BERMUDA COMMUNITY FOUNDATION

VITAL CONVERSATIONS

COMMUNITY WELL-BEING: THE ENVIRONMENT CONVENING REPORT

This aspect of quality of life refers to the degree to which residents are actively engaged in the local culture and community, and are taking action to improve their community in terms of being a good place to live

BERMUDA VITAL CONVERSATIONS

The Bermuda Community Foundation (the "foundation") introduced Vital Signs® as an important step in identifying resident's priorities related to their quality of life in Bermuda and the issues most important to them. The Vital Signs® programme has become a standard of excellence among community foundations around the world. It provides a methodology that evaluates community vitality and wellbeing and plays an important role in informing the allocation of resources. The reporting and prioritisation process is tailor-made to suit each jurisdiction's needs.

In Bermuda, we conducted research on the community's priorities, determined standardised outcomes based on that information and then sought further input from field experts in order to prioritise funding needs. This last step is carried out through convenings, known as "Vital Conversations".

The foundation is hosting the Vital Conversation Series to further refine the valuable information gathered from the community. In this phase, local stakeholders convene to access public opinion, local, and international data for each of the Vital Signs® areas and prioritize the top outcomes that will guide the foundation's funding strategy.

THE FINDINGS

The 2017 Bermuda Vital Signs Report revealed Community Wellbeing as one of seven priorities contributing to the quality of life in Bermuda. Community wellbeing is defined broadly by a variety of indicators, including those related to the community's artistic, cultural, and heritage offerings, a sense of belonging, residents' sense of engagement, and the environment. In terms of the environment, a healthy majority of residents rate Bermuda favourably in this area.

While the majority of residents rate Bermuda positively on the environment, the Sustainability Index remained at an average grade for a significant period of time. The Sustainability Index for Bermuda improved slightly from a grade of "C" in 2007 to a "B-" in 2013. According to the former Sustainable Development Department, key indices for the environment included energy usage, number of registered vehicles, and usage of public transportation. On a global perspective, other environmental indices (albeit related) include CO2 emissions, energy usage, electric power consumption, population growth, and others; of which the presence of Bermuda data is variable.

THE ENVIRONMENT

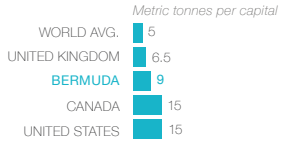
72%

RESIDENTS RATE BERMUDA AS HIGH TO EXTREMELY HIGH

Locally, recent data on certain environmental factors has been mixed. For example:

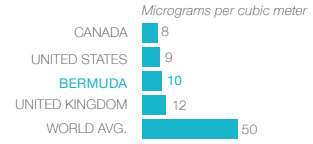
- Total electricity consumption in 2016 fell to approximately 586 million kWh from 590 million kWh in 2015
- Collected waste increased by 7.47%
- Total rainfall increased by 26.11%
- Bermuda's reefs were revealed to be in fair to poor condition and in need of additional protected marine areas (for certain species and habitats) to maintain reef resiliency
- Of the total marine area (4236.11 km2) in Bermuda, 6.96% (294.74 km2) is classified as protected.

HOW DO WE COMPARE?



CO2 EMISSIONS
(2014)

Carbon dioxide emissions, largely by-products of energy production and use, account for the largest share of greenhouse gases, which are associated with global warming. (The World Data Bank, 2014)



PM2.5 AIR POLLUTION
(2016 MEAN ANNUAL EXPOSURE)

Population-weighted exposure to ambient PM2.5 pollution is defined as the average level of exposure of a nation's population to concentrations of suspended particles measuring less than 2.5 microns in aerodynamic diameter, which are capable of penetrating deep into the respiratory tract and causing severe health damage. (The World Bank , 2014)

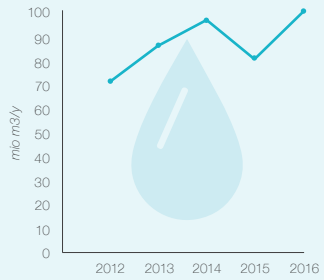
Bermuda is uniquely dependent on environmental conditions both locally and globally. It has been posited that a worsening environment and certain environmental policies may impact the island's primary economic drivers (e.g., international business and tourism). However, negative environmental conditions can affect the most basic of needs such as freshwater, energy, and many others. Climate change, specifically global warming, represents a myriad of significant threats including rising sea levels and warmer temperatures that could have catastrophic results for the archipelago.

