Accelerating the shift to the circular economy

What is the circular economy?

Most organisations agree with the definition provided by the Ellen MacArthur Foundation, recognised as global experts in circular economy development, practice and analysis.

The Foundation defines the circular economy as "… an industrial system that is restorative or regenerative by intention and design. It replaces the 'end-of-life' concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models."[1]

It differs from the prevailing linear economy in that the latter is not sustainable, is actively detrimental to the environment and human wellbeing, and threatens the viability of human and other biological life on Earth if drastic action is not taken to change how we take, make, use and dispose of natural resources. A simplified diagram illustrating the circular economy can be found in Figure 1.

There are several reasons for accelerating the shift from a linear economy to a circular economy. The reasons include:

Viability: We are destroying the ability of the planet to sustain human life. For the Caribbean and Trinidad and Tobago, the reality is stark. According to the Intergovernmental Panel on Climate Change (IPCC), average temperatures in the Caribbean have increased by 0.1° to 0.2°C per decade over the past three decades. Sea level rise has occurred at a rate of about two to four centimetres per decade over the past 33 years, presenting risks to freshwater resources and coastal populations dependent on tourism and agriculture. Implementing the circular economy places much less stress on the planet due to greatly reduced pollution and much lower levels of greenhouse gas emissions.

Waste: A linear economy generates lots of waste, presenting increasing difficulties for disposal. Trinidad's landfills receive approximately 700,000 tonnes of waste per year (1,500 to 2,000 tonnes per day), which on a per capita basis, averages between 1.5kg and 2.0kg per day. This is 66% household waste, with 33% of industrial, commercial, and institutional origin. Adopting the circular economy reduces waste generation as the residual from products is converted or used to make a new product. Toxic substances are eliminated and the waste discarded is divided or reused. Value is thus created through biological and/or technical cycles.

Environmental friendliness: Transitioning to a circular economy should be much more environmentally friendly, since sustainable goods production minimises waste, implying reduced waste production and greater efficiency in the making and using of goods.

Sustainability: The circular economy is more sustainable for several reasons. These include the use of closed ecosystem loops where waste is minimised, the use of renewable energy as much as is feasibly possible, and the fact that it requires systems thinking in which the action of one component of the ecosystem influences the outcome of another component.

What can we do to accelerate the transition?

We can accelerate the transition in several ways: through personal and community actions that reduce emissions of greenhouse gases, and actions that reduce the production of unusable excess goods or actions that reduce waste production. These interventions can be classified into the following six categories: mobility, healthcare, nutrition, consumables, communications and housing. To illustrate, we will focus on mobility and nutrition.

Mobility

- Travel less. We can learn a lot from the environmentally friendly behaviours practised during the COVID-19 lockdowns – a cut in long-distance travel and telecommuting for work. These can be further encouraged. Regional and local hubs allow residents to reach amenities within 15 minutes by foot, bike or public transport. Shared and virtual offices, telecommuting and working from home, when possible, can continue to be promoted by employers, especially as many companies acknowledge that staff productivity was maintained during the pandemic.
- Implement weight-reducing vehicle design improvements. These result in less steel and aluminium used for production, as well as lower fuel consumption and embodied energy.
- Keep your car for longer and share via car clubs/car pools, ride-sharing. Use public transport or use park-and-ride provisions to cut fuel consumption.
- Finally, design vehicles for reuse by optimising end-of-life vehicle management and the recycling of metal and plastic components.

Nutrition

- Slash excessive consumption before increasing production to tackle food shortages and scarcity.
- Use healthier, satiating foods first. Reduce the consumption of sugary beverages and refined, heavily processed items.
- Eat plant-based diets as they are much more efficient at meeting food and dietary requirements, as well as aiding in the reduction of greenhouse gases. Eating a primarily plant-based diet could slash global emissions by 1.32 billion tonnes of carbon dioxide equivalents. Circular shifts can also deliver secondary benefits such as a reduction in the packaging needed for food and reduced food waste.
- Support local as this can have substantial environmental benefits, which include reduced fuel inputs and lower transportation impact. Supporting or practising urban, organic and precision farming can eliminate synthetic fertiliser use, a major source of emissions.
- Cook clean by replacing biomass and black carbon producing stoves with clean cooking apparatuses, including advanced solar-electric stoves.
- Choose food that is sustainably sourced and managed according to environmental standards that enable regeneration. For example, a PAS2060 certification signifies a commitment to carbon neutrality by the food producer.

While these interventions can accelerate the transition to a circular economy, this requires a reconceptualisation of the interlinkages in an economy, as well as a comprehensive framework for transition. While some developed countries have begun the transition, many other countries have not begun a formal process, mingling circular aspirations with broader sustainability goals. While better than nothing, doing so can dilute the real and powerful benefits that can be gained by going circular.

Figure 1: Transitioning from a linear to a circular economy