CIRCULAR ECONOMY
CAPABILITY BUILDING IN
THE LANCANG-MEKONG REGION PROJECT

SURVEY QUESTIONNAIRE FOR THE IMPLEMENTATION RESULTS

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3.1 The pre-test results from CE Implementation prior Training -Product Verification for Plastic Packaging in Supply Chains Training Evaluation.

The score of the pre-test of CE product validation prior training for plastic packaging in the supply chain knowledge into 5 Levels (5 = Superior, 4 = Above Average, 3 = Average, 2 = Below Average, 1 = Weak, and 0 = Without Knowledge)

The pre-test results of the knowledge level score on Global trends and challenges in Plastic Industry, among 49 respondents found that the majority sample of 17 people have a score of level 3 (34.7%), and a minority sample of 2 people have a score of level 2 (4.1%) as shown in Figure 3.1

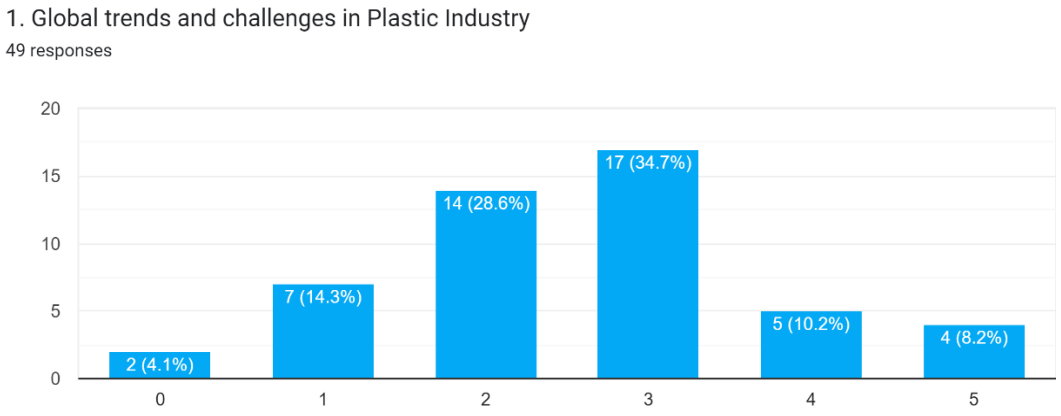


Figure 3.1 Global trends and challenges in Plastic Industry

In the knowledge level score on BCG Policy and Initiatives in Thailand, among 49 respondents found that the majority sample of 16 people have a score of level 1 (32.7%), and a minority sample of 2 people have a score of level 4 and level 5 (4.1%) as shown in Figure 3.2

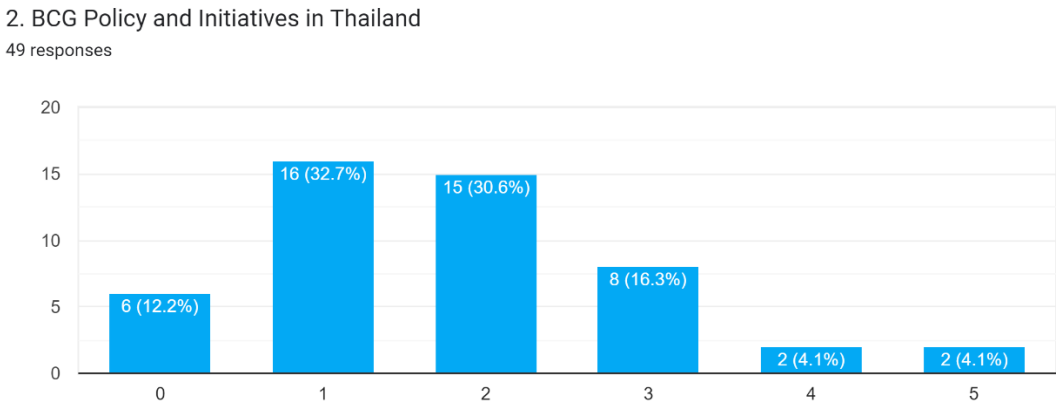


Figure 3.2 BCG Policy and Initiatives in Thailand

The pre-test results of the knowledge level score on Circular Economy Principles and Concepts, among 49 respondents found that the majority sample of 19 people have a score of level 2 (38.8%), and a minority sample of 2 people have a score of level 0 (4.1%) as shown in Figure 3.3

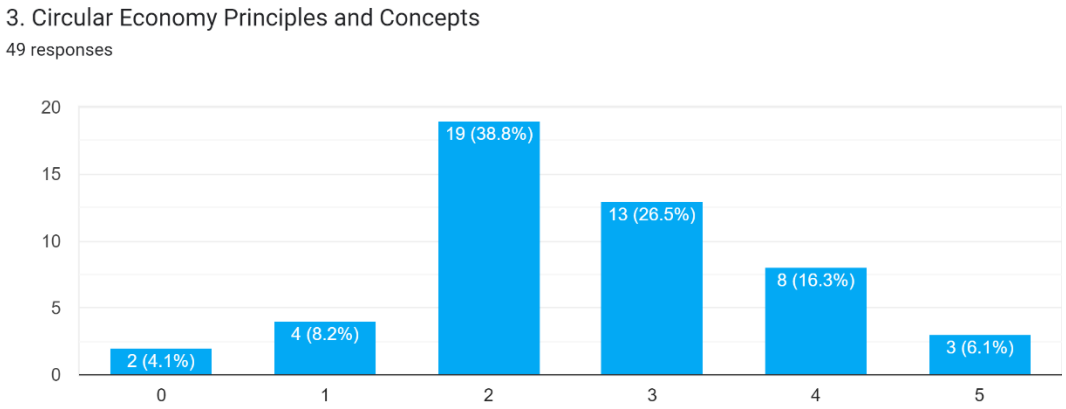


Figure 3.3 Circular Economy Principles and Concepts

The pre-test results of the knowledge level score on the Process Verification Scheme Related to CE Product, among 49 respondents found that the majority sample of 18 people have a score of level 2 (36.7%), and a minority sample of 2 people have a score of level 5 (4.1%), as shown in Figure 3.4

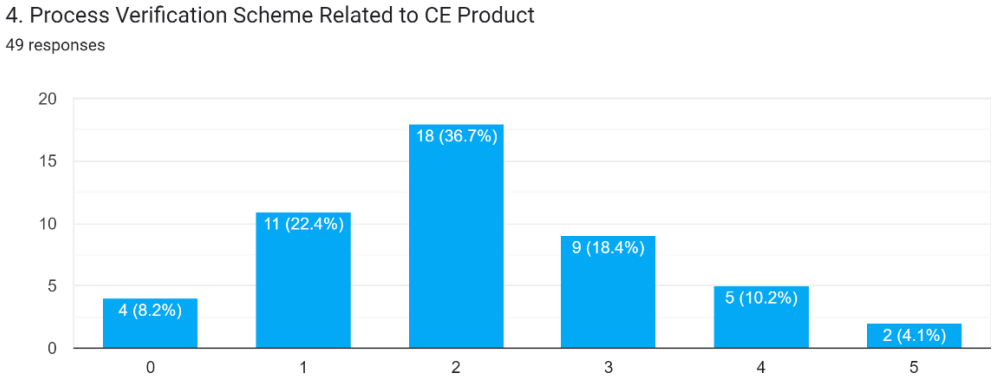


Figure 3.4 Process Verification Scheme Related to CE Product

The pre-test results of the knowledge level score on Chain of Custody Principles and Concepts, among 49 respondents found that the majority sample of 18 people have a score of level 2 (36.7%), and a minority sample of 2 people have a score of level 4 and level 5 (4.1%) as shown in Figure 3.5

