

# The Entrepreneurial Ecosystem and Capacity Building of Sustainable Entrepreneurship in APEC Economies

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APEC Human Resources Development Working Group

March 2026



**Asia-Pacific  
Economic Cooperation**





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**March 2026**

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# I. Introduction

The views expressed in this report are those of the authors and do not necessarily represent those of APEC member economies. The examples discussed in this report were prepared based on the author's research and are provided for information purposes only, and do not guide the work of the HRDWG.

## 1. Concepts and significance

The phenomenon of entrepreneurship combined with a sustainability perspective is commonly referred to as sustainable entrepreneurship (Shepherd and Patzelt, 2011). Entrepreneurship contributes to sustainable development by creating jobs, driving economic growth, innovation, and improving social conditions.

Sustainable entrepreneurship does not independently pursue economic, social or environmental goals, but systematically considers all elements of sustainability and forms synergy to transform market failures into sustainable business opportunities (Sharma et al., 2021; Watson et al., 2023). Sustainable entrepreneurship adheres to the three-bottom line principle, including the economic bottom line, the environmental bottom line and the social bottom line, and the three are both interrelated and interdependent (Munoz and Cohen, 2018; Shahid et al., 2023). Economic goals require that the operation of enterprises be sustainable and not at the expense of environmental and social goals. Social goals mean that sustainable entrepreneurship is committed to factors such as social justice, human well-being and social stability; Environmental goals require that the development of enterprises must protect and improve the environment and achieve ecological balance (Huang et al., 2023; Ogamaba, 2018).

Promoting entrepreneurship is the consensus of the APEC economies. Building a strong, balanced, secure, sustainable and inclusive growth and creating greater prosperity proposed by the Putrajaya Vision 2040 become the core mission of the APEC cooperation mechanism. In order to better implement the Putrajaya Vision 2040, the APEC economies developed the Aotearoa Plan of Actions in 2021. Besides the comprehensive visions and actions, APEC economies also published many declarations and statements relating to promote sustainable entrepreneurship, including the green entrepreneurship and inclusive entrepreneurship (Table 1). The documents aimed at promoting green entrepreneurship focused on supporting MSMEs as well as developing Bio-Circular-Green economic model and renewable energy and low carbon industries. Meanwhile, policy documents targeting inclusive entrepreneurship focused on women and people with disabilities, aiming to create more favorable resource environments for their entrepreneurship.

Table 1. The documents and policy guidance to promote sustainable entrepreneurship by APEC economies

Type	Year	Name of the document
Comprehensive Visions	2020	Putrajaya Vision 2040
	2021	Aotearoa Plan of Action
Green Entrepreneurship	2017	APEC Strategy for Green, Sustainable and Innovative MSMEs
	2022	Bangkok Goals on Bio-Circular-Green (BCG) Economy
	2022	The Trade and Investment in Renewable Energy and Low Carbon Emissions Technologies Roadmap Towards 2030
	2024	APEC Policy Guidance to Develop and Implement Clean and Low Carbon Hydrogen Policy Frameworks in the Asia-Pacific
Inclusive Entrepreneurship	2017	APEC Agenda on Advancing Economic, Financial and Social Inclusion in the APEC Region
	2019	The La Serena Roadmap for Women and Inclusive Growth (2019-2030)
	2023	San Francisco Principles on Integrating Inclusivity and Sustainability into Trade and Investment Policy
	2024	The APEC HRDWG Arequipa Goals

Enhancing the entrepreneurial ecosystem and strengthening the capability building of sustainable entrepreneurs carry growing strategic importance for APEC economies. As sustainability-related challenges—such as climate risks, resource constraints and social inequality—become more complex, entrepreneurs must operate in an environment that provides stable institutional support, accessible resources and opportunities for collaboration. A well-developed ecosystem enables sustainable entrepreneurs to identify emerging green opportunities, adopt innovative technologies and mobilize financial and human capital more effectively. At the same time, continuous capability development ensures that entrepreneurs are equipped with the managerial, technical and strategic skills required to navigate evolving sustainability

standards and market expectations. Strengthening both ecosystem and capacity building therefore plays a critical role in accelerating the transition toward low-carbon, inclusive and innovation-driven growth across the APEC region, while improving economic resilience and long-term competitiveness.

## 2. Research aims

The purpose of this report is to investigate how to enhance the capability of sustainable entrepreneurs in APEC economies. Three major tasks have been identified, including improving sustainable entrepreneurial ecosystem, enhancing the training for sustainable entrepreneurs as well as optimizing the APEC cooperation mechanism. By analyzing the three aspects respectively, the report puts forward targeted policy recommendations.

In addition, this report aims to deepen the understanding of how APEC economies can systematically enhance the enabling conditions and capacity building required for sustainable entrepreneurship. By linking ecosystem gaps with entrepreneurs' skill needs and training provisions, the study seeks to clarify where policy efforts can generate the greatest improvement in entrepreneurial performance and sustainability outcomes. The report also aims to identify practical approaches for strengthening regional cooperation—particularly in policy coordination, knowledge exchange and capacity building—so that APEC economies can collectively accelerate the development of sustainable entrepreneurship and better support the transition toward green, inclusive and innovation-driven growth across the region

## 3. Methodologies

In doing so, 4 methods have been employed in this research. Firstly, the literature review is used to define concepts and present the progress of academic research, including the literature on sustainable entrepreneurship, entrepreneurial ecosystem, entrepreneurial competence and training for sustainable entrepreneurship. Secondly, policy review is used to analyze the policies to improve the entrepreneurial ecosystem released by APEC and the member economies to identify the best practices and aspects that need to be improved. Thirdly, a questionnaire has been designed and distributed to APEC economies to collect information on the actions and perceptions on sustainable entrepreneurship. Feedback of government officials and experts from 16 APEC economies were used in this report, except Mexico; New Zealand; Peru; Chinese Taipei; and Viet Nam due to data availability (Table 2). Lastly, we held the “APEC seminar on promoting green jobs and resilient development by enhancing the capacity building of sustainable entrepreneurs” in Beijing on July 16th, and the materials shared by the attending guests also became a supplement to the content of the report.

Table 2. The economy and institution of each respondent for the questionnaire

Economy	Institution
Australia	University of Southern Queensland
Brunei Darussalam	Brunei Economic Development Board
Canada	HEC Montreal
Chile	Ministry of Labour and Social Security
China	Chinese Academy of Personnel Science
Hong Kong, China	City University of Hong Kong
Indonesia	Ministry of Cooperatives and SMEs
Japan	Hitotsubashi University
Korea	Human Resources Development Service of Korea
Malaysia	Hexachamp
Papua New Guinea	Embassy of PNG in Korea
The Philippines	Department of Labor and Employment
Russia	Ministry of Labour and Social Protection
Singapore	Enterprise Singapore
Thailand	Ministry of Education
United States	Babson College

## 4. The status quo

Sustainable entrepreneurial activity is prevailing in APEC economies and plays an important role for social-economic development. According to the questionnaire survey, the result shown that the APEC government officials and experts believe that sustainable entrepreneurship is relatively common in their economy with the score of averagely 4 points out of 5 in the Likert scale. Respondents also emphasized its current importance for socio-economic development, with an average score of 4.2, and expressed even greater confidence in its future potential, giving a score of 4.4 for its expected contribution over the next five years. These results indicate not only the growing presence of sustainable entrepreneurship but also the rising expectations from policymakers and practitioners regarding its long-term impact.

Survey results further reveal clear sectoral patterns in the distribution of sustainable entrepreneurial activities. As shown in Figure 1, a considerable proportion of sustainable enterprises are concentrated in manufacturing, agriculture and construction—sectors closely linked to industrial upgrading, food security, infrastructure modernization and resource efficiency. These

industries are also among the most directly affected by green transition policies and sustainability-related demands, making them natural entry points for sustainable business innovation. In parallel, Figure 2 illustrates that sustainable entrepreneurial initiatives align strongly with SDGs related to economic transformation, innovation, and green development, reflecting the tendency of APEC economies to focus on sustainability opportunities intertwined with industrial and technological progress.

Overall, these findings indicate that sustainable entrepreneurship in APEC economies is expanding in scale, deepening in complexity and becoming increasingly aligned with sustainability priorities. The combination of rising market demand, policy support, and technological advancement creates favorable conditions for further development. However, these evolving dynamics also highlight the presence of persistent ecosystem constraints and capability gaps, which are analyzed in detail in the following section on challenges.

