APEC Workshop on Empowering Women in Remote Areas through Climate-Smart Agriculture for Sustainability and Inclusivity

APEC Policy Partnership on Women and the Economy

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Ha Noi, Viet Nam

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I. Introduction

In September 2024, the ***"APEC workshop on empowering women in remote areas through climate-smart agriculture for sustainability and inclusivity"*** was held in Hanoi, Viet Nam. The project was led by Viet Nam and co-sponsored by Peru; the Philippines; and Thailand. Speakers and participants came from the private sector, business associations, international organizations, research institutions, and APEC economies' relevant Ministries and government agencies. The workshop aims to improve capacity building for APEC member economies through sharing information, experiences, best practices in promoting women empowerment in pursuing climate-smart agriculture in general, supporting women to adopt climate-smart agriculture approaches in particular, addressing food insecurity and environmental challenges as well. It is in line with the La Serena Roadmap, promoting women's participation and contribution through strengthening human resources. It is also in line with the Food Security Roadmap towards 2030 which focuses on "transforming the food system and enhancing food security by mitigating and adapting to climate change" as well as sustainability to "minimize the food system's harmful impact on the environment.

II. Background

According to the Food and Agriculture Organization (FAO) Report, about 8.9% of the world population is facing with hunger due to severe food insecurity. The adverse effects of climate change (increasing temperature, weather variability, invasive crops and pests) has worsened the situation, resulting in reducing crop yields, nutritional quality of major cereals, lowering livestock productivity, and food loss and waste. On the reverse side, agriculture contributes to climate change with an estimate of 19 - 29% of total greenhouse (GHG) emission. In another word, climate and agriculture are of mutual effects, hence, an approach of climate-smart agriculture would help to promote agriculture in a sustainable and inclusive manner, contributing to addressing food insecurity, meeting climate goals and reducing stress on the environment. In that sense, climate-smart agriculture is an approach that helps guide actions to transform agri-food systems towards green and climate resilient practices (FAO). According to FAO, different elements of climate-smart agricultural systems include:

+ Management of farms, crops, livestock, aquaculture and capture fisheries to balance near-term food security and livelihoods needs with priorities for adaptation and mitigation.

+ Ecosystem and landscape management to conserve ecosystem services that are important for food security, agricultural development, adaptation and mitigation.

+ Services for farmers and land managers to enable better management of climate risks/impacts and mitigation actions.

+ Changes in the wider food system including demand-side measures and value chain interventions that enhance the benefits of CSA.

+ Addressing climate change and adopting climate-smart agriculture requires joint global efforts as well as experiences and resources (R&D, human resources, capital, technologies, etc.,).

On the other hand, it challenges economies, especially developing economies due to limited capability and resources. Through sharing information, experiences on how to promote the approach, this project would contribute to APEC efforts in pursuing food security through promoting climate smart agriculture (possibly including indigenous knowledge) for productivity, sustainability, and inclusivity.

In particular, the project would focus on the roles of women in rural and remote areas in adopting climate-smart agriculture given their participation and contribution in agriculture. According to FAO, if women farmers had equal access to productive resources, their farm yields would increase by 20 to 30%, contributing to reducing global hunger by 12 to 17%, keeping 100 to 150 million people from hunger. Representing a moderate proportion in the workforce, woman farmers can be a strong driver to promote climate-smart agriculture if they are equipped with proper knowledge and upskilling. They will not only be more resilient to climate change but also be likely to benefit from participation in carbon and biodiversity market, for example.

The project will contribute to building capacity for APEC member economies to promote climate-smart agriculture, particularly for women in the agriculture sector. This would contribute to the long-term goals to mitigating adverse impacts of climate change on agriculture, promoting agriculture development, and addressing food insecurity.

III. Key Issues

1. Overview of empowering women's participation in remote areas towards climate-smart agriculture

Mr Nguyen Anh Duong, Director, Department for General Economic Issues and Integration Studies, Central Institute for Economic Management (CIEM), Viet Nam:

Climate change is reflected by increasing temperature, changes in rainfall patterns, increases in extreme weather, etc., and hence, its severe consequences have increasingly become more complicated and adversely affected the global economy. Food security is one of the most emerging concerns under the impact of climate change. In the long term, the concern may be even larger as global population continues to expand (projected at 9.7 billion by 2050) coupled with limited resources for agricultural production. According to a Cornell-led study in 2021, global farming productivity is 21% lower in the presence of climate change (equivalent to losing 7 years of farm productivity increase since 1960). Under the pressure, many economies have already undertaken actions, including export prohibition to address food security.

