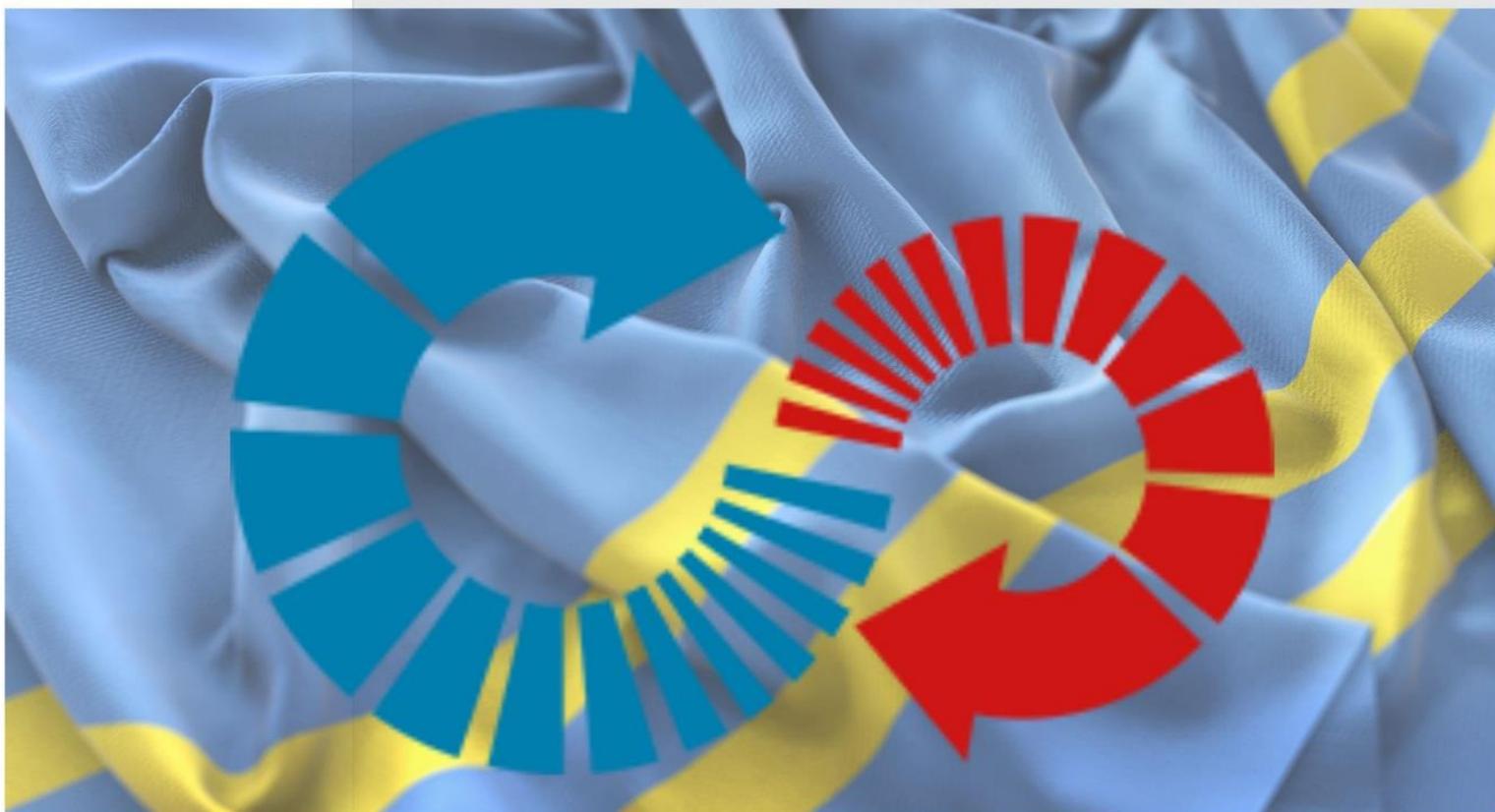

Circular Economy Vision 2050



**Aruba's strategic
vision to become a sustainable
circular island economy**



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Prologue

Aruba is presently confronted with significant sustainable development challenges. The island's geographical size, population size, and spatial use determines to a great extent the carrying capacity of the island. Its economy is mainly based on the premise of a continuously and limitless expansion of the tourism sector which continuously requires more built infrastructure, reclamation of land and natural resources, and an ever-larger volume and rate of tourist visits demanding high-class services.

This macro-economic growth model is directed to increase the size of the island economy and growth rate thus achieving greater percentage growth rates expressed as the Gross Domestic Product (GDP). This translates in aiming to continuously achieve ever higher numbers of consumers and levels of consumption rates of products, goods, food, energy, water, health, and other services offered to the tourist for a pleasant stay and holiday experience for the exchange of foreign investments and currency.

This economic model served Aruba for several decades as a suitable development strategy that enabled the island to progress into a relatively wealthy island but came at a cost that only in recent years is increasingly being recognized. This includes the significant waste problem on the island, the high cost of energy and water, lack of available and remaining space for present and future generation's use, the significant reduction in and damage to the natural environment, congestion, lack of access to fresh and healthy food, high rates of diseases, among other.

We currently power and sustain our island economy with electricity and water generated for most part from imported expensive fossil fuels, the complete transport sector is reliant on imported and expensive fossil fuels, there are limited agricultural activities providing healthy food obligating us to almost full dependency on food imports, there is no limited access to natural fresh water sources, we have an informal small scale fishing industry affected by global fish decline and climate change, there is brain drainage due to lack of attractive, progressive and innovating economic activities, among other. These are significant challenges to guarantee a good livelihood for the island community and sustainable development.

In recent years the Circular Economy is increasingly capturing global leaders attention as the next industrial revolution where a completely new alternative economic system is proposed to the present "take-make-waste" linear global economic model where human beings will be able to thrive on planet earth without impacting its present and future generation's ability to satisfy their needs.

Within the international development discourse there is an ongoing shift in focus and paradigm where the long-term vision and efforts are dedicated to systemic societal, economic, cultural, and organizational changes instead of treating environmental impacts as an externality. There is an increasing realization and acknowledgement that in order to guarantee that we as humankind can continue to thrive on planet earth, a drastic shift has to take place in how we go about maintaining a modern and high-quality lifestyle without over exploiting natural resources and polluting our own environment impacting the ability of our and future generation to satisfy our needs.

As the Minister in charge of Education, Science and Sustainable Development of the Government of Aruba, and in line with the Cabinet Wever-Croes' Coalition Agreement 2017-2021, we have taken the initiative to prepare a Strategic Vision for the development of a Circular Economy Policy Framework¹ for Aruba, in order to answer the following key question:

“How to justify and anchor Circular Economy in the Ministry's Policy Framework and Strategic Vision and National Development Policy Framework to address Climate Change and achieve Sustainable Development”

This Circular Economy Policy Vision includes:

- A concept vision with regard to the transition to a more Circular Economy, stimulated by the government;
- Possible strategic objectives within the economic reality (sectors) of Aruba;
- An overview of the most important stakeholders and mutual relationships;
- Possible interventions that can be deployed in the short term and that promote the transition to a more Circular Economy; and
- Possible instruments that the government can use to facilitate interventions.

We present this National Circular Economy Vision Statement as the start for further cooperation. Its further elaboration and implementation will rely on the knowledge, insights and suggestions from various parties in society. Accelerating the transition to a fully circular and sustainable economy requires efforts from all parties involved throughout the process.

We look forward to seeing the recommendations made in this 2050 Circular Economy Vision report adopted by the wider Government of Aruba to draft a National Sustainable

¹ Set of Principles and Long-Term Goals that form the basis of making rules and guidelines, and to give overall direction to planning and development of an organization.

Circular Economy Policy and Program and jump-start the transition toward becoming a Sustainable Circular Island Economy.

In closing, the Ministry thanks the Americas Sustainable Development Foundation (ASDF), a non-profit independent advisory foundation established since 1998 in Aruba, Dutch Caribbean highly specialized in the topic of Circular Economy and also the founding entity of the Circular Economy Platform of the Americas (CEP-Americas) for their technical support in preparing this document. And we look forward to their continued support in assisting the Government of Aruba in converting this Vision into actionable activities and positive results.



His Excellency
Dr. Armando Rudy Lampe
Minister of Education, Science and Sustainable Development
Government of Aruba

Table of Content

INTRODUCTION	6
REQUEST FOR ADVISORY	6
DRIVING FORCES	7
POLICY CONTEXT	11
ARUBA BY 2050	18
CONCEPTUAL VISION	18
ARUBA’S POSITION	18
WHAT IS SUSTAINABLE CIRCULAR ECONOMY?	20
THE SUSTAINABLE CIRCULAR ECONOMY PRINCIPLES	20
CLIMATE CHANGE AND ACHIEVING SUSTAINABLE DEVELOPMENT	21
STRATEGIC OBJECTIVES	23
THE PATHWAY FOR ARUBA’S CIRCULAR TRANSITION	25
STRATEGIC OBJECTIVE #1: BUILD OUR PEOPLE’S AWARENESS, KNOWLEDGE AND SKILLS.	25
STRATEGIC OBJECTIVE #2: BUILD-UP OUR CAPACITY TO MANAGE PREFERRED MATERIALS.	29
STRATEGIC OBJECTIVE #3: CREATE INNOVATE AND CIRCULAR SOLUTIONS.	34
STRATEGIC OBJECTIVE #4: DEVELOP AND USE SUITABLE AND AVAILABLE RENEWABLE RESOURCES.	36
STRATEGIC OBJECTIVE #5: EXPORT ARUBAN KNOWLEDGE AND SKILLS.	37
WHAT IS GOVERNMENT’S ROLE IN THE TRANSITION?	39
FINAL CONSIDERATIONS	42

Introduction

Request for advisory

The Americas Sustainable Development Foundation (ASDF) has been requested by the Ministry of Education, Science and Sustainable Development of the Government of Aruba (MinESSD) to prepare a Strategic Vision for the development of a Circular Economy Policy Framework² for Aruba, in order to answer the following key question:

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This Circular Economy Policy Vision includes:

- A concept vision with regard to the transition to a more Circular Economy, stimulated by the government;
- Possible strategic objectives within the economic reality (sectors) of Aruba;
- An overview of the most important stakeholders and mutual relationships;
- Possible interventions that can be deployed in the short term and that promote the transition to a more Circular Economy; and
- Possible instruments that the government can use to facilitate interventions.