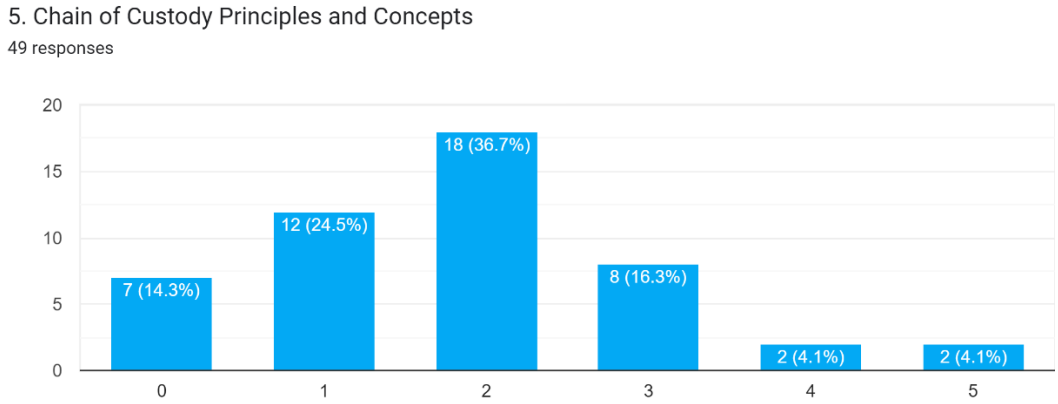


Figure 3.5 Chain of Custody Principles and Concepts

The pre-test results of the knowledge level score on Conformity Assessment, among 49 respondents found that the majority sample of 17 people have a score of level 2 (34.7%), and a minority sample of 2 people have a score of level 5 (4.1%), as shown in Figure 3.6

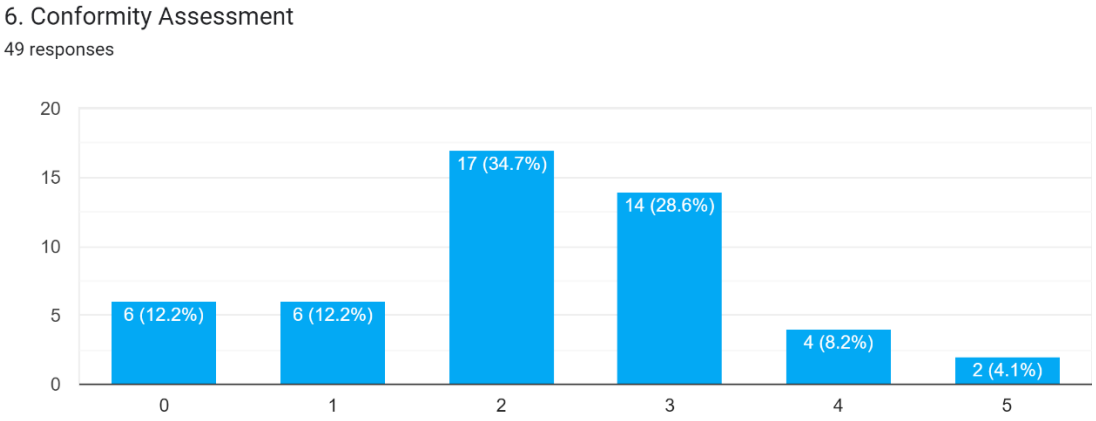


Figure 3.6 Conformity Assessment

The pre-test results of the knowledge level score on Developing Verification Scheme for CE product, among 49 respondents found that the majority sample of 21 people have a score of level 2 (42.9%), and a minority sample of 4 people have a score of levels 3, 4 and 5 (8.2%) as shown in Figure 3.7

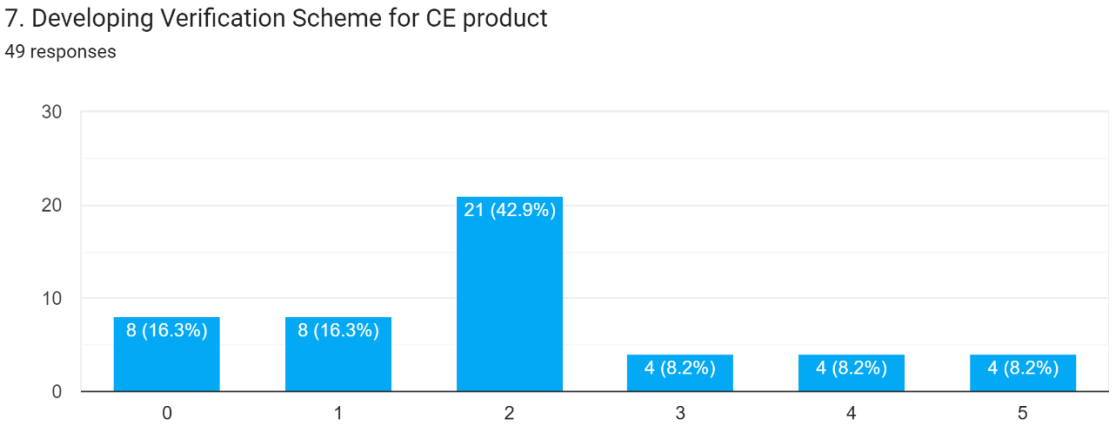


Figure 3.7 Developing Verification Scheme for CE product

The pre-test results of the knowledge level score on Requirement Setting for process or product traceability, among 49 respondents found that the majority sample of 20 people have a score of level 2 (40.8%), and a minority sample of 3 people have a score of level 5 (6.1%) as shown in Figure 3.8

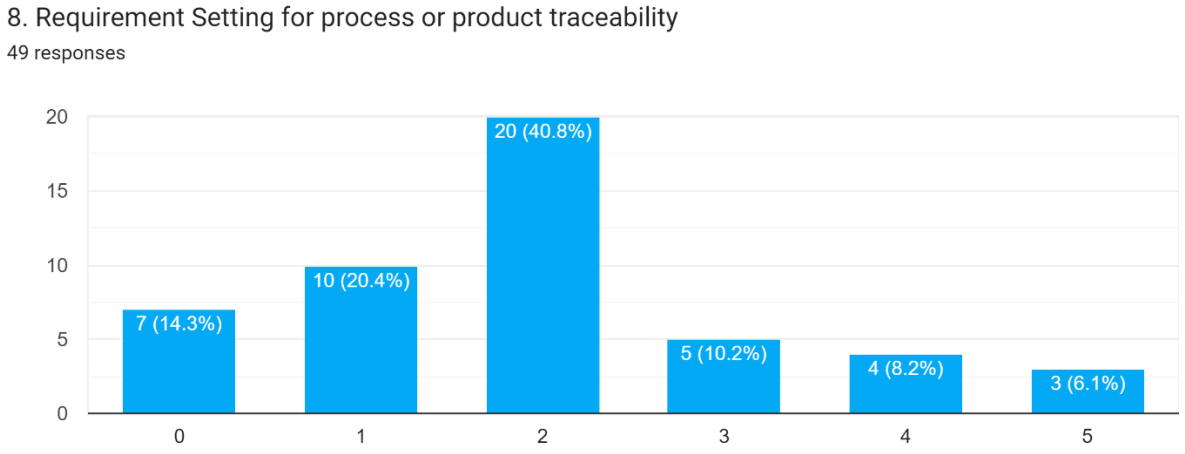


Figure 3.8 Requirement Setting for process or product traceability

The pre-test results of the knowledge level score on Requirements and implementation for related social issues, among 49 respondents found that the majority sample of 20 people have a score of level 2 (40.8%), and a minority sample of 3 people have a score of level 5 (6.1%) as shown in Figure 3.9