APEC has made great efforts to address climate change including endorsing the Bangkok Goals on Bio-Circular-Green (BCG) Economy Model integrating economic approaches, where technology and innovation are used to create value, reduce waste, advance resource efficiency, and promote sustainable business models. APEC also promote practical, ambitious and concrete initiatives to transition to a climate-resilient future global economy including promoting sustainable, resilient, productive, and inclusive food systems and agricultural practices, achieving food security and nutrition, reducing food loss and waste, through encouraging environmentally-friendly policies and minimizing environmentally-harmful ones, conserving agrobiodiversity, and enhancing the use of agricultural biotechnology, digitalization and other innovative approaches.

While traditional methods for expanding food production risk further adverse impacts on the climate, as food systems constitute a leading source of methane emission and biodiversity loss, and consumption of fresh water, climate-smart agriculture is an integrated approach to managing landscapes, cropland, livestock, forests and fisheries, etc., that address the interlinked challenges of food security and climate change.

In climate-smart agriculture, empowering women is believed to play an important role in increasing pool of human capital for formalizing and more sustainable development of agriculture; ensuring inclusive development agriculture that works for and benefits women, thereby contributing to leaving no one behind; creating incentives for the broad economy and rural economies to embark on green transition; as well as demonstrating the renewed roles of women and agriculture, rather than just buffer for growth during adverse times.

Women's participation in climate-smart agriculture is strongly encouraged especially following the COVID-19 pandemic when APEC member economies find it compelled to undertake concrete initiatives to empower women economically (203 voluntary initiatives being reported in the La Serena Implementation Report in 2023). Climate-smart agriculture is seen as an important part of green recovery; thus empowering women can effectively demonstrate the role and contribution of this important group in APEC. APEC also promotes women's economic empowerment in climate-smart agriculture through sharing expertise and experience for formulating and implementing policies as well as allocating funding available for capacity-building activities on the topics related to women in climate-smart agriculture.

On the other hand, they also encounter several shortcomings and challenges. So far, most activities focus on empowering women through access to capital and markets, but less attention to other pillars of the La Serena Roadmap. Guidelines for green taxonomy and green finance are relatively new for several economies,

which may impede women to undertake climate-smart agriculture projects. Structural gender inequalities may also prevent women from effectively and/or swiftly responding to, adapting to or mitigating climate change impacts (e.g. unequal pay for equal work or work of equal value; possession of fewer and lower-value assets, etc.).

2. Identify concerns and obstacles that impede women in remote areas from adopting climate-smart agriculture

Dr Tzong-Ru Lee, Professor, Chung Hsing University (NCHU), Chinese Taipei:

As the challenges posed by climate change to agricultural production become increasingly severe, climate-smart agriculture is commonly defined by the Food and Agriculture Organization of the United Nations (FAO) as a practice that "sustainably increases productivity, mitigates and reduces greenhouse gas emissions as much as possible, and promotes the achievement of food security and development goals". Climate-smart agriculture is anticipated to play a crucial role in the future as a key solution to addressing food security issues and facilitating the transformation of agricultural systems. Climate-smart agriculture is not only an innovative agricultural model but also a critical line of defense for agriculture in the face of extreme climate crises and greenhouse gas emission reductions. It is expected to reduce the operational risks associated with climate change in agriculture while enhancing agricultural yields and income through sustainable practices. Additionally, climate-smart agriculture seeks to build resilience within agricultural management systems to adapt to climate change, reduce or avoid greenhouse gas emissions, and preserve ecosystems and biodiversity (Lipper et al. 2014). The goals of climate-smart agriculture are underscored by the FAO's emphasis on the "three pillars" of achieving

"mitigation," "adaptation," and "food security" (Chandra, Alvin, Karen E. McNamara, and Paul Dargusch, 2018).

In rural areas, women are crucial participants and drivers in agricultural operations. They bear significant responsibilities in agricultural cultivation and production and are vital pillars in sustaining household and community livelihoods. With their extensive farming experience and hard work, these women are essential to the transformation of climate-smart agriculture. However, the adoption of these new technologies and approaches presents numerous difficulties, making it challenging for them to fully implement climate-smart practices. Therefore, empowering rural women in the ongoing transition to climate-smart agriculture is one of the key elements needed to achieve sustainable development (Huyer S, Twyman J, Koningstein M, Ashby J, Vermeulen SJ. 2015).