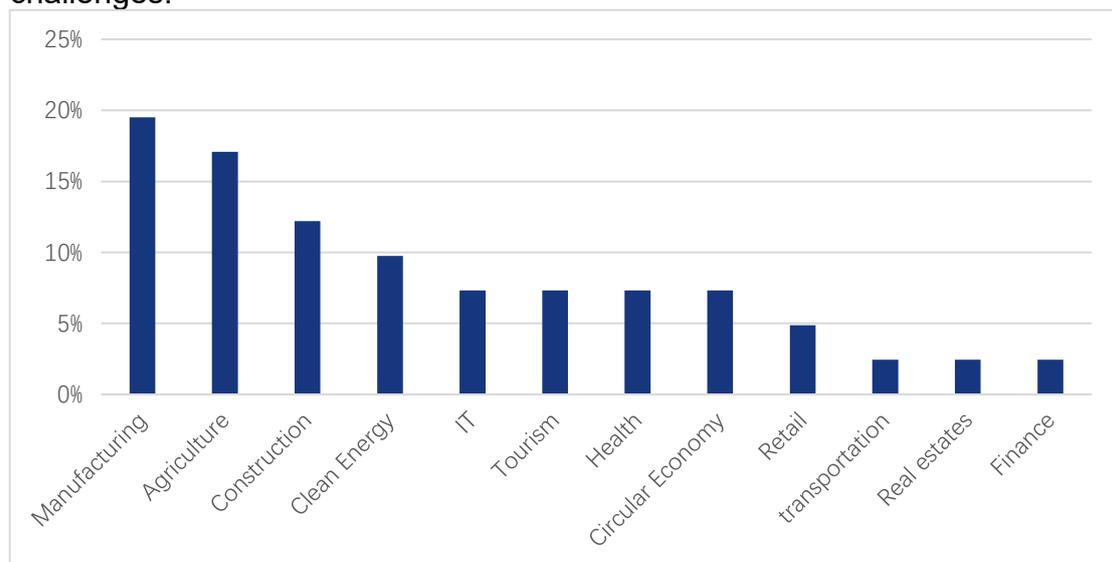


Figure 1. The industry distribution of Sustainable Entrepreneurship in APEC economies

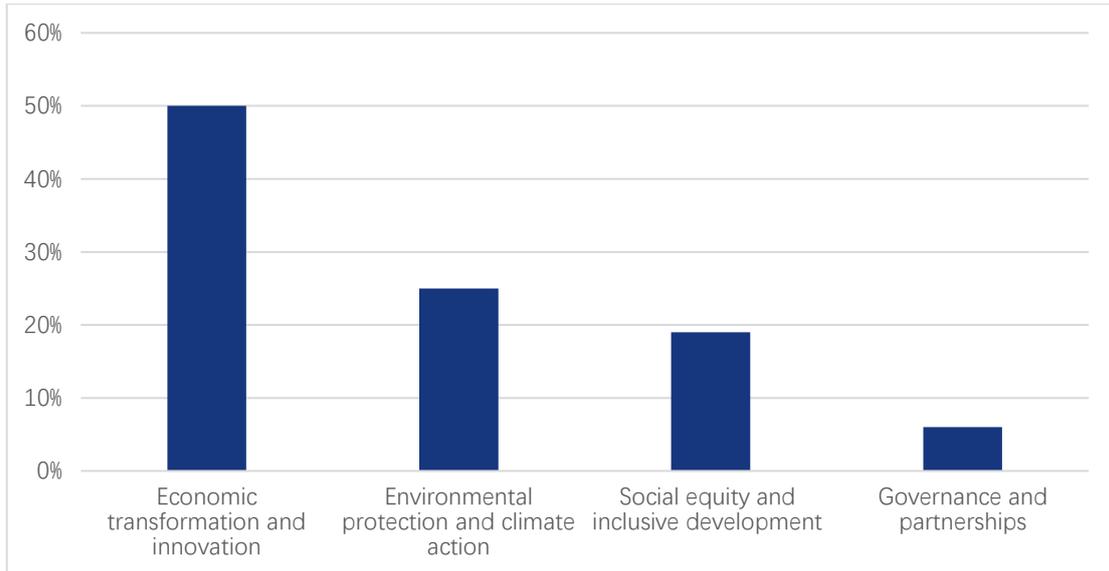


Figure 2. The UNSDGs Classification of Sustainable Entrepreneurship in APEC economies

## 5. Challenges

The sustainable entrepreneurs in APEC economies are facing three major, mutually reinforcing challenges. These challenges relate to the maturity of the entrepreneurial ecosystem, the competence and skills of sustainable entrepreneurs themselves, and the effectiveness of training provision.

Firstly, the entrepreneurial ecosystem for sustainable entrepreneurship is not yet mature. The survey shows that sustainable entrepreneurs in APEC economies are hindered by multiple elements of the ecosystem, including finance, policies, human resources, technologies and market demands. As illustrated in Figure 3, respondents commonly identified limited access to appropriate financing instruments, insufficient or unstable policy support, shortages of skilled personnel, gaps in technological infrastructure and capabilities, and inadequate or uncertain market demand for sustainable products and services as key constraints. These factors together reduce entrepreneurs' willingness and ability to initiate or scale sustainable ventures, weaken their resilience to external shocks, and slow down the diffusion of sustainable business models.

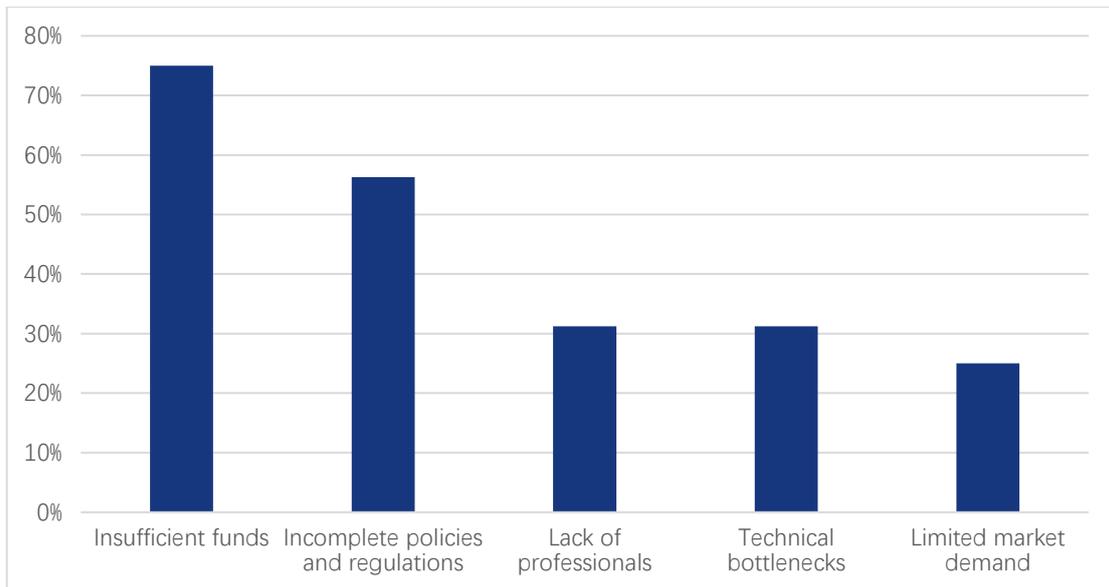


Figure 3. The main challenges faced by sustainable entrepreneurs in the ecosystem

Secondly, sustainable entrepreneurs lack competence and face significant skill gaps. More than 70% of government officials and experts do not believe that sustainable entrepreneurs in their economies have sufficient capability, and they reported that many entrepreneurs are facing skills gaps such as management skills, technical expertise and commercialization skills. In particular, respondents pointed to weaknesses in areas such as strategic and operational management, innovation and project management, marketing and branding, and the ability to translate technical ideas into viable business models. Such capability gaps make it difficult for sustainable entrepreneurs to design robust business strategies, attract investment, build effective teams, and compete in rapidly changing markets, even when there is policy interest and potential demand.

Thirdly, the training for sustainable entrepreneurs is confronted with notable obstacles. Lack of funds, trainers and enthusiasm among participants are the main factors contributing to these obstacles, as shown in Figure 4. On the supply side, many training providers face budget constraints and difficulties in recruiting trainers with both sustainability knowledge and practical entrepreneurial experience. On the demand side, potential participants may have limited awareness of available training opportunities, competing time pressures, or insufficient incentives to invest in systematic learning. These constraints result in training programs that are often small in scale, uneven in quality and not fully aligned with the specific needs of sustainable entrepreneurs at different stages of development.

