

Best Practices on Women's Participation in Global Value Chain of Agricultural Products Toward Sustainable Development

APEC Agricultural Technical Cooperation Working Group

April 2026



**Asia-Pacific
Economic Cooperation**



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TABLE OF CONTENT

ABBREVIATIONS AND ACRONYMS	iv
LIST OF TABLES AND FIGURES	v
CHAPTER 1. INTRODUCTION	1
1. Background and rationale	1
2. Objectives of the report	2
3. Analytical framework and research methodology	2
CHAPTER 2. WOMEN’S ROLES IN AGRICULTURE AND THE TRANSITION TOWARDS SUSTAINABLE DEVELOPMENT IN THE APEC REGION	5
1. APEC regional overview on women’s participation in agriculture	5
2. Gender roles in transition to climate-smart and sustainable development of agriculture	7
CHAPTER 3. GENDER GAPS, UNDERLYING BARRIERS TO GENDER EQUALITY AND WEE IN AGRICULTURE, AVC IN THE APEC REGION	14
1. APEC economies’ global ranking on gender gaps	14
2. Access to capital and assets	15
3. Access to markets	18
4. Skills, capacity, and health	20
5. Leadership, voice, and agency.....	22
6. Innovation and technology	23
CHAPTER 4. BEST PRACTICES FOR CLOSING GENDER GAPS AND EMPOWERING WOMEN IN AGRICULTURE AMONG THE APEC ECONOMIES	26
1. Access to asset	26
2. Access to market	29
3. Skill, capacity, and health	35
4. Leadership, voice, and agency.....	39
5. Innovation and technology	44
CHAPTER 5. POLICY AND ACTION RECOMMENDATIONS FOR BETTER WOMEN’S PARTICIPATION AND WEE IN AGRICULTURE IN THE APEC REGION	51
1. Transitioning to a more gender-responsive, comprehensive legal framework.....	51
2. Strengthening gender-responsive and accountable institutions	52
3. Making climate-smart, sustainable agriculture development policies and programs more gender-responsive and gender-inclusive	52
4. Enhancing regional cooperation on gender equality and sustainable development of agriculture	56
CHAPTER 6. CONCLUSIONS	58
ANNEXES	59
BIBLIOGRAPHY	65

ABBREVIATIONS AND ACRONYMS

APEC	Asia-Pacific Economic Cooperation
ATCWG	APEC Agricultural Technical Cooperation Working Group
AVC	Agriculture Value Chain
CSA	Climate-Smart Agriculture
FHHs	Female-headed households
GBV	Gender-Based Violence
GGGI	The Global Gender Gap Index
GRB	Gender-Responsive Budgeting
GTAs	Gender Transformative Approaches
HLPDAB	APEC High Level Policy Dialogue on Agricultural Biotechnology
ICT	Information and Communication Technology
MHHs	Male-headed households
OFWG	APEC Ocean and Fisheries Working Group Meeting
PPFS	APEC Policy Partnership on Food Security
PPWE	APEC Policy Partnership on Women and the Economy
SIGI	Social Institutions and Gender Index
STEM	Science, Technology, Engineering, and Mathematics
WED	The APEC Women and the Economy Dashboard
WEE	Women's Economic Empowerment

LIST OF TABLES AND FIGURES

Table 1. Five pillars of women's economic empowerment in the APEC region.....	2
Table 2. Share of female in total employment in agriculture of some APEC economies.....	5
Table 3. CSA technologies and practices in the rice and vegetable value chains.....	9
Table 4. Key contributions of women to the agriculture sector's transition towards a low-carbon economy: Views from the APEC member economies	12
Table 5. Gaps of access to finance services, inheritance rights, land and non-land assets in the APEC economies	15
Table 6. Gender gaps in agriculture as responded by six economies	16
Table 7. The significance of gender barriers in AVCs as responded by six economies	17
Table 8. Percentage of female having loan from a financial institution by economy	17
Table 9. Snapshots of APEC gender gaps in access to market	18
Table 10. Snapshots of APEC gender gaps in skills, capacity & health	20
Table 11. Graduates in Agri., Forestry, Fisheries & Veterinary (%).....	21
Table 12. Snapshots of APEC gender gaps in leadership, voice & agency	22
Table 13. Snapshots of APEC gender gaps in innovation and technology	24
Table 14. Economy's top three priorities for closing gender gap and empowering women.....	54
Table 15. Policy recommendations proposed by APEC economies.....	55
Table 16. APEC framework for advancement of gender equality	56
Table 17. Recommendations for regional cooperation mechanisms for promoting WEE in AVCs across APEC.....	57
Figure 1. GGGI score and ranking of the APEC economies in 2025.....	14

CHAPTER 1. INTRODUCTION

1. Background and rationale

APEC's agriculture sector has immense potential to ensure food security and tackle gender inequities, and meet the climate challenge. Women comprise a large proportion of agricultural labor in APEC region's agriculture in particular and at the globe in general. Women are often engaged only as laborers, seldom own land for collateral, are less educated/literate, and face burdens especially due to care for out-of-school children or sick household members. As men migrate to cities for work, women are increasingly the head of households and are vulnerable to climate and economic shocks with limited time and finances.

This project is to facilitate a transition to a low-carbon economy in APEC's agriculture sector that promotes livelihoods and green job opportunities for women, which demonstrates that empowering women farmers, women landowners, and women entrepreneurs in APEC is an essential component for economic growth and competitiveness, and a pathway for decarbonization and climate resilience. Because women's experiences are poorly understood and under-documented, many interventions to increase women's empowerment in agriculture value chains (AVCs) often fail: Field agents train the male farmer, assuming that he makes household and farm decisions. Yet, women in Asia and Pacific region, particularly in developing member economies are often responsible for household and farm spending, agricultural labor, and community relations. Meanwhile, the training aimed at women might not be informed by best practices for gender-responsive delivery (adapted to literacy rates, and child-care needs).

Interventions should be designed to close gender inequalities and empower women. Interventions are more likely to bridge gender gaps in agri-food systems and bring about positive and lasting improvements in women's welfare when they integrate explicit actions towards gender equality and women's empowerment. When possible, they should use transformative approaches at community and domestic level to address discriminatory gender norms and attitudes. Doing so can drive major improvements in incomes and resilience. The proposed Project, therefore, contributes a catalog of what's working, what's needed, and how to scale up women's economic empowerment (WEE) via low carbon strategies. The possible gaps will be identified by the Project on effectively mainstreaming gender across the region towards policy makers for better inclusive policies, taking into account sufficiently the role of women in the AVCs as well as their contribution to a sustainable economy.

Therefore, within the APEC Agricultural Technical Cooperation Working Group (ATCWG) framework, Viet Nam has proposed and got endorsed by APEC the Project on Promoting APEC cooperation for scaling up best practices on Women's participation to global value chain of agricultural products toward sustainable development.

The project aims to contribute to the implementation of the following priorities of APEC: 1) The La Serena Roadmap for Women and Inclusive Growth (2019-2030); 2) The Niigata Declaration on APEC Food Security; 3) The Food Security Roadmap Towards 2030; 4) Bangkok Goals 2022: Committed to building an environment where all, including MSMEs and women, are empowered to access economic opportunities and contribute to and benefit from our economy; 5) The APEC Putrajaya Vision 2040 and the Aotearoa Plan of Action, in particular the third economic driver: "Strong, Balanced, Secure, Sustainable and Inclusive Growth," "... foster quality growth that brings palpable benefits and greater health and wellbeing to all, including MSMEs, women and others with untapped economic potentials".

The proposed project is in line with various priorities in the ATCWG work plan and other APEC strategic plans, namely: 1) ATCWG mission: to strengthen agriculture's contribution to the region's economic growth, sustainable agriculture, food security, food safety, sustainable development, and enhanced social well-being of the rural populations; 2) ATCWG Strategic Plan for 2021-2025's priorities: Strengthening regional food security; Building AVC; Building climate smart and resilient agricultural systems; and fostering sustainable agriculture systems.

Through the policy recommendations from the report and the Workshop, the Project is expected to contribute to the Region: 1) Increasing women's empowerment which is essential for women's well-being and has a positive impact on agricultural production, food security, diets and child nutrition; 2) Enhancing women's rights to make decision in investment, resource management, access to services and institutions, resilience and food security, reducing gender-based violence (GBV) and increasing women's bargaining power; and 3) Improving women's access to agricultural extension, which is very

important to maximize food security and nutritional outcomes and to facilitate women’s participation across the food value chains.

2. Objectives of the report

The project generally aims to analyze and synthesize some best practices in terms of policies and actions in the APEC region on women’s participation, WEE and/or leadership in the global value chain of agricultural products toward sustainable development for possible scaling up by member economies. The project also targets a better understanding of gender inclusion and knowledge of the importance of gender inclusive practices, as well as the barriers women face within AVCs so as to support policy-makers for gender-inclusive climate-smart policies to promote women’s roles and contributions towards transitioning to a low-carbon economy.

This report specifically targets at following objectives:

- Overview of gender participation in agriculture and AVC and women’s roles in transition to low-carbon and sustainable agriculture;
- Identify specific gender gaps, and gender barriers to women’s participation and WEE in agriculture and AVCs at regional levels;
- Synthesize and analyze best practices, lessons learnt in policy and actions for enhancing women’s participation and WEE in agriculture and AVC among APEC economies;
- Propose policy recommendations for improving women’s role and WEE in transition to low-carbon and sustainable agriculture.

3. Analytical framework and research methodology

3.1. Analytical framework

This study adopts the five-pillar framework that APEC uses to promote WEE. This framework, which is foundational to the APEC Policy Partnership on Women and the Economy (PPWE) created in 2011, targets key barriers: (1) access to capital and assets, (2) market access, (3) skills, capacity building, and health, (4) leadership, voice, and agency, and (5) innovation and technology.

The analysis of gender gaps, best practices, and recommendations will be structured around these pillars. The objective is to provide a comprehensive understanding of the current status, underlying constraints, and practical solutions, in order to recommend policies and actions that advance WEE and gender equality in agriculture.

Table 1. Five pillars of women’s economic empowerment in the APEC region

Pillar	Description
Access to capital and assets	Including through such sources as land and personal property, participation in the workforce, and financial services.
Access to markets	Including markets for labor and for goods and services produced by women-owned enterprises.
Skills, capacity building, and health	So women are physically capable of a range of economic pursuits and are prepared both educationally and technically for success in the workforce, in business, and in entrepreneurship.
Leadership, voice, and agency	Through which women are valued as contributors, professionals, and leaders in the private, not-for-profit, and public sectors.
Innovation and technology	So women have the same opportunities as men to benefit from and participate in development and implementation of scientific advances and new technologies.

Source: APEC PPWE, accessed October 5, 2025, <https://pcw.gov.ph/apec-policy-partnership-on-women-and-the-economy-ppwe/>

This study moves beyond simple metrics of participation to analyze the deeper concept of WEE. Participation merely registers women’s presence, whereas WEE signifies that a woman has both the *ability* to succeed and the *power* (agency) to make her own economic decisions. This aligns with the UN Women definition, which frames WEE as a transformative process involving expanded choice, resource control, and the dismantling of discriminatory structures. This is the comprehensive understanding of

WEE that informs the five APEC pillars. Additionally, this study examines WEE not only in AVCs (with focus on rice and vegetable where relevant), but also generally in agriculture. The analysis of WEE in agriculture, AVCs is embedded in analysis of the APEC's five pillars.

3.2. Research methodology

Literature review

This study employed literature review approach as primary research methodology to provide a comprehensive overview on women's participation, gender gaps, underlying barriers, best practices and recommendations to advance women's participation, WEE and finally promote gender equality in agriculture and AVC. A comprehensive search of secondary documents was conducted covering various data sources such as peer-reviewed academic papers, books, reports from governments, APEC and international organizations, conference papers etc. The primary data sources to be queried include Google Scholar, Semantic Scholar, ProQuest and Google search. The searching firstly covers a wide range of keyword to understand the global circumstances of the field (gender equality, women's participation, WEE, sustainable, climate-smart in agriculture, AVC), then narrow down to specific geographical areas and subsectors (APEC member economies, rice, vegetable value chains, best practices). From the initial list of collected documents, the refinement was conducted to ensure the relevance of documents to research topic by screening titles and abstracts. After filtering and selecting documents, a thematic synthesis approach was employed to analyze and organized into analytical themes.

APEC economy survey

A semi-structured questionnaire was developed to gather economy-specific quantitative and qualitative information, data about research topic from all APEC member economies. The questionnaire composes of key sections including: current status of women's participation and WEE (in agriculture in general and rice and vegetable in specific); gender gaps, barriers and challenges; institutional and policy framework; best practices and recommendations for policy, scaling up and regional cooperation (See detailed questionnaire in Annex 1).

The questionnaire was sent to 21 APEC member economies via APEC focal point in Viet Nam (International Cooperation Department under Ministry of Agriculture and Environment) and APEC Secretariat for one month. Assigned respondents from six out of 21 economies including Australia; Chile; Malaysia; Peru; Chinese Taipei; and Viet Nam responded with completed survey questionnaire and United States with guide to data sources to fill up the questionnaire. The answers from mentioned economies are used to exemplified and supplemented to overall status quo of the region across all chapters, and sections of the report.

Best practice analysis

Best practices are the application of measures that work in practice. The list of best practice case in this report was preliminarily proposed by the six member economies (totally 10 cases of which two suggested by Australia, two by Chile, one by Malaysia, one by Peru and four by Viet Nam). These case studies of best practices are used as illustrative case for measures and placed in relevant analytical pillars. Along with cases proposed by economies, best practices implemented by the APEC member economies are also documented (via literature review), synthesized and analyzed to enrich measures. In short, best practice analysis provides practical measures for each mentioned pillar, done by the APEC economies to dealing with gender inequality.

The analysis of a best practice case study is structured around five subsections: 1) Overview: a short introduction of the case; 2) The core of initiatives introduces key activities implemented; 3) Key impact and achievements brief key outputs, results; 4) Innovative and impactful factors analyze key innovative points contributing to the success; 5) Challenges, lessons learned, and forward recommendations summarize key lessons, challenges and recommendations for the case.

Structure of the report

This report is structured into **six chapters**. After introduction, **Chapter two** highlights the essential and multifaceted roles women play as agents of change in the transition to climate-smart, low-carbon, and sustainable agriculture. **Chapter three** analyzes the significant gender gaps and barriers across the

APEC region, structured around the five pillars: access to assets, access to markets, skills and capacity, leadership and agency, and innovation and technology. It identifies underlying barriers that perpetuate these inequalities. **Chapter four** synthesizes and analyzes successful policies, programs, and initiatives from APEC member economies that have effectively addressed the barriers identified in Chapter three. This chapter features case studies from economies including Australia; Chile; Malaysia; Peru; and Viet Nam. **Chapter five** builds upon the analysis of gaps and best practices to propose a concrete set of policy and action recommendations. These recommendations are designed to guide APEC member economies in creating a more gender-responsive and inclusive environment for sustainable agricultural development. **Chapter six** is conclusion.

CHAPTER 2. WOMEN'S ROLES IN AGRICULTURE AND THE TRANSITION TOWARDS SUSTAINABLE DEVELOPMENT IN THE APEC REGION

1. APEC regional overview on women's participation in agriculture

1.1. Demographic profile and labor force participation

APEC is home to 3,0 billion people, accounting for 36.9% of total world population in 2023¹. Female labor force participation rate was recorded 57,2% in 2020 and equivalent to around 77% of men's labor force (Hernando & Kuriyama, 2021). Though women play crucial role across AVCs in the APEC region, share of women in total agricultural employment varies among economies (Table 2), with proportions ranging from below 20% in industrialized economies to nearly half in several developing members. The share of women in total agricultural employment across APEC economies show notable heterogeneity, reflecting structural and demographic differences as well as diverse agricultural systems, from smallholder farming in Southeast Asia to large-scale mechanized agriculture in North America.

Table 2. Share of female in total employment in agriculture of some APEC economies

Economies	2019	2020	2021	2022	2023
Australia	31,6	32,5	34,1	29,6	33,0
Brunei Darussalam	13,6	18,3	8,4	25,0	31,4
Canada	31,3	31,2	31,9	30,3	31,8
Chile	23,7	22,4	22,2	22,8	22,3
Indonesia	36,6	36,4	35,7	35,5	36,4
Japan	38,6	38,1	37,4	37,3	N/A
Mexico	13,0	13,3	14,6	15,8	16,2
Peru	42,0	42,2	45,2	44,3	41,9
The Philippines	23,1	23,3	24,4	26,4	N/A
The Russian Federation	33,5	33,8	32,5	32,4	31,6
Singapore	N/A	N/A	47,5	40,0	40,3
Thailand	41,0	40,8	40,8	41,2	41,1
United States	27,2	28,3	28,7	29,2	29,9
Viet Nam	49,5	48,8	45,9	49,8	45,6

Source: FAOSTAT

In high-income economies such as Australia; Canada; Chile; United States, women's participation in agricultural employment fluctuates between 22–34%, with no clear long-term upward or downward trend. Australia exhibits moderate variability (31.6% in 2019 rising to 34.1% in 2021, then dipping to 29.6% in 2022 before rebounding to 33.0% in 2023), possibly reflecting cyclical labor demand and post-pandemic adjustments. Canada and Chile show stable patterns around 30% and 22% respectively, indicating a relatively steady gender composition within mechanized and capital-intensive farming systems.

In emerging and developing APEC members, women's participation is consistently higher. Indonesia; Peru; Thailand; Viet Nam report the highest shares—typically 35–50%—highlighting the continued reliance on family-based and smallholder production systems where women play multifunctional roles in crop, livestock, and household farm management. Viet Nam's female share remains among the highest (45.6–49.8%), confirming women's pivotal contribution to agricultural labor despite gradual structural transformation. Similarly, Thailand and Peru sustain levels above 40%, showing both persistence and resilience of women's engagement even during the COVID-19 period.

Economies such as Mexico and the Philippines show gradual increases in women's agricultural employment shares over the period (from 13.0% to 16.2% and 23.1% to 26.4%, respectively), possibly reflecting rising female participation in rural enterprises and agrifood processing. In contrast, the Russian Federation displays a slight decline from 33.5% to 31.6%, consistent with ongoing mechanization and rural outmigration trends. Data for Japan and Singapore are incomplete, but the available figures suggest moderate to high participation (37–38% for Japan and around 40% for Singapore), underscoring women's presence even in technologically advanced contexts.

¹ <https://statistics.apec.org/>

Overall, the data reveals uneven trend across the APEC region, but rather a differentiated pattern shaped by economic structure, demographic shifts, and gender-sensitive policy environments. Economies with strong rural household farming systems exhibit higher and more stable female shares, while industrialized members show modest but steady participation. Sustaining and enhancing women's roles in AVCs—particularly in economies with declining rural employment—requires policies that promote decent work, access to productive resources, and equitable participation in higher-value nodes of global AVCs.

1.2. Women's participation in agrifood system, rice and vegetable value chains

Women play essential and multifaceted roles across all segments of agrifood systems—from primary production to processing, trade, and consumption. They engage as farmers, entrepreneurs, wage workers, and unpaid family contributors. As APEC economies undergo structural transformation, labor is shifting from on-farm production toward off-farm segments of the agrifood systems such as processing, logistics, and retail. However, gender disparities persist in this transition. A larger proportion of women than men remain in primary production, especially in smallholder and subsistence farming, while men more frequently enter mechanized or commercial segments (FAO, 2023b; Pham, 2024).

For example, in Viet Nam, women dominate small-scale rice and vegetable farming, contributing significantly to household food security. Empowerment interventions in the Mekong Delta have shown that when women are empowered, rice productivity and income increase significantly (Hoang et al., 2021; Cao et al., 2024). In Chile and Mexico, seasonal female employment in fruit and vegetable harvesting, selecting, and packing (especially tomatoes and export fruits) is well documented (Acosta, 2025). Meanwhile, in Australia, women entrepreneurs have been expanding their presence in agribusiness startups and niche markets, contributing to economic diversification and local employment. Programs such as TekWomen QLD and Farmers2Founders are supporting female agrifood-tech founders to build startups in innovation, specialty foods and agri-technology ventures (Joyce, 2025).

Recent studies (Kawarazuka et al., 2022; Leder, 2022) challenge the simplified notion of the “feminization of agriculture,” emphasizing instead that women's engagement is shaped by migration, labor markets, social norms, and specific commodity chains. For instance, in economies such as the Philippines, male outmigration for overseas work has increased women's roles in farm management; whereas in Japan, demographic ageing and rural depopulation have created both challenges and opportunities for women to assume leadership in family farms and cooperatives.

Women's role extends well beyond the farm gate, throughout the post-harvest and value-adding stages of agrifood systems. In Southeast Asia, women account for the majority of labor in post-harvest and processing of perishable products. In Thailand, for instant, most workers in seafood processing and packaging are women—including many migrant workers from Myanmar—especially in shore-based, packaging, and sorting roles (UN Women, 2020; SEAFDEC, 2022). In Chile, women play central roles in seasonal packing jobs for export fruits such as grapes, cherries, and blueberries, performing tasks such as cleaning, grading, and packing that are critical to export quality standards (Raynolds & Ipsen, 2024). Yet, women often lack access to cold storage, processing equipment, and market information, leading to higher post-harvest loss rates (Nordhagen, 2021).

In sum, the literature review of experiences across APEC economies affirm that women are vital contributors to the efficiency, inclusiveness, and sustainability of agricultural global value chains. Yet, their participation often remains concentrated in informal, low-paid, or seasonal segments, limiting the potential gains for both women and the wider economy. Promoting gender equality is therefore not only a social objective but also a strategic approach to improving value-chain performance, innovation, and resilience.

Women's participation in rice and vegetable value chains in the APEC region

The intensity and nature of women's participation in rice and vegetable value chains vary significantly across economies, often influenced by socio-cultural conditions and male migration patterns. The survey responses from six economies show different patterns of women's participation in these value chains, yet similar patterns between rice and vegetable value chain within one economy. Men in **Chile and Malaysia** absolutely dominate women in all activities along rice and vegetable value chains. In **Chinese Taipei**, men and women share equal workload in all nodes of the rice value chain, but in vegetable value chain, women only dominate in harvesting, while the remaining activities taken by men or both. Peru

and Viet Nam show varieties of work allocation between men and women. For example, in **Peru** rice value chain, women are mostly responsible for selection of seeds, seedling, transplanting, harvesting, packaging and selling while share equal workload with men in weeding, taking care, fertilizing, drying and processing. Similar pattern is found in vegetable value chain, but the percentage of women representing is much higher than women in rice value chain (60% in comparison with 25%). While in **Viet Nam** rice and vegetable value chain, women are predominantly involved in labor-intensive and manual tasks such as seedling, transplanting, weeding, taking care, and post-harvest activities such as drying, processing, packaging and selling. Men typically take the lead in mechanized or highly chemical-dependent tasks, such as seedbed and land preparation, pesticide application and threshing. However, there is wide variation in work allocation between the North and the South of Viet Nam in rice production.

The level of women's influence in farming decisions is contextual, even among rice farmers within the same region. Women in **the Philippines** and **Thailand** show the highest levels of involvement in decision-making regarding rice farming. In Thailand, women reported having sole decision-making authority in half of the focus group discussions (FGDs), with the remaining decisions made jointly with their husbands. In the Philippines, all major rice farming decisions studied were made jointly by husbands and wives. On the contrary, in **Indonesia** (South Sumatra), men generally take the lead, though approximately 50% of decisions involve joint input while in Yogyakarta, many decisions (78%) are relegated to community or farmer groups, which limits women's influence at the community level (Akter et al., 2017).

2. Gender roles in transition to climate-smart and sustainable development of agriculture

2.1. Some key definitions

Sustainable agriculture refers to production systems designed to meet present and future food and livelihood needs while maintaining environmental integrity, economic viability, and social equity. It emphasizes the conservation of natural resources, the responsible use of inputs, and the long-term resilience of agroecosystems (Tilman et al., 2002; FAO, 2018). The approach seeks to enhance productivity and food security without undermining the ecological foundations upon which agriculture depends.