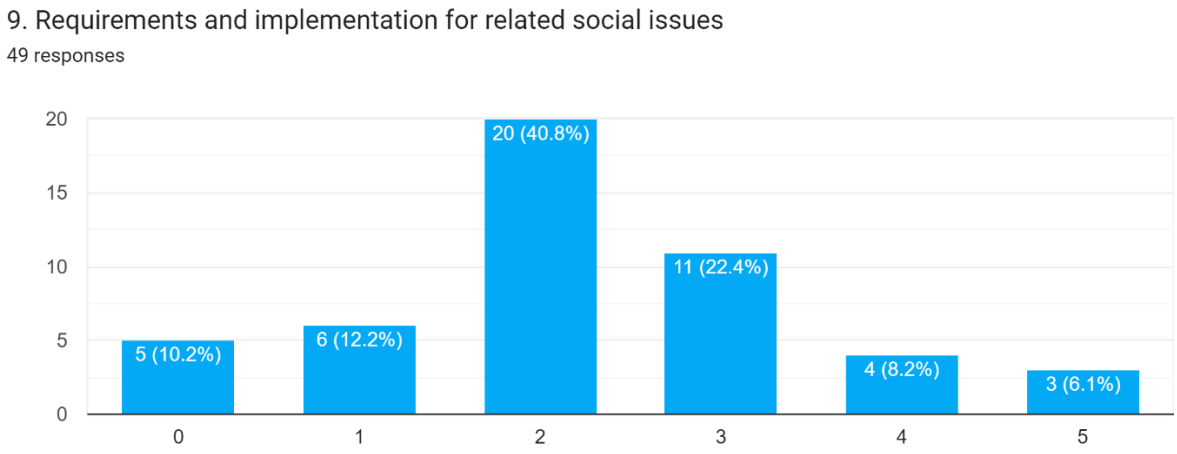


Figure 3.9 Requirements and implementation for related social issues

The pre-test results of the knowledge level score on Knowledge and Experience Sharing from SCGC in process verification, among 49 respondents found that the majority sample of 18

people have a score of level 2 (36.7%), and a minority sample of 3 people have a score of level 5 (6.1%) as shown in Figure 3.10

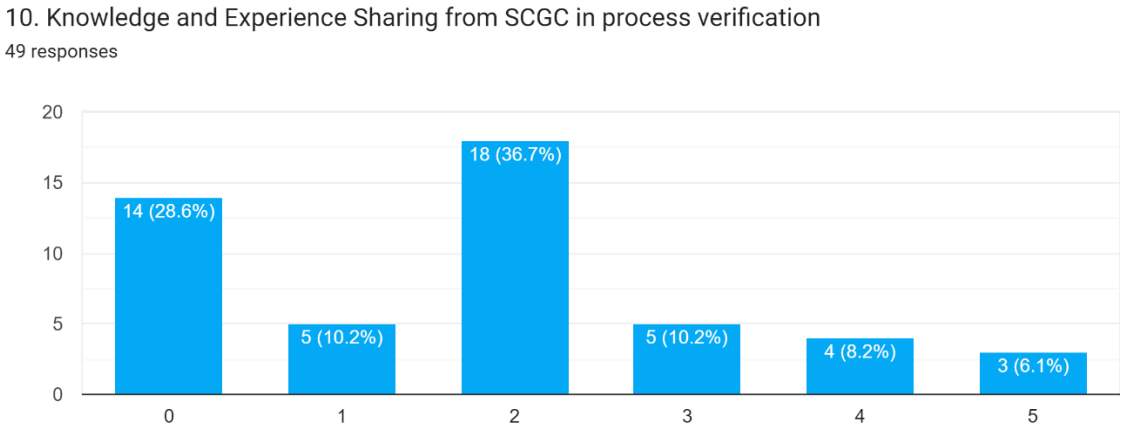


Figure 3.10 Knowledge and Experience Sharing from SCGC in process verification

3.2 Summary results of open-ended questions

The questions (see Appendix) asked about participants work experiences on Circular Economy (CE), the status quo of CE. There are 14 respondents from 3 countries. Respondents are from government sectors and 1 private sector. The respondents' overall information is summarized in Table 3.1

Table 3.1 Overview of respondents

Country	Organization	Role	Experience on CE
Cambodia	Deputy Chief Office. Ministry of Industry, Science, Technology & Innovation	n/a	0
Cambodia	Deputy Director Institute of Standards. Ministry of Industry, Science, Technology and Innovation	a member of national regulatory body for controlling products' standards	0
Cambodia	Deputy Chief Officer, Ministry of Industry, Science,	Department of Accreditation.	0

Country	Organization	Role	Experience on CE
	Technology& Innovation	Implementing scope of ISO/IEC 17025.	
Myanmar	Deputy Director, Ministry of Science and Technology, Department of Research and Innovation	n/a	Research on CE for 3 years
Cambodia	Vice Chief of Product Registration Office, Ministry of Industry, Science, Technology and Innovation (MISTI), Department of Regulatory / Institute of Standard of Cambodia	n/a	0
Cambodia	800 Super-GAEA (Cambodia) Co., LTD, solid waste management (private sector)	n/a	n/a
Cambodia	Ministry of Environment, Solid Waste Management Department	a technical inspection group to inspect in the industrial sector for environmental management, especially solid waste management.	n/a
Cambodia	Vice Chief Office, Ministry of Environment, Water Quality Management	n/a	0
Cambodia	Vice Chief Office, Ministry of	Hazardous Waste Management Bureau	

Country	Organization	Role	Experience on CE
	Environment, Hazardous Substances Management	in Hazardous Substances Management Department.	
Lao PDR.	Head of agriculture department, Agriculture Department	n/a	0
Cambodia	Chief office, Institute of Standards of Cambodia of Ministry of Industry, Science, Technology & Innovation, Certification of Department	Department of Certification, Institute of Standards of Cambodia. Control the use of recycling plastic bottle for drinking water.	0
Cambodia	Chief of Chemical Management Office, Institute of Standards of Cambodia, MISTI, Department of Regulation	n/a	n/a
Vietnam	Technical Consultant of Circular Economy (CL2B)	-Led and managed projects, developing detailed plans and budgets to ensure successful implementation of initiatives: -Recruited project teams and effectively coordinated their activities to ensure smooth project execution. -Engaged and collaborated with diverse stakeholders and facilitated collaboration to foster	3

Country	Organization	Role	Experience on CE
		cooperation and achieve project goals. -Delivered training sessions to waste managers to improve workflow efficiency and enhance sustainability practices.	
Myanmar	Deputy Director Ministry of Science and Technology National Standards and Quality Department/ Standards	National Standards and Quality Department. Tge responsibility are to development national standards with administrative functions and cooperation with standards technical committee and stakeholder. Preparing standards training to relevant stakeholder. I am also responsible to implement the National Certification activities in Myanmar.	0

Please explain about CE policy in your organization. How long have you been implementing it? Since when? Why does your organization adopt CE?