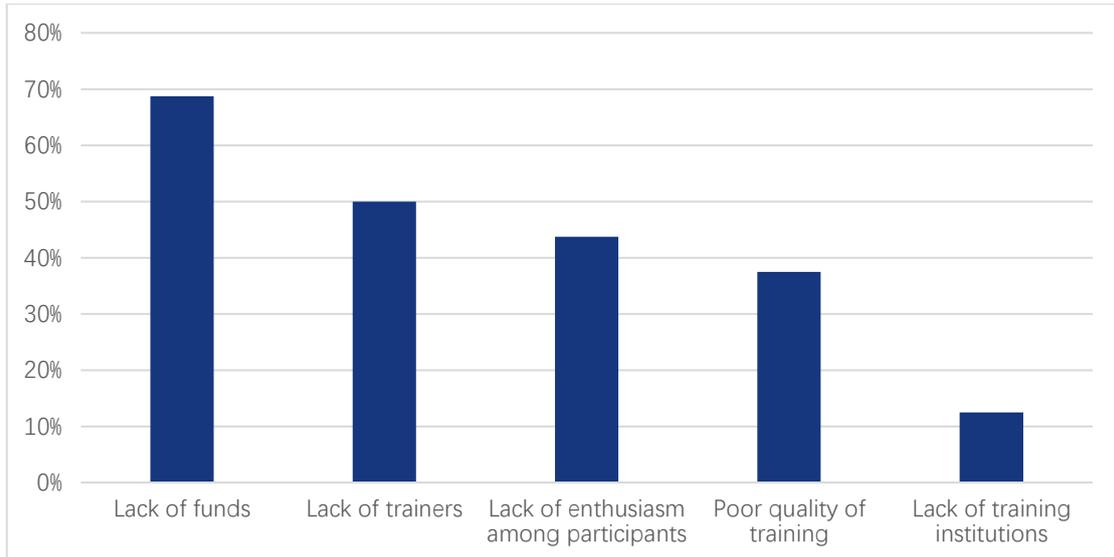


Figure 4. The obstacles confronted by the training for the sustainable entrepreneurs

In order to tackle the challenges so as to enhance the capability of sustainable entrepreneurs, the report has made the following arrangements. Chapter II analyzes the entrepreneurial ecosystem of sustainable entrepreneurship in the APEC economies, Chapter III analyzes the key capabilities for sustainable entrepreneurs and their training, Chapter IV reveals how APEC cooperation mechanism enables the capacity building of sustainable entrepreneurs, and Chapter V proposes policy recommendations based on the previous analysis.

## II. Sustainable entrepreneurship ecosystem of APEC Economies

### 1. Analysis framework of sustainable entrepreneurship ecosystem

Sustainable entrepreneurship, which integrates sustainability principles into business models, leverages innovative solutions to pursue environmental and social goals alongside economic objectives. Triple bottom line principles must be met by sustainable entrepreneurship, which means it should commit to their social and environmental impacts in addition to their economic performance (Elkington, 1997). Therefore, when we analyze the entrepreneurial ecosystem of sustainable entrepreneurship, we need to consider the three aims simultaneously, rather than only one of aims.

To achieve the three goals simultaneously, sustainable entrepreneurship cannot do without the support of the entrepreneurial ecosystem. The sustainable entrepreneurial ecosystem consists of all the elements that are required to sustain sustainable entrepreneurship in a particular territory,

including institutional arrangements, resources endowment as well as the economic and social networks (Stam, 2019; Stam and van de Ven, 2021). Institutions include formal institutions such as the strategies, laws, regulations and policies, and informal institutions such as the culture and social norms. Resources include financial resources such as venture capitals, bank loans and other channels of financial capitals, human capital resources such as talents, knowledge and leadership, physical infrastructures as well as the markets demand (Figure 5).

By analyzing the highlights and the aspects that need improvement, the report will demonstrate the best practices to promote each pillar of the sustainable entrepreneurial ecosystem in APEC economies, as well as propose some policy recommendations.

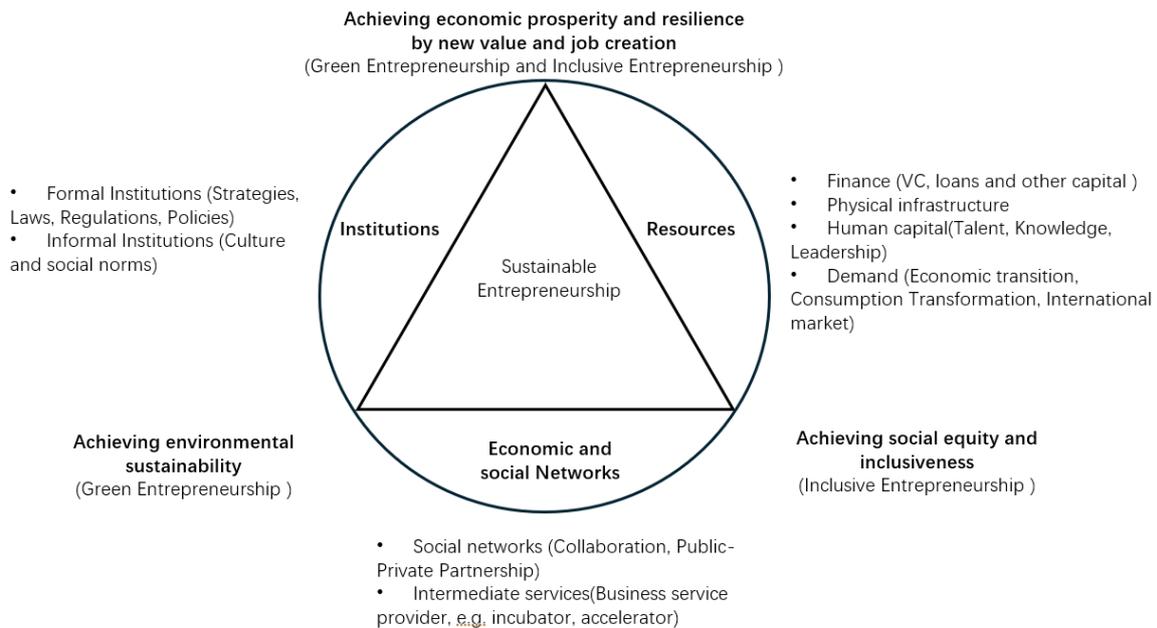


Figure 5. The analysis framework of the sustainable entrepreneurship ecosystem

## 2. Institutions

By reviewing the representative institutional documents, we have found that the highlights of the institutional pillar of the sustainable entrepreneurial ecosystem include the following aspects (Table 3). Firstly, some APEC economies introduce strategies or visions to promote sustainable development and regard sustainable entrepreneurship as an important way to realize it.

In the strategies or visions, some APEC economies emphasize the synergy between digital and sustainable transformation. For example, the “Opinions on Accelerating the Comprehensive Green Transformation of Economic and Social Development” released by China, the “Malaysia Digital Economy Blueprint” published by Malaysia and the “Brunei Darussalam: Digital Economy Masterplan 2025” issued by Brunei Darussalam all proposed to accelerate the coordinated transformation of digitalization and green development.

Meanwhile, some APEC economies promote the just transition in the green development. For example, the “Thailand's 20-Year National Strategy” (Thailand Vision 2037) released by Thailand in 2018 pointed out strengthening sustainable growth in rural and remote areas; The “Low Carbon Economy Fund” (LCEF) established in Canada in 2022 includes the Indigenous Leadership Fund, which focuses on indigenous groups; Mexico's “Sustainable Finance Mobilization Strategy” in 2023 points out ensuring gender inclusion in green finance; The “Framework Act on Carbon Neutrality and Green Growth” of Korea in 2021 introduced specific policy measures for just transition.

Secondly, some APEC economies ensure the resources for sustainable entrepreneurship through laws and regulations promulgating and institutional reform. Representative practices include Indonesia's “P2SK Law” (Financial Sector Omnibus Law) and Korea's “Carbon Neutrality Act”, Thailand's “Investment Promotion Act B.E. 2520”, Chile's “Framework Law on Climate Change” and the Australian “Climate Change Act”, all these laws and acts are on the basis of setting carbon reduction targets, and ensures the investment through legislative means.

Thirdly, some APEC economies promote the transition of micro and small business to formal economy and sustain their development through simplifying and streamlining business registration and enabling business environment, implementing the initiatives proposed by “Lima Roadmap to Promote the Transition to the Formal and Global Economies (2025-2040)”. For example, China has issued the “Guidelines for the One-Stop Service of Enterprise Registration” in 2025 to establish nationally unified standards for business registration, and integrate all required procedures into one single form and limit the time for processing within 1 working day. Peru has released Tu Empresa (Your Company) National program, provides free and personalized advice to 50,000 business throughout the economy through its Business Development Centers in 2025. Korea has developed “Microenterprises Roadmap” to promote the digitalization and formalization of 13,000 micro enterprises.

Lastly, some APEC economies also provide comprehensive support policies for sustainable entrepreneurship including fiscal and tax incentives, government procurement, innovation support and standards setting. In terms of the fiscal and tax incentives, representative practices include providing long-term tax breaks for green investment, for instance, “Peraturan Menteri Keuangan (PMK) No. 130/PMK.010/2020” and “Amendments under PMK No. Policies such as 69/PMK.010/2024” in Indonesia offer green enterprises up to 20 years of investment tax relief and an additional 50% tax benefit for two years after expiration; “Law on corporate income tax No. 32/2013/QH13” in Viet Nam offers green enterprises a preferential tax rate of 10% for up to 15 years and tax exemption for up to 4 years; Singapore offers a Refundable Investment Credit scheme to encourage companies to make significant investments in key economic sectors, including projects that implement solutions with decarbonisation objectives.

In addition, some APEC economies exempt green enterprises from tariffs on imported raw materials and equipment. For example, in Thailand, the “Import

Duty Exemption” policy exempts the raw materials and equipment necessary for approved green business activities from import duties. Viet Nam waives tariffs on imported raw materials and equipment related to green enterprises for five years from the date of production.

