Project Report on APEC Green Vocational Skills Workshop

APEC Human Resources Development Working Group

January 2025

Asia-Pacific Economic Cooperation

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Table of Contents

1. About the Project

1. 1 Project Summary

At present, the global economy is in a critical period of profound changes, and green and low-carbon development has become the consensus of all economies. The development of green vocational skills will play a vital role in promoting economic and social transformation and upgrading, and creating more high-quality green jobs. APEC's Putrajaya Vision 2040 states that strong, balanced, secure, sustainable and inclusive growth is an important driver of the vision. Green and sustainable development is an important core of economic recovery and sustainable development in the Asia-Pacific region. In September 2020, China announced its goals of "carbon peak" by 2030 and carbon neutrality by 2060. APEC economies have also put forward their own strategic goals and action plans for sustainable development.

Human resources development is an important part of the cooperation between the Asian University and the OECD, and it is one of the areas with the broadest consensus and the best foundation for cooperation among members. In order to achieve the goal of green and sustainable development, APEC economies cannot do without the support of green talents, and they also need to continuously update and improve the green vocational skills of workers. In this context, it is necessary to study and learn from the relevant experience of green vocational skills development in various economies through the platform of APEC Human Resources Development Working Group, and jointly promote green and sustainable development

In 2024, under the guidance of the Department of International Cooperation of the Ministry of Human Resources and Social Security, the Chinese Academy of Human Resources will implement the APEC International Workshop on Green Vocational Skills, a sub-fund project of the Asia-University OECD Fighting the Epidemic and Helping Economic Recovery. The project aims to identify the priority areas, challenges and good practices of green vocational skills development in APEC

economies through collaborative research and international seminars, and to make policy recommendations on the policy system for promoting and supporting green vocational skills development in APEC economies, so as to better support the strong, balanced, secure, sustainable and inclusive growth goals set out in APEC's Putrajaya Vision.

On 19-20 September 2024, the APEC Workshop on Green Vocational Skills was held in Chengdu, Sichuan, aiming to promote the development and improvement of green vocational skills in APEC economies through international cooperation and experience exchange, and provide strong support for the realization of the Sustainable Development Goals. The International Workshop is the main outcome of the project, and the conference consists of four sub-topics: “Green Skills and Labor Market", "Inclusive Green Skills Development", "Green Skills Certification and Standards", and "International Cooperation on Green Skills Development". These issues are of common concern and concern to China and other economies. The participating experts took this opportunity to speak freely and communicate extensively, and jointly promote the development of green vocational skills development concepts and practices in the Asia-Pacific region to a new level under the concept of green, low-carbon and environmental protection.

1. 2 Project Team

The conference was jointly organized by the Chinese Academy of Human Sciences and Southwest Jiaotong University. The organization staff of Southwest Jiaotong University are Yang Yifan, director, professor and doctoral supervisor of the Industrial Innovation Ecology Research Center of Southwest Jiaotong University, and Wang Shuangshuang, assistant director and assistant professor of the Industrial Innovation Ecology Research Center of Southwest Jiaotong University. Participants included government officials, researchers, representatives of vocational skills training institutions and experts from international organizations from APEC economies, including experts from China; Indonesia; Korea; the Philippines; Peru; Switzerland; Thailand; Viet Nam; and representatives of the International Labour Organization.

2. About APEC Workshop on Green Vocational Skills

Time and Venue

Time: 19-20 September, 2024

Venue: Chengdu Taihe International Hotel (15 Binjiang Middle Road, Jinjiang District, Chengdu City, Sichuan Province, China)

Organizers

Chinese Academy of Personnel Science

Southwest Jiaotong University

Theme and Sub-themes

Theme: ***APEC Workshop on Green Vocational Skills.***

Two sub-themes: ***Green skills and labor market, Inclusive green skills development, Green skills certification and standards*** **and** ***International cooperation in green skills development.***

2. 1 Detailed Agenda

Time	Activity
Wednesday. 18 September	
09: 00-18: 00	Registration
18: 00	Dinner

Time	Activity
Thursday, 19 September	
ID: 8726812 7453 PW: 448050	**Opening Ceremony** Moderator: ZHANG Xueyong, Executive Dean of Liberal Arts Department, Southwest Jiaotong University
09:30-09:50	YAN Xuedong, President, Southwest Jiaotong University, China **Welcome remarks**
	YU Xing'an, President, Chinese Academy of Personnel Science **Welcome remarks**
	JIANG Wei, Deputy Director General, International Cooperation Department, Ministry of Human Resources and Social Security, China **Welcome remarks**
	XIONG Yipeng, Deputy Director General, Department of Human Resources

	and Social Security, Sichuan Province, China **Welcome remarks**
09:50-10:20	**Briefing on the Project**
10:20-10:30	Tea break
ID:8726812 7453 PW:448050	**Keynote speech (20 min/person)** Moderator: WANG Yi, Deputy Director, Research Division of International Human Resources and International Cooperation, Chinese Academy of Personnel Science
10:30-12:00	ZHAO Ning, Associate Research Fellow, Research Division of Enterprise Personnel Management, Chinese Academy of Personnel Science **Title: From Green Occupations to Green Skills Development: China's** **Practices and Exploration**
	Eric ROEDER, Technical Specialist on Green Jobs, Climate Action and Resilience through Just Transition, Asia Pacific Region, International Labour Organization **Title: Green Skills for Just Transition**
	ZHANG Yuan, Professor, Tianjin University of Technology and Education, China **Title: Green Career Development in the Context of a Green Economy**
	WANG Dewen, Senior Economist for Social Protection at the World Bank **Title: Green Jobs in China: Measurement and Policy Recommendations**

12:00-14:00	Lunch
ID: 872681 27453 PW: 448050	**Subtheme 1: Green skills and labour market** **(15 min/person)** Moderator: WANG Shuangshuang, Associate Professor, Associate Director, Center for Ecology of Innovation and Entrepreneurship, Southwest Jiaotong University, China
14:00-15:30	Antonia Belén Morales VERA, Adviser to the Minister of Labour and Social Security, Chile **Title: How to Confront the Socio-ecological Transition from the World of** **Work: Experiences and Challenges from Chile**
	Raymond SANER, Director, Co-founder of the Centre for Socio-Eco-Nomic Development & Prof Emeritus, International Management and Organization, Basel University **Title: Inclusive Skills Development for Green Jobs: a Strategic Perspective**
	LUO Man, member of Research Centre for Sustainable Hong Kong, City University of Hong Kong **Title: Comparative Study of Sustainable Development Polices in the Guangdong-Hong Kong-Macao Greater Bay Area**
	Verioska ZUNIGA, Director of Employment Training and Workforce Development, Ministry of Labor and Employment Promotion, Peru