The Ministry of Industry, Science, Technology and Innovation, Cambodia (MISTI) is the responsible ministry for industrial policy and innovations. These are outlined in the Cambodia Industrial Development Policy (2015 – 2025) and the National Strategic Plan on Green Growth (2013-2030).

Ministry of Environment has adopted the CE Strategy and Action Plan in 2021 which outlines the key vision, mission, strategy, and roadmap for Cambodia to shift towards a circular economy. Moreover, MoE has endorsed the roadmap for sustainable consumption and production in Cambodia (2022-2035) as the 14 years plan to improve the sustainability of Cambodia's consumption and production system through strategic and action plan of short, medium, and long-term plans.

CE policy has been developed in 2021 by the Department of Green Economy of Secretariat General for Sustainable Development (GSSD), National Council for Sustainable Development (NCSD) of the Ministry of Environment (MoE), Cambodia.

CE strategy and Action Plan identified goals to achieve the sustainable development including: (1). Increase sustainable production and energy use, (2). Increase sustainable consumption, (3). Reduce waste generation, (4). Improve effectiveness of waste collection, management, segregation, and transport, (5). Promote product reuse and repair, (6). Increase recycling, composting and energy recovery, (7). Ensure environmental control at all waste management sites and (8). Promote widespread environmental education and awareness raising. CE has been adopted in MoE because we would like to enabling the country to achieve a prosperous economy, a thriving and inclusive society, and healthy environment.

Some of the participants are from private sectors e.g. consulting firm. They provide consulting services for developing CE policy for our clients.

If your organization has not yet adopted CE implementation, at what stage your organization is in implementing CE?

In the case of Cambodia, the country's strong economy and increasing population has resulted in a sharp increase in use of materials and energy and a surge in waste generation. This situation presents a significant challenge for the sustainable management of energy, resources and waste. CE enables the improvement of many aspects of the economy and society for Cambodia and the attainment of environmental sustainability. Broadly adopt CE models can significantly reduce the use of natural resources and energy, as well as GHG emissions, water and air pollution, and waste generation.

For participants from the national regulatory body for controlling and checking products' national standards and technical regulation, their roles are to develop standards for CE products.

Some participants mentioned environmental friendly behavior in minimize resources, reuse paper in their organization as part of CE practice.

"I don't think my idea is absolutely right but I think how I use A4 paper in my organization/ work is a part of implementing CE because I reuse it on another page of A4 paper used in order to reduced the waste of using paper as we know that paper is made from tree. So, it's a part of saving tree as raw material and can protect our world from any disaster or climate change."

Participants from Vietnam can add the CE implementation cases. Other participants cannot provide examples of CE case in their countries. In Vietnam, Vinamilk has initiated sustainable packaging to reduce plastic waste and improve the company's brand image. Vietnam's effective management of electronic waste through recycling centers has minimized environmental hazards and created job opportunities.

Challenges in CE implementation

Challenges in implementing the CE can be listed as follows:

- Lack of Policy and Law Support for Private Sectors/SMEs:

Insufficient government policies and laws supporting private sectors and small and medium enterprises (SMEs) hinder their adoption of circular practices. Comprehensive support measures are needed to create an enabling environment through policy frameworks, financial incentives, and regulatory measures.

- Limited Consumer Awareness:

There is a lack of awareness among consumers about the benefits of the Circular Economy. Insufficient education and awareness campaigns have resulted in a limited understanding of sustainable consumption habits, recycling, and responsible waste management practices. This hampers the demand for circular products and services.

- Lack of Business Motivation and Commitment

Some businesses lack motivation to adopt circular practices due to limited understanding of economic benefits, concerns about initial investment costs, and a focus on short-term profitability rather than long-term sustainability. Incentives and support are needed to showcase the economic advantages of circular business models. Low commitment from to management and stakeholders, don’t have quality system, planning and controlling system.

- Reliance on Low-tech Downstream Solutions

As developing countries, CE implementation relies heavily on low-tech downstream solutions like recycling. While recycling is important, a comprehensive approach should also emphasize waste reduction, product reuse, and circular design. Encouraging innovation and advanced technologies throughout the value chain is crucial.

- Limited budgets especially for SMEs

SMEs face challenges in adopting circular practices due to initial investment costs. Transitioning to circular business models, such as product redesign or resource-efficient processes, may require upfront investments that SMEs struggle to afford. Financial support mechanisms and capacity-building programs are needed to assist SMEs in the transition.

These challenges highlight the need for stronger policy support, increased consumer education, enhanced business motivation, advanced technological solutions, and financial assistance for SMEs to overcome barriers and successfully implement the CE

The Key elements that lead to CE implementation are:

Most respondents reply as follows:

- Collaboration and Stakeholder Engagement

Effective CE implementation requires collaboration among various stakeholders, including government bodies, businesses, academia, non-governmental organizations (NGOs), and communities. In my opinion, the key element that leads to CE implementation is the willingness/commitment of the organization/institution both in the public and private sectors. They must show their responsibility to participation from each stakeholder in CE implementation.

- Policy and Regulatory Framework

Governments need to develop and enforce regulations that promote circular practices, provide incentives for businesses, and establish targets for waste reduction and resource efficiency.

- Awareness and Education

Educating consumers, businesses, and policymakers about sustainable consumption, waste reduction, and responsible resource management helps create a demand for circular products and services. Understanding on how our daily needs effect our surrounding living and non-living environment. People cannot practice/ implement something that they think it is not necessary. Thus, we need the implementation body to understand the important of CE and their willingness

- Financial and Economic Incentives

Providing financial support, incentives, and favorable economic conditions play a significant role in driving CE implementation. Governments can offer tax incentives, grants, subsidies, and favorable financing options for businesses adopting circular practices, encouraging their participation.

- Circular Design and Innovation

Emphasizing eco-design, product durability, repairability, recyclability, and incorporating recycled or renewable materials promotes a circular approach. Encouraging innovation in business models, technologies, and processes further supports CE implementation.

- Communications

Clear and continuous communication among government and stakeholders (people, recycling industries etc.) are necessary to carry out CE implementation.

Some participants especially from the standard development, they mentioned the process of development CE verification as part of CE implementation key elements 1. Understand the chain of custody (CoC) 2. Design the chain of custody (CoC) diagram 3. Apply chain of custody model 4. Develop conformity assessment scheme for chain of custody and 5. Develop standard for stage of chain of custody.

Some participants mentioned about Climate change, Pollution (air and water), and virgin material shortages in the future are the key elements that leads to CE.

From my point of view, key elements that lead to CE implementation is personally understanding and their willingness to protect and reduce environmental pollution. Otherwise, government and other relevant stakeholder willing to engage and set up a simplified guideline and standard for CE implementation. Integrated CE in industrial sector should be required.

Explain CE verification product/ process and methodology you apply in your organization, or your role involved in?

The specific methodology applied in CE verification product may vary depending on the organization, industry, and context. Methodologies that can be applied are LCA, Material Flow Analysis (MFA), and Social Impact Assessment.

Are there any key milestones that your organization or country has reached in implementing CE? Explain

Respondents can describe national plan on CE.

