

## WORKSHOP REPORT

### Workshop on “How to Use Science to Fight Marine Plastic Pollution in Cambodia”

#### Building an Enabling Environment for a Science Policy-Practice Interface in Cambodia to Tackle Marine Plastic Pollution Challenges.



**Date:** May 05, 2023

**Venue:** 6th floor, Cambodia University of Technology & Science (CamTech University)

**Host institution:** Cambodia University of Technology & Science (CamTech University)

**Organizers:** Dr. HUL Seingheng, General Director of the General Department of Science, Technology & Innovation (GDSTI) of the Ministry of Industry, Science, Technology & Innovation (MISTI)

## **1. INTRODUCTION**

### **1.1 Background**

Marine plastic pollution is a global problem that threatens the health of marine ecosystems, biodiversity, and human well-being. It also has negative impacts on the economy, tourism, and fisheries. According to a 2015 study, Cambodia ranks 9th among the top 20 countries that contribute to mismanaged plastic waste entering the ocean.

To address this challenge, Cambodia needs to develop and implement effective policies and practices that are informed by the best available scientific evidence and local knowledge. However, there are many barriers and gaps that hinder the effective use of science in policy making and practice, such as:

- Lack of coordination and collaboration among different stakeholders, such as government agencies, research institutions, civil society organizations, private sectors, and local communities;
- Lack of capacity and resources to conduct, access, synthesize, communicate, and apply relevant scientific research;
- Lack of mechanisms and platforms to facilitate the exchange of information, knowledge, and perspectives among different actors;
- Lack of awareness and appreciation of the value and benefits of science for policymaking and practice;
- Lack of incentives and accountability to ensure that policies and practices are based on sound evidence and aligned with national and international commitments.

Therefore, there is a need to build an enabling environment for a science policy-practice interface (SPPI) in Cambodia. An effective SPPI can help to ensure that knowledge production simultaneously reflects the needs and expectations of experts and policy actors to improve the effectiveness and legitimacy of policy decisions.

### **1.2 Objectives and Focus of the Regional Workshop**

The main objective of this workshop is to bring together relevant stakeholders from different sectors and levels to:

- Share the current state of knowledge and practice on marine plastic pollution in Cambodia and identify key knowledge gaps and needs;
- Discuss the opportunities and challenges for strengthening the SPPI in Cambodia and explore potential solutions and best practices
- Develop a roadmap and action plan for building an enabling environment for the SPPI in Cambodia to tackle marine plastic pollution challenges.

### **1.3 Participation**

Diverse stakeholders including students, scientists, researchers, academics, policymakers, practitioners directly or indirectly engaged in marine plastic pollution measures in Cambodia participated in this workshop with an approximate number of 60 people.

## **2. OPENING SESSION**

### **2.1 Opening Remarks**

**Dr. Chea Vatana**, Vice President of Research and Innovation at CamTech University welcomed the participants with an introduction to the program. He expressed his support for the workshop's objectives, placing particular emphasis on the urgent issue of plastic pollution and its effects on the environment and climate change. Dr. Vatana described how plastic waste accumulates in landfills and oceans, endangering wildlife, biodiversity, and human health. He provided specific examples of the suffering endured by marine animals due to plastic ingestion and entanglement, how plastic fragments disrupt natural habitats and food chains, and the contribution of plastic production and disposal to greenhouse gas emissions and global warming. Moreover, he cautioned about the dire consequences of rising temperatures and sea levels for coastal communities, agriculture, and infrastructure. The speaker then shared CamTech University's proactive measures in addressing this challenge and promoting environmental responsibility. On campus, single-use plastic items such as bottles, bags, and straws have been prohibited, while students and staff have been strongly encouraged to adopt reusable alternatives. Additionally, CamTech University proudly disclosed its affiliation with two global platforms, the Net Zero Institute and the Sustainable Solutions Network, both dedicated to accelerating the transition to a low-carbon economy and supporting innovative sustainability solutions.

Dr. Vatana also announced that the university has launched an incubation planning program that integrates climate action into research and educational activities. This program provides invaluable opportunities for students and faculty to collaborate with external partners and stakeholders on projects designed to tackle pressing environmental challenges. Concluding his speech, he extended his heartfelt gratitude to **Dr. Hul Seingheng** for organizing this workshop and inviting him to participate as a panelist. He conveyed his team's deep sense of honor to be counted among such distinguished experts within the realm of environmental issues. He also stated that his academic background, rooted in demography and economics, affords him a distinctive perspective on the social and economic facets of sustainability.

### **2.2 Welcome Participants; Introduce Workshop Objectives; Outline Workshop Agenda**

**Dr. Hul Seingheng**, General Director of the General Department of Science, Technology & Innovation (GDSTI) of the Ministry of Industry, Science, Technology & Innovation (MISTI) welcomed participants while introducing them to the objectives of the workshop. He expressed his gratitude towards the event

arrangement despite the short preparation time. In his speech, he highlighted the importance of plastic waste management awareness among students. He underscored the value of learning from diverse professionals, which can assist students in deeper understanding of lessons.

### 3. WORKSHOP PRESENTATIONS

There were three presentations during this workshop:

- Keynote Speech by **Mr. Uch Rithy**: Deputy Director at COMPOSTED
- Plastic as Recycled Products by **Dr. Yos Phanny**: Head of Research Unit at RIC
- Plastic Bag Flow in Cambodia by **Mr. Koeng Septorm**: Official at MoE

In his keynote speech, **Mr. Uch Rithy** introduced his organization, COMPOSTED, which specializes in recycling organic waste into compost. He discussed the utilization of the Reduce Reuse Recycle Method to address waste management challenges, while protecting marine environments including coral reefs. He also presented studies on marine plastic in Cambodia and highlighted clean-up activities in Battambang, Kandal, Kampong Cham, and Kratie, detailing the waste separation, cleaning, drying pressing methods for effective plastic waste management. He concluded by illustrating initiatives countering marine plastic in Cambodia.

Subsequently, **Dr. Yos Phanny** exemplified Plastic as Recycled Products, demonstrating to participants on how to differentiate between various types of plastic. He reiterated the critical importance of sorting them into their respective categories before the conversion process to create new products.

Finally, **Mr. Koeng Septorm** delivered a presentation on the Plastic Bag Flow in Cambodia. He discussed the background studies conducted on plastic waste composition in Phnom Penh, introduced the Material Flow Analysis Procedures, and identified and quantified the stock flows of plastic bags. Additionally, he proposed priority scenarios for effective plastic bag waste management.

### 4. PANEL DISCUSSION

The panel discussion on “**Science to Fight Marine Plastic Pollution**” was moderated by **Dr. Hul Seingheng**.

The first question stemmed from a Robotics and Automation student, who questioned the sociological intricacies surrounding waste segregation advocacy within households.

One of the panelists, **Mr. Uch Rithy, Deputy Director of COMPOSTED,**

responded that they had conducted diverse educational endeavors to enlighten distinct demographic cohorts, but the persistent challenge was the disregard for environmental repercussions when disposing of waste in open spaces. He said that changing people's habits and behaviors requires time and commitment, and it should start from early formative years. Additionally, he advocated for methodologies such as **the 3Rs method: Reduce, Reuse, and Recycle**.

Subsequently, a Data Science and AI Engineering student, probed the contemporary methodologies and future trajectories of waste management in Cambodia. **Mr. Koeng Septorm, an Official of the Ministry of Environment (MoE)**, shared ongoing initiatives to enhance nationwide solid waste collection, currently operating at a mere 40% efficiency. He stressed the imperative of private sector involvement and the imposition of waste disposal fees on citizens to finance these enhancements. Citing examples from provinces such as Preah Sihanouk, Kampong Cham, and Battambang, he emphasized divergent waste collection frameworks. He concluded that the solutions include raising awareness, engaging private sectors, and supporting the government, acknowledging the time-intensive nature of the environmental amelioration process.

**Mr. Uch Rithy** pinpointed areas of potential improvement in extant waste management practices in Cambodia, citing instances of noncompliance with waste fee payments in Phnom Penh. He highlighted the city's division into distinct zones, each serviced by different waste collection entities operating on profit incentives, accentuating the pressing need for heightened public engagement.

**Dr. Yos Phanny, Head of Research Unit at RIC, Institute Technology of Cambodia (ITC)** addressed the prospect of leveraging technology in waste management. **Dr. Yos Phanny** reiterated that education on recycling and technological implementations should begin at the primary school level and advocated for accessible labs fostering waste repurposing. He concluded that this knowledge should be shared with the young generation, so they could instill the habit of managing their waste and appreciating the environment.

Concluding the panel discussion, moderator **Dr. Hul Seingheng** extrapolated from personal experiences, contending that while payment structures represent a viable facet of waste management in Cambodia, their success predicates upon collaborative efforts between the private sector and stringent law enforcement. He also acknowledged the potential of technology and its supportive role in fortifying policy implementation frameworks.

#### **4. CONCLUSION AND ACKNOWLEDGEMENTS**

The workshop was carried out according to the scheduled program with overall objectives met. The facilitator thanked participants for their enthusiasm and persistence while reminding them to take care of the environment by reducing plastic use. He also thanked the hosts for their excellent hospitality and the resources made available for running this workshop.

## 5. ANNEX

### a. Pictures from the workshop