Referring to the government procurement, some APEC economies pay attention to establishing and improving the policy framework of green public procurement, including setting the minimum proportion of green products and services in government procurement and incorporating carbon footprint requirements into government procurement standards. For example, “GreenGov.SG” in Singapore has made environmental sustainability one of the decision-making conditions for government purchases; Malaysia’s “The Green Technology Master Plan” (GTMP) 2017-2030 requires that at least 20% of government procurement be green; the “Opinions on Accelerating the Comprehensive Green Transformation of Economic and Social Development” of China points out that the scope and scale of green product procurement should be expanded, and carbon footprint requirements should be included in government procurement standards.

In terms of innovation supporting policies, some APEC economies attach great importance to the research and development of cutting-edge disruptive technologies and strengthening the commercial support for innovative demonstration projects. For example, China’s “Implementation Plan for Science and Technology Support for Carbon Peaking and Carbon Neutrality (2022-2030)” proposes to focus on major breakthroughs in core technologies and cutting-edge disruptive low-carbon technological innovation actions; Mexico’s “National Development Plan 2024-2030” proposes to enhance innovation in cutting-edge technologies and talent cultivation in the energy sector.

Table 3. The selected policies for sustainable entrepreneurship of APEC economies

Economy	Policies
Australia	Working for Women: A Strategy for Gender Equality
Brunei Darussalam	Brunei Vision 2035
Canada	Sustainable Development Technology Canada
Chile	Roadmap for a circular Chile by 2040
China	Opinions on Accelerating the Comprehensive Green Transformation of Economic and Social Development
Hong Kong, China	Climate Action Plan 2050
Indonesia	Indonesia Gold 2045
Japan	Green Growth Strategy Through Achieving Carbon Neutrality in 2050
Korea	Korean New Deal

Malaysia	The Green Technology Master Plan 2017-2030
Mexico	Economy's Development Plan 2024-2030
New Zealand	Women's Employment Action Plan
Papua New Guinea	Economy's Strategy for Responsible Sustainable Development
Peru	Economy's Strategy for the Woman Entrepreneur
The Philippines	The Philippine Development Plan (PDP) 2023-2028
Russia	The Development Goals of the Russian Federation through 2030 and for the Future Until 2036
Singapore	Long-Term Low-Emissions Development Strategy
Chinese Taipei	5+2 Industry Innovation Plan
Thailand	Thailand Vision 2037
Viet Nam	Economy's Green Growth Strategy 2021-2030

In terms of the standards setting, some APEC economies attach great importance to the standardization of green technologies, products and industries, including certification and classification. For example, Thailand has developed "Green Industry Criteria" to promote the green factory construction and Industry 4.0; Indonesia has published the "Indonesia Green Taxonomy 1.0" and classified the industry into types "green", "transformational" and "harmful" industries, and associate the classification results with policy support and bank loans; Malaysia has issued "The MyHIJAU Marks" that bring together various eco-labels and environmental certifications under a common logo as the identification mark for the government's purchase of green products; China has released "Guidelines for the Establishment of a Standard System for Carbon Peak and Carbon Neutrality" and committed to revising and formulating no less than 1,000 industry standards before the end of 2025.

In terms of aspects in need of improvement, firstly, although more policies or actions have been introduced in formal institutions, efforts targeting informal institutions are relatively insufficient, such as raising awareness and shaping supportive social norms. Secondly, the implementation, promotion and coordination of policies are confronted with obstacles. According to the result of the questionnaire survey, more than 40% government officials and experts consider the policies towards sustainable entrepreneurship to be lacking. Inadequate policy implementation, insufficient policy promotion and lack of coordination mechanism are the major obstacles for policies not achieving the expected results for sustainable entrepreneurship (Figure 6).

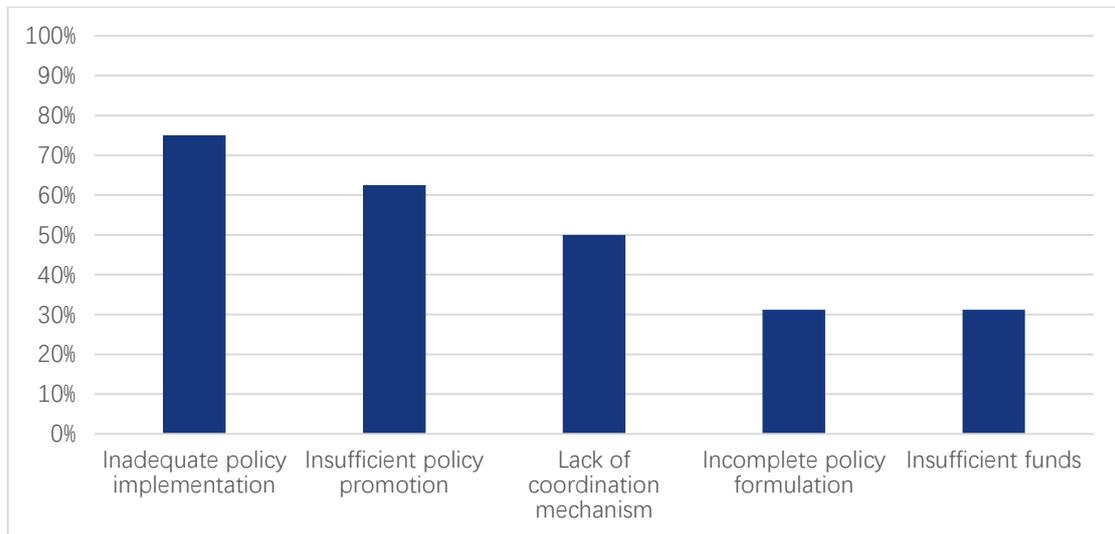


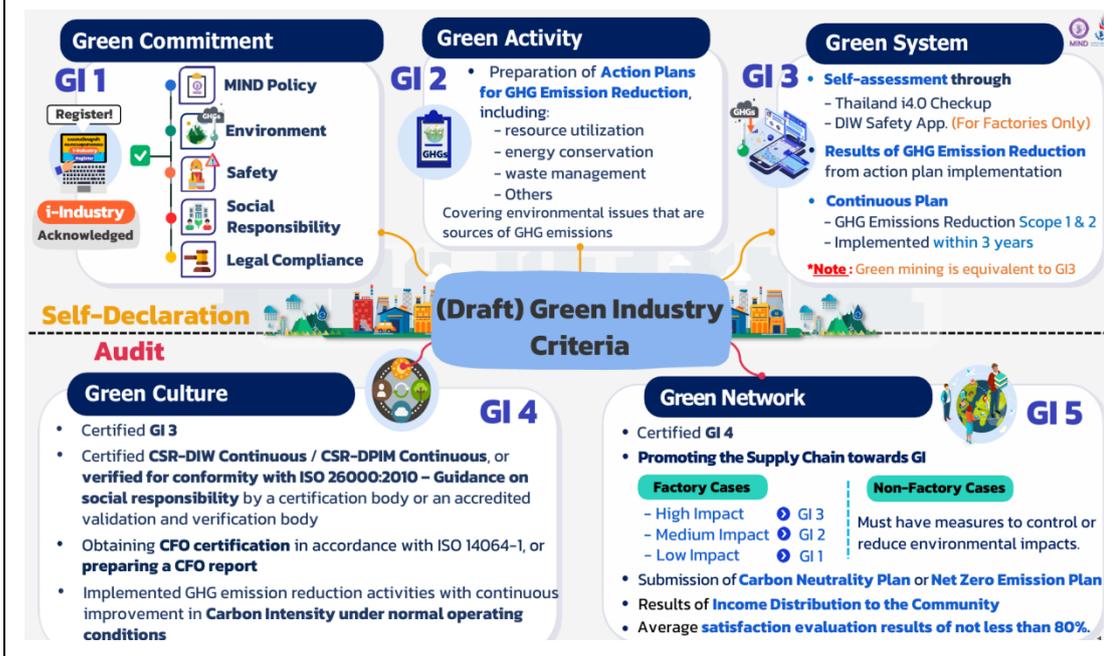
Figure 6. The major obstacles for policies not achieving the expected results for sustainable entrepreneurship

## Box1: Case study – The green industry criteria, Thailand

The green industry project has started by the Ministry of Industry to promote the environment and society friendly industrial practices in Thailand by 2010. The project aimed at improving the reputation, credibility, and public trust of the industrial sector, to serve as a starting point for the development of a Green Economy.

The core of the project is establishing the green industry criteria, and it classified the green practices into 5 levels, from green commitment, green activity, green system, green culture to green network from level 1 to level 5.

At the green commitment level, an organization shall have policy and commitment to reduce environmental impacts and effectively communicate among the various levels of the organization. At the green activity level, an organization shall establish and implement program(s) to reduce environmental impacts based on the policy and commitment from level 1. At the green system level, an organization shall have either systematic environmental management, including monitoring, self-assessment and the review for continuous improvement. At the green culture level, an organization shall demonstrate everyone's accountability on environmental and social concerns as an integral part of the organization's culture. Lastly, at the green network level, an organization shall promote the whole supply chain towards green industry and pursue the carbon neutrality and giving back to the community.