In Cambodia, successful transition to a CE also requires the engagement of Micro, Small and Medium Enterprises (MSMEs) which play a vital role in Cambodia's economy, contributing to economic and social progress. The Government's Industrial Development Policy 2015-2025 sets out to develop and modernize Cambodia's MSMEs through support in expanding and strengthening MSMEs' manufacturing base, and by ensuring technology transfer and industrial linkages among MSMEs and other key players. In line with these aims, a CE approach can support MSMEs of any size through facilitating access to energy efficient technologies which reduce overhead costs or to financial support for expanding reuse and repair businesses which are dominated by MSMEs. Recently, the Department of Solid Waste Management has been preparing the sub-decree of single-use plastic waste and product management. I believe this sub-decree will play a big role in the CE implementation for each sector to reduce plastic waste consumption and promote plastic waste recycling.

Vietnam has made significant progress in implementing the CE and has achieved several key milestones. Here are some notable achievements:

- National Strategy on Green Growth

Vietnam adopted the National Strategy on Green Growth in 2012, which promotes sustainable development and the transition to a circular economy. This strategy sets the foundation for policy frameworks, targets, and initiatives related to CE implementation.

- Circular Economy Roadmap

In 2019, the Vietnamese government introduced the National Action Plan on the Circular Economy, outlining specific goals and actions to promote circular practices across various sectors. The roadmap focuses on waste management, resource efficiency, sustainable production, and consumption patterns.

- Plastic Waste Reduction

Vietnam has taken significant steps to tackle plastic waste. In 2019, the government launched the National Action Plan on Marine Plastic Debris Management, aiming to reduce marine

plastic pollution. Various initiatives, such as banning single-use plastics in certain regions and promoting eco-friendly packaging, have been implemented to address the plastic waste challenge.

How do you plan to apply what you gain from this CE implementation training in your professional, organization, national or regional context?

Participants in the workshop understand CE concept, product verification for plastic packaging in supply chains, and learn cases from SCGC on CE product verification. Respondents, especially from the national standards body or policy makers, will attempt to develop standards/product verification for CE products, CE collector etc. The participants plan to apply knowledge gain from the workshop in 4 aspects.

- **Continue to study CE product verification**: deepen knowledge of methodologies like Life Cycle Assessment (LCA), Material Flow Analysis (MFA), and other relevant tools.

- **Training for colleagues or clients**: Share knowledge and expertise by conducting training sessions for colleagues or clients. This will empower them to incorporate circular practices into their own work and decision-making processes.

- **Advise clients to build CE standards for their product**: When advising clients, emphasize the importance of developing CE standards for their products, including plastic packaging, defining clear criteria and guidelines for circularity

- **Incorporate CE verification into consulting projects**: Integrate CE verification into my consulting projects by offering assessment and verification services for products, specifically focusing on plastic packaging. Utilize the methodologies and tools I have studied to evaluate the circularity of the packaging, identify improvement areas, and provide recommendations for more sustainable alternatives.

- **Track and report progress**: Establish a system to track and report the progress of my clients' CE initiatives.

More detail from respondents can be seen below

“What I gain from this CE implementation Training, First of all, I will share with my Co-Worker or my organization about how important of this training course. In my brief, it related to how we can reuse, reduce and recycle. One country, if there are a lot of pollutions, the government must spend a lot of money to solve this problem. As we can see that nowadays many disasters have been happening in many countries and was destroyed economic as well. Out of virgin material is what I used to wonder how can we do if we don’t have it anymore. So, if we get together, we can help to save or heal the world and live in comfortable environment.”

“This training course is really interesting and important for my organization since I get to know more in-depth about CE implementation and the Plastic standard in the global and regional context. Although it was technical training, I hope to apply what I have acquired to improve the policy and regulations regarding single-plastic products and waste management in Cambodia.”

"CE is a strategy that developed by MoE, Cambodia, but it is received technical support from UNDP as policy expert. This strategy has not yet widely introduced and implement mean we are in the early stage of CE implementation. Once, the CE is required to implement or set up a specific required standard within the organization, I'm glad to apply the gain experience and knowledge of from CE training."

"Personally, I think I cannot say my organization is implementing the CE, but we participating in overseeing the CE implementation throughout the country. After this training, I think, during inspection or workshop, I can encourage the factory to implement CE, provide them consultation if they need. Also, I think my office should develop some new requirement for factory to recycling their waste as much as possible."

"The plan to apply CE implementation training in my organization includes such things as:

1. Disseminate information and policies on circular economy implementation to directors and colleagues;
2. Bring information, lesson content, and policy on the circular economy into the green skills lessons or environmental subjects;
3. Create regulations and policies to propose to the director for the implementation of the circular economy within the organization."

"I am not quite sure about the timeline to adopt or implementing CE but I will share my knowledge to my institute about the importance of implementing CE and will try to persuade my leader to consider about CE implementation."

In relation to question 6, what plan that you believe you can achieve within 3-6 months. Please explain

Most respondents not sure when their organization will implement CE within 3-6 months but they will

1) share knowledge/experiences from the training course to the top management and team in their organization

2) continue to study CE product verification: Stay updated on the latest research, case studies, and advancements in CE verification to enhance my expertise in evaluating the circularity of products, including plastic packaging

3) training for colleagues or clients: Provide workshops or educational programs to familiarize them with CE principles, the importance of CE verification, and methodologies for assessing circularity.

More detail from respondents can be seen below

"Since we are in the stage of preparing the sub-decree on single-use plastic products and plastic waste management, I think I could share this knowledge and which and collaboration with other stakeholders related to CE implementation as much as I could."

"I could not provide a specific achievement within this period since we have not implemented in my department. I hope to introduce CE especially CE verification product in the guideline regarding with my current work and hope to be offered a chance to participated in CE

procedure development including process, methodology, set up standard requirement mainly for environmental protection. So, I commit to work closely with relevant stakeholder in developing CE."

"It is hard for me to say what exactly I can achieve in 3-6 months. My office has planned to develop the guideline for hazardous waste management in industrial and household; thus, I hope I can include what I have learnt from this training in the guideline as much as possible.

"Disseminate information and policies on circular economy implementation to directors and colleagues, and bring information, lesson content, and policies on Circular Economy into green skills lessons or environmental subjects."

"I don't think that we can achieve within 3-6 months but I believe in two year later we will have policy on CE."

"According to the question 6, I can't predict the time that we can reach the CE implementation but as I know we have already thought about this and we just need more time to make the policy and implement it."

3.3 MASCI Training workshop

CE Product Verification for Plastic Packaging in Supply Chains

MASCI hosted the "Circular Economy (CE) Implementation Training: Product Verification for Plastic Packaging in Supply Chains" at The Berkeley Hotel Pratunam from August 7 to 11, 2023. The primary objective of the training was to share knowledge on CE product verification, drawing insights from successful cases across various countries, regions, and international organizations. The target audience included participants from Mekong Region countries, namely Cambodia, Laos, Myanmar, Vietnam, and Thailand, with a total of 60 attendees representing government agencies, the private sector, and educational institutions.

The training aimed to bolster the industrial competitiveness of Mekong Region countries by applying CE concepts within supply chains, thereby contributing to the accelerated attainment of Sustainable Development Goals (SDGs). Specifically, the focus was on SDG 11: Sustainable Cities and Communities, SDG 12: Responsible Consumption and Production, and SDG 13: Climate Action.

This training marked a significant milestone in fostering collaboration among Mekong Region countries and China, aligning with the shared goal of achieving sustainable growth in the future. The agenda for the training workshop is provided in the Appendix, and participants can access workshop materials, including PowerPoint presentations and exercises, through the provided link. https://drive.google.com/drive/folders/1hTjy71tAbR_TcFdnfYd9QmTdTRO6MXOa. The participants completed the pre-and post test to understand and evaluate their understanding on CE product verification. Below is the summary of training each day.