	Title: Towards a Greener Employment in Peru
15:30-16:00	Tea Break
ID: 8726812 7453 PW: 448050	**Sub-theme 2: Inclusive green skills** **(15 min/person)** Moderator: WANG Yi, Deputy Director and Research Fellow, Information Research Institute, Shanghai Academy of Social Sciences, China
16:00-17:30	WEN Bo, Associate Professor, Department of Government and Public Administration (DGPA) at the University of Macao; Research Associate at the City University of Hong Kong **Title: Green Jobs in Hong Kong, China**
	Kyung Ho CHO, Professor and the Former President of the Korean Society for Public Personnel Administration **Title: Inclusive Green Skills in Korea**
	Parichart SUPON, Specialist of Phrae Vocational College, Office of the Vocational Education Commission, Thailand **Title: Case Studies and Examples of Green Hotels**
	ZOU Yunfei, Engineer, Certified Energy Manager, Cleaner Production Auditor, and Greenhouse Gas Checker of China Certification and Accreditation Association **Title: A Case of Green Jobs in Chinese Enterprises under the**

	Background of Carbon Dioxide Emissions Peak and Carbon Neutrality
18:00-20:00	Dinner
Friday, 20 September	
ID: 8726812 7453 PW: 448050	**Sub-theme 3: Green skills certification and Standard** **(15 min/person)** Moderator: WEN Bo, Associate Professor, Department of Government and Public Administration (DGPA) at the University of Macao; Research Associate at the City University of Hong Kong, China
8:30-10:00	Byoung Joon KIM, Professor of Public Administration; Director of Global Development Cooperation Institute, Kookmin University, Korea **Title: Green Skills Certification and Standards: A Comparison of Korea and Advanced Economies**
	FENG Ling, Associate Research Fellow, Research Division of Talent Theory and Technique, Chinese Academy of Personnel Science **Title: Green Skills Certification in China**
	Benny PARNINGOTAN, Sub-Coordinator for Development of Competency Standards, Ministry of Manpower, Indonesia **Title: Implementation of Green Skills Certification and Competency Standards in Indonesia**
	Bernard Paul MANGULABNAN, Supervising Labor and Employment Officer, Department of Labor and Employment, the Philippines; Myka Rose

	TRONO, Supervising Labor and Employment Officer, Department of Labor and Employment, the Philippines **Title: Overview of the Philippine Green Jobs Act of 2016**
10:00-10:15	Tea Break
ID: 8726812 7453 PW: 448050	**Sub-theme 4: International cooperation of green skills development** **(15 min/person)** Moderator: Byoung Joon KIM, Professor of Public Administration; Director of Global Development Cooperation Institute, Kookmin University, Korea
10:15-11:45	Kwang Kook PARK, Professor and the Former President of Korea Environment Institute (KEI), the Catholic University of Korea **Title: International Cooperation of Green Skills Development: Focusing on Green Education**
	WANG Yi, Deputy Director and Research Fellow, Information Research Institute, Shanghai Academy of Social Sciences, China **Title: Talent Development Strategy from the Green Perspective: Trends and Priorities**
	Lichia SANER-YIU, President of the Centre for Socio-Eco-Nomic Development **Title: Need for a Global (Regional) VET Architecture for Green Skill Development**
	DANG Thi Huyen, researcher from National Institute of Vocational

	Education and Training (NIVT), Directorate of Vocational Education and Training, Viet Nam **Title: Developing Green Skills in Vocational Education and Training in Viet Nam**
ID: 8726812 7453 PW: 448050	**Closing Ceremony**
11:45-12:15	Summary
	YANG Yifan, Professor, the Director of the Industrial Innovation Ecology Research Center, Deputy Dean of the National Interdisciplinary Institute on Aging, Southwest Jiaotong University

Time	Activity
	WANG Yi, Deputy Director, Research Division of International Human Resources and International Cooperation, Chinese Academy of Personnel Science
12:15-14:00	Lunch
14:30-18:00	Field study (Bamboo Industrial Park of Qingshen County)
18:00-20:00	Dinner

Time	Activity
Saturday, 21 September	
09:00-18:00	Return

2. 2 Highlights and Key Takeaways from the Forum

Opening Remarks

YU Xing'an, President, Chinese Academy of Personnel Science

Summary:

President Yu Xing'an began by welcoming the attendees to the APEC International Workshop on Green Vocational Skills in Chengdu, expressing gratitude to the China Academy of Personnel Science and Southwest Jiaotong University for their contributions to organizing the event. He highlighted the significance of the symposium, which is held under the guidance of the Ministry of Human Resources and Social Security, particularly the Department of International Cooperation. The symposium is part of the APEC Fund project aimed at identifying priority areas, challenges, and best practices in green vocational skills development across APEC economies through international seminars, collaborative research, and policy recommendations.

Yu emphasized the global consensus on the need for green and low-carbon transformation, noting that this process not only fosters environmental sustainability but also generates numerous green occupations. He explained that accelerating green vocational skills development is crucial for achieving the concept of ecological civilization, which involves respecting, adapting to, and protecting nature. He referred to President Xi Jinping's remarks during the 2023 APEC Leaders' Informal Meeting, which stressed the importance of promoting green and low-carbon development in the Asia-Pacific region. The APEC Leaders' Declaration emphasized sustainable and inclusive economic policies, highlighting the need to integrate vocational skills training and lifelong learning into the green economy's development.

Yu noted that APEC economies are actively planning and implementing strategies for green skills development. He mentioned China’s inclusion of 134 green occupations in the 2022 edition of the *Dictionary of Occupational Classification*,

which accounts for about 8% of all occupations. He also mentioned other APEC economies such as Korea; New Zealand; Peru; and Thailand, which have introduced policies and initiatives to promote green vocational skills training in various sectors, including renewable energy, sustainable agriculture, and green building.

In closing, Yu underscored that the development of green vocational skills is vital for industrial transformation and long-term sustainable development. He expressed hope that the symposium would produce valuable insights on key topics such as green skills and the labor market, inclusive green skills development, certification and standards, and international cooperation in green skills development, all of which are of shared concern to China and other APEC economies.

Yan Xuedong, President and Deputy Secretary of the Party Committee of Southwest Jiaotong University

Summary:

President Yan Xuedong began his speech by warmly welcoming the distinguished guests, experts, and scholars attending the APEC International Workshop on Green Vocational Skills in Chengdu, emphasizing the importance of the event and the long-standing relationship between Southwest Jiaotong University and the China Academy of Personnel Science. He highlighted the university's rich history, noting its foundation in 1896 and its significant contributions to the development of China’s rail transportation, including establishing high-speed rail technology as an international benchmark. Over the years, Southwest Jiaotong University has made remarkable advancements, with 64 domestic scientific and technological awards, including recent achievements in high-speed rail technology and scientific progress.

He emphasized that in light of the domestic "dual-carbon goals" and the global green transition, the university has focused on green transportation, intelligent transportation, and new energy research. The development and popularization of green vocational skills are essential to achieving sustainable development. The university has established a strong partnership with the Chinese Academy of Personnel Science, actively contributing to research in energy-saving technologies,

emission reduction in rail transportation, and green infrastructure. This collaboration also includes international projects promoting green economy initiatives.

President Yan concluded by stressing that the symposium provides a valuable platform for deepening exchanges and discussions on green vocational skills. He expressed hope that the conference would contribute to regional economic transformation, the application of green technologies, and the promotion of sustainable development. He reiterated Southwest Jiaotong University's commitment to working together with global partners to address climate change challenges, promote the harmonious coexistence of humans and nature, and contribute to the building of a shared global community.