We look forward to seeing the recommendations made in this Advisory Report adopted by the Ministry of Education, Science and Sustainable Development and the wider Government of Aruba to draft a National Sustainable Circular Economy Policy and Program and jump-start the transition toward becoming a Sustainable Circular Island Economy.

MinESSD can use this National Circular Economy Vision Statement as the start for further cooperation. Its further elaboration and implementation will rely on the knowledge, insights and suggestions from various parties in society. Accelerating the transition to a fully circular and sustainable economy requires efforts from all parties involved throughout the process.

ASDF and the Circular Economy Platform of the Americas remain available to play an active role in the follow-up process. This role can relate to the detailed design and

² Set of Principles and Long-Term Goals that form the basis of making rules and guidelines, and to give overall direction to planning and development of an organization.

facilitating multi-sectorial input and presentation of a Government-wide Sustainable Circular Economy Program, and also help address market barriers (e.g. propose revenue models, taxation alternatives, technological solutions, etc.) and the creation of adequate conditions for a circular labor market and educational and capacity building system.

Driving forces

The Circular Economy is gaining significant international traction and is seen as the next industrial revolution where a completely new alternative economic system is proposed to the present "take-make-waste" linear global economic model where human beings will be able to thrive on planet earth without impacting its present and future generation's ability to satisfy their needs.

Within the international development discourse there is an ongoing shift in focus and paradigm where the long-term vision and efforts are dedicated to systemic societal, economic, cultural, and organizational changes instead of treating environmental impacts as an externality. There is an increasing realization and acknowledgement that in order to guarantee that we as humankind can continue to thrive on planet earth, a drastic shift has to take place in how we go about maintaining a modern and high-quality lifestyle without over exploiting natural resources and polluting our own environment impacting the ability of our and future generation to satisfy our needs.

Netherland's Circular Economy Ambitions

Lead by the Ministry of Infrastructure and the Environment, and the Ministry of Economic Affairs of the Netherlands, the Government of the Netherlands has in 2016 published a kingdom-wide program entitled **Netherlands Circular in 2050** which outlines a perspective for a future-proof, sustainable economy including for future generations. Wherein raw materials will be used and then safely reused effectively and efficiently in 2050, without harmful emissions to the environment. Insofar as new raw materials are needed, these are extracted in a sustainable manner and further damage to the social and physical living environment and health is prevented. Products and materials are designed so that they can be reused with the least possible loss of value and without harmful emissions to the environment.

Circular Economy in the European Union

At the European Union level, the European Commission submitted an action plan and package of legislative proposals on 02 December 2015 to move from "waste" to "raw material" and to advance the Circular Economy. As chair, the Netherlands presented the Circular Economy action plan and legislative package on the agenda. The Commission's

Circular Economy package and the Council conclusions adopted by the Environment Council on 20 June 2016 constitute an ambitious European policy agenda³. As recently as 04 March 2019, the European Commission adopted a comprehensive report on the 3-year implementation of the Circular Economy Action Plan. The report presents the main achievements under the Action Plan and sketches out future challenges to shaping the European Union economy and paving the way towards a climate-neutral, circular economy where pressure on natural and freshwater resources as well as ecosystems is minimized⁴.

Aruba's Cabinet's Coalition Agreement 2017-2021

When assessing the present cabinet's coalition agreement (2017 – 2021), specific reference is made to "Circular Economy" as part of this Cabinet's focus on promoting economic wellbeing. The overarching goal is to improve the investment climate in Aruba, and stimulate an innovative, competitive and diversified economy that contributes to the creation of a higher quality of life for all its citizens. It is specifically stated that an economic management will be implemented as part of a "Circular Economy" that stimulates Sustainable Development, in a systemic manner, taking into account our human and natural resources⁵.

Within the primary sector (agriculture, animal husbandry, fishery, etc.) also specific reference is made to "Circular Economy" as a means to explore possibilities of the use of recycled products and re-usable resources within this sector.

Why Aruba needs to commit to Sustainable Circular Economy

Aruba as a small relatively wealthy island located in the Caribbean Sea is very vulnerable to external geopolitical, economic, and technological changes due to the island economy's dependence on materials, food, water, and energy needs, and therefore cannot guarantee a sustained quality of life for its people on the long-term.

Its carrying capacity, natural environment, and the quality of life of its people is significantly under pressure because of Aruba's ongoing commitment to a linear economic development paradigm where it is believed that by expanding and adding more infrastructure (like buildings and roads) and stimulating higher levels of consumption

³ Ministry of Infrastructure and the Environment and the Ministry of Economic Affairs of the Netherlands, *Nederland Circulair in 2050*, Rijksbreed Programma Circulaire Economie, published September 2016, available at URL: <https://www.rijksoverheid.nl/onderwerpen/circulaire-economie> (retrieved April 2019).

⁴ European Commission, Directorate-General for the Environment, *Environmental Policies, Circular Economy*, available at URL: http://ec.europa.eu/environment/circular-economy/index_en.htm (retrieved April 2019)

⁵ Hunto pa Aruba, *Programa di Gobernacion 2017-2021 entre partidonan MEP, POR y ReD*, published November 2017 (in Papiamentu), available at URL: https://issuu.com/juanyrausquin/docs/regeerakkoord_mep_por_red (retrieved April 2019).

(use) of goods and products mostly made of unsuitable materials and chemicals is the best and most effective means to generating financial capital and social wellbeing.

This linear economic model where more than 95% of goods, materials and products composed of a wide variety of chemical compounds and sometimes unknown substances are imported without thinking of their toxicity levels, their impact on public health and the environment, or about their final destination which include among other the Parkietenbos landfill, illegal dump sites, or in the island's soil, sub-soil, air, water ways, and surrounding sea is a result of an un-sustainable "import-use-waste" economic model with a high societal cost.

We recognize that we need to change the way we live, import, use and consume stuff, and discard resources without thinking about the consequences and also realize and recognize that our island is not blessed with excessive exploitable natural resources to sustain our economy and need to strengthen the resources that we do have, which is our human capacity and intellect.

Aruba's present Cabinet recognizes by its commitment to implementing an economic management as part of a Circular Economy for Sustainable Development that there is a need for re-inventing its macro-economic development model to achieve sustainable development, and as part of the Dutch Kingdom and with its close relationship with the European Union is vested in exploring opportunities for its role and benefits to be obtained in the transition toward circularity. Circular Economy opportunities and benefits may include:

Aruba as a Sustainable Circular Economy knowledge hub.

Due to Aruba's relationship with the Netherlands through the Kingdom and Europe, the island is uniquely positioned to access international cutting-edge and competitive Circular Economy business models and solutions and gain and exchange knowledge and built expertise in niche markets, such as small scale and decentralized circular economy solutions for island nations and small communities. Building a knowledge-based economy is a natural route to take as the island's population status as Dutch Citizens allows the young generation to access a wide spectrum of educational and professional development opportunities in the Netherlands, and over-time increasingly at home.

Organic Farm to Table Food.

Aruba can and needs to develop small scale organic and sustainable farming to supply all local food needs. Farmers should be incentivized and supported to incorporate innovative technologies and sustainable practices for the local production of healthy fruits and

vegetables and animal products. Also, research and development should be stimulated within the primary sector, as the exploration, cultivation and harvesting of suitable and sustainable biomass resources as raw material for products and solutions within circular biological cycles.

Sustainable Circular Economy as a Business Opportunity.

A key benefit of endeavoring in Sustainable Circular Economy business opportunities is that it helps address the resource scarcity and dependency of Aruba's economy on foreign resources, external developments, and price volatilities, including access to renewable energy, clean water, materials and healthy food. Start-ups and entrepreneurs need to be supported in their endeavor of creating new products and services compatible with the sustainable circular economy principles.

Creation of new job opportunities at all levels of specializations.

New Sustainable Circular Economy business endeavors will open up new productive activities and require new skills set and expertise and therefore job creation. Shifting to circular economic activities will open space and require highly educated professionals which helps increase and balance the overall working class with a higher degree of quality and well-paid jobs.

Anticipate and respond to macro-economic risks.

Sustainable Circular Economy offers a unique decision-making framework to help Aruba become more resilient to external shocks and transition from an import-dependent economy into a net-exporting and value creating island economy.

Optimization and balanced physical planning and infrastructure.

Sustainable Circular Economy thinking and decision making significantly helps assessing and determining suitable choices for the spatial planning and physical infrastructural development on a small island as Aruba.

Because of these and more opportunities, the Ministry of Education, Science and Sustainable Development of Aruba (MinESSD) recognizes the importance of Circular Economy as a critical component of Aruba's Sustainable Development Policy and has therefore taken the initiative to lead the process of setting up a national strategic vision and policy framework to facilitate the process of developing the sector specific policies and related strategic objectives to enable the transition of Aruba to become a Sustainable Circular Island Economy.