In that sense, the speaker focused on identifying the barriers/challenges that impede women's participation in climate-smart agriculture, namely:

Barriers to Accessing Funding and Investment Capacity: The primary obstacle to securing preparatory operating capital for implementing climate-smart agriculture lies in rural women's ability to acquire funds and their investment capacity.

Challenges Due to Insufficient Support from Financial Institutions: Financial institutions provide insufficient credit support to female farmers, thereby limiting their ability to leverage and manage funds for long-term investments and expanding production scales.

Challenges of Rising Cost: The introduction of new agricultural technologies and the carbon market contributes to the annual increase in costs.

Challenges in Managing Intangible Assets: After adopting climate-smart agriculture, there is a need to understand and manage the protection of

intellectual property rights and the maintenance of cooperation agreements, as well as related trade secrets and data information as intangible assets.

Barriers to Managing Household Economics: Women who have never left rural areas generally have little or no control over or power to manage their family's finances, making the adoption of climate-smart agriculture even more unlikely.

Barriers Due to Social Gender Bias: When attempting to transform traditional agricultural management concepts through smart farming business models, discrimination and other socio-cultural pressures are frequently encountered as obstacles.

Barriers Due to Deep-Rooted Women's Discrimination in Rural Areas: Women's role constraints result in lower participation of women who have never left rural areas in agricultural decision-making. Their voices and needs are often overlooked.

Barriers Due to Restrictions Imposed by Traditional Family Ideals: Stronger leadership and resilience are required to withstand potential constraints from family expectations, succession duties, and community norms.

Challenges Stemming from the Full Responsibility of Family Care and Childcare: Women who have never left rural areas often have significant responsibilities for household chores and caregiving, which occupy much of their time and energy. This affects their ability and willingness to adopt new technologies.

Barriers in Intergenerational Communication: Communication barriers between traditional agricultural management models and the innovative smart agriculture business models.

Barriers to Adapting to Rapid Changes in the Smart Agriculture Market: Ability to rapidly adapt to the evolving agricultural market changes and trends following the global shift to smart agriculture.

Barriers to Land Acquisition and Utilization: Traditional land inheritance practices favoring males result in less favorable land acquisition and usage conditions for female farmers

Barriers to Changing Farming Practices: In rural areas, it is a common practice to engage in slash-and-burn agriculture, where large areas are cleared before planting, and after harvesting, the land is burned and relocated for new cultivation. This leads to increased air pollution and carbon emissions. Therefore, transitioning to climate-smart agricultural methods to change these long-established farming practices in rural areas will be a significant challenge.

Barriers Due to Lack of Continuous Agricultural Education and Training: Women in rural areas rarely have opportunities for continuous education and access to the latest information and knowledge in smart agricultural technologies.

Barriers to Creating Unique Agricultural Product Value: Women in rural areas, due to a lack of creativity and social constraints, have insufficient ability to create unique agricultural product values.

Barriers to Changing Agricultural Business Models: These women find it difficult to adopt new agricultural business models due to the support of their long-term loyal customers.

Concerns About Being Replaced by Artificial Intelligence: Concerns about traditional agricultural business models being potentially replaced by innovations such as climate-smart agriculture and artificial intelligence.

Barriers to Enhancing the Value of Local Agricultural Products: There is a lack of ability to enhance and promote the value of local agricultural products.

Barriers Due to Low Accessibility of Agricultural Technology and Equipment: Rural areas typically lack modern agricultural technologies and equipment, limiting the application of climate-smart agriculture.

Challenges Due to Lack of Knowledge Management Regarding the Negative Impacts of Climate on Agriculture: There is a lack of knowledge and management capacity to reduce agricultural greenhouse gas emissions and promote sustainable land and water resource management.

Barriers to Environmental Sustainability Awareness: Limited awareness of environmental responsibility and sustainability.

Challenges Due to Low Educational Attainment: Women in rural areas typically have lower levels of education, limiting their understanding and ability to apply new agricultural technologies.

Barriers to Acceptance of New Agricultural Knowledge: Women in rural areas lack flexible thinking and openness to new knowledge, and they find it difficult to adapt to changes in the operating environment and business models.

Barriers to Awareness of Agricultural Regulations: Women in rural areas lack awareness of agricultural regulations, which may lead to difficulties in complying with legal requirements. This can result in their rights being violated and facing legal risks, thereby preventing them from obtaining effective protection.

Barriers Due to Lack of Government Agricultural Policies and Resource Allocation: In rural areas, when the government lacks support for female agricultural workers through agricultural policies and resources, the challenges of social and cultural distrust towards these women farmers are exacerbated in the face of crop yield instability caused by extreme weather conditions.