Finally, President Yan thanked all the guests for their participation and expressed his wish for the success of the seminar, as well as for the experts' work and well-being during their stay in Chengdu.

XIONG Yipeng, Deputy Director General, Department of Human Resources and Social Security, Sichuan Province, China

Summary:

Director Xiong Yipeng began his speech by extending warm congratulations on the successful convening of the APEC International Workshop on Green Vocational Skills and expressing sincere gratitude to all the guests, experts, scholars, and leaders who have supported the cause of human resources and social security in Sichuan. He highlighted the beautiful autumn season in Chengdu, setting a warm and inviting tone for the event.

Drawing on President Xi Jinping's emphasis on green development as the foundation for high-quality growth, Xiong stressed that green productivity is key to fostering high-quality technical and skilled talent, craftsmen, and experts. He noted that Sichuan has firmly embraced the path of ecological modernization, in alignment with the spirit of the 20th National Congress of the Communist Party of China and

the 3rd Plenary Session. Sichuan is prioritizing ecological and green development, leveraging its strengths as a large, economically and ecologically significant province. The province is implementing initiatives such as the “Four Actions of Carbon Peak” and the “Skills Sichuan Action, ” aiming to cultivate green occupations and establish a green skills certification system to support the province's transition to a low-carbon economy.

As of June this year, Sichuan had 11.07 million skilled personnel, with 2.41 million highly skilled workers. The province has also conducted green skills-related vocational evaluations, certifying 1,412 individuals in green occupations such as hydropower. However, Xiong acknowledged that there are still gaps in green development compared to other provinces.

He emphasized that green skills are essential for promoting sustainable development and the harmonious coexistence of humans and nature. The APEC International Workshop on Green Vocational Skills, Xiong noted, plays a crucial role in advancing green skills, which are integral to Sichuan’s industrial transformation and upgrading. He expressed hope that the symposium would stimulate new ideas and innovative solutions for the development of green skills and standards, contributing to the global green transition.

Xiong also invited the symposium participants to explore Chengdu’s vibrant cultural and historical attractions, such as Wuhou Temple, Jinli, Dufu Cao Tang, and Sichuan Opera, offering an opportunity to experience the richness of Chinese-style modernization.

Finally, he wished the symposium a complete success and extended his best wishes for the health, well-being, and productive work of all guests during their stay in Sichuan.

Jiang Wei, Second Inspector, Department of International Cooperation, Ministry of Human Resources and Social Security

Summary:

Inspector Jiang Wei expressed his pleasure in attending the APEC International Workshop on Green Vocational Skills in Chengdu, highlighting the significance of the event. On behalf of the Ministry of Human Resources and Social Security, he extended warm congratulations on the successful organization of the meeting and expressed gratitude to the China Academy of Personnel Science and Southwest Jiaotong University for their meticulous preparation.

He emphasized the dynamic role of the Asia-Pacific region, which accounts for one-third of the world's population and over 60% of global economic output. APEC, as the most influential economic cooperation organization in the region, has a significant role in promoting shared prosperity. The Putrajaya Vision 2040 aims to build an open, resilient, and peaceful Asia-Pacific community, with a focus on inclusive human resource development, equipping people with the necessary skills for the future.

Jiang acknowledged that green development has become a consensus among Asia-Pacific economies. He highlighted the importance of fostering mutual understanding and sharing experiences regarding green vocational skills development in the region. The APEC Green Job Skills Development Program, initiated by the Chinese Academy of Personnel Science, has provided a platform for economies to exchange practices and strengthen human resource cooperation. This collaboration is vital for the continued development of green jobs, green industries, and green skills.

He noted that significant research has already been carried out on green skills upgrading, focusing on policies, strategies, and the experiences of different economies. He expressed hope that the symposium would explore new paths for green vocational skills development and further enhance cooperation in this area.

Jiang also discussed the importance of harmonious coexistence between humans and nature as a cornerstone of Chinese-style modernization, as emphasized in the "14th Five-Year Plan". China has made substantial progress in promoting ecological civilization, with a focus on carbon reduction and green transformation across industries. This has led to the creation of numerous green occupations in sectors such as green finance and environmental protection consulting.

He highlighted the 2020 revision of the National Classification of Occupations (NCoO), which now includes 134 green occupations, and stressed the importance of these occupations in driving employment, entrepreneurship, and vocational education reforms. China plans to further develop employment opportunities in green occupations, improve standards, and establish appropriate salary and promotion systems to increase practitioner motivation and stability.

Finally, Jiang pointed out that the recent Third Plenary Session of the 20th CPC Central Committee had set the direction for further deepening reforms and accelerating green transformation, offering new opportunities for China to expand green skills cooperation within the Asia-Pacific region. He expressed hope that the symposium would contribute to advancing international cooperation in green skills development to new heights, wishing the conference a complete success.

Briefing on the Project

Wang Yi, Deputy Director and Assistant Research Fellow of Research Division on International Human Resources and International Cooperation, Chinese Academy of Personnel Science.

Keynote Speech

ZHAO Ning, Associate Research Fellow, Research Division of Enterprise Personnel Management, Chinese Academy of Personnel Science.

Title: From Green Occupations to Green Skills Development: China's Practices and Exploration

Summary:

Associate Research Fellow Zhao Ning from the Corporate Human Resources Management Research Office at the China Academy of Personnel Science delivered a presentation focusing on green skills, discussing China's path in developing green industries and skills.

Zhao highlighted that the development of green industries in China has followed a structured policy approach, beginning in the "11th Five-Year Plan" with energy-saving and emission reduction initiatives. The policy evolved through the subsequent Five-Year Plans, culminating in the "dual carbon" goals of carbon peaking and neutrality, marking a shift to a "deep green" transformation. China's policies now focus on decarbonization, pollution reduction, and environmental restoration, as seen in the 2023 Green Industry Guide from the National Development and Reform Commission.

The progression of green industries has led to three main changes: directional shifts toward low-carbon goals, industrial scaling and intensification, and technological advancements. Green economic activities in China have given rise to new professions, such as wind turbine operators and forest protection engineers, driven by the demand for sustainable development.

China has also built its own green occupational classification system, starting with the 2015 version of the "Chinese Occupational Classification Standard, " which initially identified 125 green occupations. This number has since grown, with the 2022 edition marking 134 green occupations across sectors like energy conservation,

clean production, and ecological protection. Zhao emphasized the need for green skill development, through both modernizing traditional roles and creating entirely new ones.

Looking ahead, Zhao suggests four key actions: enhancing top-level policy design, developing a framework for general green skills, updating existing occupational standards, and implementing targeted green skill training programs. These actions will support China's green workforce and contribute to the global goals of sustainable development.

Eric ROEDER, Technical Specialist on Green Jobs, Climate Action and Resilience through Just Transition, Asia Pacific Region, International Labour Organization

Title: Green Skills for Just Transition

Summary:

Eric Lloyd expressed his gratitude for the introduction and for the opportunity to visit Chengdu, noting its strong environmental efforts and abundant greenery.