First day of the training workshop: participants delved into various topics, including BCG Policy and Initiatives in Thailand, circular economy principles and concepts, and an introduction to the process verification scheme related to CE products.

Dr. Tarnkamol Tarvornpanich from the Department of Primary Industries and Mines, Ministry of Industry, shed light on BCG Policy and Initiatives in Thailand. He outlined the Ministry of Industry's roadmap for the circular economy strategy spanning 2022-2027, emphasizing seven target industries: plastics, tires, construction materials, steel & other metals, electronics, solar panels, and EV batteries. The presentation included insights into success stories and challenges encountered in the journey toward a circular economy.

Witchar Pichainarong from the National Standardization Council, Thai Industrial Standards Institute (TISI), provided valuable information about the roles of TISI in the CE Certification scheme. Notably, he discussed specific standards such as TWA 4002-2565 for circular design for PET bottles and TWA 4004-25xx for design recommendations for recyclable packaging (D4R).

Challenges in implementing circular economy practices were highlighted, encompassing financial and investment barriers, consumer behavior considerations, limited awareness, and understanding, as well as institutional and regulatory hurdles. Financial constraints, potential resistance from consumers, and a lack of awareness and understanding were identified as potential obstacles.

On the flip side, opportunities in the circular economy were discussed, including the potential for policy and regulatory reforms to incentivize circular practices, collaboration and partnerships to foster innovation, and financial support from governments to encourage the development of circular solutions. The session concluded with participant evaluations to gauge their comprehension of the presented subjects.

Summary of CE process verification scheme can be seen in Figure 3.11

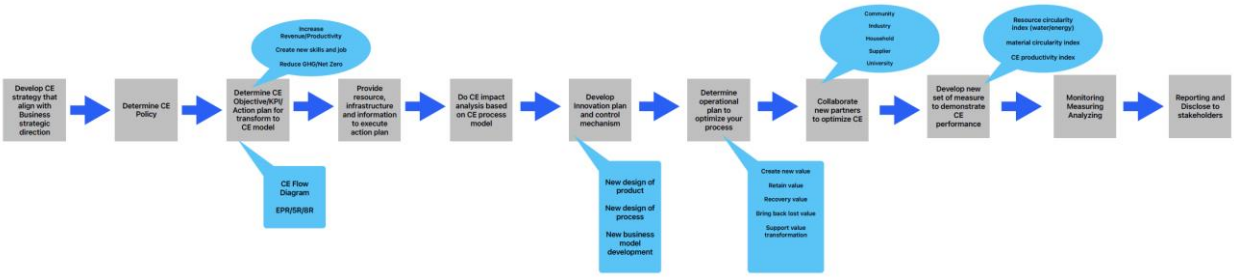


Figure 3.11 Summary of the overview CE process verification scheme

Second day of the training workshop: The following topics will be presented to participants during the workshop:

Introduction to Chain of Custody: Principles and Concepts

Verification Process and Methodology

Verification Scheme Workshop: Developing Verification Scheme for CE Product

Exercise: Integration of Knowledge to Develop CE Product Verification Based on Country Context

The workshop focuses on the development of a comprehensive CE product verification standard for the plastic supply chain, specifically targeting industries involved in recycling plastic bottles, recycling plastic bags, recycling food storage containers, and producing plastic products from recycled materials. Participants engage in collaborative tasks outlined below:

Task 1: Selecting the Industry

Participants collectively choose one specific industry within the plastic supply chain as the focal point for standard development.

Task 2: Drawing the Value Chain (Schematic Overview)

Participants sketch a schematic overview of the selected industry's value chain, identifying key stages and stakeholders to visualize material and information flow.

Task 3: Determining the Chain of Custody Model

Integrating the Chain of Custody (CoC) Model into the value chain, participants identify points where CoC is established to track the flow and handling of recycled plastic materials.

Task 4: Adopting the Functional Approach for Standard Development

a. Selection Stage: Identify criteria and requirements for businesses to be eligible for CE certification.

b. Determination Stage: Define environmental and sustainability performance indicators for CE certification.

c. Review and Attestation Stage: Establish the third-party verification process for compliance.

d. Surveillance Stage (Optional): Design monitoring mechanisms for ongoing compliance.

Task 5: Drafting the CE Product Verification Standard

Participants collaborate to draft a comprehensive CE product verification standard based on the outcomes of previous tasks.

Task 6: Feedback and Review

Groups exchange work, providing feedback on clarity, completeness, and feasibility of proposed requirements.

Task 7: Audit Objective Evidence

Participants outline objective evidence for audits to verify compliance with the CE Product Verification Standard, including documentation and records. By the workshop's end, a tailored standard is developed, promoting sustainable practices and recycled material usage within the selected industry of the plastic supply chain.

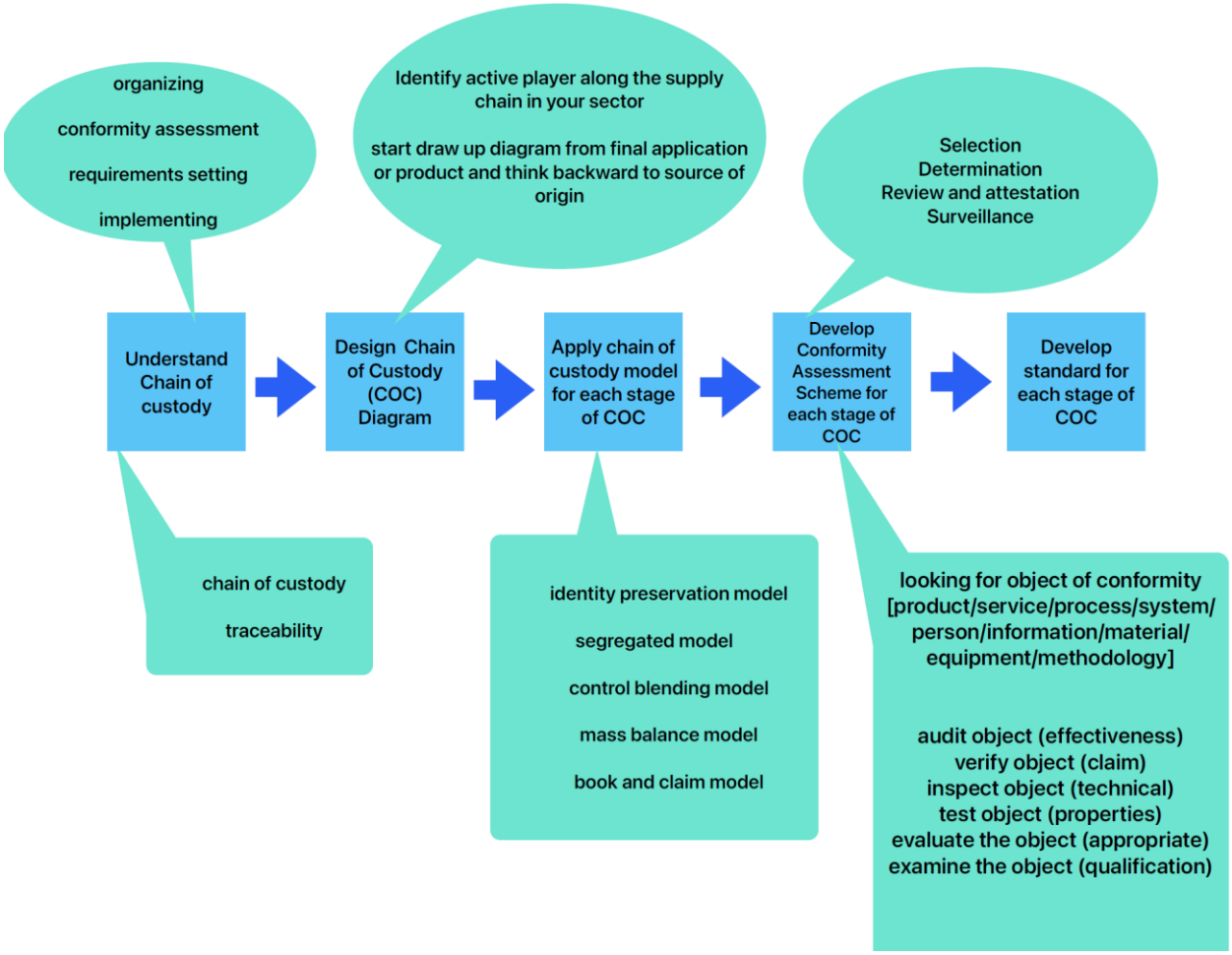
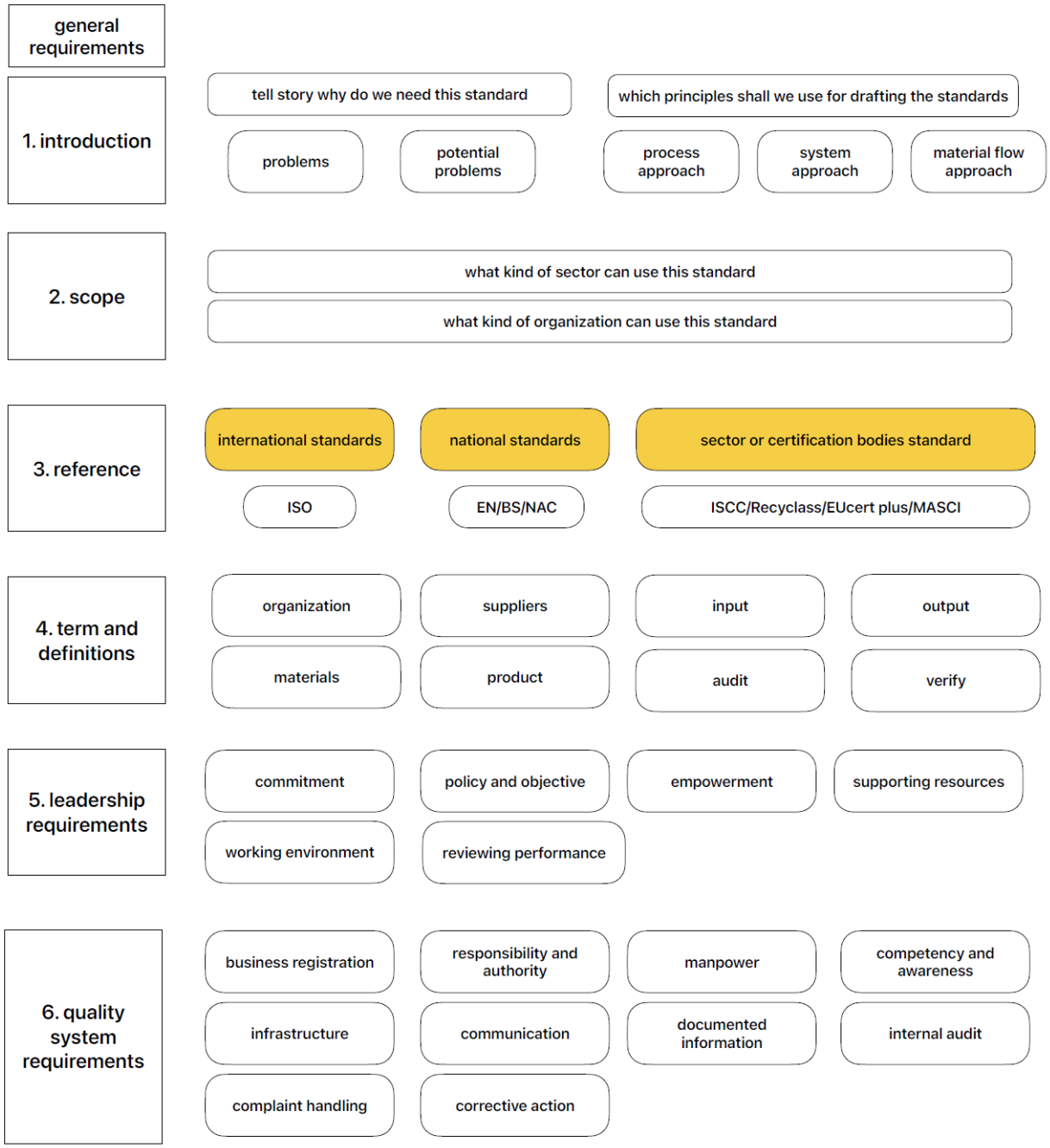
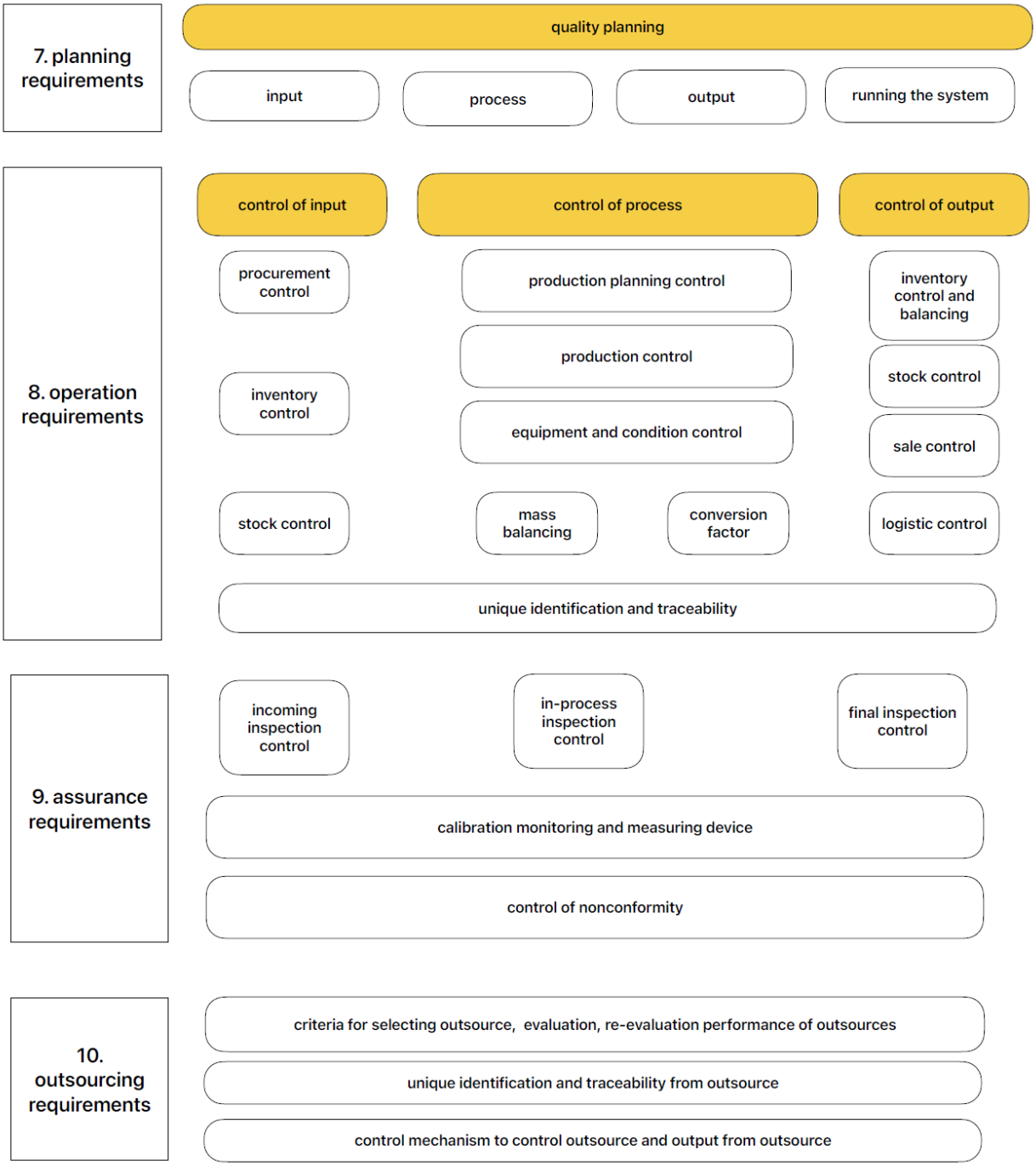