Barriers Due to Insufficient Government Agricultural Subsidy Policies for Rural Women: Government agricultural policies and subsidy programs provide relatively insufficient incentives or preferential treatment for women in rural areas to engage in agricultural entrepreneurship.

Challenges in Agricultural Cooperation and Assistance: Women in rural areas are better suited for development through agricultural cooperative extension services and professional organization assistance. However, due to educational and technical barriers, as well as a lack of empowerment for women, they find it difficult to access government support and guidance related to agriculture.

Challenges in Accessing Information on New Agricultural Products: Women in rural areas lack access to channels for obtaining the latest information in the agricultural industry.

Challenges Due to Lack of Government Training and Support in Addressing Agricultural Issues: These women lack government training and support to develop resilience and stress tolerance, making them insufficiently equipped to use smart agriculture management to challenge traditional farming concepts.

Ms Dinh Bao Linh, Deputy Director, Information Center for Industries and Trade, Viet Nam:

Viet Nam is one of the economies most severely affected by the climate change. Natural disasters are increasing in both frequency and intensity, requiring urgent actions to promptly mitigate damage due to climate change. Viet Nam's coastal region is vulnerable to the combined effects of sea level rise and land subsidence. The coastal areas suitable for agriculture are shrinking, especially in provinces around the Mekong Delta, and farmers are forced to adopt new, climate resilient practices.

Under the pressure of urbanization, women roles in agriculture have changed significantly. Male migration from rural to urban centers affect women's welfare and their roles in rural communities in ways that it places an additional burden on women farmers, particularly on female-headed households. Women conduct their tasks and perform additional agricultural activities, such as tillage and pesticide spraying, adding to their existing workload" (UN Women, 2017). The

recent feminization of the agricultural sector should not be overlooked, as it has numerous implications for policymakers.

In recent years, Viet Nam has issued timely policies to respond to climate change in both mitigation and adaptation aspects. To adapt to climate change and ensure food security and agricultural sustainability, the Government adopted the “Viet Nam Target Program to Respond to Climate Change and Rising Sea Level” and the “Green Growth Strategy in 2011-2020, with a vision to 2050”. Viet Nam also joins the Global Alliance for Climate-Smart Agriculture (GACSA), contributing to promoting research, technology and policy approaches to climate-smart agriculture.

The Viet Nam’s Women's Unions in provinces have developed plans and activities to support the application of science and technology in production and market connection for agricultural products for ethnic minority women; introduce new production models and help them to access micro credit support. However, in practice, women are still facing many difficulties when working in remote areas with inconvenient transportation, and limited educational level.

Education is believed to be one of the important keys to help women obtain a better future, especially for those in remote areas. Since limited education and knowledge are among main obstacles that impede women in remote areas from adopting climate-smart agriculture, more efforts should be done to promoting sharing of information and knowledge to empower women in climate-smart agriculture.

3. Unlock bottlenecks for women's participation in rural value chains

Ms Dulce Blanca Tadle Punzalan, Lawyer-Social Entrepreneur-International Standardization Technical Expert, Women's Business Council Philippines (WomenbizPH).

As stated in the "The Unjust Climate" FAO report, "rural people and their climate vulnerabilities are barely visible in climate policies. Among 24 economies analyzed in the report, only 6% of the climate actions proposed mention women, 2% explicitly mention youth, less than 1% mention poor people and about 6% refer to farmers in rural communities. Of the total tracked climate finance in 2017/18, only 7.5% goes towards climate change adaptation; less than 3% to agriculture, forestry and other land uses, or other agriculture-related investments; only 1.7%, amounting to roughly USD 10 billion, reached small-scale producers"[1].

As climate change exacerbates the impacts of disasters, its effects on agricultural productivities often leads to the threats to farmers' livelihoods, especially to marginalized groups of women. Mainstreaming gender equality in agriculture not only helps to eliminate the disproportionate vulnerability of women, but also empower them to become effective agents of change and ultimately drive the agriculture sector towards growth and development. Approaches must be taken to benefit all stakeholders to ensure inclusive and sustainable development, and technology should be one of the key factors to be included since technology innovation plays an important role in promoting sustainable agricultural production and distribution, as well as effectively reduce the labor cost, which at the same time provide female farmers with more flexibility. In that sense, it is important to raise awareness of smart agriculture technology and its importance for women to adopt within families and communities. Enterprises will harness benefits if they soon promote technologies in the process of designing and

[1] https://knowledge4policy.ec.europa.eu/publication/unjust-climate-measuring-impacts-climate-change-rural-poor-women-youth_en

producing agricultural equipment; take into consideration the issue of bias and encourage research on “women-targeted innovations” to design smart equipment and infrastructure including facilitating women’s participation in e-commerce and/or multiple marketing channels.