In his remarks, Lloyd discussed the concept of "green jobs, " emphasizing that they should be decent work, meaning they provide social protections, contribute to environmental preservation, and improve natural capital. He highlighted the economic benefits of green jobs, citing research showing that every dollar invested in conservation yields USD7 in local economic value. He underscored that green jobs should promote environmental restoration and be part of the formal sector, providing fair working conditions and safety.

Lloyd also introduced the concept of "just transition", which ensures equality and inclusion in transitioning to sustainable practices. He emphasized that just transition requires a tripartite approach involving government, employers, and workers. Lloyd cited examples of industries transforming to greener operations, such as using CO_2-based or natural dyes in the apparel industry, and the importance of social

protections as workers shift to sustainable sectors.

Discussing employment trends in the Asia-Pacific region, he noted that renewable energy initiatives, energy efficiency, climate resilience, and sustainable land management are creating new job opportunities, particularly in areas like solar and wind energy and climate adaptation infrastructure.

Lloyd concluded by highlighting the need for green skills development to support just transition efforts. He stressed the importance of lifelong learning, environmental awareness, and skills training tailored to the needs of the green economy. He cited examples from various industries, emphasizing that green jobs must remain decent work, promoting both environmental sustainability and social equity.

ZHANG Yuan, Professor, Tianjin University of Technology and Education, China

Title: Green Career Development in the Context of a Green Economy

Summary:

Professor Zhang Yuan from Tianjin University of Technology and Education shared insights into the development of green professions within the context of the global shift towards a green economy.

Zhang traced the evolution of occupational specialization through different eras—agricultural, industrial, and now the green economy era—emphasizing that modern society must balance finite natural resources with sustainable economic development. Green economic development, driven by international initiatives, requires a new framework centered on resource efficiency, social equity, and environmental protection.

Zhang highlighted the symbiotic relationship between green industries and green professions, noting that a successful green economy depends on a workforce with

relevant green skills. The concept of green professions has been formalized globally by organizations such as the International Labor Organization (ILO), and in China, green occupational standards have been integrated into the 2022 edition of the Chinese Occupational Classification Standard. Green professions are classified into emerging, growth-demand, and skill-enhanced categories, with a strong presence in sectors like clean energy, green manufacturing, and eco-friendly infrastructure.

In his remarks, Zhang emphasized the impact of digital and new technologies, especially within sectors like smart agriculture, which are shaping the landscape of green careers. As society moves toward a “green revolution”, there is a need for training programs that align with green industry requirements. He concluded by stressing the critical role of education and training in developing new green professions and adapting traditional roles to the demands of a sustainable future.

WANG Dewen, Senior Economist for Social Protection at the World Bank

Title: Green Jobs in China: Measurement and Policy Recommendations

Summary:

Dr. Dewen Wang, Senior Economist at the Social Protection and Jobs Global Practice of the World Bank, presented on the measurement and policy recommendations related to green jobs. His remarks focused on China's pioneering efforts in creating a Green Occupation Directory, which uses an "L-label" to designate green jobs, setting an example for other developing economies.

Wang emphasized that green jobs require a robust definition, focusing on "decent work" with social protection. To measure and classify green jobs effectively, the World Bank compared China's approach with methods used by the U. S. ONET Green Economy Program and the World Bank's GTI Toolkit. These approaches include industry output, process-based green technology, and task-oriented classifications, with a particular interest in linking green jobs to specific skills.

Wang highlighted that China's L-label method, based primarily on industry output,

uses a binary approach to classify occupations as either green or non-green, without assessing the degree of "greenness. " Compared to the U. S. ONET and the GTI Toolkit, which are more comprehensive in categorizing green tasks across sectors, the L-label approach may underestimate green employment in non-green sectors.

Dr. Wang recommended enhancing China's L-label framework by integrating updated measurement methods, such as machine learning, to better define green employment and align with policy objectives. He also advocated for developing a localized green skills framework in China to support training, skill assessment, and the advancement of green employment initiatives. This refined approach would facilitate the ongoing monitoring and evaluation of green jobs, supporting China's broader green transition goals.

Green skills and labour market

Moderator: WANG Shuangshuang, Associate Professor, Associate Director, Center for Ecology of Innovation and Entrepreneurship, Southwest Jiaotong University, China

Antonia Belén Morales VERA, Adviser to the Minister of Labour and Social Security, Chile

Title: How to Confront the Socio-ecological Transition from the World of Work: Experiences and Challenges from Chile

Summary:

Antonia Vera, advisor to the Chilean Ministry of Labor and Social Security, discussed Chile's approach to addressing socio-ecological transition in the labor market. Under Chile's current administration, efforts focus on three main transitions: technological, demographic, and socio-ecological. Vera highlighted that these transformations are aimed at addressing consumption challenges, promoting

biodiversity, and shifting to environmentally friendly production and sustainable consumption.

The socio-ecological transition impacts the labor market by creating new jobs, modifying existing roles, and requiring skill adaptation, as some positions may be phased out. To support workers, the Ministry has implemented a "National Employment Service Strategy" to improve job matching, provide career-long support, and protect affected workers.

Vera emphasized the importance of “tripartite dialogue” between government, workers, and businesses, particularly through Regional Training Councils and the Chilean Vocational Training and Certification Organization. These entities focus on skills certification and developing training plans that align with regional job market needs, with an emphasis on green jobs, especially in sectors like renewable energy.

Chile faces challenges in further identifying, training, and certifying green jobs and adapting the economy's economic structure to support these transitions. Vera concluded by stressing the need for an institutional framework to support long-term goals across different administrations, continuous labor market monitoring, skill development, and inclusiveness in training access, with attention to gender equality.

LUO Man, member of Research Centre for Sustainable Hong Kong, City University of Hong Kong, China

Title: Comparative Study of Sustainable Development Polices in the Guangdong-Hong Kong-Macao Greater Bay Area

Summary:

Luo Man from the Hong Kong Sustainable Development Research Center at City University of Hong Kong, China presented a comparative study on sustainable development policies in the Guangdong-Hong Kong-Macao Greater Bay Area (GBA). This research addresses the challenges of cross-border governance, as environmental and economic sustainability issues often surpass administrative

boundaries.

Luo Man introduced the GBA, comprising 11 cities, including Hong Kong, Macao, and nine cities in Guangdong. The GBA aims to foster regional cooperation and sustainable development, particularly in ecological preservation and green growth. However, despite the shared goals of ecological conservation and pollution control, green labor market integration remains fragmented due to varying policy frameworks, qualification systems, and definitions of green services.

The study analyzed policies from Hong Kong, Macao, and two representative Guangdong cities (Guangzhou and Shenzhen), comparing their approaches across four dimensions: policy framework, organizational structure, public engagement, and policy tools. Findings show that while Hong Kong, China prioritizes environmental sustainability with a structured framework and high public engagement, Macao focuses on economic diversification due to its reliance on gaming, promoting economic resilience through public-private cooperation. Guangzhou and Shenzhen emphasize economic sustainability with strategic planning but rely more on regulation and economic policies than public engagement.