Source: the document shared by Mr. Kittinat Sopar from Ministry of Industry, Thailand and its official website.

### 3. Resources

Some examples of providing resources for sustainable entrepreneurs in some APEC economies include the following actions (Table 4). For financial resources, some APEC economies develop the blended finance model to increase the investment which is guided by the government funds. For example, Indonesia initiated the “Tri Hita Karana (THK) Roadmap for Blended Finance”, setting a roadmap for promoting the SDGs through blended finance and provide government guarantees for sustainable infrastructure projects, reduce financing costs, and attract more private investment; the fund initiated by “The Clean Energy Finance Corporation (CEFC)” in Australia has invested over AUD 71.5 billion in more than 53,000 small businesses, driving an additional AUD 3 in social capital investment for every AUD 1 invested; “The Malaysia Co-investment Fund (MyCIF)” provides 1:2 matching funds for green start-ups that obtain financing from crowdfunding or p2p platforms, increasing financial support for green start-ups while reducing government investment risks.

As for human capital resources, some APEC economies implement all-level sustainable entrepreneurship education in the education system and build the network for the peer-to-peer learning of sustainable entrepreneurs. For example, “The National Action Plan for Circular Economy (NAPCE)” in Viet Nam proposed to incorporate circular economy education into education plans at all levels and carry out vocational and technical training for the employed groups; “Powering Australia Plan” also proposed green training and apprenticeships for different age groups; “The Climate Change Master Plan 2015-2050” in Thailand aim to carry out education on the impacts of climate change for all citizens and enhance awareness of the risks and opportunities of climate change.

In terms of the physical infrastructure resources, some APEC economies emphasize investment in technical infrastructure including the key R&D and production equipment, as well as the common technology platforms in the related industries.

Lastly, in regard to the market demand resources, some APEC economies accelerate economic and consumption transformation to increase the demand for sustainable products and services as well as encourage sustainable entrepreneurs to explore the international markets.

The aspect in need of improvement is that more resources tend to favour sustainable enterprises with technological advantages, while under-represented groups have limited opportunities to access these resources.

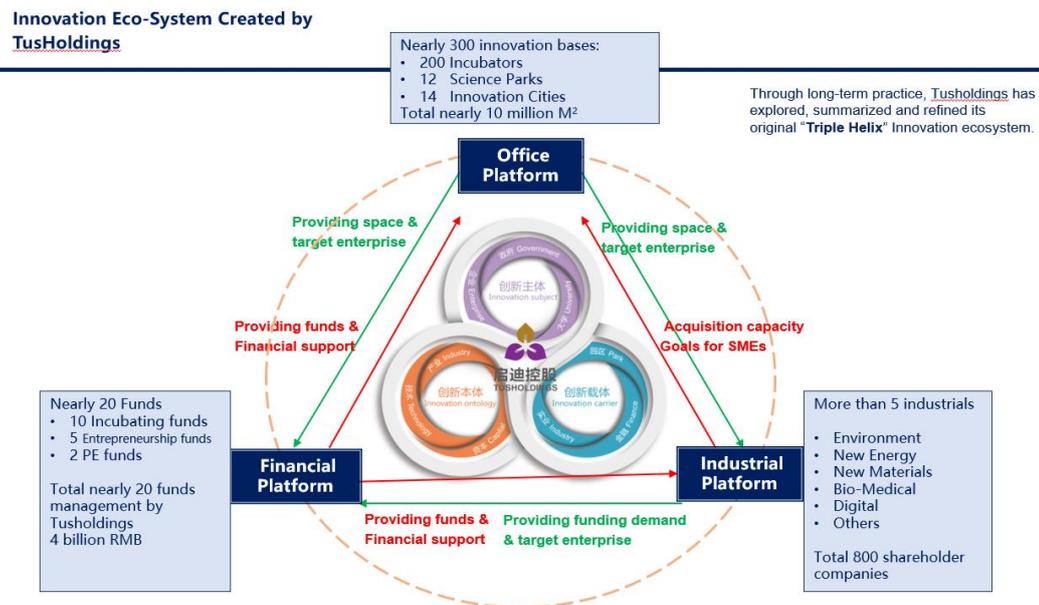
Table 4. The selected programs for sustainable entrepreneurship resources of APEC economies

Economy	Programs
Australia	Clean Energy Finance Corporation (CEFC)
Brunei Darussalam	Darussalam Enterprise (DARe)
Canada	The Low Carbon Economy Fund (LCEF)
Chile	Chile's Economic Development Agency (CORFO)
China	sovereign green bond
Hong Kong, China	Pilot Green and Sustainable Finance Capacity Building Support Scheme
Indonesia	Green Bond and Green Sukuk Initiative
Japan	Green Innovation Fund
Korea	Korea Venture Investment Corp (KVIC )
Malaysia	Green Technology Financing Scheme (GTFS)
Mexico	SHCP sustainable bond
New Zealand	Edmund Hillary Fellowship
Papua New Guinea	The PNG Greenpreneurs Initiative
Peru	Economy's Institution for the Promotion of SME
The Philippines	Shared Services Facilities (SSF) Program
Russia	Skolkovo Foundation
Singapore	Enterprise Sustainability Programme
Chinese Taipei	Green Energy & Circular Economy Fund
Thailand	ENCON Fund
Viet Nam	EVN Finance JSC green bond

**Box2: Case study – the resource ecosystem created by Tsinghua University Science Park, China**

Tsinghua University Science Park (TusPark) was founded in 1994 and is one the earliest university park in China. TusPark has gathered over 1,000 technology enterprises and research institutions, becoming a gathering place for the R&D headquarters of multinational companies in China. During its development as a scientific and technological innovation services provider, TusPark has summarized their operational model for building the entrepreneurial ecosystem.

TusPark has a triple helix innovation ecosystem including office platform, financial platform and industrial platform to provide the necessary resources to the startups. Office platform includes nearly 300 innovation bases with 10 million square meters. Financial platform includes nearly 20 funds with the managing capital more than CNY 4 billion. Meanwhile, the industrial platform spread from 5 industries with more than 800 shareholder companies.



TusStar incubator is one the core functions of TusPark, and it has provided incubation services to over 10,000 enterprises and graduated more than 2,000 enterprises. TusStar has developed seven step incubation model, with firstly launched TusStar dream classroom. The classroom was established with School of Economics and Management, Tsinghua University to carry out entrepreneurship courses. Secondly, dream lab. Collaborate with Tsinghua X-lab to promote R&D transfer by the faculties and students in Tsinghua University. Thirdly, co-working space. Provide co-working space for the entrepreneurs and support them for the business registration. Fourthly, acceleration camp. Collaborate with leading enterprises in the industrial chain to promote the rapid growth of the selected enterprises. Fifthly, diamond plan. Provide in-depth empowerment for the quasi-unicorn enterprises. Sixthly, listing plan. Integrate securities firms and law firms to promote the listing of enterprises. Lastly, global network. Support the global development of the enterprises with the innovation network over 100 cities worldwide.

Source: the document shared by Mr. Chen Hongbo from TusPark and its official website.

## 4. Economic and social networks

Economic and social networks promote sustainable entrepreneurship by facilitating the sharing and flow of knowledge, skills, information, practice and resources. The key actions to promote these networks for sustainable entrepreneurs in some APEC economies include the following aspects (Table 5).

Table 5. The selected networks for sustainable entrepreneurship of APEC economies

Economy	Networks
Australia	Australian Renewable Energy Agency
Brunei Darussalam	Darussalam Enterprise (DARe)
Canada	Net-Zero Accelerator(NZA)
Chile	Start-Up Chile
China	China Business Council for Sustainable Development
Hong Kong, China	Sustainable Development Solutions Network, Hong Kong
Indonesia	Indonesia Business Council for Sustainable Development
Japan	Tokyo Beyond-Zero Week
Korea	K-Startup Grand Challenge (KSGC)
Malaysia	Malaysian Research Accelerator for Technology & Innovation
Mexico	Partnership Landscape Assessment
New Zealand	Sustainable Business Network (SBN)
Papua New Guinea	Sago Network
Peru	Perú Sostenible
The Philippines	The Corporates for a Better Planet Initiative (CBPI)
Russia	The Social Charter of Russian Business
Singapore	Enterprise Sustainability Programme
Chinese Taipei	Business Council for Sustainable Development
Thailand	Innovation Thailand Alliance
Viet Nam	Viet Nam Sustainable Business Network

Firstly, the Public-Private Partnership mechanisms are established to improve the efficiency of the resource allocation. For example, Chile has published the “Just Transition Strategy in the Energy Sector” to establish a corporate cooperative investment mechanism for energy transition and a roundtable dialogue on public-private partnerships regarding carbon pricing and carbon taxes; Malaysia has proposed “The Green Technology Master Plan (GTMP) 2017-2030” which include providing funds for the research and development and commercialization (R&D&C) of green technologies through public-private partnership mechanism.