It is stressed that to maximize the positive impact of off-farm opportunities, complementary services are essential. Investing in the collection of disaggregated data is essential to assess the impacts of different climate actions on vulnerable populations. The design and implementation of effective people-centered climate actions requires an understanding of the diverse drivers of climate vulnerability in rural areas. These drivers include barriers to the access to resources, services and employment opportunities that rural people can leverage to adapt to and cope with climate change. For example, some norms and policies place a disproportionate burden on women for care and domestic responsibilities, limit their rights to land, prevent them from making decisions over their own labor and hamper their access to information, finance and other essential services. Overcoming these challenges requires specific interventions to enable diverse rural populations to take climate-adaptive actions and avoid maladaptive coping strategies.

Rural people’s multidimensional climate vulnerabilities demand multifaceted policies and programs. These policies and programs must address the specific constraints faced by vulnerable populations. Linking social protection programs to advisory services can encourage adaptation and compensate farmers for losses. The ability to act on climate-related agricultural advice depends on people’s economic agency and decision-making power. Participatory extension methodologies can boost the participation of all people and result in a greater uptake of improved practices.

Dr Pham Thi To Oanh, Director, Viet Nam Cooperative Alliance (VCA):

Of 31,906 cooperatives in all sectors (agriculture, transportation, construction, commerce, services, environment, etc.,) in Viet Nam, agriculture cooperatives account for up to 66%, and women up to 48.2%. Women take an important role in Viet Nam's economy and policies, which include the promulgation of the 2023 Law on Cooperatives; the Resolution No. 20-NQ/TW dated 16 June 2022 of the Central Committee of the Communist Party of Viet Nam; the Decision No.01/QĐ-TTg dated 3 January 2023 of Prime Minister endorsing the plan to support women to start-up for the period 2017 – 2025; the three (03) Viet Nam Target Programs, namely: (i) New Rural Viet Nam Target Program; Viet Nam Target Program on Sustainable Poverty Reduction; and Viet Nam Target Program on Mountainous and Ethnic Development.

Women are recognized to play important roles in the smart agriculture in general, climate-smart agriculture in particular including in the accumulation and concentration of agricultural land, the formation of concentrated production areas and large-scale production areas; organizing collective activities to produce large, uniform and quality products to meet enterprise requirements and reduce production costs, competence in adopting technology innovation to pursue green and sustainable agriculture, and so on.

On the other hand, they encounter several difficulties in participating in and benefiting from the green and sustainable agriculture values chains. First, currently, the production scale is still fragmented with low quality and standard production, which is a result from lack of famers' (including women farmers) capacity to access the market. They mainly participate in low-value stages such as cultivation, collection, preliminary processing and export of raw products. They do not pay adequate attention and lack experiences in accessing market more efficiently through investing in branding, packaging, design, labels, and product traceability, etc. Besides, trade promotion activities and capacity

building programs to farmers and women farmers are not efficient enough to address the challenges and support them to access market.

It is recommended that supporting women should be prioritized and realized to harness their participation in the economy and agri-food chains, which include promulgating policies, proposing concrete solutions to mobilize internal resources for production, and providing necessary services to support women's participation in green and sustainable agri-food values chains, and so on.

She also shares some practical cases of women-led SMEs adopting climate-smart agriculture and their lessons such as how to promote links between farmer households through collective actions to organize production and promoting links with businesses along the value chains; or how to adopt digital transfer and technology advance to pursue climate-smart agriculture for enhanced productivity, and so on.

Ms Nguyen Huong Tra, Independent Consultant, Viet Nam:

In Papua New Guinea (PNG), women constitute 49% of the population (equivalent to 5.2 million in 2024). They play a central role in family and agriculture as well as bear burden of care and reproductive work. They are under the polygamy with a large family size and influenced by diverse clan system and clan ownership.

Women in PNG are recognized to encounter a big number of challenges including access to small arable land 2,000 m2/ HH due to low level of mechanization although large customary land available, only 13% electrification now though the ambitious goal to 70% by 2030, and droughts and increasingly severe climate change impacts.