Figure 3.12 Verification of CE products for second day of the training workshop

Third and fourth day of the training workshop: The training workshop covers the following topics: traceability and conformity assessment for plastic recycling, requirements for recycled plastic products and their implementation, and a verification workshop focusing on verification topics and objective evidence. A summarized overview of the training workshop is depicted in Figure 3.13


general requirements
1. introduction
tell story why do we need this standard
which principles shall we use for drafting the standards
problems
potential problems
process approach
system approach
material flow approach
2. scope
what kind of sector can use this standard
what kind of organization can use this standard
3. reference
international standards
national standards
sector or certification bodies standard
ISO
EN/BS/NAC
ISCC/Recyclass/EUcert plus/MASCI
4. term and definitions
organization
suppliers
input
output
materials
product
audit
verify
5. leadership requirements
commitment
policy and objective
empowerment
supporting resources
working environment
reviewing performance
6. quality system requirements
business registration
responsibility and authority
manpower
competency and awareness
infrastructure
communication
documented information
internal audit
complaint handling
corrective action


7. planning requirements
quality planning
input
process
output
running the system
8. operation requirements
control of input
control of process
control of output
procurement control
production planning control
inventory control and balancing
production control
inventory control
stock control
equipment and condition control
sale control
stock control
mass balancing
conversion factor
logistic control
unique identification and traceability
9. assurance requirements
incoming inspection control
in-process inspection control
final inspection control
calibration monitoring and measuring device
control of nonconformity
10. outsourcing requirements
criteria for selecting outsource, evaluation, re-evaluation performance of outsources
unique identification and traceability from outsource
control mechanism to control outsource and output from outsource

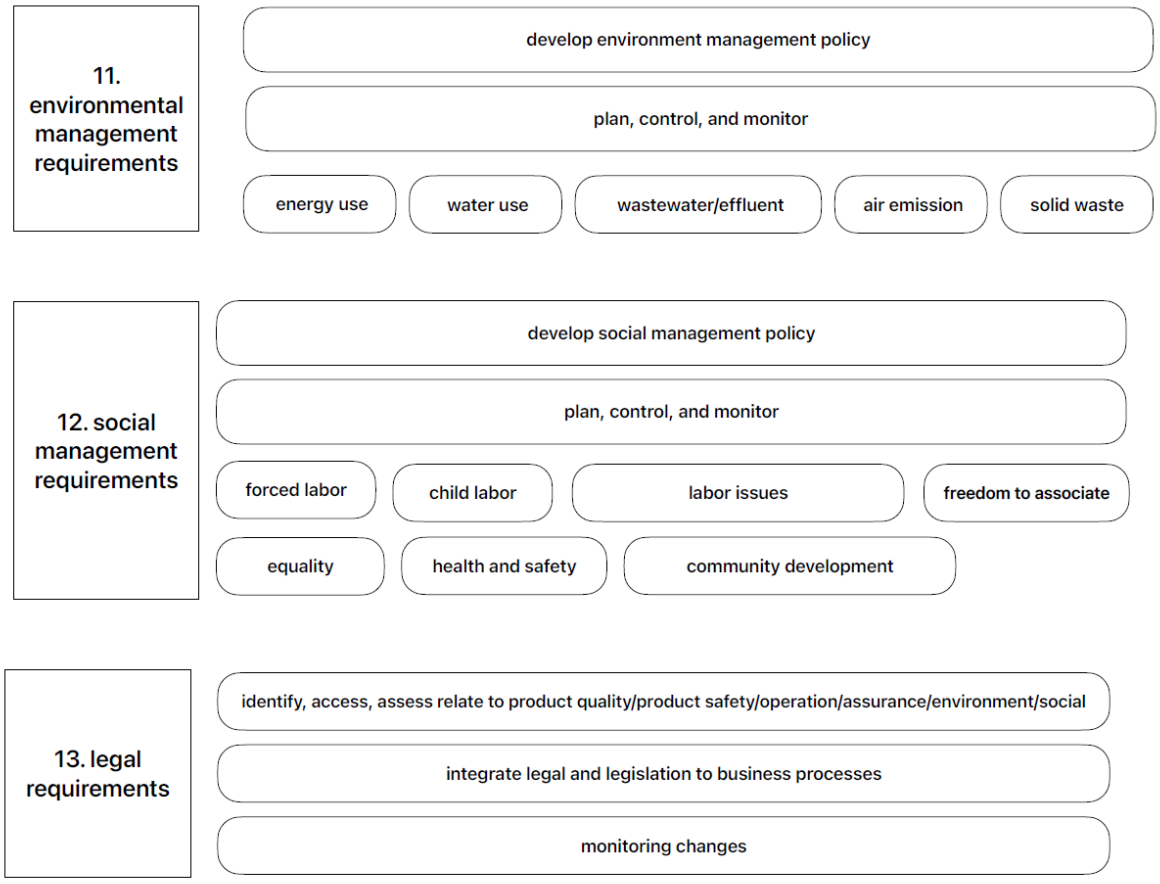


Figure 3.13 The summary of the day 3-4 training workshop

Last day of the training workshop: Ms. Pornravee Sumitra has generously shared insights into CE product verification based on her experiences at Siam Cement Group (SCG). As one of Thailand's largest conglomerates, SCG boasts over a century of expertise dedicated to enhancing people's quality of life. The company achieves this goal by delivering high-quality products and services through a commitment to excellent processes, technological development, and innovation, positioning itself as one of ASEAN's foremost sustainable enterprises.

SCG is actively working towards becoming the "Chemicals Business for Sustainability," aligning its operations with ESG principles and striving to balance the triple bottom lines, encompassing tangible and intangible capitals. As part of its sustainable initiatives, SCG has ambitious plans to inaugurate Thailand's first demonstration plant in Rayong, with a recycling feedstock capacity of 4,000 mt/year. This cutting-edge facility is designed to transform post-consumer plastics into recycled feedstock, and it has obtained ISCC PLUS certification for the entire supply chain. This significant development is poised to enhance Thailand's domestic plastic waste management practices.