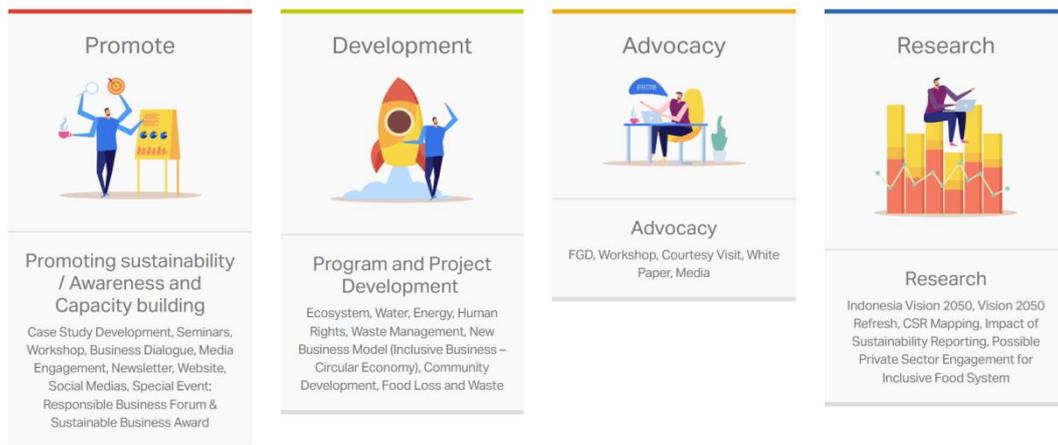
Secondly, there is business leadership to lead and guide the development of the sustainable industry. Lastly, global networks or mature models developed by international organizations and NGOs are adapted to the local context, such as the “Sustainable Development Solutions Network” in Hong Kong, China and the “Sustainable Business Network” in Viet Nam.

For the aspects that need to be improved, the majority of these networks aim to facilitate communication between different stakeholders in the sustainable ecosystem or the sustainable entrepreneurs from different regions, with few oriented to practical cooperation. Moreover, economic and social networks have limited evaluation mechanisms, which should be strengthened to ensure their effectiveness.

### Box3: Case study – the Indonesia business council for sustainable development

The Indonesia business council for sustainable development (IBCSA) is an association of companies operating in Indonesia, who share the commitment on promoting sustainable development through sustainable economic growth, the ecological balance and social progress. The missions of the association are to provide business leadership as a catalyst for change towards sustainable development and support the business license to operate, innovate and grow in a world increasingly shaped by sustainable issues.

The IBCSD has 4 strategic roles to promote sustainable entrepreneurship, including promote, development, advocacy and research. Promote focus on the promotion of sustainability awareness and capacity building through training, seminars, workshops, business dialogues, media engagement, forums and awards. Development aims to enable the program and project development in related industries through good practices sharing and professional consultancy. Advocacy requires the association to participate actively in debates that shapes the policy agenda for sustainability by providing policy recommendations and being part of the public-private interactions. Research refers to conduct science-based research in addressing issues and targeting solutions to scale-up business impact.



Source: the IBCSD official website.

# III. The capacities and training for sustainable entrepreneurs in APEC Economies

## 1. Capabilities of sustainable entrepreneurs

The capabilities of sustainable entrepreneurs include their personal comprehensive abilities, full-process management capabilities, and technical expertise (Table 6).

Table 6. The composition of capabilities of sustainable entrepreneurs

Capabilities of sustainable entrepreneurs	Personal comprehensive abilities	Personal traits and values
		Self- efficacy
		Knowledge accumulation
		Thinking, learning and action abilities
	Full-process management capabilities	Opportunity capabilities (opportunity identification, opportunity creation, and self-motivation)
		Management capabilities (team management, innovation management, marketing, and operations)
		Strategic capabilities (strategic thinking, strategic decision-making, and strategic transformation)
		Relational capabilities (stakeholder relationship management, inter-organizational cooperation, platform resource acquisition, government resource acquisition, and social relationship management)
	Technical expertise	Technical knowledge and skills in various industries

The personal comprehensive abilities constituted by personal traits and values, self-efficacy, knowledge accumulation as well as thinking, learning and action abilities. Personal traits and values including entrepreneurial imaginativeness (Kier & McMullen, 2018), optimism (Luan & Zhang, 2025), confidence (Eesley & Lee, 2020), perseverance (Dierberger et al., 2020), and psychological Capital

(Aggarwal & Narula, 2020). Self-efficacy for sustainable entrepreneurship indicates strength and confidence in an individual's belief that he or she has the skills and ability to achieve the roles and tasks of a successful sustainable entrepreneur, and it has significant impacts on innovativeness and organizational capabilities (Broccia et al., 2022). Entrepreneurs' self-efficacy and pro-environmental and pro-social values have both been proven to influence entrepreneurs' perception of sustainable opportunities and entrepreneurial willingness (Hanohov and Baldacchino, 2018; Mujin oz, 2018).

Knowledge accumulation includes learning through entrepreneurship education, absorbing others' experiences and summarizing own practices (Riedl & Seidel, 2018). Business experience can regulate the relationship between sustainable entrepreneurial intentions and actions, thereby influencing the transformation of these intentions into concrete actions (Kuckertz and Wagner, 2010). While thinking, learning and action abilities include the thinking ability, cognitive ability, role ability, learning ability as well as execution ability of a sustainable entrepreneur (Sakakibara & Balasubramanian, 2020).

Full-process management capabilities are the competence needed spanning from generating entrepreneurial ideas, establishing and managing enterprises to drive their long-term development, including opportunity capabilities, management capabilities, strategic capabilities and relational capabilities. Opportunity capabilities include the capabilities for opportunity identification and creation (Berglund & Korsgaard, 2017), as well as the cognition of entrepreneurial motivation (Su et al., 2020). Management capabilities include the capabilities for team management (Homan et al., 2020), innovation management (Liu et al., 2017), marketing (Morgan et al., 2018) and operations (Chen et al., 2020).

Strategic capabilities include strategic thinking (Kirtley & O'Mahony, 2020), strategic decision-making (Papadakis et al., 1998), and strategic transformation (Patvardhan & Ramachandran, 2020). Relational capabilities include stakeholder relationship management (Huang and Knight, 2017), inter-organizational cooperation (Raffaelli et al., 2019), platform resource acquisition (Grodal, 2018), government resource acquisition (Grandy and Hiatt, 2020), and social relationship management (Safran & Özdemirci, 2020). Sustainable entrepreneurs need to possess the strategic capabilities to maintain the balance of contradictions and dependencies, stimulate innovation while ensuring resource acquisition, and ensure the synergy and coexistence among different value propositions (Spee & Jarzabkowski, 2017).

Technical expertise includes technical knowledge and skills in various industries. According to the survey results from the APEC government officials and experts, they believe opportunity capabilities, management capabilities, and relational capabilities are the key capabilities for sustainable entrepreneurs (Figure 7).

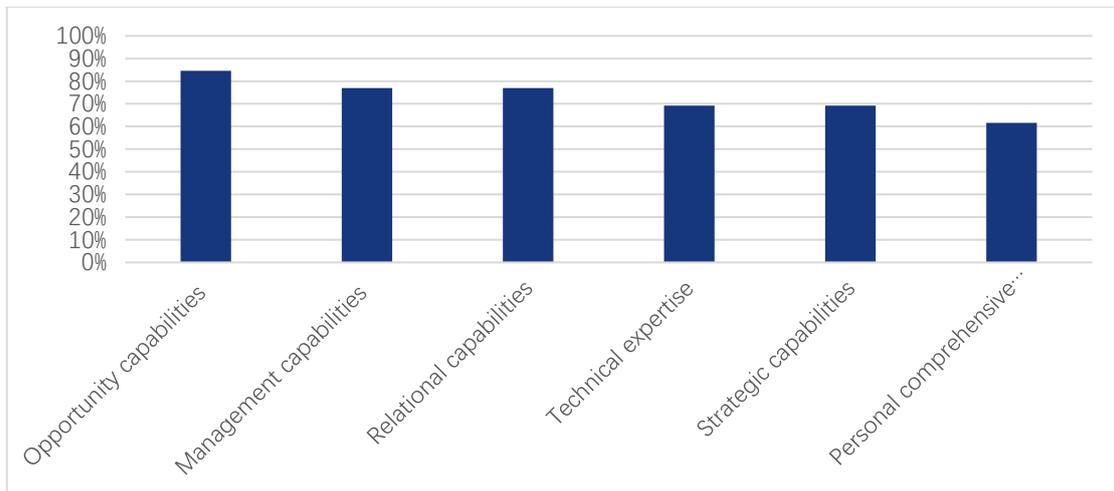


Figure 7. The most important capabilities for sustainable entrepreneurs considered by the government officials and experts in APEC economies

## 2. The training for sustainable entrepreneurs

The training for sustainable entrepreneurs differs from providers, audience and the focus of the contents. The providers of the training include universities, public entrepreneurship training institutions, private entrepreneurship training institutions, large enterprises and SMEs in the related industries. The audiences of the training include the entrepreneurs who are starting a new sustainable business, transforming the existing business to be sustainable, as well as integrating the unemployed into the sustainable business job market (Kummitha & Kummitha, 2021).