The International Fund for Agricultural Development (IFAD) has deployed the "Markets for Village Farmers Project - Market Bilong Vilis Fama (MVF) Project" or GoPNG project for the period 2019 – 2026 to support farmers and women farmers in PNG to enhance productivity for a better life and

sustainability. The Department of Agriculture and Livestock (DAL) is the Project Executing Agency, while the Fresh Produce Development Agency (FPDA) is the Project Implementing Agency. The total project financing is USD 50.26 million (IFAD loan 25.5 million (50.7%), a government contribution of an estimated USD 2.85 million (5.7%), contributions from beneficiaries estimated at USD 1.21 million (2.4%), financial institutions USD 4.22 million (8.4%), and provincial and district governments are expected to co-finance USD 13.00 million (25.9%) for the road rehabilitation works.

With the increasing recognition of climate-smart agriculture, value chain development, and women empowerment, they make great focus on food processing, which contributes to reducing food waste and loss, improving fresh produce value chain development, replacing import, as well as adapting to climate change and empowering women.

4. **Identify resources to strengthen the capacities and empower women to adopt climate-smart agriculture**

Dr Phung Duc Tung, Director, Mekong Development Research Institute (MDRI).

MDRI carried out the Baseline Report on the Status of Empowerment of the Beneficiaries under the Netherlands Development Organisation's (SNV's) Funding Leadership and Opportunities for Women (FLOW)/ Enhancing Opportunities for Women Enterprises (EOWE) program, which is a 5-year women's economic empowerment program, funded by the Department of Social Affairs in the Ministry of Foreign Affairs of The Netherlands. The program's aim is to increase women's economic participation and self-reliance in Kenya and Viet Nam by catalysing a conducive environment for female entrepreneurship.

The SNV FLOW-EOWE in Viet Nam aimed to empower women in 4 disaster-prone provinces (Quang Binh, Binh Dinh, Ninh Thuan and Binh Thuan) by: (i) supporting vulnerable low-income women actors in agriculture and renewable

energy value chains, their households, and local communities; (ii) building upon existing initiatives that builds capacity for sustainability and empowers women in the household and economy, including those from women's unions, civil society organizations, agricultural cooperatives, and chambers of commerce. The baseline survey and focus group discussions (FGDs) on women empowerment were conducted with agriculture cooperative members and their spouses. The abbreviated Women Empowerment in Agriculture Index (A-WEAI) methodology is used to measure empowerment, with 5 domains (5DE).

According to the report, Viet Nam's women have a significantly higher workload than men, with the expectation of contributing to productive tasks while being the main family caretaker. Qualitative data from FGDs indicate that these expectations are perpetuated by both men and women, rooted in patriarchal, Confucian traditions. Majority of respondents (84% of women and 82% of men) are members of a group, namely agriculture groups, civic groups aimed at community improvement, and insurance groups. However, the majority of women surveyed felt that they had very limited influence on their community.

To address the issues, it is implicated that the first step in empowering women in rural and remote areas is to break down the barriers, which means to provide women with more financial autonomy and free time, and more opportunities for capacity-building and adopting climate-smart agricultural technologies (CSATs) through focusing on empowering women's capacity for leadership in cooperatives, associations, business and institutions, and enhancing the bargaining power of their agribusiness in markets; encouraging women to take a more active role and (co-)ownership of decisions around productive resources and assets. To transform relations within the household, advocacy interventions can work through direct lobbying, public campaigns, public education, capacity building, and creating alliances, and so on.

Dr Quilang, Eduardo Jimmy P., Officer-in-Charge, Deputy Executive Director for Research – Philippine Rice Research Institute, Department of Agriculture, the Philippines.

Women in the Philippines' agriculture encounter several challenges. Low quality infrastructure (e.g. insufficient source of irrigation water, dilapidated roads, etc.,) and lack of access to necessary services (e.g.: lack of pre- and post- harvest facilities, etc.,) hinder women's economic empowerment, especially in rural and remote areas. They have limited access to agricultural inputs and services due to high production costs and low price of agricultural crops. Women have unequal access to finance and markets. They lack technical skills and knowledge due to limited access to agriculture-related trainings, services, and technology as a result of social biases, hence impede them from adopting climate-smart agriculture.