To bridge these policy and governance gaps, Luo Man proposed three recommendations: (1) establish a unified GBA framework for sustainable development to align foundational objectives, (2) create a dedicated coordination body to oversee inter-city cooperation on green policies, and (3) enhance experience-sharing among GBA cities to improve governance practices. These steps, similar to the collaborative knowledge-sharing seen at APEC, could strengthen green development in the GBA.

Verioska ZUNIGA, Director of Employment Training and Workforce Development, Ministry of Labor and Employment Promotion, Peru

Title: Towards a Greener Employment in Peru

Summary:

Verioska Zuniga, Director of Employment Training and Workforce Development at Peru's Ministry of Labor and Employment Promotion, presented Peru's initiatives in promoting green skills and employment. She highlighted Peru's legal framework supporting climate change and sustainable development, including policies to promote green jobs under Peru's Climate Change Framework Law.

Peru's labor market faces challenges, with approximately 70% of jobs being informal. The Ministry identified 11 green sectors, such as agriculture, fisheries, and forestry, with green jobs comprising 32.3% of the workforce, predominantly employing men (68.3%) and urban populations (over 90%). Informal employment is particularly high in green sectors, emphasizing the need for formalization.

Peru has developed green skills in seven key areas, including communication, innovation, management, environmental awareness, and technical skills in STEM. Training modules are being developed, with the publication of the National Occupational Outlook Directory, created in collaboration with the UN and the ILO. This directory currently includes 17 green job profiles and labor standards and seven training modules.

Zuniga outlined Peru's ongoing challenges, including formalizing green employment, identifying high-demand green skills, and creating specialized training plans. As one of the economies most affected by climate change, Peru aims to enhance resilience and sustainability in its labor force.

Raymond SANER, Director, Co-founder of the Centre for Socio-Eco-Nomic Development &Prof Emeritus, International Management and Organization, Basel University

Title: Inclusive Skills Development for Green Jobs: a Strategic Perspective

Summary:

Professor Raymond Saner, founder of the Center for Socioeconomic Development in Geneva and professor at the University of Basel, presented on skills development for sustainable transformation, emphasizing a systemic, cross-industry approach.

He highlighted that the UN's 2030 Agenda for Sustainable Development requires transformational change across education, healthcare, and natural resource management, necessitating new skills and professions. Skills development policies must integrate economic, social, and environmental sustainability, addressing equity, access, and gender inclusivity. The pandemic underscored resource limitations and the need for targeted, inclusive digital infrastructure to support global learning continuity.

Saner outlined a four-tiered governance model for sustainable skills development:

Micro-level: Focuses on lifelong learning for students and workers, addressing skill development across all life stages.

Meso-level: Emphasizes policy-driven support for educational institutions to improve performance and adapt to market needs.

Macro-level: Involves creating strategic frameworks, laws, and policies to support sustainable workforce development.

International cooperation: Recognizes the need for collaboration in addressing global challenges, as many future jobs remain undefined.

He called for partnerships between education systems and industries, noting that companies should play an active role in skill training, particularly for sustainable transition. Reflecting on his 40 years in Switzerland, Saner cited successful collaborative models where industry invests in apprenticeships, benefiting both businesses and the broader economy. He concluded by emphasizing that a shared commitment among stakeholders is crucial for effective skill development, resource optimization, and sustainable growth.

Inclusive green skills

WEN Bo, Associate Professor, Department of Government and Public Administration (DGPA) at the University of Macao; Research Associate at the City University of Hong Kong, China

Title: Green Jobs in Hong Kong, China

Summary:

Associate Professor Wen Bo from the University of Macao and Research Fellow at City University of Hong Kong's Center for Sustainable Development shared insights on green job development in Hong Kong, China (HKC) and Macao. He emphasized the growing role of green employment as a response to sustainability challenges, noting key areas like renewable energy, green finance, and green building.

HKC's economic growth has led to environmental concerns, including noise, air pollution, and waste management. In response, the government has introduced several initiatives, including environmental impact assessments, a 2050 carbon neutrality goal, and policies to boost green industries. To support green development, HKC is investing in green finance, funding projects like the “RAISe+” program, which provides HKD10 billion to support technology transfer and commercialization, especially in green tech.

Wen noted that HKC aspires to become a green technology hub, yet faces a skills gap. Despite the demand for green skills, there is insufficient talent in sectors such as sustainable tourism and green construction. Wen called for increased education, corporate responsibility, and public-private partnerships to address these workforce challenges. In closing, he encouraged collaboration toward a shared, sustainable future.

Kyung Ho CHO, Professor and the Former President of the Korean Society for Public Personnel Administration

Title: Inclusive Green Skills in Korea

Summary:

Professor Kyung Ho Cho from Kookmin University presented Korea's approach to inclusive green skills development, highlighting national projects and green initiatives that address carbon neutrality, sustainable urban spaces, low-carbon energy production, and industrial innovation.

Cho outlined Korea's green skills priorities, including renewable energy, AI-driven energy efficiency, waste management, and sustainable agriculture, aimed at addressing urban-rural disparities and supporting rural sustainability. He provided examples such as intelligent waste management and smart water systems, which utilize AI to optimize resource use.

Cho emphasized three focus areas for Korea's green initiatives: creating green jobs, inclusive education (targeting all demographics), and public-private partnerships (PPP). He discussed flagship projects such as the Green Smart City, carbon-neutral youth training centers, and the K-Factory initiative, which seeks to modernize industrial complexes into green and smart ecosystems.

Cho concluded by underscoring the importance of equipping workers with green skills and fostering government-business collaboration to support sustainable

economic growth. Korea aims to become a global leader in green skills development, promoting an inclusive and just transition to a green economy, empowering communities, and driving environmental innovation.

Parichart SUPON, Specialist of Phrae Vocational College, Office of the Vocational Education Commission, Thailand

Title: Case Studies and Examples of Green Hotels

Summary:

Parichart Supon, an expert from Phetchabun Vocational College under Thailand's Office of the Vocational Education Commission, shared Thailand's achievements in promoting green hotels as part of its green tourism initiatives. Focusing on the “green hotel” concept, she highlighted environmental, economic, social, and health benefits of sustainable practices in the hospitality sector, especially within Thailand's tourism industry.

Supon outlined practices that green hotels adopt, including reducing greenhouse gas emissions, conserving water, minimizing waste, and using eco-friendly building materials. Key initiatives include LEED certification for sustainable building design, reliance on renewable energy, and locally sourced food to reduce carbon footprints. She presented the case of the Green Rainforest Hotel in Phitsanulok Province, a model of sustainable practices using solar power, natural ventilation, rainwater harvesting, and composting. This hotel integrates natural preservation into its structure, promotes local food production, and engages guests in eco-friendly activities like kayaking and waste collection.

In conclusion, Supon emphasized that green hotels benefit both the environment and local communities by creating eco-conscious employment opportunities and enhancing guest awareness. She invited participants to visit Thailand's green hotels to experience sustainable hospitality firsthand.

ZOU Yunfei, Engineer, Certified Energy Manager, Cleaner Production Auditor, and Greenhouse Gas Checker of China Certification and Accreditation Association

Title: A Case of Green Jobs in Chinese Enterprises under the Background of Carbon Dioxide Emissions Peak and Carbon Neutrality

Summary:

Zou Yunfei, General Manager of Shandong Full Carbon Chain Low Carbon Technology Co. , Ltd. , shared insights into green employment trends within China's dual-carbon (carbon neutrality and carbon peak) policy framework. He outlined three main topics: current trends in green occupations, industry-specific case studies, and pathways to enhance green employment under the dual-carbon strategy.

Zou emphasized that since the 2021 carbon neutrality launch, China has introduced robust policies to reshape industrial structures, which has led to new green and technical job opportunities. He described the stratification of dual-carbon talents within companies, ranging from high-level innovation experts to technical staff managing emissions, carbon reduction, and green project management.

Green job development in China stems from various training paths: social training programs, newly established university disciplines, in-house company training, and self-driven learning by professionals. These trained individuals find roles in areas such as low-carbon consulting, carbon management, renewable energy, and carbon trading.

Zou highlighted specific sectoral impacts, noting that agriculture, industry, and services all face unique green challenges and opportunities. In industries like power generation, carbon management creates a demand for professionals with interdisciplinary knowledge in science, technology, and policy.

To optimize green employment, Zou suggested measures like traditional workforce upskilling, the integration of academic and practical training, a unified certification

system, and support for green entrepreneurship. He concluded by emphasizing the vast potential for green job creation as China's dual-carbon policies continue to unfold.

Green skills certification and Standard

Byoung Joon KIM, Professor of Public Administration; Director of Global Development Cooperation Institute, Kookmin University, Korea

Title: Green Skills Certification and Standards: A Comparison of Korea and Advanced Economies

Summary:

The conference focused on green skills certification and its impact on sustainable development education, examining various strategies, challenges, and opportunities across economies and regions. Key topics included the dual perspective on green skills certification, the need for new skills to meet emerging challenges, a global comparative analysis of green skills development, Korea's Green New Deal and urbanization challenges, government-private sector collaboration, and the importance of intergenerational education and mindset shifts.

Key Discussion Points:

Dual Perspective on Green Skills Certification: Korea's Stern Institute emphasizes not only practical skills application but also a shift in attitudes towards sustainable development as a critical driver.

New Skills for New Challenges: Given the rise of AI, Korea is exploring skill development strategies to ensure alignment with technological advancements.

Global Comparative Analysis: Comparing strategies in the U. S., EU, and Australia revealed diverse approaches, each with its strengths and limitations, yet

all geared toward advancing global sustainable development.

Korea's Green New Deal and Urbanization: Korea has adopted a low-carbon growth strategy since 2008, learning from cities like New York to address urban energy demands.

Government-Private Sector Collaboration: Government and private sector collaboration was highlighted, with examples like Australia's green schools initiative and Europe's green education centers.

Intergenerational Education and Mindset Shift: To achieve 2030 goals, instilling a sustainable mindset in the next generation is essential, supported by collaboration between education, government, and industry.

Conclusion and Action Recommendations: The conference underscored the global trend in green skills certification and sustainable education, calling for greater collaboration between governments, private sectors, and educational institutions. It encouraged further research and practice to advance intergenerational education and innovation for global sustainable development.

FENG Ling, Associate Research Fellow, Research Division of Talent Theory and

Technique, Chinese Academy of Personnel Science

Title: Green Skills Certification in China

Summary:

The conference discussed how the Chinese government evaluates green professions through three main mechanisms: professional titles, occupational qualifications, and occupational standards. Key topics included:

Professional Titles: Since 2016, China has been reforming its professional title system to encourage local governments to establish evaluation bodies and green

low-carbon professional titles aligned with local development needs. Cities like Chongqing, Shenzhen, Shanghai, and Tianjin have introduced relevant policies. This reform enhances career opportunities for technical professionals in green industries, incentivizing innovation and green development while addressing classification and evaluation challenges.

Occupational Standards: The conference listed current occupational standards and noted the recent addition of new green-related professions, including comprehensive energy service personnel and building energy efficiency consultants. More green professions are expected to emerge in the future.

Challenges in China's Green Skills Evaluation:

Insufficient response to the segmented, interdisciplinary, and cross-industry nature of green sectors.

Limited professional credibility.

Foreign-led evaluations in some sectors.

Slow progress in international recognition of certifications.

Action Recommendations:

Establish a structured, multi-tiered evaluation mechanism specific to professions, specializations, and levels.

Develop a multi-sector, cross-industry mechanism to accommodate interdisciplinary skills.

Empower companies and organizations with delegated authority to guide green skills development and expedite standard-setting.

Emphasize systemic integrity to ensure the effectiveness and accuracy of green skills evaluations.

These recommendations aim to build a robust, adaptable, and integrated green skills evaluation framework suited to China's specific conditions.

Benny PARNINGOTAN, Sub-Coordinator for Development of Competency Standards, Ministry of Manpower, Indonesia

Title: Implementation of Green Skills Certification and Competency Standards in Indonesia

Summary:

This presentation began by outlining Indonesia's current demographic dividend and labor market challenges, leading into a detailed overview of the economy's domestic vocational training system and its green skills certification and competency standards. Specific cases were discussed, such as green skills training and certification for photovoltaic and small hydropower technicians, vividly illustrating the practical implementation of Indonesia's green skills framework.

Key Topics and Discussion Points:

Population and Labor Force: Indonesia's large, young population is currently experiencing a demographic dividend. However, the labor market faces a high proportion of informal employment, highlighting the need for institutional measures and education strategies to develop the labor force.

National Vocational Training and Green Skills Certification:

National Competency Standards and Individual Qualification Framework: Based on vocational training, individuals must complete skills training to gain official certification.

Implementation of the Vocational Training System: Focusing on technical personnel, the system prioritizes green skills.

Evolution of Green Skills Certification and Standards: Driven by new

legislation, partnerships, and green space planning initiatives.

Green Skills Training in Photovoltaics and Small Hydropower:

Training Focus and Outcomes: Quality-focused, with many technicians trained and employed, supported actively by enterprises.

Training Details:

Broad coverage and inclusivity to ensure widespread and targeted training.

Strict adherence to national green skills certification and competency standards.

Courses aligned with national industry trends, developing standardized curricula.

Industries actively support domestic policy through training initiatives, enhancing synergy between industry and training.

Dedicated training facilities to ensure effective learning and practical experience.

Bernard Paul MANGULABNAN, Supervising Labor and Employment Officer, Department of Labor and Employment, the Philippines; Myka Rose TRONO, Supervising Labor and Employment Officer, Department of Labor and Employment, the Philippines

Title: Overview of the Philippine Green Jobs Act of 2016

Summary:

This workshop addressed the rise of green employment in the Asia-Pacific region amidst the Fourth Industrial Revolution, emphasizing sustainable environments, decent work, and inclusive employment in the Philippines. Participants discussed

the 2016 Philippine Green Jobs Act, which adapts to evolving labor market demands by focusing on people, technology, and environmental protection.

Key Points:

Philippine Green Jobs Act of 2016: The Act, Southeast Asia's first of its kind, supports green employment, labor protection, productive employment, and the creation of environmentally sustainable workplaces.

Department of Labor and Employment's Role: The Department developed the 2023 Green Jobs Plan to facilitate a green transition, design a green jobs roadmap, establish a green jobs database, and enhance skill assessments and training. It collaborates with the National Statistics Office to create a green job category, improve the evaluation system, and align with International Labour Organization (ILO) standards.

Green Certification and Assessment: The certification process involves verifying companies' environmental practices, product compliance with green standards, and process innovations beyond legal requirements. Incentives are provided for certified entities that meet both green and decent work standards. Additionally, the strategy includes green talent development, incorporating HR development elements, and updating the social dialogue mechanism.

Social Protection Amid Green Transitions: Recognizing that new industries will emerge while others may transform or decline, the workshop stressed enhancing social security systems to protect affected workers.

Conclusion and Recommendations: The meeting emphasized the importance of the Green Jobs Act, the role of agencies in implementing it, and the significance of green skills certification and assessment. Furthermore, it recommended that green development be forward-looking, respond to evolving societal needs, and focus on detailed, actionable green employment initiatives.

International cooperation of green skills development

Kwang Kook PARK, Professor and the Former President of Korea Environment

Institute (KEI), the Catholic University of Korea

Title: International Cooperation of Green Skills Development: Focusing on Green Education

Summary:

This presentation focused on green education, beginning with the balanced development of Korea's three pillars: economy, society, and environment. Despite strong economic performance, research shared by Professor Park reveals that Korea's social satisfaction and community environment scores are low. With high energy consumption and significant carbon emissions, Korea faces challenges in its community environment and signs of a climate crisis.

Key points included:

Balancing Korea's Three Pillars: While Korea excels economically, the economy faces challenges in societal satisfaction and environmental quality. The Korea Institute of International Studies is working to raise public environmental awareness, with experts conducting environmental assessments and fostering green development through collaboration with agencies, officials, students, and the public.

Focus on Green Education: The Korea International Research Institute's mission is to promote environmental awareness globally by offering accessible knowledge on addressing environmental challenges. Partnering with research institutions in developing economies, they provide comprehensive online courses on global environmental policy in three languages. They collaborate with local governments,

industry boards, and private enterprises to support green jobs and strive toward carbon neutrality.

Green Education and the Digital Economy: The rise of the digital economy has created new green employment opportunities. Economy-widely managed digital economic initiatives are aligned with green goals. The presenter closed with a quote from Nelson Mandela, emphasizing determination.

International Collaboration and Standards: Korea collaborates with economies like Viet Nam and Cambodia, offering over 1,000 pounds in development support annually.

Conclusion and Recommendations: The presentation underscored the importance of international cooperation, standardized green education, and financial support, leveraging digital economic growth to foster global partnerships that advance Korea's holistic development.

WANG Yi, Deputy Director and Research Fellow, Information Research Institute, Shanghai Academy of Social Sciences, China

Title: Talent Development Strategy from the Green Perspective: Trends and Priorities

Summary:

The speech emphasized that green development is a core element of high-quality growth, highlighting the need for green jobs and talent cultivation. Prioritizing “green” at a strategic level fosters the comprehensive development of green talent, skills, and professions, supporting harmonious coexistence between humans and nature and building a shared Earth community.

Key discussion points included:

Focus on Green Jobs: Differentiating between green jobs, greening existing jobs, and managing the transition with necessary green skills.

Green Talent Development Strategy:

Talent cultivation: Shifting from “brown” to “green” by training individuals with environmental awareness, sustainable development perspectives, and technical expertise to meet green productivity and development demands. Integrating education, interdisciplinary fields, and industry-academia collaboration to foster green consciousness, values, knowledge, and skills, supporting projects with platforms, funding, and policies to enable the practical application of these talents.

Talent mobility: Enhancing openness, promoting international collaboration, and attracting global green talent with proactive policies.

Talent standards: Developing qualification standards and certifications for emerging green professions, establishing career pathways, and creating cross-disciplinary opportunities that reflect evolving societal needs.

Talent evaluation system: Establishing a scientific, green-oriented evaluation system to encourage innovation and growth.

Talent Allocation Mechanisms:

Green-oriented labor markets.

A framework promoting specialization, international collaboration, and green skills.

Developing supply-demand, pricing, and competition mechanisms for green talent.

In conclusion, green development demands new skills and provides challenges and opportunities for talent, driving innovation in green industries, technologies, and promoting sustainable economic growth.

Lichia SANER-YIU, President of the Centre for Socio-Eco-Nomic Development

Title: Need for a Global (Regional) VET Architecture for Green Skill Development

Summary:

This presentation emphasized the urgency of addressing global green skill shortages and the need to build robust vocational education and training systems to support sustainable development. The discussion highlighted the critical importance of enhancing green education and training and facilitating the global sharing of best practices. Key issues included the current global skill shortage, particularly in technical skills, and the obstacles this poses to achieving sustainable development goals. Challenges from youth employment issues and an aging society were also analyzed, focusing on “NEET” (Not in Education, Employment, or Training) risks, income inequality, and labor market pressures from aging populations.

Key Discussion Points:

Importance of a Global Green Skills Framework: Establishing a global green skills framework is vital for supporting the green economy transition, setting standardized skill requirements, and enabling international skill recognition, thus bridging the gap between demand and supply in the labor market.

Skill Shortages and Youth Employment Challenges: Citing research from the European Investment Bank, the presenter noted that skill shortages, especially in technology, hinder green economy progress. Concerns were raised about the impact of the “NEET” phenomenon on both individual development and broader economic pressures.

Aging Societies and Labor Market Pressures: The presentation referenced former EU official Draghi's report, projecting a significant reduction in the labor force by 2040 due to aging populations. Emphasis was placed on lifelong learning and skills enhancement to address labor market adaptability and resilience.

International Cooperation and Standards: Proposals included developing unified vocational and technical standards through international cooperation, offering scholarships, and encouraging intercultural teacher exchanges. This approach would strengthen global skill recognition and enhance educational quality.

Degree Recognition and Standards Collaboration: Successful initiatives between the Philippines and Indonesia in mutual degree recognition underscore the value of such frameworks in fostering talent mobility and regional growth.

Cross-Industry and Cross-Border Collaboration: Emphasizing collaboration across industries and borders, the speaker advocated for shared approaches to sustainable development challenges, facilitating green technology innovation and application through these cooperative efforts.

Conclusion and Recommendations: The development of a global green skills training framework is essential to support sustainable goals and address skill shortages.

Actions recommended include establishing a global green skills certification system, investing in vocational and technical training, and enhancing cross-border cooperation to accelerate green technology adoption.

Follow-Up Plans: Formation of an international working group on green skills and vocational education to oversee the implementation of recommendations. Semiannual assessments to ensure effective progress in achieving action goals.

DANG Thi Huyen, researcher from National Institute of Vocational Education and Training (NIVT), Directorate of Vocational Education and Training, Viet Nam

Title: Developing Green Skills in Vocational Education and Training in Viet Nam

Summary:

This presentation outlined Viet Nam's five strategic approaches to green skills development as part of its 2021-2030 policy. It detailed the comprehensive implementation of green skills training within the vocational education sector, including system building, high-quality curriculum design, and industry integration. The discussion also addressed challenges such as Viet Nam's late start, regulatory gaps, and limited infrastructure, and proposed solutions like raising public awareness, capacity building, classroom integration, and expanding pilot programs.

Key Discussion Points:

Viet Nam's Economy-wide Policy Orientation: Viet Nam's 2021-2030 policy focuses on integrating green skills into vocational education and training, supported by policies on green job development, financial investment, technology innovation, and international cooperation.

Green Skills Training Initiatives: Programs aim to provide holistic green skills training for students, job seekers, and workers through comprehensive course systems, training centers, and green lifestyle promotion, with emphasis on integrating green skills across sectors.

Challenges and Solutions: Key issues include a late start, regulatory and planning gaps, limited infrastructure, and funding constraints. Proposed solutions include increasing public awareness, strengthening green skill-building capacity, integrating green skills into educational curricula, and expanding training pilots.

Recommendations and Follow-Up Actions:

Recommendations: Increase public education on green skills, enhance training quality and teaching resources, incorporate green skills into vocational education, and expand training pilots based on existing experiences.

Follow-Up Actions: Develop a detailed implementation plan, establish monitoring and evaluation mechanisms, foster international cooperation for best practices, and mobilize resources to ensure the sustainability of green skills development.

Closing Ceremony

Yang Yifan, Doctor of Economics (the Max Planck Society Joint PhD), Professor and Doctoral Supervisor at School of Public Administration, Southwest Jiaotong University.

Summary:

This presentation highlighted the critical role of green skills in promoting social transformation and equity. Key points included:

Green Skills and Social Transformation: Experts agreed on the vital role of green skills in fostering social equity and transformation, sharing insights and case studies from various sectors. Aging societies were also discussed, focusing on the potential of senior citizens in green employment.

Policy-Driven Approach and Economic Capacity: Government policies are essential for advancing green jobs and skill development. Experts recommended that each economy tailor policies to their economic capacity and budgetary constraints, especially in light of post-pandemic economic uncertainties.

SOEs and Regional Cooperation in Green Transition: China's state-owned enterprises (SOEs) were highlighted as models for green transition, demonstrating the role of public sector leadership in green economic shifts. Regional collaboration, such as in the Greater Bay Area, was noted as a powerful driver for green skills development, with APEC identified as a key but underutilized cooperation platform.

Green Skills Certification and Standardization: The discussion explored potential partnerships with organizations like ISO to create a unified global green skills certification framework, underscoring the importance of standardization for mutual skill recognition and mobility.

Digitalization in Green Skills Training: Digital tools were identified as

transformative for green skills training, with attention to bridging the digital divide to ensure inclusivity, particularly for developing economies.

Future Outlook and Recommendations:

Sustained International Cooperation: Establish ongoing platforms for collaboration on green skills and education.

Policy Adjustment: Adapt green skills policies to the economic realities of each economy.

Global Green Skills Certification: Partner with ISO to develop a unified certification system.

Digital Green Training Expansion: Leverage digital resources for green skills, reduce the digital divide, and create a global resource-sharing system.

Economic Capacity Research: Conduct analyses to inform sustainable green development investment.

Resource Optimization: Ensure sustainable resource allocation for green skills education.

Next Steps:

Formation of a Green Skills Task Force: Establish a dedicated working group to implement these recommendations.

Quarterly Evaluation: Conduct quarterly reviews to assess progress and recalibrate strategies and resources as needed.

3. Meeting Outcomes and Consensus

3. 1 Green jobs for social equity and economic transformation

During the session, several experts mentioned the contribution of green occupations to social equity and economic transformation. From an international perspective, green occupations were not only the basis for environmentally sustainable development but also an important tool for ensuring social justice. This view coincided with that of Professor Zhao Ning, who, from China's experience, emphasized that the upgrading of the green industrial chain had brought about the rapid growth of green occupations and contributed to the decarbonization of industrial transformation. And further suggested that in promoting green careers, inclusiveness and social equity, especially gender equality, should be prioritized. Through the development of green careers, not only could high-quality employment opportunities be created, but also socioeconomic disparities could be effectively reduced and more inclusive social development realized.

3. 2 The need for and challenges of policy-driven green skills development

The evolution of policy in China from the Eleventh Five-Year Plan to the Fourteenth Five-Year Plan was reviewed, emphasizing the critical role of policy in the development of a green economy. This was further discussed from a global perspective, noting that policy formulation and implementation were central to ensuring the success of green skills development. He called on economies to strengthen green skills training through policy-driven approaches, especially for the transformation and upgrading of traditional industries. The professor from Korea, on the other hand, added the importance of cooperation between policy and the private sector to promote the overall popularization of green skills through policy incentives. In addition, Peru's experience in promoting green skills training through policy incentives in the areas of agriculture and renewable energy was shared, providing further evidence of the significant role of policy as a catalyst for a green economy and career development.

3. 3 International cooperation and the promotion of regional synergies

Cross-border cooperation was the focus of several expert discussions, with participating experts analyzing in depth the sustainable development of the Guangdong-Hong Kong-Macao Greater Bay Area and arguing that cross-border cooperation was crucial for green skills development. She pointed out that economies in the region should share best practices to accelerate the spread of green skills and standardization of occupations. Korea was cited as an example to show how the development of a green skills certification system could be promoted through the alignment of international standards to enhance international competitiveness. Cooperation between China and ASEAN economies in the green industry chain was also discussed at the conference, showing that international cooperation can not only promote integrated economic development, but also facilitate the promotion of green skills globally.

3. 4 Importance of green skills certification and standardization

Standardization and certification of green vocational skills is an important tool for achieving sustainable development, and experts at the meeting referred to the experience of the Republic of Korea in this area, noting that a standardized certification system can help to promote the popularization and upgrading of green skills. Indonesia's green skills certification and training system in the field of renewable energy was demonstrated, emphasizing that standardization is an important tool to promote green career development. Some experts emphasized that by developing rigorous skills standards and certification systems, it was possible to ensure that workers had access to high-quality skills training in a green economy and to enhance their competitiveness in employment through occupational certification.

3. 5 The potential of digital tools in green skills training

The session concluded with a discussion on the potential of digitalization in green skills training, with several experts suggesting that digital tools could be effective in improving the efficiency and coverage of green skills training. Participating experts suggested that online training platforms and digital tools could help workers in remote areas to access green skills training, especially in the context of epidemics, and that digital means provided new avenues for skills development. Sharing in line with this view, he demonstrated that the Republic of Korea had promoted the popularization of green skills and economic transformation through the application of digital technologies in smart city projects.

3. 6 Looking ahead

Sustained international cooperation and policy support to promote wider application of green vocational skills in the Asia-Pacific region.

Regularized green jobs and green industries promote a green transformation of the economy and foster inclusive social development.

High-end talent training and education system to help the Asia-Pacific region achieve the goal of carbon peak and carbon neutrality.

Developmental training systems and skills application to promote the development of green skills in the Asia-Pacific region in a sustainable direction.