth are moving away from agriculture farming to other sectors in agriculture value-chain or into unrelated sectors for employments. The lack of technology and traditional nature of agriculture farming makes it less rewarding both in financial terms and also to feed their appetite for innovation and entrepreneurship. To address this, Agribusiness Incubation Center (ABIC) can be established with involvement of stakeholders from government agencies, financial institutions, private sectors and venture capital operations. Agribusiness incubators will take the form of comprehensive occupational schools, offering rural youth sufficient knowledge, experience, infrastructure, and means to become agribusiness entrepreneurs. This can have far-reaching effects, promoting the overall modernization of primary production, industrialization, and marketing and development of rural areas.

More specifically, however, an agribusiness incubator will create a mechanism to assist in the identification, adaptation, and commercialization of products from public and private agricultural research institutions and universities. From a development perspective, the goal of agribusiness incubation center will be to develop and commercialize new products, develop technologies, provide services to improve productivity at the farmers' fields, and increase the practical impacts of research conducted in academic and research institutions. Incubators provide a means of leveraging the significant resources invested in R&D and infrastructure, generating employment and income in rural areas, and ultimately creating wealth to support the livelihoods of the rural youth.

Establishment of agribusiness incubation center will promote entrepreneurship and innovation in agribusinesses through encouraging rural youth to take up agribusinesses and farming as occupation. The incubation center will help rural youth by providing an approachable entry into the world of agriculture entrepreneurship by tackling the high-cost and high-risk nature of innovation in farming and agribusiness sectors and through provision of a nurturing environment, where young entrepreneurs can fine tune their business ideas and hone skills in running agribusiness successfully.

The ABIC to be established with overwhelming objectives includes:

- Promotion of agricultural technologies developed by universities, R&D centres of excellence and the research institutions, separately and jointly.
- Help supports and develop competitive agribusiness sector through engaging rural youth for generating entrepreneurship and employment opportunities in rural areas.

- Develop new models for agriculture-based growth.
- Promote progressive farmer and agribusiness entrepreneurs for increasing agricultural productivity and ultimately agriculture growth.
- Transformation of traditional agriculture into a market oriented commercial agriculture leading to increase farm profits by integrating the resources and minimizing the production costs and maximize the profits.

It will help youth to gain the knowledge; make confidence to mobilize resources; connecting them to the land, technology, service providers, professional coaching and mentoring by seasoned entrepreneurs and progressive farmers. The participants will walk through each step of farming startup, including conception of idea, development of business plan with a feasibility study, execution of the plan for the farming and marketing of products, all these activities will be carried out under the support and guidance of subject experts and mentors.

## **6. Approaches for Promoting Youth and Women in Agriculture**

In Pakistan, some schemes are successfully adopted in promoting youth and women in agriculture based enterprises. These schemes are guided by **Three Strategic Pillars**: i) Improved service delivery through infusion of ICT with traditional services; ii) Promotion of agri-entrepreneurship; and iii) Adopting a value-chain development approach. The overarching principle governing the development approach is that all interventions must take into consideration of political and socio-cultural environment; economic and financial opportunities; and needs and preferences of rural youth and women at the country and local levels. This means that evidence based, research driven and need responsive approach should be adopted for strategic and programmatic level planning to ascertain that these are responding to the real needs and norms of rural youth and women. Meanwhile, a rational planning, and effective monitoring and evaluation mechanism is required for attaining set forth outcomes. Some of the schemes for promoting rural youth and women in agriculture-based enterprise development are briefed as follows:

### **6.1 E-Loans**

The linkage between formal financial sector with rural youth and women farmers is lacking. Especially, the poor people do not get the bank loan due to the requirement of bankable collaterals, difficult banking documentations and lengthy procedural requirements of the financial institutions. The penetration of micro finance banks at the rural areas remained less, in part due to low outreach and high interest rates for the borrowers, which makes financing unaffordable.

The informal sources of lending credit are few and exploitative. As a result, the rural enterprises have remained underdeveloped across the country.

The government in partnership with micro-finance banks has developed a digitalized solution for provision of easy credit or E-Credit. The ICT is applied to simplify complex functions of collateralization and other lending procedure. The registration is digitally integrated with data bases of Punjab Land Revenue Authority (PLRA) and National Database and Registration Authority (NADRA), which makes lending convenient and fast. The interest payments are subsidized by Government to encourage shift in the borrowing behaviors.

At the moment, e-credit is only being offered to the small farmers (including youth and women farmers), but the *Agriculture Policy (2018)* has indicated that e-credit will expand to offer targeted loans to rural youth and women with introduction of new financial products to meet their lending requirements. These can include financing for micro enterprises in agriculture value-chains, including agro-services, agro-technology and agro-processing.

## **6.2 Information, Advisory Services and Skill Trainings**

The availability of information, advisory service and skill trainings to rural population, including for youth and women is a huge challenge. The sheer size and geographical spread of the target groups makes provision of these services difficult for the public and private sector alike. The low education level, especially among rural women limit application of ICT tools and mobile technologies. Overall, only 35% of rural women between ages of 15-64 years are literate. The literacy rate of rural girls between 15-24 years is much higher (54%), which makes them better suited for provision of ICT based services. The rural youth, both girls and boys, has a higher literacy than adults demonstrating potential for deployment of ICT platforms for disseminating information, advisory and skill trainings for youth.