The Philippines has identified the gender inequalities as well as challenges encountered by women in adopting sustainable agriculture and climate-smart agricultural practices to focus efforts in addressing the issue. They focus on prioritized agrarian reform areas to maximize resource allocation, complementation and mobilization for greater efficiency and impact, taking into consideration the limited financial and material resources of the Government. The efforts were made through focusing on investing in basic infrastructure and services, including through prioritizing investments in rural infrastructure such as roads, irrigation systems, and market facilities to improve women's access to markets and integration into the higher value chains; strengthening healthcare and education services in rural and remote areas to enhance women's well-being and productivity; enhancing access to finance to promote the adoption of technology and innovation. They also provided targeted financial services and market linkages for women farmers and entrepreneurs, including microcredit schemes, savings groups, and farmer cooperatives; promoted inclusive value chains that recognize and reward women's contributions and ensure equitable access to market information and opportunities. With the approach to develop

technical skills and knowledge, the strategy focused on investing in agricultural training, extension services, and technology transfer programs that target women farmers and agri-preneurs, fostering women's leadership and participation in agricultural organizations and decision-making processes in pursuing sustainable agriculture through capacity-building initiatives and mentorship programs.

5. **Improve women's access to skills and technology for climate resilience**

Dr. S. Sarpaneswaran Subramaniam, Director, C&G Analatica, Malaysia:

With a focus on ASEAN, the speaker shared ASEAN related initiatives related to addressing climate change including the ASEAN Climate Change Initiative (ACCI), ASEAN Working Group on Climate Change (AWGCC), ASEAN Framework on Climate Change on Agriculture. The ACCI aims to enhance the resilience of climate change and promote sustainable development. In practice, ASEAN members remain a big gap in enforcing regional policies, inconsistent implementation across member states, and lack of regional coordination in data sharing. The AWGCC aims to adopt a unified approach to tackle impacts of climate change. However, they have limited focus on vulnerable groups, remain funding gap for climate resilience initiatives, and limited access to latest climate-resilient technologies. The ASEAN Framework contributes to developing and promoting agricultural practices across the region to ensure food security and sustainable agricultural productivity. In practice, they also encounter a number of challenges related to implementation across member states, including not addressing specific needs of vulnerable groups affected by climate change, and lacking comprehensive monitoring and evaluation.

It is recognized that ASEAN has challenges in access to skills and technology, which are believed to result from societal norms, education barriers, lack of gender-sensitive training programs, high costs of technology, limited access to credit and financing, low digital literacy and digital divide.

It is recommend that women should be facilitated to access skills and technology to adopt climate-smart agriculture, including: (i) promoting STEM education for women (scholarships, mentorship); (ii) integrating climate education into curricula (build awareness and skills); (iii) bridging the digital divide (subsidies to access technology); (iv) promoting access to climate-related technologies (partner with technology providers); (v) developing social protection programs (income safety nets); (vi) strengthening local community networks (sharing knowledge, resources and support).

Mr Bui Van Tung, Researcher, Northwest Agriculture and Forestry Research Center-Northern Mountainous Agriculture and Forestry Science Institute (NOMAFSI):

The Northern Mountainous region (NMR) in Viet Nam includes 14 provinces with a land area of 117,000 km2, accounting for 35% of Viet Nam. The population has more than 30 ethnic minority groups, approximately 15 million people, accounting for 15% of Viet Nam. Agriculture plays a main economic role with mainly small-scale farmers in terms of labor and production. Approximately 74.6% ethnic women work in agricultural sector, 6% higher than that of ethnic men. They are influenced by social norms that women should be responsible to housework.

In agriculture, women face a number challenges such as unsafety production under traditional practices accompanied with overuse chemical inputs that do not meet the demand of high-value markets; small-scale farmer production, fragmented areas, which are not concentrated, hence difficult to supply big quantity; limited production level skills with limited production plan, lack of capital and knowledge about technologies, which lead to low productivity; heavily reliance on weather and affected by climate change; lack of market information and weak linkage with the markets, unstable and low prices; less access to new information and technology than men. In particular, they encounter

challenges related to uptake of technology such as difficulties in applying digital tools including in operating irrigation system (e.g. how to set up for automatic operation, fertilizer mixing rate in the drip irrigation system, etc.,), and e-commerce, etc.

To enhance women's productivity and capability in adopting climate-smart agriculture, it is recommended to implement some of the following strategies, namely: (i) providing training and knowledge for both men and women in accordance with local needs, languages and cultures (such as training on how to build fanpages, labels, product packaging, how to access market information and promote advertising in social media; how to operate automatic control machinery in processing produces, greenhouses, automatic drip irrigation systems in production; etc.,); providing and introducing new technologies, and sharing success stories; establishing and participating in social, farmers organizations, farmer cooperatives to create a network for women; policy support from the government such as prioritizing loans for women in technology adaptation; and so on.