Policy Context

In order for this Circular Economy vision to have any resonance and buy-in government-wide, it is important to inter-relate this topic with the existing international and national policy framework and cabinet’s coalition agreement, and explain where Circular Economy could fit within the national development policy context and support ongoing government programs and initiatives.

First of all, the present Cabinet has chosen to take into account and use the United Nation’s Sustainable Development Goals Framework for the operationalization of its 2017-2021 coalition agreement. This offers a very opportune configuration to integrate Circular Economy principles within the ongoing national strategic development process and plan.

Global Sustainable Development Commitments

At the United Nations, the principle framework for concerted action has since 2015 been the 2030 Agenda for Sustainable Development. This is a resolution adopted by the General Assembly of the United Nations on 25 September 2015. The Agenda includes 17 Sustainable Development Goals (SDGs) and 169 associated targets. The Agenda encompasses a number of central issues that are particularly relevant to the sustainable development and wellbeing of Aruba.



Figure 1 Illustration of the United Nations 17 Sustainable Development Goals of the Agenda 2030

Within this Agenda 2030 context, Aruba has signed the UN Multi-Country Sustainable Development Framework (MSDF) for the Caribbean which is a business plan for the UN agencies, funds and programs in the English and Dutch speaking Caribbean for the period January 2017 to December 2021.

The UN MSDF supports the realization of the Sustainable Development Goals (SDGs), the SAMOA Pathway and other international development aspirations, and the national development plans of the individual countries in the English and Dutch speaking Caribbean. It is also intended to support the promotion of all the international human rights that have been ratified in the English and Dutch speaking Caribbean.

The United Nations System in the English and Dutch speaking Caribbean consists of five (5) United Nations Country Teams (UNCTs) in Belize, Guyana, Jamaica, Suriname, and Trinidad and Tobago, as well as one (1) United Nations Sub-Regional Team (UNST) for Barbados and the Organization of Eastern Caribbean States (OECS). And the participating island nations are Anguilla, Antigua and Barbuda, the British Virgin Islands, the Commonwealth of Dominica, Grenada, Montserrat, the Federation of St. Christopher (St. Kitts) and Nevis, St. Lucia, and St. Vincent and the Grenadines which are covered by the Barbados and the OECS Office. The Trinidad and Tobago Office covers Aruba, Curacao and Sint Maarten, while the Jamaica Office covers the Bahamas, Bermuda, the Cayman Islands, as well as Turks and Caicos.⁶

Furthermore, several agencies within the UN system have recently since 2015 forward started with developing stand-alone initiatives and programs relating to Circular Economy. At the UN Secretariat level, its only since 2018 that Circular Economy is becoming recognized by the United Nations General Assembly as an important development paradigm to help address and implement the UN Sustainable Development Goals. Permanent bodies such as UN Conference on Trade and Development is one of the first adopters of the Circular Economy concept and reports to the UN General Assembly and the UN Economic and Social Council (ECOSOC)⁷.

As a result of gradual awareness raising, through a Joint Meeting of ECOSOC and the Second Committee of the General Assembly at the 74th UN General Assembly, the first formal meeting about Circular Economy was held on October 10, 2018. In this plenary meeting, the Circular Economy was presented as an economy in which waste and pollution do not exist by design, products and materials are kept in use, and natural

⁶ United Nations Caribbean, the 2030 Agenda, available at URL: <http://www.2030caribbean.org/content/unct/caribbean/en/home/sustainable-development-goals/2030-agenda.html> (retrieved April 2019)

⁷ United Nations Conference on Trade and Development (UNCTAD), Trade and Environment, Circular Economy, institutional website available at URL: <https://unctad.org/en/Pages/DITC/Trade-and-Environment/Circular-Economy.aspx> (retrieved April 2019)

systems are regenerated, and which can be leveraged to accelerate the implementation of the 2030 Agenda and Sustainable Development Goals⁸.

This is considered the formal commencement of the acceptance and adoption of the Circular Economy concept at the UN Secretariat level which will highly incentivize and influence all UN agencies, Regional Multilateral Organizations, and Member States in developing new programs and initiatives relating to Circular Economy. And in-time become an important component of the global policy framework.

Ongoing National Strategic Policy Development

On Aruba, in January 2017 a national Sustainable Development Goals (SDG) committee was set up to guide the process of stakeholder engagement and confirm the interpretation of the UN SDGs to Aruba's context. This process is led by the Department of Economic Affairs, Commerce and Industry of Aruba (DEACI) under the Ministry of Finance, Economic Affairs, and Culture, where in mid-2018 a Roadmap for the SDG implementation in Aruba has been approved by the Minister's Council which is considered a National Strategic Plan (NSP) 2019-2022 for Aruba.

The NSP consists of national goals with a detailed Action Plan and resource specification. These resources include both human and financial capital. The NSP includes long-term strategies at the national level with an inter-disciplinary and multi-sectoral approach. These long-term strategies are formulated within the framework of the UN methodology with the participation of stakeholders that directly and/or indirectly influence sustainable development in Aruba. The targets and indicators are adapted to the local context and needs for each phase⁹.

On 18 April 2018, after the reinstatement of the SDG Commission by Ministerial Decree in January 2018, an Institutional Framework for the National SDG Commission was set up and approved. This defines the National SDG Commission as a high-level inter-departmental body that is directly under the purview of the (1) Prime-Minister, (2) Minister of Finance, Economic Affairs and Culture (MinFEC) and (3) the Minister of Education, Science and Sustainable Development (MinESSD)¹⁰.

8 Circular Economy for the SDGs: From Concept to Practice - Joint meeting: Second Committee, 7th meeting - General Assembly, 73rd session and Economic and Social Council, 3rd plenary meeting, held on October 10, 2018, meeting recording available at URL:

<http://webtv.un.org/search/circular-economy-for-the-sdgs-from-concept-to-practice-joint-meeting-second-committee-7th-meeting-general-assembly-73rd-session-and-economic-and-social-council-3rd-plenary-meeting/5847160146001/?term=&lan=english&cat=2nd%20Committee&page=3>

9 Department of Economic Affairs, Commerce and Industry of Aruba (DEACI), Sustainable Development Goals, institutional website available at URL: <https://www.deaci.aw/sustainable-development/sustainable-development-goals/> (retrieved April 2019).

10 Ministry of General Affairs, Integrity, Government Apparatus, Innovation and Energy, Government of Aruba, Synopsis, A Roadmap for SDG implementation in Aruba, published September 2018, available at URL: <http://www.sustainablesids.org/wp-content/uploads/2018/09/The-Aruba-SDG-Roadmap.pdf> (retrieved April 2019)

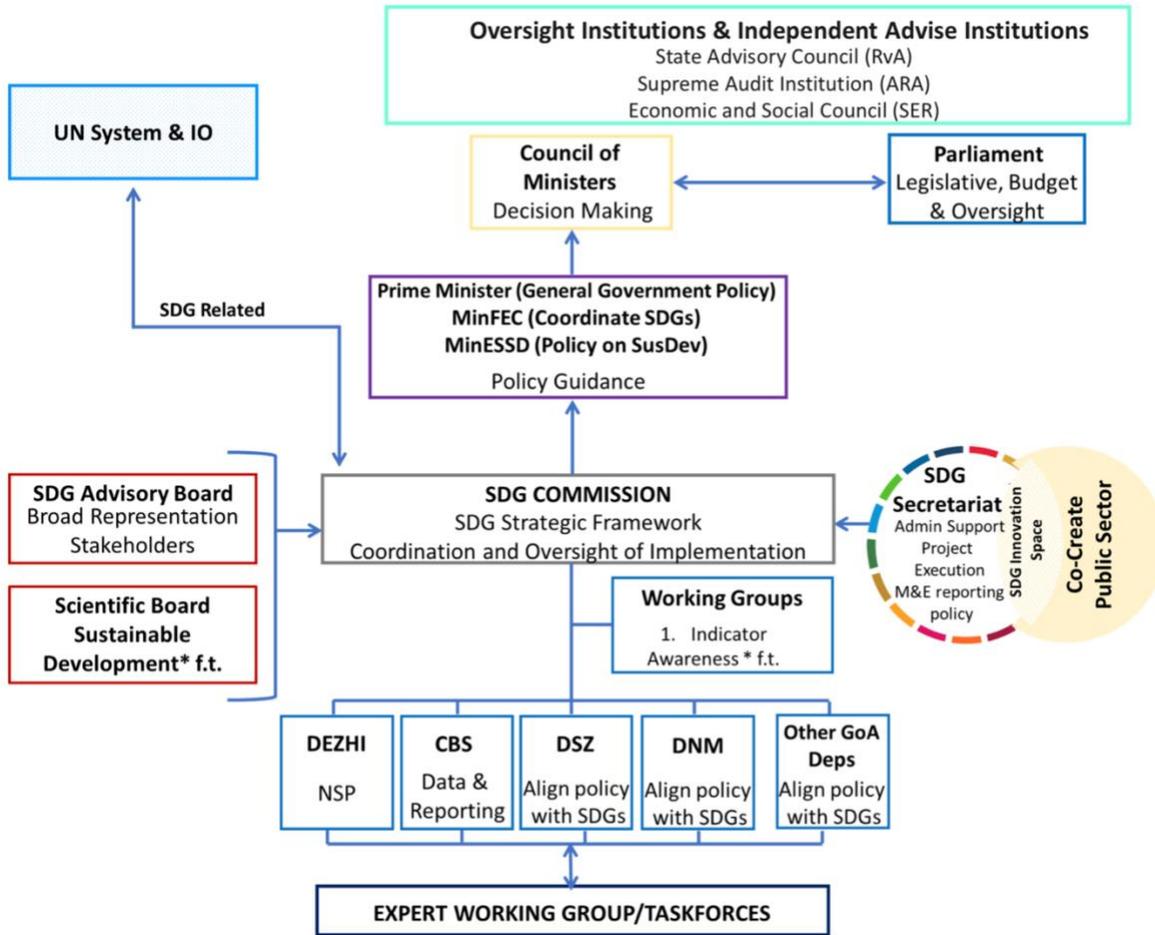


Figure 2 Aruba's SDG Commissions Reporting Governance (SDG Roadmap Aruba, 2018)

The reason for elaborating on Aruba’s SDG Governance and the outcomes of the SDG Roadmap, is because the concept of Circular Economy is best initiated within the existing SDG governance framework and is very compatible with the “Natural Resources Management” Accelerator, one of the nine (9) identified accelerators for the implementation and reporting of Aruba’s compliance to the UN 2030 Agenda.

This SDG Accelerator includes SDG 6 (Clean Water and Sanitation), SDG 8 (Decent Work and Economic Growth), SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Production and Consumption), SDG 13 (Climate Action), SDG 14 (Life below Water), SDG 15 (Life on Land) and fits with SDG 17 (Partnerships for the Goals) as a model for achieving Sustainable Development.

When looking specifically into the “Natural Resources Management” Accelerator as part of the latest formal reporting on the status of implementation of the Sustainable Development Goals by Aruba as part of the Dutch Kingdom at the occasion of the 2017

United Nations High-Level Political Forum on Sustainable Development¹¹ it can be concluded that there is significant space for improvement and need for having a concise and coherent Sustainable Circular Economy policy that effectively addresses all the SDGs included under this Accelerator.

Table 1 Summary of reported outcomes by Aruba upon implementation of the UN SDGs under the Natural Resource Management Accelerator (Kingdom of the Netherlands, 2017)

Sustainable Development Goal (SDG)	Reporting by Aruba (at 2017 UN HLPF)
SDG 6 (Clean Water and Sanitation)	Aruba provides excellent quality drinking water to its people and visitors. Its desalination technology is a success. Aruba achieves seawater desalination at the lowest cost in the region, despite the expensive technology. Aruba also has three wastewater treatment facilities, where around 95% of the island’s wastewater is fully treated. These advanced treatment plants use tertiary filtration and UV disinfection technologies, which allow a large proportion of wastewater to be reused for irrigation and internal plant operations. Virtually no untreated wastewater is disposed of in the sea.
SDG 8 (Decent Work and Economic Growth)	N/A
SDG 11 (Sustainable Cities and Communities)	The government of Aruba has adopted the concept of smart growth for community development and has developed programs for the renovation of the urban centers of Oranjestad and San Nicolas and 20 other neighborhoods on the island. The Bo Aruba (Your Aruba) and Bo Bario (Your Neighborhood) community enhancement programs have created more parks and public spaces to promote physical activity and walking and bring people together, thus linking the promotion of health, happiness and wellbeing.
SDG 12 (Responsible Production and Consumption)	N/A
SDG 13 (Climate Action)	<p>In responding to these challenges, Aruba has introduced incentives for businesses and individuals to obtain energy-efficient and renewable energy products.</p> <p>The first waste-to-energy plant to be built in the Caribbean or Latin America is located in Aruba. Owned and operated by a private company, it uses innovative technologies to reduce waste while simultaneously generating energy. The plant will generate 2 MW in</p>

¹¹ Ministry of Foreign Affairs of the Netherlands, Report on the implementation of the Sustainable Development Goals, published July 2017, available at URL: <https://sustainabledevelopment.un.org/content/documents/16109Netherlands.pdf> (retrieved April 2019)

Sustainable Development Goal (SDG)	Reporting by Aruba (at 2017 UN HLPF)
	its first phase and up to 8 MW in its second. The water and electricity company WEB Aruba will feed all the power generated into the grid. All recyclable material will continue to be extracted from the waste and exported.
SDG 14 (Life below Water)	Aruba is proud of its beaches and its clean sea, as virtually all wastewater is treated before being discharged into the sea. The country recognizes the ecological importance of marine life and the need for responsible management of species by protecting and preserving the marine environment, wildlife and the coral reef.
SDG 15 (Life on Land)	Aruba has a large nature reserve, Arikok National Park, which covers nearly 33% of the island and includes the protected wetlands site Spanish Lagoon. It also has several important bird habitats recognized by Birdlife International. Indigenous flora and fauna are regularly monitored and studied on the island as part of ensuring the preservation of its rich natural habitat.
SDG 17 (Partnerships for the Goals)	Aruba, Curaçao, and St Maarten have all signed the UN Multi-Country Sustainable Development Framework (MSDF) for the Caribbean. The Framework guarantees national ownership while promoting regional synergies in implementing the SDGs. It primarily focuses on the priority areas for the Caribbean, which are the basis for regional collaboration with the UN system. The UN MSDF gives countries a platform to access the UN system’s global expertise and experience at both country and regional level.

It is important to note that under SDG 8 (Decent Work and Economic Growth) and SDG 12 relating to Responsible Production and Consumption, Aruba had no result or update to provide. And these fit, next to the other presented SGDs, exactly within the overarching goals and rationale for the adoption of Circular Economy principles and paradigm.

To confirm this, the Netherlands in this same reporting, described their commitment and efforts regarding promoting Circular Economy as deliverable to SDG 12. Highlighting programs to prevent food waste, a National Waste Management Plan and the National Raw Materials Agreement which are all part of a Government-wide Program for a Circular Economy.

Through the Sustainable Trade Initiative, and in partnership with Solidaridad and other concerned organizations, the Netherlands is striving towards more sustainable production of raw materials. It is working with commodity-exporting countries like phosphate producer Morocco to promote sustainable economic growth, and promoting socially

responsible procurement of goods, for instance through the Circular Procurement Green Deal and the 'Infranature' Green Deal. It is also investing in the transition to a Circular Economy in other countries by exporting useful knowledge.

This latter point is another important issue for Aruba's long-term vision of building a knowledge-based, innovative, competitive and diversified economy with expertise and skills in the field of Circular Economy.

Furthermore, Sustainable Circular Economy paradigm addresses one of the SDG's Commission's key conclusions that in Aruba, prosperity must go beyond material concerns and success or a larger GDP, to encompass quality of life and wellbeing. Sustainable prosperity requires 'doing more with less', so that prosperity for people today does not diminish the quality of life of future generations.

The conclusion is that realizing a Sustainable Circular Island Economy by 2050 as a long-term policy vision is justified and merits government-wide adoption and support. The ongoing National Strategic Development Process linked to the UN Sustainable Development Goals Framework allows for the suitable integration and anchoring of Sustainable Circular Economy principles to effectively address the SDGs reported under the "Natural Resource Management" Accelerator which includes mitigating Climate Change and achieving Sustainable Development.

Aruba by 2050

Our Statement of Intent

Conceptual Vision

By 2050 our island's economy will be an innovative, competitive, and diversified knowledge-based economy blessed with real-case proven and commercially viable small scale and decentralized sustainable circular economy solutions that can be exported as Aruban' knowledge, products and services to other islands and small communities across the globe as a value added macro-economic activity.

By then we will have figured out the way to offset our dependence on imported energy, food, materials, and other natural resources to become more resilient and sustain and improve our island communities life styles and satisfy the needs of our present and future generations.

We will live in a waste free society where all can enjoy the island's beauty and natural environment while living under decent conditions and with decent jobs and opportunities to grow and thrive. In this new economy, waste does not exist, and we will only refer to assets, goods and nutrients when dealing with end-of-use products.

Our island will remain a welcoming island to all that want to abide to our rules and contribute to our set goals of creating an open economy driven and guided by the Sustainable Circular Economy principles to achieve a diversified, relevant, competitive, and attractive place to establish, invest and start new innovative and groundbreaking knowledge- and services-based businesses and industry.

Aruba's position

Aruba is uniquely positioned to build upon its people's present knowledge base and create a suitable educational and capacity building system to prepare a new generation of specialized professionals to bring about Sustainable Circular Economy solutions in Aruba and beyond.

We will learn how to deal with materials, chemicals, and goods that are imported into the island territory and make the effort to investigate and stimulate the import of valuable and preferred material and chemicals that can be re-used and re-inserted in the island local economy through perpetual use cycles.

We want to demonstrate to the international community that a sustainable lifestyle is possible within the present time and globalized economy. We aim to use the Sustainable

Circular Economy Principles as a means to achieve eco-effective growth and recouple the use of natural resources with the continued need to sustain and build new capital using preferred materials, eco-intelligent design, solutions and services.

We will showcase that a small island economy can become a net carbon positive society with the ability to contribute positively and with an added value to our surrounding region and lead the way in how to effectively contribute to mitigating Climate Change.

Our Aruban people will be known as conscious, knowledgeable, creative and innovative people with multiple skills and abilities to positively assist and contribute to Sustainable Development challenges in Aruba and across the globe.

We are conscious that human knowledge and skills are the most critical national assets we have to our disposal to develop our island economy in a sustainable manner. It's not the beach, sun, or nature alone, but we need an innovative and knowledge-based economy which does not require the import or exploitation of physical natural resources and enables the creation and export of Aruban knowledge.

Therefore, the Government's overarching goal is to concentrate on our people as the most valuable asset for Aruba's sustainable future.

What is Sustainable Circular Economy?

The **Sustainable Circular Economy** represents an alternative paradigm to the present “take-make-waste” linear global economic model, based on the idea of us as human beings aiming to observe, learn and apply the principles of nature to enable us as a species to thrive on planet earth without harming it and ourselves.