The contents of training include inspiration, business knowledge and skills, technical knowledge and skills as well as practical competence (Klapper et al., 2024; Perez-Encinas et al., 2021). The inspiration training motivates trainees to start business with sustainable value and methods. While business knowledge and skills include business design, deployment and management. Technical knowledge and skills are the technical essential in specific industries, and practical competencies include on-site learning and operations.

**Box 4: Case study – The sustainable entrepreneurial education in UniKL BMI, Malaysia**

Universiti Kuala Lumpur (UniKL) is a leading engineering technology university in Malaysia founded in 2002. UniKL BMI is the British Malaysian Institute in the university, which was set up as a result of a partnership between the Malaysian and British government. The vision of the institute is to be the leading entrepreneurial technical university, and the mission is to produce enterprising global technopreneurs.

UniKL BMI serves as human capital development and a feeder institution for green tech startups through technical education, professional certification, entrepreneurial modules as well as Genesispreneur programs. Besides the degree program, UniKL BMI also provide courses to TVET graduates and working professions as well as the lifelong learners. The programs are intended to cultivate the graduates who are technically capable and entrepreneurially primed to launch startups in clean energy sectors. Meanwhile, the certifications will legitimize and professionalize small green tech startups, helping them accessing larger project tenders and instilling investor confidence.

Through upskilling, reskilling, certifying and empowering, the programs in UniKL BMI will contribute to the SDG4, SDG7, SDG8 and SDG13, by providing industry-based technical education, producing certified professionals in clean energy sector, creating green jobs and embedding sustainability in the learning and practicing.



Source: The document shared by Zulkifli Mahmoodin from UniKL Malaysia and the university's official website.

From the practices and perceptions by some APEC economies, sustainable entrepreneurs mainly acquire sustainable entrepreneurship training through public entrepreneurship training institutions and universities (Figure 8). Moreover, management knowledge and skills, especially the innovation and

commercialization skills, technical knowledge and skills as well as policy and regulation information for actions are the most needed training contents for sustainable entrepreneurs considered by government officials and experts in some APEC economies (Figure 9).

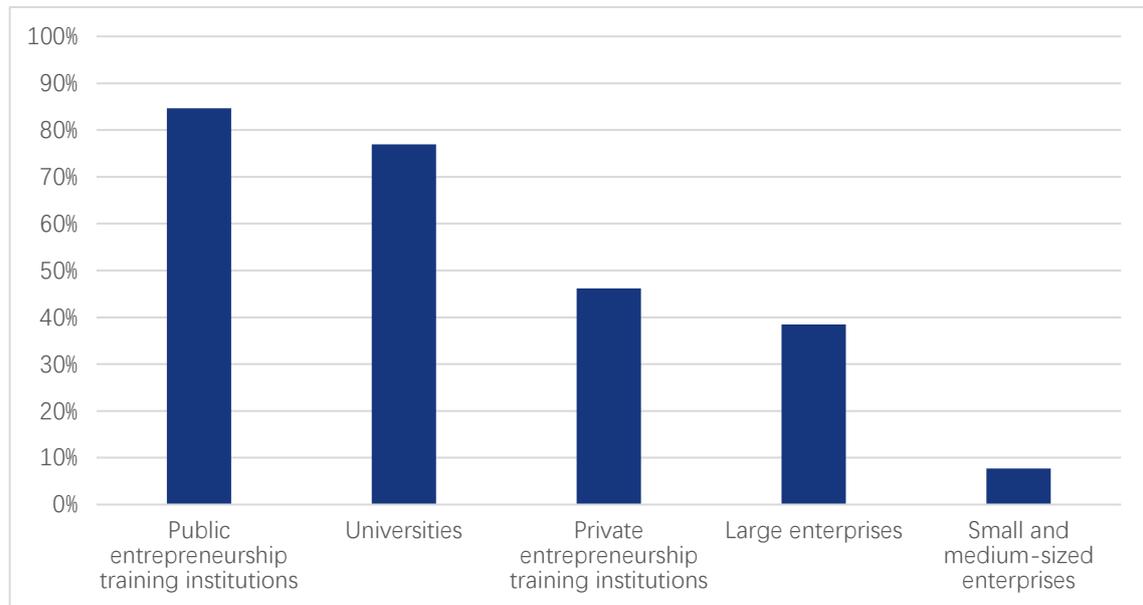


Figure 8. The type of sustainable entrepreneurship training providers in APEC economies

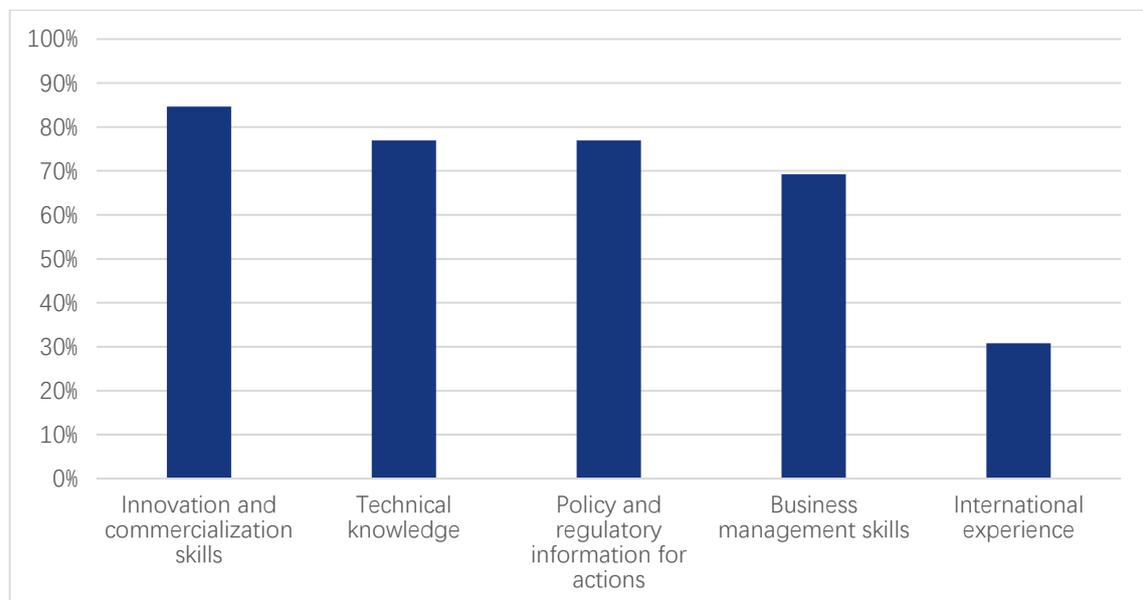


Figure 9. The most needed training contents for sustainable entrepreneurs are considered by government officials and experts in APEC economies

## IV. The role of APEC for enabling sustainable entrepreneurs

Although some APEC government officials and experts generally recognize that the APEC international cooperation mechanism plays an important role in strengthening the capabilities of sustainable entrepreneurs, they also acknowledge that the mechanism continues to face considerable challenges and requires further improvement. On average, it received 3.9 out of 5 points, suggesting that while its contribution is appreciated, its full potential has yet to be realized. As shown in Figure 10, the major challenges encountered by the APEC mechanism in promoting sustainable entrepreneurship include difficulties in coordinating policies across economies, obstacles that hinder market access for sustainable products and services, barriers that restrict effective technology transfer, and issues related to limited policy effectiveness. These challenges indicate that APEC can better empower the development of sustainable entrepreneurs by enhancing coordination, improving cross-border facilitation measures and strengthening implementation mechanisms.

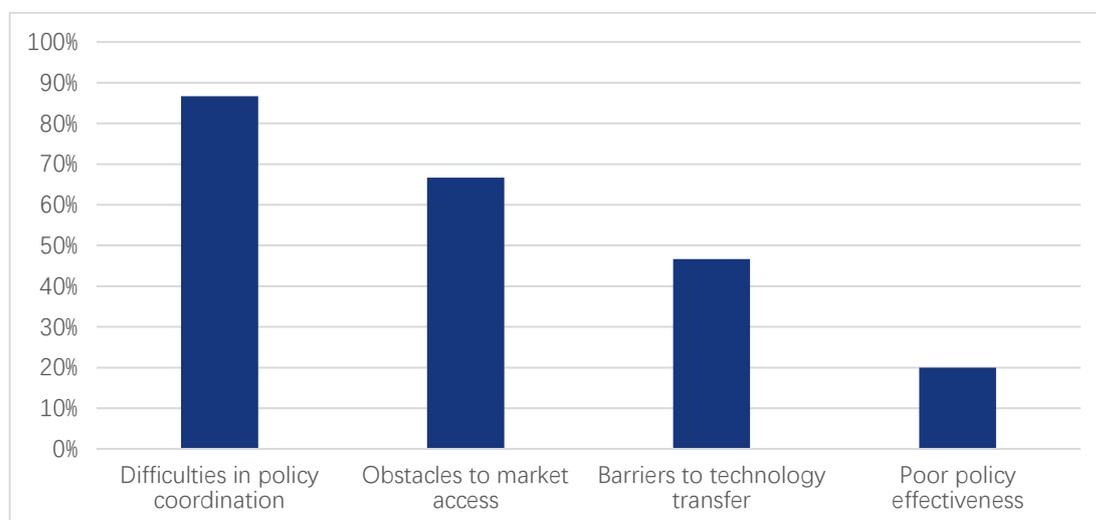


Figure 10. The major challenges faced by APEC in promoting sustainable entrepreneurship

Meanwhile, some member economies expressed clear expectations regarding the types of support they hope the APEC mechanism can provide to further empower sustainable entrepreneurs. As illustrated in Figure 11, the most anticipated actions include facilitating mutual learning on policies and best practices, strengthening cross-economy industrial cooperation, and promoting the sharing of data and knowledge related to sustainability and entrepreneurship. These forms of collaboration are viewed as essential for reducing information gaps, accelerating the diffusion of effective approaches, and creating a more enabling regional environment in which sustainable entrepreneurs can innovate, scale and participate more fully in cross-border value chains.