Ms Rahmi Khalida, Nutrition and Gender Consultant, International Fund for Agricultural Development (IFAD):

Under the IFAD Policy on Gender Equality and Women Empowerment Strategy, they focus on promoting economic empowerment to enable rural women and men to participate in and benefit from profitable economic activities; enabling women and men to have equal voices and influence in rural institutions and organizations; and achieving a more equitable balance in workloads. Among the strategies to implement, they focus on supporting women to access production technologies to obtain a sustainable food availability in village/community level. First of all, it aims to raise climate change awareness, which bring an understanding of the current situation due to climate change and the risks to rural agriculture farmer's livelihood. The uptake of climate-smart agriculture

technology can include village/community-based food demonstration plot (nursery, production site, and post-harvest facilities); crop diversification to support nutritious food supply for the household and community; a small greenhouse; water storage facilities & water sprinkle; organic fertilizer; integrated farming; etc.

The strategy for improving women's skills and technology in production might include farmer field school for seasonal high value crop (targeting on women commodities); women farmer group institutions, which significantly contribute to increasing a number of women receiving knowledge and production technology (UPLAND project report 2022); community-based demonstration plot, which has shown good results on spreading impacts of knowledge and technology in rural areas in Indonesia.

With the strategy to support for women's access to finance services, IFAD aims to improve women and men's knowledge and skills on financial instruments and financial management. They have carried out financial literacy training with family team approach when farmer households can learn about crop and household financing, making budget and finance recordings, financial instruments and/or how to use credit for production and climate insurance, etc.

IV. Discussion, Recommendations and Conclusions

Through the active sharing of information and experiences at the Workshop, speakers and participants exchanged views on how to empower women in remote areas through climate smart agriculture to help ensure sustainability and improve inclusivity and productivity. Recommendations are summarized as below:

1. Recommendations for business

- Women and/or women-led MSMEs should raise the awareness of importance and trend of sustainable agriculture, hence, take an active approach and strategies to pursue climates-smart agriculture such as making

strong commitments to the transition; transforming the commitments into workflow in practice; etc.

- Women and/or women-led MSMEs are encouraged to invest and adopt CSATs, as well as seek support to have more financial autonomy and decision-making power.
- Proactively engaged in collaborating with various governmental, non-governmental, local, and international groups, etc., to empower women to adopt climate-smart agriculture as well as raise their voice to be heard and have influence on the community.

2. Recommendations for APEC member economies/governments

- It is important to raise public awareness of importance and/or benefits of climate-smart agriculture and women participation in climate-smart agriculture.
- Promptly develop and enact climate-smart agriculture policies, including a proper emphasis on women's land tenure security.
- Incentives policies and PPP efforts are needed to help women in remote areas to take advantage of technology wave.
- Promote capacity building and provide technical support since training and constant technical support have proven to be highly effective in encouraging women in rural and remote areas to adopt climate-smart agricultural technologies. Beyond that, various extension services (be it within or outside of agriculture) should be the focus for stakeholders to build sustainable climate-smart agriculture practices.
- Make efforts to offer female workers in remote areas equal opportunities as well as improve their working conditions, access knowledge and technologies to adopt climate-smart agriculture.
- Increase women's access to formal finance to invest in climate-smart

agriculture.

- Promote adequate monitoring mechanism to support empowering women in climate-smart agriculture.

- Roles of multi-stakeholders can be consolidated through promoting collaboration and cooperation; creating frequent and adequate mechanisms or networks to support climate-smart agriculture and women participation in climate-smart agriculture. By leveraging the diverse expertise and perspectives of various stakeholders as well as securing access to the right financial resources, we can enable the transition to a more sustainable future.

3. Recommendations for APEC

- APEC should lead a more active role in promoting climate-smart agriculture and especially women participation through sharing knowledge, experiences, best practices, or training programs.

- APEC can also champion to promote stronger international cooperation and robust policy development to foster climate-smart agriculture in the region in general, women participation in particular.

- Encourage APEC members to conduct sound research to identify the needs of female farmers, especially those in remote areas.

- Encourage public-private partnerships to design women- and age-responsive initiatives of smart agriculture, and ensure the initiatives are accessible for the target audience.

- Increase female farmers' participation through promoting and developing communities and networks to ensure they can benefit through the adoption smart agriculture technology.

- Work with APEC's Emergency Preparedness Working Group and promote disaster education and training programs to equip female farmers with knowledge on emergency response.

Hereinabove are some recommendations from the workshop's participants and speakers that require further thoughts and discussions at the upcoming PPWE meetings to transform into more concrete and practical activities.