Nature is composed of multiple complex ecosystems wherein simultaneous cyclical processes take place where materials and chemicals are continuously used, transformed and exchanged safely without leading to wastage or contamination. Everything used in nature is reused over and over to grow mass and complexity without causing negative impacts while powered by the sun.

And based on this idea, the Sustainable Circular Economy serves as a new direction for us as human beings to reconfigure our operating system (economy and society), and re-assess the materials and chemicals we use, the processes we apply to extract and transform them, and the things we make and use, to sustain ourselves, satisfy our needs, and thrive on earth with the intention not to contaminate our surroundings and harm ourselves in the process.

For this Sustainable Circular Economy Policy Framework, the following operational definition is proposed:

*"A **Sustainable Circular Economy** is intentionally designed to be a restorative, regenerative and resilient economy with positive and beneficial results to build economic, environmental and social abundance, which is shared equally for the benefit of all species at all times while safely reusing and recirculating materials perpetually as technical and biological nutrients, fed by clean and renewable energy, valuing clean water and celebrating diversity".*

(Alston, K. and de Cuba, K., Circular Economy Platform of the Americas, January 2019).

The Sustainable Circular Economy principles

Creating a clear definition of a Sustainable Circular Economy can sacrifice part of the granular detail that is missing (for example, the misunderstanding that the circular economy is simply more recycling, or the risk of a circular economy that is not sustainable). This is why the following principles are included to serve as a guide in decision making.

A Sustainable Circular Economy:

- Aims to first re-materialize services and needs;
- Always includes Preferred Materials¹²;
- Can also include considerations for energy and water;
- Is intentionally setup to closing the loop of safe material flows in technical and biological cycles;
- Always offers positive economic, environmental and social benefits (sustainable development principles), to avoid an unsustainable model and create beneficial outcomes;
- Is powered by clean and renewable energy; and
- Clean water and biodiversity are valued.

This concept goes beyond the traditional concept of resource-efficiency of some environmental approaches that only aim to reduce negative impact actions or be less bad. Instead the overarching goal is to create better and positive outcomes.

Climate Change and achieving Sustainable Development

The way we as humans extract, use, and discard resources from and back into nature is driven by the present global linear economic model and society's mindset. This is an unsustainable model based on the assumption of unlimited access to affordable and suitable natural resources to sustain our modern economy and lifestyles, which not only results in us overexploiting the limited natural resources on the planet, but while at it, also contaminate our direct and global environment with toxic chemicals or un-intended levels of concentrations of substances into the air, water and soil impacting our own long-term ability to satisfy our present and future needs and eventual survival on earth.

Sustainable Circular Economy thinking does not only have implications on how we need to set up our new global economy and societal set-up, but also provides guidance on how to bring about the process of change. The so-called Sustainable Circular Economy principles are critical for proper decision making and, in this case, policy making, and help guide decision makers and the community as a whole in the right direction for the transition toward a Sustainable Circular Island Economy.

By applying re-materialization principles, and there after eco-intelligent design and selective use of suitable and preferred materials and chemicals the process of extraction, manipulation, transformation, and use in products can be performed without resulting in contamination of water, soil, and air (through Greenhouse Gas – GHG – emissions) with

¹² The concept of Preferred Materials is that any material, chemical, resource, and/or substance to be used in a Sustainable Circular Economy cannot be toxic, carcinogenic, or lead to health and environmental impact.

toxic substances and excessive concentration of certain materials and chemicals in unwanted environments, such as the global challenge of Climate Change.

By bringing about sustainable and cyclical production and consumption patterns, the overall net pollution is diminished through healthy use-cycles of any products or material that is extracted, transformed, used, and re-used in the economy.

This may sound utopic, but will be the necessary thing to do, to allow us as human beings survive on earth. And this is one of the reasons for urgency in creating a global consensus to trigger concerted Circular Economy inspired action to achieve sustainable development. And we as Aruban's want to lead the way in showing how we are able to create a Sustainable Circular Island Economy.

Strategic objectives

The overarching goal for Aruba's 2050 Sustainable Circular Economy transition agenda is to guide decision makers and facilitate the intensification and accelerate the transition to become the leading Sustainable Circular Island Economy in the globe.

The Aruba Government's principal role is to create the enabling environment and address any market failures and un-wanted effects and stimulate and accelerate the transition toward a Sustainable Circular Island Economy. Its national overarching development strategy and policy should be broad and flexible that allows for experimenting, testing and continuous learning and incentivizes application of technological innovations.

In order to achieve this long-term vision of Aruba's Sustainable Circular Island Economy, the following five (5) strategic objectives are proposed:

1. Build our people's awareness, knowledge and skills.

We need to heavily invest in the education and training of our people to become conscious, knowledgeable and skillful people to preserve our natural assets, live, work and practice sustainable circular habits to achieve a sustainable island community.

2. Build-up our capacity to manage preferred materials.

We need to learn how to increase the amount, type and level of preferred materials and chemicals that enter the island territory and explore opportunities to grow biomass and biodegradable material on the island. These are materials and chemicals that are non-toxic, sustainably sourced, and have a pre-identified secondary or perpetual use within the local economy and/or can serve as resource for the making and exporting of a new added value products or technologies.

3. Create innovate and circular solutions.

We need to also heavily invest in our science, research and development (R&D) abilities and infrastructure, create the enabling conditions for learning and promote innovation to create and optimize circular economy solutions and business models using preferred materials to have real-case proven and commercially viable small scale and decentralized circular economy solutions.

4. Develop and use suitable and available renewable resources.

We need to invest and intelligently and sustainably use the natural and renewable resources available in our territory, both on land and in our surrounding ocean, to power our circular island economy and satisfy to the best extent possible our energy, water, food, and infrastructural needs for the present and future generations.

5. Export Aruban knowledge and skills.

To sustain the island's macro-economic wellbeing, we need to make sure our professionals, start-ups, small- and medium sized enterprises (SMEs), and larger businesses with competence in Sustainable Circular Economy solutions are supported and enabled to thrive on Aruba and more so build the necessary capacity to internationalize and compete in the global market and export Aruban knowledge and skills.

The pathway for Aruba's circular transition

The transition to a Sustainable Circular Island Economy requires a systematic societal change which involves all public and private partners and stakeholders to work together and coordinate efforts based on a common vision. The conceptualization, design, development and deployment of circular products and solutions, ideas and actions have to originate from and by different parties across supply and value chains, across sectors, across disciplines, involving companies, universities and NGOs at local, regional and international levels.

This requires Aruba's Government to commit to this long-term vision, and act as facilitator as well as a referee to coordinate or steer the collective public and private investments, efforts and activities toward the common vision of converting Aruba into a Sustainable Circular Island Economy by 2050.

In order to guide the transition, recommended interventions are presented for each Strategic Objective and are organized by chronological order or deemed suitable in timing for their implementation. Three time-bounded intervention categories are presented as (1) Short term (prior to 2021), (2) Medium term (2021 – 2030), and (3) Long term (by 2050).

Strategic Objective #1: Build our people's awareness, knowledge and skills.

The first recommendation is to start by stating a formal Government's intention for the island to prefer buying goods and services which are designed to cycle materials safely in Aruba's island economy. This can stimulate discussion, creation of general public awareness, and begin the process of stimulating the demand for circular products and solutions. Ultimately it will allow for the purchase of materials and products which can become long-term assets for use and perpetual reuse on the island.

The following short-, medium-, and long-term interventions are proposed to achieve this strategic objective:

Short Term (prior to 2021)

Intervention	Description	Key Stakeholders
<i>Set up a National Sustainable Circular Economy Dialogue.</i>	<p>This is a national platform composed of a select number of public and private partners (including policy makers, entrepreneurs, and other) with the pertinent background, knowledge, expertise and experience that together exchange knowledge, updates, innovations, and determine and recommend voluntary agreements, viable targets, standards, and incentives and regulations to be considered for conversion into law and its enforcement.</p> <p>This platform serves as an advisory platform to the Government to develop, adopt and enforce suitable legal instruments to stimulate the transition toward a Circular Island Economy.</p>	Select number of representatives of Government Departments and Agencies; Policy Makers; Commerce and Industry Associations, NGOs, Civil Society Groups, Entrepreneurs, and Business Owners committed to being part of the transition.
<i>Identify Communities of Circular Practice.</i>	Identify pioneering and leading individuals, businesses and organizations in Aruba that are engaged in developing sustainable circular economy solutions, products and services, and highlight their achievements through national and international outreach channels and build support for these communities of practice.	Ministry of Education, Science and Sustainable Development; Ministry of Finance, Economic Affairs and Culture; Ministry of Communications, Transport and Primary Sector; and communications and outreach departments of each ministry across the government.
<i>National awareness making campaign on Sustainable Circular Economy.</i>	<p>Throughout the process of transition, a continuous exchange of information and strategic communications need to take place to continuously enrich the people’s awareness and knowledge about Sustainable Circular Economy solutions and principles.</p> <p>Carefully designed public outreach campaigns need to be developed and continuously communicated to the general public through available media (written, TV, Radio, internet, etc.)</p>	Ministry of Education, Science and Sustainable Development; Ministry of Communications, Transport and Primary Sector; and communications and outreach departments of each ministry across the government.
<i>Engage in, attract, and facilitate</i>	Proper introduction to the concept of Sustainable Circular Economy is critical, and general awareness has to lead to enrichment and building consensus among	Ministry of Education, Science and Sustainable Development; the