Overall, residents approve of Bermuda's environmental situation, with the majority offering a positive rating. The modest improvements shown on the Sustainability Index for Bermuda may support the notion that Bermuda's actions to protect its environment have had some positive impact, at least in the eyes of residents. However, worsening environmental conditions represent a clear and present threat to the island of Bermuda and serve as motivation to continue efforts to preserve and protect the environment as well as to consistently measure and monitor conditions and their impact locally.

THE PLAN

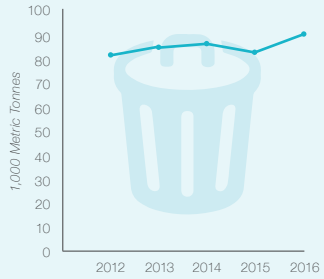
On May 11, 2018 the sixth in the series of Vital Conversations was convened with environmental experts to examine the public opinion data from the Vital Signs® Report as well as relevant local and international data. The Bermuda Community Foundation selected a list of outcomes and indicators for the group to examine and prioritise. The result of this collaborative prioritisation effort yielded the following key outcomes and indicators that the foundation, and potentially other funders, can use to guide its funding decisions through 2021.

JUST THE FACTS



RENEWABLE FRESH WATER RESOURCES
(BERMUDA SOURCE: PRECIPITATION)

Precipitation: total volume of atmospheric wet precipitation (rain, dew, etc.) falling on the territory of the country over one year



GENERATION OF WASTE
BERMUDA

Waste: this is any article or substance (including scrap metal or other surplus arising from the application of a process) which is not liquid and either requires to be disposed of as being unwanted, broken, worn out, contaminated or otherwise spoilt or useless, or in relation to a particular person, has been discarded by.

VITAL CONVERSATIONS PRIORITISED OUTCOMES & INDICATORS

ENVIRONMENT

Strong public awareness of and engagement with the natural environment, and good sectoral understanding as to how to sustain it

Improved public awareness	Improved public engagement	Improved sectoral understanding as to how to tackle the problems presented by threats to the natural environment, and how best to sustain it
• Change in public perception and improvements to any underlying prejudices • Change in public perception and improvements to any underlying prejudices • General availability of accurate and comprehensible information • Impact on locality (measures of local pollution levels and consequences) • Improved public awareness • Level of media exposure associated with conservation of the natural environment (e.g. number of articles published on the subject in mainstream media; exposure on tv, radio; internet traffic) • Level of public awareness about the causes and consequences of the problem • Number of educational programs run • Number of school visits to conserved space • Public donations to related charities • Public events, rallying, campaigning • Volume of wastewater discharged to sewer or other water bodies (if applicable)	• Institutional and organisational engagement with stakeholders over issues related to sustainability and the conservation of the natural environment • Public levels of engagement with sustainable behaviours (e.g. energy saving, recycling, water usage, transport) • Public volunteering on projects and initiatives	• Funding for research • Innovation of new ideas, technologies and approaches • Research and evidence relating to the problem and interventions (e.g. studies conducted, papers published) • Retirement of previous methods shown by research to be ineffective • Support for the sector through quality umbrella bodies • Uptake of new ideas by other organisations or government

Sustainable Agriculture

Locally grown food

- Availability of farmer's markets
- Availability of locally sourced food in shops

Organic farming

- Area of land farmed sustainably
- Associated reductions in greenhouse gas emissions and environmental damage (reductions in use of fertilizer, mitigation of soil erosion)
- Number of organizations achieving recognized standards for sustainable agriculture
- Volume of organic produce

Public and corporate policy and expenditure that supports the natural environment

Improved investment, expenditure and procurement

- Government investment in sustainability and the conservation of the natural environment

Improvements in policy and legislation

- Changes in policy and legislation that support improvements in sustainability and the conservation of the natural environment
- Changes to regulation (e.g. introduced t o improve energy efficiency)
- Level of relevant parliamentary activity (e.g. white papers published, committees formed, consultations or reviews conducted, citations made)

Conservation of Natural Spaces and Heritage

Awareness, access and inclusiveness of natural space / heritage

- Awareness surveys
- Distribution of information (publications, website hits, use of community resources to propagate word of mouth)
- Number of pieces published in the media associated with the conserved space
- Number of visitors to conserved space cost of entry
- Number of visitors from minority and disadvantaged groups
- Number of special access/ interest programmes

Community benefits

- Number of community organisations using conserved space
- Number of community events (e.g. walks, youth meetings, arts performances) taking place in conserved space (attendance)
- Number of social enterprises using conserved space
- Number of local people participating
- Levels of volunteering