A combination of traditional and ICT-based services for provision of information, advisory services and skill trainings will be effective way forward. The traditional methods will include strengthening of Technical Education and Vocational Training Authority (TEVTA) and mobilization of extension agents in agriculture and livestock sectors, both in government and private sector, to reach out to rural youth and women in their communities. The ICT-based services can include SMS and *Robo* calls in local languages for less educated groups and website, apps and use of social media platforms for better educated recipients. The success of information, advisory and skills training is not only dependent on delivery methods and appropriate frequency and timing of messages, but also on quality and relevance of content. A research-based approach is recommended

to maximize effectiveness of information, advisory services and skills trainings through digital and traditional means. Development of strong databases is also recommended to make the deployment of ICT targeted and therefore efficient.

### **6.3 Investments in Agribusinesses**

The agriculture value chain in Pakistan suffers from lack of investments, which has kept the agriculture performs at lower than the optimal level, resulting in slow growth and unemployment. The investments have remained lower in both, inputs technologies and value addition sectors, owing to multiple factors including poor security, power shortages, lack of financing etc. The post-harvest value-addition is almost non-existent in the horticulture. The investment mobilized in processing of horticulture will generate new jobs and entrepreneurship opportunities for rural youth and women. Similarly, growth in input technology sector (seeds, fertilizers, information, financial services, farm-mechanization, etc.) will offer new opportunities in and around farming activities for rural youth and women.

The government has announced to introduce a matching grants scheme for promoting agribusinesses in the under-performing sectors of agriculture value chains to encourage mobilization of private investments. At least 97 of total 240 matching grants will be given to youth and women entrepreneurs. The investments mobilized through these matching grants will create jobs and entrepreneurship opportunities, including for youth and women living in rural areas. Matching grants is an instrument that provides supports to business entities, through a competitive process, to implement commercial activities and ultimately ensure markets to operate effectively. The concept of a matching grant is simple; the government will designate funds to high priority agribusinesses entity. The agribusinesses companies can apply for grant supports. The selected agribusinesses firms through competitive process will receive government's in-kind grants of up to 50% of project's cost in form of technology transfer (machinery, equipment and software) and technical assistance (business development and advisory services).

## **7. Policies for Empowering Youth and Women in Agriculture**

The *Agriculture Policy of Punjab (2018)* (GOP, 2018) emphasized rural women and youth as key beneficiaries for policy interventions and briefs on programmatic approaches for inclusive growth in the agriculture sector. The women extension workers mobilize to provide training in the rural areas, training content developed to meet the needs of rural women, and the trainings and extension activities offered close to their homes, develop capacity and skills of women farmers, increase wages to fair and equitable level of women labor. Women



farmers are encouraged through digital connectivity, awareness and capacity building, provide incentives for women entrepreneurs in marketing and value-chain activities, provide financial scheme, where interest free loans are being offered to the farmers using the mobile money operators and the lending procedures are simplified for easy access to formal credit. The women farmers could be empowered with integrated incentive packages consisting of education, agriculture extension and training, market access, and women focused programs that enhance the efficiency levels in vegetable production (Shrestha et al., 2015)

**The policy provisioned four broader strategic areas of focus for Climate Smart Agriculture (CSA):** i) Adaptation and building resilience to changes in rainfall and temperature, extreme weather events and unsustainable land/ water management and utilization; ii) Mitigation of GHG's emissions from key and minor sources in the agriculture sector; iii) Establishment of an enabling policy, legal and institutional framework for effective implementation of CSA; and iv) Minimizing effects of underlying cross-cutting issues such as human resource capacity and finance which would potentially constrain realization of CSA objectives. Federal and Provincial Governments continue to develop alliances and partnerships with International Development Agencies on women empowerment in agriculture.

## **8. Challenges and Opportunities on Youth and Women in Agriculture**

The FAO et al. (2014) based on regional and global studies highlights **key challenges for youth in agriculture:** i) Insufficient access to knowledge, information and education; ii) Limited access to land and finance; iii) Limited access to markets; iv) Less involvement of women and youth in policy dialogue; v) Higher risks of climate change in agriculture; vi) Gender disparity; and vii) Restrictive mobility of rural women and girl youth because of insecurity and socio-cultural norms of society. Thus, the further empirical studies required for finding out the exact action to be taken.

Furthermore, youth and women farmers are not availing financial access for developing agribusiness enterprises including production, marketing, and processing and value addition. Improved seed varieties are constrained to the farmers, which could contribute to increase 25-30% yield in agriculture. Huge resources to be allocated to the research centers and universities for developing high yielding and stress tolerance varieties of crops and animal breeds that could motive youth and women farmers to be involved in agriculture sector.

There is an increasing realization among policy-makers and stakeholders for the importance of the rural youth and rural women in the agricultural development.

This is evident from the *Punjab's Agriculture Policy (2018)*, which includes rural women and rural youth as the core beneficiary groups for policy interventions. The policy also provides information on programs and initiatives for inclusion of women and youth in the agriculture sector. These programs and initiatives are focused at entrepreneurship development, financial inclusion and capacity building. The agriculture policy also advocates on the use of digital media, in conjunction with the traditional means of communication to promote outreach and connectivity. However, it is difficult to gauge the impact of policy interventions at the grass root level at this early stage.