Intervention	Description	Key Stakeholders
<p><i>international and regional awareness raising events, conferences and seminars on Circular Economy.</i></p>	<p>all parties and stakeholders in Aruba to have a common definition and understanding of the sustainable circular economy principles and achieve effective concerted action.</p> <p>Host and co-organize the 2020 edition of the Circular Economy Forum of the Americas (CEFA2020) to bring together international experts and strategic alliances in Aruba to learn about Aruba’s goals and targets, showcase progress, exchange, and establish strategic partnerships for helping make Aruba’s 2050 Circular Economy Vision possible.</p>	<p>Ministry of Finance, Economic Affairs and Culture; Ministry of General Affairs, Integrity, Government Organization; other relevant stakeholders.</p>
<p><i>Circular Public Procurement.</i></p>	<p>The Government of Aruba can lead by example, and institute a circular procurement system and use sustainable circular economy criteria, where preferred products and materials are purchased or procured and imported for upgrading the government apparatus and supply public programs, projects, and initiatives.</p>	<p>Ministry of Education, Science and Sustainable Development; Ministry of General Affairs, Integrity, Government Organization, Innovation & Energy; Ministry of Finance, Economic Affairs and Culture; and all Government Departments with authority to procure goods and services.</p>
<p><i>Building institutional capacity for education and professional preparation.</i></p>	<p>Strengthening the educational and academic institutions and related activities to prepare a new generation of conscious, knowledgeable and skillful people ready to help making the transition to a Circular Island Economy possible.</p> <p>Facilitate the establishment of strategic added-value institutional partnerships between Aruban academic institutions and leading international universities and research institutions specialized in Circular Economy.</p> <p>Launch and support an Academia-Private Sector Apprenticeship Program by combining the University of Aruba’s new SISSTEMS Faculty activities with companies in Aruba to work together on practical knowledge creation, applied research, and capacity building of a new work force with understanding of sustainable circular economy solutions.</p>	<p>Ministry of Education, Science and Sustainable Development; Ministry of Social Affairs and Labor; University of Aruba; interested business owners and representatives interested parties committed to the transition.</p>

Intervention	Description	Key Stakeholders
<i>Enter in dialogue with the Financial Sector and create a financing mechanism for circular solutions.</i>	<p>As financing circular innovation is a clear need for the transition toward a Sustainable Circular Island Economy, the Government can reach out and engage with public and private financial institutions to start a regular dialogue to exchange knowledge and identify opportunities for new financial products and needs in risk assessment in light of the sustainable circular economy.</p> <p>Beyond this regular dialogue, a national financing mechanism needs to be set up launching periodic grant competitions as seed funding for circular-minded startups and SMEs.</p>	<p>Ministry of Education, Science and Sustainable Development; Ministry of Finance, Economic Affairs and Culture; Central Bank of Aruba; Aruba Investment Bank; Commercial Banks; Credit Unions; Aruba Pension Fund; and interested financial sector representatives.</p>

Medium-Term (2021 – 2030)

Intervention	Description	Key Stakeholders
<i>Promote Sustainable Circular Lifestyles.</i>	<p>The way we purchase and use things is an important factor in the island’s community’s ability to transition toward a Sustainable Circular Island Economy.</p> <p>As the collective awareness and knowledge grows among the population, and a proper inventory is prepared of preferred materials for Aruba’s interest, and this is effectively communicated, and new circular business models are being developed, an Aruban citizen is informed and empowered to make conscious choices in purchase of products, goods and services.</p>	<p>Ministry of Education, Science and Sustainable Development; The Ministry of Finance, Economic Affairs and Culture; Ministry of Social Affairs and Labor; Ministry of Spatial Planning, Infrastructure and Environment.</p>
<i>Built Circular Economy Scientific Knowledge</i>	<p>To sustain the mid- to long-term ability to invent, develop and deploy sustainable circular materials, chemicals, products and solutions, the national scientific knowledge and capacity is critical and needs to continuously be developed, updated, and strengthened.</p> <p>New natural sciences-based faculties and research programs need to be developed and offered in Aruba and built home-grown knowledge and skills for the circular economy.</p>	<p>Ministry of Education, Science and Sustainable Development; The Ministry of Finance, Economic Affairs and Culture; Ministry of Social Affairs and Labor.</p>

Strategic Objective #2: Build-up our capacity to manage preferred materials.

To jump-start the transition process, a key recommendation is that we need to start right-away with making use of organic materials (organic waste) present on the island and explore ways to cultivate locally grown biomass, such as reed, bamboo, hemp, aloe, cacti, local trees, as the input materials for other productive processes. These might include creating a source of compost for use on island properties for small farmers, manufacturing biodegradable composites and products, and/or may include biomass-to-energy generation opportunities.

Another key recommendation is to start with purchasing or procuring products made of preferred biodegradable materials. A positive recent initiative is the Government's commitment to incentivize the changing from single-use plastics which are not able to be collected and reused and substituting with biodegradable materials which can be collected with organic waste and go into a new composting stream. This increases the economies of scale, and quality of input material (feedstock), and the viability of small- to medium scale biomass-to-energy technologies.

The essence behind these examples is to create the enabling conditions by making concrete choices and build the capacity to knowing what products and materials enter the island territory which should have a pre-identified secondary or perpetual use within the island's economy to build more capital and value-added assets.

Short Term (prior to 2021)

Intervention	Description	Key Stakeholders
<i>Identify critical value chains for Aruba's needs.</i>	<p>To realize circular innovations and solutions and their effective implementation, strategic added-value and complementary relationships need to be established and win-win cooperation networks created.</p> <p>Aruba's business community will require to learn to work closely together to improve coordination and co-invest in sustainable circular business opportunities that require the improvement of critical value chains for Aruba's island economy.</p> <p>The first step is to identify and prioritize value chains that contribute to Aruba's long-term vision and are compatible with the Sustainable Circular Economy principles.</p>	<p>Ministry of Education, Science and Sustainable Development; Ministry of Finance, Economic Affairs and Culture; Aruba Chamber of Commerce and Industry; Whole and Retailers; and interested business owners and representatives.</p>

Intervention	Description	Key Stakeholders
<i>Strategic market and business exchanges on Circular Economy among local businesses.</i>	<p>It is important to get in an early stage the buy-in and active engagement by the private sector to understand the value, implications, trade relations, market access, and business opportunities Sustainable Circular Economy brings about.</p> <p>The collective understanding and realization of the need and urgency for a comprehensive and common strategic positioning of Aruban businesses and the strengthening of priority sectors is critical for the further adoption of sustainable circular economy principles and implementation of circular business models.</p>	<p>Ministry of Education, Science and Sustainable Development; The Ministry of Finance, Economic Affairs and Culture; Aruba Chamber of Commerce and Industry; Private Business Owners, Entrepreneurs, other interested parties.</p>
<i>Launch a national Circular Design and Knowledge Development Program.</i>	<p>Business owners, entrepreneurs, students, and designers will be assisted, in interaction with scientists and international experts specialized in Circular Economy in workshops, with the development of new circular products, services, and business models.</p> <p>This program can benefit from the extensive network and international expertise of the Circular Economy Platform of the Americas, managed by ASDF, an Aruban-based non-profit international advisory foundation.</p>	<p>Ministry of Education, Science and Sustainable Development; the Ministry of Finance, Economic Affairs and Culture; Aruba Chamber of Commerce and Industry; Private Business Owners, Entrepreneurs, other interested parties.</p>
<i>Stimulate sectorial commitments and voluntary agreements.</i>	<p>Actors within the same sector, industry or value-chain can propose and agree upon sectorial targets and commitments and through these demonstrate their contribution to the national circular economy transition agenda.</p> <p>Establish strategic voluntary agreements with at least one sector/value-chain with the objective to learn and stimulate strategic collective and circular procurement by parties within the same sector. The sector actors will gain knowledge, expertise and build capacity to source and manage preferred materials.</p>	<p>Ministry of Education, Science and Sustainable Development; the Ministry of Finance, Economic Affairs and Culture; Aruba Chamber of Commerce and Industry; Private Business Owners, Entrepreneurs, other interested parties.</p>
<i>Finance and Strategic Support.</i>	<p>Small and Medium Sized Enterprises (SMEs) and Start-Ups are at the core of Aruba’s potential future success as a leading Sustainable Circular Island Economy. Investigate ways to eliminate or create clarity regarding</p>	<p>Ministry of Education, Science and Sustainable Development; the Ministry of Finance,</p>

Intervention	Description	Key Stakeholders
	<p>taxes and liability for companies registered and operating in Aruba. Create fiscal space for entrepreneurs to endeavor in circular innovation. Create room for experimentation with new materials and products and the application of regulations.</p>	<p>Economic Affairs and Culture; Ministry of General Affairs, Integrity, Government Organization, Central Bank of Aruba; Innovation & Energy; and relevant parties.</p>
<p><i>Address Waste Challenges through a Sustainable Circular Economy lens.</i></p>	<p>With the lack of an existing national Waste Management Policy and suitable Waste Management System and Technologies, there is a great opportunity to leap-frog toward application of sustainable circular solutions.</p> <p>It's recommended to pilot the implementation of a materials exchange on the island to enable connections to be made which with encourage and facilitate the "used materials" from one place to be a viable "input" for another business. Although the materials (waste) do not comply with the Sustainable Circular Economy principles, it's a means to trigger the transition to a more Circular Materials Management system and gradually improve the input with higher degrees of preferred materials.</p>	<p>Ministry of Education, Science and Sustainable Development; Ministry of Spatial Planning, Infrastructure and Environment; Ministry of Finance, Economic Affairs and Culture; Private Business Owners, Entrepreneurs, other interested parties.</p>
<p><i>Introduction of a Waste Disposal Tax.</i></p>	<p>There is a critical need to internalize the Cost of Externalities and develop ways to place a value on the cost of waste and internalize these costs such that it helps to create the economic conditions that stimulate a move to more sustainable circular alternatives.</p> <p>Clear and viable targets have to be established to obligate residential and business sectors to separate the organic waste from the general waste by charging disposal fees.</p> <p>Waste bins will have to regularly be inspected and in case not in compliance left on the curb until next scheduled pick-up. This is an effective means to enforce the separation at source of the organic matter from the general waste stream.</p>	<p>Ministry of Education, Science and Sustainable Development; Ministry of Spatial Planning, Infrastructure and Environment; and relevant parties.</p>
<p><i>Include Circular Fiscal Incentives</i></p>	<p>By offering the opportunity for investors and businesses to deduct their invest made in sustainable</p>	<p>Ministry of Education, Science and Sustainable</p>

Intervention	Description	Key Stakeholders
<i>in the ongoing Tax Regime Revision.</i>	circular economy compatible solutions, materials and products, from their revenue taxes a significant traction can be built in Aruba. Also consider give SMEs and Start-Ups a lead time (2 years) before they are taxed.	Development; the Ministry of Finance, Economic Affairs and Culture; Ministry of General Affairs, Integrity, Government Organization, Innovation & Energy; Ministry of Justice, Security and Integration; and other relevant parties.
<i>National Circular Economy Statistics.</i>	<p>A key means to measure progress toward the 2050 Sustainable Circular Economy vision is to gather primary data and information to compose baselines and databases relevant to Sustainable Circular Economy.</p> <p>An essential data series is a national annual materials flow analysis. This is to understand the type and volumes of material streams that enter, circulate and leave the island throughout a set periodic time frame. This and other relevant data series can be part of a National effort to comply with the UN Sustainable Development Goals (SDGs).</p>	Ministry of Education, Science and Sustainable Development; the Ministry of Finance, Economic Affairs and Culture; Central Bureau of Statistics; and other relevant parties.

Medium-Term (2021 – 2030)

Intervention	Description	Key Stakeholders
<i>Establish National Circular Procurement Protocol and Standards.</i>	<p>To make the transition lasting, new circularity legislation is required to stimulate circular procurement processes and tenders in all sectors of the economy throughout the coming decades.</p> <p>After the accumulated experience from the Government's own circular public procurement process, and the strategic voluntary agreements expire, national circular procurement standards may be set up and adopted. This is to enable the island to achieve greater representation of preferred materials entering the island territory and further the island's circular economy growth and strengthening.</p>	Ministry of Education, Science and Sustainable Development; Ministry of Finance, Economic Affairs and Culture; Aruba Chamber of Commerce and Industry; Whole and Retailers; and interested business owners and representatives.

These protocols and standards can influence the purchase of circular economy compatible office furniture, paper, ICT technology, hardware, food services, cars, packaging material, water and energy management, etc.

<i>Setting National Circular Business Standards and Certification Schemes.</i>	<p>To further develop and guarantee the long-term integrity of Sustainable Circular Economy's solutions and application in Aruba's island economy, it is important to establish clear and objective business performance standards and certification systems to filter, separate and recognize innovative Start-Ups, SMEs and Businesses from conventional and non-circular companies, products and solutions.</p> <p>The underlying idea is to guarantee the integrity of solutions and products that are in line with the sustainable circular economy principles. This is an intermediate step to exploring and investigating the need to establish mandatory circular economy product requirements.</p>	<p>Ministry of Education, Science and Sustainable Development; Ministry of Finance, Economic Affairs and Culture; Aruba Chamber of Commerce and Industry; Whole and Retailers; and interested business owners and representatives.</p>
<i>Train and Educate Public Decision Makers and Departments.</i>	<p>To enforce new protocols, standards, and mechanisms to stimulate or disincentivize certain activities in the economy it is critical to have the inspectors, law enforcing agents and public staff trained in sustainable circular economy principles.</p>	<p>Ministry of Education, Science and Sustainable Development; Ministry of Justice, Security and Integration; and all other law-enforcing agencies.</p>
<i>Establish an Independent Sustainable Circular Economy Enforcement Agency.</i>	<p>As is common in other nations, the concept of an independent law-enforcing Environmental Corporation is not new, what is, is its application as an instrument to enforce and guarantee compliance to all developed and adopted sustainable circular economy standards, policies, laws, permits, and regulations. This will be the executing agency of the Government that operates independent from the Ministry in charge of Circular Economy and Sustainable Development and operates based on the existing legal framework.</p>	<p>Ministry of Education, Science and Sustainable Development; the Ministry of Finance, Economic Affairs and Culture; Ministry of General Affairs, Integrity, Government Organization, Innovation & Energy; Ministry of Justice, Security and Integration; and other relevant parties.</p>

Strategic Objective #3: Create innovate and circular solutions.

Short Term (prior to 2021)

Intervention	Description	Key Stakeholders
<i>Stimulate and support Circular Economy Leadership and Entrepreneurship.</i>	Aruban companies and start-ups should be stimulated and supported to endeavor into circular entrepreneurship both local as internationally. This enables the business community to gain experience and gradually position itself in global value chains to open the gates and routes for the export of Aruban knowledge and skills, and potentially products and technologies.	Ministry of Education, Science and Sustainable Development; Ministry of Finance, Economic Affairs and Culture; Ministry of General Affairs, Integrity, Government Organization, Innovation & Energy; the Aruba Chamber of Commerce and Industry; other interested strategic partners.
<i>Set up a National Science and Innovation policy.</i>	The future Sustainable Circular Island Economy will require plenty of specialized knowledge and skills which should be built in Aruba. This needs to be supported through national science and innovation policy to channelize efforts and resources to strengthening the necessary academic institutions and creating research labs for performing specialized science investigation and R&D activities on the island.	Ministry of Education, Science and Sustainable Development; Ministry of General Affairs, Integrity, Government Organization, Innovation & Energy; other interested strategic partners.
<i>Food and Organic Matter.</i>	Promote research and development and application of innovative solutions to food production, stimulate local, decentralized, organic multi-owned farming and cultivation for own or community consumption where possible and enable and support research and development of alternative methods and technologies for mass cultivation of fruits and vegetables to supply the island economy.	Ministry of Education, Science and Sustainable Development; Ministry of General Affairs, Integrity, Government Organization, Innovation & Energy; Ministry of Transport, Communications and Primary Sector; and other relevant parties.
<i>Materials and Chemicals.</i>	Support the research in the identification, assessment, categorization of materials and chemicals that presently enter the island territory and build our	Ministry of Education, Science and Sustainable Development; Ministry of

Intervention	Description	Key Stakeholders
	<p>scientific knowledge and capacity to rank them upon their level of toxicity, re-usability, and potential productive use as resource for a next or perpetual use-cycles.</p> <p>Also support the investigation and sourcing of suitable and preferred materials and chemicals for pre-identified next or perpetual use within the local economy or as resource for a new added value exportable product.</p> <p>Explore and sustainably exploit local vegetation and locally grown biomass which include aloe, cacti, hemp, cannabis, trees, bamboo, and other vegetation as bio-materials for a circular economy.</p>	<p>General Affairs, Integrity, Government Organization, Innovation & Energy; Ministry of Spatial Planning, Infrastructure and Environment; and relevant parties.</p>
<i>Circular Mobility.</i>	<p>Stimulate behavioral changes in the island community to prevent the unnecessary mass mobility of people for home-work-home traffic, promote alternative modes of mobility, explore opportunities to improve the public transportation network and infrastructure, stimulate the use of alternative public and private transportation vehicles or technologies which are powered by renewable energy sources and designed and made of preferred, recoverable and reusable materials and chemicals to make effective use of their component at the end of the first use-cycle.</p>	<p>Ministry of Education, Science and Sustainable Development; Ministry of General Affairs, Integrity, Government Organization, Innovation & Energy; Ministry of Transport, Communications and Primary Sector; Ministry of Spatial Planning, Infrastructure and Environment; and other relevant parties.</p>
<i>Digitalization of solutions and services.</i>	<p>Enable the creation of a Sharing Economy, where the available resources (existing capital) is used by a larger number of people that contribute to reduction in resources use and intensity. Also, fintech solutions are considered here to optimize services provided on the island and dematerialize the need for materials.</p> <p>This links to for instance car-sharing schemes that help improve mobility and change from ownership to use structure (product-as-a-service).</p>	<p>Ministry of Education, Science and Sustainable Development; Ministry of General Affairs, Integrity, Government Organization, Innovation & Energy; Ministry of Finance, Economic Affairs and Culture; and other relevant parties.</p>
<i>Space optimization and</i>	<p>Promote the design open spaces for optimal multi-purpose use while preserving natural capital and the existing eco-services offered, integrate new eco-</p>	<p>Ministry of Education, Science and Sustainable Development; Ministry of</p>

Intervention	Description	Key Stakeholders
<i>use and circular building codes.</i>	intelligently designed buildings and infrastructure using preferred materials and powered by renewable energy, promote and facilitate the planting of local fruit trees in public spaces across the island territory to green public spaces, create shade and help moderate extreme heat and create comfortable micro-climate conditions in urbanized areas, while providing the island community access to local and healthy fruits for free consumption.	Spatial Planning, Infrastructure and Environment; Ministry of General Affairs, Integrity, Government Organization, Innovation & Energy; Ministry of Finance, Economic Affairs and Culture; Ministry of Transport, Communications and Primary Sector; and other relevant parties.
<i>Perceived higher capital requirements for Circular Economy.</i>	<p>Circular innovations generally are perceived to entail higher capital investment requirements. The return-on-investment times are indeed sometimes longer, because of changes in business models, such as when businesses want to keep possession of or recover their products and want to earn money through providing services.</p> <p>The scope of a business value chain is modified, where conscious pre-identification and selection of preferred products and materials, guarantees an added-value post-use revenue generating activity, as it is intentionally imported to serve as resource for multiple use cycles and financial transactions.</p> <p>Research is needed in assessing and confirming the economics of circular economy and showcase profitable business models and macro-economic performance.</p>	Ministry of Education, Science and Sustainable Development; Ministry of General Affairs, Integrity, Government Organization, Innovation & Energy; Ministry of Finance, Economic Affairs and Culture; and other relevant parties.