Community feedback and involvement

- Visitor feedback (volume, number of suggestions; changes implemented as a result of feedback)
- Number of involvement groups / participative sessions held with community or visitor public

Conservation of natural spaces, natural heritage and biodiversity	Education and research	Local economic benefits
• Air quality measures (relating to diminished environmental risk) • Levels of biodiversity • Area of natural space or heritage (e.g. habitats, forests, water bodies, coastlines) conserved • Area of natural space or heritage restored or created (e.g. derelict or brownfield sites converted) • Number of trees planted • Number of visitors to conserved spaces • Population numbers (changes) of wildlife/plant species • Area of natural space (e.g. habitats, forests, water bodies, coastlines) conserved • Number of species protected • Response from sector, special interest groups on value and effectiveness of conservation • Air quality measures, diminished environmental risk awareness surveys	• Number of school visits to conserved space • Number of school children visiting conserved space • Number of educational programmes run (attendance) • Provision and distribution of information relating to the environment and heritage (number of leaflets distributed, documents downloaded etc.) • Involvement in policy making • Number of research documents published (sector / academic responses to research)	• Value of local spending by visitors to conservation area • Number of local jobs created • Number of local training opportunities, volunteering opportunities created • Increase in property values, land values • Public investment into the area (where conserved space identified as a contributing factor in investment decision) • Value and number of new local businesses (where conserved space identified as a contributing factor in location decision)

Sustainable buildings and transport

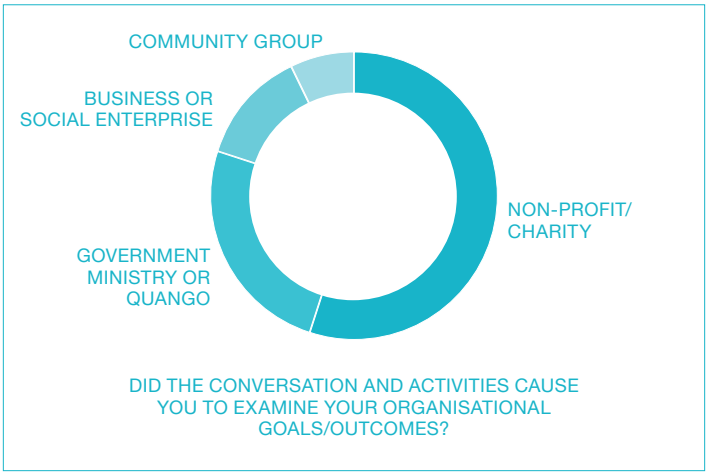
Construction and renovation of buildings with an environmental purpose	Core environmental focus areas for building management of green buildings	Sustainable transport
• Area of brownfield or previously contaminated land reused • Number of units built/renovated to high environmental standards (using e.g. BREEAM measures) • Populations of species of plants/animals conserved • Related reductions in lifetime greenhouse gas emissions (of projects/buildings) • Use of environmentally responsible construction techniques (relating e.g. to use and sourcing of materials, energy consumption, site waste) • Value and built area of units built/renovated to environmental standards	• Percentage of building needs serviced by natural light and natural ventilation • Reductions in energy use and onsite energy generation • Related reductions in greenhouse gas emissions and pollution • Volume of waste produced, recycled (proportion) • Volume of water consumed, recycled on site	• Percentage of the population walking, cycling, using public transport • Related reductions in greenhouse gas emissions • Availability of sustainable transport options • Improvements to sustainable transport options (e.g. improved cycle lanes, public transport) • Reduction in levels of unsustainable company and personal travel (e.g. air miles, car miles) • Uptake of sustainable transport options

Key Outcome Category | Specific Outcome | • Indicator(s)

We are pleased to make more detailed outcome and indicators reporting available to BCF fund holders. Special terms and conditions apply. Contact info@bcf.bm

WHAT THE EXPERTS SAID

The Vital Conversation focusing on The Environment (an aspect of Community Wellbeing), was attended by a diverse group of researchers, scholars, and activists across different sectors. The discussion was enriched by the breadth and depth of perspectives and knowledge.



The responses were mixed when asked about their level of confidence that the top prioritised outcomes would lead to a better quality life for Bermuda residents. While a large majority had some degree of confidence (93.3%) there were some participants who had no confidence (6.7%) in the potential impact of the outcomes.