## **9. Recommendations**

Pakistan's agriculture sector suffers from low average yields making it uncompetitive in global competitiveness. The lack of knowledge and skill along with adopting less advanced technology in agriculture could be the reason for low yields. Access to information and advisory services is available for less than 20% of the farmers spread across the country. The availability of information and advisory services can be improved significantly and rapidly by strengthening of linkages between research, extension and farmers through application of ICT tools. The coordination and cooperation between public and private sector organizations for enhancing extension service can also be improved through ICT. With induction of women extension workers, improvement in literacy rate and infusion of information technology in the delivery of extension services, the rural youth and women can play a major role in improvement of yields. The specific recommendations for research and development, policy, and extension services for promoting youth and women in agricultural development include:

- i) Development and use of ICT platforms for data collection, analysis and dissemination of extension services.
- ii) Reliable data collection of soil, weather and water quality data across the country to formulate plan and policy inconsistent with demand of the targeted groups of people.
- iii) Develop technologies consistent with women and youth, geographical condition, and socio-cultural set up.
- iv) Make financial access to youth and women with easy procedure and subsidized interest rate for investment in agriculture including purchasing inputs, establish farms, production purpose, marketing and processing of the products.
- v) Establish Agribusiness Innovation Center and promote agriculture as a business to enhance commercialization and competitiveness.

- vi) The extension services need to focus to those interested youth and women with complete package including production, marketing and processing, and value addition.
- vii) Improve the quality and relevance of advisory services through linkage between research and extension, and development of knowledge banks.
- viii) Promote climate smart agriculture for adaptation and mitigation measure to climate change that reduce the effects of climate change events. Agriculture insurance scheme could reduce the risk of crop failure to the farmers.
- ix) Empower women farmers with gender sensitive planning, policy formulation, implementation, and monitoring & evaluation in the whole value chain process.
- x) Ensure markets of the farmers' products; raw, semi-processed and full processed.

## **10. Conclusions and Way Forward**

Empowering youth and women could significantly enhance the agricultural development that eventually contributes to improve the livelihoods and food security of the rural and urban people. Support packages from public, private, cooperatives and NGOs is imperative for agricultural development, particularly to the rural areas where poor, marginalized, women and youth are residing. There is a strong and multi-facet correlation between empowerment of rural youth and women, agricultural development, food security and economic development. The paper highlighted some important policies, strategies and programmatic responses for development of agriculture, particularly led agriculture by women and youth. The intervention should be: easy access to soft-loan availing facilities in the whole value chain of agricultural development foster the investment in rural agriculture; use of ICT in information management would contribute for better planning and forecasting of crops and livestock; encouraging the private sector and strong coordination with concerned stakeholders would enhance the production and marketing development; and adoption of CSA technologies would help to resilient agriculture against the climate change effects. Such policy and program interventions would be much useful for enhancing women and youth in agriculture value chain, and that eventually contribute to improve food security and foster the economy of the country.

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## Chapter Eight

# Youth and Women in Agriculture for Economic Development and Food Security in Sri Lanka

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### Abstract

*Sri Lanka is primarily agriculture based country where 70% of its population are engaged in agriculture. Agriculture sector contributes 12% to the Gross Domestic Product (GDP). Women in Sri Lanka form approximately 50.7% of a total population of 21 million. Attracting youth and women in agriculture labor force is of utmost important for the sustainable agricultural development and food security in the country. Among employed female, 30.4% are in agriculture sector, while this share is 25.1% for male. Unemployment rates in the age group 15-19 years was 20% in 2010, while it is 19% in the age group of 20-24. Female unemployment in this age group is higher than that those of male counterpart. The female and youth workforce can be utilized for agricultural development of the country by empowering individuals with conducive policies throughout the agriculture value chain. Technology, knowledge and skill should be provided to the women and young farmers and entrepreneurs for fostering the agriculture sector that would contribute for economic development and food security. Meanwhile, as young people are full of ideas, providing policy supports would contribute to addressing the challenges faced by farming communities.*

**Key words:** Agriculture, employment, food security, women, youth, Sri Lanka

### 1. Introduction

The island of Sri Lanka lies in the Indian Ocean, to the Southwest of the Bay of Bengal. It is separated from the Indian subcontinent by the Gulf of Mannar and the Palk Strait. Its position is between 79° 50' and 82° longitude and 6° and 9° 50' latitudes. The total land area of the island is 6.5 million ha. The population of 2017 was estimated as 21.4 million consisting of 10.4 million males (48.4%) and 11.1 million females (51.6%). Compared with countries of South Asia, Sri Lanka has a high population density of 0.35 ha per person. The climate of Sri Lanka can be described as tropical and warm. Its position between 6° and 9° 50' north latitude endows the country with a warm climate moderated by ocean winds and considerable moisture. The average yearly temperature ranges from 28 °C

(82 °F) to nearly 31 °C (88 °F). Day and night temperatures may vary by 4 °C (7 °F) to 7 °C (13 °F).

### 1.1 Agriculture in Sri Lanka

Sri Lanka is primarily agricultural country and 70% out of its population are engaged directly or indirectly in agriculture. Agriculture sector has been contributes 12% to the Gross Domestic Product (GDP). The significance of agriculture thus cannot be ignored because it constitutes the foundation of growth and stability of the entire economy. Agriculture in Sri Lanka can be divided in to two broad sectors, the export oriented plantation sector and food crops for domestic consumption. The plantation sector consists of tea, rubber, coconut and spice crops. The food crop sector deals with the production of basic domestic food requirement. Most of the cultivation in this sector is carried out by subsistence farmers and the average land holding size is less than 1 hectare. The area and production of agricultural crops is presented in Table 1.

Table 1. Cultivated extent and production of main food crops (2018)

<b>Crop</b>	<b>Land area cultivated (ha)</b>	<b>Production (ton)</b>
Paddy	791,679	4,420,085
Maize	52,544	52,544
Chilly	10,837	51,843
Potato	4,457	73,258
Ground nut	12,639	21,475
Vegetable	74,720	998,489
Fruits	150,000	3,000,540

Source: CBS (2018)

A few decades back, the population in Sri Lanka was relatively small and hence food requirements remained at a low level. Monoculture was practiced in a small extent. Mixed cultivation, where a number of different crops were cultivated on the same land was more popular. Thus, crops such as finger millet, maize were grown in a few patches and vegetables and chilies were grown as mixed crops.

With the increase in population, the world address the challenge of food security by increasing food supply to feed a growing population. The Green Revolution was launched through developing improved crop cultivars designated as high yielding varieties (HYVs). More land was brought under the plough and there was year round cultivation which provided food almost throughout the year for pests. With the developments of HYVs, natural pest resistance of these crops had disappeared. Pesticides and chemical fertilizers were recommended as a package to exploit the high yield potential of new varieties. People who invested in

agriculture made lucrative profits by cultivating large extents. New technologies developed were attractive to farmers and easy to practice.

### **1.2 Women Involvement in Agriculture**

Women in Sri Lanka form approximately 50.7% of a total population of 21.4 million. However, out of the total population economically active population is about 8.6 million in 2017. Of which, 62.7% are males and 37.3% are females. Out of the economically inactive population, 25.1% are males and 74.9% are females. Thus, almost 75% of the labor force constitutes economically inactive women. This implies that there is a large untapped reservoir of manpower that could be utilized for the development of the country, while empowering the individuals (i.e., females) and benefitting society as a whole. On the other hand, attracting more women into the labor force is of utmost importance, and given the fact that the majority of the population in Sri Lanka is female.

Women earn for their livelihoods predominantly through agriculture based activities in the rural areas. Due to their household activities, they have limited time to engage in farming and improve their knowledge and skill. Although women's contribution on production and processing of the products is considerably higher, while access to markets and involvement of women in the decision making process has limited opportunity. Empowerment of Sri Lankan women through agriculture farming will be helpful to increase national economy, and improve food and nutrition security. Existing policies and institutions for women in agriculture are not enough to cater the present needs. Women in agriculture face lot of challenges in the fields of religious, social skill and education. Therefore, new policies and institutions should be formulated to empower women to enhance agriculture development and to improve sustainable food system.

### **1.3 Youth Involvement in Agriculture**

The *National Youth Policy (2014)* (GOS, 2014) of Sri Lanka defines youth as between 15-29 years. It is estimated that the youth population in Sri Lanka is about 4.4 million or 23% of the total population based in 2017. The youth population by sex indicates that there is an almost equal distribution of 50.23% for males and 49.76% for females. Young people between the ages of 10-24 years make up nearly a quarter of the world's population today. This demographic dividend represents a golden opportunity for many developing countries to experience accelerated economic growth as a result of changes in the population age structure. But harnessing a demographic dividend is not automatic, and requires strategic investments in different areas productive sector focusing the younger farmers of the country.



Youth unemployment remains a critical issue for policy makers, youth and their families in Sri Lanka. Unemployment rates in the age group 15-19 years was 20% in 2010 and 19% in the 20-24 age group. Female unemployment in this age group is also higher than male unemployment. The National Youth Services Council (NYSC), known as Sri Lanka Youth, acts as the focal point for youth clubs and organizations. It delivers extensive programs including youth awards, education, sports, media, international youth affairs, skills and training. The NYSC organized the world conference on youth in 2014 and is a member of the Commonwealth Youth Council, which has a large organizational structure.

Many young people are not engaged in agriculture. The farming sector is risky, full of uncertainty, not profitable and rife with inequalities. Climate variability, land degradation and the high costs of inputs are just some deterrents. Young people are setting their sights on urban, non-farming sectors and overseas labor markets, or focusing on furthering their education elsewhere to seek securing better-paid salaried work.

Women-specific state agency is the Women's Agricultural Extension Program of the Department of Agriculture; it has a mandate in improving the living status of women farmers by increasing women's productivity and incomes in the agriculture sector. Under the theme of local food promotion program, local food sales outlets were established islands wide by Department of Agriculture with the guidance of Ministry of Agriculture. It has provided a means of professional employment for women in rural areas, equipping them with the ability to monetize their existing skills. Its main objectives are to promote entrepreneurship and food, with a focus on women for the former.

## **2. Programs on Youth and Women in Agriculture**

Program known as "Enterprise Sri Lanka" aims to support and nurture entrepreneurs so that the Sri Lankan trade eco-system transforms from import to export oriented. Objective of "Enterprise Sri Lanka" is to increase the number of entrepreneurs by 100,000. Project of Construction of Automated protected houses for the enhancement of high value vegetable production through the young entrepreneurs. Young farmers club of Department of Agriculture, launch project to supply financial assistant, necessary technical training to Young Agriculture Entrepreneurs

Most of the small and medium enterprises in Sri Lanka are agriculture based industries. Productivity levels of the agriculture sector could be improved through various actions such as the adoption of technology in commercial agricultural activities, the use of high yielding varieties and hybrid seeds. Further, with the entry into new trade agreements and restoration of certain

trade facilities, the industry and services sectors could focus on higher value addition through diversifying into niche markets and offering value added products to international consumers.

### **3. Youth and Women in Agriculture for Economic Empowerment and Food Security**

With the anticipated increasing role of the market economy, one of the major sources of women's empowerment must be their access to employment opportunities. Labor force participation rates for women have increased substantially over the last two decades and women now constitute one third of the workforce. This growth in women's employment has, however, generally been in the informal sector or in low-wage work. Wage inequality continues to discriminate against women to the extent of around 25%. Although education levels of women are relatively high, unemployment levels are still typically twice those for men. Despite the pioneering role of Sri Lanka in the appointment of women to positions of political leadership (i.e., the world's first female Prime Minister in 1960), the percentage of women in senior administrative positions remains below 10%. The orientation of the current education and training systems tend to perpetuate the employment of women in low-paying jobs and fails to recognize the opportunity and potential of educating women to be an engine of change towards the planned modern economy. This issue must be specifically addressed in future planning.

Women's contribution to agriculture and farm economic activities is unpaid. It is estimated that over 56% of the women work as unpaid family workers (CBS, 2018) with women's participation in planting, weeding and post-harvest work high. However, improvement in farm practices and technology adoption/mechanization has somewhat reduced this contribution. Women constitute the major labor force in plantation at 56% and total female labor force form the largest labor group in Sri Lanka. Women's work is intensive and time consuming. Nearly 68% women in agriculture work in plantations and more than 70% of rural women in subsistence agriculture (Sireerahan, 2014)). Additionally, women's workload has increased with expansion of plantations, changes to *Chena* and dry land farming with men concentrating on cash crop production and opting for wage labor where possible, thus increasing women's responsibilities for home maintenance.

Most of the Sri Lankan women are participated in agricultural sector rather than industrial sector. They perform numerous labor intensive jobs in agriculture production. Such as land clearing, land tilling, planting, weeding, fertilizer/manure application to harvesting, food processing and livestock management.

However, men moderately involve in harvesting and post-harvest operation due to the introduction and use of new tools and machineries in such operation. Even though, paddy cultivation is entirely done by men, women increasingly involve in land preparation, fertilizer management, irrigation, weeding, pest and disease control, harvesting and marketing in the cultivation of other field crops and fruits, which reflect a remarkable change in their traditional farming activities. Home gardening is also carried out by most of the women in rural and urban areas. Women play a major role in both vegetable cultivation and floriculture in the Western and upland Central and Uva provinces in the country. They are actively involved in land preparation, seeding, planting, weeding harvesting and preparation for market. In the dry zone areas they do contribute to seeding, weeding, harvesting and irrigation under agro wells and pump irrigation.

Livestock is an integral component of farming systems in Sri Lanka and women play a major role in raising livestock and poultry. The diminution of grazing livestock and moving to stall feeding due to stress on land has resulted in women apathetic livestock programs with improved stock that include to non-family income. This compensate for their less partaking in crop production. Cattle and goat raising projects have proved to be successful income generating performance for poor rural women. With regard to milk production there is several female lead the family groups actively pursuing this for livelihood. This also provides balanced nutrition for the family. All those work done by women enhances the family income. They produce about two third of total food which is quite rational to involve them actively in all agricultural development programs.

It is obvious that creating a conducive environment for youth to invest in agriculture could considerably increase the agriculture production that could contribute for improving sustainable food system to the farm families. Youth need to be engaged with their innovative ideas and aspirations. The supports to be given to those including women and youth, and vulnerable groups of people engaged in agriculture enterprises. Harnessing the skills and energy of youth in more innovative ways is crucial for the agricultural development that would eventually contribute for food and nutrition security.

#### **4. Gender Sensitive Agricultural Development**

Gender is an important cross-cutting area in agricultural development. Nowadays there are visible changes in women participation in agriculture production because of the greater opportunities, education and employment. Large number of skilled women labor force employed in various organization and societies. The status of Sri Lankan women is at a higher level than other

countries in the region. Sri Lankan women outlive men, enjoy high human development, and are recognized as equals under the country's Constitution. However, despite the advanced level of women, numerous inequities exist that prevent women from being equal partners in Sri Lanka's economic and social development. Women farmers are still struggling to perform their roles and activities in farming by unequal rights, access to and control over productive resources and cultural restriction imposed by gender.

Accordingly, the main goal of the gender strategy for Sri Lanka should be to ensure that the benefits of economic growth and poverty reduction accrue to women. In particular, efforts must be made to reduce women's unemployment by increasing women's access to employment and/ or productive assets. Lastly, the emerging issue of Sri Lanka's aging population is especially pertinent because women are starting to outlive men and there is real concern that the number of poor, elderly women will increase in the short to medium term.

The main agriculture sectors of tea, rubber and coconut employ more women in labor positions as pickers, tappers and coir workers respectively, while an insignificant number occupied in the management positions. From the total female work force, major portion engaged in the estate sector. Women earn less and work longer hours particularly in the estate sector. Women are participated in agriculture sector rather than industrial sector. They perform numerous labor intensive jobs in agricultural production, such as land clearing, land tilling, planting, weeding, fertilizer/ manure application to harvesting, food processing and livestock management.

In Sri Lanka, most of women of agriculture families work along with men on the farm as well. Despite their routine domestic work, women are very actively involved in agriculture production. They are very active in livestock management activities. Women in Sri Lanka also significantly involved in post-harvest operation in maize and pulse grains. The role of women is very significant in spite of many social barriers and constraints. They produce about two third of total food, which is quite rational to involve them actively in all agricultural development programs.

Majority of the population in Sri Lanka is female and attracting more women in to the labor force is of utmost importance. Increasing female labor force participation can be done in two ways; first is by attracting more women into the labor force as 'employees' and the second is by encouraging women to act as 'employers', i.e., more women entrepreneurs. Fostering women's economic development through enterprise promotion can have a positive impact in a number of areas. It enhances economic growth and provides employment opportunities; in addition, it improves the social, educational and health status

of women and their families as women invest more in education, health and well-being of the family. Despite all these possible benefits to the economy and the society as a whole, gender biases against women are common in the small and medium enterprises sector, a sector in which women should ideally be able to start up their career as entrepreneurs.

Most of the small and medium enterprises in Sri Lanka are agriculture based industries. Productivity levels of the agriculture sector could be improved through various initiatives such as the adoption of technology in commercial agricultural activities and the use of high yielding varieties and hybrid seeds. Further, with the entry into new trade agreements and restoration of certain trade facilities, the Industry and Services sectors could focus on higher value addition through diversifying into niche markets and offering value added products to international consumers. The gender gap in labor force participation narrowed during 2017, although the LFPR (Labor Force Participation Rate) still remains much in favor of the male labor force. The male LFPR was 74.5% during 2017, while the female LFPR was 36.6%. As such, females remain under-represented in the Sri Lankan labor force, despite increasing number of women attaining educational and professional qualifications. The main reason for economic inactivity of females, as identified by the Quarterly Labor Force Survey of the DCS, is their engagement in housework.

## **5. Policies and Programs for Youth and Women in Agriculture**

The *National Youth Policy (2014)* aims “to develop the full potential of young people to enable their active participation in national development for a just and equitable society”. **The policy focuses on nine areas for policy intervention:** i) Education; ii) Skills development and vocational training; iii) Youth employment; iv) Civics & citizenship; v) Youth work; vi) Health & well-being; vii) Social exclusion & discrimination; viii) Peace & reconciliation; ix) Arts, recreation, sports & leisure. As a member of the Commonwealth of Nations, Sri Lanka is a signatory of The Commonwealth Plan of Action for Youth Empowerment (PAYE) 2006-2015.

The Youth Development Division under the Ministry of Youth Affairs & Skill Development is responsible for youth affairs and is the “main institution” responsible for implementing the *National Youth Policy (2014)*. An inter-ministerial ‘Presidential Youth Development Commission’ is established in the *National Youth Policy (2014)* to monitor and evaluate the implementation of the policy. The Youth Development Division is also responsible for policies relating to youth development, including careers guidance, cultural programs, and international cooperation.

The crux of the discussion, however was not the interventions themselves, but how they could be tailored to address the specific issues facing young agro-entrepreneurs. For example, in a context where young people struggle to gain access to land, business models not only ensure high value output per hectare, but also create mechanisms for negotiation with elders or community leaders to access household or lineage owned land. Achieving positive outcomes for entire households and communities requires building mutual trust between generations and ensuring that the elder generation is aware of the potential returns from allocating land to youth for productive investment.

Similarly, the *Migration, Youth and Agricultural Transitions: Emerging Perspectives, Global Linkages* discussion forum held in May in Kampala, and led by WLE (Water, Land and Ecosystem), aimed to challenge the prevailing narrative that youth migration is responsible for the deterioration of rural agricultural livelihoods in East Africa and to explore what other perspectives exist on youth migration.

Research work regarding new agro enterprises can be carried out to introduce for women entrepreneurs. The most significant achievement has been the formulation of a Women's Charter for Sri Lanka by representatives of the Ministry of Women's Affairs (MWA) and other key ministries, as well as women's organizations who have been lobbying over the years on critical issues pertaining to women. The Charter is an adaptation of CEDAW to local needs and has seven sections— civil and political rights, rights within the family, right to health, right to education and training, economic rights, social discrimination, and gender-based violence

## **6. Challenges and Opportunities on Youth and Women in Agriculture**

### **6.1 Challenges for Youth and Women in Agriculture**

Sociologically speaking the role of women in the cultural context of Sri Lanka has always been misconceived. Constraints faced by the women in Sri Lanka are deep rooted in cultural values, normative patterns and customs, most of which are without religious and ethical sanction. Even though, the important role of women in agriculture, customary laws and traditional social norms has been prejudiced in favor of men, which constitute a barrier to women's impartial access to resources. Considering about religion, involvement of Muslim women are comparatively low in farming activities as a result of socio cultural restriction.

When considering the skill, new technology must reach to the women farmers for improved farming practices. Using technology, to a greater extent serves to ameliorate women's double burden and improve their quality of life. In the context of Sri Lankan situation, clearly shown planners and administrators have deprived many women of the knowledge and skills required for the modernization of agriculture by paying scant attention to the needs of the women engaged in farming. Especially in Mahaweli areas training in agricultural management and water management have been given to the head of the household thereby excluding women from gaining knowledge and skills. Women have moderate access and low control over farm tools due to lack of knowledge and skills on improved farm implements.

## **6.2 Opportunities of Youth and Women in Agriculture**

Every person has opportunity to get agricultural education and training in different levels. Post graduate or under graduate degree programs are available in many state's universities and private universities. Diploma or other training needed for entrepreneurs are available in Diploma Schools of Department of Agriculture and Technical Collages. Other short term training in many technologies and different subject areas are available in many regional training institutions of Department of Agriculture (DOA). Farmer training can be provided through extension and training center of DOA. Extension and training center of DOA include main training schedule to the annual plan and regional training centers also prepare annual training schedule. Entrepreneurs, framers or any person interested on any training can apply and participate to relevant training.

## **7. Conclusions**

Women in Sri Lanka form approximately 51.7% of the total population of 21.41 million. In rural areas women are very actively involved in agriculture production. These rural women earn their livelihood predominantly through agriculture based activities. However, their involvements in agribusiness activities are at low level due to many social barriers and constraints. Unemployed percentage of women is also high. Unemployment rates in the age group 15-19 years was 20% in 2010, while it is 19% in the 20-24 age group. Female unemployment in this age group is also higher than male unemployment. The female and youth workforce can be utilized for agriculture development of the country by providing policy incentives, technology disseminations, and capacity building. A national level policy intervention is required to create sufficiently conducive working conditions for females. To avoid social constraints new policies must be implemented. The introduction and implementation of labor

law reforms would play a prominent role in attracting the untapped, potential labor force particularly in rural areas of the country. Young people are full of ideas and it's most likely that, with the right support, they will be the ones to identify and develop the solutions to the challenges faced by farming communities.

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## **Report on SAARC Regional Expert Consultation on “Youth and Women in Agriculture: Economic Development and Food Security in South Asia”**

### **Introduction**

SAARC Agriculture Centre (SAC) organized a SAARC Regional Consultation on “Youth and Women in Agriculture for Economic Development and Key to Food Security in Future” in Kathmandu, Nepal on 9-11 June 2019. The program was jointly organized by SAARC Agriculture Centre (SAC), Ministry of Agriculture and Livestock Development, Nepal, Asian Farmers’ Association (AFA) and ActionAid Bangladesh. The objectives of the consultation were to analyze the women and youth engagement in agriculture for fostering economic development and security in South Asia.

The consultation meeting was attended by more than 30 participants from different institutions and organizations of SAARC Member countries- Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka, ActionAid and AFA. After the inaugural session, technical papers were presented from SAARC Member States followed by SAC, ActionAid, AFA and Farmer Organization.

### **Major Recommendations of the Program**

The major recommendations come out of the regional consultation meeting are:

- Farmers have less access to local, national and regional markets. As a result, they are not getting fair price of their produce during pick harvesting period. To avoid such situation the participants recommended the SAC and SAARC Member Countries should take steps to introduce delay sale loan for women and men farmer only.
- Unpaid care work is a major challenge for women farmers of South Asia. It prevents women farmers being empower economically from agriculture.
- Development of ICT platforms in country and regional level for data collection, analysis and dissemination among farmers of South Asia.
- SAARC Member countries and SAC should allocate budget for research & development (R&D) and extension linkages and building knowledge banks on climate change adaptation and mitigation in agriculture.

- Identifying, design and implement the new programs for women on agricultural entrepreneurs. Respective Ministry of the SAARC Member countries can take initiative to formulate the program.
- SAC and SAARC Members countries should set up the door step trainings on food processing and packaging engaging the Department of Agriculture Extension of each country.
- Strengthen climate resilient farming practices and bring in technologies so that youth and women farmer could use it and adapt with climate change shocks.
- Build links and coordinate among the government organizations, farmer organizations, and non- governmental organizations.
- Develop market information centre through conducting market research in countries and regional level.
- SAC should take steps to develop “Mission for Youth in Agriculture” and “Regional Platform for Youth in Agriculture”.
- SAC and SAARC Member countries should facilitate farmers and producers organizations development in countries and regional level.

## Pictures of the Program



## **List of participants**

1. Mr. Md. Abubakar Siddique  
Additional Secretary  
Ministry of Agriculture, Bangladesh.
2. Ms. Laxmi Thapa  
Senior Agriculture Officer  
Agriculture Research & Development Centre  
Ministry of Agriculture and Forests, Bhutan.
3. Dr. S.K. Srivastava  
Director, CIWA, ICAR  
Bhubaneswar, India.
4. Naahid Abdul Razzaq  
Agriculture Officer  
Ministry of Fisheries and Agriculture, Maldives.
5. Mr. Sirish Pun  
Senior Agricultural Economist  
Ministry of Agriculture and Livestock Development, Nepal.
6. Mr. Babar Malik  
Chief Technical Advisor  
Agriculture Department, Government of Punjab, Lahore, Pakistan.
7. Ms. T.M.P.G. S.P. Tennakoon  
Assistant Director  
Department of Agriculture, Peradeniya, Sri Lanka.
8. Ms. Proma Noore Jannet  
Program Officer  
Action Aid, Bangladesh.
9. Mst. Lizu Begum  
Farmer Representative  
ActionAid, Bangladesh.
10. Md. Helal Uddin  
Project Manager  
Action Aid, Bangladesh.
11. Ma. Estrella A. Penunia  
Secretary General  
Asian Farmer Association (AFA), Philippines.

12. Mr. Amirul Islam  
Operations Manager  
Asian Farmers Association (AFA).
13. Ms. Hasina Akter  
Group Member, Coast Trust, Bangladesh.
14. Ms. Lysa  
Asian Farmers Association (AFA).
15. Ms. Irish  
Asian Farmers Association (AFA).
16. Ms. Sarswati Subba  
Farmer Representative  
Central Tea Cooperative Forum (CTCF), Nepal.
17. Jignasa Pandya  
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18. Sangita Rathod  
Farmer, SEWA Reception Centre, Ahmedabad 380 001, India.
19. Saima Zia  
Coordinator, Crofter Foundation, Pakistan.
20. Shamila Rathnasooriya  
Manager, Program and Admin  
MONLAR, Sri Lanka.
21. Ms. Shazada Begum  
Chairperson, Asian Farmer Association, Bangladesh.
22. Dr. Md. Younus Ali  
Senior Technical Officer  
SAARC Agriculture Centre, Bangladesh.
23. Mr. Md. Abdul Kader  
IT Manager  
SAARC Agriculture Centre, Bangladesh.

## Biography of Editors



**Dr. Md. Yunus Ali**, born in Kushtia, Bangladesh on 15<sup>th</sup> August, 1972, is currently working as Senior Technical Officer, SAARC Agriculture Centre (SAC), Dhaka. He obtained his Doctoral Degree in Poultry Science in 2016 from the Department of Animal Husbandry & Veterinary Sciences of Rajshahi University, Bangladesh. He served as Head of Training, USAID Agricultural Extension Project under the Dhaka AM, Bangladesh. He worked in various organizations namely, Development Services Limited (ADSL), Concern Worldwide, Palli Karma-Sahayak Foundation (PKSF), Environment and Social Development Organization (ESDO). He published around nineteen research articles in internationally reputed journals.



**Dr. Rudra Bahadur Shrestha**, Senior Program Specialist (Policy Planning), SAARC Agriculture Center, Dhaka, Bangladesh. He served as a Senior Agricultural Economist and Head of International Cooperation Section, Ministry of Agriculture, Nepal; Cross Sector Advisor, Global Food Security Strategy, USAID-GON; Project Advisor, Peace Corps-Nepal; Chairperson, Nepal Rice Working Group; and Focal Point for UNDP, FAO, ILO, USAID, WB, ADB, Danida, SDC, JICA, IFPRI, IRRI, CIMMYT, DFID in Nepal. He has PhD in Agricultural Economics from the National Pingtung University of Science and Technology, Taiwan (2015); M.Sc. in Agricultural Economics from the University of Philippines Los Banos, Philippines (2009); Master Degree in Sociology (2003) and in Economics (1999) from the Tribhuvan University, Nepal. He served as Visiting Professor in Thai Nguyen University, Vietnam, and in Purbanchal University, Nepal. His areas of expertise includes agricultural economics; strategic policy planning; agriculture and food system; climate resilient agriculture; agribusiness, marketing and value chain; international trade; public private partnership; and farmers' right & smallholding agriculture. He was Secretary General, Nepal Agricultural Economics Society; published dozens of papers in different journals, book chapters, and edited books.



**Dr. Shaikh Mohammad Bokhtiar**, born in Chapai Nawabganj, Bangladesh on 1st January, 1963, is the Member Director (Programme & Evaluation), Bangladesh Agricultural Research Council (BARC) and is currently leading the SAARC Agriculture Centre as Director. He obtained his doctoral degree in Soil Science from the Graduate School of Agricultural Sciences, Ehime University, Japan in 2006. Later, he continued with post doctoral research at Guangxi Academy of Agricultural Sciences, Guangxi, People's Republic of China. In his carrier, he contributed immensely for agricultural research and development in South Asia and lead several challenging programmes for the regional integration and progress. He collaborated with multiple international organizations to introduce advanced and innovative technologies at the grassroot levels for the benefit of the South Asian farmers. Dr. Bokhtiar published more than sixty research papers in journals of international repute in addition to authoring several books, policy papers, book chapters and information bulletins.



**Ms. Fatema Nasrin Jahan**, Joined in SAARC Agriculture Centre (SAC) on 05 November 2013, is currently holding the position of Senior Program Officer, SAARC Agriculture Centre. She obtained MS in Soil Science in 2010 from the Department of Soil Science, Sher-e-Bangla Agricultural University. She also awarded BSc in Agriculture at the same university in 2007. Prior to joining in SAC, she served in the position of Research Associate, Department of Soil Science, BARI. She published around 05 (five) research articles in national and internationally reputed journals. In addition to authoring several books, chapters, technical bulletin and training manuals. She is also working as associate editor of the SAARC Journal of Agriculture.