

2019 ASEAN-U.S. Science Prize for Women

Theme: The Circular Economy

The current population of ASEAN is currently around 640 million, and it is expected to grow to 660 million by 2025. There will be increasing demand for all kinds of resources, some of which are renewable but many are not. Without strong action, the combination of population and economic growth tied to fixed resources may limit opportunities for future generations.

One approach to address this issue is to embrace the concept of the **circular economy**, which is defined as:

An economic development model that entails decoupling economic activity from the consumption of finite resources, and designing waste out of the system. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital. It is based on three principles: (i) design out waste and pollution; (ii) keep products and materials in use; and (iii) regenerate natural systems.¹

The concept of **circular economy** is not new. Long time ago people converted unused clothes into papers, fed their domestic pets with waste food, and built new houses with the remains of old houses². Nonetheless, the one thing that makes our situation today different is the type of material used. Currently, many materials that are discarded after being consumed are not degradable, and with the increasing amount, they have and will continue to pose a threat to the environment and people, and eventually to our economy. This is what happens in the **linear economy**, where materials that have been used at least one time will go directly to the waste bin. The case of plastic bags being thrown away after being used only one time is arguably the worst example of this issue.

Embracing the circular economy will require changing the way we do business, produce and consume. It requires that everyone in the economy reuse, recycle, refurbish, and reduce their utilization of the resources provided by the environment. From the producers' side, it may go all the way to redesigning the products and production process. Essentially, it requires some thinking and strategizing in ensuring more efficient use of the inputs and resources, at a larger scale.

While the circular economy can reduce environmental damage, it can also bring about significant economic benefits. A recent study³ found out that implementing the methods of circular economy in the European Union may result in an annual net economic benefit of €1,8 trillion and cost saving of €600 billion a year by 2030. The study found out that most of the EU area still follows the linear

¹ www.ellenmacarthurfoundation.org

² <https://countercurrents.org/2018/12/07/how-circular-is-the-circular-economy/>

³ <https://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/europes-circular-economy-opportunity>

model: make, use and discard. Shifting to the circular model will incur some significant costs at the beginning, but if managed well, will pay off in the longer run.

The EU has been very active in transitioning to circular economic ways of doing business and consuming products. The benefits of improved environment, cleaner air, more efficient use of resources, and more sustainable economies are well known. ASEAN will benefit greatly by taking into account circular economic methods when collaborating with all stakeholders to achieve economic integration by ensuring that the whole process can bring about long-term benefits for everyone.

Against this backdrop, the 2019 ASEAN-U.S. Science Prize for Women will focus on circular economy, and emphasize how the circular economy can bring about positive outcomes for Southeast Asia. The prize seeks female applicants who are engaged in research related to the circular economy in the region and who are role models for other women working in and pursuing careers in science, technology, engineering and math (STEM) fields.

Along with recognition for their achievements, applicants are eligible to receive cash awards of \$20,000 (first winner) and \$5,000 (honorable mention), as well as separate provisions for travel and lodging to attend and compete in a pitch competition in June 2019 during the ASEAN-US Consultation on S&T in Indonesia.