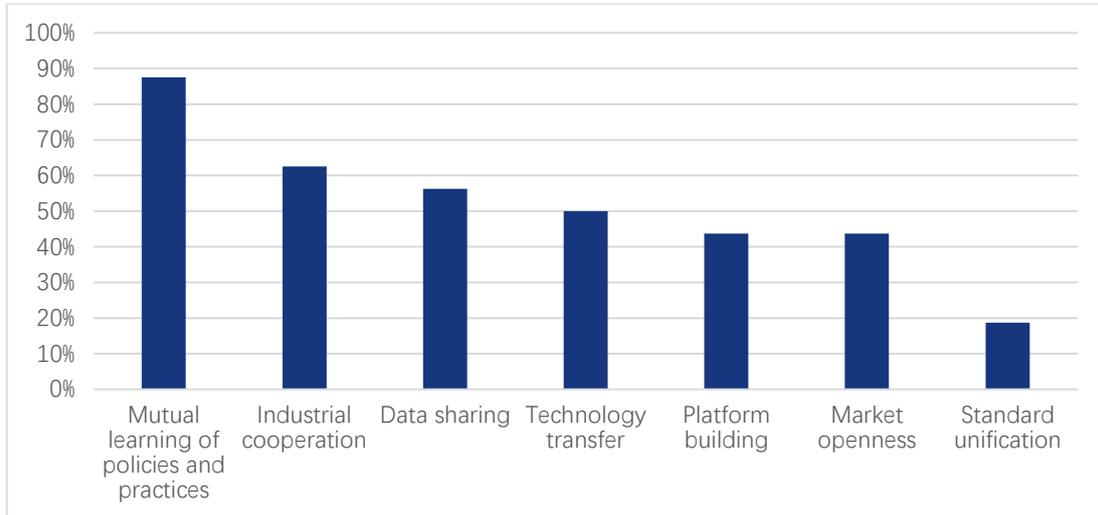


Figure 11. The actions are expected to empower sustainable entrepreneurs by APEC economies

## Box5: Case study – The action to promote sustainable entrepreneurship by APEC 2025 Korea

The theme of the APEC 2025 Korea is “building a sustainable tomorrow” and the policy priorities are connect, innovate and prosper. Connect refers to strengthen the economic and social connectivity by facilitating trade and investment as well as communication and exchanges. Innovate stresses the fostering and cooperation on AI and digital innovations. While prosper pays attention to addressing the pressing global challenges and achieve sustainability and prosperity.

### Building a Sustainable Tomorrow: **Connect, Innovate, Prosper**

Our theme embodies our commitment to create a better future for the next generation in accordance with the Putrajaya Vision 2040 which envisions an open, dynamic and resilient Asia-Pacific by 2040.

As the host of APEC 2025, Korea will endeavor to realize this vision through three main policy priorities: Connect, Innovate, Prosper.



For the capacity building of the sustainable entrepreneurs, the APEC education ministerial meeting joint statement has pointed out the possible future directions and strategies. Firstly, leveraging technologies such as AI to enhance learning and increase accessibility to expand educational opportunities for all. Secondly, strengthening the education cooperation across APEC region to share best practices regarding the latest educational innovations and knowledge exchange outcomes, while exploring opportunities to collaborate on identifying and expanding the implementation of effective policies and programs. Thirdly, promoting access to quality education for all, including support the development of education in remote and rural settings and promote policies to address disparities.

Source: The APEC 2025 Korea official website.

## V. Policy recommendations

Building upon the analysis of the sustainable entrepreneurial ecosystem, the assessment of the capabilities and training needs of sustainable entrepreneurs, and the identification of key challenges together with the most expected actions that some APEC economies have identified, this report proposes three corresponding policy recommendations. These proposed recommendations are designed to directly respond to the ecosystem gaps, capability constraints, and cooperation demands highlighted in earlier chapters. They aim to suggest options member economies may wish to consider to strengthen the enabling environment for sustainable entrepreneurs, enhance their skills and competitiveness, and foster more effective regional collaboration.

### 1. Strengthening the implementation, promotion and coordination of policies

Firstly, set important indicators to regularly evaluate the effectiveness of the entrepreneurship policies. The indicators may include the proportion of fiscal subsidies on sustainable entrepreneurship of the overall fiscal expenditure, the proportion of government procurement reserved for small and medium enterprises, and the proportion of small businesses loans of the total bank loan balance to track the performance of policy supply. Meanwhile, indicators such as the ratio of women entrepreneurship and youth entrepreneurship, as well as the jobs created by these entrepreneurial activities may be used to evaluate the outcome of the policies. In addition, conduct voluntary assessments on important policies and projects, including soliciting feedback, as appropriate, from stakeholders in the entrepreneurial ecosystem to make dynamic adjustment of the policies.

Secondly, strengthen coordination among relevant government agencies to facilitate streamlined and coherent policy implementation, as well as enhance the capacity building of local governments.

Lastly, enhance policy promotion through digital platforms and local channels to allow entrepreneurs at all levels to understand and obtain relevant policies.

### 2. Enhancing the scale and quality of training for sustainable entrepreneurs

Firstly, expand the training scale by incorporating the training for entrepreneurs into the education and training system of the economy, as appropriate, including the entrepreneurial awareness cultivation in primary and secondary schools, providing knowledge and practice combined entrepreneurial education in colleges and universities, as well as carrying out technical and vocational education and training programs (based on competencies, micro-credentials,

work-based learning, and prior learning recognition mechanisms). In addition, encourage more private entrepreneurship training institutions and SMEs to carry out various types of training by providing tax incentives and financial subsidies.

Secondly, enhance the training quality by establishing training standards and conducting regular evaluations. The proposed training standards may incorporate the latest advancements in academic research on sustainable entrepreneurs and the needs proposed by some APEC economies in the previous parts. Moreover, conduct regular evaluations to ensure the effectiveness of the training and meet the needs of local industrial development.

### 3. Formulating an action plan to promote sustainable entrepreneurship under APEC mechanism

Give due attention to the current challenges and recommended actions by the member economies, such as facilitating policy and practice mutual learning, industrial cooperation, data sharing and market access.

Strengthen the capacity building for entrepreneurs. Collaborate to collect and analyze the employment data in related industries, especially on the skills gaps and the mismatches between skills and employment.

## VI. Conclusion

Promoting high quality entrepreneurship is an important way to realize the APEC Putrajaya Vision. Sustainable entrepreneurship will dedicate to development as well as drive employment. creating jobs. According to data from the World Bank, four fifths of new jobs are created through entrepreneurship.

Sustainable entrepreneurship is confronted with multiple challenges, among which the most significant ones are reflected in the insufficiency of the entrepreneurial supporting ecosystem and the capabilities of entrepreneurs. The entrepreneurial support ecosystem requires APEC economies to enhance the efficiency of entrepreneurs. The insufficiency of entrepreneurs' capabilities requires further strengthening of education and training for sustainable entrepreneurs, as well as empowerment and services for start-up enterprises. In addition, APEC economies should also consider using of the APEC cooperation mechanism to enhance exchanges and experience sharing, as well as provide more substantive development opportunities for entrepreneurs.

The report puts forward three policy recommendations regarding the APEC sustainable entrepreneurship ecosystem, entrepreneurs' capabilities and training, and strengthening the implementation, promotion and coordination of policies, and enhancing the scale and quality of entrepreneurship training.

Moreover, as some APEC economies advance toward long-term green and inclusive development goals, strengthening sustainable entrepreneurship will become increasingly essential for building economic resilience and fostering innovation-driven growth. Sustainable entrepreneurs can act as key connectors between emerging technologies, evolving market needs and local development priorities, helping economies respond more effectively to climate challenges and structural transitions. Continued investment in supportive ecosystems, capability enhancement and regional cooperation will therefore play a decisive role in enabling sustainable entrepreneurship to contribute more substantially to shared prosperity and long-term competitiveness across the Asia-Pacific region.

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