Strategic Objective #4: Develop and use suitable and available renewable resources.

Short Term (prior to 2021)

Intervention	Description	Key Stakeholders
<i>Water.</i>	Explore new methods and technologies to produce high quality fresh water from available ocean resources powered by renewable energy sources, categorize	Ministry of Education, Science and Sustainable Development; Ministry of

water resources by origin and quality (rainwater, groundwater or seawater) and stimulate the cascading use of fresh and clean water resources in residential, commercial, and industrial sectors on the island, and promote the creation of blue, brown and black water cycles categorized by the quality of the water and its intended use, in order to make optimal use of the limited available water resources on the island and apply a tailored and proper handling prior to reaching the ocean or sub-soil.

General Affairs, Integrity, Government Organization, Innovation & Energy; Ministry of Spatial Planning, Infrastructure and Environment; and relevant parties.

Energy.

Support the development and implementation of clean, renewable energy technologies and seek circular designs of such technologies.

Ministry of Education, Science and Sustainable Development; Ministry of General Affairs, Integrity, Government Organization, Innovation & Energy; and relevant parties.

There is an urgency to explore and assess the viability of Ocean Energy Technologies, including Ocean Thermal Energy Conversion (OTEC), Tidal, Wave and other renewable energy options compatible to a Circular Economy to exploit available marine renewable resources which will require 10 – 15 years of development.

On the short-medium term (next 5 – 10 years), a small-scale modular or flexible Waste-to-Energy/Water/Materials refinery should be considered as an intermediate and back-up solution to address the existing waste at Parkietenbos and other sites, and ongoing and projected waste generation while the transition toward a fully circular economy is made.

Strategic Objective #5: Export Aruban knowledge and skills.

Short Term (prior to 2021)

Intervention	Description	Key Stakeholders
<i>Announcing Government's Commitment to Investing in Aruba's Circular future.</i>	<p>The Government's role in setting the stage and pace for financing the needed interventions and creating mechanisms for facilitating and accelerating the transition to a Sustainable Circular Island Economy is essential.</p> <p>Having a clear national vision and policy toward making Aruba a globally leading circular island economy is important to send the right signal to the local and</p>	<p>Ministry of Education, Science and Sustainable Development; Ministry of Finance, Economic Affairs and Culture; Ministry of General Affairs, Integrity, Government Organization, Innovation & Energy; the Aruba</p>

Intervention	Description	Key Stakeholders
	<p>especially the international community and private sector and other critical actors in society.</p> <p>Both national and foreign investors require a nation’s commitment to its long-term vision and commitment to reducing their investment risks and justify opting for Aruba as a destination for establishing their business or representative office and contribute to Aruba’s transition to a Circular Island Economy with international knowledge, networks, and recognition.</p>	<p>Chamber of Commerce and Industry, Aruba Tourism Authority; Central Bank of Aruba; and other ministries and relevant institutions.</p>
<p><i>Position Aruba in strategic international Circular Economy initiatives.</i></p>	<p>With a clear vision and long-term commitment to Sustainable Circular Economy, Aruba can explore strategic alliances and international initiatives to position itself as a leading circular island economy and exploit the opportunities to co-develop new international circular solutions and methods, enter niche markets, and extract additional knowledge and attract expertise and investments to Aruba.</p> <p>Aruba has a unique opportunity to support and use the existing Circular Economy Platform of the Americas as its strategic internationalization mechanism with expertise in Circular Economy and significant international presence and recognition, created and powered by ASDF, an Aruban-based and lead non-profit advisory foundation that operates throughout the American Continent in bringing about Sustainable Development solutions.</p>	<p>Ministry of Education, Science and Sustainable Development; The Ministry of Finance, Economic Affairs and Culture; Ministry of General Affairs, Integrity, Government Organization, Innovation & Energy.</p>
<p><i>Promote the use of EU-OCT and Horizon 2020 Funds for Circular Economy projects.</i></p>	<p>Making use of Aruba’s status as an Overseas Country or Territory (OCT) of the European Union, position the Government and Strategic Private Partners to support locally registered companies and organizations entitled to apply for such EU funds to endeavor into Circular Economy opportunities locally and internationally.</p>	<p>Ministry of Education, Science and Sustainable Development; The Ministry of Finance, Economic Affairs and Culture; and interested private partners.</p>

What is Government's Role in the transition?

Set clear conceptual framework and intention regarding transforming waste and reusing materials.

In order to enable the transition to Sustainable Circular Economy, the concept of "Waste" has to be converted into "Resource" or "Asset". This is critical to understand how to categorize and what to do with each material stream circulating on the island. It is important to find a balance between recycling raw materials, on the one hand, and preventing the spread of harmful substances, on the other. Sometimes products and materials that contain harmful substances can be safely recycled by taking into account their intended use in the future.

Create an enabling legal and regulatory framework.

To stimulate and enable to process of change toward a Sustainable Circular Island Economy, there is a need for strategic design and enacting of incentive mechanisms in specific sectors or focused on specific material streams.

Remove barriers to circular research, development, innovation and business.

Apply a gradual approach to scaling up of the quality standards and regulatory demands. This can be triggered by establishing voluntary agreements between the Government and social partners. A monitoring protocol composed of criteria to measure circularity with respect to its impacts on land, air, water, and food will stimulate and force companies and organizations to innovate and adopt sustainable circular solutions and technologies.

Mindset

The major obstacle to change and transition toward a Sustainable Circular Island Economy is the present mindset and dependency and use of technology and services that are locked in the linear economic model. This also means that most existing regulations are conceptualized and designed to address challenges from a linear economic perspective. Where awareness and general knowledge need to change. The government can invest in strategic public awareness campaigns to elevate the level of awareness and understanding of the Aruban people of the rationale and benefits of the Sustainable Circular Economy principles.

Political

There needs to be a long-term political commitment beyond the lifetime of the current administration. The overarching goal of Aruba becoming a Sustainable Circular Island Economy by 2050 needs to be carried by all critical political bodies and representatives

across Aruba's political spectrum and be considered a national priority and of general interest.

Improve Education and Awareness.

Circular Education and Awareness is a critical element to guarantee progress. In the near future there will be a need for new knowledge, set of skills and capacity in Aruba to achieve the set ambitions and targets.

Keep track and communicate progress.

A mechanism is required to set common criteria to monitor and evaluate the performance of actions and the progress of the transition toward a Sustainable Circular Island Economy.

Financial

There needs to be clear commitment by the Government of Aruba to be willing and able to invest in the necessary activities to support and facilitate the process of transition toward a Sustainable Circular Island Economy.

Human Resources

The recipe for success is the Government's investment in its people, by strengthening the educational and academic institutions and related activities to prepare a new generation of conscious, knowledgeable and skillful people ready to help making the transition to a Circular Island Economy possible.

Technical

Next to the technical knowledge and skillset needed, the Government can set up the enabling mechanisms to ease the procurement of technologies, infrastructure, and hardware needed for the recovery and transformation of recoverable and reusable materials and chemicals for the production of new added value products or services and explore ways to close the loop of material flows in the local economy.

Accountability.

Good governance is key to achieving set Sustainable Circular Economy strategic objectives. This relates to always having the proper mechanisms and rules in place to guarantee the integrity of the term Sustainable Circular Economy, the monitoring and evaluation of progress, and the realization of beneficial outcomes to Aruba's society. There is a critical need to have a legal framework with clear set of rules of the game to filter and promote the interventions that are in line with the Sustainable Circular Economy principles.

Facilitate cooperation and building alliances.

The Government of Aruba can create small subsidy schemes to enable leading organizations and companies actively building networks and partnerships between public and private partners to accelerate the cooperation and coordination of defining common targets and activities to their achievement, as contribution to the 2050 targets.

Final considerations

A forward-looking approach is fundamental to this 2050 Sustainable Circular Island Economy vision for Aruba. Sustainable Circular Economy offers a holistic and integrated approach to protect the public's interests in health, safety and the environment, and therefore needs to be carried across all the ministries and departments of the Aruban Government.

One of the critical outstanding tasks is to involve the other ministries and government departments and private and civil society actors and stakeholders in the island's society in the further roll-out of this 2050 Sustainable Circular Economy vision and policy framework for Aruba, in addition to the Ministry of Education, Science and Sustainable Development.

By linking the Government's objectives and targets with macro socio-economic and commercial interests to position Aruba on the international map not only as a popular touristic destination, but as well as a Sustainable Circular Economy Knowledge Hub for the wider region.

Aruba's strength is its people. We need to recognize that our collective effort and cooperation needs to be focused on building the competitive capacity of Aruba to position itself in the international and regional market as a knowledge hub on Circular Economy.

More specific and sectorial sustainable circular economy policy, targets and action plans are required to guide the relevant actors in prioritized sub-sectors and industries to make concrete interventions for booking results and outcomes.

Effective cross-sector collaboration is also a must for an effective innovation policy for a sustainable circular island economy. The Sustainable Circular Economy principles deserve a prominent place in the national development policy framework.

This first step into creating a national Sustainable Circular Economy policy framework for Aruba will need to be further revised, updated, and its components and recommendations worked out in more detail together with public and social partners, and together establish criteria for monitoring and evaluation of progress toward the 2050 target of converting Aruba into a leading Sustainable Circular Island Economy.



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