Of those expressing the highest levels of confidence, many expressed that community engagement and government action were very necessary to the success of the outcomes being achieved. Some related comments included, *"increased awareness and supportive policies with many and diverse voices included will go a long way to an improved quality of life,"* and *"without awareness, engagement, and funding, nothing can be achieved. Many organizations are working diligently on this within the community, but the government needs to have a bigger presence,"* and *"the outcomes should equal success, however, these priorities need to be enacted and enforced."*

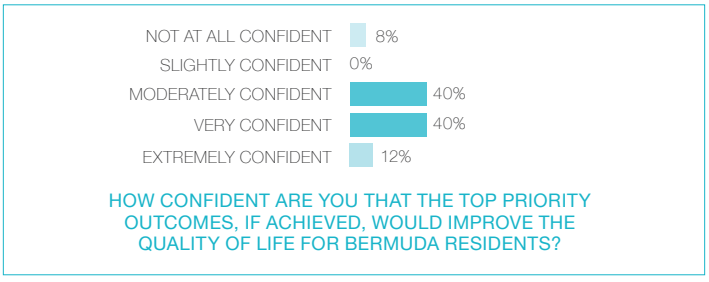
The message was clear that participants believed that success was contingent on both community members and government playing their roles. Of those expressing moderate levels of confidence, the success of the outcomes were predicated on the same factors but they were somewhat less confident that actions on the part of individuals and the government would actually occur. For example, a participant expressed that *"having the environmental data is important but if the public doesn't know about it or understand their role, then nothing changes."*

> "Increased awareness and supportive policies with many and diverse voices included will go a long way to an improved quality of life."
>
> - Nonprofit sector member

Another related comment, *"increased environmental awareness is only effective if that translates in far more people taking individual actions and putting pressure on government to drive policy changes.*

There are many other areas that impact quality of life as well as environmental factors, so while quality of life in general will improve if we improve our environmental stewardship, I recognise that for many there are more critical immediate factors impacting their quality of life (health, housing etc)." Still others put the onus squarely on the government, one participant stated, *"raising awareness and engaging residents will assist in sustainable implementation of measures beneficial to Bermuda. However, I believe that measures will be taken only if they become mandated through government legislation. Surveys have shown that Bermuda residents and visitors are willing to be engaged, but without the tools and policies, this willingness will not be sufficient for long term benefits."*

Finally, others felt that the priorities set by the democratic group process did not produce the outcomes they believed were most important. One participant stated, *"Any progress with the top ranked issues would be beneficial. But as I noted several times we have made a lot of progress on some of these topics to date. The lower ranked ones, which did not make the final selection, really need more attention, such as energy and waste issues, and will deliver long term benefits."*



Some participants felt that laudable efforts in some areas were already underway but more attention needed to be paid toward agriculture. Comments included, *"there are areas like waste management where Bermuda has done well, but agriculture needs more focus"*, and "the ability to produce our own food is a key driver to the cost of living because everything is imported." These sentiments represent the synergy between at least two Vital Signs areas, the Environment and the Economy (Cost of Living).

Many participants (80%) reported that the conversation expanded their knowledge about certain areas as they relate to the environment. One participant stated, *"much positive discussion took place and I think this was a fabulous opportunity for all of us to look at the huge picture."* Another participant shared, *"[the session] made me consider priorities for public policy and donor dollars in terms of tackling areas that have lacked attention to date versus areas where we have been doing quite well and just need to continue that work. It reminded me to focus on areas that may have most significant impact on the wider population - such as public transport accessibility and that these kinds of things are not always aligned with the focus of local environmental organisations."* Related thoughts included, *"I think that my understanding the need for sustainable buildings and transport better helped me realise the extent to which this is a driver of other positive outcomes."* These participants were able to see how seemingly unrelated issues were connected for a greater cause. These understanding are important as they can facilitate future collaborations and partnerships.

Some participants were impacted by the conversation to the degree that they planned to make changes within their own organization. One participant from the government/QUANGO sector stated, *"It [the conversation] did make me think more about the need to be sure we address structural problems like waste and energy production. To me solving the energy production issue may produce more funding to tackle the other areas."*

Still others, while not changing their organizational goals, were moved toward better collaboration with other entities, *"we are a small volunteer organisation with limited resources in terms of money and volunteer time. We are clear about mission, our goals and how those relate to the work of other environmental organisations focused on other areas. This conversation has not changed that, but has been useful in terms of looking at the broader picture and how we may focus our support of other organisations where our goals align."*

Ultimately, there was the sentiment that the government needed to be clear and intentional about ensuring that residents have a sense of responsibility for the environment, and the necessary knowledge and skills to be meaningful stewards.