The concept has evolved significantly since the Brundtland Report in 1987 (WCED, 1987), which defined sustainable development as meeting “*the needs of the present without compromising the ability of future generations to meet their own needs.*” This principle has been extended to agriculture as the pursuit of production systems that balance environmental stewardship, economic profitability, and social responsibility (Rigby & Cáceres, 2001; Hiywotu, 2025).

In practice, sustainable agriculture encompasses a broad range of context-specific approaches - including crop rotation, agroforestry, conservation tillage, integrated pest management, and water- and energy-efficient technologies - that enhance biodiversity, soil fertility, and resilience to climate shocks (Gomiero et al., 2011; Pretty et al., 2018). Beyond biophysical sustainability, it incorporates social dimensions such as equitable access to resources, fair labor conditions, and the empowerment of rural communities, particularly women and smallholders, in agricultural decision-making (FAO, 2022b).

Today, sustainable agriculture is recognized as a cornerstone of global strategies for achieving the Sustainable Development Goals (SDGs) — particularly SDG 2 (Zero Hunger), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action). It represents not merely a set of farming techniques but a transformative framework for redesigning food systems to enhance resilience, equity, and planetary health.

Low-carbon agriculture is increasingly framed in the scientific community as an outcome-oriented subset of sustainable agriculture: its primary objective is to reduce greenhouse-gas (GHG) emissions across agrifood systems while safeguarding food security, productivity and resilience. This framing positions mitigation — lowering emissions of CO₂, CH₄ and N₂O through changes in management, technology and value-chain processes — alongside adaptation and development objectives, rather than in competition with them (IPCC, 2022).

Scholars and major assessments converge on a cross-cutting taxonomy for mitigation interventions. These include: (a) on-farm agronomic measures that reduce direct emissions (e.g., Alternate Wetting and Drying (AWD) in irrigated rice, improved nitrogen management using the 4R principles, and improved residue management); (b) livestock system measures (enteric methane reduction through

feed quality and additives, manure management, and herd-productivity improvements); (c) land-use and soil carbon measures (conservation agriculture, agroforestry and improved tillage); and (d) value-chain and energy measures (post-harvest loss reduction, cold-chain electrification, efficiency gains and fuel switching) (Nabuurs et al., 2022; FAO, 2023a). The integrated treatment of these domains reflects a scientific consensus that mitigation must operate across both production and post-production stages to be effective.

The literature emphasizes co-benefits (water savings, improved soil health, biodiversity, and rural incomes) but also warns of trade-offs and equity risks. Implementation costs, risk of emission leakage (e.g., shifting emissions across supply-chain stages), and distributional impacts on smallholders are recurring themes. Scientific reviews call for socially inclusive design — combining technical options with finance, extension and safety nets — to avoid exacerbating rural poverty or undermining food access. The IPCC synthesizes these points, highlighting that mitigation must be context-specific and aligned with adaptation and development priorities (IPCC, 2022).

2.2. The current transition to low-carbon, sustainable agriculture in the APEC region

Asia-Pacific is the world's fastest growing region, with an economic growth rate of 3.9% (ahead of the global rate of 3.5%)². Recent regional and global assessments show that agrifood systems are responsible for a substantial share of emissions: global agrifood systems emitted about 16.2 GtCO₂e in 2022, and agriculture (together with related land-use change) accounts for a large share of Asia-Pacific emissions—estimated at roughly 15% when land-use change is included³.

Within the Asia-Pacific (and by extension many APEC economies) the primary on-farm emission drivers are well established: enteric fermentation from livestock, methane emissions from flooded rice cultivation, and nitrous oxide from synthetic fertilizer and manure management; energy-related CO₂ from irrigation, mechanization and processing also contributes notably to agrifood emissions (Rahut et al., 2023). Economies' inventories and sectoral analyses confirm these patterns. For example, Viet Nam's domestic reporting indicates that agriculture contributed about 19% of domestic GHG emissions in 2020, with rice cultivation representing nearly half of the sector's emissions, while domestic inventories document enteric fermentation and fertilizer as leading sources within agriculture sector (Viet Nam, 2022).

Agricultural emissions across APEC (especially East and Southeast Asian) economies are highly heterogeneous, reflecting differences in farming systems, rice vs livestock reliance, fertilizer use, and policy/infrastructure contexts. East Asian economies (China; Japan; Korea) show important absolute agricultural emissions driven by intensive systems, while Southeast Asia's emissions are strongly influenced by rice cultivation and land-use change. Recent peer-reviewed analyses based on FAOSTAT and FAO data show that China's food-system emissions are large in absolute terms (production-stage emissions ~1.2 GtCO₂-eq in 2019 in some studies) and that rice and livestock are major CH₄ contributors (FAO, 2024a).

Domestic inventory documents show that enteric fermentation and rice cultivation are dominant within agriculture in Korea and are important in Japan's agricultural profile, though absolute levels differ due to variations in production scale and system intensity (Greenhouse Gas Inventory Office of Japan & Ministry of the Environment, Japan, 2022; The Government of Republic of Korea, 2024). Regional analyses by FAO (2022b, 2024) further emphasize rice cultivation as a leading source of agricultural CH₄ in Indonesia; the Philippines; Thailand; and Viet Nam, where it accounts for a large proportion of total sectoral emissions. Moreover, land-use change (including peatland fires in Indonesia) periodically generate substantial CO₂ emissions, producing episodic surges that significantly influence domestic emission totals.

Within the food sector, rice production is a disproportionately large source of agricultural methane (CH₄), while intensive vegetable production is associated with high embedded emissions from inputs (fertilizers, energy for protected cultivation, cold chains) and substantial post-harvest losses that amplify lifecycle emissions. Because rice and vegetables are both regionally important commodities (for food security,

² Moving beyond commitment and towards transformation: Asia Pacific climate actions not on track, <https://www.pwc.com/vn/en/publications/Viet-Nam-publications/net-zero-economy-index-asia-pacifics-transition-2023.html#:~:text=Asia%20Pacific%20is%20the%20world's,the%20impacts%20of%20climate%20change.>

³ Greenhouse gas emissions from agrifood systems. Global, regional and domestic trends, 2000–2022, https://www.fao.org/statistics/highlights-archive/highlights-detail/greenhouse-gas-emissions-from-aqrifood-systems.-global--regional-and-country-trends--2000-2022/en?utm_source=chatgpt.com

trade and rural employment), targeted low-carbon transitions in these value chains can deliver both emission reductions and productivity/market benefits.

The transition in rice value chain

Rice cultivation represents a particularly challenging subsector for decarbonization efforts within the APEC region. Asia accounts for approximately 86.5% of global methane (CH₄) emissions from rice paddies, highlighting the concentration of emissions in key APEC economies such as China; the Philippines; Thailand; and Viet Nam (Zhang et al., 2024). The carbon footprint of rice production extends beyond field-level emissions to encompass the entire value chain, including:

- Pre-production: Manufacturing and transportation of fertilizers, pesticides, and seeds
- Production: Methane emissions from anaerobic decomposition in flooded paddies, nitrous oxide from nitrogen fertilizer application, and CO₂ from fuel consumption in mechanized operations
- Post-harvest: Energy consumption in milling, drying, storage, and transportation
- Waste: Emissions from rice straw burning and organic matter decomposition

Several technological and management interventions have demonstrated efficacy in reducing emissions from rice production systems, including alternate wetting and drying (AWD), system of rice intensification (SRI), nutrient management optimization, etc.

The transition in vegetable value chain

While vegetables generate lower absolute emissions compared to rice, their production systems present distinct decarbonization challenges and opportunities. The primary emission sources in vegetable production include synthetic fertilizer application (N₂O emissions), energy consumption for irrigation (CO₂), greenhouse heating and cooling (CO₂), transportation and cold chain management (CO₂), and plastic mulch and greenhouse materials production and disposal.

Table 3: CSA technologies and practices in the rice and vegetable value chains

Value chain	CSA technologies and practices
1. Rice VC	
Input supply	Development and distribution of climate-smart inputs, including slow-release fertilizers and low-emission seed varieties
Production	Adoption of mitigation practices through extension services, farmer training and financial incentives
Processing	Energy-efficient milling technologies, renewable energy integration, and waste heat recovery systems
Distribution and marketing	Development of certified low-carbon rice labels, premium pricing mechanisms, and consumer awareness campaigns
2. Vegetable VC	
Climate-smart production practices	Precision nutrient management Water-efficient irrigation Renewable energy integration Organic matter management: composting, green manure incorporation, and conservation tillage practices to enhance soil carbon sequestration
Fertilizer management and substitution	Optimizing N inputs and adopting organic amendments or enhanced-efficiency fertilizers reduce N ₂ O emissions and input costs.
Post-harvest operations	Cold chain optimization Packaging innovation Lost and waste reduction

Source: Authors' synthesis

APEC policy agenda for sustainable development of agriculture

APEC region has developed several policy frameworks to support agricultural decarbonization:

- The endorsement of the Trujillo Principles for Preventing and Reducing Food Loss and Waste⁴ at the 2024 APEC Food Security Ministerial highlights regional commitment to enhancing supply chain resiliency, which is essential for low-carbon transition.
- APEC Energy Ministers endorsed the "APEC Policy Guidance to develop and implement clean and low-carbon hydrogen policy frameworks in the Asia-Pacific"⁵ alongside the Just Energy Transition Initiative⁶ to promote efforts to accelerate energy transitions within APEC economies. While focused on energy systems, these frameworks have implications for agricultural energy use.
- The APEC Technology Empowers Low Carbon Action (TELCA) Best Practice Report⁷ offers detailed analysis of strategies, policies, and initiatives across APEC economies to promote sustainable transitions, underscoring the significance of regional cooperation, policy alignment, and innovation.

The transition to low-carbon agriculture in the APEC region is both a necessity and an opportunity. Transforming the sector is essential to meet climate goals, sustain food security, and promote rural prosperity. Success depends on integrated approaches that link productivity, profitability, and environmental sustainability while ensuring equitable outcomes for vulnerable rural groups.

Given the diversity of APEC economies - spanning various development levels and farming systems—flexible, context-specific solutions are needed. The rice and vegetable value chains illustrate both the scale of challenges and the potential of proven solutions ready for scaling. Rice is a major source of methane, while vegetables face high emissions from fertilizers, energy use, and post-harvest losses. Addressing these through climate-smart practices offers immediate and cost-effective mitigation gains. Ultimately, the shift to low-carbon agriculture is not only an environmental imperative but a path toward more resilient, productive, and sustainable agrifood systems that underpin regional prosperity in a changing climate.

2.3. The women's roles in the transition to climate-smart, low-carbon agriculture

The role of women in addressing climate change and driving agriculture toward sustainability and climate resilience is increasingly recognized as fundamental and transformative, moving beyond simply acknowledging their *vulnerability* to seeing them as *essential agents of change*. While climate change disproportionately affects women, especially rural and indigenous women, by exacerbating existing inequalities, empowering women is undoubtedly crucial for eradicating poverty and achieving sustainable development goals (FAO, 2023a).

In this context, it is crucial to recognize the multidimensional roles women play in driving sustainable and climate-resilient agriculture, emphasizing their unique knowledge, agency, and capacity for systemic transformation.

Women play roles as crucial agents of adaptation and resilience

Women's capacity to cope with climate variability and extreme weather is essential for household and community survival, positioning them as central figures in local adaptation efforts despite facing significant resource constraints (Jost et al., 2016). They exhibit crucial adaptive behaviors in managing farms and livelihoods, often innovating in response to environmental shifts (Arintyas, 2024). Such adaptation is demonstrated through livelihood diversification as a coping strategy against uncertainty (Lima de Faria et al., 2023), and evidence indicates that components of women's empowerment are positively correlated with increased crop diversification among small-scale producers (de Pinto et al., 2020, cited in Njuki et al., 2023). Women are also essential contributors to Climate-Smart Agriculture (CSA) initiatives (Tran et al., 2021), which improve conservation, boost productivity, and enhance risk

⁴ <https://www.apec.org/meeting-papers/sectoral-ministerial-meetings/food-security/9th-apec-food-security-ministerial-meeting/trujillo-principles-for-preventing-and-reducing-food-loss-and-waste-in-the-asia-pacific-region>

⁵ https://www.apec.org/docs/default-source/groups/ewg/apec-policy-guidance-to-develop-and-implement-clean-and-low-carbon-hydrogen-policy-frameworks-in-the-asia-pacific.pdf?sfvrsn=45fb78ac_1

⁶ https://www.apec.org/docs/default-source/groups/ewg/24_emm14_002.pdf?sfvrsn=384b3443_1

⁷ [https://prod-statistics.apec.org/publications/2024/11/apec-technology-empowers-low-carbon-action-\(telca\)--best-practice-report](https://prod-statistics.apec.org/publications/2024/11/apec-technology-empowers-low-carbon-action-(telca)--best-practice-report)

management (Mutenje et al., 2019, cited in Dabkienė, 2025). Women plot managers are as capable as men to adopt climate-adaptive agricultural practices and are often found to be equally or more able to adapt their agricultural systems to climate stressors, notwithstanding significant constraints related to resources and time (FAO, 2024b). Furthermore, women-led enterprises are advancing circular agriculture through organic, mixed, and agroforestry practices (Pham, 2025), such as an initiative in Ecuador where women integrated duck production within rice cultivation to reduce agrochemical use and regenerate local ecosystems (Acosta et al., 2025).

Beyond these specific practices, women fulfill a critical function in disaster risk reduction and managing climate change effects, often possessing specialized knowledge of adaptation techniques and serving in early warning systems. Group-based and collective approaches are identified as central to supporting the climate actions undertaken by women (Bryan et al., 2024). Participation in community-based organizations, for instance, positively influences the adoption of climate-resilient agricultural technologies (Turquet, et al., 2024). These collective actions frequently provide access to microcredit, climate information, and training sessions, thereby improving women's overall climate change resilience. Strengthening women's economic autonomy and access to climate and disaster risk financing and insurance is another critical element of resilience. Initiatives that foster a savings culture and provide access to adapted financial insurance products are vital for preventing losses and enabling faster recovery from climate-related shocks (Acosta et al., 2025).

Women play roles as leadership in disaster risk management

Women fulfill a critical function in disaster risk reduction and in managing the effects of climate change, often possessing specialized knowledge of successful adaptation techniques and serving in early warning systems (Acosta et al., 2025). Supporting these climate actions is heavily reliant on group-based and collective approaches (Bryan et al., 2024). For instance, women's participation in community-based organizations positively influences the adoption of climate-resilient agricultural technologies (Turquet, et al., 2024), as these collective forums can provide microcredit, climate information, and training sessions that enhance climate change resilience. Furthermore, strengthening women's economic autonomy and their access to climate and disaster risk financing and insurance is identified as another critical element of climate resilience. Initiatives that cultivate a savings culture and provide access to adapted financial insurance products are therefore essential, as they help prevent losses and enable faster recovery from climate-related shocks (Acosta et al., 2025).

Women play roles as custodians of sustainability and biodiversity

Through their traditional and ongoing roles, women possess and utilize knowledge that is crucial for maintaining sustainable agrifood systems and conserving natural resources (FAO, 2023b). This includes holding vital traditional ecological knowledge (TEK) on successful climate change adaptation techniques (Acosta et al., 2025) and managing resources such as land, water, and biodiversity (APEC, 2023), often linked to their roles as primary providers of fuelwood and water (Hill, 2011). Furthermore, rural women are frequently at the forefront of local crop seed selection and the conservation of traditional varieties and crop wild relatives (Hosken, 2017), thereby preserving the wide genetic base fundamental for future climate adaptation (FAO, 2023b). Their intuitive grasp of sustainability, derived from their familial and community roles, also positions them to devise innovative, environmentally responsible solutions (Pham, 2025), making the recognition of their economic contributions essential for any transition toward a climate-resilient green economy (Hill, 2011).

Despite these contributions, climate change often increases women's existing labor burden, an effect particularly documented in Southern Asia where climate impacts can reduce crop residues or necessitate re-sowing and transplanting crops (Khatri-Chhetri et al.). Consequently, as climate change exacerbates women's labor, access to time-saving, climate-resilient actions and Labor-Saving Technologies (LST) is highlighted as essential (FAO, 2011). Providing such technologies is critical not only for preventing additional drudgery but also for improving livelihoods, redistributing the burden of unpaid work, and freeing women's time to pursue other productive activities (Khatri-Chhetri et al., 2020).

Women play roles as catalysts for transformative change

Gender transformative change (GTC) is considered a prerequisite for achieving sustainable and equitable climate-resilient agrifood systems (Acosta et al., 2025). This approach involves utilizing Gender Transformative Approaches (GTAs) to question and actively address the unequal power relations, restrictive gender norms, and other discriminatory social institutions that limit the capacity of

both men and women to respond effectively to climate change. The explicit goal of GTAs is to build agency and fundamentally shift existing power dynamics; for example, a project in Rwanda used joint couple training in climate-resilient methods and participatory household tools to foster more equitable intrahousehold relations and increase women's decision-making confidence. Addressing such discriminatory norms is critical because they directly determine women's access to assets (e.g., land, water), essential information like climate services, and participation in climate action. Consequently, engaging men, boys, and local leaders is deemed a necessary component of GTAs to effectively address the harmful norms that impede women's adaptation (Acosta et al., 2025).

At a structural level, women's engagement in policy formulation is essential to ensure that climate and sustainability measures are relevant and effective for the populations most impacted (FAO, 2023b). Women's differentiated knowledge and perspectives are fundamental for designing appropriate climate-resilient agrifood system policies and regulatory frameworks, including disaster risk management (Acosta et al., 2025), and such policies should be grounded in local knowledge and the experiences of both male and female farmers (APEC GIFTS A+, 2025). Increasing the representation of diverse women in climate change policy decision-making is therefore critical, as it introduces new perspectives that might otherwise be overlooked (Acosta et al., 2025) and is considered a crucial pillar for achieving climate-resilient agrifood systems (Morgan et al., 2024). Evidence further suggests that a higher share of female representation in parliaments correlates with the adoption of more stringent climate change policies (Mavisakalyan & Tarverdi, 2019). This highlights the necessity of jointly pursuing climate resilience (SDG 13) and gender transformative (SDG 5) goals, which requires developing gender-responsive national adaptation plans and policy instruments that acknowledge and address the structural causes of inequality (Acosta et al., 2025).

Table 4. Key contributions of women to the agriculture sector's transition towards a low-carbon economy: Views from the APEC member economies

Economy	Detail
Australia	Women and girls are disproportionately affected by contemporary crises, including poverty, conflict and climate change and inequality compounds the most pressing challenges. Placing gender equality at the heart of Australian agriculture sector is fundamental to improving food security outcomes and ensuring resilience in agri-food systems
Peru	<ul style="list-style-type: none"> - Adoption of agroecological and organic practices: Many women lead the production of Andean vegetables, tubers and grains with traditional methods without intensive use of agrochemicals. They contribute to the reduction of emissions and the care of biodiversity. For example, women's associations in Cusco and Apurimac that produce organic vegetables for local fairs. - Sustainable water and soil management: Women actively participate in the irrigation of plots and in the recovery of terraces, canals and soil conservation practices. These practices reduce erosion and improve carbon sequestration in agricultural ecosystems. - Use and transmission of ancestral knowledge: Women maintain and transmit traditional agricultural practices of rotation, polyculture, native seed management and organic fertilizers. This knowledge contributes to climate resilience and production systems with a lower carbon footprint. - Promotion of productive diversification: Women tend to diversify their crops more (vegetables, fruit trees, small breeding), which decreases dependence on monocultures with a high environmental footprint. This supports more sustainable and resilient food systems. Women are key actors in the decarbonization of Peruvian agriculture through resilient practices, natural resource management, and promotion of local food systems. Enhancing their role through gender policies, access to resources and economic valorization of their contributions is essential for a just and effective climate transition.
Viet Nam	<ul style="list-style-type: none"> - Adoption of sustainable and low-carbon practices - Knowledge and information dissemination - Entrepreneurship and market linkages - Leadership and decision-making.

Source: APEC economy survey, 2025

2.4. Benefits of addressing gender equality in transitions to climate-smart and sustainable development of agriculture

Addressing gender inequality in agriculture is not only a matter of social justice but a proven driver of productivity, food security, and environmental sustainability across APEC economies. When women farmers and entrepreneurs gain equitable access to resources, services, and decision-making, evidence consistently shows measurable improvements in yields, household nutrition, and adoption of climate-smart innovations.

- *Economic and productivity benefits:* Across APEC economies, narrowing gender gaps in resources (land, inputs, extension) and decision-making has been shown to increase farm productivity and income, especially when women receive equal support. For example, in Viet Nam, participatory scaling plans for low-emission rice production in the Mekong River Delta include AWD suitability mapping and gender-sensitive interventions (Dao Minh Trang et al., 2019; Tong et al., 2022). These helped female farmers access technology and information, improving efficiency.

- *Food security and nutrition benefits:* Evidence from Southeast Asia and Latin America shows that women's control over agricultural income is closely linked to improved household food security and nutritional outcomes. In the Peruvian Andes, households cultivating greater agricultural biodiversity (more crop species) achieved higher diet diversity and micronutrient adequacy among women of reproductive age (Jones et al., 2018). In Viet Nam, analyses from the *Country Gender Assessment* show that when women have greater control over agricultural resources and decision-making, their households tend to invest more in food, health, and nutrition programs, bolstering resilience - especially during shocks (FAO, 2019c).

- *Adoption of sustainable and climate-smart practices:* Women in APEC's agricultural systems have shown strong engagement in environmental stewardship and climate adaptation when institutional barriers are addressed. For instant, in Viet Nam's Mekong Delta, the participatory development of a low-emission rice roadmap includes AWD and other mitigation practices, with gender-sensitive training and extension. These interventions are showing uptake among women farmers, contributing to emissions reductions while maintaining yields. Additionally, field testing of digital tools for sustainable rice production in the Mekong Delta revealed that while access remains unequal, women show strong interest; when tools are made accessible they help improve management and climate-resilient practice adoption (Barnard et al., 2023).

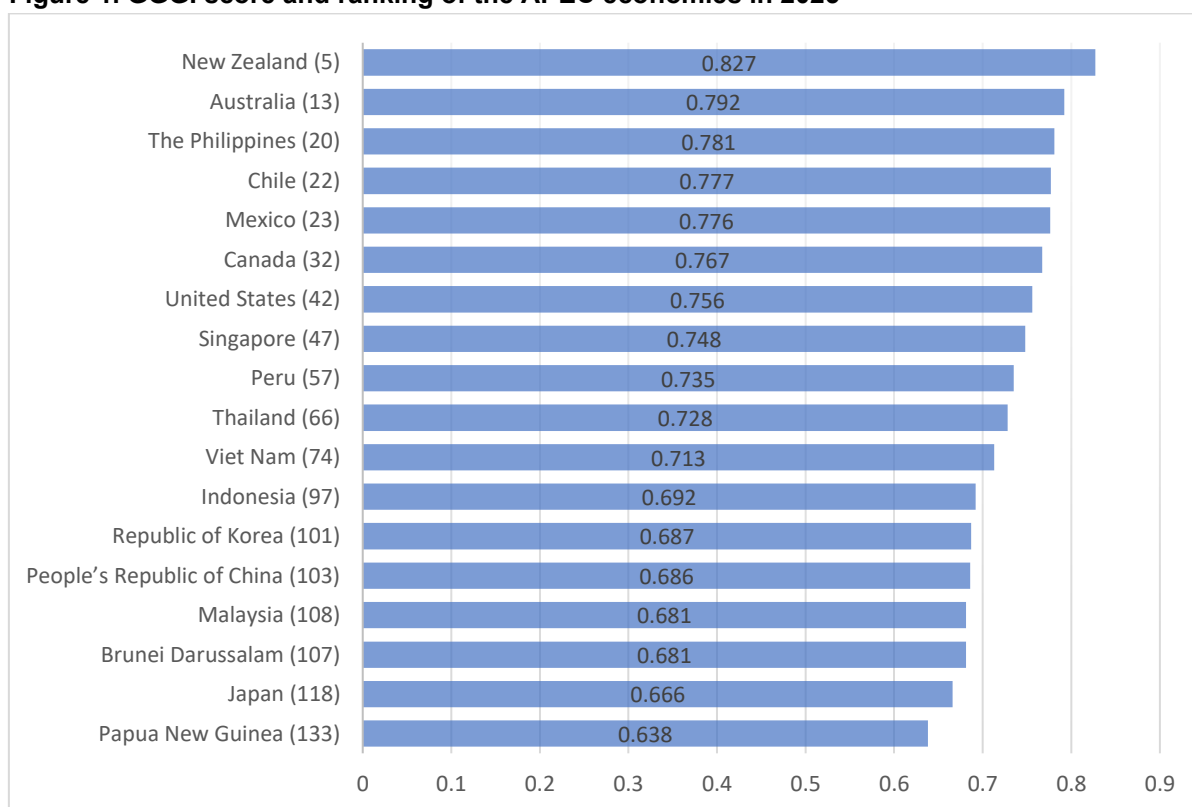
CHAPTER 3. GENDER GAPS, UNDERLYING BARRIERS TO GENDER EQUALITY AND WEE IN AGRICULTURE, AVC IN THE APEC REGION

Through literature review and the APEC economy survey, this chapter specifies the status of gender gaps and gender barriers in the APEC region. To illustrate the regional picture of gender gaps and gender barriers, this study preliminarily draws on the data of three reports: The Global Gender Gap Index (GGGI)⁸, and The APEC Women and the Economy Dashboard (WED)⁹ and the Social Institutions and Gender Index (SIGI) reports. The economies' survey data will be added to exemplify for the regional situation.

1. APEC economies' global ranking on gender gaps

In general, the GGGI 2025 reports reveal significant variation in gender parity across the APEC region, with member economies' global rankings spanning a broad spectrum (Figure 1). For instance, New Zealand holds the highest regional rank at 5th globally, whereas Papua New Guinea is positioned very low at 133rd. A discernible pattern emerges wherein some highly developed economies, such as Japan and Korea, rank relatively low, while several developing economies, including Chile; Mexico; and the Philippines are positioned among the top performers. This observation suggests that an economy's level of wealth is not necessarily determinative of its achievements in gender equality.

Figure 1. GGGI score and ranking of the APEC economies in 2025



Note: The number in bracket is the economy's GGGI world ranking 2025. Hong Kong China; The Russian Federation; and Chinese Taipei are not included in the report.

Source: WEF (2025)

⁸ The Global Gender Gap Index (GGGI) is a framework published annually by the World Economic Forum (WEF) that measures and tracks gender-based disparities across economies. Its main goal is not to measure the overall development or well-being of women, but rather to capture the magnitude of the gap between women and men in key areas. The index is built upon four fundamental pillars, each representing a critical area of gender inequality, including i) Economic Participation and Opportunity, ii) Educational Attainment, iii) Health and Survival, iv) Political Empowerment.

⁹ Launched in 2015, The APEC Women and the Economy Dashboard (WED) offer a snapshot of the status of women in the region by tracking key indicators over time. It aims to measure progress, uncover data and policy gaps as well as spotlight social barriers that continue to hinder women's full, equal and meaningful participation and leadership in the economy. The set of indicators covers five priority pillars, including: i) Access to capital and assets; ii) Access to markets; iii) Skills, capacity-building and health; iv) Leadership, voice and agency; and v) Innovation and technology.

A detailed examination of the five core pillars of APEC reveals significant heterogeneity in progress toward gender parity.

2. Access to capital and assets

2.1. Access to land

While most APEC economies achieve widespread success in establishing legal frameworks for basic financial inclusion, the rights to own and inherit the land and non-land assets are more diversified (Table 5). Although access to land of married and unmarried women is secured by laws of 21/21 economies (OECD, 2024), there exists gap in implementation of the laws. Data from (WEF, 2025) shows that only 8/18 economies secure equal rights to inheritance and ownership, while the others show the "unequal" right like Brunei Darussalam; Indonesia; and Malaysia, "uneven" rights in the Philippines; Singapore; and Thailand and "near-equal" rights in Republic of Korea; Mexico; and Viet Nam. Besides, half of the 18 economies achieve equality in access to land and 12 economies secure equal rights to access to non-land assets. Indonesia; Malaysia; the Philippines; and Singapore are economies that do not secure all inheritance rights, rights to access to land and non-land assets.

Table 5. Gaps of access to finance services, inheritance rights, land and non-land assets in the APEC economies

Economy	Access to financial services	Inheritance rights (widows/daughters)	Access to land assets	Access to non-land assets
Australia	=	=	Uneven rights	=
Brunei Darussalam	=	Unequal rights	=	=
Canada	=	=	Uneven rights	=
Chile	=	=	Restricted rights	Restricted rights
People's Republic of China	=	=	=	=
Indonesia	=	Unequal rights	Near-equal rights	Near-equal rights
Japan	=	=	=	Equal rights
Malaysia	=	Unequal rights	Uneven rights	Uneven rights
Mexico	=	Near-equal rights	=	=
New Zealand	=	=	Uneven rights	=
Papua New Guinea	Unequal rights	Uneven rights	Uneven rights	=
Peru	=	=	=	=
The Philippines	=	Uneven rights	Restricted rights	Restricted rights
Singapore	=	Uneven rights	Uneven rights	Uneven rights
Republic of Korea	=	Near-equal rights	=	=
Thailand	=	Uneven rights	=	=
United States	=	=	=	=
Viet Nam	=	Near-equal rights	=	=

Note:

- The mark "=" means **equal rights**.

- **Unequal rights** mean there are explicit legal restrictions or disadvantages for women compared to men, often rooted in civil, family, or property law.

- **Near-equal rights** mean there might be subtle legal differences or exceptions, or the practical implementation of these rights could still face certain legal hurdles.

- **Uneven rights** mean there is a significant gap or disparity in how rights translate into reality, or the existing legal rights themselves are not consistently applied or cover all relevant types of assets equally.

- **Restricted rights** refers to legal and/or customary barriers that prevent women from owning, controlling, managing, and inheriting property and financial resources on equal terms with men.

Source: WEF (2025)

In fact, access to land remain inequality as indicated in some APEC economies. In **Indonesia**, women held an estimated 24.04% of agricultural land in 2018, compared to men’s 75.96%. Furthermore, female farmers control an average of 0.2 ha of land, which is less than half the 0.6 ha controlled by male farmers (Rachmawati et al., 2025). Historically, the shift toward irrigation systems in Java concentrated secure land access in the hands of men (FAO, 2019a). In **Japan**, rural women face difficulty borrowing from banks due to low retention of fixed assets (Inagaki & Hara-Fukuyo, 2020). In **Papua New Guinea**, women tend not to own the land, fixed assets, or other resources necessary to meet collateral requirements for accessing finance or extension services, resulting in less access to and control over financial resources. Approximately 97% of land is under customary ownership, where traditional governance systems limit women's control. Women typically receive user rights (to cultivate, fish, or gather forest products) but rarely hold formal ownership rights or control over productive resources (FAO, 2019b). In **the Philippines**, despite laws granting equal property rights, gender inequalities persist in land rights due to weak implementation of land laws, customary practices, traditional patriarchal relations, and lack of awareness. Women have significantly less access to credit or financial assistance compared to men, often because wives' names are not included as co-owners of cultivated land due to weak administrative practices (FAO, 2022a). In **Viet Nam**, women face unequal access to and control over key resources, including land and credit. Although legislation requires both spouses' names on the Land Use Rights Certificate (LUC), enforcement is slow and often ineffective (FAO, 2019c).

Mexican women face significant disparities in owning high-value assets, including land, severely limiting their economic leverage. Only 35% of Mexican women owned at least one high-value asset in 2018, compared to 58% of men. In rural areas, only 25.6% of women own land, versus 37% of men. When women do acquire land, it is typically through inheritance (63.6%), not purchase (28%). Land reform laws technically grant women equal rights to land; however, only 19.8% of *ejidatarios*¹⁰ or community landholders were women in 2015. The plots owned by women are significantly smaller, averaging 2.8 hectares compared to 5–10 hectares for men. Furthermore, women who are widowed or whose husbands are absent due to migration are not automatically granted legal land tenure (World bank, 2019).

Results from the APEC economy survey shows similarities in access to land in Chile and Peru (Table 6). In **Chile**, the laws do not secure equal ownership rights to property between men and women (APEC, 2025; OECD, 2024). Women only account for 30% of total agricultural land holders in 2007¹¹. The default marital property regime, chosen by over 80% of couples, stipulates that the husband administers the marital property. This prevents married women from undertaking financial actions, like starting a business, because they often lack the necessary collateral (OECD, 2021). As response by **Peru**, women own and control less land than men (with 35.5% of women producers have a plot with a property title), and smaller farms (average 1.8 hectares versus 3 hectares for men). This limits women’s access to credit, irrigation, programs, and decision-making power

Table 6. Gender gaps in agriculture as responded by six economies

Gender gaps	Australia	Chile	Malaysia	Peru	Chinese Taipei	Viet Nam
Access to land	No data	Yes	No	Yes	No	Yes
Access to inputs	No data	Yes	No	Yes	No	Yes
Access to financial services	Yes	Yes	No	Yes	No	Yes
Access to market	Yes	Yes	No	Yes	No	No
Access to education, extension services, training, and technology	No	Yes	No	Yes	No	Yes
Decision-making power	Yes	Yes	No	Yes	No	Yes
Control of use of income	Yes	Yes	No	Yes	No	Yes
Leadership and community participation	Yes	Yes	No	Yes	No	Yes
Time allocation	Yes	Yes	No	Yes	No	Yes
Productivity	Yes	Yes	No	Yes	No	Yes

Source: APEC economy survey, 2025

¹⁰ In Mexico, an *ejidatario* is a member of an *ejido*, which is a parcel of communal land granted for agricultural use.

¹¹ <https://documents1.worldbank.org/curated/en/735801642746928142/pdf/Increasing-Women-s-Ownership-and-Control-of-Productive-Assets.pdf>

Table 7. The significance of gender barriers in AVCs as responded by six economies

Gender barriers	Australia	Chile	Malaysia	Peru	Chinese Taipei	Viet Nam
Limited access to land ownership/tenure	Not sure	5	Not sure	5	1	5
Lack of access to credit and financial services	2	5	Not sure	5	1	5
Limited technical knowledge and training opportunities	2	4	Not sure	4	1	4
Gender discriminatory social norms and attitudes	4	5	Not sure	5	1	5
Lack of access to markets and value chain networks	4	4	Not sure	4	1	2
Unpaid care and domestic work responsibilities	4	5	Not sure	5	1	5
Limited literacy/education levels	1	2	Not sure	4	1	4
Lack of technology access	3	4	Not sure	4	1	4

Note: Not at all significant=1; Very significant =5

Source: APEC economy survey, 2025

2.2. Access to finance and credit

Access to finance services is regionally reported to be equal between women and men (Table 5). In reality, men and women in APEC have equal rights to open a bank account and obtain credit at a formal financial institution. The rate of women who have account at formal financial institutions increases from 59% to 82% in a decade (compared to 85.4% for men), contributing significantly to closing the gender gaps. The proportion of women (over 15 years old) who have a loan from a financial institution was 38.7% and have a saving at a financial institution was 41.8% in 2021 (APEC, 2025) but varies significantly from economy to economy (Table 8).

Despite these improvements, women's access to credit still faces challenges. Fewer than half of APEC economies (only 10 economies as of 2023) have laws prohibiting sex-based discrimination in credit access. Women often lack sufficient formal credit history, timely payment records, or collateral needed to approve a loan, as utility bills or property might be registered under their spouse's name. This lack of creditworthiness contributes to the perception that women entrepreneurs are high-risk borrowers (APEC, 2025). According to **Australia's** response to the survey, 18% of total Australian start-up capital was invested in start-ups with at least one women founder in 2023 (PM&C, 2024). When comparing full-time equivalent total remuneration of private sector employees, which includes superannuation, bonuses, overtime and other payments, the median gender pay gap is 19% (USD 18,461 per year). In **Chile**, access to credit is 60% for men and 40% for women. As responded by **Peru**, due to limited access to formal credit (as financial institutions usually require securities of property that women do not possess), informal loans predominate. Only about 10-15% of women agricultural producers have access to formal credit (Table 6).

Table 8. Percentage of female having loan from a financial institution by economy

APEC economy	2014	2017	2021	2022	Note
Australia	66.1%	63.8%	59.4%	...	...
Brunei Darussalam	...	14.3%	...	...	Note: 2017 data was carried to 2014 and 2021 for the APEC aggregate, but only 2017 is explicitly shown below.
Canada	74.0%	82.6%	81.2%	...	...
Chile	28.5%	30.3%	20.5%	...	...
People's Republic of China	18.5%	19.2%	38.9%	...	...

APEC economy	2014	2017	2021	2022	Note
Hong Kong, China	58.5%	59.6%	72.3%	...	...
Indonesia	11.9%	17.5%	16.4%	...	...
Japan	59.5%	54.9%	60.0%	...	...
Republic of Korea	60.8%	66.2%	64.0%	...	...
Malaysia	21.0%	32.5%	30.6%	...	...
Mexico	16.3%	31.1%	...	14.4%	Note: Data for 2022 was carried backward to 2021 for the APEC aggregate.
New Zealand	73.9%	69.1%	60.5%	...	...
Papua New Guinea	...	...	...	...	Data is not available
Peru	16.0%	15.9%	21.2%	...	...
The Philippines	15.0%	11.2%	14.5%	...	...
The Russian Federation	22.6%	22.3%	29.2%	...	...
Singapore	38.1%	47.7%	40.6%	...	...
Chinese Taipei	21.4%	20.9%	24.3%	24.1%	2008: 23.1%; 2010: 22.6%; 2012: 22.2%; 2015: 21.3%; 2016: 21.0%; 2018: 21.0%; 2019: 20.9%; 2020: 23.0%.
Thailand	16.0%	21.8%	22.7%	...	...
United States	67.1%	66.9%	66.6%	...	...
Viet Nam	22.5%	19.2%	...	9.3%	Note: Data for 2022 was carried backward to 2021 for the APEC aggregate.

Source: APEC (2025)

3. Access to markets

There remain significant disparities in income and wages in the APEC region (Table 9). The regional average for the Estimated Earned Income Gender Gap is a score of 0.648, which signifies that women earn, on average, approximately 65% of what men earn. This gap demonstrates a fundamental inequality in economic returns. The performance across economies varies widely, with Thailand reporting the highest score (0.805), while Indonesia shows the largest disparity with a score of 0.503.

Table 9. Snapshots of APEC gender gaps in access to market

Indicator	APEC average	Best economy	Lagging economy
Estimated Earned Income Gender Gap (Score F/M)	0.648 (N=18)	Thailand (0.805)	Indonesia (0.503)
Wage Equality for Similar Work (1-7 score)	0.687 (N=17)	Singapore (0.812)	Mexico (0.513)
Labor Force Participation Rate (Score F/M)	0.786 (N=18)	Papua New Guinea (0.951)	Mexico (0.606)
Labor Force Participation Rate (Difference F-M) %	-16.067 (N=18)	Papua New Guinea (-2.62%)	Mexico (-30.11%)
Proportion of time spent on unpaid domestic and care work (F %)	16.688% (N=9)	Thailand (11.04%)	Mexico (27.77%)

Note: N is the total number of economies used to calculate the average. Best economies are those closest to parity/highest % F/highest score. Lagging economies are those farthest from parity/lowest score.

Source: Authors synthesize and calculate from (WEF, 2025).

Gender wage gaps are remarkable globally and in the APEC region. Evidence from across agrifood systems shows persistent gender wage gaps: Globally, women in agricultural wage employment earn on average approximately 18 % less than men, and in agriculture broadly women earn about USD 0.82 for every USD 1.00 men earn (FAO, 2023b). In **Chile**, the extent of the gender pay gap, calculated hourly and adjusted for factors like education and sector, is particularly high (ILO factor-adjusted). Women are more likely to be low-paid than men (OECD, 2021). In **Korea**, women earn only 68.8% of what their male counterparts earn, representing the largest gender pay gap among OECD economies (OECD, 2022, cited in Hicks et al., 2025). Men in **Mexico** earn 9.6% more than women on average. After controlling for individual characteristics and job type, the unexplained wage gap is still significantly high (15.3%) (World bank, 2019). Whereas in **Thailand**, although the overall gender wage gap has been successfully reduced due to structural economic transformation (shifting women from unpaid to paid formal jobs), a larger gender wage gap persists in informal employment (Paweenawat, 2021). In **Viet Nam**, domestic gender assessments indicate that female agricultural workers often have lower earnings, engage in seasonal/irregular work, and take on multiple tasks to make ends meet (FAO, 2019c). These cases illustrate how women are concentrated in precarious, informal, and lower-paid segments of the agrifood value chain, even in export-oriented industries.

There is lack of pay equity for equivalent roles, as measured by the Wage Equality for Similar Work indicator (Table 9). The APEC average score is 0.687 on a 1-7 scale, suggesting a prevalent perception of unequal compensation. **Mexico's** score of 0.513 points to a severe perceived gap in compensation for similar work, highlighting that even when women attain employment, they face structural pay discrimination. In contrast, **Singapore** is the regional leader with a score of 0.812, indicating stronger perceived wage equality. In **Thailand's** seafood processing pre-processing sector, women are paid around 41 % less than men in similar roles under informal contracts (Petcharat, 2021; Vandergeest et al., 2025).

The gender gap in payment is partly attributed to the legal protections in the workplace which is inconsistent in the APEC member economies. Data from SIGI released by OECD (2024) shows that while many members, including Australia; Canada; Chile; Mexico; and New Zealand legally prohibit discrimination in employment and mandate equal pay for work of equal value, economies such as Brunei Darussalam; Indonesia; Malaysia; Papua New Guinea; and Singapore do not. Similarly, Brunei Darussalam; Malaysia; and Singapore do not legally mandate equal remuneration. Moreover, legal barriers persist that restrict women from entering certain professions in several economies, including the China; Japan; Korea; Malaysia; Papua New Guinea; and United States, directly limiting women's access to all segments of the labor market.

A principal structural barrier to female market participation is the asymmetrical distribution of unpaid domestic and care work (Table 9). The available data indicates that women in the APEC region spend an average of 16.68% of their time on such unpaid labor, more than double the men average of 7.71%. Meanwhile, Hernando (2022) estimates that across the APEC region, women dedicate an average of 4 hours and 20 minutes per day to unpaid care and domestic labor, which is nearly three times the amount contributed by men and is consistent with established global trends. They are typically responsible for childcare, food preparation, and the management of small livestock—tasks that restrict mobility and time available for paid work (FAO, 2023b). In **Chile**, women spend more than twice the time on unpaid domestic and care work as men (Andrea, 2023). The disparity is particularly pronounced in **Mexico**, where women dedicate 27.77% of their time to unpaid work. They spend 17–26 more hours per week than men on household chores, depending on their education and income. In **Thailand**, the gap is smaller but still significant, with women spending 11.04% of their time on these tasks compared to 3.25% for men (WEF, 2025). In **the Philippines**, women were found to be the least empowered in the time and drudgery domain, heavily overburdened by farming and household responsibilities. In **Korea**, women spend 215 minutes per day on unpaid household labor, compared to 49 minutes for men (Stangarone, 2021, as cited in Hicks et al., 2025). This excessive burden limits women's time and subsequently their ability to participate fully in economic and political life (OECD, 2021).

Although vulnerable employment rates have declined for both women and men, there remains significant gender disparity in the category of **contributing family members**, where women constituted 10.8% in 2023, a rate more than double the 4.6% recorded for men. This imbalance in employment status is largely attributed to the disproportionate burden of **unpaid work** shouldered by women (APEC, 2025).

The responses of Australia; Chile; Peru to the survey exemplify the gender disparity in unpaid workload. In **Australia**, 71% of women working in agriculture indicated they spent five hours or more doing unpaid domestic work in the week prior to the 2021 census. This is 14 percentage points more than the

proportion for all women of 56% (ABARES, 2023). In **Chile**, most women combine care work with productive work. In **Peru**, the domestic workload plus the agricultural workload limits their participation in other activities such as training, marketing, leadership or leisure. According to the INEI: 7 out of 10 family workers are women and rural women dedicate between 35 and 42 hours a week to unpaid domestic work.

This disproportionate responsibility for unpaid work directly correlates with lower female engagement in the formal economy (Table 9). The regional average score for the Labor Force Participation Rate gender gap is 0.786, with an average participation difference of -16.067 percentage points between men and women. The gap is most acute in **Mexico** with a participation difference of -30.11% reinforcing the fact that Mexican women dedicate 27.77% of their time to unpaid work. While **Papua New Guinea** exhibits a high participation score (0.951) and a small gap (-2.62%), this figure may reflect a high concentration of women in the informal, low-wage economy rather than equitable market access (WEF, 2025).

4. Skills, capacity, and health

The domain of skills, capacity, and health demonstrates the most significant progress toward gender parity within the APEC region (Table 10). The average score for the Literacy Rate gap is 0.978, approaching full parity. A significant number of member economies—including Australia; Canada; Chile; Japan; Korea; New Zealand; the Philippines; Singapore; Thailand; and United States—have achieved a perfect score of 1.000, having eliminated the gender gap in literacy. The primary exception is Papua New Guinea, with a score of 0.785, indicating that challenges in providing universal basic education persist.

Table 10. Snapshots of APEC gender gaps in skills, capacity & health

Indicator	APEC average	Best economy	Lagging economy
Literacy Rate (Score F/M)	0.978 (N=18)	Australia; Canada; Chile; Japan; Korea; New Zealand; the Philippines; Singapore; Thailand; United States (1.000)	Papua New Guinea (0.785)
Healthy Life Expectancy Gender Gap (GPI Score)	1.035 (N=18)	Mexico; the Philippines; Thailand; Viet Nam (all 1.060)	New Zealand (1.011)
Women in Agri., Forestry, Fisheries & Veterinary professions (% F Graduates)	1.732% (N=14)	Viet Nam (4.44%)	Singapore (0.37%)
Vocational Training (% F Graduates)	8.796% (N=15)	Singapore (21.88%)	Papua New Guinea (0.42%)
Vocational Training (% M Graduates)	10.782% (N=15)	-	-

Note: N is the total number of economies used to calculate the average. Best economies are those closest to parity/highest % F/highest score. Lagging economies are those farthest from parity/lowest score.

Source: Authors synthesize and calculate from GGGI 2025 (WEF, 2025).

However, this parity in foundational metrics does not extend to specialized vocational and technical fields (Table 10). On average, women account for only 8.796% of graduates in Vocational Training, compared to 10.782% for men. Similarly, women represent a mere 1.732% of graduates in Agriculture, Forestry, Fisheries & Veterinary professions. This reveals a critical pipeline issue where high levels of general education for women do not translate into their representation in key technical sectors.

Examining graduates in Agri., Forestry, Fisheries & Veterinary profession reveals disproportional situation between developed and developing economies (Table 11). In highly developed economies such as Australia; Canada; New Zealand; Singapore; and United States, the percentage of female graduates is higher than that of male graduates. Conversely, in developing and newly industrialized economies such as Indonesia; Mexico; Peru; the Philippines, male graduates outnumber female graduates. Besides, economies with significant agriculture sectors show the highest overall percentage of graduates, such as Viet Nam (4.52% total) and Indonesia (4.1% total) while highly urbanized and

service-oriented economies have the lowest share of graduates in these sectors like Australia; Singapore; and United States.

Table 11. Graduates in Agri., Forestry, Fisheries & Veterinary (%)

Economy	Female (%)	Male (%)	Value (%) (Total)
Australia	0.94	0.75	0.86
Brunei Darussalam	n. a.	n. a.	n. a.
Canada	1.1	0.92	1.02
Chile	1.9	2.2	2.03
People's Republic of China	n. a.	n. a.	n. a.
Indonesia	3.37	5.13	4.1
Japan	n. a.	n. a.	n. a.
Malaysia	1.49	1.91	1.68
Mexico	1.46	2.28	1.82
New Zealand	2.64	1.52	2.23
Papua New Guinea	n. a.	n. a.	n. a.
Peru	1.74	3.51	2.48
The Philippines	2.84	3.42	3.07
Singapore	0.37	0.31	0.34
Republic of Korea	1.33	1.61	1.47
Thailand	2.32	2.58	2.43
United States	1.02	0.94	0.99
Viet Nam	4.44	4.6	4.52

Source: WEF (2025)

Access to and participation in agricultural extension training, which is crucial for agricultural production, remains a significant challenge for women due to a range of systemic barriers. In research focusing on **Indonesia** and Myanmar, the lack of training and extension services and insufficient agricultural knowledge were identified as major challenges affecting women's empowerment (Akter et al., 2017). Structural issues are prominent in economies like **Peru**, where extension programs are often designed with inappropriate schedules and content that is not customized to women's specific needs. This leads to their significant underrepresentation; in 2022, women accounted for only 26% of training recipients and 24% of technical assistance beneficiaries (ENA 2022). Beyond structural design, perceptual biases also limit access, as seen in the **Philippines**, where extension agents often fail to recognize women's roles as agricultural producers (FAO, 2022a). Furthermore, social dynamics, such as the predominance of male extension staff in **Indonesia**, can create a barrier for female farmers seeking information (FAO, 2019a). These challenges are mirrored in **Viet Nam**, where women not only have less access to extension services but are also offered training that is typically short-term, thereby reinforcing existing inequalities. The scale of this issue is stark, with 60% of rural women in Viet Nam's agricultural labor force lacking access to vocational training (FAO, 2019c).

A significant gap exists regarding women's access to and capability with digital tools. **Filipino** rural women, especially agricultural producers, have significantly less access to know-how, including the use of information and communication technologies (ICTs), compared to men. The digital gender divide is most acute between young, city-based, educated, and middle-class men on one hand, and elderly, rural-based, and undereducated women on the other (FAO, 2022a). Women in **Papua New Guinea** face persistent gaps in skills and ICT literacy. The poor adoption of ICT in rural areas and the high cost of internet services results in delays and loss of information along the value chain (FAO, 2019b). For example, in cocoa-growing areas, women who own a phone or have access to the internet show a significant correlation with higher bargaining power in intra-household decision-making processes (FAO, 2019b). Women in ASEAN face increased risks from fintech, such as device interception or doxing for extortion. This underscores the critical need for enhancing digital and financial literacy for women, particularly those at higher risk of being left behind from development (Shofwan Al Banna. C et al., 2025).

In health outcomes, the Healthy Life Expectancy Gender Parity Index for the region is 1.035, indicating that women tend to live longer, healthier lives than men. The **Philippines**; Thailand; and Viet Nam lead the region with a score of 1.060 (Table 10). However, gender gaps exist in both the utilization of healthcare services and the prevalence of reported illness, especially when comparing urban and rural settings. In **Indonesia**, gender inequality is significantly higher in rural areas compared to urban areas. Specifically, 34.82% of women in villages report health complaints, but only around 3.27% are able to obtain health facilities. In contrast, urban women report fewer health complaints (28.96%) and have greater access to health facilities (4.02%) (Azizah et al., 2024). **Filipino** women farmers tend to prioritize economic profit over health issues, resulting in low rates of medical attention; only about 20% of women farmers received medical attention when they needed it, according to a 2010 study (FAO, 2022a). In **Viet Nam**, women demonstrate greater access to medical services (43.6%) compared to men (34.6%). This higher utilization rate is potentially explained by a higher prevalence of illness reported among women. Additionally, the proportion of women with medical insurance (56.11%) is slightly higher than that of men (52%) (FAO, 2019c).

Gendered roles related to family care, labor burden, and resource allocation directly affect the health outcomes of women and children. Traditional meal habits in rural areas of West Java, **Indonesia**, prioritize the father (as the primary breadwinner) even during mealtimes, leading to gender disparity in food access. This practice is identified as a factor contributing to the high proportion of women and children who suffer from stunting and poor nutrition in rural settings (Azizah et al., 2024). In rural **Papua New Guinea**, women traveling long distances to secure food crops and water are exposed to risks of harassment and compromised safety (FAO, 2019b). Women farmers in the **Philippines** are often overburdened by farming and household responsibilities, leading to overall low wellbeing and, in specific cases, poor health (Akter et al., 2017). They also exhibit disparities in the prevalence of *anaemia* and high waist circumference by age group and sex, as well as high prevalence of malnutrition among lactating mothers (FAO, 2022a). In **Viet Nam**, inadequate awareness of nutrition, poor eating habits based on custom, and insufficient quality of health care are critical factors influencing food and nutrition security. Furthermore, women and children in ethnic minority communities are particularly disadvantaged regarding access to health and nutrition care. In contexts defined by patriarchy and cultural traditions in Viet Nam, women are sometimes expected to reduce their food intake during times of crisis (FAO, 2019c).

5. Leadership, voice, and agency

A critical disjuncture is observed between women's educational attainment and their representation in positions of political leadership, which remains the area of greatest gender disparity. The average score for Women in Parliament across the APEC region is a low 0.414. The regional variance on this indicator is extreme. Mexico stands as a global exemplar, having achieved a perfect score of 1.000, signifying full gender parity in its parliament. Conversely, Papua New Guinea's score of 0.028 indicates a near-total exclusion of women from legislative bodies.

Table 12. Snapshots of APEC gender gaps in leadership, voice & agency

Indicator	APEC average	Best economy	Lagging economy
Women in Parliament (F/M Score)	0.414 (N=18)	Mexico (1.000)	Papua New Guinea (0.028)
Women in Ministerial Positions (F/M Score)	0.372 (N=18)	Chile (1.000)	Papua New Guinea (0.028)

Note: N is the total number of economies used to calculate the average. Best economies are those closest to parity/highest % F/highest score. Lagging economies are those farthest from parity/lowest score.

Source: Authors synthesize and calculate from GGGI 2025 (WEF, 2025).

A similar trend is evident in executive government. The regional average for Women in Ministerial Positions is 0.372. Here, Chile leads with a perfect score of 1.000. Again, Papua New Guinea has the lowest score at 0.028. This profound underrepresentation at the highest levels of governance constitutes a significant democratic deficit and limits the integration of female perspectives into domestic policymaking.

Women's empowerment concerning leadership and membership in organizations shows considerable variation in the APEC region, depending on sectors they participate in. As responded from **Australia**, the female share of agriculture owner-operators is a little under 30% (Barr & Kancans, 2020). Workplace Gender Equality Agency (WGEA) data from 2024 illustrates that women only comprise 19% of board roles, and just 2% of CEO or equivalent roles. Only 18% of agriculture organizations/businesses have a formal policy/strategy to support gender equity and have a target set to increase the representation of women. In **Peru**, women make up a vital part of the workforce but are underrepresented in leadership positions. It is estimated that less than 15% of management positions in agricultural cooperatives, irrigation associations and water user boards are held by women. In rice cooperatives, management positions are predominantly male, which affects the distribution of benefits and input purchasing decisions. In vegetable associations, although there is more female participation at the grassroots, representation in decision-making it is still low. Women have less voice in productive decisions (what to grow, what to sell, the price, what to invest in) and community decisions are limited. In rice cultivation, key decisions such as purchasing machinery or negotiating prices with mills, are predominantly male and they depend on water use boards. In vegetables, although the woman decides on the garden for self-consumption, the commercialization of large volumes is usually controlled by men, so that are relegated mainly to activities of postharvest. In **Viet Nam**, the proportion of women participating in leadership and management accounts for only about over 25% of the total number of leaders in cooperatives, and most of them only hold positions at deputy level or lower¹². In **Indonesia**, leadership in agricultural groups and organizations is predominantly men's territory (Akter et al., 2017).

On the contrary, in **the Philippines and Thailand**, women are frequently active members of both female-only and mixed agricultural and non-agricultural organizations, which often possess clear governance structures including positions like president, vice president, and treasurer (Akter et al., 2017). In **the Philippines**, women often hold notably strong leadership roles in these organizations (Akter et al., 2017). This is reinforced by the domestic agrarian reform laws in the Philippines mandating that key agricultural decision-making bodies must comprise at least 40% women. Similarly, the Community-Based Forest Management (CBFM) policy, which requires 30% female representation, has resulted in more than 30% women's leadership in CBFM committees (FAO, 2022a). Similarly in **Thailand**, women are active members in various community organizations (Akter et al., 2017).

Legal frameworks in the APEC region for political voice are a universal strength. All 20 APEC economies grant women the same legal rights to vote and to hold public and political office. Furthermore, institutional mechanisms to promote this are common, with economies like China; Indonesia; Korea; Mexico; Peru; the Philippines; and Chinese Taipei, utilizing constitutional or legislated gender quotas. However, this public-facing equality is severely undermined by legal discrimination in civil and domestic life. Women are not granted the same right as men to be legally recognized as the "head of household" in Brunei Darussalam; Indonesia; Malaysia; Papua New Guinea; and the Philippines. Access to justice is also unequal, with a woman's testimony not carrying the same evidentiary weight as a man's in the family courts of Brunei Darussalam and Indonesia, or in Malaysia's parallel legal systems. Finally, discriminatory citizenship laws in Brunei Darussalam and Malaysia prevent married women from conferring citizenship to their children on the same basis as men, impacting the agency of the entire family unit (OECD, 2024).

6. Innovation and technology

In the context of APEC's strategic focus on innovation-driven growth, the underrepresentation of women in Science, Technology, Engineering, and Mathematics (STEM) fields constitutes a significant structural challenge (Table 13). Across the economies with available data, women on average account for only 16.969% of STEM graduates. This disparity threatens to sideline women from the high-growth industries of the future. Brunei Darussalam is a positive outlier, with female graduates comprising 28.19% of the total in STEM fields. In contrast, Chile has one of the lowest representations at just 7.80%. This gap has downstream consequences, limiting women's access to high-growth economic sectors and ensuring that emerging technologies are developed without the full diversity of human perspective.

In **Australia**, gender segregation in the workforce contributes substantially to the pay gap, as men dominate high-earning industries and occupations. Women frequently choose to study or train in fields that attract debt or require unpaid placements, creating economic inequality at the start of their careers (Commonwealth of Australia, 2024). In **Mexico**, although enrollment gaps have closed in general

¹² <https://hoilhpn.org.vn/web/ho-tro-phu-nu-khoi-nghiep-va-khoi-su-kinh-doanh/tin-chi-tiet/-/chi-tiet/phat-huy-vai-tro-cua-nu-lanh-%C4%91ao-hop-tac-xa-va-%C4%91ong-gop-thuc-chat-hieu-qua-vao-phat-trien-kinh-te-192301-2001.html>

education, differences in learning outcomes persist, with girls underperforming more than boys in international standardized tests (PISA) starting in upper-secondary school. This translates into educational choices where women and men are segregated across fields of specialization. For instance, men prefer engineering-related majors, while women exhibit a higher preference for health-related majors. Women are also severely underrepresented in physics and mathematics majors at the Domestic Autonomous University of Mexico (UNAM) (World bank, 2019). In **Peru**, only one quarter of female tertiary graduates having a STEM degree, compared to over one-third of male tertiary graduates (OECD, 2022).

The APEC region has gained significant achievements in ICT such as mobile network coverage, mobile phone possession and internet usage (Table 13). In 2023, 99.5% of the population were covered by a mobile network signal, 78.2% of the women population used the internet in 2022. Digital payment and online purchase become more popular among women and the gaps between men and women in regards of these areas are inconsiderable. This contributes to progress of women's empowerment and minimization of gender gaps in the region.

Table 13. Snapshots of APEC gender gaps in innovation and technology

Indicator	APEC average	Best economy	Lagging economy
Women in STEM professions (% F Graduates)	16.969 (N=14)	Brunei Darussalam (28.19)	Chile (7.80)
Percentage of total population covered by a mobile network signal (%)	99.5 (2023)		
Female internet users (% of population)	78.2 (2022)		
Used a mobile phone or the internet to buy something online, female (% age 15+)	65.4 (2021)		
Used a mobile phone or the internet to buy something online, male (% age 15+)	62.1 (2021)		
Made or received digital payments, female (% age 15+)	78.2 (2021)		
Made or received digital payments, male (% age 15+)	79.9 (2021)		

Note: N is the total number of economies used to calculate the average. Best economies are those closest to parity/highest % F/highest score. Lagging economies are those farthest from parity/lowest score.

Source: (APEC, 2025; WEF, 2025)

However, access to ICT and digital literacy in the APEC region presents a persistent challenge, particularly among vulnerable populations. In **Mexico**, despite the potential for ICT infrastructure and fintech to help, men use digital payments and mobile services more frequently than women. Between 2014 and 2017, the gender gap in mobile account ownership actually increased by 1.6 percentage points. However, women in rural areas experienced a large increase in cell phone access (16.7 percentage points between 2012 and 2016) (World bank, 2019). In **the Philippines**, gender disparities regarding the use of ICTs are noted as constraints for rural women and men in agriculture. The digital gender divide is most pronounced between elderly, rural, and undereducated women and younger, educated, urban men (FAO, 2022a). In **Thailand**, while young Thai women show high involvement in ICT access and e-commerce, globally, the digital gender gap is stable or worsening, and it is generally higher in developing economies. In urban areas of Thailand, there is a 10% gender gap in computer ownership (55% of men versus 45% of women). Women often possess lower levels of skills and technical literacy compared to men, though this difference is negligible among the younger generation. Improving digital infrastructure and technical literacy is recommended to close these gender gaps and provide new opportunities for empowerment (Paweenawat, 2021).

Apart from disparity in access to ICT, there are evidences that gender gaps in innovation and technology remain existence. In **Indonesian** rural agriculture, women's roles are vulnerable to marginalization because they often do not have the necessary skills to use equipment equipped with advancing technology. Furthermore, gender bias embedded in service institutions limits women's access to

innovation in sectors such as cattle farming (Valerio et al., 2024, cited in Azizah et al., 2024). They often work longer days using traditional technology, which contributes to widening gaps in labor productivity. Capacity building efforts are necessary to address the impact of limited education levels on the adoption of modern technology and farm productivity (Rachmawati et al., 2025). In **Papua New Guinea**, basic labor-saving technologies and women-friendly post-harvest technologies are generally non-existent in rural Papua New Guinea (FAO, 2019b). In **Viet Nam**, men are typically overrepresented in technology transfer involving new machinery and commercially promising livelihood strategies (e.g., shrimp farming), while women are confined to training in more traditional areas like small-scale animal husbandry or rice and vegetable cultivation (Pham & Nguyen, 2014, cited in (FAO, 2019c). Labor-saving machines, which are often operated by men, are replacing tasks traditionally performed by women.

CHAPTER 4. BEST PRACTICES FOR CLOSING GENDER GAPS AND EMPOWERING WOMEN IN AGRICULTURE AMONG THE APEC ECONOMIES

This section aims to synthesize and analyze best practices for closing genders gaps, accelerating women's participation in agriculture sector and enhancing WEE within the APEC region. These practices implemented by APEC economies are identified through literature review and APEC economy survey responses (including two best practice examples recommended by Australia; two by Chile; one by Malaysia; one by Peru; and four by Viet Nam). The content of these best practice examples is preliminarily built on economies' responses and enriched by other secondary sources. The best practices comprise of policies, measures, initiatives, programs and are structured into 5 pillars: Access to asset; access to market; skills, capacity and health; leadership, voice and agency; innovation and technology.

1. Access to asset

The APEC economies have implemented a range of policies, measures, and initiatives targeting to closing the gender gaps in access to productive assets, particularly land and finance. These strategies frequently focus on legal reform, harnessing technology, supporting entrepreneurship, and implementing broader empowerment frameworks.

1.1. Best practices and initiatives for access to assets

Enhancing women's access to land and property rights

One crucial area of action is the statutory recognition of women's ownership and decision-making power over land. This is an "entry point" to address many other gender barriers. The enhancement of women access to land should focus on:

- **Legal mandates for joint titling:** Several APEC economies have established laws to ensure joint land ownership, aiming to address traditional practices that restrict women's rights. The Philippines' Magna Carta of Women (MCW) (Government of the Philippines, 2009) declares that equal status is given to women and men in land titling and the issuance of land instruments. Similarly, Viet Nam's 2013 Land Law mandates that the full names of both the husband and wife must be included on the Land Use Rights Certificate (LUC) to secure women's equal rights to land (Government of Viet Nam, 2013).
- **Formalizing joint registration and rights:** To overcome systemic barriers, policies advocate for formal action. In the context of Chile, recommendations emphasize the need to formalize joint titling and registration of property rights for female heads of households. These actions are complemented by calling for the training of land administration staff on gender-equitable governance and simplifying procedures for women's access to housing (Andrea, 2023).
- **Addressing discriminatory marital law:** Policy interventions targeting marital property regimes are vital to enhancing women's access to collateral and credit. In Chile, a major recommendation focuses on accelerating the reform of marital law to abolish the default rule that allows the husband to administer marital property. This practice restricts a woman's capacity to raise collateral and start a business without her husband's consent (OECD, 2021).
- **Recognizing non-monetary contributions:** Mexico's legal framework promotes gender equality in property by recognizing women's nonmonetary contributions within marriage, which positively influences their access to property ((World bank, 2019).

Expanding financial inclusion and access to credit

APEC economies are leveraging institutional reforms, entrepreneurship initiatives, and technological innovations to bridge the financial inclusion gap. For example:

- **Utilizing technology and data-driven lending:** A significant innovation involves leveraging financial technology (Fintech) to bypass traditional barriers like the lack of collateral.
 - + In Mexico, implementing data-driven lending can reduce heavy collateral requirements and increase financial inclusion for women (World bank, 2019).
 - + Digitalizing government transfers through Government-to-Person (G2P) payments (e.g., social transfers or conditional cash transfer programs) has successfully provided women in rural

- Mexico with bank accounts and significantly increased their financial inclusion (World bank, 2019).
 - + Similarly, the conditional cash transfer program (4Ps) in the Philippines provides cash grants directly to women beneficiaries' bank accounts, boosting their access to financial resources (ADB, 2015, cited in FAO, 2022a).
- **Promoting women-centered financial initiatives:** Many measures focus on creating or strengthening institutions designed specifically for women or mandating gender sensitivity in existing financial bodies:
 - + Indonesia encourages the promotion of credit facilities using village-owned cooperatives or financial services (BUMDes), and ensuring they are accessible for female farmers (FAO, 2019a).
 - + The provision of credit access for rural women in Viet Nam is supported by the Viet Nam Bank for Social Policies (VBSP), with the Women's Union providing extra support to access these preferential loans (FAO, 2019c).
 - + Australia is committed to increasing the availability of relevant banking products and investing in women-led and owned businesses (Commonwealth of Australia, 2024).
 - + ASEAN members recommend promoting women-centered initiatives to regional banks to boost women's participation for productive purposes, including strengthening gender perspectives within regional banking frameworks (Shofwan et al., 2025).
- **Combining financial services with non-financial support:** To ensure loans lead to true empowerment, microfinance and credit access should be combined with non-financial assistance. Effective approaches combine access to formal saving services and flexible debt repayment conditions with measures such as market and business training, financial education, and acquisition of digital skills (OECD, 2022). Entrepreneurship training courses in Chile, for example, place more emphasis on identifying when seeking credit is advisable and how to obtain it (OECD, 2021).

1.2. Overarching policies and empowerment strategies

Beyond specific asset categories, broader policies and institutional changes underpin the success of closing gender gaps in resource access.

- **Supporting women's entrepreneurial activities:** In Japan, rural women's entrepreneurial activities (RWEA) are strongly supported by the government, contributing to women's economic independence and empowerment (Inagaki & Hara-Fukuyo, 2020). A key insight is that women gain decision-making rights in their ventures by utilizing savings acquired from pre-farming careers for initial investment (Inagaki & Hara-Fukuyo, 2020). Similarly, Malaysia provides substantial financial assistance, including access to sizable funds and lower financing rates, to promote entrepreneurship among women (MWFC, 2024).
- **Adopting GTAs:** GTAs are participatory processes that uncover and address the underlying discriminatory social institutions and unequal power relations that restrict women's potential and access to resources (FAO et al., 2024). The use of GTAs is critical for ensuring that interventions lead to equitable outcomes, as empowerment relies on engaging both women and men to promote positive changes in perspectives and attitudes (FAO et al., 2024). The framework emphasizes improving women's skills, knowledge, and access to assets as immediate goals.
- **Implementing gender-responsive budgeting (GRB):** GRB is a policy mechanism that integrates consideration of gender impacts into all budget decisions and investments (Commonwealth of Australia, 2024). This is essential for ensuring that funds are allocated to meet the specific needs of all groups, including women, and for correcting existing gaps in access, control, participation, and benefits (Azizah et al., 2024). Indonesia and Malaysia explicitly mandate GRB to enhance the effectiveness of gender equality initiatives (MWFC, 2024).
- **Developing localized strategies:** Indonesia has pioneered innovative localized policies to align global goals with grassroots realities, such as launching Village SDGs in 2020 and Women-Friendly and Child-Care Villages (DRPPA) in 2022 (Azizah et al., 2024). These programs set quantitative indicators for women's participation and asset utilization at the village level.
- **Building institutional capacity:** Indonesia and the Philippines both emphasize the need to expand gender mainstreaming in relevant policies to ensure women's access to and control over resources and assets. This includes providing guidance, training, and consultation to various government agencies, particularly at the sub-domestic level, to enhance their capacity for gender analysis and implement gender-responsive policies (FAO, 2019a).

Case study #1: Rural and Indigenous Women's Entrepreneurship Plans (PEMRI): Financing women-led enterprises

Member economy: Peru

Overview

The *Estrategia de Emprendimiento de la Mujer Rural e Indígena (Rural and Indigenous Women's Entrepreneurship Strategy- EEMRI)* is a pivotal Peruvian initiative designed to foster the economic empowerment of women within the agricultural, livestock, artisanal, and forestry value chains.³ The strategy is operationalized through the funding of *Planes de Emprendimiento de la Mujer Rural e Indígena (PEMRI)*, which are business plans developed by Women's Agrarian Organizations (OAMs). The program's model is a targeted intervention that uniquely combines non-reimbursable financing (grants) with strict institutional requirements that prioritize and mandate female leadership within the recipient organizations.³

The core of initiative

The EEMRI provides substantial financial support to women-led agricultural organizations. The mechanism involves the provision of non-reimbursable grants of up to 25 Tax Units (UIT), equivalent to PEN 133,750 (approximately USD 35,000), to eligible OAMs¹³. These funds cover up to 90% of the total budget of the organization's business plan (PEMRI), which has an execution period of up to 12 months¹⁴.

The program, executed by Agroideas (a government agency for agricultural competitiveness), follows a rigorous process of selection, execution, monitoring, and supervision. The eligibility criteria are the cornerstone of the program's transformative potential. To qualify, an OAM must:

- Be legally constituted and have an ongoing business.
- Be comprised of at least 70% women members.
- Have women holding at least 50% of leadership positions, with the roles of president and treasurer obligatorily held by women.

This governance requirement ensures that women are in direct control of the financial resources and the strategic direction of their enterprise, building both their economic capacity and their leadership experience.

Key impact and achievements

The EEMRI has demonstrated significant scale and a profound impact on empowering rural and indigenous women. Between 2022 and 2024 alone, the strategy benefited 8,184 women economy-wide through a total investment of PEN 67.9 million (approximately USD 18 million).³ Since its inception, the program has financed the ventures of over 8,200 women¹⁵.

The primary achievement, as stated in its evaluation, is the "empowerment of Women's Agrarian Organizations (OAM), prioritizing female leadership in their internal structures and strengthening their productive and economic capacities". This directly addresses the critical issue of women's under-representation in leadership roles and provides a structured pathway for them to gain management

¹³ Mujeres rurales e indígenas: Accede a financiamiento - Inforegión, accessed October 20, 2025, <https://inforegion.pe/ultimos-dias-para-postular-a-fondos-que-fortalecen-emprendimientos-de-mujeres-rurales-e-indigenas/>

¹⁴ Acceder a la subvención económica 'Estrategia de Emprendimiento de la Mujer Rural e Indígena' (EEMRI), accessed October 20, 2025, <https://www.gob.pe/83894-acceder-a-la-subvencion-economica-estrategia-de-emprendimiento-de-la-mujer-rural-e-indigena-eemri>

¹⁵ More than 1,800 rural and indigenous women apply for economic grant - Tridge, accessed October 20, 2025, <https://www.tridge.com/news/more-than-1800-rural-and-indigenous-women-ap-hlzzgne>

experience and economic control, contributing to their autonomy and enhancing their decision-making power within their households and communities¹⁶.

Innovative and impactful factors

The innovation of the PEMRI model lies in its institutional-strengthening approach. By investing in and enforcing governance standards within OAMs, it builds sustainable, local, women-led institutions. These organizations become capable of managing resources, negotiating with market actors, and advocating for their members' interests long after the initial grant period has ended.

The strategic value of this approach is its ability to formalize and professionalize women's economic participation. It facilitates the transition of women from being isolated, informal producers to becoming members of organized, competitive enterprises. This not only improves their individual economic outcomes but also strengthens the fabric of the rural economy.

Challenges, lessons learned, and forward recommendations

The implementation of the EEMRI has generated a set of clear and powerful lessons that provide an evidence-based roadmap for designing effective WEE programs. Four key lessons have emerged:

- **A comprehensive approach is essential:** Financial support or training alone is insufficient. Successful interventions must combine access to assets (land, technology), technical training, organizational strengthening, and concrete linkages with markets.
- **An intentional gender approach is non-negotiable:** Progress requires deliberate affirmative actions, such as the participation and leadership quotas mandated by the EEMRI, as well as practical support like flexible schedules and training in soft skills (e.g., leadership, negotiation).
- **Strengthening associativity is key:** Supporting women's organizations like OAMs is crucial for them to achieve economies of scale, access larger financing, purchase inputs in bulk, and market competitive volumes.
- **Market articulation must drive training:** All technical training and capacity building must be directly linked to a clear marketing strategy that ensures the production is profitable and has a secure place in the value chain.

These lessons underscore that the economic empowerment of rural women is not only an imperative of social justice but also a smart strategy to accelerate the transition to a more resilient and productive agriculture sector. The clear recommendation is to scale this integrated, four-part model, ensuring that future programs and policies incorporate all of these components to maximize their impact and sustainability.

2. Access to market

APEC economies have developed multifaceted strategies, blending policy reforms, targeted economic measures, and social innovations, aimed at closing gender gaps and enhancing WEE in accessing labor, goods, and services markets. These initiatives focus strongly on addressing deep-seated cultural norms, leveraging digital technologies, and enhancing legal and institutional frameworks.

2.1. Enhancing access to labor markets

Strategies to improve women's access to labor markets largely center on overcoming the burden of unpaid care and domestic work, promoting equitable workplace standards, and ensuring meaningful career progression.

Addressing the burden of unpaid care and domestic work

A key barrier to women's full participation in the labor force across APEC economies is the disproportionate share of unpaid care and domestic work they shoulder, typically averaging almost three

¹⁶ Economic factors influencing the empowerment of Peruvian women - PMC, accessed October 20, 2025, <https://pmc.ncbi.nlm.nih.gov/articles/PMC11971627/>

times the time spent by men. Policy recommendations follow a "recognize–reduce–redistribute" framework:

- **Policy recognition and data:** Governments must recognize and quantify the monetary value of unpaid care and domestic work using time-use surveys and sex-disaggregated data to inform policymaking (Hernando, 2022).
- **Reducing workload through investment and technology:**
 - + Investing in infrastructure is critical for reducing the household workload, particularly in rural and low-income areas where basic public services like water and electricity are often lacking (Hernando, 2022).
 - + The Philippines promotes the commercialization of "gender-friendly technologies" (e.g., specific diggers or solar dryers) developed to be compact and easy to maintain for both male and female farmers, thus aiming to increase their productivity (FAO, 2022a).
 - + Viet Nam has seen that technological improvements, such as irrigation systems, have demonstrably reduced the time spent on hard agricultural labor by women (FAO, 2019c).
 - + Papua New Guinea recognizes the need for low-cost labor-saving technologies, such as water tanks and pumps for irrigation, to address constraints in production and mitigate women's chronic time poverty (FAO, 2019b).
- **Redistributing care responsibilities (workplace policies):**
 - + Leave policies: Policies should mandate paid maternity leave (13 APEC members provide at least 14 weeks) and introduce paternity and/or shared parental leave to encourage men to assist with family duties (Hernando, 2022). As of February 2022, 15 APEC economies provided paternity leave, and 10 supported shared parental leave, doubling the numbers from a decade prior (Hernando, 2022).
 - + Flexible work arrangements: Implementing flexible forms of work, such as home-based work, part-time options, and flexible working hours, is strongly encouraged. These arrangements help individuals balance career and family responsibilities, encouraging women to remain in the labor force (Hernando, 2022). Malaysia specifically advocates for supporting Small and Medium Enterprises (SMEs) to digitalize their businesses to facilitate these flexible work models (World Bank, 2021).
 - + Non-discriminatory hiring: The adoption of non-discriminatory policies in the workplace is essential, especially against bias based on sex, marital status, or family characteristics (Hernando, 2022).
 - + Childcare and long-term care: Expanding the supply of affordable, quality care services is central to reducing the burden (Hernando, 2022). Indonesia recommends promoting affordable quality childcare facilities through community-based organizations (CBOs) or village-owned business institutions (BUMDes) to free up women's time (FAO, 2019a). Chile specifically needs to expand formal early childhood education and actively invest in long-term care for the elderly (OECD, 2021).
- **Challenging social norms:** Initiating awareness campaigns on gender equality is vital for shifting mindsets and countering gender stereotyping, thereby encouraging men and boys to actively share caregiving responsibilities (Hernando, 2022). Malaysia promotes the *Qawwam Male Initiative* to reinforce men's roles as advocates and leaders for gender equality within families and communities (MWFCD, 2024).

Promoting career advancement and equal pay

- **Equal pay legislation:** Legal reforms, such as those implemented in Thailand, mandate equal remuneration for work of equal value (World Bank, 2020). Similarly, Malaysia aims to reform labor laws to legally mandate equal remuneration for work of equal value (World Bank, 2021).
- **Addressing the "Glass ceiling":** Practices focusing on strengthening women's representation at the executive level in private sector companies are recommended, supported by monitoring and evaluation mechanisms for equal pay and equal opportunity (OECD, 2021). Economies like Australia and Malaysia utilize targets or mandatory reporting for women on corporate boards (MWFCD, 2024; Commonwealth of Australia, 2024).

- **Breaking STEM segregation:** To tackle the underrepresentation of women in STEM careers, which are often high-earning:
 - + Interventions involve informing students about career possibilities and the returns of studying STEM (World Bank, 2020).
 - + Featuring female role models and mentors in STEM fields is a promising intervention to close the belief gap and challenge stereotypes (World Bank, 2020; OECD, 2021). Exposure to mentorship programs in Peru increased high-performing female students' interest in engineering (World Bank, 2020).
 - + Programs address gender biases in learning materials and encourage participation in extracurricular activities related to STEM (World Bank, 2020).

Case study #2: The Gender-Responsive Equitable Agriculture and Tourism (GREAT) Program: Building inclusive market systems for women

Member economy: Viet Nam

Overview

The GREAT Program is a flagship bilateral initiative between the governments of Australia and Viet Nam. The program is specifically focused on driving the economic empowerment of ethnic minority women in the mountainous northwest provinces of Son La and Lao Cai, regions characterized by high rates of poverty and inequality¹⁷. GREAT is distinguished by its use of a Market Systems Development (MSD) approach. This methodology moves beyond traditional capacity-building to systematically forge sustainable, commercially viable linkages between women producers and profitable markets in the agriculture and tourism sectors, aiming to create lasting systemic change.

The core of initiative

The GREAT program's MSD methodology is holistic and multi-layered, targeting change at the community, market, and policy levels. Key activities include:

- **Private sector partnerships:** The core of the program involves identifying and co-investing with private sector partners (e.g., buyers, processors, tourism operators) to develop and scale inclusive business models that integrate women producers and employees into their value chains.
- **Holistic training:** GREAT and its partners provide comprehensive training to women that goes beyond technical skills. It includes business planning, financial literacy, marketing, and sustainable farming techniques, equipping them to engage with markets as entrepreneurs.
- **Access to finance:** The program works to improve women's access to formal credit and financial services, often a critical barrier to scaling their operations. This includes trialing innovative approaches like collateral-free lending based on cash flow models.
- **Policy advocacy:** GREAT engages with provincial and domestic government agencies to advocate for more gender-sensitive and inclusive policies and to ensure public resources are allocated to support women's needs.
- **Leadership development:** A key focus is on strengthening the capacity of women-led cooperatives and business associations, building their collective bargaining power and leadership skills.

The program strategically focuses on specific value chains with high growth potential, such as cinnamon, tea, vegetables, and community-based tourism¹⁸.

Key impact and achievements

The first phase of the GREAT program (2017-2022) delivered impressive and quantifiable results, demonstrating the effectiveness of its MSD approach.

¹⁷ Gender Responsive and Equitable Agriculture and Tourism (GREAT) Program - Equality.Aus4Viet Nam, accessed October 20, 2025, <https://equality.aus4vietnam.org/wp-content/uploads/2024/08/EN-GREAT-Overview.pdf>

¹⁸ GREAT: Gender Responsive Equitable Agriculture and Tourism, accessed October 20, 2025, <https://beamexchange.org/practice/programme-index/286/>

- **Income and economic empowerment:** The program contributed to increased income for over 15,257 women, and 3,657 women secured new, safe jobs¹⁹. In the province of Lào Cai alone, the project helped over 6,800 women increase their earnings.
- **Decision-making and confidence:** The impact extended beyond income. An extraordinary 97% of women participating in the project reported having greater involvement in business decisions and family finances, and 86% felt more confident in their technical and business skills.
- **Private sector leverage:** The program proved highly effective at mobilizing private capital, leveraging approximately USD 6.1 million in private sector investment to build more inclusive and profitable business opportunities for women.
- **Sector-specific results:** As of December 2020, the program had trained over 2,500 women in cinnamon production, expanding the organic cultivation area to 3,400 hectares and creating 235 new jobs for local women. In the vegetable sector, over 3,100 women gained access to productive resources and inputs²⁰.

Innovative and impactful factors

The core innovation of the GREAT program is its rigorous application of the MSD approach. By focusing on changing the incentives and capacities of permanent market actors—businesses, financial institutions, and government services—it creates changes that are inherently sustainable. Instead of the program being the primary service provider, it acts as a catalyst, facilitating linkages that are commercially beneficial for all parties. This ensures that women's "efforts translate into real economic returns" and that the inclusive market systems continue to function and expand long after the program's direct involvement ceases. This model addresses the root causes of economic exclusion by simultaneously tackling barriers related to skills, market access, finance, and decision-making power.

Challenges, lessons learned, and forward recommendations

The program faced significant challenges, primarily from "deeply ingrained gender norms" that limited women's mobility, public roles, and time availability due to their heavy domestic workload.³ Ensuring that the economic benefits of new market connections were distributed equitably among women was another key challenge.

The most critical lesson learned is the absolute necessity of a holistic approach. The evaluation concluded that simply providing training or credit in isolation is not enough to create lasting change. To be effective, a program must simultaneously address restrictive social norms, strengthen women's leadership and collective agency, and build profitable, reliable market linkages.³ Furthermore, the active involvement of male family members and community leaders was identified as a crucial factor for success.

The recommendation for future development programming is to replicate this multi-faceted, market-driven model. Any program design aimed at empowering marginalized women must include integrated components for social norm change alongside technical, business, and financial support to be truly transformative and sustainable.

2.2. Accessing goods and services markets (entrepreneurship and value chains)

Measures to boost women's access to goods and services markets often intersect with financial inclusion efforts, emphasizing entrepreneurial support, technological adoption, and targeted interventions within AVCs.

Supporting women's entrepreneurship

- **Bundled financial and non-financial support:** To ensure business success, especially in high-informality contexts like Peru, policy suggestions emphasize "bundled strategies" that combine access to formal financial services (savings, flexible debt repayment) with non-financial

¹⁹ Australia-Viet Nam Tourism Cooperation: Australia's GREAT project improves women's lives in northwest Viet Nam - Australian Hospitality Alumni Network Viet Nam, accessed October 20, 2025, https://ahaViet_Nam.org/2024/12/16/australia-Viet_Nam-tourism-cooperation-australias-great-project-improves-womens-lives-in-northwest-Viet_Nam/

²⁰ GREAT: Gender Responsive Equitable Agriculture and Tourism, accessed October 20, 2025, <https://beamexchange.org/practice/programme-index/286/>

measures such as market and business training, financial education, and digital skills acquisition (OECD, 2022).

- **Targeted training:** Training programs should include both hard and soft skills. Research in Mexico suggests that soft-skills training (e.g., fostering personal initiative) can be particularly impactful on business profitability for female micro-entrepreneurs, potentially encouraging those in low-productivity enterprises to close them and seek more profitable wage employment (World Bank, 2019).
- **Financial assistance and programs:** Governments offer direct support, such as the *Rural Women's Entrepreneurial Activity (RWEA)* in Japan (Inagaki & Hara-Fukuyo, 2020). Malaysia provides substantial financial assistance, including sizable funds and lower financing rates, through programs like *WeJana Programme* (for training) and *MyKasih Kapital* (for capital assistance) (MWFCD, 2024).
- **Overcoming legal barriers:** Accelerating reform of discriminatory marital laws (like that in Chile, where the husband traditionally administers marital property) is necessary. Such reforms remove constraints that restrict a woman's ability to provide collateral, thereby limiting her access to credit needed for starting or scaling a business (OECD, 2021).

Leveraging technology for market access

The digitalization of economies is seen as a key strategy to eliminate traditional barriers like physical mobility constraints and discrimination. Promoting e-commerce activities provides new job opportunities and reduces difficulties for small- and medium-sized enterprises (SMEs) (Paweenawat, 2021). Programs like Malaysia's *eUsahawan programme* provide essential training in digital marketing, and the *WeBridge Programme* helps connect women's small businesses to existing e-commerce platforms (MWFCD, 2024). In China, women own over 50% of online shops on Alibaba, highlighting the potential benefits of this sector (Paweenawat, 2021).

Strengthening participation in value chains (goods markets)

- **Gender-sensitive value chain analysis:** The use of GTAs is emphasized, which involve systematic processes to uncover and change the underlying social norms and power imbalances that restrict women's effective market engagement (FAO et al., 2024).
- **Targeting value-adding nodes:** Interventions aim to enhance women's roles in more profitable nodes of AVCs, such as processing and marketing (Quisumbing et al., 2021). For example, Sari et al., (2017) highlight the importance of recognizing women's dominance in fish processing and trading activities in Indonesia (FAO, 2019a).
- **Training and extension services:** Providing training and agricultural extension services is generally associated with increased empowerment for women farmers, though these services must explicitly target women to avoid exacerbating inequality, as traditional services often favor men (A. Quisumbing et al., 2021). In Malaysia, engagement in practical training and seminars provided by extension officers enhanced women's knowledge and decision-making power in rice production (Amran & Abdul Fatah, 2020).
- **Collective action and networking:** Encouraging the formation of women-only cooperatives or self-help groups provides a crucial platform for members to collaborate, share resources, and enhance their market influence (Dani et al., 2024; FAO, 2022a). In Japan, the use of web-based group activities allows individual rural women entrepreneurs to cooperate solely on publicity and sales functions to strengthen their individual businesses, differing from traditional groups focused on joint production (Inagaki & Hara-Fukuyo, 2020).

Institutional and policy innovations

Underpinning these sectoral initiatives are broad institutional and strategic innovations designed to embed gender equality across government functions. Along with mentioned gender-responsive budgeting and localized policy integration (Indonesia) which set quantitative indicators for women's participation and empowerment at the village level, such as ensuring gender-responsive village regulations and attaining 30% female participation in all village officials (Azizah et al., 2024), Governments like Australia leverage their procurement power to drive gender equality outcomes. They introduce requirements for large businesses seeking government contracts to demonstrate compliance with gender equality indicators and commit to workplace targets for women (Commonwealth of Australia, 2024).

Case study #3: Expo patrimonio cultural mujeres rurales (Rural Women's Cultural Heritage Expo): A showcase of culture and commerce

Member economy: Chile

Overview

The *Expo patrimonio cultural mujeres rurales* is a high-profile marketing and economic empowerment initiative jointly led by Chile's Institute for Agricultural Development (INDAP) and the Ministry of Women and Gender Equity²¹. Staged in a location of immense symbolic importance—the Plaza de la Constitución, directly in front of the Presidential Palace in Santiago—the Expo serves a dual purpose.³ Primarily, it provides a prestigious, direct-to-consumer sales platform for rural women entrepreneurs to enhance their economic autonomy. Concurrently, it functions as a domestic celebration of these women's roles as vital custodians of Chile's rich cultural and agricultural heritage²².

The core of initiative

The Expo is a multi-day fair, typically running for two to three days, that curates a vibrant and diverse collection of products from over 40 women exhibitors representing every region of Chile, from the northernmost Arica y Parinacota to the southernmost Magallanes. The event is meticulously designed to be a holistic cultural experience.

The products showcased are a testament to Chile's rich biodiversity and artisanal traditions. They include:

- **Heritage foods:** Value-added agricultural products such as artisanal wines from heritage grape varieties, quinoa, *merkén* (smoked chili spice), processed foods, and honey.
- **Traditional crafts:** A wide array of handicrafts, including Mapuche and Pehuenche textiles, pottery, basketry made from diverse natural fibers, and wood and stone carvings²³.

Beyond commerce, the event is enriched with cultural activities that reinforce the "heritage" theme. These include "Knowledge Transfer Workshops," where artisans teach visitors traditional techniques like pottery and weaving, and a program of live artistic and musical performances that celebrate Chilean folklore.²⁰

Key impact and achievements

The primary and most direct achievement of the Expo is the creation of a powerful marketing and sales platform that contributes to the economic autonomy of the participants through "significant sales". By bringing producers directly to a large urban consumer base, it eliminates intermediaries and allows the women to capture a greater share of the value of their products.

The event successfully gathers a diverse range of producers, creating a unique and attractive marketplace for consumers seeking authentic, high-quality, and locally sourced goods. It also serves as a public platform to demonstrate the synergy between different government programs. The Director of INDAP has explicitly linked the Expo to the broader domestic strategy for rural women, which also includes the *Escuelas de lideresas*, showcasing a coherent and multi-pronged approach to empowerment²⁴.

Innovative and impactful factors

The innovation of the Expo lies in its focused, "100% women's fair" concept and its powerful fusion of commerce with cultural preservation.³ It transcends the model of a typical farmers' market to become

²¹ Segunda Expo Patrimonio Cultural: Mujeres rurales se toman La Moneda – MinMujeryEG, accessed October 20, 2025, <https://minmujeryeg.gob.cl/?p=55041>

²² Ministra Vallejo participa de Expo Patrimonio Cultural de Mujeres Rurales, accessed October 20, 2025, <https://msgg.gob.cl/wp/2024/11/13/ministra-vallejo-participa-de-expo-patrimonio-cultural-de-mujeres-rurales/>

²³ Expo Patrimonio Cultural Mujeres Rurales: Más de 40 expositoras este 11 y 12 en la Plaza de la Constitución - Ministerio de Agricultura, accessed October 20, 2025, <https://minagri.gob.cl/noticia/expo-patrimonio-cultural-mujeres-rurales-mas-de-40-expositoras-este-11-y-12-en-la-plaza-de-la-constitucion/>

²⁴ Segunda Expo Patrimonio Cultural: Mujeres rurales se toman La Moneda – MinMujeryEG, accessed October 20, 2025, <https://minmujeryeg.gob.cl/?p=55041>

a curated cultural event. This unique positioning enhances the perceived value of the products on display.

Its strategic value is in creating a strong brand identity for the products of rural Chilean women, inextricably linking them to concepts of domestic heritage, authenticity, and innovation. This premium branding can open doors to more lucrative and sustainable markets beyond the two-day event, including tourism, export, and high-end retail, thereby addressing one of Chile's key strategic priorities for women's economic development.

Challenges, lessons learned, and forward recommendations

The main challenge encountered during the Expo's implementation was logistical, specifically the difficulty of "getting your products to you in good condition".³ This highlights a common and critical barrier for rural producers: a lack of access to reliable and affordable supply chain infrastructure, such as cold storage, appropriate packaging, and coordinated transport.

This experience offers a valuable lesson for any organization planning similar large-scale, domestic fairs. The success of such events depends not only on marketing and promotion but also on robust back-end logistical support. A key recommendation, therefore, is to integrate logistics training and support into the pre-expo preparation for all participants. This could involve workshops on packaging standards for fragile goods, coordination of shared refrigerated transport to reduce costs, and partnerships with logistics companies. Providing this support would not only ensure the success of the event itself but would also build the long-term capacity of the women entrepreneurs, equipping them with the skills and knowledge needed to access broader markets year-round.

3. Skill, capacity, and health

APEC economies recognize that enhancing women's skills, capacities, and health outcomes are foundational elements for achieving full economic empowerment and closing persistent gender gaps. Best practices in this domain focus on reforming education systems, leveraging technology for training, providing targeted mentorship, addressing deep-seated unpaid care burdens, and strengthening comprehensive health services.

3.1. Enhancing skills and capacities

Policies aimed at bolstering women's human capital focus on promoting equity in traditionally male-dominated fields, improving vocational and digital literacy, and ensuring training access.

Enhancing literacy, vocational, and agricultural training

Strategies aim to make training and skill development accessible, contextually relevant, and supportive of women's entrepreneurial ambitions.

- **Digital and financial literacy:** Promoting digital and financial literacy is crucial for economic inclusion (OECD, 2022; Paweenawat, 2021). Peru recommends strengthening initiatives specifically focused on boosting the financial and digital literacy rates of women (OECD, 2022).
- **Leveraging prior experience:** In Japan, research on rural women entrepreneurs highlights that utilizing skills and savings acquired from pre-farming careers (even non-agricultural experience) significantly contributes to their initial investment, and aids in areas like public relations, negotiation, and sales (Inagaki & Hara-Fukuyo, 2020).
- **Making extension services gender-responsive:** While agricultural training and extension services are positively associated with empowerment (Quisumbing et al., 2021; Amran & Abdul Fatah, 2020), efforts must ensure they do not exclude women or perpetuate biases.
 - + The Philippines emphasizes reviewing extension messaging, as research shows that access to extension services benefits men significantly more than women in terms of empowerment (A. R. Quisumbing & Malapit, 2023).
 - + Malaysia's rice farmers reported that participating in practical training and seminars significantly enhanced their knowledge and improved their decision-making power in production (Amran & Abdul Fatah, 2020).

Case study #4: Women Extension Group (KPW): A Community-based empowerment model

Member economy: Malaysia

Overview

The *Kumpulan Pengembangan Wanita* (Women Extension Group, or KPW) is a long-standing, community-based initiative managed by Malaysia's Department of Agriculture (DOA). The program was established to empower rural women by fostering their active participation in agriculture and entrepreneurship across the food value chain. The core model of the KPW is to strengthen the agriculture sector and contribute to community economic development by providing training to its members and establishing strategic networks with local leaders and other stakeholders.

The core of initiative

The KPW operates as a network of local groups for rural women, governed and supported by the Department of Agriculture (Zainalaludin, 2012). The core function of these groups is to serve as a vehicle for agricultural extension services, empowering members through training and by establishing strategic networks with local leaders and other institutional stakeholders. The groups are designed to encourage women's involvement across the entire food value chain, from production to processing and marketing. For decades, this model has been a key government mechanism for mobilizing rural women in income-generating activities based on agriculture, with a focus on improving family well-being (Zainalaludin, 2012).

Key impact and achievements

The report provides a specific case study of a successful KPW, the *Tani Komuniti Kampung Dato' Abdul Rahman Yassin (KDARY)* in Kluang, Johor, to illustrate the program's potential impact.³ This group serves as a model of how collective action by women can strengthen the local agriculture sector and contribute to broader community economic development.

A key achievement highlighted by this group is its innovative and sustainable use of local resources. This includes developing a community irrigation system using mountain water and adopting zero-waste practices by converting agricultural residues into compost. These practices demonstrate a capacity for grassroots innovation and environmental stewardship. While broader quantitative impact data for the KPW program is not provided, its long history and integration into the DOA's structure suggest it has played a significant role in the development of rural women's micro-enterprises over many years (Zainalaludin, 2012).

Innovative and impactful factors

The innovative aspect of the KPW model, as demonstrated by the KDARY case study, is its capacity to foster "Resource Innovation"—the creative, efficient, and sustainable use of locally available resources. The broader strategic value of the KPW model lies in its ability to build community-level social capital. By encouraging active participation in both agriculture and entrepreneurship, it provides a crucial social and professional network for rural women, helping them to overcome isolation and share knowledge.

Challenges, lessons learned, and forward recommendations

The most critical challenge facing the KPW program today is its struggle for relevance with younger generations. The "declining number of Women Extension Groups (KPW) due to the lack of interest among young women in joining the agriculture sector" is a direct threat to the program's long-term sustainability. This is exacerbated by broader challenges, including a lack of interest in agriculture among youth in general and a tendency for women to prefer work in the service sector

The clear lesson is that traditional models of agricultural extension, which may have been effective in the past, are no longer sufficient to attract and retain the talent of younger, more digitally-native women. The program's historical association with home economics rather than professional entrepreneurship may also be a deterrent.

To address this existential challenge, a fundamental modernization of the KPW program is required. The recommendations for this reboot can be drawn directly from Malaysia's own stated priorities for scaling up WEE in agriculture:

- **Rebuild the skills offering:** The KPW curriculum must be updated to include training in modern, high-demand skills. This includes digital marketing, e-commerce, financial technology, and the use of modern agricultural technologies (AgriTech). The program needs to be rebranded from a traditional "extension group" to a modern "women's agribusiness incubator."
- **Empower extension services:** The DOA's extension officers themselves must be retrained and equipped to deliver this new, modernized curriculum effectively.
- **Introduce targeted financial support:** To incentivize participation, the government should introduce grants and financing mechanisms specifically tailored for young women entrepreneurs operating within the KPW framework.

By transforming its value proposition, the KPW can reposition itself as a relevant and attractive pathway for young Malaysian women to build successful, modern careers in the agriculture sector.

3.2. Improving health outcomes

Addressing women's health needs is critical for increasing female labor force participation and productivity (Hernando, 2022; World bank, 2019). Policies aim to provide targeted health care, especially focusing on reproductive health and maternal mortality.

- **Maternal and adolescent health:** Mexico targets eliminating disparities in health endowments by actively addressing high rates of teenage pregnancy and maternal mortality, particularly among indigenous and rural populations (World bank, 2019). Thailand enacted the *Prevention and Solution of the Adolescent Pregnancy Problem Act (2016)*, which mandates schools to provide age-appropriate sex education and prohibits the discharge of pregnant students to ensure their continued education (Government of Thailand, 2016; Department of Women's Affairs and Family Development, 2020; Ministry of Education, 2018).
- **Curriculum integration:** Malaysia integrates sexual and reproductive health education through the *Reproductive and Social Health Education (PEERS)* curriculum in schools, covering topics such as emotional well-being, consent, and contraceptives (MWFCD, 2024).
- **Gender-sensitive research:** Australia explicitly commits to increasing the availability of funding for women's health research, aiming to award an equal number of Investigator Grants to women and men researchers in health and medical research (Commonwealth of Australia, 2024).

Case study #5: Working for Women: A strategy for gender equality

Member economy: Australia

Overview

Australia's *Working for Women: A Strategy for Gender Equality* represents a comprehensive, whole-of-government framework designed to address systemic gender inequality over a ten-year period from 2024. This domestic strategy is positioned not merely as a collection of policies but as a broad societal call to action, aiming to shift the foundational attitudes and stereotypes that perpetuate gender gaps²⁵. It is structured around five core priority areas: ending GBV; addressing unpaid and paid care; advancing economic equality and security; improving health outcomes; and promoting leadership, representation, and decision-making. By outlining a long-term vision for an Australia where outcomes

²⁵ Working for Women Strategy overview | Working for Women, accessed October 20, 2025, <https://genderequality.gov.au/working-for-women/working-women-strategy-overview>

are not dictated by gender, the strategy seeks to integrate gender equality into the fabric of domestic policy and community action²⁶.

The core of initiative

The architecture of the *Working for Women* strategy is designed for systemic impact. It functions as an overarching framework that integrates and elevates existing domestic commitments, such as the domestic *National Plan to End Violence against Women and Children 2022–2032* and the domestic *Women's Health Strategy 2020–2030*. This integration ensures a coordinated, rather than siloed, approach to gender equality.

Key activities and legislative underpinnings form the backbone of its implementation. A critical mechanism is the re-introduction of gender-responsive budgeting and gender impact assessments into the Commonwealth budget process, ensuring that fiscal and policy decisions are systematically analyzed for their differential impacts on gender.³ The strategy is also reinforced by strengthening foundational legislation like the *Workplace Gender Equality Act 2012*, the *Sex Discrimination Act 1984*, and the *Fair Work Act 2009*. To translate strategy into action, the government established the Working for Women Program (formerly the Women's Leadership and Development Program), which provides grant funding to key partners to ensure women's voices and experiences are reflected in policymaking. The strategy's development was profoundly consultative, informed by over 3,000 submissions from women, advocacy groups, businesses, and civil society across Australia, lending it significant legitimacy and grounding it in lived experience²⁷.

Key impact and achievements

The strategy has already catalyzed tangible actions and established robust mechanisms for accountability. Key achievements include direct investments in women's leadership through the Working for Women program (previously Women's Leadership and Development Program) and the establishment of workforce representation targets for women in traditionally male-dominated industries through the AustralianSkills Guarantee and the Building Women's Careers program.

One of the most significant policy changes driven by the strategy is the government's commitment to pay superannuation (retirement contributions) on its Paid Parental Leave scheme, starting from 1 July 2025²⁸. This measure directly targets a primary cause of the gender gap in retirement savings, which accumulates over a woman's career due to time taken out of the workforce for caregiving. By valuing care work within the retirement system, this policy represents a structural reform aimed at long-term economic equality.

To ensure accountability, the government has committed to a transparent monitoring framework. This includes the annual publication of a *Status of Women Report Card* on International Women's Day to track progress, alongside comprehensive reviews of the strategy at its midpoint in 2029 and its conclusion in 2034²⁹.

Innovative and impactful factors

The most innovative aspect of the *Working for Women* strategy is its foundational premise: that government action alone is insufficient to achieve gender equality.¹ It is explicitly designed as a "call to action for every part of the community".¹ This collaborative philosophy is its greatest strategic asset. By framing gender equality as a shared responsibility, it seeks to mobilize the collective efforts of businesses, unions, community organizations, and individuals, fostering a more durable and widespread movement for change.

Its strategic value lies in its long-term, 10-year vision and its ambition to embed gender equality across all government functions through mechanisms like gender-responsive budgeting. This creates a

²⁶ Working for Women Strategy overview | Working for Women, accessed October 20, 2025, <https://genderequality.gov.au/working-for-women/working-women-strategy-overview>

²⁷ A Strategy for Gender Equality - Working for Women, accessed October 20, 2025, <https://genderequality.gov.au/sites/default/files/2024-03/working-for-women-a-strategy-for-gender-equality.pdf>

²⁸ Working for Women: A Strategy for Gender Equality, accessed October 20, 2025, <https://alp.org.au/news/working-for-women-a-strategy-for-gender-equality/>

²⁹ Working for Women: A Strategy for Gender Equality, accessed October 20, 2025, <https://alp.org.au/news/working-for-women-a-strategy-for-gender-equality/>

sustainable framework for progress that is less vulnerable to short-term political shifts. It marks a paradigm shift away from isolated "women's programs" toward a systemic, mainstreamed approach where gender is a central consideration in all policymaking.

Challenges, lessons learned, and forward recommendations

A primary challenge identified during the strategy's development was the significant limitation of available data, particularly for understanding the compounded disadvantages faced by intersectional groups, such as women in rural areas, Indigenous women, and women with disabilities. This is a critical lesson for any economy seeking to develop a comprehensive gender equality strategy: effective and equitable policy requires robust, disaggregated data to identify and address the specific barriers faced by different cohorts of women. Without such data, even well-intentioned domestic strategies risk failing the most marginalized.

Further, although civil society have welcomed the ambition of Australia's first domestic gender equality strategy, there has been critique it lacks clear mechanisms to drive change beyond government and the need for more specific, resourced "vehicles" to drive change at the community level. Based on these findings, a key recommendation for other APEC economies considering similar domestic frameworks is to prioritize an upfront investment in data infrastructure. This includes collecting and analyzing sex-disaggregated and intersectional data across all policy domains. Furthermore, establishing an independent advisory body and dedicated funding streams for community-led initiatives could strengthen implementation and ensure that the strategy's vision translates into tangible changes for all women.

4. Leadership, voice, and agency

Best practices among APEC economies aiming to close gender gaps and enhance WEE in leadership, voice, and agency focus on institutional reform, legislative mandates, challenging deeply entrenched social norms, and providing targeted support for political and corporate participation.

4.1. Strengthening legal and institutional frameworks

A fundamental step recognized across APEC economies is the strengthening of domestic legal and institutional infrastructure to guarantee women's political participation and equal agency:

- **Establishing comprehensive gender equality legislation:** Viet Nam's *Gender Equality Law* (2006) lays out specific measures for achieving substantive gender equality in all fields of social and family life and mandates gender mainstreaming in legal documents (the Assembly of Viet Nam, 2006; Government of Viet Nam, 2015). Similarly, Malaysia has intensified efforts toward drafting and tabling new legislation related to gender, including the *Gender Equality Bill*, though progress has stalled (World bank, 2021).
- **Mandating gender mainstreaming:** Several economies mandate the integration of gender concerns across all government planning and budgeting. Indonesia utilizes Presidential Instruction No. 9/2000 on Gender Mainstreaming, which requires ministries and agencies to incorporate gender perspectives into domestic development programs across planning, organizing, implementation, and monitoring (FAO, 2019a; Azizah et al., 2024). Australia relies on GRB, embedding gender impact considerations into all budget decisions and investments as a key tool for closing gender gaps and ensuring accountability (Commonwealth of Australia, 2024; Azizah et al., 2024).
- **Creating oversight and coordination bodies:** Institutional mechanisms dedicated to gender equality are crucial. Mexico established the Domestic Institute for Women (INMUJERES) to promote gender mainstreaming across federal agencies and coordinate actions to abate gender disparities (World bank, 2019). Thailand's main authority is the Department of Women's Affairs and Family Development (DWF), responsible for laws, policies, and operational standards related to gender equality (Department of Women's Affairs and Family Development, 2020).

4.2. Increasing women's representation and political participation

Policies often include affirmative action, targets, and capacity building to increase women's visibility and power in formal decision-making bodies.

- **Gender quotas and targets in government:** Legislative mechanisms, such as gender quotas, have proven effective in increasing political representation. Mexico established a 50% quota for women on candidate lists for domestic and state parliaments and municipal councils, backed by sanctions for non-compliance (World bank, 2019; Hinojosa & Piscopo, 2018). Chile introduced a quota law in 2017 requiring political parties to field no fewer than 40% of female candidates (OECD, 2021).
- **Setting corporate leadership targets:** Governments actively promote women's representation in the business sector. Malaysia achieved its target of 30% women in senior management positions in the private sector and public service (World bank, 2021; MWFC, 2024). Australia aims to drive change by setting targets for gender representation on Australian Government boards and achieved a record 51.6% female representation in 2023 (Commonwealth of Australia, 2024).
- **Judicial appointments and integrity:** Measures extend to the judiciary. Australia implemented a transparent and merit-based judicial appointments process to ensure candidates from diverse backgrounds have the opportunity to apply (Commonwealth of Australia, 2024). Furthermore, Malaysia enforces parliamentary regulations prohibiting the use of rude, condescending, or sexist remarks during discussions, backed by financial penalties, fostering a more respectful political environment (MWFC, 2024).

4.3. Promoting agency at the grassroots and community levels

For empowerment to translate into real economic outcomes, interventions must foster women's agency and voice at the household and community levels.

- **Supporting women's groups and networks:** Encouraging the formation and strengthening of women-only groups provides crucial platforms for collective action (Dani et al., 2024; Amran & Abdul Fatah, 2020). In the Philippines, Rural Improvement Clubs (RICs), supported by local government units (LGUs) and the Department of Agriculture (DA), foster mutual cooperation, enhance women's leadership skills, and support livelihood opportunities (FAO, 2022a).
- **Harnessing digital networks for voice:** Innovative structures like web-based group activities in Japan emerged among rural women entrepreneurs who participated in government "Career-up" programs (Inagaki & Hara-Fukuyo, 2020). These digital groups enhance public relations and sales functions by cooperating solely on those elements, enabling individual entrepreneurs to overcome challenges associated with traditional group production while gaining affirmation of their business management skills and expanding their network (Inagaki & Hara-Fukuyo, 2020).
- **Empowerment through economic contribution:** A study in Japan by Inagaki & Hara-Fukuyo (2020) found that rural women gain decision-making power in new agricultural ventures by using their personal savings from previous, non-farming careers for the initial investment. This financial ownership fosters empowerment by allowing them to take managerial command of the activity, even when it is part of the family farm.

Case study #6: The Domestic "One Commune, One Product" (OCOP) Program: A pathway to entrepreneurship

Member economy: Viet Nam

Overview

The "One Commune, One Product" (OCOP) program is a major domestic strategy for rural economic development in Viet Nam, inspired by successful international models like Japan's "One Village, One Product". While OCOP is a broad-based economic program and not exclusively a gender-focused initiative, it has become a powerful and effective vehicle for WEE. This has been achieved through the strategic and proactive efforts of civil society organizations, most notably the Viet Nam Women's Union (VWU), which has worked systematically to integrate women into the program. The goal of these efforts is to leverage the domestic OCOP framework to transform women from simple producers into recognized entrepreneurs with branded, high-value products that can access wider markets.

The core of initiative

The success of women within the OCOP program is underpinned by a robust support system, with the VWU playing a central role. The VWU's interventions are practical and comprehensive, designed to help women overcome the specific hurdles to OCOP certification and market success:

- **Training and capacity building:** The VWU provides extensive training on crucial aspects of business development, including product design, quality control standards (such as VietGAP), business management, financial literacy, and marketing.
- **Financial and technical support:** The Union actively assists women in accessing preferential loans and connecting with technical experts to improve their production processes and product quality to meet OCOP standards.
- **Branding and promotion:** A key function is helping women's products navigate the OCOP certification process to achieve official star ratings (from 3 to 5 stars). This certification acts as a quality guarantee, significantly enhancing product value and marketability.
- **Network building and market access:** The VWU facilitates crucial connections between women-led businesses and formal markets, including large distributors, supermarket chains, and increasingly, e-commerce platforms.

Key impact and achievements

The integration of women into the OCOP program has catalyzed a significant shift in their economic roles and has generated substantial positive impacts:

- **Growth of women-led businesses:** A significant and growing portion of OCOP-certified products are now developed, managed, and owned by women, establishing them as recognized business leaders in their communities. The VWU has directly supported the establishment of thousands of cooperative groups and hundreds of cooperatives with OCOP-certified products³⁰.
- **Improved incomes and livelihoods:** Achieving OCOP certification allows products to command higher prices and access broader, more lucrative markets. This has led to significant increases in household income and improved living standards for participating women and their families.
- **Shift to sustainable production:** The rigorous quality and safety standards required for OCOP certification have incentivized many women's groups to adopt cleaner, organic, and more sustainable farming and production practices, contributing to environmental protection.
- **Enhanced leadership and social standing:** The program has been instrumental in fostering a new generation of female leaders in the rural economy. By taking on roles as cooperative directors and business managers, women are challenging traditional gender norms, demonstrating their leadership capabilities, and gaining greater respect and influence within their families and communities.

Innovative and impactful factors

The impactful nature of this initiative stems from its brilliant simplicity: it leverages an existing, powerful, and state-supported domestic brand-building tool (OCOP) and strategically channels support to ensure women can participate and benefit from it. This approach directly aligns the goal of gender empowerment with domestic economic development objectives, which guarantees high-level political support, resource allocation, and long-term sustainability. It provides a clear and structured pathway for women to move beyond subsistence farming and become recognized entrepreneurs with high-value, marketable products.

Challenges, lessons learned, and forward recommendations

Despite its success, the initiative faces challenges. The main hurdles for women include the high upfront costs associated with meeting OCOP certification standards (e.g., investing in equipment, packaging, and quality control), which can be prohibitive for those in deep poverty. Additionally, limited digital literacy can be a significant barrier to accessing e-commerce and online marketing platforms, which are increasingly crucial for expanding market reach beyond the local level.³ Women in

³⁰ Forum talks promoting women's role in rural economic development - Viet Nam Plus, accessed October 20, 2025, <https://en.VietNamplus.vn/forum-talks-promoting-womens-role-in-rural-economic-development-post188543.vnp>

agriculture also continue to face broader challenges, including limited access to land and capital and the heavy burden of family care responsibilities³¹.

The primary lesson learned from this experience is the importance of providing holistic support that extends beyond technical training. To enable women to successfully transition from producers to entrepreneurs, it is essential to provide an integrated package of support that includes access to affordable capital, ongoing mentorship, and direct market linkages.

The key recommendation is to scale this successful model of leveraging domestic programs, but with a more deliberate focus on ensuring the inclusion of the most vulnerable. This requires creating dedicated financing mechanisms, such as micro-grants or low-interest loans, specifically to help poor rural women cover the costs of certification. It also necessitates the development of tailored digital literacy programs to ensure they can fully participate in the modern marketplace.

4.4. Overcoming obstacles to voice and leadership

Despite policy efforts, entrenched barriers persist, leading to continued recommendations for improvement.

- **Addressing lack of confidence in leadership:** In Malaysia, research among rice farmers showed that while access to extension services and credit positively influenced empowerment, leadership displayed a negative association with decision-making by FHHs, suggesting that female farmers felt less confident speaking out publicly or giving suggestions on crucial agricultural decisions. Policy recommendations thus suggest enhancing leadership and communication skills, often through strong community associations (Amran & Abdul Fatah, 2020).
- **Fighting violence to enable participation:** GBV is a major impediment to women's political participation and agency. Successful programs to address GBV and economic dependence integrate violence prevention into development platforms, combining economic empowerment with participatory training sessions on relationships and violence (World bank, 2019). Australia is strengthening legal mechanisms and judicial processes to ensure better safety and justice outcomes for women (Commonwealth of Australia, 2024).
- **Supporting political ambition:** Australia provides funding to organizations like *Women for Election Australia* to equip and encourage women across the political spectrum to run for public office at local, state, and federal levels (Commonwealth of Australia, 2024).

Case study #7: Escuelas de lideresas (Schools for Women Leaders): Cultivating rural leadership

Member economy: Chile

Overview

The *Escuelas de lideresas* (Schools for Women Leaders) is a targeted initiative spearheaded by Chile's Institute for Agricultural Development (INDAP) in partnership with the Ministry of Women and Gender Equity. The program is specifically designed to address the deficit of female leadership in rural communities. Its core purpose is to equip young rural women, aged between 18 and 40, with essential skills in leadership, emotional intelligence, effective communication, and decision-making. The ultimate goal is to build a pipeline of future leaders and increase women's active participation and influence in local and regional decision-making bodies³².

The core of initiative

³¹ FAO: May women in agriculture continue to be empowered, recognized, and have more opportunities, accessed October 20, 2025, <https://van.nongnghiepmoitruong.vn/fao-may-women-in-agriculture-continue-to-be-empowered-recognized-and-have-more-opportunities-d742289.html>

³² Últimos días para postular a la Escuela de Lideresas para Mujeres Rurales Jóvenes 2024 - Diario Digital El Calbuco, accessed October 20, 2025, <https://www.elcalbuco.cl/2024/10/ultimos-dias-para-postular-a-la-escuela-de-lideresas-para-mujeres-rurales-jovenes-2024/>

The *Escuelas de lideresas* is a domestic program with schools conducted across all regions of Chile, aiming to train approximately 400 young women annually. The curriculum is delivered over two intensive days and is structured into four key modules:

1. **Local development, gender equity, and leadership:** Providing a foundational understanding of the context in which they operate.
2. **Challenges and opportunities:** Analyzing the specific barriers and pathways for rural women.
3. **Leadership principles and oratory:** Developing practical skills in public speaking and effective communication.
4. **Participation in decision-making:** Strategizing on how to enter and influence decision-making spaces.³³

Eligibility is targeted and specific: participants must be women between the ages of 18 and 40 and be registered users of INDAP's services. In a crucial design feature that directly addresses one of the primary barriers women face, INDAP co-finances travel, food, and lodging, and also provides support for the care of children under 12, enabling mothers of young children to attend³⁴.

Key impact and achievements

The program's primary achievement is the successful training of hundreds of young rural women, with 400 participating in the 2024 cohort across 18 separate schools.³ The most significant outcome reported is tangible evidence of "more women participating in participation spaces within INDAP". This indicates that the program is effectively achieving its core objective of feeding graduates into the very decision-making structures it targets, creating a direct pathway from training to influence.

Participant testimonials reinforce the program's impact, highlighting the value of building a peer network with other rural women and the motivational effect of learning new concepts related to leadership and personal development³⁵. This creation of social capital is a key, albeit less tangible, outcome of the initiative.

Innovative and impactful factors

The innovation of the *Escuelas de lideresas* lies in its precise targeting and its curriculum. By focusing specifically on *young* rural women, it invests in the future of rural leadership. Furthermore, its emphasis on "soft skills" like leadership, confidence, and communication, rather than purely technical agricultural training, addresses the intangible but powerful cultural barriers that often prevent women from seeking or succeeding in leadership roles. This is a strategic investment in human and social capital. The program's sustainability is enhanced by the creation of a peer network among participants, which can offer long-term support and collaboration, reinforcing the initial training long after the two-day course has concluded.

Challenges, lessons learned, and forward recommendations

The implementation of the program has encountered practical challenges, primarily related to rural connectivity and the limited time availability of participants—a direct consequence of their disproportionately high burden of unpaid care and domestic work. This finding validates the program's decision to provide childcare support as an essential enabling component.

A key lesson that has emerged is the need for "greater continuity" and longer-term support for participants. While the intensive two-day model is impactful, it may be insufficient to sustain momentum and help graduates overcome the ongoing challenges of entering and consolidating their positions in traditionally male-dominated spaces.

Based on this lesson, a forward-looking recommendation is to develop a structured follow-up program. This could take the form of a mentorship network, pairing graduates with established female

³³ Bases convocatoria escuelas de Lideresas para mujeres Rurales Jóvenes 2024 - Indap, accessed October 20, 2025, <https://sistemas.indap.cl/descargador.php?HL1011=enFadkNTRkh=mWUd9Q0JCR0Qd3RE0GUINFMPHp0Ui1GUUh1EZV1QQjdDR30d9OENGWXJDb0XYmd0NsPUZ4STF1Td0JGTUt=DeDpGSTdIUg=Z3WVN0UXVce=WI3PEUFR0dC=>

³⁴ Last days to apply for the 2024 School of Leadership for Young Rural Women, accessed October 20, 2025, <https://minagri.gob.cl/noticia/ultimos-dias-para-postular-a-la-escuela-de-lideresas-para-mujeres-rurales-jovenes-2024/>

³⁵ Con Escuela de Lideresas INDAP fortalece el rol de mujeres rurales jóvenes en la región, accessed October 20, 2025, <https://elproa.cl/2024/11/con-escuela-de-lideresas-indap-fortalece-el-rol-de-mujeres-rurales-jovenes-en-la-region/>

leaders, or an alumni association that provides ongoing training, networking opportunities, and a platform for collective action. Such a mechanism would reinforce the initial investment and build a more resilient and influential cohort of rural women leaders over time.

5. Innovation and technology

Best practices among APEC economies to close gender gaps and enhance WEE in innovation and technology largely revolve around increasing participation in STEM, promoting digital literacy, leveraging digital platforms for entrepreneurship, and addressing biases within digital ecosystems.

5.1. Increasing women's participation and performance in STEM

A core strategy for innovation is preparing women for lucrative technology careers by addressing biases and providing pathways into STEM fields:

- **Tackling gender bias in education:** Policies must actively confront gender biases in learning materials and teaching methods (Hammond et al., 2020). Australia, for example, aims to ensure that all levels of education reinforce the idea that career choices should not be limited by gender (Commonwealth of Australia, 2024). In Mexico, policymakers recognize that differences in learning outcomes, particularly in math and science, lead to occupational segregation and must be addressed (World Bank, 2019).
- **Promoting role models and mentorship:** Featuring female role models and mentors in STEM fields is essential to break down stereotypes and build confidence.
 - + In Peru, exposure to senior female engineering students or recent graduates significantly increased the preference for engineering programs among high-performing female students by 14 percentage points and boosted their self-confidence in pursuing these areas (Agurto et al., 2021).
 - + In Japan, an online survey experiment showed that providing information on gender equality and STEM successfully increased the motivation of junior high students and their parents to pursue studies in STEM (Ikkatai et al., 2021).
- **Creating targeted pathways and funding:** Governments support initiatives to encourage enrollment and retention in STEM:
 - + Malaysia implements programs like Girls4Tech, offering inquiry-based activities in cryptology and digital technologies, and promotes gender-responsive STEM education by integrating science and mathematics into the domestic curriculum starting from preschool (MWFCD, 2024).
 - + The Malaysian government established the Women Technologist Chapter (WTC) under the Malaysia Board of Technologists (MBOT) in 2022 to enhance the visibility and competency of women in technology fields, registering nearly 20,000 women members by late 2023 (MWFCD, 2024).
 - + Australia is investing in the Australian Skills Guarantee, which includes targets for women in apprenticeships and traditionally male-dominated trades, as well as providing funding for the Women in STEM and Entrepreneurships Grants program (Commonwealth of Australia, 2024).
 - + Mexico's Women in STEM program mentors young women in public high schools to increase their interest in science and engineering (World Bank, 2019).
 - + The Peruvian government implemented the pilot program, *Deciding for a Better Future*, to inform students about the monetary and social returns of education, with observed progress in academic performance being particularly strong among girls (OECD, 2022).
- **Institutionalizing gender equity in research:** Australia is addressing gender inequities in research funding by setting targets for the Domestic Health and Medical Research Council (NHMRC) to award equal numbers of Investigator Grants to women and men researchers for the first time, achieving this goal in 2023 (Commonwealth of Australia, 2024).

5.2. Promoting digital literacy

Closing the digital literacy gap is recognized as a necessary prerequisite for women to access digital economic opportunities:

- **Integrating digital literacy into domestic policy:** Malaysia aims to enhance digital literacy among underserved populations, particularly women in rural areas and those with disabilities, ensuring educational continuity and access to resources. This effort includes the Digital Education Policy (launched in 2023), which sets a foundation for future generations to succeed in STEM and address the digital skills gap (MWFCD, 2024).
- **Targeted skills training:** Programs specifically tailored for women entrepreneurs are highly effective.
 - + Peru stresses developing "bundled" strategies that pair formal financial services with digital skills acquisition and financial education (OECD, 2022).
 - + Malaysia's eUsahawan programme provides essential training in digital marketing and e-commerce, with 57% of women entrepreneurs participating since its launch in 2015 (MWFCD, 2024).
 - + Malaysia launched the AI-Latent-Workforce-Back-to-Work (AI-LWBW) program under the Domestic Artificial Intelligence Roadmap (AI-RMAP) 2021-2025. This initiative is designed to empower female talent in technology fields through support mechanisms like childcare and flexible work-from-home options (MWFCD, 2024).
- **Using technology to deliver training:** The sheer scale of training needed requires innovative delivery methods. In Mexico, the development of ICT infrastructure and services is seen as key to reducing geographical and mobility constraints that women face in accessing information and employment (World bank, 2019).

5.3. Addressing infrastructure and gendered barriers to innovation

Sustainable improvements require comprehensive changes to the digital and physical infrastructure supporting women.

- **Investing in connectivity:** Accelerated rollout of advanced network technology is critical. Malaysia's rollout of the 5G network is intended to foster a gender-inclusive digital society by enhancing connectivity, especially for women in rural areas (MWFCD, 2024).
- **Labor-saving technologies:** Providing technologies that reduce women's domestic and agricultural workload frees up time for economic or entrepreneurial innovation as shown in the Philippines (FAO, 2022a) and Viet Nam (FAO, 2019c).
- **Regulating digital safety and ethics:** It is crucial to address the specific risks women face in the digital sphere, such as technology-facilitated GBV (Puteri et al., 2024, cited in Shofwan Al Banna. C et al., 2025).
 - + Malaysia is developing the Domestic Guidelines on Artificial Intelligence (AI) Governance & Ethics for Responsible AI to promote fairness and non-discrimination in AI systems, explicitly ensuring they do not discriminate based on gender (MWFCD, 2024).
 - + Increased risks from fintech, such as doxing or device interception, underscore the importance of enhancing digital and financial literacy among women (Puteri et al., 2024; OECD, 2022).

Case study #8: ACIAR's Gender Equity and Empowerment Activities: Mainstreaming gender into agricultural R4D

Member economy: Australia

Overview

The Australian Centre for International Agricultural Research (ACIAR) is Australia's specialist international agricultural research-for-development agency. ACIAR works with partners to generate knowledge and technologies that underpin improvements in agricultural productivity, sustainability and food systems resilience, delivered through research partnerships for the benefit of partner economies and Australia. ACIAR's activities to promote gender equity and the empowerment of women and girls are not a peripheral program but a core, integrated component of its entire research portfolio. This approach is founded on the principle that gender equality in agriculture is not only a matter of fairness – it is a practical strategy for strengthening economic security, food security and

social stability. Across many low- and middle-income economies, rural women are central to farming and food systems, as producers, workers, processors, traders and household food managers, yet they face persistent barriers to land, finance, training, technology and markets. ACIAR's contribution is to generate, adapt and test innovations so that women and men can both benefit, with the aim of improving overall productivity while ensuring social norms that limit equitable engagement in agricultural practice and decision making are addressed. This is not a "women-only" approach, rather, it focuses on changing the constraints that prevent households and systems from performing efficiently and fairly.

The core of initiative

ACIAR's operational approach is systematic and deeply integrated. Gender equity is described as "hard-wired" into the organization's 10-year strategy, ensuring it is a consideration across all activities. The implementation of this commitment is multi-faceted:

- **Project design:** All research proposals submitted to ACIAR must adhere to its Gender Guidelines, which require a thorough analysis of gendered social relations and a clear plan for how the project will empower women and "do no harm"³⁶.
- **Capacity building:** ACIAR invests in developing female leaders in agricultural science through initiatives like the Meryl Williams Fellowship. This program targets women in research leadership roles from across Southeast Asia and the Pacific, providing them with skills, confidence, and professional networks to advance their careers.
- **Community-level training:** ACIAR projects focus on empowering women directly at the smallholder level. A prominent example is the "family farm team" approach in Papua New Guinea— a practical, whole-of-household training model that helps families run farming as a shared enterprise, with women and men as equal decision-makers. This is economically significant in a context where women often undertake most agricultural labor (commonly estimated at around 70%), yet have historically had limited influence over farm planning, marketing, and the use of income.
- **Targeted economic interventions:** Many projects are designed to create direct pathways to financial independence. In Indonesia, a long-term project focused on improving soil management through household gardens managed by women, creating new income streams and business opportunities.

Key impact and achievements

ACIAR's integrated approach has yielded significant and quantifiable impacts on the lives of women in partner economies. The evidence from its projects demonstrates clear economic and social returns:

- **Indonesia:** A 16-year project focused on vegetable production in household gardens supported 725 women. The intervention resulted in an increase in household income ranging from USD 402 to USD 2,000 per year, and for some participants, it led to full financial independence through the creation of new businesses.
- **Papua New Guinea:** The "family farm team" project trained 165 women (out of 266 total farmers) to become village community educators. These women then went on to train an additional 1,622 women and 869 men. Evaluations of the project found a "marked improvement in gender equity and increased recognition of the role of women in farming".
- **South Asia (Bangladesh, India, and Nepal):** A project on sustainable farming systems introduced rice seedling cultivation as a new business opportunity for women. Participants reported earning an additional USD 200–USD 250 per month, which translated into improved household health and education outcomes and enhanced their social standing within their communities.

At an organizational level, ACIAR's commitment is reflected in its performance metrics. In the 2019–20 period, 83% of its concluded project reviews were rated as 'good' or 'above' in their positive contribution to gender equity, surpassing the Australian aid program's aspirational benchmark of 80%³⁷.

Innovative and impactful factors

³⁶ Gender Guidelines | ACIAR, accessed October 20, 2025, <https://www.aciar.gov.au/project-tools/gender-guidelines>

³⁷ Gender equity and women's empowerment | ACIAR, accessed October 20, 2025, <https://www.aciar.gov.au/publication/aciar-annual-review-2019-20/our-focus-areas/gender-equity-and-womens-empowerment>

The innovation of ACIAR's model lies in its use of research and knowledge as the primary levers for empowerment. It moves beyond traditional aid delivery to build local capacity, change mindsets through evidence, and foster sustainable development. The strategic value of this approach is its scalability and long-term impact. By training local women to become researchers, leaders, and educators, ACIAR creates a self-perpetuating model of development that reduces long-term dependency on external assistance.

This approach is built on a foundational understanding that empowering women economically creates a powerful virtuous cycle. As one of its guiding principles states, "When women earn an income, they invest in their families, who then become healthier and more educated, which in turn leads to greater prosperity for their communities".

Challenges, lessons learned, and forward recommendations

The central challenge that ACIAR's work consistently confronts is the systemic invisibility and undervaluation of women's contributions to agriculture. The most critical lesson learned from its decades of experience is that making these contributions visible and properly valued is a powerful catalyst for both social and economic change. When women's roles are recognized, it opens the door for their greater participation in decision-making, leading to more equitable and productive outcomes.

The primary recommendation for other R4D organizations and development agencies is to adopt a similarly integrated and transformative approach. This requires moving beyond purely technical solutions to also address the social and cultural norms that prevent women from accessing resources, knowledge, and power. The evidence from ACIAR's work suggests a clear conclusion: if women had equal access to resources, their farms would be more productive, which would have a direct and substantial positive impact on global food security.³ This demonstrates that integrating gender equity is not just a social imperative but a strategic necessity for effective agricultural development.

Case study #9: Application of Sustainable Rice Platform (SRP) Standard: The leading roles of private sector

Member economy: Viet Nam

Overview

Rice production is a cornerstone of Viet Nam's economy, supporting 15 million farm households. However, it is also a major source of greenhouse gas (GHG) emissions, accounting for 48% of the agriculture sector's total emissions. These emissions stem largely from inefficient water use, high seed density, and improper rice straw management. This case study examines the SRP100 Model by Loc Troi Group, a leading Vietnamese agricultural producer. The initiative aims to transition farmers to sustainable, low-carbon farming practices using the Sustainable Rice Platform (SRP) standard. Loc Troi is the world's first and only organization to achieve a perfect SRP100 score, piloting the project in the An Giang, Dong Thap, and Kien Giang provinces.

The Core of the Initiative

Loc Troi's model provides comprehensive technical, financial, and logistical support to farmers.

Farmer engagement ("3 Cùng"): The initiative is built on Loc Troi's "3 Cùng" (3 Together) model, where a network of 1,200 engineers works directly with farmers in the field ("Eat together, Stay together, Work together"). This provides continuous, hands-on coaching.

Financial investment & market linkage: Loc Troi invests VND 20-25 million per hectare by supplying inputs (seeds, fertilizers, pesticides) on 120-day interest-free, deferred payment terms. The company also provides services (e.g., drone spraying) and guarantees the purchase of all paddy through an offtake agreement at a premium price.

Sustainable farming techniques:

- **Seed & water:** Using certified, high-yielding rice varieties with a drastically reduced sowing volume (10-60 kg/ha) and managing water with the Alternate Wetting and Drying (AWD) method.
- **Nutrients & pests:** Applying precise chemical fertilizers combined with 100 kg/ha of organic fertilizer. **Drones** are used for all pesticide spraying, which ensures precision, saves water, and removes farmers from direct chemical exposure.
- **Straw management:** Burning rice straw is forbidden. Instead, Loc Troi provides farmers with Trichoderma bio-enzymes to treat the straw, which accelerates decomposition and enriches the soil.

Key impacts and achievements

The SRP100 model has delivered significant benefits to farmers and Loc Troi.

+ For farmers:

- **Cost reduction:** Farmers cut production costs by 12%. This was driven by reduced seed volume and a 30-37% reduction in pesticide costs.
- **Income increase:** Farmers earned an average premium that resulted in a total profit increase of 15% compared to conventional farming.
- **Health benefits:** The use of drone spraying services significantly reduced farmers' direct exposure to harmful chemicals.

For Loc Troi Group:

- **Reputation:** The primary benefit is its "invaluable" reputation as the world's first and unique holder of the SRP100 score, enhancing the company's competitiveness as a globally responsible rice producer.
- **Economic benefit:** Direct economic benefit is not the current target. Loc Troi has not yet sold its rice under a specific SRP label, meaning it has not yet captured a direct market premium for the product.

Innovative and impactful factors

The initiative's success is driven by several key factors that ensure farmer adoption.

- The "3 Cùng" (3 Together) hands-on coaching model is "instrumental" in changing farmer behavior and building trust.
- The model's power lies in its holistic support package. It removes key barriers by bundling access to credit (interest-free inputs), advanced technology (drones, bio-enzymes), and market access (offtake agreements) all at once.
- Direct price incentives are repeatedly cited as a "huge driving factor" and the "most important factor" for ensuring farmer compliance.

Challenges, lessons learned, and forward recommendations

Despite its success, the SRP100 model faces significant challenges to its long-term sustainability and scalability.

Challenges: Key hurdles remain. Farmers are resistant to changing traditional habits, such as reducing high seed volumes. 90% of farmers in the region still burn rice straw, as bio-enzymes are considered expensive and the 3-season-per-year schedule leaves little time for treatment. The greatest challenge is financial sustainability: the model is high-cost for Loc Troi, which has not yet found a niche market that pays a premium for SRP-labeled rice. The SRP area actually *decreased* after 2019 due to this financial limitation.

Lessons & Recommendations: The case proves that "tangible" commitments—specifically offtake agreements and premium prices—are the most critical factors for farmer compliance. Without these economic incentives, farmers will not adopt difficult practices. To scale up, recommendations include:

- Developing a niche market for SRP rice.
- Fostering Viet Nam's carbon credit market, set to operate from 2028.
- Supporting value chain finance and investing in irrigation infrastructure to enable practices like AWD.

Case study #10: Application of CSA in Rice Production: The leading roles of private sector and farmer's association

Member economy: Viet Nam

Overview

Rice production is critical to Viet Nam's food security but is also a major source of greenhouse gas (GHG) emissions. This case study examines an initiative by ThaiBinh Seed Corporation, a leading Vietnamese seed producer, to develop and scale a climate-smart rice farming technology package. The project, located in Thai Binh province, was part of the AgResults Viet Nam Emission Reduction Challenge Project (AVERP). The goal was to prove that advanced farming practices could successfully reduce GHG emissions while simultaneously improving crop yields, increasing farmer incomes, and securing a high-quality seed source for the company.

The core of the initiative

ThaiBinh Seed's initiative centered on a specific climate-smart technology package. This package included four key interventions: mandating an optimized, thinner planting density (24-30 clusters/m²); implementing the alternate wetting and drying (AWD) water management method with a strict draining schedule to reduce methane; switching to "slow-releasing" fertilizers and reducing applications from five to just two per crop; and forbidding straw burning by providing bio-enzymes (Sumitri) to accelerate decomposition.

To ensure farmer adoption, this technology was paired with a robust engagement and investment strategy. Costing approximately USD 160 per hectare, this strategy involved partnering with local agricultural cooperatives to manage contiguous land areas (crucial for AWD), providing direct input subsidies for seeds and 50% of fertilizer costs, and, most importantly, offering a buy-back guarantee for the harvested rice at a price 30% higher than the market rate.

Key impacts and achievements

The project, which scaled to involve 5,688 farmers, yielded significant and multifaceted results. For farmers, the package successfully reduced GHG emissions by an average of 0.6 CO₂ MT/ha and improved plant health, leading to stronger stalks and higher-quality grains. Economically, they saw an average yield increase of 0.37 MT/ha and, combined with reduced input costs and the 30% price premium, a significant boost in income. The initiative was also highly inclusive for women, with the labor-saving technology reducing physical burden and women accounting for 70% of participants in training courses.

For ThaiBinh Seed, the business benefits were substantial. The company secured a reliable, high-quality source of rice for its core seed business, which was a primary operational goal. Furthermore, the initiative generated significant brand reputation, culminating in ThaiBinh Seed winning first place in the AVERP competition. This victory came with USD 1.52 million in prize money, allowing the company to recover its entire initial investment into the project.

Innovative and impactful factors

The project's success was driven by several key factors:

- **Direct economic incentives:** This was the most impactful factor. The 30% buy-back guarantee was the primary driver, successfully tying the abstract goal of "reducing emissions" to the tangible, immediate benefit of higher, guaranteed income.
- **Use of cooperatives for contiguous land:** Working through cooperatives allowed for the management of large, connected paddy fields, which was structurally essential for implementing landscape-level practices like AWD.
- **Simplicity of the technology:** The package was easy to adopt (e.g., reducing fertilizer applications from five times to two), which saved farmers time and labor.

Challenges, lessons learned, and forward recommendations

The primary challenge is financial sustainability, as farmer adoption was conditional on continued company subsidies. This model is difficult to maintain because the market for premium-priced "sustainable rice" is still "nascent," with no guarantee the 30% premium can be supported long-term. This highlights the key lessons learned: incentives are paramount, as farmers are unlikely to change practices for environmental reasons alone, and working through trusted community structures (like cooperatives) is essential for building trust and organization.

Forward recommendations focus on creating long-term market viability. The government is urged to provide policy support and help foster market linkages to establish a stable, premium price for sustainable rice. For the private sector, the recommendation is to continue providing access to finance and incentives to farmers, ideally through these established cooperative structures.

CHAPTER 5. POLICY AND ACTION RECOMMENDATIONS FOR BETTER WOMEN'S PARTICIPATION AND WEE IN AGRICULTURE IN THE APEC REGION

Based on current status of gender gaps, gender barriers, legal, institutional and policy framework, together with best practices, the recommendations focus on four domains that the APEC member economies should follow to make women more economically powerful and consequently achieve better position of gender equality: 1) Transitioning to a more gender-responsive legal framework; 2) Strengthening gender-responsive and accountable institutions; 3) Making climate-smart, sustainable agriculture development policies and programs more gender-responsive and gender-inclusive and 4) Enhancing regional cooperation on gender equality and sustainable development of agriculture.

The transition should begin with reform in legal frameworks which are more gender-responsive and gender-inclusive, following by reinforcing institutions responsible for gender equality at central and local levels. The optimal pathway to address the interconnected challenges of gender inequality, WEE, climate change, and unsustainable development in agriculture is to fully integrate gender-responsive policies into climate-smart, agricultural sustainable development frameworks. Consequently, the design and implementation of CSA policies must treat gender as a core component, placing women at the center. By prioritizing and dismantling barriers to gender equality and WEE, climate objectives can be achieved more effectively and sustainably. The following recommendations include measures for both individual economy and the region as a whole.

1. Transitioning to a more gender-responsive, comprehensive legal framework

Establishing, reviewing, and reforming the laws, regulations, and formal rights is extremely crucial to ensure gender equality. The reform should focus on:

- Eliminate statutory discrimination: Governments must review and reform all domestic legislation—including land laws, family law, inheritance law, and housing law—that contains explicit or implicit gender biases against women's ownership or access to assets.
- Mandate equitable property and inheritance rights:
 - + Legislation should grant equal inheritance rights for sons and daughters, and for female and male surviving spouses, regardless of sex. This includes recognizing women's non-monetary contributions to marital property when calculating asset shares upon divorce or death.
 - + Promote and mandate the joint registration of land titles (Land Use Rights Certificates) in the names of both spouses. This intervention is proven to increase women's access to credit, strengthen their bargaining power, and encourage long-term land investments.
- Ensure equal economic and legal agency: Laws must explicitly guarantee women the same rights as men to engage in economic and political life. This includes eliminating legal constraints that prevent women from signing contracts, registering businesses, and accessing courts, ensuring their testimony carries the same evidentiary weight as men's.
- Prohibit financial discrimination: Enact and enforce laws that expressly prohibit discrimination in access to credit based on sex or marital status. Globally, many economies still lack comprehensive legal provisions forbidding this.
- Protect rights under customary law: Where customary or traditional laws related to land are legally recognized, policies must explicitly ensure that they protect women's rights and cannot contradict the principles of gender equality and non-discrimination.
- Guarantee legal equity in education: Governments must implement and enforce laws that guarantee women and girls equal access to and participation in all levels of education, including primary, secondary, Technical and Vocational Education and Training, and tertiary education.
- Establish legal frameworks for technology and data:
 - + Governments must review and reform laws related to agriculture, technology, succession, and finance to eliminate discriminatory practices that hinder women's access to resources needed for technology adoption.

- + As smart agriculture relies on big data, legal frameworks must be developed to ensure women's security and control over their data. This includes addressing agricultural data ownership through laws on agriculture, technology, or privacy to further monitor data contracts.

2. Strengthening gender-responsive and accountable institutions

The recommendations focused on building the capacity, structure, and accountability of public and private institutions responsible for implementing and enforcing gender-equitable laws and policies.

- Strengthen government gender bodies: *National Women's Mechanisms* (NWMs)³⁸ or Gender Bureau should be positioned at the highest levels of government. These bodies require an explicit mandate, authority, and sufficient resources to coordinate, facilitate, support, and monitor gender mainstreaming across all government ministries and agencies, and they should lead capacity development on gender issues for public servants.
- Institutionalize gender mainstreaming:
 - + Gender mainstreaming should be institutionalized as a continuous process across all government spheres, ensuring women's concerns are integrated into the design, implementation, monitoring, and evaluation of all policies. This must move beyond superficial inclusion to structural integration.
 - + Financial service providers should undertake a gender audit to assess internal biases and ensure staff and products are gender-aware.
- Build capacity and gender sensitization:
 - + Governments must invest in resources to translate law into substantive gender equality, which requires accountable institutions, adequate financial resourcing, and high human capacity.
 - + It is crucial to train public servants in basic gender knowledge and gender mainstreaming. This includes land registration officials, cadastral officers, judicial staff, and agricultural extension officers.
- Enhance representation and accountability:
 - + Increase female representation in key bodies, including agricultural research, extension services, and finance institutions. This includes recruiting and retaining female extension agents and hiring female loan officers or banking agents to overcome social barriers.
 - + Foster women's participation in local land management institutions and governance bodies.
 - + Encourage member economies to develop rosters of eligible women to ensure a ready pool of qualified female candidates for participation in APEC fora and other decision-making roles.
 - + Promote gender audits and accountability mechanisms. Officials should be held accountable against gender-related targets for access and tenure security, linking performance evaluations and incentives to the achievement of specific gender targets.

3. Making climate-smart, sustainable agriculture development policies and programs more gender-responsive and gender-inclusive

General recommendations for policies and programs

Integrating gender perspectives into climate-smart policy is essential to address both gender inequality and sustainable, low-carbon development of agriculture. The following measures compose of specific, actionable policies, programs, and interventions designed to actively advance gender equality, promote WEE to achieve sustainability in agriculture development.

- Strategic budgeting and procurement:
 - + Implement GRB to ensure that public funds are allocated based on gender analysis and monitored to deliver gender-equitable outcomes. The APEC PPWE recently launched in

³⁸ Directory of National Mechanisms for Gender Equality updated January 2025 can be found at <https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/Partnerships/NationalMechanisms/Directory-of-National-Mechanisms-en.pdf>

January 2025 the “APEC Gender Equality Budgeting Toolkit” to guide member economies strengthen budgeting practice to achieve gender quality³⁹. The Philippines, for instance, mandates allotting at least 5% of the total budget for gender and development (GAD) through the Magna Carta of Women, which is crucial for translating legal equality into substantive resource allocation.

- + Leverage gender-responsive public procurement by implementing preferential sourcing criteria or set-asides for women-owned businesses (WOBs) in government contracts.
- + Increase transparency in public tender processes and launch effective communication strategies to ensure women entrepreneurs are aware of contracting opportunities.
- Innovate in financial inclusion:
 - + Develop innovative financial instruments that rely on alternative forms of guarantee, as women often lack land collateral.
 - + Specific models include Group Guarantee Schemes, where collective liability serves as social collateral; Alternative Collateral Registries that allow the use of non-land assets (e.g., inventory, equipment); and Microleasing, which allows women to acquire capital goods without collateral.
 - + Incentivize financial institutions to design "women-friendly" and gender-sensitive financial products, such as secure, private individual savings accounts and loans tailored to women's purchasing power, like smaller, high-frequency quantities.
 - + Promote systemic policies like the Banking on Equality policy in Pakistan.
- Promote digital inclusion and infrastructure:
 - + Leverage digital financial services (DFS), such as mobile money, to reduce women's mobility constraints, increase privacy and control over finances, and enable direct payment of digital wages.
 - + Invest in fundamental infrastructure and connectivity to ensure female farmers can access digital technologies. This includes investing in telecommunications and power infrastructure (like broadband) in rural areas.
 - + Provide or create accessible spaces, such as women-friendly public access points, where women without personal devices can use ICTs.
- Mandate quotas and affirmative action:
 - + Formal policies should introduce gender quotas to ensure adequate representation of women in leadership and decision-making bodies at all levels, including local governance, parliament, and cooperative management.
 - + Implement Temporary Special Measures (TSMs), such as reserving seats for women in local councils.
 - + Set specific gender targets or quotas in public bodies.
- Targeted skills and capacity building:
 - + Promote legal literacy by running targeted campaigns to educate both women and men about women's legal rights and joint titling.
 - + Provide affordable legal assistance (e.g., mobile legal clinics or trained community paralegals) to help women enforce their rights.
 - + Invest in financial and digital literacy training for women so they can utilize digital tools for e-commerce, mobile banking, and accessing time-sensitive information.
 - + Challenge occupational segregation and stereotypes in educational curricula. Mount domestic campaigns to boost women's enrollment in lucrative, typically male-dominated fields like STEM and ICTs.
 - + Reform Vocational and Technical Training to be gender-inclusive, prioritize job-oriented skills for women, and offer training in non-traditional fields.
- Gender-responsive service delivery:
 - + Agricultural advisory services (RAS) must adopt gender-sensitive approaches, tailoring content and delivery. Training courses must be planned around women's schedules, offered in

³⁹ APEC Gender Equality Budgeting Toolkit, https://www.apec.org/docs/default-source/publications/2025/1/225_ppwe_apec-gender-equality-budgeting-toolkit.pdf?sfvrsn=c65f2053_1

- accessible locations, and designed to address different literacy levels (e.g., using visual learning or local languages).
 - + Simplify complex procedures like business registration and licensing, as cumbersome bureaucracy disproportionately affects female entrepreneurs.
 - + Where legal reforms for land are difficult, strengthening women's traditional use-rights may provide more immediate security. In regions with low literacy, requiring a photo of all owners on land certificates can also increase security.
- Policy evaluation and impact assessment:
 - + Regularly evaluate laws and policies to identify and address gender biases.
 - + Mandate Gender Impact Assessment (GIA) systems to incorporate a monitoring framework into smart agricultural policies. All projects, technology, and policies should undergo impact assessment from a gender perspective when introduced to local farmers.
 - + Conduct more research on the benefits and costs of making public and private data sets more available, while preserving individual privacy.

Policy recommendations from member economies

Results of the economy survey (Table 14 and Table 15) show that although measures are highly-contextual, enhancing financial inclusion and access to resources is the most consistent priority to be recommended by the economy respondents. Economies aim to provide women with "equitable access to productive resources and inclusive financing" (Peru), "sufficient grant" (Malaysia), and increased "financing for women" (Chile). Viet Nam echoes this by focusing on enhancing women's "access to resources."

In the era of digital transformation, building technical, digital, and business skills is extremely important: There is a strong emphasis on moving beyond subsistence farming by upgrading capabilities. This includes "promoting digital and technical literacy" (Viet Nam), "strengthening technical capacities and access to technological innovation" (Peru), and offering "gender-sensitive skills certification" (Chile). Malaysia specifically targets building skills across the entire value chain, from "production to processing and marketing."

Fostering entrepreneurship and market integration: The recommendations aim to connect women to higher-value parts of the agricultural chain. This is evident in priorities like "fostering women-led entrepreneurship and value chain integration" (Viet Nam) and ensuring "access to differentiated markets" (Peru). This also extends to leadership and governance, with Peru and Viet Nam highlighting the need to enhance women's "decision-making power" and "participation in value chain governance."

Table 14. Economy's top three priorities for closing gender gap and empowering women

Economy	Detail
Australia	<ol style="list-style-type: none"> 1. Ending gender-based violence 2. Economic equality and security 3. Unpaid and paid care
Chile	<ol style="list-style-type: none"> 1. Increase participation and financing for women in the agriculture sector 2. Strengthen the Rural Women's Program (improve training, technical assistance, and access to investment for their productive units). 3. Promote gender-sensitive skills certification
Malaysia	<ol style="list-style-type: none"> 1. To build women skills in agriculture from production to processing and marketing. 2. Empower agriculture extension services. 3. Introduce sufficient grant to women in agriculture. 4. To encourage young generation especially women to involve in agriculture.
Peru	<ol style="list-style-type: none"> 1. Equitable access to productive resources and inclusive financing 2. Strengthening technical capacities and access to technological innovation 3. Access to differentiated markets and participation in value chain governance.

Economy	Detail
Viet Nam	<ol style="list-style-type: none"> 1. Enhancing women's access to resources and decision-making power; 2. Promoting digital and technical literacy for sustainable agriculture; 3. Fostering women-led entrepreneurship and value chain integration

Source: APEC economy survey, 2025

Table 15. Policy recommendations proposed by APEC economies

Economy	Detail recommendations
Australia	<ul style="list-style-type: none"> - Addressing structural barriers and embedding gender equity into legal and regulatory systems and frameworks. - Increasing investment in economic empowerment of women (access to financing, addressing training and skill gaps, for example). - Increasing leadership and participation opportunities for women working in the agriculture sector
Chile	Active participation in programs that promote sustainable agricultural practices
Peru	<ul style="list-style-type: none"> - Include quantified parity targets in all agricultural investment programs (e.g., EEMRI, Agroideas); - Financial and business literacy training for rural women. - Inclusive digitalization: Subsidizing access to smartphones and data for women, and promoting adapted pricing/climate alert apps. - Alliances with the private sector (buyers, agro-exporters) for preferential sourcing programs and value chain training. - Awareness-raising campaigns targeting men and community leaders on gender equality and socio-economic benefits. The Peruvian experience suggests that the economic empowerment of rural women is not only an imperative of social justice, but a smart strategy to accelerate the transition to resilient and low-carbon agriculture.
Viet Nam	<ul style="list-style-type: none"> - Strengthen women's access to productive resources; - Enhance women's access to knowledge and technology; - Support women's leadership and participation; - Mainstream gender in climate and green growth policies

Source: APEC economy survey, 2025

General suggestion for policy making process

Institutional and legal barriers often result from "gender-blind" policies that fail to acknowledge or perpetuate existing inequalities. Addressing this requires best practices centered on rigorous analysis, institutional capacity building, and a firm commitment to gender-responsive governance.

Accurate, systematic analysis is the essential prerequisite for designing effective. This foundation demands that statistical agencies allocate resources to routinely collect, update, and publicly release Sex-Disaggregated Data (SDDA). This data must span crucial areas like wages, labor market activity, unpaid work, productivity, and asset ownership, and be actively used to inform decision-making and track progress.

Once data is collected, a comprehensive gender analysis must investigate not only value-chain participation but also household-level income management and the role of horizontal institutions. Methodologies like the APEC Guide for Gender Analysis ensure gender is integrated throughout policy design and evaluation to identify differential impacts, while value chain tools like INGIA-VC help map specific gender roles and constraints. Finally, specialized tools like the SIGI are vital for measuring

discrimination embedded in social institutions, providing the data needed for transformative policy change.

Integrating gender-responsive policies into climate-smart and sustainable agriculture development requires shifting beyond basic recognition to building policies upon robust analytical. The APEC region mandates gender inclusion into Fora Strategic and Work Plans, Annual Reports and Projects as stated in APEC Economic Leaders (ALEM 2016) and APEC Ministers (AMM 2014) and follows five principles: 1) Build a culture of gender inclusion across APEC; 2) Encourage inclusive engagement in all Fora and cross-cutting initiatives; 3) Apply gender-inclusive approaches to strategic plans, work plans, annual reports and projects; 4) Promote good practices in gender inclusion; and 5) Optimize resources and prosperity for all in the APEC region (APEC, 2017).

4. Enhancing regional cooperation on gender equality and sustainable development of agriculture

The APEC region has progressively recognized that gender equality is not a peripheral social issue but a central pillar of its core mission to foster sustainable economic growth and prosperity. Over the past two decades, APEC's approach has evolved from acknowledging women's issues to strategically integrating gender equality as a cross-cutting imperative for achieving regional objectives in trade, food security, and innovation. This evolution is codified in a series of high-level frameworks that collectively form a powerful mandate for action across all member economies. The contemporary APEC vision for gender equality is anchored in four interconnected strategic documents that guide the work of its various committees and working groups, including: La Serena Roadmap for Women and Inclusive Growth, APEC Putrajaya Vision 2040, Aotearoa Plan of Action and Food Security Roadmap Towards 2030.

Table 16. APEC framework for advancement of gender equality

Framework/ Roadmap	Year adopted	Key gender-related objective	Relevant APEC Fora for implementation
La Serena Roadmap for Women and Inclusive Growth	2019	Amplify women's role in all economic sectors, bridge the gender wage divide, uplift women's leadership, and ensure access to resources.	All APEC Fora, led by PPWE
APEC Putrajaya Vision 2040	2020	Foster quality growth that brings benefits to all, including MSMEs, women, and others with untapped economic potential.	All APEC Fora
Aotearoa Plan of Action	2021	Advance gender equality and WEE by accelerating the full implementation of the La Serena Roadmap.	All APEC Fora
Food Security Roadmap Towards 2030	2021	Promote inclusivity by implementing the La Serena Roadmap and unlocking the economic potential of diverse groups, including women.	PPFS, ATCWG, OFWG, HLPDAB

The APEC region has launched different regional working groups, committees guided by different strategic plans, actions to advance gender equality. Translating these high-level visions into tangible outcomes is distributed across several APEC bodies. The PPWE serves as the primary engine for gender-related projects and policy dialogue⁴⁰. However, the principle of gender mainstreaming requires other fora, such as the PPFS and the ATCWG, to integrate gender considerations into their respective work plans⁴¹. This is often guided by the *APEC Gender Inclusion Guidelines* (an initiative notably pushed by Viet Nam), which aim to embed a gender perspective into all policies and projects. The ATCWG, for instance, explicitly supports the implementation of the Food Security Roadmap and its gender components⁴². This distributed model, guided by the overarching frameworks, is designed to ensure that gender equality becomes an integral part of all APEC's economic and technical cooperation, not just a siloed concern. The effectiveness of this model, however, hinges on the capacity and commitment of

⁴⁰ APEC PPWE, accessed October 5, 2025, <https://pcw.gov.ph/apec-policy-partnership-on-women-and-the-economy-ppwe/>

⁴¹ Study and Workshop on the Associativity as a Strategy to Improve the Competitiveness of Women in Small- Scale Agriculture in APEC Economies, accessed October 5, 2025, https://www.apec.org/docs/default-source/publications/2025/1/225_atc_associativity-as-a-strategy-to-improve-the-competitiveness.pdf?sfvrsn=cbfc10ef_1

⁴² Agricultural Technical Cooperation Working Group (ATCWG) 2025 Work Plan, accessed October 5, 2025, https://www.apec.org/docs/default-source/groups/atcwg/2025/atcwg-work-plan-for-2025.pdf?sfvrsn=24e2ee8b_1

each forum and member economy to conduct meaningful gender analysis and implement gender-responsive initiatives.

Suggestions for areas of cooperation among member economies

According to economies' responses, there is unanimous support for knowledge-sharing platforms and best practices exchange. This illustrates that member economies are constantly desired to learn from each other practical models, mechanisms, stories on gender equality that work in reality. PPWE is well suitable to this demand. Besides, the economies also highly recommend regional cooperation in training and capacity building programs, cross-border market access facilitation for women entrepreneurs, technology transfer and innovation networks (5/6 economies).

Table 17. Recommendations for regional cooperation mechanisms for promoting WEE in AVCs across APEC

	Australia	Chile	Malaysia	Peru	Chinese Taipei	Viet Nam
Knowledge sharing platforms and best practice exchanges	x	x	x	x	x	x
Joint research and development programs	x	x		x		x
Regional training and capacity building programs	x		x	x	x	x
Cross-border market access facilitation for women entrepreneurs	x	x		x	x	x
Regional climate information and early warning systems	x		x	x		x
Technology transfer and innovation networks	x	x	x	x		x
Regional financing mechanisms for women in agriculture	x			x	x	x
Policy harmonization and standard setting	x			x		x

Source: APEC economy survey, 2025

CHAPTER 6. CONCLUSIONS

This report synthesizes and analyzes the critical role of women in the AVCs of the APEC region, particularly focusing on the transition toward sustainable and low-carbon agriculture development. The findings, drawn from extensive literature review and direct surveys of APEC member economies, confirm that enhancing WEE is not merely a social objective but a core prerequisite for achieving regional food security, climate resilience, and sustainable economic growth.

The research reveals a profound disconnect between women's essential contributions and their access to resources and opportunities:

- Women as essential agents of change: Women are not just laborers; they are foundational actors in APEC's agrifood systems, especially in rice and vegetable value chains. They serve as crucial agents of adaptation, custodians of biodiversity, and drivers of household food security. Their participation is essential for an effective transition to CSA.

- Persistent and systemic gender gaps: Despite their vital roles, women face deep and persistent gender gaps across all five APEC pillars for WEE. They have significantly less access to land and finance (Assets), face lower wages and market segregation (Markets), are underrepresented in STEM and agricultural extension (Skills), are systematically excluded from leadership roles (Leadership), and are on the wrong side of a digital divide (Technology).

- Deep-rooted underlying barriers: These gaps are symptoms of deeper, systemic barriers. The findings identify discriminatory social norms, the disproportionate and unrecognized burden of unpaid care and domestic work, and pervasive "gender-blind" policies and institutional biases as the primary drivers holding women back.

- Proven pathways to empowerment: The best practices collected from APEC economies, including Australia; Chile; Malaysia; Peru; and Viet Nam, demonstrate that these barriers are surmountable. Successful interventions are consistently holistic, combining legal reform (e.g., joint land titling), targeted financial and technical support (e.g., the PEMRI in Peru), market integration (e.g., the GREAT program in Viet Nam), and leadership development (e.g., Chile's *Escuelas de lideresas*).

To bridge these gaps and unlock the full potential of women in the region's agriculture sector, this report puts forward four main categories of policy recommendations:

- 1) Transition to a more gender-responsive legal framework: APEC economies must review and reform domestic legislation to eliminate statutory discrimination. This includes mandating equitable property and inheritance rights (such as joint land titling), prohibiting sex-based discrimination in financial services, and legally recognizing women's equal economic and legal agency.

- 2) Strengthen gender-responsive and accountable institutions: Legal reforms must be supported by strong institutions. This involves institutionalizing Gender-Responsive Budgeting to ensure financial commitments match policy goals, strengthening the capacity of domestic gender mechanisms, and increasing female representation in institutional bodies, from cooperative boards to agricultural ministries.

- 3) Make climate-smart and sustainable agriculture policies gender-inclusive: Policies for sustainable agriculture must be designed with a gender lens from the start. This requires tailoring service delivery (e.g., extension services, digital tools) to women's needs, schedules, and literacy levels; investing in digital and financial literacy training; and challenging the occupational segregation that keeps women out of STEM and other high-growth fields.

- 4) Enhance regional cooperation: APEC provides a crucial platform for collective action. Member economies should actively use APEC fora (such as ATCWG and PPWE) to exchange best practices, support joint capacity-building programs, and facilitate cross-border market access for women-led enterprises.

ANNEXES

Annex 1. Questionnaires for APEC economies

I. INTRODUCTION

This project, proposed by Viet Nam, aims to analyze and synthesize best practices in terms of **policies and actions** in the APEC region on Women's participation and/or leadership in the AVC toward sustainable development for possible scaling up by member economies. The project also aims to enhance understanding of gender inclusion and the significance of gender-inclusive practices, while identifying barriers women encounter in AVCs to support policymakers in developing gender-inclusive, sustainable-agriculture policies that promote women's roles and contributions to a low-carbon economy transition.

Your responses will serve as a crucial source of information for the Report on Best Practices, assisting policymakers develop such policies.

Please provide your valuable input on the following **questions**, focusing specifically on **rice and vegetable value chains**. If information on these is not available, please provide details on **AVCs or agriculture** in general.

II. RESPONDENT INFORMATION

1. APEC economy:
2. Organization name:
3. Respondent's full name:
4. Respondent's position/title:
5. Respondent's gender (optional):
6. Contact email:

III. QUESTION CONTENT

3.1. Current status, gaps, barriers of women's participation in agriculture and AVC in your economy

1. What is the approximate percentage of women in the agricultural workforce in your economy? If exact data is unavailable, provide an estimate or select "Not known."

	Percentage of female workforce (%)	Not known
In agriculture sector		<input type="checkbox"/>
In rice sector		<input type="checkbox"/>
In vegetable sector		<input type="checkbox"/>

2. What roles do women primarily play in the rice and vegetable value chains in your economy? Indicate whether each activity is dominated by men, women, or is gender-neutral. Provide supporting data, if available.

Stages/activities	Vegetable value chain (tick X that apply)			Rice value chain (tick X that apply)		
	Men domination	Women domination	Neutral	Men domination	Women domination	Neutral
Inputs provision						
Selection of seeds/crops						
Land preparation						
Seedling						
Transplanting						
Weeding						
Taking care/field visiting						
Pesticide spraying						
Fertilizing						
Harvesting						
Threshing						

Transporting						
Drying						
Processing						
Packaging						
Selling/marketing						
Others (please specify)						

Supporting documents/Links (if any):

3. What are the key gender gaps in AVCs (particularly rice and vegetable sectors) in your economy? For each gap, indicate its presence and provide details, including quantitative data or estimates if available.

Gender gaps	Exists? (Yes/No)	Details/Quantitative data (if available)
Access to land		
Access to inputs		
Access to education, extension services, training, and technology		
Access to financial services		
Access to market		
Decision-making power		
Control of use of income		
Leadership and community participation (participating in groups, cooperatives, community organizations and their leadership, women's voices...)		
Time allocation		
Productivity		
Others		

Supporting documents/Links (if any):

4. How significant are the barriers women face in participating in AVCs in your economy? Rate each barrier's impact.

Gender barriers	Not at all significant	Slightly significant	Neutral	Fairly significant	Very significant	Not sure
Limited access to land ownership/tenure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of access to credit and financial services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Limited technical knowledge and training opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gender discriminatory social norms and attitudes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Lack of access to markets and value chain networks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpaid care and domestic work responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Limited literacy/education levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of technology access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. In your economy, what are the main challenges women face in adopting sustainable agricultural practices? (Please tick all that apply).

- High upfront costs of technologies
- Lack of technical knowledge and training
- Limited access to climate information and early warning systems
- Inadequate financial support and credit access
- Cultural barriers and resistance to change
- Lack of appropriate technologies for women's needs
- Limited market incentives for sustainable practices
- Other (please specify):

3.2. Institutional and policy framework for women's participation in agriculture

6. What institutional mechanisms does your economy have to integrate gender into agricultural policies? Indicate their presence and provide a brief description

Institutional mechanisms	Exists? (Yes/No)	Brief description
Gender focal points in agricultural ministries		
Inter-ministerial coordination committees		
Gender-responsive budgeting in agriculture		
Women's participation requirements in agricultural boards/committees		
Regular gender impact assessments of agricultural policies		
Dedicated women's agricultural development units		
No specific mechanisms in place		
Other (please specify):		

7. Does your economy have specific laws, policies, strategies, programs that promote women's participation, WEE in agriculture, AVCs?

If yes, please cite relevant gender-related law/policies/strategies/programs as follows:

Category	Yes/No	If yes, then specify			
		Title of law/policies/strategies/programs	Brief description	Year implemented	Key Outcomes/Impact (if known)
Laws					
Policies					

Strategies					
Programs					

Supporting documents/Links (if any):

8. Are there any specific laws, policies, strategies or programs that support women's role in the transition of the agriculture sector (specifically rice and vegetables if available) towards **sustainable and low-carbon practices** (e.g., climate-smart agriculture)?

Category	Yes/No	If yes, then specify			
		Title of law/policies/strategies/programs	Brief description	Year implemented	Key Outcomes/Impact (if known)
Laws					
Policies					
Strategies					
Programs					

Supporting documents/Links (if any):

3.3. Best practices on women's participation and WEE

This research project is seeking to identify examples of **successful policies, measures, innovations, initiatives (best practices)** in the APEC region to advance women's participation and WEE in AVCs (specifically focusing on rice and vegetable where available). These initiatives are valuable for the policymakers in the APEC region to develop climate-smart and gender-responsive policies and measures.

9. Share one or two successful examples (best practices) of policies, programs, or initiatives in your economy that have advanced WEE in AVCs (preferably rice or vegetable sectors)

Best practice #1

	Details
Name of policies/measures/innovations/initiatives	
Which of the following domains the policies/measures/innovations/initiatives target to? (tick all that apply):	<input type="checkbox"/> Women's access to and control over productive resources (land, assets, credit...) <input type="checkbox"/> Women's control of use of income <input type="checkbox"/> Women's decision-making power <input type="checkbox"/> Women's participation and leadership <input type="checkbox"/> Women's education, training and skills development <input type="checkbox"/> Women's time allocation <input type="checkbox"/> Others (please specify):.....
Purpose	
Activities implemented/key content	
Key achievements	
What makes this approach innovative or impactful?	
How have these contributed to sustainable development of agriculture, women's participation or WEE?	

What challenges have you encountered, and what lessons have emerged so far?	
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Supporting documents/Links (if any):

Best practice #2

	Details
Name of policies/measures/innovations/initiatives	
Which of the following domains the policies/measures/innovations/initiatives target to? (tick all that apply):	<input type="checkbox"/> Women's access to and control over productive resources (land, assets, credit...) <input type="checkbox"/> Women's control of use of income <input type="checkbox"/> Women's decision-making power <input type="checkbox"/> Women's participation and leadership <input type="checkbox"/> Women's education, training and skills development <input type="checkbox"/> Women's time allocation <input type="checkbox"/> Others (please specify):.....
Purpose	
Activities implemented/key content	
Key achievements	
What makes this approach innovative or impactful?	
How have these contributed to sustainable development of agriculture, women's participation or WEE?	
What challenges have you encountered, and what lessons have emerged so far?	

Supporting documents/Links (if any):

3.4. Opportunities for women's participation and WEE

10. What opportunities exist in your economy to promote gender equality and WEE in AVCs? Provide specific examples or areas of potential.
11. In your economy, what are the key contributions of women to the agriculture sector's transition towards a low-carbon economy?

3.5. Policy recommendations, regional scaling up and cooperation

12. Drawing on your economy's experience, what policy recommendations would you suggest to strengthen women's participation and economic empowerment in AVCs, especially to support a low-carbon transition?
13. Which regional cooperation mechanisms would be most beneficial for promoting women's empowerment in AVCs across APEC? (Please tick all that apply)?
 - Knowledge sharing platforms and best practice exchanges
 - Joint research and development programs
 - Regional training and capacity building programs
 - Cross-border market access facilitation for women entrepreneurs
 - Regional climate information and early warning systems
 - Technology transfer and innovation networks
 - Regional financing mechanisms for women in agriculture
 - Policy harmonization and standard setting
 - Other (please specify)
14. What are your economy's top three priorities for scaling up WEE in AVCs over the next 5 years?

Additional notes:

Please feel free to provide any data sources (e.g., government reports, statistics, surveys, research) that are available in your economy to assess gender gap, women's participation, WEE in AVCs (you may attach files or specify the links that are available for download).

It would be appreciated if your responses could include references to published documents or reports for further analysis.

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