One participant stated, *"to achieve the outcome of increased public awareness and understanding of environmental matters, we need to ensure that this is part of the curriculum in schools, and support programmes run by NGOs with a focus on environmental education. Bermuda is already quite good at this and just needs to work harder to reach those who are getting the message. We need a clear vision and strategy from government on environmental matters ranging from protection and use of natural space to energy sustainability, transport and waste management. In terms of conserving our natural spaces and heritage, we must continue to maintain strict planning policies and ensure that the use of our natural spaces remains appropriate. There are a few sizeable areas of open space still under threat of development that ideally should be conserved, through campaigns such as Buy Back Bermuda. In the areas of energy use, waste management and sustainable transport/ public transport I think there is probably some 'low-hanging fruit' that can be tackled if there is enough public pressure and the political will e.g. banning single-use plastics, mandating recycling etc."* This intentionality could be in the form of laws and policies, as well as embedding these sensibilities and skills within in the public education curriculum.

WHO NEEDED TO BE IN THE ROOM

Representatives of key government entities, policy influencers and makers, nonprofits, vendors and service providers in the relevant field were invited to participate in the convening. They were also encouraged to nominate additional participants we may not have considered. The purpose was to ensure that the convening outcome would reflect input from those with the greatest experience and knowledge of the topic under review. This would include senior civil servants, nonprofit executives, industry leaders and community experts in their respective fields. At the convening, participants were asked to step aside from their individual affiliations and participate in the discussions as policy influencers, programme and service providers, researchers and other professionals for the benefit of Bermuda.

WHO WAS THERE

Anne Hyde*	Keep Bermuda Beautiful	Executive Director
Annie Glasspool, PhD	Bermuda Environmental Consulting/ Bermuda Environmental and Sustainability Taskforce	Vice President
Bill Zuill	Bermuda National Trust	Executive Director
Christopher Bulley	Government of Bermuda – Department of Planning	Acting Director
Davida Morris*	Greenrock	School Programme Manager
Francis Eddy*	Independent	Former teacher/Biointensive Gardening/Backyard Biodiversity
Janice Hetzel	Bermuda Audubon Society	Secretary
Jennifer Gray*	Buy Back Bermuda	Chair
Judy Motyer	Bermuda Environmental and Sustainability Taskforce	Director
Julie Marshall	Government of Bermuda – Department of Planning	Senior Planning Officer
Karen Border	Bermuda Audubon	President
Kim Smith	Bermuda Environmental and Sustainability Taskforce	Executive Director
Larry Williams	Government of Bermuda – Department of Planning	Assistant Director
Leila Wadson	Independent	Gardner / Environmentalist
Lynda Johnson	Bermuda Zoological Society	Development Officer
Dr. Robbie Smith	Natural History Museum Bermuda	Curator
Tim Noyes	Bermuda Institute of Ocean Sciences	Research Specialist
Samia Sarkis, PhD	Living Reefs Foundation	Managing Partner
Tom Wadson	Wadson's Farm Limited	Owner/Manager

**Regrets = Confirmed but not in attendance*

The Vial Signs Convenings are facilitated with the support of the BCF Vital Signs team: Research Coordinator, Dr. Tamara Gathright Fritz of Strategic Evaluation Consulting; BCF Managing Director, Dr. Myra Virgil; BCF Programme Associate, Michelle Grant; and BCF Interns.

AN EVOLVING PROCESS

We strive to inform these convenings with high-level field and content area expertise. We ask participants to use their knowledge to inform this work at a national level. We appreciate the participation of the attendees of this convening. Also considered for participation, and therefore, potential community resources on this issue are:

Airport Waste Management Facility
Bermuda Aquarium and Museum
Bermuda Audubon Society
Bermuda Bluebird Society
Bermuda Development Plan / Ministry of Home Affairs
Bermuda Environment Authourity
Bermuda Environmental and Sustainability Taskforce (BEST)
Bermuda Environmental Consulting, Ltd.
Bermuda Institute of Ocean Sciences (BIOS)
Bermuda Lionfish Taskforce
Bermuda National Trust
Bermuda Water Consultants Limited
Blue Halo Project
Buy Back Bermuda
Department of Environment and Natural Resources
Department of Parks
Environmental Activists
Greenrock
Independent Farmers
Keep Bermuda Beautiful
Marine Resources Board
Ministry of Works and Engineering (Recycling)
Natural History Museum
Organic Farmers
Private Farm Owners
Sustainable Development Department (former)

THE BERMUDA VITAL SIGNS® ARE ALIGNED WITH THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS