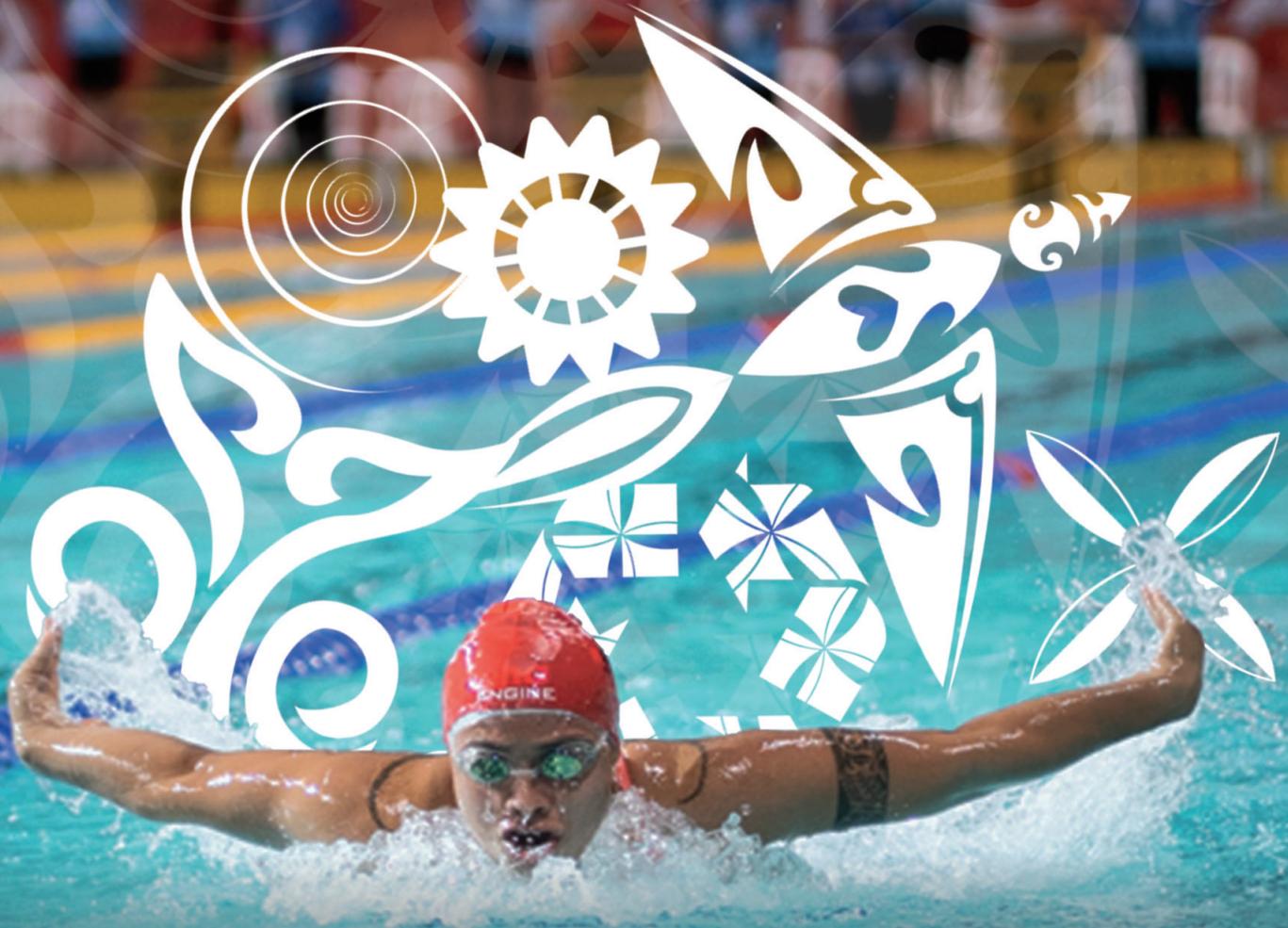




SPREP

Secretariat of the Pacific Regional
Environment Programme



SUSTAINABILITY REPORT

GREENING OF THE GAMES

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Opening message from Director-General of the Secretariat of the Pacific Regional Environment Programme (SPREP)

It is with great pleasure that I write the foreword for the Greening of the Games Sustainability Report. The Samoa 2019 Pacific Games will be remembered for many record-breaking accomplishments: The most athletes participating, the most sports represented, the most countries competing and the largest spectator crowd in history. It will also be remembered for being the first Pacific Games to “go green” or more specifically, to succeed in eliminating single-use plastics and polystyrene from the athletic sports venues, dining halls and accommodations.

When the Samoan government established the Greening of the Games sub-committee in January of 2019, with Ulu Bismarck Crawley CEO MNRE and I as Co-Chairs, it was to address waste management issues occurring from major events like the Pacific Games. We knew we had a rare opportunity to use this major cultural and marketing platform to not only address marine waste and pollution issues in the Region, but to raise awareness and inspire behavioural change amongst Samoans and our entire Pacific Islands family as well.

With just five months to pull together a sustainable, strategic action plan and raise eight hundred thousand tala, many thought it too high a goal to achieve. However, due to the hard work of the organising committee members, the Pacific games office, representatives from the public and private sectors as well as thousands of volunteers, we were able to pull it off with tremendous results. It is said that if you want to go faster, go alone but if you want to go farther, go together. In this case, everyone had something to contribute and that’s what made the Greening of the Games initiative such a great success. It was truly a collective effort based upon the theme of the Games: “One in Spirit”!

During the games, as I walked around the various sports venues, I spoke with several of the visiting team officials and athletes from around the region. They shared with me feelings of pride for what Samoa was doing not just for the games but for the region as a whole. There was a sense of satisfaction for what could be achieved with vision, determination, engaged partnerships and effective planning. Even weeks after the games ended, we are still reading posts and hearing stories from athletes and visitors thanking Samoa, acclaiming the work of the Greening of the Games sub-committee, and sharing the message back home to do the right thing for the environment.

It is clear that the Samoan Government’s message of seeking to improve the standard of living and quality of life for Samoans without single use plastics was heard across its communities. The Greening of the Games was intended as a catalyst for people to see the possibilities, open their minds and begin to change their relationship with single-use plastic items.

Radical ideas are often judged by the legacies they leave, and the Greening of the Games had many. Even before the closing ceremonies occurred, the host of the next (XVII) Pacific Games approached us for help greening their event. Others have asked for a ‘How to Guide’ which this Sustainability Report seeks to achieve.

Following the Games one hundred and fifty of the free, fresh and filtered water stations procured for the games will be installed in local Samoan schools and children will be instructed on their use and purpose. At the end of the day, this is what it’s about: to pass on the legacy to our children for a cleaner, healthier environment and Pacific Region.

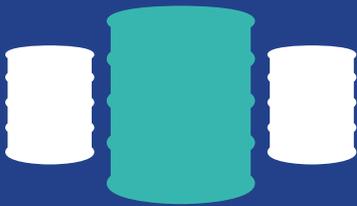
Kosi Latu,
Director-General of the Secretariat of the
Pacific Regional Environment Programme (SPREP)

SUSTAINABILITY ACHIEVEMENTS AT A GLANCE



Over one million 500ml

single-use plastic bottles were NOT used or discarded as rubbish during the XVI Pacific Games.



Over 3,200 native trees were planted

in Samoa by visiting athletes and officials, and Samoan students and teachers planted 8,000 trees, to offset carbon emissions.

Over 8 tonnes of waste collected

in Samoa as part of three clean-up efforts before the XVI Pacific Games began.



About 5,000 athletes and officials

were given free reusable bags to ensure they did not use single-use plastic bags (which they may have brought with them) while in Samoa.

How we greened the XVI Pacific Games

- A Greening of the Games committee was established as a formal committee under the Samoa Pacific Games Office.
- Partnerships were formed with donors, private sector, NGO's and government agencies to work together to support the actions under the Greening of the 2019 Games.
- A communications campaign was developed to raise awareness of the Greening of the XVI Pacific Games and the waste issues which led to a wide range of communications activities including establishment of billboards, television commercials and social media promotion.
- A sample waste audit was held from 7–13 July to provide us with a snapshot of the waste trends from across Pacific Games venues and accommodation sites.
- 350 free, cold, filtered water stations were established across all Pacific Games venues and accommodation sites.
- Labelled waste receptacles were established across all Pacific Games venues encouraging people to put waste in either of the recyclable or non-recyclable bins.

Legacy of Greening the XVI Pacific Games

- Increased awareness of the Greening of the Games.
- Strong interest from across the Pacific region to greening Pacific regional, and national events.
- Close to 8,000 Pacific athletes, officials and volunteers, equipped with reusable water bottles to use in their home countries, contributing to the overall reduction of single use plastic bottles across the Pacific.
- 150 free water stations donated to schools across Samoa for use.
- Over 10,000 native trees planted in Samoa contributing to growth of the national carbon sink.
- Development of an adaptable and usable step-by-step guide highlighting good practices and options to undertake, to empower Pacific islands to organise and implement their own Green events.
- Commitment by Government of Solomon Islands, as host of the next Pacific Games, to Green Games.



1.0

INTRODUCTION

Greening of the Games Sustainability Report

1.2

About the Report

The purpose of the Greening of the Games Sustainability Report is to share the vision, strategy, key outcomes, best practices, and lessons learned before, during, and subsequent to the Samoa 2019 Pacific Games. The Report lists the eight-targeted areas set forth by the Greening of the Games Committee by way of a Strategic Action Plan (SAP) and makes recommendations based on the associated activities' results.

The Greening of the Games initiative sought to use major events such as the XVI Pacific Games as a platform to bring about behavioural change for addressing waste and pollution issues particularly marine litter and plastic pollution through the 4Rs: refuse, reduce, reuse, and recycle.

In keeping with the Blue Pacific narrative, the Pacific Island Forum Leaders' chose to commit to eliminating marine litter, and a sense of urgency to implement the Pacific Marine Litter Action Plan under the Pacific Framework for Regionalism, the S.A.M.O.A. Pathway, and the Sustainable Development Goals.

In addition, the Initiative aligned with the International Olympic Committee's belief that the Olympic Movement has both a duty and an opportunity to contribute actively to global sustainability:



“Sustainability is one of the most pressing challenges of our time across a wide spectrum of social, environmental, and economic matters. Major issues such as climate change, economic inequality, and social injustice are affecting people throughout the world. These are also pressing concerns for the sports community, both for managing its day-to-day affairs and for its responsibilities towards young people and future generations. We also recognise that sport has an unrivalled capacity to motivate and inspire large numbers of people. This is why we believe that the Olympic Movement has both a duty and an opportunity to contribute actively to global sustainability in line with our vision: Building a better world through sport”.

Section overviews and much of the data presented in the Greening of the Games Sustainability Report is broken into eight (8) strategic, activity sectors in order to help the reader understand which activities are responsible for which impacts. *Refer to Annex II: Strategic Action Plan.*

1.0

Development of Games strategy and sustainability plan:

An 18-member Greening of the Games sub-committee (GoGC) formed under the umbrella of the Samoa 2019 Pacific Games. It included members from Government Ministries, United Nations Environment Programme (UNEP), Secretariat of the Pacific Regional Environment Programme (SPREP), a public and private sector organisations. In early

January 2019, the GoGC appointed co-chairs and co-facilitators, defined objectives, developed, approved, and launched a SAP.

2.0

Improved waste management for Games facilities:

The Greening of the Games Committee (GoGC) members developed a waste management plan, which required the Ministry of Natural Resources and Environment (MNRE) and SPREP to include waste audits of rubbish collected in Apia, Samoa before the Games and at two sports' venues and one dining hall during the competition. Six hundred, 240 litre wheelie rubbish bins were acquired and installed at all 20 sports venues, two dining halls, and the athletes' / officials' accommodations "village". Volunteers labelled and colour coded bins for separation of rubbish vs recyclables. Forty (40) student volunteers from the National University of Samoa (NUS) A waste team was hired and trained to monitor all clean-up activities at sporting event sites. The students, already trained in the practice of waste audits, supported the work and thereby increased the capacity for the practice of waste management and raising awareness on the issues surrounding marine pollution.

3.0

Engagement with Apia villages in waste management measures:

In partnership with the GoGC members from the Ministry of Women Communities and Social Development (MWCSO) and Samoa Tourism Authority (STA), three (3) city, river, and community clean-up activities were organised, marketed and carried out before the start of the Pacific Games. As facilitators of the Government's National Beautification Program (NBP), the MWCSO and STA assisted in leveraging the NBP with the clean-up events in order to increase capacity and sustainability as well as align with the governments' mandate for a clean and beautiful Samoa in time for the Games to begin. The clean-ups events resulted in over 1500, citizen volunteers taking part clean-up activities including post event sausage sizzle, 'green' games and an environmental messaging / awareness tent. Articles and Interviews across TV, radio, and print helped increase attendance and awareness.

4.0

Engagement with Apia schools in waste management measures:

GoGC members from the Ministry of Education and Sports Culture (MESCC) helped incorporate the Greening of the Games messaging into a larger Samoan Government's XVI Pacific Games strategy for schools. Two hundred and ten (210) government schools organised vegetable gardens and waste recycling programs that included repurposing single-use plastic bottles. MNRE Forestry division's Two million Tree planting program enabled the planting of over 13,600 native tree seedlings to help off-set carbon emissions from increased visitor travel. In addition, the program provided a venue for the Greening of the Games messaging which was included as part of the program's full day, outdoor classroom, school presentations. Over 900 students received the word about Greening the Pacific Games. Most received refillable water bottles.

5.0

Development of awareness and media resources on marine litter, plastics pollution and effective waste management:

An 11-member communications sub-committee formed to develop and implement a comprehensive communications strategy that included establishing a tagline and logo, social, outdoor, print and broadcast media. Local media representatives from top TV, radio and print media were briefed on the initiative's objectives and instructed on the best practices to raise public awareness and help bring about citizen behaviour change in support of the 4Rs: refuse, reduce, reuse, and recycle.

6.0

Legacy of Greening the Games through sporting champions:

Identifying local, programmatic organisations with pro-green pillars as part of their mission, is paramount to building human capacity for spreading a plastics-free message and modelling sustainable behaviour change. Involving highly recognisable and respected individuals related to sports and the environment, ensured

efforts to eliminate single-use plastics would live on long after the Games ended. Local non-governmental organisations, Voices of Athletes and Samoa Voyaging Society's Guardians, partnered and continue to outreach and educate on issues concerning marine pollution and carbon emissions through their programmatic activities initiated before, during and after the Games.

7.0

Reducing single-use plastic drinking bottles through dispensing water stations:

The GoGC undertook a major fund-raising effort, resulting in SAT \$400,000 towards the purchase of 360 water stations, installed at 20 sports venues, two (2) dining halls and the athletes / officials' accommodation "village". Because of the critical need for athletes to stay hydrated, solutions for unconventional venues were found to ensure fresh, safe, and cool drinking water remained continuously available at every sports arena and field-of-play including the on the Triathlon course.

8.0

Supporting sustainable green alternatives: The GoGC distributed 9000 refillable water bottles were to all athletes, officials, and volunteers. The GoGC distributed to athletes and officials over 4500 reusable shopping bags, a supply donated by Zero Bag of New Zealand, and 4500 reusable backpacks from the UNEP. Biodegradable food containers and utensils formed part of the meal delivery services as required of tenders. New 'green' business production of plant-based serving plates, bowls from Samoa Green Products, Ltd.

Key Milestones:

Over 360 refillable, water stations installed across all 20, XVI Pacific Games venues, providing on demand, free, filtered, cool water.

100, 40 litre water coolers used on the field-of-play where stations could not be installed.

Over 9,000 refillable water bottles distributed to all athletes, officials, and volunteers.

GoGC efforts prevented an estimated 1 million, 500 ml single-use plastic bottles becoming rubbish during the XVI Pacific Games.

Over 4,500 reusable backpacks and 4,500 reusable shopping bags distributed to athletes and officials.

A minimum of 60,000 people reached through social media channels as one aspect of comprehensive communications strategy.

Over 3.8 tonnes of city and river waste collected as part of three, city / river / waterfront clean-up events before the start of the 2019 Samoa Pacific Games. Over 1000 citizen volunteers from villages, private and public sectors across Upolu and Savai'i participated. Approximately 1.8 tonnes of waste were audited, and data used for management and planning purposes.

Partnership with the government's Two Million Tree Campaign spread Greening of the Games messaging to over 913 students in 68 schools across Upolu and Savai'i. A calculation of 13,605 trees planted by the students contributed to offsetting carbon emissions of athletes and officials traveling to the XVI Pacific Games.

Another 3,200 native tree seedlings planted in Samoa during the Games by visiting athletes and officials to offset carbon emissions of flights from their countries of origin to Apia, Samoa.

Multiple waste audits conducted during the competition in order to understand better the type of waste typically generated by a large sporting event and from which to prepare an appropriate waste management plan for future sporting events around in the Pacific Region.

BACKGROUND: Samoa 2019 Pacific Games: 7 – 20 July. See Annex I: Terms of Reference and Annex II: Strategic Action Plan.

The Opportunity:

For two weeks starting July 7, 2019, Samoa hosted the XVI Pacific Games. It was the third time the Pacific Games were held in Samoa, returning for the first time since 2007 after the Government of Tonga relinquished its bid in July 2017. As the Oceania region's premier, multi-sport event, the XVI Pacific Games was the largest so far. With a commitment to the theme of 'One in Spirit', over 5,000 athletes and officials from 22 Pacific island nations and territories, plus Australia and New Zealand, participated in 27 sports at 20 sports venues.

With less than 24 months to prepare, the Samoa 2019 Pacific Games provided a unique opportunity and regional platform from which the Government of Samoa and its partners could demonstrate environmental leadership by reducing the consumption of single-use plastics and improving waste management. Inadequate control of generated waste from major sporting events poses a threat to the overall economic base in a Region heavily reliant on a clean, healthy environment to support its fundamental industries such as fishing, agriculture, and tourism. By leveraging the cultural and market influence of sports, the proposition for 'greening' the XVI Games set a bold course to reduce plastic pollution while influencing behaviour change through definitive and deliberate actions supported by effective management and messaging, together with the provision of available and environmentally friendly alternatives.



Hailed as the first and honoured for its achievements, the Greening of the Games initiative - to eliminate single-use plastics, introduce alternatives, improve waste management practices, and encourage societal behaviour change - stood in line with the Samoan government's policy to address plastic pollution by placing a ban on single-use plastic bags and straws in January 2019. This policy proved to be a strong foundation on which to launch

the Greening of the Games initiative building on the fact that Samoan residents had already made the behavioural switch from single-use, plastic shopping bags to reusable cloth bags and / or cardboard boxes. Because of this, the elimination of single-use plastic water bottles and the need to reuse and refill met with understanding and compliance rather than resentment and frustration.





THE ISSUES

Marine litter is a global, intergenerational, and transboundary issue that negatively affects the environment, people, and coastal economies around the world. Eight million tons of plastic makes its way into the ocean each year with 80 percent coming directly from land. The Pacific region has the potential to generate 580,000 tons of plastic waste by 2025, which is a 65 percent increase since 2010. Ninety-seven (97) percent of fish species sampled in the Pacific region have plastic in them. National fish consumption in the region is three to four times the global average. If these trends continue, by 2050, there will be more micro-plastics in the ocean than fish. In 2014, the fishing industry represented 3.4 percent of Samoa's GDP. The consequences of plastic pollution have raised concerns about its impact on human health and food security.

Rowers Cleanup, Apia Samoa.
©SPREP

It is estimated that 9,000 tons of plastic is generated in Samoa every year.



A crab stuck in plastic in the Philippines, where residents dispose of 163 million pieces of single-use plastic sachets daily.
©Noel Guevara / Greenpeace via EPA

With the local landfills at or near capacity and recycling processes stretched or non-existent, real concerns developed about the ability to handle a spike in waste realised from increased visitor traffic associated with a large event over a short period. Available data from previous regional sporting events detailed the increase in single-use plastic water bottles due to the continuous and essential need for athletes to hydrate. Targeting the elimination of single-use plastic water bottles and replacing them with dozens of on-demand, filtered water refilling stations at sports venues, dining halls and accommodations provided a proactive approach to addressing the needs of the athletes, a decrease of single use plastic waste while supporting the larger global and regional issues surrounding marine pollution. The same remained true for plastic flatware and polystyrene packaging replacing both with biodegradable alternatives.



THE COMMITTEE

Since 2010, many Pacific island countries and territories have been proactive in banning single-use plastics. As previously mentioned, Samoa enforced its ban on single-use plastic bags and straws starting 31 January 2019. That same month, a GoGC was formed as a sub-committee of the Samoa 2019 Pacific Games Organising Office. The GoGC was tasked with developing an effective, far-reaching, sustainable strategy to address marine pollution – a major issue for the Pacific island region. See **Annex I: Terms of Reference**.

Co-chaired by the MNRE and SPREP, the GoGC operated under the slogan “Beautiful Samoa – Keep it Clean and Plastic Free”. Derived from the existing logo and tagline of the STA, this communications strategy ensured a longer lifespan of action for the ‘greening’ initiative post the XVI Pacific Games.

Rowers Cleanup, Apia Samoa.
©SPREP



THE PARTNERS

Several international development partners stepped up to help execute this inaugural attempt to “Green” the Pacific games. Through the generous contributions of Agence Française de Développement (AFD), Government of Australia, Government of New Zealand, UNEP and the United Kingdom, a total of SAT \$400,000 was turned over to the PGO by the GoGC co-chairs during a press conference in May, 2019. Funding went to the procurement of 360 new and strategically placed water stations along with the required awareness and educational communications.

Rowers Cleanup, Apia Samoa.
©SPREP



The Strategy: Annex I: Terms of Reference and Annex II: Strategic Action Plan

The development of a SAP synchronised with identifying and recruiting members to join the GoGC. The SAP served as the foundation on which the GoG initiative addressed a series of waste management and environmental awareness activities. Each of the eight (8) target areas of the SAP shared a collective goal to reduce the consumption of single-use plastic bottles, flatware, and polystyrene packaging at all games' venues, while simultaneously raising awareness for and adaptation of the 4Rs: refuse, reduce, reuse, and recycle

The Goals and Objectives of the Greening of the Games SAP were to:

- Reduce and eradicate single-use plastics and polystyrene
- Empower responsible waste management practices
- Encourage carbon offsetting
- Promote positive environmental behaviour through the 4Rs: refuse, reduce, reuse, and recycle

The Proposed outcomes sought included:

1. Green business models.
2. Green behaviours achieved through uptake of 4Rs.
3. Green infrastructure and equipment identified to support 4Rs.

The Proposed outcomes that were surveyed and monitored were:

1. Increased uptake of green products as alternatives to single-use plastics.
2. Positive shift in consumption and waste disposal choices.
3. Greening facilities operations, efficacy, and sustainability.



SAP 1.0

SUSTAINABILITY

through Strategic Planning

The First Steps

Underlying the success of any major initiative such as Greening of the XVI Pacific Games, is the need to develop a solid strategy and achievable SAP based on research, resources, and reality. The GoGC developed the SAP out of a series of discussions with stakeholders who helped define the issues, propose the objectives, and determine the possibilities of realistic goals for a six-month period. The SAP benefited from reported outcomes and lessons learned from recent, large-scale, sporting events in the Pacific Region including the 2018 Raka 7s in Fiji, the 2018 Gold Coast Commonwealth Games, and the 2017 Pacific Mini Games in Vanuatu.

The Working Group

Appointing committee members from government agencies and local organisations with direct connections to the key initiatives and expertise in the targeted areas of the SAP was imperative. Support from the highest levels of the Samoan Government was essential to achieve the proposed outcomes of the SAP.

A committee of 20, volunteer representatives from national (MNRE, MWCSO, MESC, STA) and international (United States Peace Corps) government agencies, an inter-governmental organization (SPREP) the PGO and the local, waste non-governmental organisations Samoa Recycling & Waste Management Association (SRWMA) was established and known as the GoGC. For waste management, the CEO of MNRE co-chaired the GoGC with the Director General of the SPREP, a leading intergovernmental organization focused on environmental issues about 21 Pacific island country members. The GoGC met bi-weekly / monthly starting in January 2019, continuing through the competitions and after the Games concluded.

Funding priority

With the SAP and GoGC in place, the next step critical to success was researching and reaching out to partners and funding sources in support of the SAP goals and objectives. The GoGC, through SPREP, had existing relationships with countries having a stake in the region's environmental waste issues. SPREP's Metro-Country Members of Australia, New Zealand, Great Britain, and France were obvious and willing donors along with the Samoa office of UNEP.

Overall results of SAP 1.0: Sustainability through Strategic Planning

Key outcomes:

- Established a realistic, strategic, and sustainable action plan.
- Established a "volunteer" working committee of 20 professionals with experience and contacts in the targeted areas of the strategic plan and influence in the government and community at large.

- Sourced dependable funding partners and secured budgeted funds to finance communications and procurement targets outlined in the strategic plan.

Best practices:

- Choose committee co-chairs from local entities having close ties to the initiative's strategy, the greatest influence on targeted activities and the most to gain from the results.
- Get buy-in from the highest levels of the local government.
- Play heavily off any government issued bans on single-use plastic and polystyrene if they exist.

Lessons learned and recommendations:

- Start fundraising early. Five months is not enough time to secure money-in-the-bank. Begin to identify and contact funding sources and partners when the initiative launched. Having money in the bank before actions require payment is critical to achieving goals, preparing for unplanned expenses, being open to opportunities and maintaining positivity overall.
- Recruit committee members dedicated to the initiative and committed to doing whatever it takes to get the job done from attendance at meetings to delivering on activities and outcomes within their authority.
- Appoint a full-time professional with project management skills and dedicated time to manage and oversee all activities and targets associated with the SAP.

SAP 2.0

SUSTAINABILITY

through improved waste management at Pac Games locations: Annex II

Green-up needs the right clean-up!

Having a clear and comprehensive waste management plan is important for any special event large or small but for one marketed as 'green', it is essential as 'green' often translates to 'clean'. With 20 sports venues, two (2) very busy dining halls and an athletes / officials' "village" comprised of three (3) schools, a large church and 50+ buildings and houses, the task would have been daunting had it not been for the experience and expertise of GoGC members from the local Samoan environmental waste and protection community.

Facilities Assessment: *(Assessment questionnaire form annexed? Setoa should have this)*

Playing on waste management practices established locally during the SIDs conference in 2014, Commonwealth Youth Games in 2015 and regionally at the 2018 Raka 7s in Fiji, a tried and true waste management process was further developed based on findings from a games' facilities assessment conducted three (3) months prior to the start of the Samoa 2019 Pacific Games. In addition to the analysis of location, access points, and increased waste disposal capacity, experts considered the available personnel, required number of waste collection bins, existing waste removal service companies and accessible funding to make it

all happen. The assessment resulted in the development of a comprehensive Waste Management Plan (WMP) that was best suited for the XVI Pacific Games.

Procurement and placement:

Based on the WMP, 600, 240 litre, wheelie rubbish bins were acquired and installed at all 20 sports venues as well as the athletes / officials’ accommodations ‘Village’. Bins were labelled and

color-coded to facilitate separation of trash vs recyclables. Organics were separated at the athletes / officials’ dining halls, stored in bins and collected daily by local farmers to use as animal feed.

Waste was managed in ‘zones’ (waste areas). Up to 10, hired and trained waste cleaners were placed at each zone. One hundred and forty (140) office rubbish bins were also procured and placed in 22 office venues.

Waste Management Zones			
Zone (4)	Type of management by waste contractor	Transfer stations (8)	Waste streams (3)
Faleata – Harvest centre, Tuanaimoto, Shooting range	Cleaning and waste management	Gym 3 new multi-complex Football	2 – general and recyclables 3 – general, recyclables and organics at dining hall
Apia Park – NUS, Samoa College, Fagalii, Beach Volleyball	Cleaning and waste management	Apia Park, Samoa College	3 – general and recyclables 3 – general, recyclables and organics at dining hall
Faleula & Mulifanua	Waste management	Faleula – 1 Faleula - 2	4 – general and recyclables 3 – general, recyclables and organics at dining hall
Savai'i	Cleaning and waste management	Savai'i	2 – general and recyclables

Please note, this chart only shows sports venues and does not include the Athletes’ Village.

Public notices:

A key part of the waste management plan was to increase the public’s knowledge, understanding, and capacity to sort their self-generated rubbish into recyclables for diversion from and waste for disposal to the local landfill. This practice was to stimulate consumer behaviour change and increase an uptake of the 4Rs: Refuse, Reduce, Reuse and Recycle.

As part of a comprehensive communications plan, **Annex III: Greening of the Games Communications Report**, a “roadmap” was developed that included messaging the public about the ‘greening’ of the Games: what to expect and how to help. Posters, badges, t-shirts, banners, social media tiles, news articles, and website posts highlighted various messages about waste bins, water stations, and the 4Rs.

A Greening of the Games brochure, with a summary of the XVI Pacific Games efforts to reduce plastics and improve waste management, was circulated to the Chef de Missions of all competing countries' sports federations as well as other key personnel. The pamphlet addressed the reasons behind the initiative and provided lists of solutions, actions, and ways to cooperate in the history-making effort.

Radio and TV talks-shows as well as a series of local TV ads explained and instructed folks on what to expect while suggesting spectators bring a refillable bottle and reusable food containers.

Sports announcers broadcast regularly Public Service Announcements (PSA) during games' competitions.

Waste audits: Is the WMP working? Refer to Annex XIV: Snapshot of Wastes Generated at the XVI Pacific Games 2019 and Annex XIII: Wastes Generated from the Clean-ups leading to the XVI Pacific Games

To monitor and verify the plan to reduce plastics and polystyrene was working, waste audits were conducted during the XVI Pacific Games on trash collected from multiple sports complexes and the athletes / officials' accommodations. Volunteers transported for seven (7) consecutive days, accumulated rubbish was brought to three (3), carefully selected audit zones for sorting, identifying, and recording. The entire operation was overseen and managed by a team of local, waste experts including those from MNRE and SPREP. The team was ably assisted by 40 student volunteers from the NUS. Analysis of the resulting data helped identify the types of rubbish generated during a large sporting event and enable the Greening of the Games Committee draw conclusions about the effectiveness of the pre-games 'green' messaging.

NUS Student Volunteer



“In conclusion, I experienced and noticed that this project is vital to me as a biology student, to learn and discover what is happening to my environment and in my country, not only I learned to protect my environment but to help out other pacific countries to protect the Pacific Region. So, people should do some work to help our environment last for other upcoming generations in the future.”

Overall results of SAP 2.0 Sustainability through improved waste management at Pac Games locations

Key Outcomes:

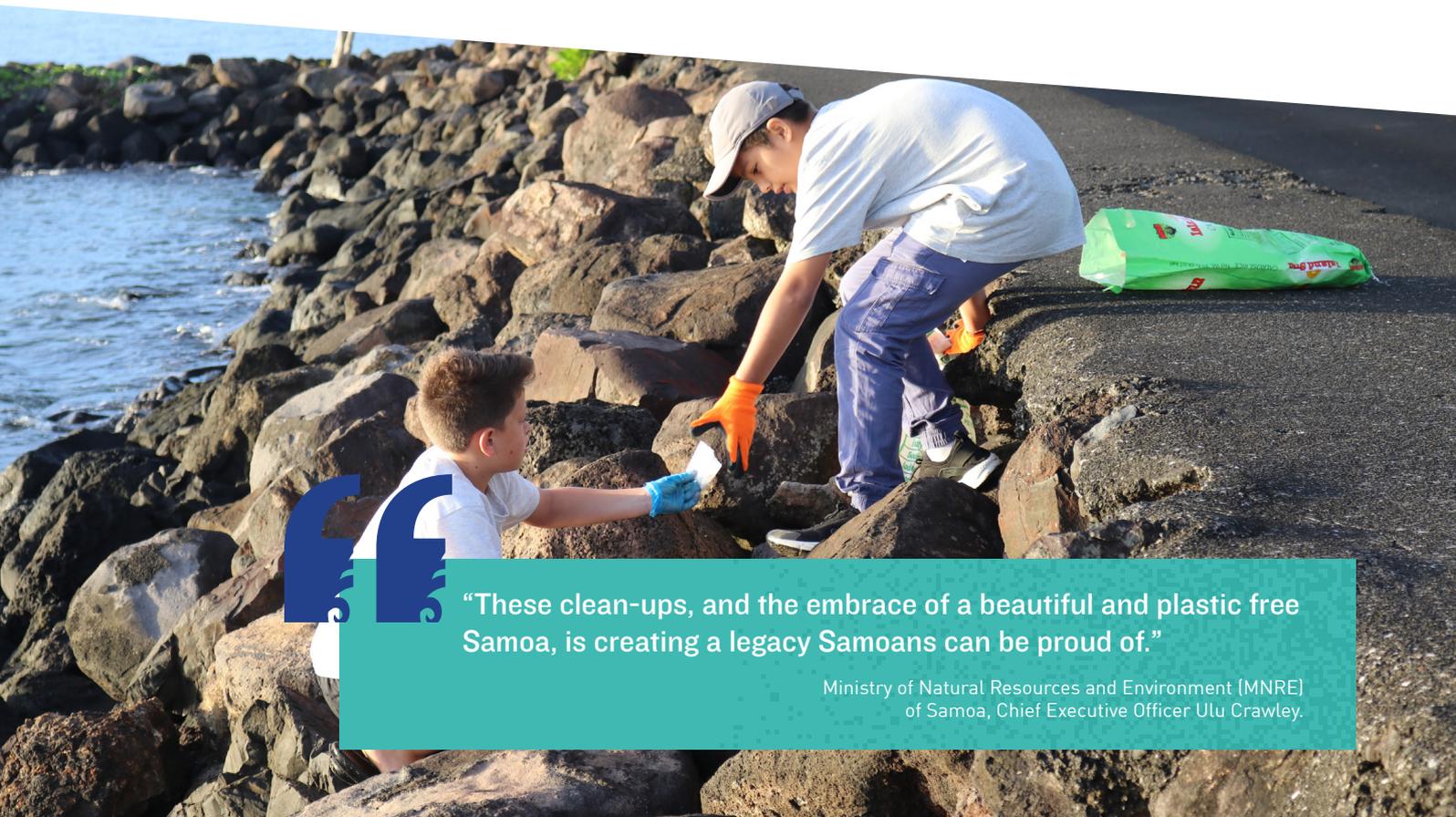
- buckets with lids and used as livestock feed by local farmers.
- Recyclables were treated and prepared for export using the Moana Taka Partnership with Swire shipping.
- General waste was transported and properly disposed at Samoa's landfill.
- Capacity for waste management best practices increased because of the inclusion of NUS student volunteers in the waste audits.
- Waste management messages of refuse, reduce, reuse, and recycle were part of the overall communications plan.

Best Practices:

- Vendors wanting to contract food and beverage services for the Games were required to replace single use plastic and polystyrene packaging with biodegradable alternatives as part of their tender process. In addition, they were to commit to keeping enough stock on hand to meet compliance needs for the 14 days of competitions.
- Waste collectors were paid employees rather than using a volunteer force.
- Waste collectors were trained on proper bin use, waste separation and disposal practices.
- Conducting waste audits to monitor the success of the initiative can be helpful.

Lessons Learned and Recommendations

- Start early. Conduct a waste assessment of every possible location in your purview that could be affected by waste accumulation and determine the best way to address collection, separation, disposal, and messaging.
- Research and secure desired waste bin sizes and quantity per findings from a timely and comprehensive waste assessment.
- Begin installation of waste bins at least one month prior to your event in order to work out any issues that may arise well in advance of the start date.
- The wheelie bin system needs to be marked clearly with high-impact, well-placed labels that clearly indicate recyclables from waste at first glance. Posters to explain bin operation and expectations should be strategically placed for easy public recognition and compliance.
- Waste collector training should start early and repeat often to ensure understanding and compliance with the waste management plan and procedures.
- Place recycle bins next to waste bins in order to differentiate and denote the expected separation process.



“These clean-ups, and the embrace of a beautiful and plastic free Samoa, is creating a legacy Samoans can be proud of.”

Ministry of Natural Resources and Environment (MNRE)
of Samoa, Chief Executive Officer Ulu Crawley.



3.0

SUSTAINABILITY

through engagement with Apia villages in waste management measures: Refer to Annex XII: Message to Samoa's mayors.

A willing and committed partner

Samoa benefits from a strong Government Ministry responsible for oversight and support of Village life and its people. It was vital that staff from the MWCSO be part of the GoGC. Assistant CEOs from MWCSO, provided consultation and recommendations on best practices to engage and activate Villagers about the need for a clean and green environment. In early April, these committee members met with hundreds of village mayors to present the Greening of the Games initiative. This included sharing the GoG Strategy and methodologies as well as an explanation of what their communities could do to help Green the Games and keep Samoa clean and plastic free.

Leverage to maximise results: Refer to Annex IX: Posters, Fliers and More.

In preparation for the Samoa 2019 Pacific Games, the Samoan Government mandated the country's village, church and school communities engage in a variety of clean up and decoration activities incorporating cultural influences for all 24 competing countries and sports teams. Playing off this mandate, and with the support from MWCSO committee members, the GoG partnered with the Samoan Tourism Authority (STA) in clean-up efforts associated with the

country's NBP. Leveraging clean-up activities around national (Samoa Independence Day 1 June), and international events (World Oceans Day 8 June), as well as the start date of the Games (7 July), the GoGC together with the MNRE, MWCSO and STA mobilised Villagers in carrying out three (3) city, river and community clean-up events in Apia and surrounding villages including on the island of Savai'i.

Clean-up events achieve multiple strategies

Elimination of single-use plastics and improved waste management were the two (2) aspects of the GoG Strategic Plan that required the most planning, preparing and delivery. They were also the areas that could produce the greatest return on investment if done thoughtfully, used the most effective channels, paid attention to details and benefitted from responsible follow through.

Focusing on SAP messaging targets to A. eliminate single use plastics and reduce the amount of waste that could potentially transfer to the local landfill and B. raise awareness and stimulate behaviour change from single use to reusable drink and food containers, three (3) community clean-up events were organised pre-games.

The events provided an efficient and effective way to connect with many people in a short amount of time while helping Samoa prepare for the arrival of visitors to the Games. In addition, they provided a venue for introducing and spreading the 'greening' of the Games message and the greater need to reduce marine pollution by eliminating single use plastics and polystyrene.

Planning by the GoGC originated six (6) weeks prior to the start of the Games and included multiple partners from Apia's waste and environmental sectors, local public, and private businesses as well as the sporting community.

Clean up event activities included:

- A waste focal point established to welcome volunteers, provide safety instruction, and dispatch to clean-up locations
- Waste sites were mapped, and equipment mobilised for efficient collection and subsequent delivery back to the focal point
- Post clean-up, activities were organised and marketed pre-clean-up to increase community turnout
- Large event-tents housed
 - » Waste audit
 - » Sausage sizzle
 - » Repurposed product sales
 - » Environmental information tables
 - » 'Green' activities for children
- Local grocery stores were asked to donate sausages, bread, drinks and supplies for post-clean up sausage sizzles. Approximately 1,300 sausages were grilled and served to the volunteers by members of Team Samoa Va'a and Volleyball. Due to the generosity of local groceries, money earmarked for food and beverage was given instead in support of Team uniforms and supplies.
- Members of Teams Samoa Touch Rugby and Volleyball demonstrated engagement in field-of-play activities with the children.
- Created a *green-fest* atmosphere.
- MC announcements generated dance contests, cultural and environmental-friendly activities (basket and plate weaving) to keep the volunteers engaged.
- Information tables shared messages about the environmental impacts of marine plastics, promoted the 4 Rs: refuse, reduce, reuse, and recycle, and announced the Greening of the Games initiative.



“The clean-up is a good way to remove rubbish from our rivers. It’s a great way for Samoa to demonstrate Pacific leadership through a commitment to green the games by reducing amount of plastic and Styrofoam choking our waterways.”

Director General of SPREP, Kosi Latu.

- A section of the tent was devoted to displaying local, green businesses that are
 - » effectively repurposing plastic into viable products
 - » manufacturing biodegradable, plant-based serving plates, bowls and spoons.
- Staff from MNRE’s Forestry Division handed out dozens of FREE, native tree seedlings thereby raising awareness for the Government’s Two Million Trees planting campaign, 2015 – 2020. This helped spread a message about off-setting carbon emissions from an increase in airline travel before, during and after the Games.
- Pre-event TV and radio morning talk-shows, newspaper reports, and various marketing outlets including social media posts, banners, posters and an official government announcement sent to local private institutions helped spread the word about the event as well kick-start the ‘greening’ messages.

Waste audits reinforce the message and influences behaviour: Refer to Annex XIV: Snapshot of Wastes Generated at the XVI Pacific Games 2019 and Annex XIII: Wastes Generated from the Clean-ups leading to the XVI Pacific Games.

In line with the GoG SAP strategy (#2.0) to improve waste management practices, as well as raise public awareness for issues pertaining to the accumulation

of litter, a compulsory waste audit was conducted during two of the three city, river, community clean-ups. A random sampling of rubbish from these events was collected, sorted, recorded and reported. Waste management experts and advisors used the audits to identify and prepare for what might be expected from an increase in visitors over the first two weeks in July.

Student volunteers from the NUS who helped conduct the audits felt a profound impact from the reality of the amount of litter that exists on the streets and in the rivers of Apia. Many chose to sign-up for waste audits planned during the Games despite the work being dirty, smelly, and tiresome. The physical presence of the rubbish displayed on tables over a four-hour sorting and auditing process shocked many of those attending the events.

Key to the outcomes achieved from the audits was to share the data with local contractors responsible for waste transfer to the local landfill and recycling centres. This encouraged and invited those responsible to better prepare for what was about to happen when the Games began.

Results of the two waste audits:

- 25 May: approximately 1.7 tons of garbage collected; 0.2 tons sorted, recorded and audited.
- 29 June: approximately 2.1 tons of garbage collected; 0.16 tons sorted, recorded and audited.



“During these waste audits we felt encouraged to be waste champions to spread the news to friends and families to be familiarised of how to do water management because the cleaner world we made nowadays is the healthier environment we will be living tomorrow.”

-NUS Student Volunteer



“Samoa is taking great strides to help make the island nation a clean and healthy one for her people. Showing leadership through banning single-use plastic bags at the start of this year, Samoa continues to lead by example having committed to Greening the Samoa 2019 Pacific Games this year. The commitment of people to this initial clean-up is further demonstration of Samoa leading by example.”

-Mr Anthony Talouli, the Marine Pollution Advisor of SPREP

Overall results of SAP 3.0: Sustainability through engagement with Apia villages in waste management measures.

Key Outcomes:

- Presence of Team Samoa athletes spurred excitement for the Games and set a notable example for the activity.
- Church, schools, and businesses used the events to form volunteer clean up teams which furthered event-capacity for gathering waste and provided an avenue for comradery and spreading of the environmental message.
- Basket and plate weaving were brought to the forefront as a reminder of how Pacific Islanders used to be plastic and polystyrene free
- Events provided visual reminders of the realities of local litter accumulation and the impact on the health and beauty of Samoa.
- A total of 3.8 tonnes of waste was removed from the rivers, streets, and waterfront of Samoa!
- Data from 0.18 tonnes of audited waste assisted with waste management and planning for the current as well as future large, public events.

Best Practices:

- Full involvement from the government ministry waste department, local waste management organisations and the ‘green’ organising committee provided a greater degree of ownership ensuring sustainability and building a legacy from which future events will benefit.
- A single point-of-contact for all contributing partners smoothed communication, responsibilities, and follow through on key activities.

- Experts and volunteers from the public and private sectors disciplined in waste management and clean-ups was critical to successful outcomes.
- A key reporter from the major local newspaper (Samoa Observer) adopted the Greening of the Games initiative in the early phases and provided high profile, continuous coverage before, during and after the clean-up events including messaging the underpinnings of the ‘greening’ of the Games throughout the period commencing 11 May – 20 July.
- Engaging youth at all levels in all activities increased knowledge of and competencies for the ‘why’ and ‘how’ to set up a cleaner, healthier, more beautiful, and plastic free Samoa.
- Clean-up events as part of a ‘greening’ initiative supply numerous avenues for raising awareness and educating the public on the need to practice the 4Rs: refuse, reduce, reuse, and recycle.

Lessons Learned / Recommendations:

- More advanced planning lessens the challenges inherent to implementing a large waste collection process particularly the logistical arrangements.
- Pre-training of waste audit volunteers saves time and reduces the possibility of error and / or injury.
- Volunteer clean up event instructions should define the desired litter targets: rubbish vs organics.
- Start early and often posting public notices broadcast across all available media outlets that include event logistics and purpose.
- Engage and get commitments from more stakeholders and influencers to enlist volunteers from their contingencies.

- It is of significant importance to have a strong representation of organisers; community leaders and committee members present at the events.
- Task-oriented, planning personnel as well as reliable resources are essential to fulfilling expectations and making sure goals are met.

SAP 4.0 Sustainability through engagement with Apia schools in waste management measures: refer to Annex V: MESC Report and Annex VIII: Educational Awareness and Tree Planting.

Partner, partner, partner:

In early 2019, the Samoan Government, in collaboration with the XVI Pacific Games organizing committee, directed MESC to develop a school-wide program scheduled to roll-out three (3) months prior to the start of the Games. "Adopt a Country" became the focus of several Games-related activities some of which focused on promoting a clean, healthy & sustainable environment.

Instructed to reflect the idea and theme of Greening of the Games, MESC staff, who were also, GoGC members, assisted 210 Apia and Savai'i schools in setting up environmental actions that included recycling, building vegetable gardens and installing compost bins.

Schools, students, and parents were encouraged to use recycled resources (paper, plastic bottles etc) and other objects from their environment to create & design posters welcoming visiting athletes from their 'Adopted' countries. Positioning these activities in the framework of a competition enabled the projects to be taken seriously with intent and purpose while

providing valuable experiential learning.

New partners and messages increase sustainable outcomes

With MESC managing the Greening of the Games message in government schools, the GoGC decided to look for more opportunities to reach more students and teachers across Upolu and Savai'i. Members of the GoGC from MNRE introduced organisers to the leaders of the Forestry division's Two Million Tree planting program, 2015 – 2020.

This relationship provided a messaging venue for Greening of the Games presentations to be inserted as part of monthly, three-day, four-hour workshops focused on Samoan forests and forestry. Facts and photos about the realities and dangers of plastic pollution on Pacific marine life shared in a PowerPoint presentation. "Choose to Reuse" buttons, and *Beautiful Samoa – Keep it clean and plastic free* tattoos and t-shirts were handed out as prizes. Each student received a refillable water bottle while every teacher received a collection of posters for her/his classroom having environmental messages including one promoting the 4Rs: refuse, reduce, reuse, and recycle.

Partnering with a tree-planting project stretched the climate change discussion to include how planting trees helps off-set carbon emissions. This connected to facts surrounding increased airplane emissions due to increased flight miles from athletes and officials travelling to Samoa before, during and after the games.

The program resulted in 13,605 native trees planted by over 913 students in 68 schools on 10.41 hectares of national forests across Upolu and Savai'i. The partnership ensures sustainability for a plastics free message with planned through November 2019 and throughout 2020.

This chart represents results from Two Million Tree planting - school events.

EATA Program supporting Greening of the Games Initiative April, May, June, July, August 2019

	# Schools	# Students	# Seedlings	Area (hectares)
Upolu	40	558	10,864	4.35
Savai'i	28	355	2,741	6.06
Grand Totals	68	913	13,605	10.41

EATA Program September, October, November, 2019

	# Schools	# Students
Upolu	30	450
Savai'i	15	225
Total	45	675

Overall results of SAP 4.0: Sustainability through engagement with Apia schools in waste management measures Key Outcomes.

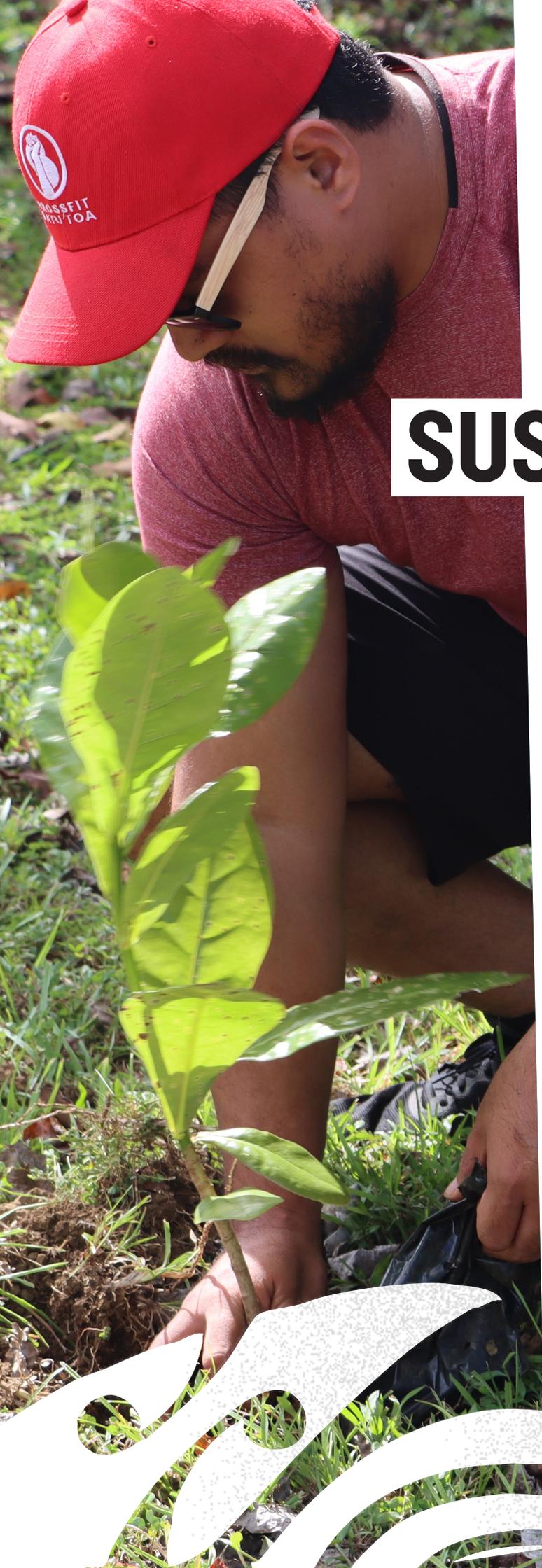
- 'Greening' activities spread to all Samoa schools beyond the 210 government mandated schools.
- Activities originated and remained on school campuses for six months starting in March and continuing through August 2019.
- Some schools furthered the 'green' message by requiring students and parents to pack student lunches in reusable food containers.
- Students that participated in the Two Million Tree planting campaign each received a refillable water bottle.
- One hundred and fifty refurbished, refillable water stations used during the Games were installed in government schools.

Best Practices:

- Inclusion of MNRE's forestry division enabled partnering with the government's tree planting program adding the valuable 'green' component of off-setting carbon emissions from the expected increase of airline flights by athletes and officials.
- Locating community individuals connected to or involved in activities complimentary to the 'greening' initiatives increased the reach into non-government schools and student art and environmental groups thus furthering the 'green' messaging.
- Organising multiple 'green' messaging activities, which targeted youth and were led by local Pro Green organisations, received a high priority.

Lessons Learned / Recommendations:

- When preparing the operating budget, money for school activities should be of primary interest and focused on the procurement of alternative sources for what the initiative is asking folks to eliminate. For example, refillable water bottles.
- Materials and methods to promote and deliver a 'green' message in schools need to start as early as possible, be developed and distributed quickly and include wording that is sustainable long after the event is over.
- While materials need to be "youth-friendly," they also need to be mindful not to compromise the 'green' message: for example, no plastic parts or packaging



SAP 5.0

SUSTAINABILITY

through the development of awareness and media resources on marine litter, plastics pollution and effective waste management: refer to Annex III: Greening of the Games Communications Report.

Organising a team of marketing and communications experts from among the members of the GoGC made for a more effective marketing & communications strategy. Accomplishing the goals and objectives of the Greening of the Games (GoG) initiative was paramount to what the committee set out to do both in terms of local waste management and capacity issues as well as the larger issues of climate change and setting standards to affect behaviour change.

To ensure operative planning and targeted delivery, the GoGC, 11-member communications sub-committee sought input and guidance from others with insight and connections that could prove influential and beneficial to the GoG including a discussion of expectations. Discovery and expertise review accomplished, the sub-committee developed a comprehensive communications strategy that included establishing an operational tagline and logo: "Beautiful Samoa: keep it clean and plastic free." Playing off the STA's 'Beautiful Samoa' tagline and logo ensured the *Greening of the Games* tagline and logo would be in use long after the Games ended.

A Communications Roadmap is essential to reaching the target audience and accomplishing the Goals & Objectives.

Four months prior to the opening day of the Games, a Communications Roadmap was developed by the sub-committee and consisted of Greening of the Games messaging spread across social

media, broadcast, print and display communications channels. The plan fleshed out a variety of plastic and polystyrene free messages including how the public should prepare for a plastic free event if they were going to attend the XVI Pacific Games.

To build increased capacity for messaging the *Greening of the Games* activities, local media representatives from TV, radio and print were briefed on the initiative's objectives and trained on the best practices and delivery methods to raise awareness and help bring about behaviour change in support of the 4Rs: refuse, reduce, reuse, and recycle.

The local newspaper, Samoa Observer, as well as the main local TV and radio stations, were enthusiastic partners in helping message the goals of the 'greening' initiative including articles about the elimination of single use plastics from the Games' venues and announcements about the three (3) city & river clean-up events held prior to the beginning of the Games. The newspaper was particularly engaged consistently reporting on 'greening' of the Games activities before and after each event and then posting the articles in print and on their website. Stories of the marine pollution problems and the need to reduce use of plastic often went with the reporting.

Collaboration among GoGC members from the STA, MNRE, and the SPREP resulted in live radio and TV talk shows in the weeks leading up to the clean-up events and messaged GoG initiative to eliminate single use plastics and polystyrene and 'how' and 'why' the public and Games' spectators could support the effort.

Chef de mission / competing teams can play a role

With a focus on reducing the negative impact of the increased carbon emission from frequent and multiple flights to and from Samoa before, during and after the Games, a "50-Days Out" tree planting campaign was launched 18 May 2019. The intent was to encourage athletes from competing countries to organise tree-planting activities in their countries of origin before their arrival in Samoa. Spun off the partnership with MNRE's Two Million Tree Planting

Program, the GoG sub-committee worked with the Pacific Games Office communications staff on the best way to engage the Chef de Mission from each country's individual sports federations.

The GoG sub-committee emailed an official announcement the PGA and the Chef de Missions in early May. The campaign was supported by social media postings on the Pac Games, GoGC and partner websites. Promotion was complimented by the development of an information booklet summarising critical points about the entire GoG initiative while explaining the goals of the '50-Days Out' proposal. Local Team Samoa benefited from tree planting events organised by MNRE's Forestry Staff responsible for the Two Millions Tree program.

Overall results of SAP 5.0: Sustainability through the development of awareness and media resources on marine litter, plastics pollution and effective waste management.

Key Outcomes:

- Social media reached over 60,000 people through official GoG social media channels. This number does not include 'shares' from partners, sponsors, private and public organisations international and nationally as well as individual 'Friends' of the Samoa 2019 Pacific Games, athletes, sports federations, fans, family and friends.
- 'Green' messaging opportunities were increased by adding campaigns that gave reason to directly target the Chef de Mission.
- 'Green' messaging opportunities were extended by way of partnering and playing off other organisations' environmental activities and promotional efforts.

Best Practices:

- As a sub-committee of the XVI Pacific Games operations office, the Greening of the Games sub-committee enjoyed a strong working relationship with the communications / marketing staff enabling guidance, collaboration, and ultimately greater success.

- A strong working relationship with national media is critical for ensuring good coverage of all aspects of the event before, during and after. Helping with capacity building of the media by keeping them informed through frequent business messaging and press releases can result in better reporting and more feature stories. Consider organising a specialised one-day training session and invite media across print and broadcast media.
- Ensure advertisements appear on official TV and radio broadcast stations. Frequent ad buys several weeks before and continuing during the event improves possibility audience will hear and heed he message.
- Make sure an effective 'green' message includes:
 - » Radio, television, newspaper/print, billboards, and social media campaigns
 - » Interactive activities including events and a 'green' information booth both before and during the event
 - » Coordinated messaging with government, tourism, and environmentally focused organisations
 - » Promotional materials such as buttons, banners, posters, tee shirts, booklets
 - » Regularly repeated Public Service Announcements at games' venues during the competition
- Strong relationships with local suppliers help ensure work is prioritised.
- Featuring local talent and/or people held in high regard in the community – particularly in the related field of sports – increases the each and impact of your advertising and promotional materials.
- Featured a wide variety of Pacific island faces in social media draws interest.
- Advertising in both the universal and national languages is crucial.

- "50 Days Out" tree-planting campaign encouraged teams from all competing countries to offset carbon emissions from increased air travel before, during and after the Games.

Lessons learned / recommendations

- Ensure funding is obtained and accessible well in advance (at least six months) of the media launch date. Broadcasting and production is costly. Having funds available will supply a timely start for the work that needs to be done.
- Strong knowledge and understanding of funding agreements during the planning phase ensures branding requirements are met when developing promotional materials.
- Procurement processes must be adhered to avoid delayed payment of vendor invoices.
- Due to supplier differences within Pacific island countries, capabilities and availabilities must be taken into consideration in the initial stages of executing the communications plan.
- Coordinating among all media outlets ensures a wider and broader reach.
- Communication plans need to be mindful of the timing for the approval and other processes.
- Initiatives involving Chef de Mission need to be sent early, with repetition and follow-up. If possible, schedule a meeting with all Chef de Mission pre-games when in town to discuss accommodations being made for their teams.
- Ensure Partners' marketing requirements and guidelines are obtained, understood and agreed upon in advance of campaign launch to ensure a smooth process with graphic design.
- If operating interactive, information booths as part of the SAP, make certain the location is placed strategically for best ability to engage with the public.
- Information booth plans should include planning for access, transporting supplies, staff accommodations and inclement weather.



SAP 6.0



SUSTAINABILITY

by leaving a legacy of Greening the Games through sporting champions:

Identifying local, programmatic organisations incorporating pro-green pillars as part of their mission, is paramount to building human capacity for spreading a plastics-free message in real time and modelling sustainable behaviour change throughout and post events. Highly recognisable and respected individuals related to the core initiative – in this case the environment and athletics – ensured efforts to eliminate single-use plastics would live on long after the Games ended. Early in its strategic planning phase, the Greening of the Games Committee identified two such organisations to help achieve the goals of leaving a legacy from the ‘greening’ the XVI Pacific Games: Voices of Athletes and Samoa Voyaging Society’s Guardians of the Ocean.

Voices of Athletes (VOA), aims to empower “retired” competitive athletes to be leader-educators in the four key areas of a Doping Free Culture; Healthy Lifestyle; HIV and AIDS Education and Prevention; and the Environment with the key messages being – Play True; Play Safe; Stay Healthy and Go Green. Funded by the Oceania National Olympic Committees (ONOC), United Nations Educational, Scientific and Cultural Organisation and Oceania Regional Anti-Doping Organisation (ORADO), the Voices of the Athletes Program was launched at the South Pacific Games in Samoa in 2007. Originating in Australia, the program now serves seven Pacific Island nations including a dedicated office with staff in Samoa.

Members of the Greening of the Games committee reached out to officials from VOA to present the need to build awareness and legacy for the GoG message. The proposal was met with positivity recognising the opportunity was both an excellent outlet for VOA leader-educators and supportive of their newly adopted pillar, Go Green. Due to the successful partnership between the GoGC and the Samoan government's Two Million Tree planting project, VOA staff and 'retired' competitors, recruited former and current athletes from various sports teams and countries to engage in planting trees to off-set carbon emissions realised by air travel to Samoa. Fourteen teams from seven countries together, with athletes and officials from Voices of Athletes, SOSNOC and Samoa, planted over 3200 trees in Faleata Reserve during the two weeks of the Games' competition.

Requested Date	Country	No. of Trees planted
25-Jun-19	Norfolk Island (net-ball team)	280
29-Jun-19	PNG Team	200
9-Jul-19	TONGA	15
10-Jul-19	Fiji (rugby & vaa)	420
15-Jul-19	Samoa (badminton & swimming)	1,000
16-Jul-19	Vanuatu (Archery athletes)	50
17-Jul-19	VoA	150
17-Jul-19	Samoa Team (cricket & vaa)	380
18-Jul-19	Tahiti (Dereck)	35
20-Jul-19	Fiji (powerlifting & Athletics)	525
16-19 Jul-19	Boxing - Savai'i tree planting	180
		3235

Samoa Voyaging Society – Guardians of the Ocean: is a non-profit organisation established in 2009 for the purpose of reviving Samoan cultural traditions related to ocean sailing and navigation as well as the promotion of the wise stewardship of the Pacific Ocean. One of their goals it to encourage conservation, protection and awareness of the Pacific Ocean and island environments. This part of their platform made a perfect landing for the Greening of the Games message. The Guardians are the custodians of the traditionally inspired, 22 metre voyaging canoe, the Gaulofa. The Voyaging Society uses the vessel as a floating classroom to spread environmental and cultural messages out to beach communities throughout the Samoan islands.

The Greening of the Games city, river and community clean-up events benefited from 'Guardians' who were on hand to share environmental lessons with the children volunteers present for the after-clean-up activities. A 30-minute litter lesson asked children to guess the length of time it takes for common litter to breakdown in the environment. Attitudes were affected and minds changed when the real answers were exposed about the reality of how long it takes for plastic, aluminium, polystyrene, glass, and other common litter to degrade. The 'Guardians', in tandem with MESC, have generated a week's long, 10 class series of environmental exercises that includes topics addressing marine litter, coral reefs, mangroves and more. Village classes were scheduled for the 2020 school year. The GoG plastics free message will live on because of the good and crucial work of the Guardians.



Clean-up, Apia Samoa
©SPREP

Overall results of SAP 6.0: Sustainability by leaving a legacy of Greening the Games through sporting champions

Key Outcomes:

- Essential partnerships with local, high-profile, sports related non-profit organisations increased audience reach strengthened credibility and longevity for the 'greening' initiative.
- Success of the GoG initiative boosted visibility, authenticity, and support for the non-profits.
- Heightened awareness for off-setting carbon emissions was recognised and embraced among athletes, officials, visitors, and spectators to the Games.
- 3200+ more native tree seedlings were planted in one of Samoa's main nature reserves.

Best Practices:

- Partnering with organisations that have a viable and recognisable association with the focus of the event or initiative will extend audience reach, add credibility and create long-term effects and outcomes for all parties.

- Partnering with established, reputable and recognisable NGOs who have a track record modelling green behaviours, increases the chance of public awareness, agreement and adaptation in favour of the environment and a cleaner, healthier Pacific Region.
- Leveraging these partnerships within the community have the potential to influence and develop future leaders and entrepreneurs for 'green' businesses and practices.

Lessons Learned / Recommendations:

- Well in advance of the event, schedule a series of bi-lateral, information sessions with designated members of each organisation to discuss goals and objectives, expectations, contributions and commitment.
- Include a clear understanding and agreement for timelines, finances, human resources, and deliverables.
- Be mindful many non-profits are limited in terms of money and technical capabilities. Be prepared to provide assistance in these and other areas in order to secure successful outcomes and sustainability of the initiative's goals and legacy.



SAP 7.0

SUSTAINABILITY

by reducing single-use plastic drinking bottles through dispensing water stations:

Athletes need water! Water regulates body temperature and lubricates joints. It helps transport nutrients to give competitors energy and keep them healthy. Staying hydrated boosts athletic performance and prevents injury. Good hydration means getting the right amount of water before, during, and after exercise. Any event involving athletic competition, no matter how large or small, requires attention to the hydration needs of the competitors. It is a top priority.

Historically in the region, the solution was to supply athletes with huge quantities of plastic water bottles. This practice created a variety of challenges for local waste management companies tasked with collection and disposal of the increased waste, particularly plastic that in many cases could not be repurposed or recycled. When the Greening of the Games Committee Co-chairs developed the plan to eliminate single use plastic water bottles, they took a serious look at finding viable alternatives and reliable sources to make certain the hydration needs of each and every athlete, official, volunteer and Games' employees were met.

Once the decision to procure water stations for all 20 sports venues, three (3) dining halls and athletes / officials' accommodations was made, a major fund-raising effort was undertaken by the GoG Committee resulting in SAT \$400,000 raised for the

purchase of 350 water stations. Games staff installed multiple stations at each location. In addition to the sporting community, water stations were free and available to spectators, volunteers and all having any access to the sports venues. Posters advertising were generated and posted next to the water stations messaging the public on the importance of using a refillable water bottle. Included on the posters were the logos of those who provided funds for the purchase of the water stations: AFD, Government of Australia, Government of New Zealand, UNEP and the United Kingdom.

Overall results of SAP 7.0: Sustainability by reducing single-use plastic drinking bottles through dispensing water stations:

Key outcomes:

- Nine thousand refillable water bottles were distributed to all athletes, officials & volunteers.
- An innovative and first-time process was developed and delivered for supplying safe, fresh, cool water to the Triathlon competitors (see case study).
- Measured increase in public exposure for and use of refillable water bottles modelled by athletes competing in the Games and local, high-profiled individuals from sports, government, environment and social societies.
- Increased awareness and positivity for the 'greening' message to reduce single-use plastics realised by increased sales of water bottles, school initiatives to reduce plastic consumption, local businesses adding more green options to their retail shelves and business owners serving food & beverage in biodegradable cups and containers replacing polystyrene and plastic.
- Following the Games, raised awareness for the use of water stations and the need to reduce the use and cost of single use waste bottles, led to an increase of water station sales and installations in businesses from hospitality to industry.
- More local restaurants and coffee shops serve water in glass from filtered water supply rather than plastic bottles.
- Pacific Pure Water pledged to freely install and provide low-cost service for 150 water stations used during the Games and intended for Samoan government schools.
- Uptick in the number of students receiving refillable water bottles.

Best practices:

- Chef de Mission, Athletes and support staff were guaranteed access to plenty of filtered, cold and secured water both on and off the field-of-play including the Triathlon course which proved the most challenging to service. **Refer to Annex VI: Case Study.**
- Multiple water stations were installed to provide continuous, free, filtered, water at every sporting venue, dining hall and housing accommodation for easy and fast fill-up.
- All athletes, officials and volunteers received an official XVI Pacific Games 1.5 litre, long-lasting, aluminium, and refillable water bottle to use during and after the competitions.
- Water station vendors were contracted to service machines at all locations daily from 6:00 AM – 9:30 PM.
- Frequent and targeted messages broadcast on TV, in print and on social media featuring high-profiled athletes, local personalities, government and environmentally connected officials alerted the public to bring refillable water bottles and food containers as single use were not available at Games' venues.

Lessons learned / recommendations

- Sufficient funding and access to the money raised needs to be secured early in the process in order to procure and install water alternatives well in advance of the start of the event in anticipation of any challenges or opportunities that could arise.
- Early in the planning stages, schedule meetings with all sports federations, organising officials and key personnel to discuss all aspects of what is being proposed and planned in order to lock-in agreement for the initiative. This could result in better, advanced and prolonged support for the proposed alternatives and practices as well as a much-needed buy-in from athletes and participants in order to achieve maximum success and residuals.
- Canteens positioned outside the Games' sports venues selling food & beverage in take-away plastic and polystyrene containers said they were unaware of the Greening of the Games compliances. Including a discussion process of 'what ifs' among organisers and committee members will enable identifying possible breaches in the SAP and result in a process to educate and encourage compliance everywhere necessary.
- Proper transparency of the proposed initiative delivered by frequent, targeted, well-placed and engaging messages through traditional and social media outlets, must start early and have the backing of an approved communications plan with sufficient and available funding.



SAP 8.0

SUSTAINABILITY

through supporting sustainable green alternatives:

For the Greening of the Games Committee, it was not enough to just eliminate single use plastic water bottles. Of equal importance was to:

- Eliminate single use plastic tableware and plastic & polystyrene food containers.
- Develop Green business models.
- Achieve 'green' citizen behaviour change through uptake of the 4Rs.
- Identify 'green' infrastructure and equipment to support 4Rs.

In addition to addressing these goals, realities had to be taken into consideration such as the unavailability of single-use plastic shopping bags and drinking straws. Banned by the Samoan government in January 2019, and unavailable in Apia grocery and convenient stores as well as most Samoan restaurants and hotels, the need to supply athletes and officials with a way to manage their shopping became an issue needing to be addressed.

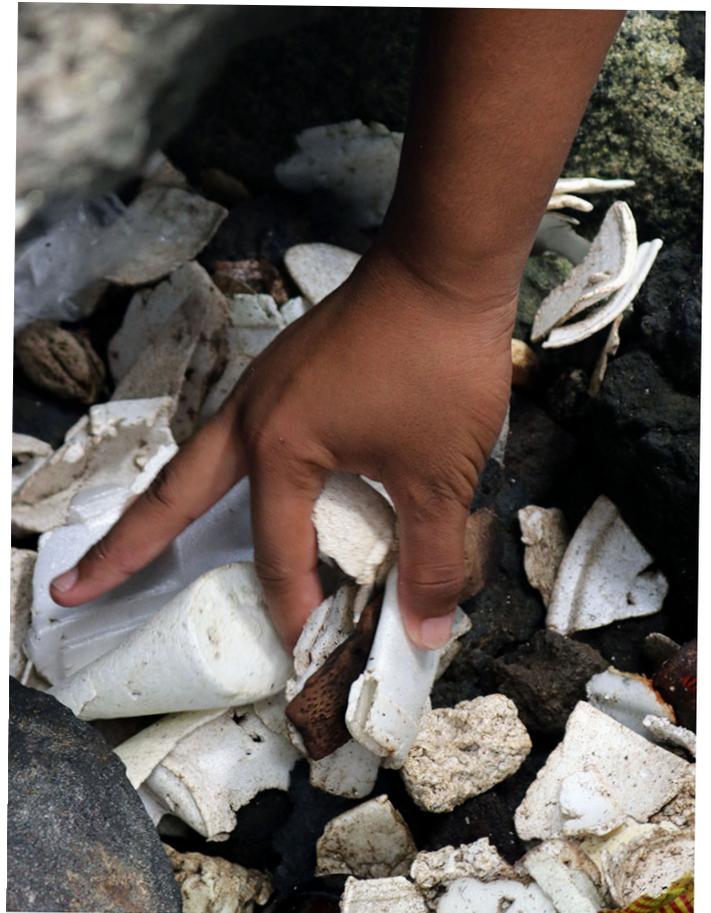
Again, the needs of the competitors and support staff took precedence. Staff of the Games Operations Office in charge of sponsorships, initiated contact with Game's sponsors and were successful in obtaining over 6,000 reusable sports backpacks. The backpacks became receptacles for a variety of "welcoming" gifts given to every athlete and official as they stepped off the plane.

Similarly, the GoGC task force embarked on a search for alternatives to single-use plastic shopping bags including outreaching to local village seamstresses who, in the end, were unable to meet the necessary budget and timelines.

Zero Bag, producer of reusable, 'stuff' sack, shopping bags made from recycled plastic bottles, stepped in and donated 6000 repurposed bags. The power of networking was at play and on the side of the GoG when, hearing about the 'greening' initiative from members of the waste management staff of SPREP, the owners of Zero Bag eagerly and without hesitation asked to be involved. The Zero Bag donation supplied enough shopping bags to fill all of the athletes and officials' 'welcoming' gift bags with left over supplies used as part of special gift bags for key influencers and stakeholders such as the GoG funding partners.

Providing biodegradable alternatives for food & beverage service was a mandate of every vendor's contract. Vendors did not resist the directive though concern for supplies was clear. Still the practice was embraced, and solutions/resources found. Many of business providing food & beverage service at the Games have incorporated the use of biodegradable serving and packaging into their daily business practices.

Spurred on by the Greening of the Games Initiative, two local businessmen invested in a way to manufacture biodegradable plates, bowls, and tableware from plant-based materials. The need for and collection of the required palm leaves has become a community supported effort with many landowners offering to stock the factory with materials.



Overall results of SAP 8.0: Sustainability through supporting sustainable green alternatives.

Key outcomes:

- Over 4,500 reusable shopping bags and 4,500 reusable back packs were distributed to athletes and officials. Shopping bags were donated by Zero Bag out of New Zealand. Sports bags were donated by the United Nations Environmental Programme.
- Biodegradable food containers and utensils were required of food & beverage tenders and formed part of the meal delivery services.
- Production of plant-based serving plates, bowls and flatware was launched by Samoa Green Products Ltd. SGPL was heavily promoted in articles in the press and on social media. Displays of the products were showcased at 'green' information booths both at the pre-Games 'clean-up events and during the 2-weeks of competition key locations.
- Increased Apia businesses using paper / biodegradable take away containers for food & beverage.
- Ten Apia grocers agreed to install recycling cages for aluminium/tin and plastic.

Best practices

- Biodegradable food containers and utensils were required of food & beverage tenders and formed part of the meal delivery services. A minimum of 150,000 meals were served during the games to athletes, officials and volunteers.
- Canteen staff served meals using proper plates and utensils when possible. Staff served more than two thirds, or 104,000 of the meals in this manner.
- 46,000 meals served in takeaway containers with less than 2,000 served in polystyrene containers.

Lessons learned / recommendations

- Start early to stockpile alternatives. Demand stretched available supplies.
- Besides contractual inclusion and securing adequate resources, compliance with non- plastic / non-polystyrene product use must be monitored and enforced.
- Notification and education regarding a ban on plastic and polystyrene needs to be far reaching to include vendors outside the Games / event purview.

ANNEXES

Annex I:

TERMS OF REFERENCE

Greening of the Games Committee (GoGC)

Introduction

1. The overall objective of the Greening of the Games Committee (GoGC) is to implement the **Greening of the Games Strategy (GoGS)** as part of the Pacific Games 2019. This is in line with Samoa's vision for a plastic free environment, sustaining livelihoods and natural heritage in harmony with culture.
2. Specifically the overall objective of the Strategy is to use the Pacific Games as a platform to bring about behavioural change for addressing waste and pollution issues particularly marine litter and plastic pollution through the principles of the 4Rs – Refuse, Reduce, Reuse, Recycle capitalising on the Moana Taka Partnership between SPREP and Swire for the export of low value non-commercial waste streams from Pacific islands to overseas markets for recycling and/or disposal.
3. The Strategy has five key outcomes:
 - a. Green business models including procurement of environmentally sustainable alternatives;
 - b. Green behaviours achieved through uptake of 4Rs;
 - c. Green infrastructure and equipment identified to support 4Rs;
 - d. Carbon footprint offsets for incoming athletes, officials and visitors; and
 - e. Increased education and awareness for sustainable waste management through the 4Rs.
4. The Strategy has three key outputs:
 - a. Increased uptake of green products as alternatives to single-use plastics;
 - b. Positive shift in consumption and disposal choices; and
 - c. Greening facilities operational, effective and sustainable.
5. To this purpose, and to ensure strong inclusion of all stakeholders in the GoGS a sub-committee of the Pacific Games has been established – GoGC. Its role, composition, organisation and mode of operation are described hereunder.

Roles & Responsibilities of the Committee

6. The Greening of the Games Committee (GoGC) will provide guidance and oversight to the implementation of the Greening of the Games Strategy (GoGS). It is a consultative body to guide the effective mobilisation of resources working in close coordination and reporting to the office of the Pacific Games 2019 (Pacific Games Committee).
7. The role of the GoGC will be as follows:
 - a. To provide oversight, advice and guidance on the strategic directions of the GoGS implementation, by meeting at least once every fortnight;
 - b. Approve the GoGS workplan and budget and monitor the progress of implementation; and
 - c. Provide implementation advice to the teams by way of ensuring that they planned activities are implemented effectively and efficiently.

Composition of the GoGC

8. The GoGC will be co-chaired by SPREP and MNRE. And co-coordinated SPREP and MNRE. Membership of the GoGC will comprise representatives of other games sub-committees, government Ministries such as education and rural development, UNEP, and the Samoa Recycling and Waste Management Association.
9. "Other Members" that comprise of other implementing agencies could attend the meeting.

Organisation of Meeting

10. The facilitation of the GoGC is as follows:
 - a. The GoGC will meet fortnightly and where necessary meetings will be convened virtually;
 - b. Draft agendas and discussion papers will be circulated to all GoGC Members prior to the date of the meeting; and
 - c. Meeting minutes will be circulated for comments/inputs to all GoGC Members within 2 working days of the meeting.

Governance of the GoGC and its decision-making capacity

11. With regards to the governance of the meeting, it will be as follows:
 - a. Meetings of the GoGC will be co-chaired by the Director General of SPREP Leota Kosi Latu and the CEO MNRE Ulu Bismarck Crawley or their delegated representative. And co-coordinated by Seumalo Afele Faiilagi ACEO DEC MNRE, Anthony Talouli Pollution Adviser SPREP, Papalii Faafetai Sagapolutele Assistant Chief Technical Adviser JPRISM2;
 - b. As a rule, the GoGC will discuss matters and issues in a cohesive manner and will take its decisions by consensus. The Co-chairs will guide and facilitate the discussions, as appropriate; and
 - c. The co-coordinators shall facilitate administrative and logistical arrangements for the organisation of the GoGC meetings. Prepare draft agendas, letters of invitation and any support documentation within the agreed time frame. Coordinate the drafting of meeting documentations. Draft summary notes for circulation and approval.

Annex II:

STRATEGIC ACTION PLAN

Background

The Pacific Games will be hosted by Samoa in July 2019. It is expected that over 4,500 athletes and officials from 22 Pacific island countries and territories will participate in 28 sports. The Pacific Games provides a great opportunity for the Pacific and the Government of Samoa to green the games promoting sustainable initiatives to address marine pollution particularly marine litter and plastic pollution which is now a major issue for Pacific islands. Poor waste management and inadequate control over major sporting events in the region can pose risks to the overall economic base of most PICTs that are very reliant on a clean environment and a healthy environment. Recent regional and national sporting events (Commonwealth Games 2017, Pacific Games in Vanuatu and the Raka7's in Fiji) have implemented sustainable events management strategies. Leveraging the cultural and market influence of sports to promote healthy, sustainable communities as a platform to advocate for and address marine litter and plastic pollution. This is in line with the Blue Pacific narrative and the Pacific Island Forum Leaders decision to commit to eliminating marine litter and urgency to implement the Pacific Marine Litter Action Plan under the framework of the Pacific Framework for Regionalism, the S.A.M.O.A. Pathway and the SDGs.

Overall Objective

The overall objective of Greening the Games is to use major events such as the PG as a platform to bring about behavioural change for addressing waste and pollution issues particularly marine litter and plastic pollution through the 4Rs – Refuse, Reduce, Reuse, Recycle.

Proposed immediate outcomes

1. Green business models.
2. Green behaviours achieved through uptake of 4Rs.
3. Green infrastructure and equipment identified to support 4Rs.

Proposed outputs

1. Increased uptake of green products as alternatives to single-use plastics.
2. Positive shift in consumption and disposal choices.
3. Greening facilities operational, effective and sustainable.

Inputs

Targeted workshops; effective engagement with private sector; sustainable green policies developed; in-country intensive support; ad-hoc technical assistance and mentoring; infrastructure and equipment commissioning workshops; in-country intensive support.

Coordination

Preparation for the Pacific Games is a whole of country effort. A Pacific Games Greening Advisory Panel is to be set up co-chaired by the Director General SPREP Leota Kosi Latu and CEO MNRE Ulu Bismarck Crawley. Seumalo Afele Faiilagi, Faafetai Sagapolutele and Anthony Talouli will be the convener and also liaison with the Pacific Games Committee as the games secretariat, the games Executive Committee, SASNOC and other partners.

Strategic Actions

a. Green behaviours through waste management

Similarly, to the 2007 Pacific Games, the 3rd UN SIDS Conference and the Raka7's the focus will be on implementation of the circular economy principles of minimising wastage as well as maximising use of resources through the 4Rs – Refuse, Reduce, Reuse, Recycle. Conveying key messages in a way that the public understands and undertake participatory activities.

Greening of the Games Strategy and Sustainable Plan – SPREP will develop a greening of the games strategy that will encompass the best practices and key messages from the ISO 20121 Events Sustainability Management System and the Global Reporting Initiative Framework as part of the games that can be used for future Pacific major events.

Waste management of games facilities – waste management audits will be carried out of all the games facilities, accommodation and cafeteria venues. The audit will also include other key facilities such as the airports and hospital. SPREP and J-PRISM II will assist the Ministry of Natural Resources and Environment (MNRE) of Samoa to put in place measures to improve waste management at these sites including the purchase and installation of waste and recycling receptacles as well as detailed guidance to waste management contractors.

Marine Litter Demonstration Projects – work with MNRE and the Pacific Games Committee on a marine litter demonstration project for the various games host villages. This will include media events, clean ups, municipal improvements, waste Guardians environmental education workshop. The results of these activities will be demonstrated at the games.

Media Campaign – SPREP will develop an awareness and media communication strategy to convey key messages to the public as part of the games.

School and community consultation – develop a programme of school visits to provide key issues relevant to the games and work with MNRE and the PG Committee to do the same with communities.

Sporting Champions – work with SASNOC and ONOC to select 10-12 sporting champions from around the region and co-develop a programme that will advocate for a plastic free games before, during and after the games working with national environment agencies.

b. Green business models

The games will provide the opportunity to implement green business models to address alternatives to single-use plastic that include plastic shopping bags, PET water bottles, take-away products that include plastic cutlery (knives, forks and spoons), cups, plates, straws and food containers designed or supplied as single-use items, and single-use plastic foam take-away products (e.g. styrofoam/polystyrene).

Clean drinking water stations – with funding support implement a new business model for providing clean drinking water to games facilities, accommodation and cafeteria venues.

Re-usable water bottles and cups – with funding support each athlete will be provided with a re-usable water bottle and cup that they can refill at the clean drinking water stations, and use for hot liquid products such as tea or coffee.

c. Infrastructure and equipment

As much as possible procurement will be for sustainable Green infrastructure:

- Clean drinking water stations.
- Waste segregation bins.
- Alternatives - re-usable water bottles, hot and cold beverage cups, cloth shopping bags.

Proposed Budget

Strategic Actions	Total Budget (\$US)
0.0 Capacity to organise the greening of the PG2019 – accommodation for 3 Peace Corp volunteers	24,000
1.0 Development of Games Strategy and Sustainable Plan	2,000
1.1 Development of Games Strategy and sustainable plan	1,000
1.2 Stakeholder consultation	1,000
2.0 Improved waste management for games facilities	25,000
2.1 Waste audits	2,000
2.2 Post Audit stakeholder consultation	1,000
2.3 Purchase of waste and recycling receptacles	20,000
2.4 Installation of waste receptacles	2,000
3.0 Engagement with Apia villages in waste management measures	16,000
3.1 Community consultation (2 community consultations)	3,000
3.2 Community Cleanups (3 community cleanups)	4,500
3.3 Community Environment Awareness Programmes	3,000
3.4 Voyaging Community training workshops (Guardians)	1,500
3.6 Purchase and installation of waste receptacles	4,000
4.0 Engagement with Schools around Apia in waste management measures	14,000
4.1 School consultations and workshop events (10 schools)	5,000
4.2 School environment awareness programmes	5,000
4.3 Purchase and installation of waste receptacles	4,000
5.0 Development of awareness and media resources on marine litter and plastics pollution, and effective waste management	50,000
5.1 Development of media and awareness materials	10,000
5.2 Broadcasting and launching of media and awareness materials	30,000
5.3 Print media materials and printing	10,000
6.0 Legacy of greening of games through sporting champions	24,000
6.1 Advocacy of sports and sustainable development through sporting champions (12 champions)	24,000

7. Reducing single-use plastic drinking bottles through dispensing water stations	99,000
7.1 Drinking water receptive location audits. Alternatives to import water stations - use of water tanks	1,000
7.2 Post Audit stakeholder consultation, arranging with supplies specifications, request for tender prepared.	1,000
7.3 Purchase of clean water dispensing stations (30 @ 2.8K ea CIF).	84,000
7.4 Installation of clean water dispensing stations	3,000
7.5 Operation and maintenance during and post games	10,000
8.0 Supporting sustainable green alternatives	45,000
8.1 Cloth shopping bag (5000 est 4ea CIF)	20,000
8.2 Alternative starch based food packaging and/or plates	
8.3 Source details, cost, stock feed, availability of stock feed, who would get to use this locally.	15,000
Sources alternatives from NZ subsidise the cost	10,000
TOTAL (Project)	299,000

Annex III:

GREENING OF THE GAMES COMMUNICATIONS REPORT

1.0 Purpose of this Report

The Greening of the Games Communication Report is to focus and share the vision, strategies, key outcomes, best practices, and lessons learned from the Samoa 2019 Pacific Games. The report lists the eight targeted areas that facilitated communications efforts during the Greening of the Games (GoG) campaign and includes a full survey report in the annex.

1.1 Development of Games Strategy

The Pacific Games are a multinational athletic competition event. Every few years the host country of the Games changes. Samoa chose to host the 2019 games after the surprising withdrawal of Tonga to serve in that capacity.

The Samoa 2019 Pacific Games presented a special set of challenges, opportunities, and responsibilities. Relevant here is the Games presented a special change to promote a green friendly message to those involved in the Samoa 2019 Pacific Games.

An 18-member sub-committee formed under the umbrella of the Samoa 2019 Pacific Games. This sub-committee included members from Government Ministries of Samoa, UN Environment Programme, Secretariat of the Pacific Regional Environment Programme (SPREP), public and private sector organisations. Co-chairs and co-facilitators were appointed, objectives defined, and a Strategic Action Plan developed, approved and launched, in January 2019.

Co-chaired by the Samoan Government's Ministry of Natural Resources and Environment (MNRE) and the SPREP, the Greening of the Games Committee (GoGC) operated under the slogan "Beautiful Samoa – Keep it Clean and Plastic Free." Derived from the existing logo and tagline of the Samoa Tourism Authority, a communications strategy ensured a longer lifespan of action for the 'greening' initiative post the XVI Pacific Games.

Several international development partners stepped up to help execute the GoG campaign. Through the generous contributions of Agence Française de Développement (AFD), Government of Australia, Government of New Zealand, United Nations Environment Programme (UNE) and the United Kingdom, a total of SAT \$400,000 was turned over to the Pacific Games Office by the GoGC co-chairs during a press conference in May, 2019. Funding went to the procurement of 360 new and strategically placed water stations along with the required awareness and educational communications.

The larger plan included a set of goals for the communication efforts, to disseminate the message of the GoG and to persuade the public to comply. Subsequently, an 11-member communications sub-committee was formed to develop and implement a comprehensive communications strategy that included establishing a tagline and logo, social, outdoor, print and broadcast media. Local media representatives from top TV, radio and print media were briefed on the initiative's objectives and instructed on the best practices to raise public awareness and help bring about citizen behaviour change in support of the 4Rs: refuse, reduce, reuse, and recycle.

SPREP's communication staff, and partners, pursued the agreed upon GoG campaign through seven major avenues;

- Content Development – Material, stories and videos, generated for the Samoa 2019 Pacific Games website.
- Interactive Booth – Activities to promote the GoG campaign at a public booth stationed at game venues.
- Media Awareness – Work with partners to disseminate the GoG through radio and television stations.
- Promotional Materials – The use of material goods to encourage green friendly behaviour on the part of the public.
- Publications – The use of printed and published materials encourage green friendly behaviour on the part of the public.
- Social Media – Online activities to promote the GoG campaign.
- Survey Report – A spot survey used to test the effectiveness of the GoG campaign.

2.0 Content Development Report – Greening of the Games

2.1 Summary of Activities and Actions

This brief provides information about the *content developed specifically for the Samoa 2019 Pacific Games Office* for official distribution from their sites. These included news items and animated videos produced part the Greening of the Games (GoG) initiative during the Samoa 2019 Pacific Games. This effort involved the support of the Communications and Outreach team.

The online media materials were produced with an aim to target across multiple areas, including: the private sector, communities, schools, civil society, intergovernmental, donor and development partners, and governments.

The concise stories and videos provided a useful way to engage with and inform the public. The stories and

videos generated helped disseminate the message of the GoG, strengthening and online presence with a carefully informed message.

For the GoG site, 16 stories were generated on GoG subjects and these were shared specifically on the Samoa 2019 Pacific Games website – www.samoa2019.ws

The 10 animated videos were generated on GoG subjects, these were loaded to the SPREP YouTube channel and shared with the SPREP social media sites and the Pacific Games Office.

2.2 Key Outcomes

Through the online content we were able to share key practical information for a better environment for all audiences that were planning to watch the Samoa 2019 Pacific Games. This ranged from encouraging people to carpool to watch the games, to letting people know to bring their own water bottle when attending the games as there will be free, cool, treated water for all.

2.3 Best Practices

If the local community is a key audience in your messaging, please ensure that your video products are also developed in the national vernacular. When the approvals process for a multi-partner news item is developed it helps to have an agreed time limit for partner sign off. A strong working partnership with the Pacific Games organising committee is very helpful, if you can establish relations with the Marketing and Communications team, they can guide you as to what is best needed.

2.4 Recommendations

Work with a recommended translator proficient in the national vernacular for translation of all materials in the local language. Allow for enough planning time to consider the approvals process. Follow up with the Pacific Games Office for the number of hits to your content for your monitoring and evaluation purposes.

2.4.1 Tables

Story Subject
Supporting the GoG
Carpooling to the games
Using water bottles to reduce rubbish
Using reusable food containers to reduce rubbish
Properly sorting rubbish into different bins of general waste and recyclables
Asking people to participate in a survey
The results of waste audits during the games
The #playgreenpacific contest
Water stations available at the games
Tree planting of offset carbon waste
Food waste from the games going to Samoan farmers
How people may assist with the GoG
Using the Samoa 2019 Pacific Games as an opportunity for change
Planting trees to offset a carbon footprint
SPREP and Ministry of Natural Resources and the Environment (MNRE) work together to lead the GoG campaign
The audit results from the pre-game clean-up events

Video Subjects
Carpooling to the games
A video praising the first pre-game clean-up
A video praise the second pre-game clean-up
The #playgreenpacific contest
Results of audit numbers from the pre-game clean-ups
The use of water bottles to reduce rubbish
The dangers of plastic
Thanking sponsors for making water stations possible
A discussion of the GoG in English
A discussion of the GoG in Samoan

3.0 Interactive Booth Report – Greening of the Games

3.1 Summary of Activities and Actions

Samoa played host to more than 5,000 athletes and officials from around the Pacific for the Samoa 2019 XVI Pacific Games. The Pacific Games provided an excellent international platform from which to address waste management and sustainability issues within the Pacific island region.

This report provides information about the interactive booth activities performed as part of the Greening of the Games (GoG) initiative during the Samoa 2019 Pacific Games. This effort involved the support of the SPREP (in full) Communications and Outreach team, guidance from Waste Management and Pollution Control staff with the Government of Samoa, and the members of the Knowledge Management team.

Staff involved in the GoG campaign operated a booth during the two weeks of the Samoa 2019 Pacific Games. The first week staff set up and operated a booth adjacent to the canteen/cafeteria at the Tuanaimato Sports Complex. During the second week, the staff set up and operated a booth adjacent to the front gates, and tickets stand, of Apia Park.

New and clean rubbish bins were used to present waste management data accumulated during the Games. Also displayed at the booth were SPREP pullup banners, a “Beautiful Samoa” pullup banner, photo frame “Choose to Reuse” (please see the social media report), whiteboard to make your pledge and camera to take your photo-for commitment, and pamphlet explaining Greening of the Games (please see the publications report).

Because neither location could be secured overnight, every morning staff set up table, chairs, posters, displays, and placed supplies and promotional materials on the tables. Every evening, the staff collected these items and placed them in vehicles to be transported to a secure location until the next day.

3.2 Key Outcomes

The interactive booth activities performed gave the SPREP staff participating in the GoG a physical presence at game event. This provided a useful way to interact with members of the audience, athletes, and others participating in all levels of the games. Personal interactions are hard to ignore, dismiss, or forget, and therefore provide a useful way to disseminate the GoG message.

During the 2019 Pacific Games operating a booth allowed SPREP staff to; (A) engage the public in a discussion of the GoG campaign and its goals, to raise awareness of plastic free games, “Say No To Plastics,” the 4Rs, and Walk the Talk, (B) to distribute reusable bags to the public, which reduced the use of single use plastic bags, (C) distribute palm plates, bowls and spoons, to provide an environmentally friendly alternative to plastic and Styrofoam food containers (please see the promotional report), (D) to successfully conduct a sample survey of public opinion (please see the survey report).

Concrete Outcome: A precise number of people whom interacted with staffers at the booth is not available. However, extrapolating from the numbers of people interviewed for the survey and the amount of promotional materials given away, an estimated 400 people interacted at the booth across the two weeks at both locations.

3.3 Best Practices

Operating the booth proved to be an invaluable method for interacting with people involved in the games in some capacity, such as members of the audience, competing athletes, volunteers supporting the games, etc.

Booths are valuable for interacting with the public. Location of booth space is important and should be considered and selected for optimum potential for interacting with the public. Plan for the time, manpower, and storage space required for setting

up, taking down, and securing materials and supplies used in a booth. Schedule the time and shifts of people operating the booth, and this should include breaks, lunch, and the possibility of watching the games.

3.4 Recommendations

Include enough tables, chairs, and display stands, and if the booth space is outside then include a tent of good size to protect the space from the weather. Ensure that funding is available for booth space. Ensure enough manpower is available to operate a booth. Secure the best location for a booth. Plan for the logistics of getting people, materials and supplies to and from the location. Interaction and positive rewards provide ways to encourage good behaviour, such as green friendly attitudes. It will be useful to plan, in advance, to use a booth to facilitate this kind of interaction.

4.0 Media Awareness Report – Greening of the Games

4.1 Summary of Activities and Actions

This report provides information about the media awareness activities conducted as part of the Greening of the Games (GoG) initiative during the Samoa 2019 Pacific Games. This effort involved the support of the SPREP (in full) Communications and Outreach team and guidance from Waste Management and Pollution Control staff with the Government of Samoa.

In order to get our message out, we engaged the services of local media stations through paid advertising packages, and local production companies. These ads featured Samoans, including Samoans who had performed well in past Pacific Games.

We signed agreements for paid advertising packages with the two largest television networks in Samoa, TV1 and TV3 noting that TV3 were the exclusive local broadcasters of the Samoa 2019 Pacific Games, to have our messaging aired on those stations.

We also worked with the national radio broadcasting companies, Samoa Broadcasting Corporation (My FM 89.1) and Radio Polynesia Ltd (Magik FM 98.1 and Talofa FM 88.5) to raise more awareness amongst the general public of the activities that were to take place as part of the GoG campaign.

Further, the SPREP Communication team lead a special team media training awareness exercise prior to the games to help raise the understanding of national media about the GoG activities and why these were underway.

4.2 Key Outcomes

The media awareness campaign gained country-wide attention on the objectives of the GoG campaign. The key messages of a “Green” Pacific Games – with no single-use plastic water bottles and food containers – were driven home by the campaign in order to encourage athletes, officials and other participants alike to play their part in achieving these goals.

Through the reach of television, radio and newspaper in Samoa, we managed to engage with support from the public for the campaign, which was most evident in the three river, city and foreshore clean-ups that were held prior to the Games.

With the media campaign also, we were able to encourage spectators who came along to watch the Games to bring their reusable water bottles to take advantage of the free, cool, filtered water that was available at all sporting venues, as well as bringing a reusable container for their food.

There were radio and TV talk-back shows in the weeks leading up to the first GoG clean-up which came about due to the collaboration between members of the Samoa Tourism Authority (STA) and Ministry of Natural Resources (MNRE) and the Environment. While SPREP didn’t coordinate STA of the talkback shows directly, we were given the opportunity to use spots already secured by STA to feature SPREP staff to talk of the initiative.

The local radio stations consistently announced the clean-up to remind the people to come down and lend a hand in the week prior without having to be prompted to.

Also dubbed a highlight was having Samoa’s only Olympic medallist, Ms Ele Opeloge, starring in one of our TVCs, reminding the public to help keep beautiful Samoa clean and plastic-free by not using single-use plastics and reinforcing the Choose to Reuse message.

Another highlight was having SPREP Director General himself, Mr Kosi Latu, starring in two of our TVCs, reminding athletes, officials and spectators to bring their reusable water bottles and reusable food containers with them when coming to the Games.

4.3 Recommendations

Featuring local talent and/or people held in high regard really helps to make an impact in your advertising. When reaching the local community, advertisements in the national language play a strong role in reaching your audiences.

Ensure that funding is available for media awareness and development. Broadcasting and production is costly, having funds available will help see work start well in advance. Have a good relationship with national media in covering the event and aspects of the event. Ensure that broadcasting of the advertisements will be shown on the official broadcast television station. Help build the capacity of the media where you can, to better report and feature the events.

Media Type	Name	Notes
Radio	Good Morning Samoa, My FM 89.1	radio talk-back show
TV	Good Morning Samoa on TV1	television talk-back show
Radio	Breakfast Show on Magik FM 98.1	radio talk-back on
Radio	Malu Taeao on Talofa FM 88.5 and 99.9	breakfast show radio talk-back
TV	Morning Tea with Lupe Lu on TV3	television talk-back show
TV	Lali on TV1	television talk-back show, before the first clean-up
TV	Lali on TV1	television talk-back show
TV	TV1, TV2	Samoan language, choose to reuse bags / SPREP Greening Games
TV	TV1, TV2	English language, choose to reuse bags / SPREP Greening Games TVC3
TV	TV1, TV2	Samoan language, choose to reuse water bottles / SPREP Greening Games
TV	TV1, TV2	English language, choose to reuse water bottles / SPREP Greening Games
TV	TV1, TV2	English language, choose to reuse water bottles / SPREP Greening Games
Online	Samoa Observer	Samoa creates a new legacy for future games
Online	Samoa Observer	Pacific Games in partnership to go all green
Online	Samoa Observer	SPREP signs up for greening of the games
Online	Talamua Media	1,000 trees planted by SPREP to mark 26th anniversary

5.0 Promotional Materials Report – Greening of the Games

5.1 Summary of Activities and Actions

This report provides information about the *promotional materials* produced as part of the Greening of the Games (GoG) initiative during the Samoa 2019 Pacific Games. This effort involved the support of the Communications and Outreach team, a local graphic designer and guidance from Waste Management and Pollution Control staff. Media materials were produced with an aim to target across multiple areas, including: the private sector, communities, schools, civil society, intergovernmental, donor and development partners, and governments.

Thousands of reusable bags, of two different types, were distributed to people in all parts of the Samoa 2019 Pacific Games, including athletes, volunteers, spectators and officials which helped reduce the need to dispose of single use plastic bags.

Hundreds of alternative plate ware and cutlery produced using palm leaves was distributed freely at the Samoa 2019 Pacific Games to encourage use of friendlier options when purchasing meals from nearby food carts.

Promotional t-shirts, stickers, temporary tattoos and badges were distributed both before and during the Pacific Games to promote the GoG and spread the positive environmental messaging to visitors and locals.

These were distributed at the three clean up events which were held before the games, and during the games at two different booth locations – one at the Tuanaimoto Sports Complex, and the other at the Apia Park Stadium through the information booth established (please refer see the interactive booth report).

4500 Zero Bags and “Choose to Reuse” badges were distributed to the Pacific Games Office for athletes and officials’ packs that were provided by kind donation of Zero Bags company in New Zealand. An additional 250 were distributed to the general public during the games.

5.2 Key Outcomes

We helped bring about good environmental behaviours through the distribution of promotional materials that providing environmentally friendly alternatives to single-use plastic options.

The promotional materials produced helped deliver effective, consistent and appropriate messaging regarding good behaviours that individuals could do in the lead up to the Samoa 2019 Pacific Games, during and afterwards when visitors have returned to their countries, or once the games have wrapped up for locals. All those involved have learned positive behaviours they may do to reduce their individual waste.

5.3 Best Practices

Where possible we worked with locally based suppliers in Samoa – i.e. the host country. There was strong visibility of the messaging with many people sighted wearing the t-shirts and requests for these were being made to us.

The messages on the badges were clear and very visible. Support from Zero Bags, a New Zealand based company that willingly donated over 4,500 reusable bags made from plastic bottles for free distribution across the Pacific islands was a huge highlight.

5.4 Recommendations

Strong relationships with local suppliers that you already work with will help ensure your work is placed as priority. All promotional materials developed had to have a specific reason to ensure we ourselves weren’t contributing to the single use plastics problem. Strong knowledge and understanding of the funding agreements will help ensure that all branding requirements are met when developing promotional materials. It is best this be finalised as part of the planning stage.

The required procurement processes must be adhered to, to avoid delays of the payment processes for suppliers you work with. A finalised budget at least six months beforehand for promotional materials allows for solid planning and work to be underway – this must be taken into consideration given the available suppliers and their capabilities is different within each Pacific island.

5.4.1 Table

Promotional materials include;

Number	Type	Notes
680	T-shirts	“Choose to Reuse,” in sizes for kids and adults
2,000	Tattoos	Beautiful Samoa logo
2,000	Tattoos	4R’s symbol and “Choose to Reuse”
4,500	Badges	“Choose to Reuse”
200	Bags	United Nations Environmental Programme Bags
4,750	Zero Bags	Distributed to athletes, officials, and the public
350	Stickers	Labels for water coolers
1,100	Palm plates, bowls and spoons	Purchased from Samoa Green Products and Supplies (SGPS) and distributed at booth

6.0 Publications Report – Greening of the Games

6.1 Summary of Activities and Actions

This report provides information about the *publications* produced as part of the Greening of the Games (GoG) initiative during the Samoa 2019 Pacific Games. This effort involved the support of the Communications and Outreach team, a local graphic designer, a printing company contracted for the work, and guidance from Waste Management and Pollution Control staff. Media materials were produced with an aim to target across multiple areas, including: the private sector, communities, schools, civil society, intergovernmental, donor and development partners, and governments.

Published banners, posters, and information cards were distributed both before and during the Pacific Games to promote the GoG and spread the positive environmental messaging to visitors and locals.

These were distributed at the three clean up events which were held before the games, and during the games at two different booth locations – one at the Tuanaimato Sports Complex, and the other at the Apia Park Stadium through the information booth established (please see the interactive booth report).

At the conclusion of the game two booklets were prepared and published, which discussed the GoG efforts and accomplishments.

6.2 Key Outcomes

We helped bring about good environmental behaviours through the distribution of publications that providing environmentally friendly alternatives to single-use plastic options.

The publications produced helped deliver effective, consistent and appropriate messaging regarding good behaviours that individuals could do in the lead up to the Samoa 2019 Pacific Games, during and afterwards when visitors have returned to their countries, or once the games have wrapped up for locals. All those involved have learned positive behaviours they may do to reduce their individual waste.

6.3 Best Practices

Strong relationships with local suppliers that you already work with will help ensure your work is placed as priority. All publications developed had to have a specific reason to ensure we ourselves were not contributing to excessive waste and rubbish. Where possible we worked with locally based suppliers in Samoa.

6.4 Recommendations

Strong knowledge and understanding of the funding agreements will help ensure that all branding requirements are met when developing publications.

It is best this be finalised as part of the planning stage. The required procurement processes must be adhered to, to avoid delays of the payment processes for suppliers you work with.

A finalised budget at least six months beforehand for publications allows for solid planning and work to

be underway – this must be taken into consideration given the available suppliers and their capabilities is different within each Pacific island. Not all the islands are necessarily home to printing and publishing infrastructure – some of the material may have to be contracted and purchased abroad.

6.4.1 Table

Publications include;

Number	Type	Notes
400	Booklet	Greening of the Game, Beats
400	Booklet	Greening of the Game, 12-page booklet
200	Posters	Choose to Offset
100	Posters	What You Can Do
100	Posters	Water Information Poster
100	Posters	4Rs Poster

7.0 Social Media Report – Greening of the Games

7.1 Summary of Activities and Actions

This brief provides information about the *social media activities* conducted as part of the Greening of the Games (GoG) initiative during the Samoa 2019 Pacific Games. This effort involved the support of the SPREP Communications and Outreach team, a local graphic designer and guidance from the Waste Management and Pollution Control staff.

Social media materials were produced with an aim to target the online community across the Pacific region, active on social media with an interactive activity driven online to help encourage action.

We engaged in three activities, (1) media tiles, (2) broad use of the SPREP social media Facebook page which has close to 70,000 followers, and (3) conducting the #playgreenpacific campaign.

(1) For the media tiles the services of a local graphic designer was contracted to create content to be shared via the official SPREP Social Media channels. This artist produced 2 separate tiles which helped amplify the voice of the GoG committee and campaign.

(2) GoG materials such as stories, photos and tiles were posted consistently to SPREP Facebook Page during the Samoa 2019 Pacific Games. This included photo albums containing images of athletes, spectators and officials at the Pacific Games venue holding a social media frame calling upon people to Choose to Reuse.

(3) The #playgreenchallenge was conducted which involved having people posting photographs of themselves engaging with a green-friendly behaviour, with the #playergreenpacific hashtag for tracking participation. This promoted good behaviours through engaging people. Four prizes were given to participants. The prizes themselves – electronic devices such as speakers and headphones – were donated by a local company.

7.2 Key Outcomes

The Social Media Campaign sought to focus regional attention on the objectives of the GoG campaign. The campaign’s key messages of a “Green” Pacific Games encourage athletes, officials and other participants alike to play their part in achieving measurable goals.

Further, through the social media campaign, we encouraged spectators to bring their reusable water bottles to take advantage of the free, cool, filtered water available at all sporting venues, as well as bringing a reusable container for their food.

An interactive activity called the #PlayGreenPacific encouraged people to take photos of themselves undertaking a good environment action for which they would go into the draw to win a prize.

7.3 Best Practices

The wide reach of the campaign was a major highlight – over 60,000 people were reached through the SPREP official social media channels alone, this is not including the partners that also on-shared the media tiles.

Using a wide variety of Pacific island faces as the main feature of each social media tile proved to be

a draw card. Also, the SPREP is a multi-cultural workspace which gave us access to a wide range of Pacific Islander models to be featured on the social media tiles.

7.4 Recommendations

Ensuring the partner boiler template is completed in advance will help ensure a smooth process with graphic design. Bringing all partners together to support and coordinate a social media campaign and competition will ensure a stronger and wider reach. It is best to ensure that no other social media competitions are happening or to work together with partners to maximise opportunities.

The ‘Publish timer’ feature on Facebook is very helpful with coordinating release of the memes via social media accounts. Combine the hashtags with that from your campaign, the Pacific Games official hashtag and the country name hashtag.

7.4.1 Table

We developed the following:

Number of Tiles Developed	Tile Message
4	Media Tiles asking people to bring their own water bottles
4	Media Tiles on reusing food and water containers
3	Media Tiles on the #playgreenpacific challenge
2	Media Tiles on the waste and recycling bins available at game venues
6	Media Tiles informing athletes they would be able to plant trees as part of Samoa’s Two Million Tree Campaign 2015 – 2020 to offset their carbon emissions
2	Media Tiles on using reusable bags
1	Media Tiles on the survey
2	Media Tiles on the use of water bottles

8.0 Survey Report – Greening of the Games

8.1 Summary of Activities and Actions

This report provides information about the *survey* conducted as part of the Greening of the Games (GoG) initiative during the Samoa 2019 Pacific Games. This effort involved the support of the SPREP Communications and Outreach team and guidance from Waste Management and Pollution Control staff. The survey targeted game participants across multiple areas, including: the private sector, communities, schools, civil society, intergovernmental, donor and development partners, and governments.

A sample survey collected information from 260 people and calculated 254 results (six survey were rejected for various reasons). The collection of survey data came from personal interviews and an on-line survey. The survey included; (A) 17 total questions, (B) four demographic questions, and (C) 13 questions about perceptions of the GoG.

Keeping interviewee and participant interest was a challenge during any survey process – so the survey used here was short, with simple questions.

The margin of error (or the confidence interval) is the plus-or-minus figure reported in opinion poll results. The confidence level tells you how sure you can be. It is expressed as a percentage and represents how often the true percentage of the population who would pick an answer lies within the confidence interval.

According to the formula provided by Creative Research Systems, 253 respondents from a population of 5,000 should produce; about a 6 percent margin of error, and a confidence level of 95 percent.

8.2 Key Outcomes

The objective of the survey, with 254 counted respondents, was to gauge the perceptions of people at the Samoa 2019 Pacific Games. It was insufficient to take it as a matter of faith that the partners in the Greening of the Games (GoG) campaign were successful. That success needed to be tested and measured.

Most of the game audience (64 percent) across participating countries had some knowledge about the GoG prior to their coming to SPG. A majority (74 percent) of game viewers and participants believed there to be enough rubbish and recycling bins around the venues. Surveyed people further stated that the bins are in good locations, where people can easily throw their rubbish. Many (51 percent) of people surveyed during the Samoa 2019 Pacific Games found the plastic free games campaign highly successful.

Across participating countries and audiences, the GoG of the Samoa 2019 Pacific Games conveyed a clear environmental message.

8.3 Best Practices

Conducting the survey in person, as compared to on-line, is a good way for engaging with people. It allows for people supporting the GoG to start a conversation with members of the general public about environmental issues. Much of the survey was conducted at the GoG booth (please see the interactive booth report).

A spelling error appeared in some of the questions, using the word “where” when it should have been “were.” This is a regrettable error; however, it did not compromise anyone’s ability to understand, or answer, the questions. In any case, those involved in a GoG campaign should be able to provide feedback on a survey before people are polled.

8.4 Recommendations

A survey is an important useful tool for gauging public perception about a GoG campaign – it can point to strengths and weaknesses. As noted, keeping interviewee and participant interest is a challenge during any survey process – so the survey used should be short, with simple questions. Also, conducting the survey in person allows for people supporting the GoG to start a conversation with members of the general public about environmental issues. All aspects of a survey should be carefully recorded.

Appendix I: Post Samoa 2019 Pacific Games Survey Results

Version 2.0 15-10-2019

Robert Sullivan and Rebecca Polestico

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Objective of the Survey

The objective of the survey was to seek a snapshot of the perceptions of people at the Samoa 2019 Pacific Games.

Survey Methodology

A sample survey collected information from 260 people. The collection of survey data came from personal interviews and an on-line survey. The survey included;

- 17 tow the GoG.

Keeping interviewee and participant interest was a challenge during the survey process – so the survey used here was short, with simple questions. Note; A spelling error appeared in some of the questions, using the word “where” when it should have been “were.” While a regrettable error; however, it did not compromise anyone’s ability to understand, or answer, the questions.

The process of entering the data from the interviews saw six copies of the personal interviews discarded because they were insufficiently completed or competed in an incorrect manner.

This left data from 254 people; approximately 5 percent of an estimated 5,000 people involved in the Samoa 2019 Pacific Games at any time.

A margin of error (or the confidence interval) is the plus-or-minus figure reported in opinion poll results. The confidence level tells people performing a survey how sure certain they can be of the results. It is expressed as a percentage and represents how often the true percentage of the population who would pick an answer lies within the confidence interval.

According to the formula provided by Creative Research Systems, 253 respondents from a population of 5,000 should produce;²

- About 6 percent margin of error
- About confidence level of 95 percent.

The margin of error is small and the confidence level in the results is high.

Findings and Analysis

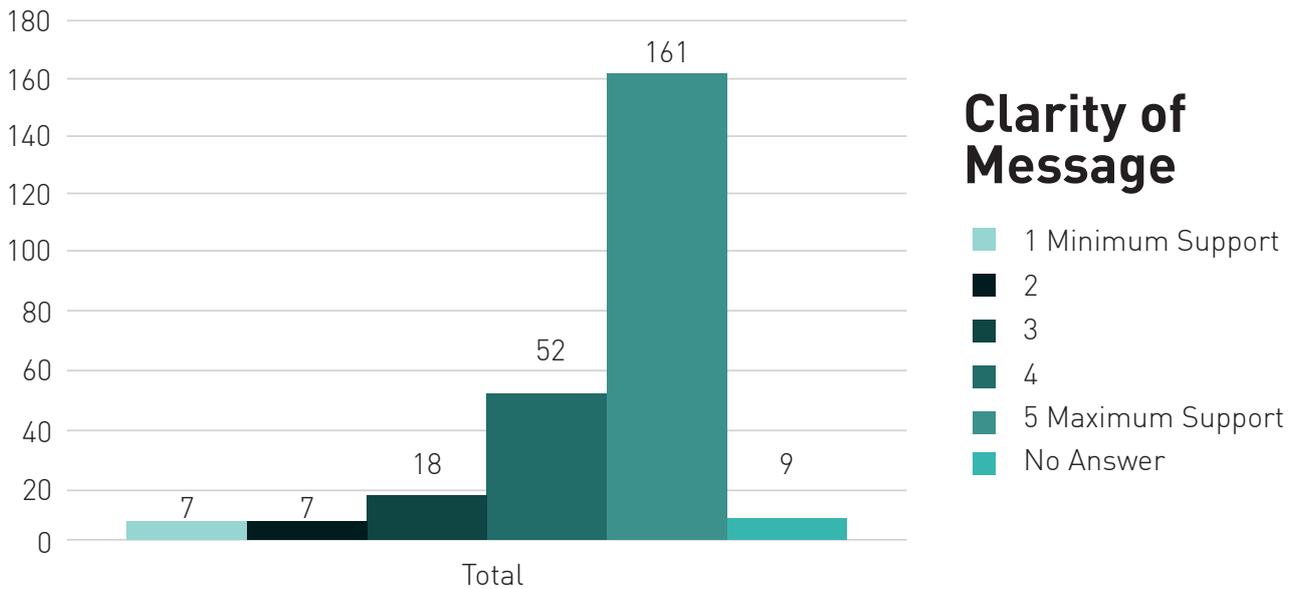
The findings and analysis follow.

²For more information please visit; <https://www.surveysystem.com/sscalc.htm>

Clarity of Message

Question: "Was the environmental message clear?"

The majority (66 percent) of the respondents interviewed during the Samoa 2019 Pacific Games stated that the environmental message of the GoG was clear.

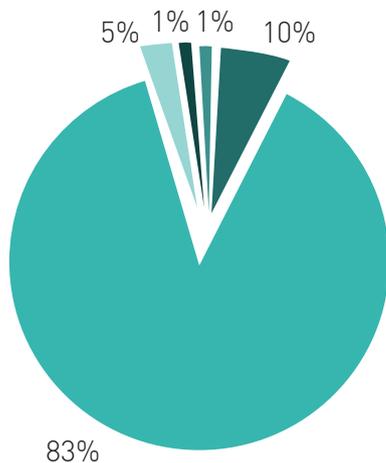


	1 Minimum Support	2	3	4	5 Maximum Support	No Answer	Grand Total	
Was the environmental message clear?	7	7	8	2	5	161	9	254

Support of the Message

Question: "Do you support the environmental message?"

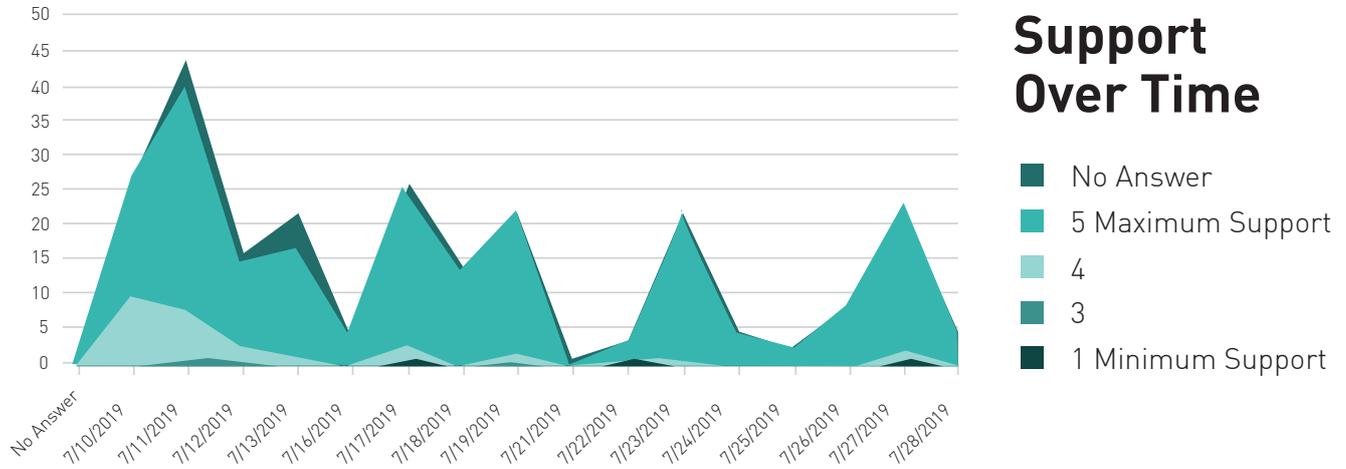
The majority (83 percent) of the respondents supported the environmental message always. Importantly, this position solidified across the time of the survey – other opinions dropped out during the games.



Clarity of Message

- 1 Minimum Support
- 3
- 4
- 5 Maximum Support
- No Answer

Support Over Time

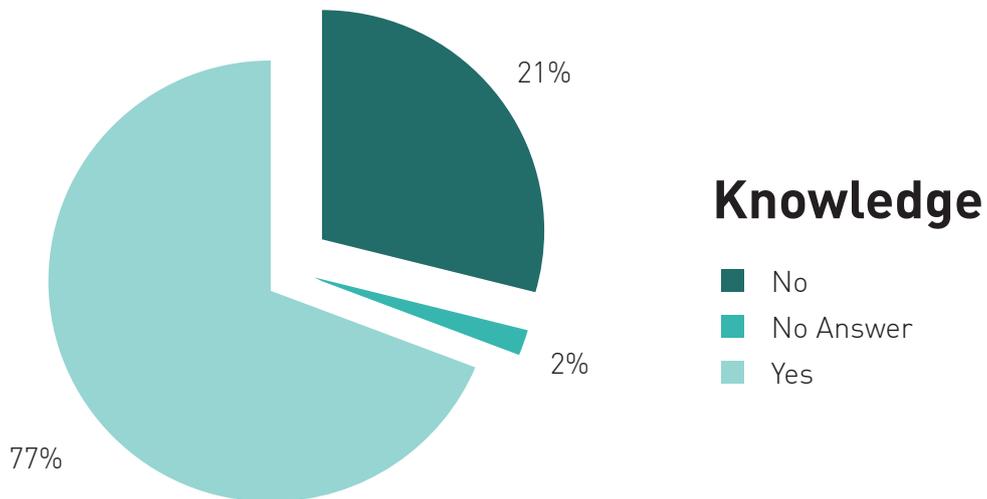


Do you support the environmental message?	
1 Minimum Support	3
2	0
3	3
4	26
5 Maximum Support	210
No Answer	12
Grand Total	254

Knowledge

Question: "Did you know about the Greening of the Games before the start of the Samoa 2019 Pacific Games?"

Around 64 percent of the respondents have knowledge about the GoG before the start of the Samoa 2019 Pacific Games. Thus, most people had some awareness of the campaign, but a significant minority did not.



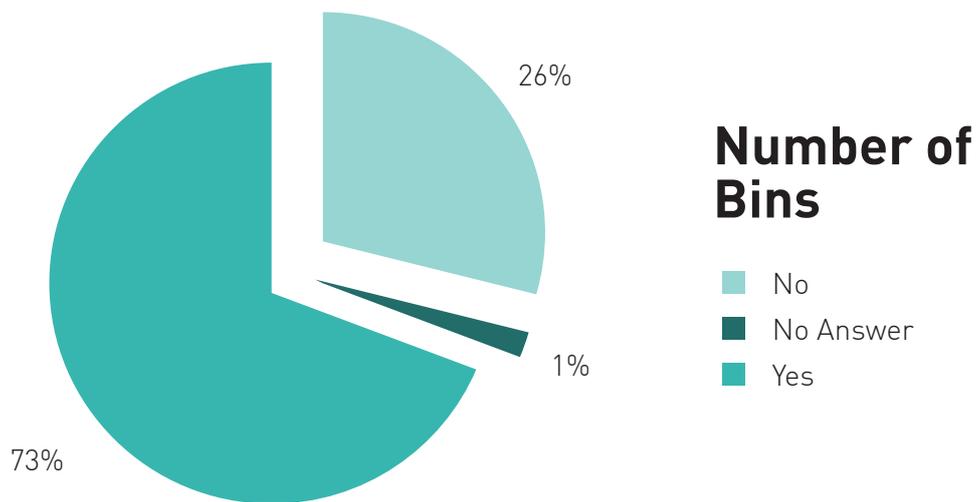
Did you know about the Greening of the Games before start of the Samoa 2019 Pacific Games?

No	90
No Answer	1
Yes	163
Grand Total	254

Bins

Question: “Were enough rubbish and recycling bins around the game venues?”

The majority (74 percent) of respondents found enough recycling bins around the game venues.



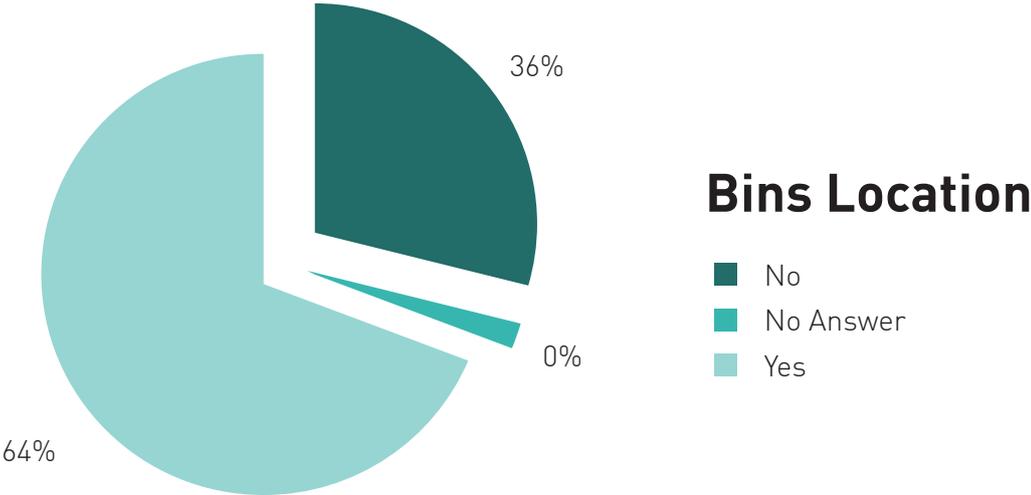
Were enough rubbish and recycling bins around the game venues?

No	67
No Answer	2
Yes	185
Grand Total	254

Bins Location

Question: "Were the bins in good locations?"

Bins were in good locations according to the majority (78 percent) of those interviewed.

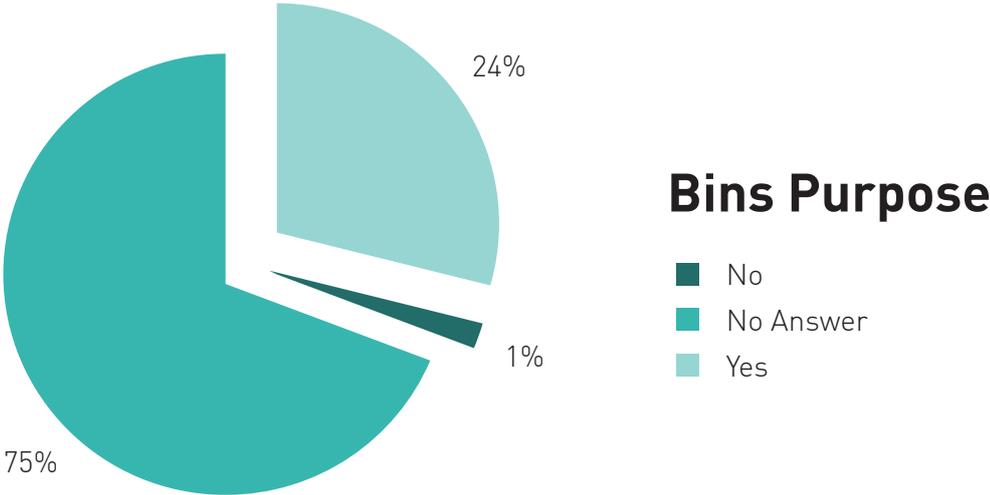


Were the bins in good locations?	
No	53
No Answer	4
Yes	197
Grand Total	254

Bins Purpose

Question: "Was the purpose of the bins (rubbish, or recycling) clear?"

The majority (76 percent) of the respondents stated they believed the bins purpose to be clear. . .

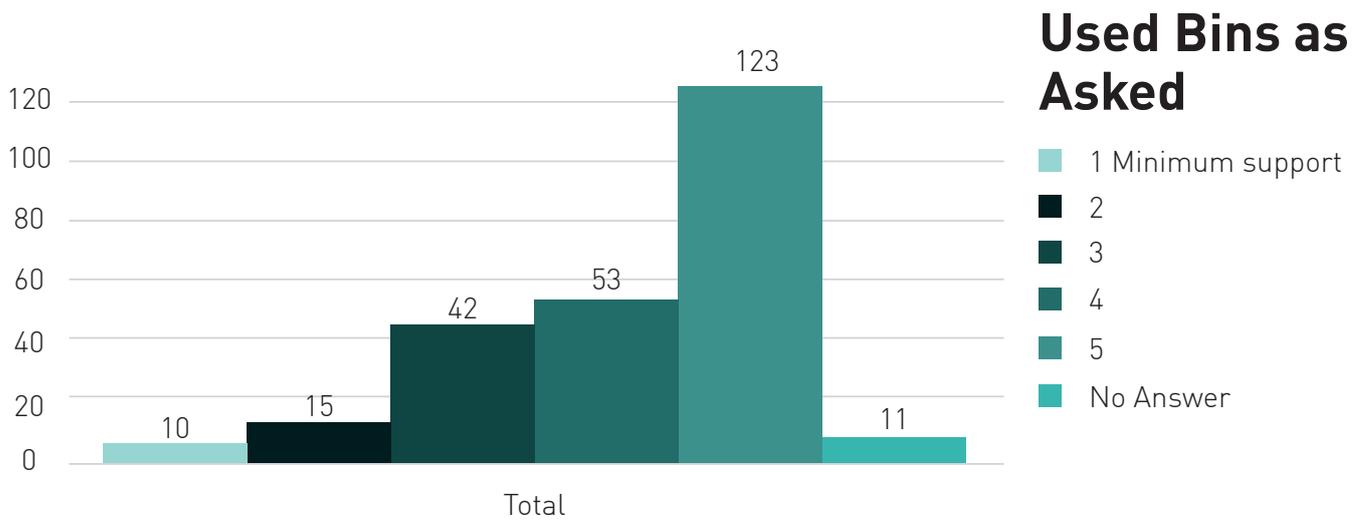


Was the purpose of the bins (rubbish, or recycling) clear?	
No	60
No Answer	4
Yes	190
Grand Total	254

Bins Use

Question: “Did you use the bins as asked?”

More than half of the respondents indicated that they always used, or at least attempted to use, the bins properly during the Samoa 2019 Pacific Games. Note: It will be worth exploring this data with the data from the waste audit – to determine if people were using the bins properly.

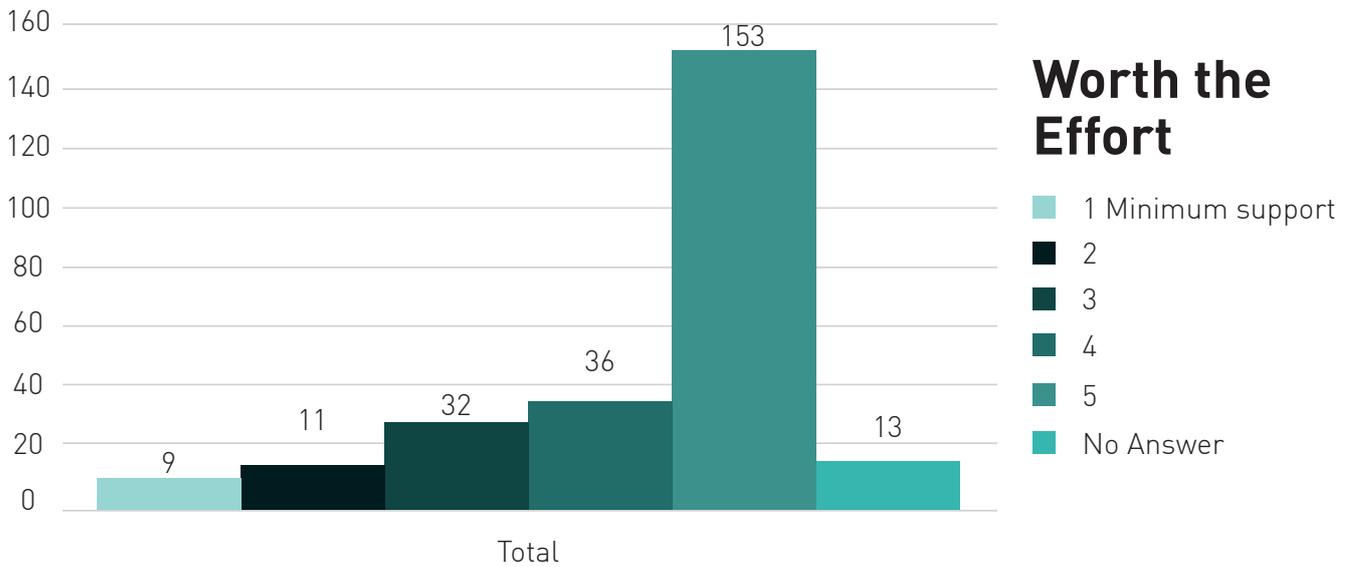


	1 Minimum Support	2	3	4	5 Maximum Support	No Answer	Grand Total
Did you use the bins as asked?	10	15	42	53	GoG	11	254

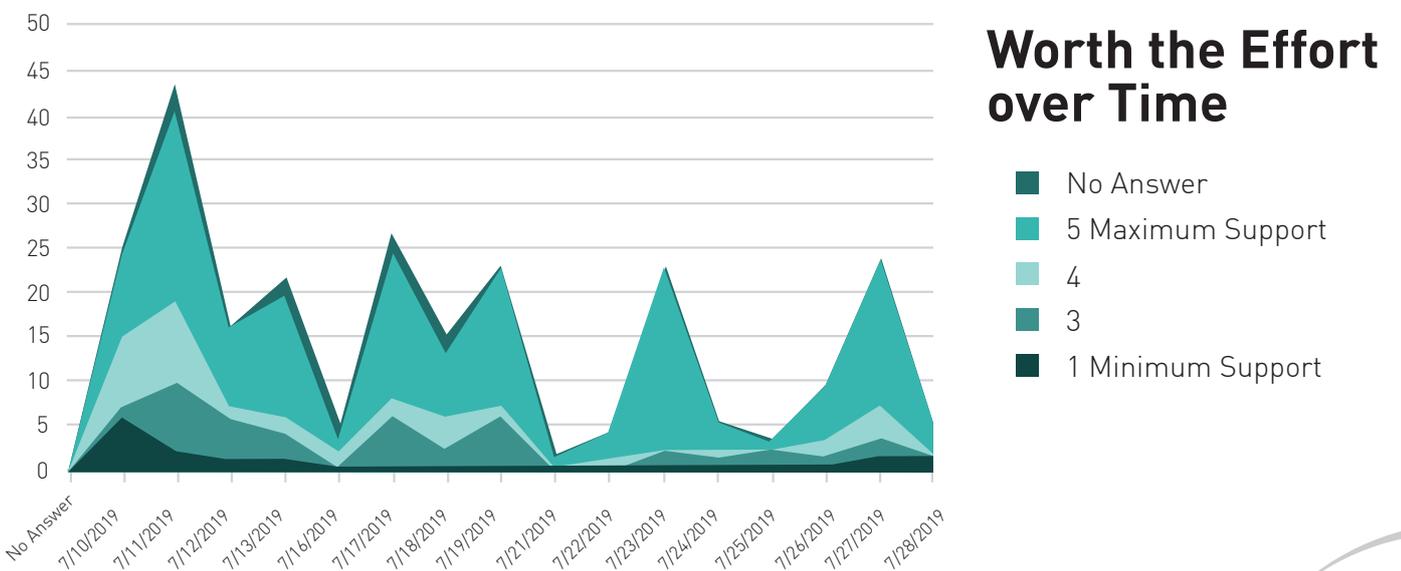
Effort to use the Bins

Question: "Was it worth the effort to use the bins as asked?"

Most (about 60 percent) of those present during the games always found it worth the effort to use bins. Importantly, this position solidified across the time of the survey – other opinions dropped out during the games



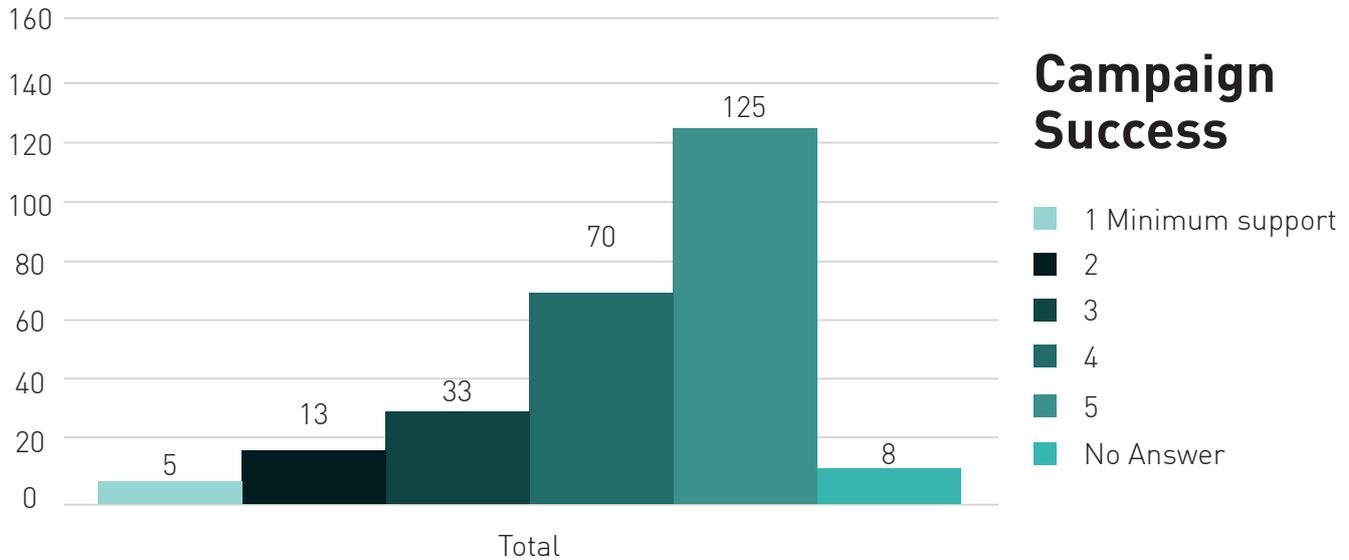
	1 Minimum Support	2	3	4	5 Maximum Support	No Answer	Grand Total
Was it worth the effort to use the bins as asked?	9	1	3	3	153	13	254
		1	2	6			



Campaign Success

Question: “How would you rate the success of this plastic free games campaign?”

More than half (51 percent) of those interviewed perceived a very successful plastic free games campaign.

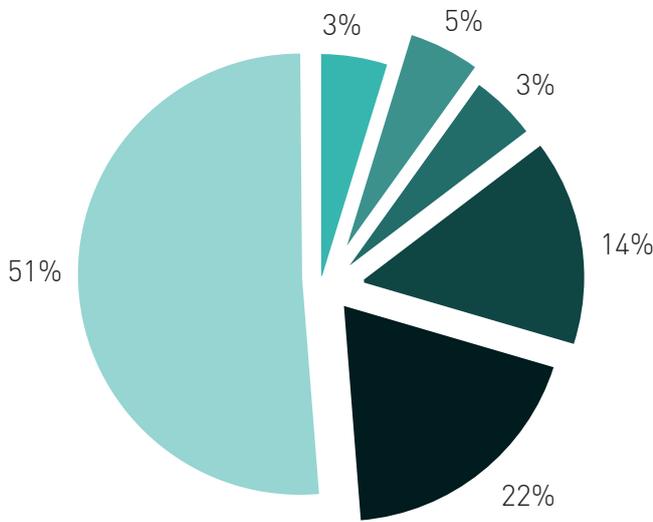


	1 Minimum Support	2	3	4	5 Maximum Support	No Answer	Grand Total
How would you rate the success of this plastic free games campaign?	5	13	33	70	125	8	254

Avoiding Plastic

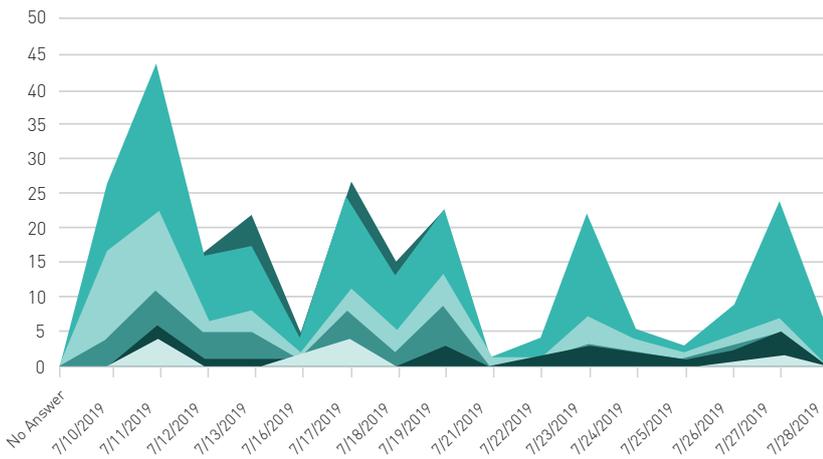
Question: “Did you avoid single-use plastic as asked? (People may have used single-use plastic occasionally.)”

Most of those surveyed (51 percent) present during the games always avoided single-use plastic, and many (22 percent) reported attempting to avoid plastic. This means the majority (73 percent) either avoided, or attempted to avoid, plastics over the course of the Samoa 2019 Pacific Games. Further, this position apparently solidified across the time of the survey – like the opinions of making the effort to use the bins – because other opinions dropped out during the games.



Campaign Success

- 1 Minimum support
- 2
- 3
- 4
- 5
- No Answer



Plastic Ban Over Time

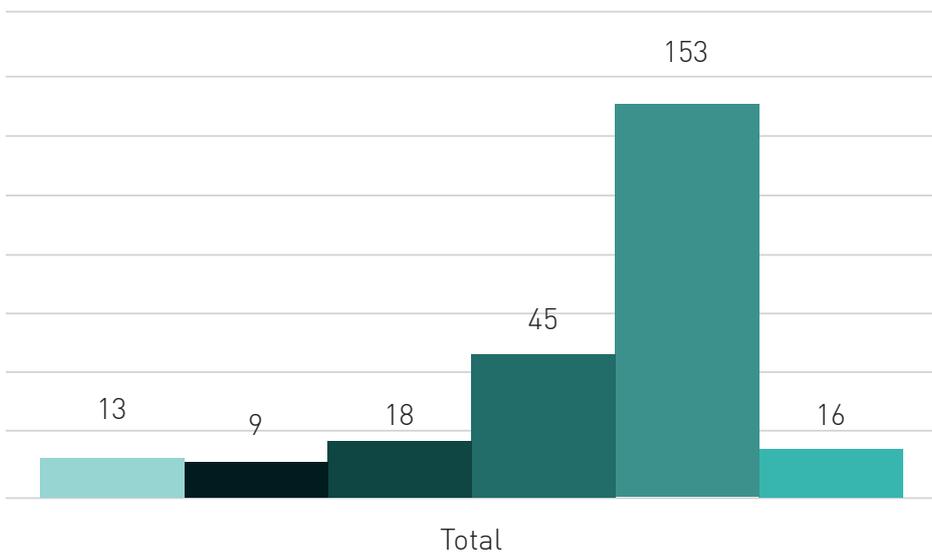
- No Answer
- 5 Maximum Support
- 4
- 3
- 2
- 1 Minimum Support

Did you avoid single-use plastic as asked?	
1 Minimum Support	12
2	12
3	35
4	56
5 Maximum Support	130
No Answer	9
Grand Total	254

Worth the effort of Avoiding Plastic

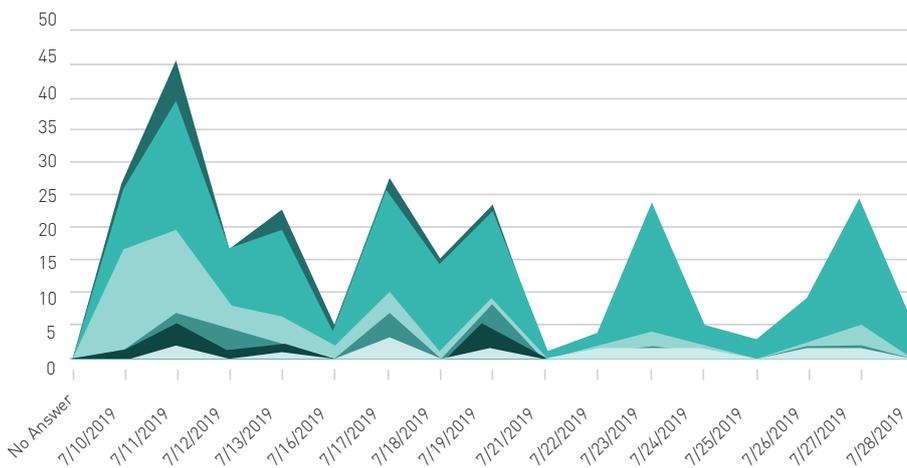
Question: "Was it worth the effort avoiding single-use plastic as asked?"

Most of those surveyed (60 percent) present during the games agreed that it was always worth the effort to avoid, and many (18 percent) reported it was usually worth the effort to avoid plastic. This means the majority (78 percent) believed it to be worth the effort to avoid plastics over the course of the Samoa 2019 Pacific Games. Further, this position also appears to have solidified across the time of the survey – like the opinions of making the effort to use the bins – because other opinions dropped out.



Worth the effort of Avoiding Plastic

- 1 Minimum support
- 2
- 3
- 4
- 5
- No Answer



Plastic Ban Over Time

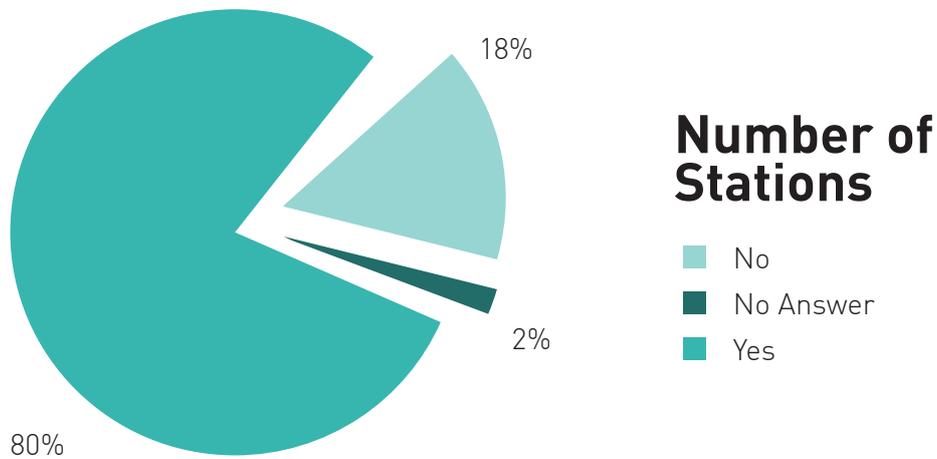
- No Answer
- 5 Maximum Support
- 4
- 3
- 2
- 1 Minimum Support

Did you avoid single-use plastic as asked?	
1 Minimum Support	12
2	12
3	35
4	56
5 Maximum Support	130
No Answer	9
Grand Total	254

Number of Water Stations

Question: "Where there enough water stations?"

The majority (about 80 percent) of the respondents observed enough water stations during the games.

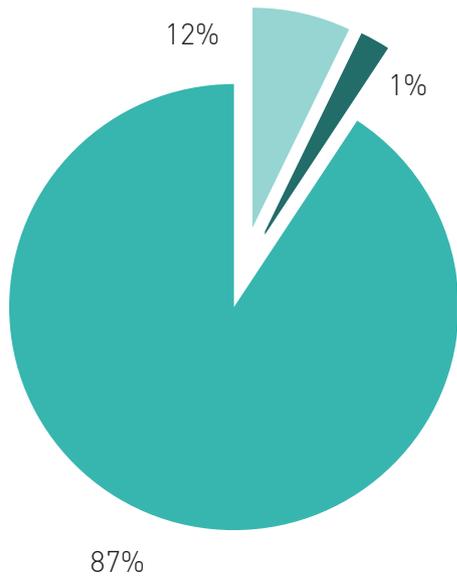


Were there enough water stations?	
No	46
No Answer	4
Yes	204
Grand Total	254

Use of Water Stations

Question: "Did you use a water station?"

The majority (about 87) percent of those present at the games used a water station.



Water Station Use

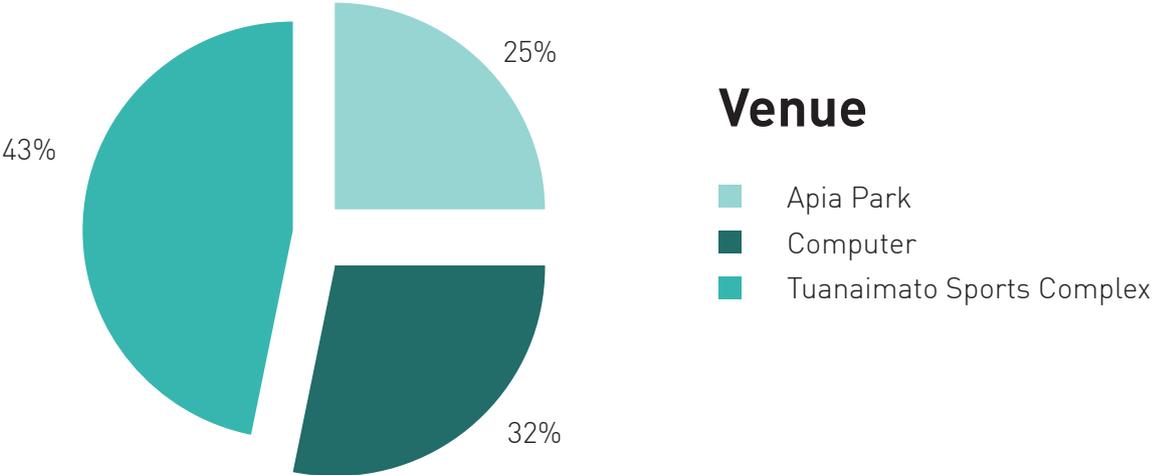
- No
- No Answer
- Yes

Did you use a water station?	
No	29
No Answer	3
Yes	222
Grand Total	254

Demographics

Venue

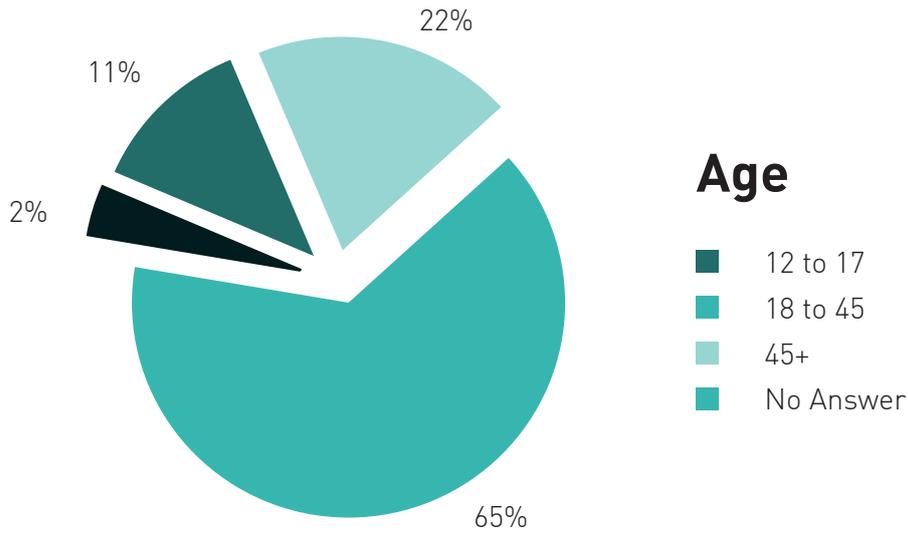
A total of 254 respondents interviewed after watching any of the scheduled Pacific Games in three areas: Tuannaimato Sports Complex (43 percent), Apia Park (25 percent), and on-line (32 percent). The majority of those SPG viewers interviewed was from Tuannaimato Sports Complex



Venue of the survey	
Apia Park	64
Computer	81
Tuannaimato Sports Complex	109
Grand Total	254

Age

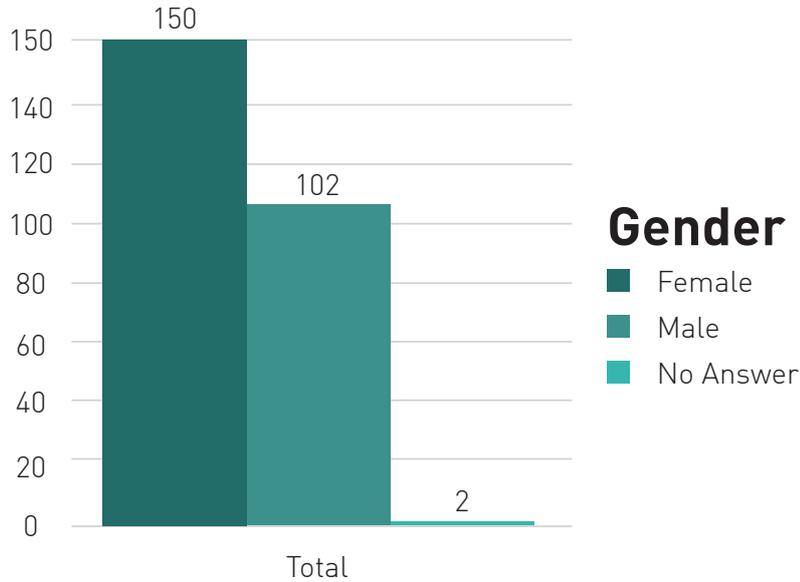
The majority (78 percent) of the respondents were between 18-45 years of age. Note: This could indicate a weakness in communicating with younger people.



Venue of the survey	
12 to 17	29
18 to 45	166
45+	55
No Answer	4
Grand Total	254

Gender

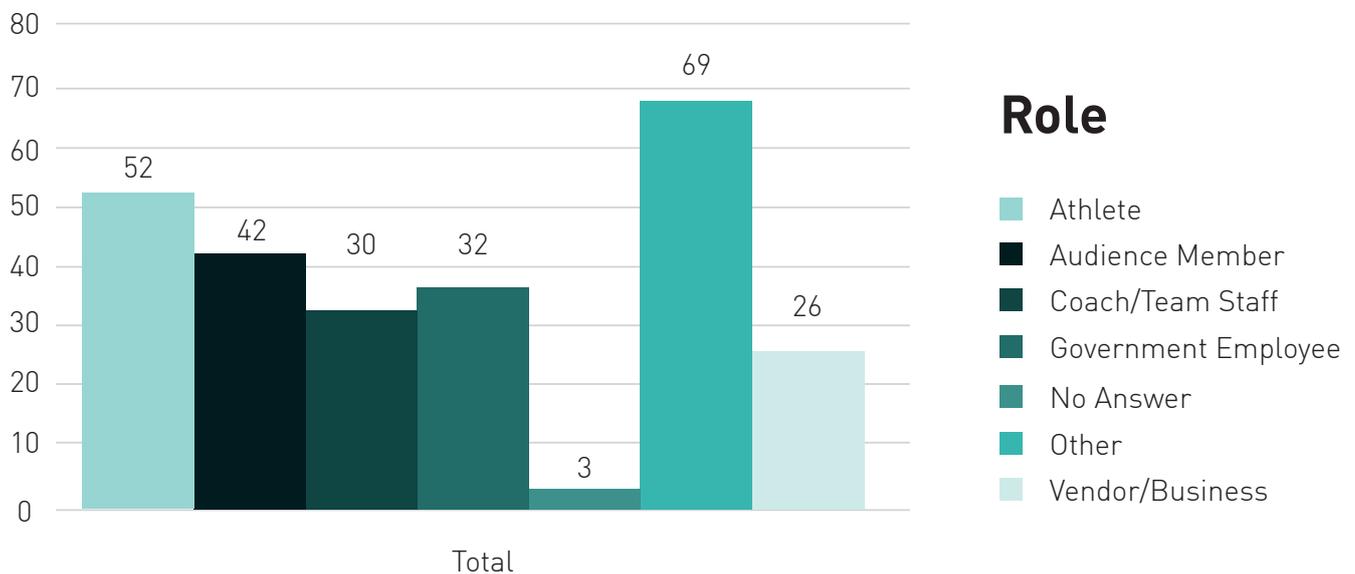
Of the respondents, 60 percent were female and 40 percent male.



Gender	Female	Male	No Answer	Grand Total
	150	102	2	254

Role

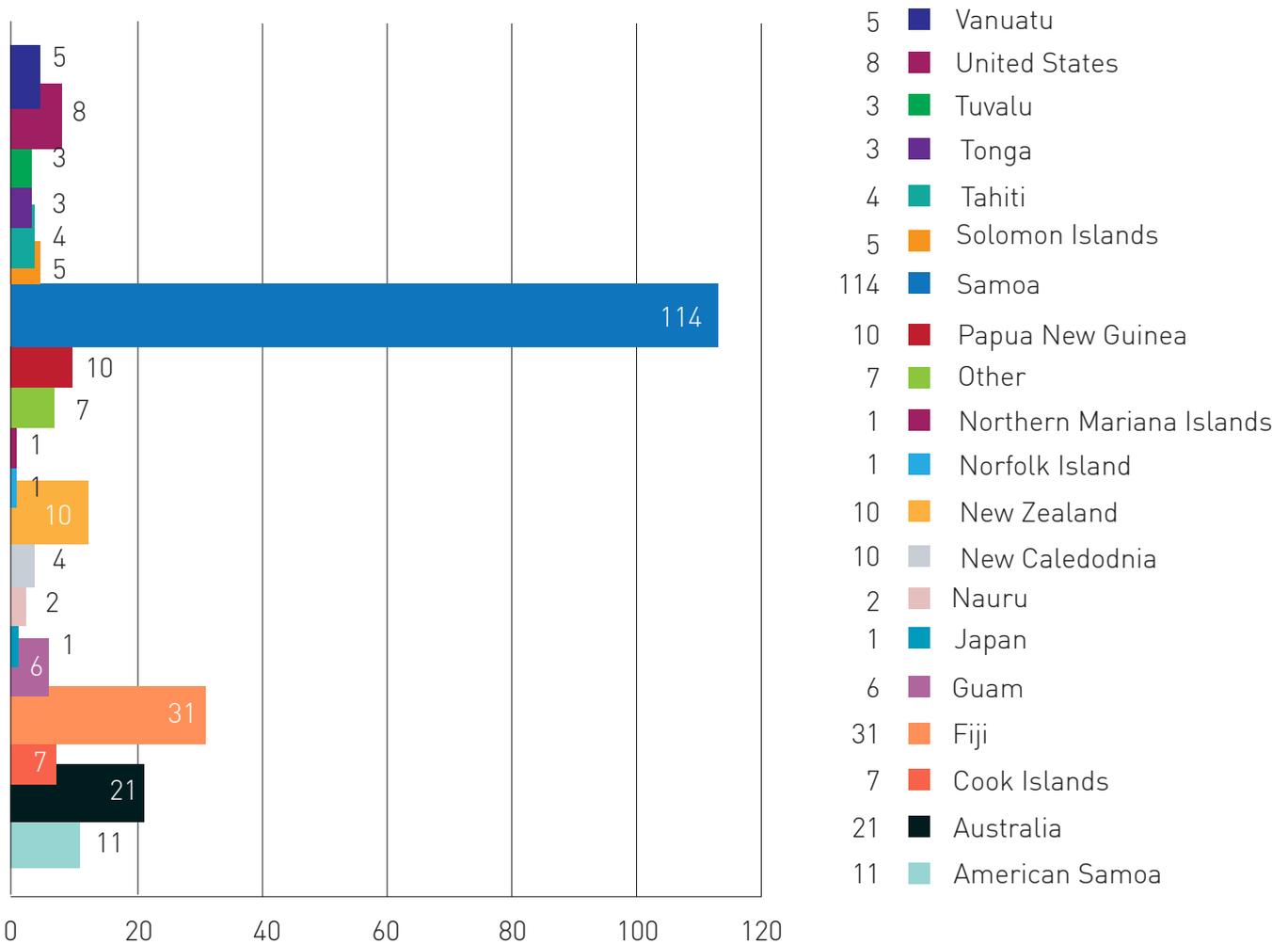
Most of the respondents (27 percent) had varied roles in the Samoa 2019 Pacific Games and 20 percent of those interviewed were athletes.



Role	Athlete	Audience Member	Coach / Team Staff	Government Employee	No Answer	Other	Vendor / Business	Grand Total
Number	52	42	30	32	3	69	26	254

Origin

Most of those interviewed – 114 of 254, or about 45 percent – came from Samoa.



CONCLUSIONS

As found by the survey results, this snapshot has shown us that impact of the GoG demonstrated positive actions from both athletes and officials. As per those we surveyed, audiences (64 percent) across participating countries had some knowledge about the GoG prior to their coming to Samoa 2019 Pacific Games. A majority (74 percent) of those surveyed believed there to be enough rubbish and recycling bins around the venues. Surveyed people further stated that the bins are in good locations, where people can easily deposit their rubbish.

People surveyed believed the environmental message to be clear during the Samoa 2019 Pacific Games, across country participations, gender, and age groups. An even better demonstration is the use of water refilling stations, and recycling bins – this use is also most associated to middle age group (18-45 years old).

For Samoa, the games had a noticeable change in the mindset and behavior of the public in terms of their awareness of the issue of plastics. Just over half of people surveyed during the Samoa 2019 Pacific Games found the plastic free games campaign highly successful. Most people surveyed avoided the use of single use plastics with some occasionally used single use plastics during the game. Many refilled water bottles from the posted water stations around the venue. This demonstrated that viewers brought their own water containers during the games instead of using single use plastics. Across participating countries and audiences, Samoa 2019 Pacific Games has brought in a clear environmental message.

10 Snapshot Survey Takeaways

1. People, members of the teams and the public, supported the environmental message overwhelmingly. However, overall social communication – beyond the GoG – likely plays a factor in this response.
2. Attendees largely felt the environmental message to be clear.
3. People largely felt there were enough water stations present. A greater proportion of athletes felt this way than did the public.
4. Attendees and participants largely felt the purpose of the bins (general waste or recyclables) was clear. It will be worth compared these numbers to the results of the waste sorting and audit conducted by the audit.
5. People largely stated they used the bins as asked, that is they sorted their general rubbish from recyclables. Again, it will be worth compared these numbers to the results of the waste sorting and audit conducted by the audit.
6. People largely felt the bins were in good locations.
7. Members of the teams and the public indicated they mostly complied with the ban on single use plastics. This means almost all the attendees used banned plastic at some point, even if they usually avoided it. This commitment apparently increased over time.
8. Only a small majority of people were aware of the GoG campaign before the game began. A significant minority were unaware of the campaign and what it was asking of the people.
9. More women were surveyed than men and more people were surveyed at Tuanaimoto Sports Complex than at Apia Park. However, the survey sampled a good spread of people across different roles involved in the games.
10. A comparatively small portion of young people (ages 12 – 17) responded to the survey. This indicates a weakness in assessing their thoughts on the GoG. This demographic will soon become decision makers with an ability to make an impact on environmental issues.

Annex IV: QUOTES

NUS Student volunteers in response to their participation in the waste audits at the Games.

1. "In conclusion, I experienced and noticed that this project is vital to me as a biology student, to learn and discover what is happening to my environment and in my country, not only I learned to protect my environment but to help out other pacific countries to protect the Pacific Region. So, people should do some work to help our environment last for other upcoming generations in the future."
2. "During these waste audits we felt encouraged to be waste champions to spread the news to friends and families to be familiarised of how to do water management because the cleaner world we made nowadays is the healthier environment we will be living tomorrow."
3. "The Greening of the Games campaign should not stop but should be an ongoing event for Samoa and sold be called Greening of Samoa Campaign."

Pure Pacific Water:

Peter Thorne (Official with Team Tonga) "Awesome, I carried my bottle every day during the games and kept my water cold. Thanks, Pure Pacific Water"

Sharon Kellman Yett (Works at USAID) "Excellent initiative Pure Pacific Water! Thank you!"

Vincent Fepulea'i (CEO Samoa Rugby Union) "It was great to walk out of Apia Park and not see empty plastic bottles all over the ground"

Samoa Pure Water:

Visitor 1: A "ballsy move" by Samoa considering the time constraints in getting things up and ready for the opening and start of the games.

Visitor 2: Happy Samoa took the first step especially considering we are one of the main nations negatively affected by environmental pollution. Samoa is becoming a beacon for other island nations that it can be done.

Local 1: Appreciate the public and government sector working collaboratively to make this possible. A small constructive feedback though, while the initiative is amazing and has so much potential, it is unfortunate that the available resource (bubble coolers) was not enough to combat such large crowd sizes. Samoa being tropical and the event being a sports event, the most crucial planning should have been the availability of clean drinkable water to the public. Although there were stations present, they were clearly not enough and public awareness should have been prioritised where the water coolers stationed at and what people needed to bring. As an example, him and his family were unfortunately not aware that they had to bring their own reusable bottles.

Annex V:

MESC REPORT SENT VIA EMAIL:

Talofa

Firstly, MESC was tasked with promoting the games. As such we put together the **'Adopt a Country' school** program involving all 210 government, mission & private schools. As all school were involved together with local communities, I can estimate that the participants number were between 6k – 10k.

The overall aim of the program was to encourage school communities (students, teachers, parents, school committees / boards & wider community) involvement and active participation in celebrating Samoa hosting the XVI Pacific Games in July. Further, the program was designed to broaden students understanding, knowledge and appreciation of the different cultures and traditions that defines the essence of the Pacific

The program was designed to complement existing MESC and school led programs such as the Samoa Innovation Literacy, Numeracy and Science (SILNAS) program, English Day, Culture Day and International Day to name a few. The program also links to the Minimum Service standards as well as aligning to School Curricular – English, Social Studies, Geography, History, Science, Design Textile & Technology, Visual Art and Music.

In implementing the program, 24 countries (including Samoa) were allocated to Government, Mission & Private schools (primary and secondary) to champion. The planning, developing and organising of each country tribute was left to the Principals and teachers under the leadership of their respective School Inspector.

Three activities were given to the schools to prepare for:

- **School Environment that best depicts the Spirit of the 2019 Pacific Games**
 1. garden showcasing and/or promoting the PG with special focus on the schools adopted country;
 2. environment must reflect the idea/theme of 'greening the games' by promoting clean, healthy & sustainable environments i.e. recycling & vegetable garden etc.
- **Cheers/Faapisapisao that best depicts the Spirit of the 2019 Pacific Games**
 - School chant must encourage & echo the spirit of the Games – "One In Spirit";
 - Is a tribute to the schools adopted country;
 - Links to the National Curriculum
- **Posters/Art work that best showcase & promote the Spirit of the 2019 Pacific Games**
 - School use recycle resources (paper, plastic etc) and other objects/items from their environment to create & design posters;
 - Images must depict the theme of 'One in Spirit'
 - Reflect artwork of adopted country

Manuia le week end

Perenise Melanie Stowers

Assistant Chief Executive Officer – School Operations Division

P:+685-64-607 | Email: p.stowers@mesc.gov.ws |

Annex VI:

CASE STUDY

Triathlon water service stations, establishing a chain of custody.

When it was announced that the Samoa 2019 Pacific Games were going 'green' and eliminating all single use, plastic water bottles from the sports venues, the participating sports federations - to put it mildly - did not take the news lightly.

The International Triathlon Union, ITU, was particularly concerned and told the Games' operations office they would have to make an exception for them. ICU went on to explain that for reasons of health, safety and doping, plastic water bottles had to be used on the Triathlon course. This was an argument heard from virtually all the competing sports federations. Yet the Operations Team held its course and worked to find a solution that would appease ICU and its federation colleagues.

Procuring and installing water stations from the two, local water station suppliers did, in fact, present a challenge for the Triathlon course due to the need for and lack of access to electrical power and a main water supply. In researching a possible solution, the head of Games' operations, Jack Smith, along with the Sports Manager, Alex (fill-in) began to scour ICU's rules and regulations looking for a way to supply enough safe, fresh, on-demand water on the running, swimming and cycling course while sticking to the no plastic initiative.

When the ITU technical staff arrived in Samoa, they were met by the games' operation team and taken to Pure Pacific Water facilities where PPW staff demonstrated their process for refilling the 10 litre water bottles used on their water supply stations. The process to carefully seal each bottle ensuring health and safety standards were met was well received by ICU representatives and determined a reliable, safe solution to sufficiently meet the hydration needs of the competitors.

Several times a day, for the duration of the Triathlon, the 10 litre water bottles were transported to a designated location where, under the supervision of a Doping Control Officer, they were opened, emptied into portable water coolers, resealed and secured with duct tape. Once this health and safety process was complete, the coolers were then distributed onto the course where volunteers filled paper cups to hand off to each of the competitors as they passed by. Every time a cooler was refilled, the process was repeated deeming it time consuming but effective. Rather than giving up easily when faced with this hurdle, Games' operations stuck to the strategy and found a solution!!

Annex VII:

SAMOA PURE WATER

1. how many stations were installed?

We supplied a 100 bubble Coolers.
We supplied a total of 600 10 Litre Bottles per day.
We supplied 40,000 Ice Bags

Basically, areas that have no power outlets, Pacific Games bought 40 Litre Chilly Beans to store and distribute water. Our involvement was basically refilling each chilly beans with our 10 Litre bottles. Basically, yes we were the only company contracted to do that for Pacific Games as far as I am aware.

2. At how many venues?

Per below: Bubble Cooler Installation
Faleata: Gym 1, 2 Aquatic Centre, Soccer Field, Multipurpose Centre
Multisport Centre Lotopa
Saint Joseph College Rugby Field
Marist Rugby Field
Beach Volleyball Apia Water Front
NUS GYM 1
Tafaigata Shooting Range
Mulifanua Canoe
Apia Park Stadium and Tennis Court
Faleula Methodist Campus – Rooms where the athletes and officials were staying

(Please note the above areas is where we transported water and Ice). Another area we provided service too was Savaii where the boxing match was happening. We did not supply water but we did however supply Ice. Basically Ice was carted from Upolu to Savai'i for 4 days in the last week of the games.

3. Were they installed at just the sports venues or also dining halls and accommodations?

For us it was both the sports venues and accommodations. Dining hall was I believe allocated to another contractor.

4. Did you have regular / daily monitoring?

Yes – As part of our contract we had to service all locations from 6AM – 9.30PM

5. Any facts about how many times a day you had to resupply with a new water bottle

It varied based on the number of spectators, number of games held, athletes and officials present and how long the game lasted. I guess a good e.g. Apia Park Stadium, we installed 8 bubble coolers with 4-6, 10 Litre Bottles per cooler. Refilling at peak time saw us resupplying the coolers hourly. Refilling at lower attendance were spaced between 2 hours per cooler.

6. How many 10 litre water bottles did you go through?

We supplied 600 10 Litre per day.

7. Do / did you reuse your 10 litre bottles i.e. cleansing process, refilled and reused so not even your plastic bottles were disposed in the waste

Yes, at the end of each event, all our 10 Litre Bottles were brought back to our main station Vaitele for cleaning and refilled, capped and ready to be used for the next day. That's the beauty of our 10 Litre bottles because they are classified as reusable not single use.

1. Brief description of activities

Samoa Pure Water Company Ltd sponsored the supply of purified water, Bubble Water Coolers and Ice across all the events for the Pacific Games 2019.

Installed filtering system for a temporary refilling station at Faleula Methodist Camp

Transport of 10Litre Bubble Water Bottles for all events.

2. Outcomes

Reduce use of single plastic bottles.
Samoa Pure Water brand recognition.
Strengthened advocacy for plastic use.

3. Lessons learned

It is possible to hold an international event and go semi plastic free.

4. Recommendations

Communications: Message transparency was lacking when such an initiative was proposed. Events such as this where the most important component is the supply of purified water, it is crucial that involved parties (especially the private sector) is informed at least 10 months before the event.

Plastic Free Event: Although a wonderful initiative, it was not plastic free. Reason being is because banning only single use plastic bottles while vendors were still free to sell other products that were packaged in plastic was in our opinion controversial. We support the initiative however execution was poorly managed.

Annex VIII:

TERMINOLOGY

AFD: Agence Française de Développement

Biodegradable: Capable of being broken down by natural processes, such as bacterial action.

Carbon Footprint: A measure of the impact human activities have on the environment in terms of the amount of greenhouse gases produced, measured in units of carbon dioxide.

Carbon Offset: A way of counteracting the carbon emitted when the use of fossil fuel causes greenhouse gas emissions. Offsets commonly involve investing in projects such as renewable energy, tree planting and energy efficient projects.

Compost: A mixture of humus-rich, decomposed vegetable matter, used as a fertiliser or soil enrichment.

Corporate Responsibility: Our obligation to consider the interests of customers, employees, shareholders, communities and the environment as an aspect of meeting planning, execution and evaluation so that sustainability can be achieved.

Ecological Footprint: The measure of area needed to supply national populations with the resources and area needed to absorb their wastes.

Ecology: The system of relationships between organisms and their environments.

Ecosystem: A community of living organisms interacting with themselves and with their environment.

Ecotourism: Responsible travel to natural areas that conserves the environment and improves the wellbeing of local people.

Energy/Water Conservation: Practices and strategies that are designed to minimise the amount of energy and water used. 51

Environmentally Responsible Transportation: Transportation options that minimise environmental impact such as mass public transportation (light rail, subway, electric/hybrid/biodiesel buses) and electric/hybrid vehicles.

E-waste: Waste materials generated from using or discarding electronic devices, such as computers, televisions, and mobile phones. E-waste tends to be highly toxic to humans, plants, and animals, and has been known to contaminate water, air and dirt.

Fair Trade: Small farmers are paid a fair market price that enables them to improve their standard of living.

Fossil Fuel: An organic, energy-rich substance formed from the long-buried remains of prehistoric life.

Global Warming: A gradual, long-term increase in the near surface temperature of the Earth. The term is most often used to refer to the warming predicted to occur as a result of increased emissions of greenhouse gases.

GoG: Greening of the Games

GoGC: Greening of the Games Committee

Green Collar Job: A job connected to eco-friendly products and services.

Green Seal Certified: An organisation, product or process that has passed a specific environmentally responsible standard as outlined by Green Seal. It is a non-profit, third-party certifier and standards development body in the United States.

Green: A common expression meaning environmentally responsible.

Greenhouse Effect: Heating of the atmosphere that results from the absorption of solar radiation by certain gases.

Greenhouse Gas: A gas which contributes to the greenhouse effect by absorbing solar radiation. These gases include, but are not limited to, carbon dioxide, ozone, methane, and chlorofluorocarbons.

Kilowatt Hour: 1,000 watts of electricity used for one hour.

MESC: Samoa Ministry of Education and Culture in Sports

MESC: Samoa Ministry of Education and Sports Culture

MNRE: Samoa Ministry of Natural Resources and Environment

MWCSD: Samoa Ministry of Women Communities and Social Development

MWCSD: Samoa Ministry of Women Communities and Social Development

NBP: Samoa National Beautification Program

NUS: National University of Samoa

ONOC: Oceania National Olympic Committees

ORADO: Oceania Regional Anti-Doping Organisation

Organic Foods: Grown without chemicals that can harm the land, water or human health. Organic certification of food can be through an independent organisation or government program.

PGO: Pacific Games Office

Post-Consumer Material: An end product that has completed its life cycle as a consumer item and would otherwise have been disposed of as a solid waste. Post-consumer materials include recyclables collected in commercial and residential recycling programs, such as office paper, cardboard, aluminium cans, plastics and metals.

Post-Consumer Waste: Post-consumer waste is recycled material collected after people have tossed it in the blue bin. Office recycling programs and household recycling programs are the main source of post-consumer waste.

PCF: Processed Chlorine Free "Processed chlorine free" describes a bleaching process free of chlorine or chlorine compounds, which poisons rivers. The most common PCF bleaching agent is hydrogen peroxide (which breaks down into water and oxygen). Using PCF paper eliminates most of the toxic by-products of traditional bleaching, such as dioxins and other organ chlorides, and this means cleaner rivers.

PSA: Public Service Announcements

Recycled Paper: According to U.S. government standards, uncoated paper with at least 30% post-consumer waste and coated paper with at least 10% post-consumer waste can be called "recycled" paper.

Recycling: The collection of waste materials and reprocessing them into new materials or products, which are then sold again.

Renewable Resources: Resources that are created or produced at least as fast as they are consumed, so that nothing is depleted. Includes solar, hydro, wind power, biomass, and geothermal energy sources.

SAP: Strategic Action Plan

SPREP: Secretariat of the Pacific Regional Environment Programme

SRWMA: Samoa Recycling & Waste Management Association

STA: Samoa Tourism Authority

Sustainability: Meeting the needs of the present without compromising the ability of future generations to meet their own needs (as defined by the Brundtland Commission, 1987).

Sustainable Food: Food that is healthy for consumers and animals, does not harm the environment, is humane for workers, respects animals, provides a fair wage for the farmer, and supports and enhances rural communities.

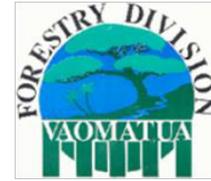
UNEP: United Nations Environment Programme

UNESCO: United Nations Educational, Scientific and Cultural Organisation

USPC: United States Peace Corps

Venue: Location where an event takes

WMP: Waste Management Plan

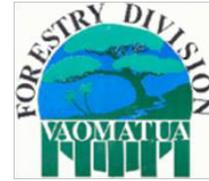


(Annex IX:)
EDUCATIONAL AWARENESS & TREE PLANTING ACTIVITY (EATA) STAGE 1
‘TWO MILLION TREE PLANTING CAMPAIGN 2015 – 2020 ‘
“Save a Life by Planting a Tree”
APRIL – JUNE 2019

June 12 – 14 2019, Schedule:

DATE	TARGET SCHOOLS/SITE	NO. OF PARTICIPANTS/STUDENTS	VENUE/Responsible Section/office
12 June 2019	Anoamaa College Letogo Primary School Vaitele Primary School Vaiusu Primary School Vailoa Primary School	Students: 15 @ school Teachers: 2 @ school MNRE staff – 25	Mt. Vaea Nature Reserve Forestry Office, VAILIMA
13 June (UPOLU)	Aleipata College Vailoa (Aleipata) Primary Lalomanu Primary School Lepa Primary School Lotofaga Primary School (Lepa/Lotofaga)	Students: 15 @ school Teachers: 2 @ school MNRE staff – 25	O Le Pupu Pu'e National Park (OLPP), Forestry Office, TOGITOGIGA
14 June (UPOLU)	Aana No 1. College Aana No. 2 College Leulumoega Fou College Nu'uausala College Paul VI College	Students: 15 @ school Teachers: 2 @ school MNRE staff – 25	Faleolo Reserve/STEC land, IMPRESS Project /Forestry Office, VAILIMA





PROGRAM:

9:00am	Registration & distribution of giveaways <i>Elisaia</i>	Lareina Tago & Miriama I.
10:00am	Welcome Remarks & Prayer	Vanda Falesoa Chan Ting
10: 15am	Introduction of schools & staff	Ape Tuuau Letaulau
	Forestry Division Overview Presentation	Ape Tuuau Letaulau
10:45am	MORNING TEA & GROUP PHOTO	
11:30am	Presentations:	
	1. Status of Forest in Samoa	Joe Te’o
	2. SMSMCL/IMPRESS Project	
	3. Two Million Tree Planting /Greening of the Games	Susau Siolo
	4. <i>Tour directives/highlights</i>	Vailega Timoteo Moresi
12:30pm	Forest Educational Tour - Divide into 3 groups	
	Group 1: Tour Guide – Vailega Timoteo Moresi	
	Group 2: Tour Guide – Joe Te’o	
	Group 3: Tour Guide – Loto Tuitaalili	
1:30pm	<i>Tree Planting Activity (1 hour)</i>	All
2:30pm	CLOSING REMARKS & LUNCH	Ape Tuuau Letaulau



EATA program photos:



EATA @ Vailima Forestry Station



EATA @ Togitogiga Forestry Station



EATA @ Vaipouli Forestry Station



EATA @ Asau Forestry Station

Contact Division

Ministry of Natural Resources and Environment
Level 3, Tui Atua Tupua Tamasese Efi Building - Sogi

Email: info@mmre.gov.ws OR

tolusina.pouli@mmre.gov.ws

Ph: (685) 67200

Website: <http://www.mmre.gov.ws>

Facebook page: TwoMillion Trees Samoa



Contact any nearby Forestry Offices for assistance

Vailima Forestry Station

Ph: (685) 21054

Togitogiga Forestry Station

Ph: (685) 609024

Maota Forestry Station

Ph: (685) 51444

Asau Forestry Station

Ph: (685) 58114

Vaipouli Forestry Station

Ph: (685) 609020



Ministry of Natural Resources & Environment

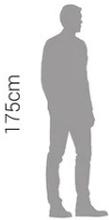
**Educational Awareness &
Tree Planting Activity
(EATA) Program**

**“Two Million Tree Planting Campaign
2015—2020”**



Forestry Division





175cm

260cm

520cm

SUPPORT THE PLASTIC BAN!
Effective Date: 30 Jan 2019

SAY NO TO PLASTIC (with icons for plastic bags, plastic shopping bags, and plastic straws)

"A moment to use but up to a century to decompose!"
PLASTIC TAKES UP TO MORE THAN 10,000 YEARS TO DECOMPOSE

SAY YES (with icons for paper bags, reusable bags, and paper straws)

Use paper based bags, straws and reusable shopping bags to support the plastic ban

SAY NO TO PLASTICS

#PlasticFreeSamoa

FREE CLEAN DRINKING WATER

Bring a reusable water bottle whenever you attend an event at the Pacific Games to stay hydrated with fresh, clean drinking water

Say NO to single use plastic bottles



Funding for Water Stations at the Samoa 2019 Pacific Games is proudly supported for all athletes, officials, volunteers, and spectators through the kind assistance of the Agence Française de Développement (AFD), Government of Australia, Government of New Zealand, United Nations Environment Programme (UN Environment) and the United Kingdom.

GREENING

OF THE SAMOA
2019 PACIFIC GAMES

WHAT YOU CAN DO TO HELP

Email sprep@sprep.org to learn more



Do the Play Green Challenge and take a photo of you or your team doing a good environmental action and post to facebook or Instagram using the #PlayGreenChallenge Go in the draw to win prizes!



Refill your bottle at free filtered water stations across all XVI Pacific Games Venues

**REFUSE
REDUCE
REUSE
RECYCLE**

Practice the 4R's – Reduce, Reuse, Refuse and Recycle



Reuse your food containers for any food you bring to the XVI Pacific Games



Offset your carbon footprint and plant trees with Samoa's 2 million tree planting campaign 2015-2020. For more information contact susau.sioilo@mnre.ov.ws or moeumu.uil@mnre.gov.ws.



Reuse your bags and support Samoa's single-use plastic bag ban



Read the signs and put your rubbish in the right bins at any of the Games venues

YOU'RE INVITED TO A CITY-WIDE RIVER CLEAN-UP IN APIA

In support of the Beautiful Samoa: Keep it Clean and Plastic Free campaign



WHERE: Five Locations

1. Vaisigano and Mulivai Rivers
2. Fuluasou River
3. Gasegase River
4. Apia beach front and Mulinu'u foreshore area
5. Apia city

WHEN: Assemble at Malaefatu Park, Sogi on 29 June 2019, Saturday at 7 a.m.

Please bring a reusable water bottle, hat and work gloves if you have them otherwise rubber gloves will be provided.

Free sausage sizzle, fun games and green activities to follow at Malaefatu Park, Sogi!



YOU'RE INVITED TO A RIVER CLEAN-UP IN APIA ON SATURDAY 29 JUNE 2019

In support of the Beautiful Samoa: Keep it Clean and Plastic Free campaign



WHERE:

Four Locations

1. Vaisigano river
2. Loimata o Apaula River
3. Gasegase River
4. Fuluasou River

WHEN: Assemble at Malaefatu Park, Sogi on Saturday, 29 June at 6:30 a.m.

Please bring a reusable water bottle, hat and work gloves if you have them otherwise rubber gloves will be provided.

Free sausage sizzle, fun games and green activities to follow at Malaefatu Park, Sogi!



CHOOSE TO OFFSET YOUR CARBON FOOTPRINT

With Samoa's 2 million tree planting campaign 2015–2020



**FREE
SEEDLINGS**
available to plant at
the **Fuluasou Reserve**
next to the Faleata
Sports Complex and
the **Mt Vaea Reserve**



Contact us for more at:
Ph: 67200
E-mail: susau.sioalo@mnre.gov.ws; moeumu.uili@mnre.gov.ws



YOU ARE INVITED TO A THANKSGIVING
BRUNCH IN CELEBRATION OF

THE GREENING OF THE XVI PACIFIC GAMES



Friday 9 August 2019
11:00 A.M - 1:00 P.M
TATTE Convention Centre

Please RSVP by COB Wednesday 7 August
to deborahb.ext@sprep.org or
anthonyt@sprep.org



**YOU'RE INVITED TO JOIN A
CLEAN-UP OF APIA'S
FORESHORE**

In support of the Beautiful Samoa:
Keep it Clean and Plastic Free
campaign and in celebration of
World Oceans Day



*Beautiful
SAMOA
Keep it Clean
and Plastic Free*

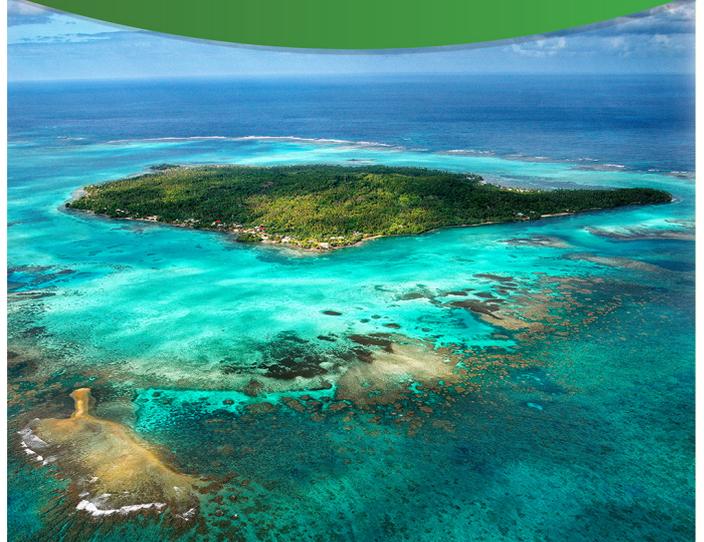
World Oceans Day

WHERE: From Samoa Met Office,
Mulinu'u, Apia beachfront, Sheraton
Aggie Grey's Hotel, Vaisigano,
Matautu, Vaiala, Vaipuna & Moata'a
WHEN: Saturday 8 June 2019 at 7 a.m.
Free sausage sizzle, fun games and
green activities to follow at Malaefatu
Park, Sogi.



*Beautiful
SAMOA
Keep it Clean
and Plastic Free*

GREENING THE SAMOA 2019 XVI PACIFIC GAMES



Annex XI:

SPEECH ON THE GREENING OF THE GAMES BY JAMES SMITH, GAMES OPERATIONS MANAGER

Friday, Aug. 9, 2019

Good morning everyone. I would first like to thank SPREP and MNRE for hosting this event to celebrate the Greening of the Games initiative. I would also like to acknowledge all of the CEOs, Ministers and other honored guests and thank them for their presence here today. It is an honor to have you here. I am here on behalf of Falefata Matatia, the CEO of the Pacific Games. He sends his apologies for not being here, he is spending time with his family in New Zealand.

As many of you know, when we first started discussions around the Greening of the Games strategy, I was very skeptical. There were barriers, dead ends and numerous other hurdles in our way to implementing the plan we wanted. I didn't believe it was possible. But in the end, thanks to the work of the people in this room, we were able to execute our plan and make a significant difference in the environmental impact that the Pacific Games had on Samoa and on the region.

We had two main things that our office focused on as it related to Greening of the Games, water and takeaway containers. Before I get to those specifics, let me give you a little background.

Since we started this project, we were ensured that the total number of athletes and team officials was going to be around 4 thousand 500. We did all of our estimates based on that number. Then as teams started to arrive during that last week of June and the first week of July there was panic in our team. Countries were arriving with more athletes than we thought. That number kept rising. 4700, 4900, then when New Caledonia arrived we surpassed the 5,000 mark. Not only did that make these games bigger than Papua New Guinea, 4 years ago, but it made these games the largest Pacific Games ever.

Now this presented all sorts of issues for us, especially as it related to our greening strategy. But we did not panic, we stuck to our plan and were able to carry it out despite this influx of people.

Our first strategy revolved around water and the distribution of water to all venues.

Our office distributed more than 9000 water bottles to athletes, technical officials and volunteers. Some, the hydroflasks, were very popular and many of you in the room have no doubt received requests for donations of these items.

With the help of our two water partners, Pure Pacific Water and Samoa Pure Water, which no one has ever confused, we installed more than 400 locations to refill these water bottles in the village and the venues. In addition to these refill stations our office distributed 100 - 40 liter coolers that were used on the field of play to provide water to athletes and officials.

While this might sound all well and good, we still faced many hurdles. We ran into sport federations who were not particularly keen on our plan. I will give you one example. ITU, the International Triathlon Union, as soon as they heard we were not using plastic bottles, said that we had to make an exception for them. We had to provide bottled water on the course. It was a health, a safety and a doping issue. These were arguments we heard from almost all of the sports. But Triathlon presented an interesting challenge, because these water stations would not be near power, or water so neither Samoa Pure or Pure Pacific would be able to really solve this issue. So Alex, our sport Manager, and I were at a bit of a loss. I began to scour through the ITU rules, to find some way that we could go without using plastic bottles. Eventually we found a solution. When the ITU technical staff arrived in Samoa, I took them

to Samoa Pure Water's site in Mulivai and showed them where we refilled the 10 liter bottles and then sealed them. We then transported those same bottles to Sogi Park where under the supervision of a Doping Control Officer we filled our Orange round coolers with that same water. We then sealed those coolers with duct tape. We then distributed these coolers to the water stations where volunteers used paper cups to give out water to the athletes. Each time we refilled these coolers we would redo this same process, it was time consuming, but effective. We could have just used plastic water bottles, but instead we stuck to our strategy and found a solution.

In the lead up to the games, this issue of water kept me up at night. I would wake up and think of places where I had forgotten to put units, areas where we were water deficient. I was worried that we would impact someone's performance or worse cause an injury because of our decision to forgo Single-use plastic water bottles. But with the help of our sponsors and partners we were able to do something that I thought was impossible just four short months ago. I would like to give a special thanks to Lucky and Neal at Pure Pacific Water and Victor and Nua at Samoa Pure Water. Without their work and the work of their teams, this would not have been possible.

Our second strategy was around reducing the use of styrofoam and plastic containers and utensils for catering. Over the course of the 20 days of the games we served more than 150,000 meals to all client groups, athletes, volunteers. Remember when I said we had more athletes and team officials than we expected, well that means we served more meals than we expected as well.

Out of those 150,000 meals, more than two thirds, or 104,000 meals were served in our dining halls using proper plates and utensils. The other 46,000 meals were served in takeaway containers. Less than 2,000 of those meals were served in styrofoam. So out of the 150,000 meals just one percent of all

of the meals we served for the games was prepared with styrofoam or plastic. This is an incredible feat for companies which have long relied on styrofoam as their go-to container. I would like to thank our caterers here in Upolu, Denzals and Taroking for their strong commitment to paper takeaways for our athletes and technical officials. I would also like to thank Apia Bottling Company who produced 27,000 meals for our volunteers all of them in paper takeaways with bamboo utensils; they used reusable bags to help us deliver those meals to over 20 different locations. On Savaii, The Savaiian Hotel and Dynasty catering for their commitment to quality food and non-plastic takeaway containers.

Let me tell you countries were excited about our efforts. Single use plastic waste is not a problem unique to Samoa, it impacts each and every one of our member countries. We have created a road map, a strategy that can be replicated in the future. There is no excuse for future Pacific Games to not commit to a similar if not more robust call for reducing single use plastic. The individual sports within countries and within the Oceania region saw what was possible, they drank and ate the results of our hard work. They saw the possibilities and they will take the strategies we implemented today and use them in the future.

I am so proud to be in this room today. With a simple idea and the support of our friends within the government and community of Samoa, we put on a world-class sporting event, while also addressing one of the most important issues facing this country and this region today.

A lot of people have called these the Miracle games. I say that is rubbish. It is only called a miracle by the people who didn't see all the hard work done by thousands of people in this country. These games would not have been possible without them and without you. Thank you for your hard work. Thank you for your determination to be single use plastic free. Thank you for your dedication to these Pacific Games.

Annex XII:

MESSAGE TO SAMOA'S MAYORS

Let's make History!

Greening of the Games – and beyond!

One in Spirit | 7 - 20 July, 2019 | 27 sports | 20 venues
| 24 countries | 5,000+ athletes

What is Greening of the Games?

It's a catalyst for grassroots eradication of plastics that are polluting our water ways, oceans, and neighbourhoods by activating a concerned, engaged and inspired Samoa ready to use love of country, region and the Pacific to intentionally reduce or eliminate single-use plastics and Styrofoam from every day use starting with the Pacific Games 2019.

In recent years, a number of Pacific Island countries have instituted bans on single-use plastics, with Samoa commencing its ban on single-use plastic bags and straws starting 31 January 2019. With Samoa hosting the 2019 Pacific Games, we are now in a high-profile, leadership position to show our regional counterparts how consumption of single-use plastic bottles, flatware and Styrofoam packaging can be reduced, or eliminated, not only at sporting venues, but also at accommodation houses and restaurants.

The Greening of the Games initiative responds to an immediate and persistent issue faced by every Pacific Island nation – how to eradicate the marine litter polluting our water ways, oceans, and neighborhoods and harming human health and our precious environment. Single-use plastics such as bottles, bags and Styrofoam make up a significant proportion of this litter and one we all have the ability to control.

Thousands of people will be in Apia to cheer on their sporting idols and countrymen. This huge outpouring of positive energy for and with the athletes themselves under the Games' theme of

"One in Spirit", provides the perfect environment for promoting positive messages around the four R's: Reduce, Reuse, Refuse, Recycle.

Why is this important?

Quick global facts:

- Eight million tons of plastic makes its way into our oceans each year.
- 80 percent of the marine debris in the ocean comes from the land.
- 97 percent of fish species sampled in the Pacific region have plastic in them, and national fish consumption in our island region is three to four times the global average.
- By 2050, if we continue on the current trends, there will be more micro-plastics in the ocean than fish.

Quick Samoa facts:

- Waste generation grew by over 20% within a six year period from 2011 to 2017
- 26,000 tons of waste was generated in 2011
- 32,850 tons of waste was generated in 2017
- It is estimated over 8,800 tons of plastic are generated in one year in Samoa
- Fisheries' contributed 3.5 percent of Samoa's National GDP in 2014.
- In 2015, exports of fish and fisheries' products were valued at \$13.4 million USD and imports at \$8.6 million USD

Who is behind this effort?

The Greening of the Games Committee (GoGC) is comprised of Samoan government officials, intergovernmental organisations, Pacific Games Committee representatives, and local business leaders. The committee began actively working to develop the Greening of the Games strategies in January 2019.

The Advisory Panel includes:

Co-chairs: Leota Kosi Latu, Director General SPREP. Ulu Bismarck Crawley, CEO MNRE

Co-Facilitators: Seumalo Afele Faiilagi, MNRE; Faafetai Sagapolutele, J-PRISM2; Anthony Talouli, SPREP

What is being asked of my Community?

The GoGC is respectfully asking Mayors and their communities to help us by engaging in the following:

1. Continue your efforts in line with the National Beautification Programme and proposed clean-up dates set by the National Beautification Committee in favour of:
 - a. April 1st, launch of the China Pacific Tourism Year
 - b. June 1st Independence day
2. Adopt one additional date for a community / country-wide clean-up
 - a. Projected for the last Saturday in June – just before the first arrivals to the Games, July 4th
3. Spread the Greening of the Games message – to eliminate single-use plastic bottle, bags, straws, and Styrofoam packaging. The following will NOT be available for sale at sporting venue canteens.
 - a. Single-use plastic water bottles and containers
 - b. Single-use plastic forks, spoons and knives (tableware)

- c. Single-use plastic take-away bags
- d. Single-use plastic straws
- e. Styrofoam cups and food containers
3. Educate / instruct your citizens on ways to help us Green the Games by asking them to:
 - a. Bring their own reusable bottles, cups and food containers when attending sporting events
 - b. Help with keeping the Games clean by putting their trash in the waste bins
 - c. Buy local, support Samoa, and choose green options when purchasing food and beverage
 - d. Remember to Reduce, Reuse, Refuse and Recycle
 - e. Share the Green messaging with family, friends and neighbours

What's in it for my community?

By partnering with the Games Committee to Green the Games, your community will have access to:

1. Clean, fresh drinking water stations at Games' venues for free reusable water bottle and cup refills.
2. Plenty of easy-to-use waste segregation bins for:
 - a. Recyclables of tin, aluminum cans, plastic single-use water bottles
 - b. Compostable / organic materials
 - c. Waste for to transport to the landfill.
3. Volunteer opportunities to assist in this history-making Green initiative
4. Introduction to trending Green / biodegradable food & beverage options
5. Introduction to new Green technologies

6. Possible collaboration with business and organisations taking part in the Greening initiative
7. Possible collection of clean waste materials used in women-owned micro-business models

In addition:

1. Identification of possible new “Green” business models from which to derive jobs and income.
2. Increased income from the travel / tour industry by showcasing a Green / Clean Beautiful Samoa
3. Potential behaviour change achieved through experiential activities, affirming results, positive feedback.
4. Reduction in the amount of waste in our streams, rivers, landfills; on our streets and in our communities
5. Reduction in the amount of waste that could adversely affect our fishing industry

Annex XIII:

SNAPSHOT OF WASTES GENERATED AT THE XVI PACIFIC GAMES 2019

BACKGROUND:

The Greening of the Games in the recently held XVI Pacific Games 2019 was initiated by the Secretariat of the Pacific Regional Environment Programme (SPREP) and the Government of Samoa (host country) through the Ministry of Natural Resources and Environment (MNRE). It became a huge success in terms of offsetting carbon footprint through the 2M Trees Campaign, promoting environmental awareness through river clean-ups, and discouraging single-use plastics and polystyrene materials during the event period. The segregation of wastes at discharge points was also introduced.

The initiatives to reduce the amount of single-use plastics during the Games include provision of reusable water bottles to approximately 4,000 athletes and key event coordinators with water refilling stations installed around the games venues. Reusable bags were also distributed to the athletes and spectators to support the Government of Samoa's legislation on banning the use of plastic bags.

To further capture the single-use plastic bottles and other recyclable wastes, two separate labelled bins were stationed at each rubbish discharge points, one for general wastes and one for recyclable wastes (Al cans, glass and PET bottles).

A waste audit was conducted to determine outcomes of these initiatives.

WASTE AUDIT:

Wastes collected from three sites: Tuinaimato Complex, Apia Park and Faleula Village (athletes' accommodation) were sampled daily over a consecutive 7-day period within the duration of the games. Sampling and audit were conducted during the period when the venues were expected to be busy.

Around 40 students from the National University of Samoa (NUS) were trained and tapped to conduct the waste audit with lead support from SPREP and MNRE, and other volunteers from JICA.

Representative samples (around 9% of daily wastes generated in the three sites) were collected, weighed and sorted by the National University of Samoa students and volunteers at the Faleata Reserve and Apia Park. The different categories are indicated in the annexed sheet.

The output of the daily audit was consolidated and reported in the Waste Tracking Station during the games. Analysis of the data were interpreted based on the actions and aspirations of the Greening of the Games Initiative.

a. Daily Waste Generated at the Games

The total amount of waste generated during the event is around 40.26 tons with a daily average of 3.10 tons (Table 1). Figure 1 shows a general trend of greater tonnage of wastes generated during the first week of the event. There is a decreasing trend in waste generated during the second week with another increase shown towards the end of the games when a lot more spectators came to watch the championships.

Table 1: Daily waste generation over the duration of the Pacific Games

Zone	Total Weight Generated (ton)													Total	Daily Average
	Day 1 (8 July)	Day 2 (9 July)	Day 3 (10 July)	Day 4 (11 July)	Day 5 (12 July)	Day 6 (13 July)	Day 7 (15 July)	Day 8 (16 July)	Day 9 (17 July)	Day 10 (18 July)	Day 11 (19 July)	Day 12 (20 July)	Day 13 (22 July)		
Tuinaimoto	0.71	1.92	1.03	1.31	0.94	0.83	0.81	0.99	1.21	1.13	0.94	1.74	0.76	14.33	1.10
Apia Park	0.41	1.53	1.77	1.49	2.24	1.05	1.59	0.84	0.60	0.58	2.25	1.33	0.00	15.70	1.21
Faleula Village	0.85	0.85	1.09	1.24	1.13	0.84	0.68	0.97	0.65	0.85	0.85	0.26	0.00	10.24	0.79
Total	1.97	4.30	3.89	4.04	4.31	2.71	3.08	2.81	2.46	2.56	4.04	3.33	0.76	40.26	3.10

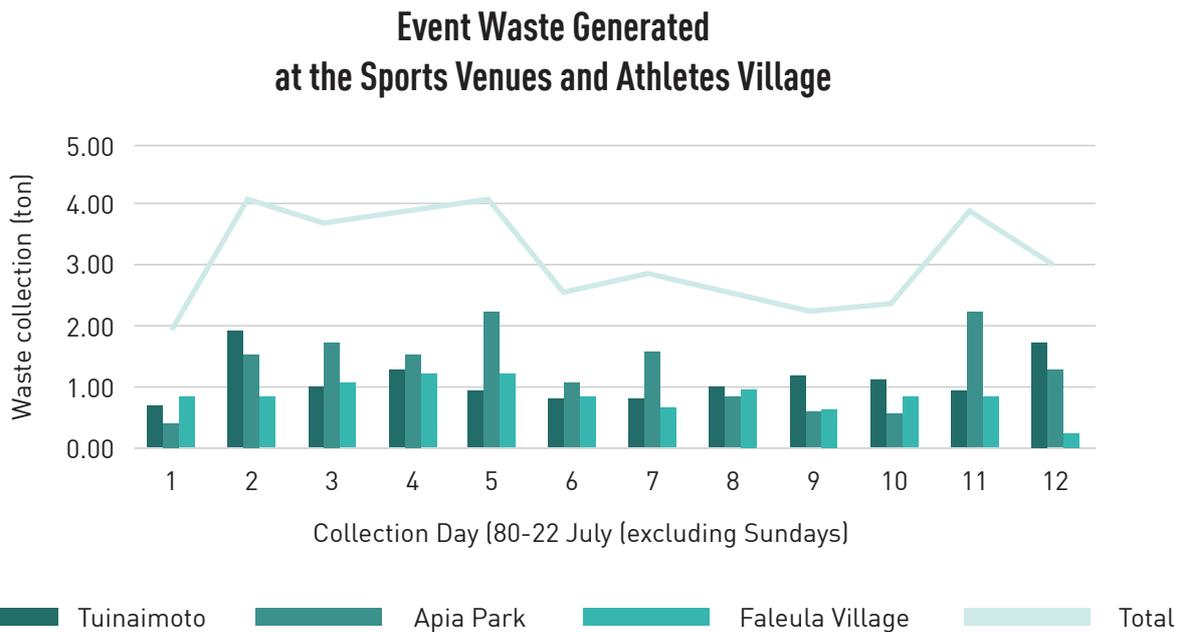


Figure 1: Amount of wastes generated at the XVI Pacific Games

Based on the average daily tonnage of wastes disposed at the Tafaigata Landfill of 52.5 tons (most recent survey in 2018) as shown in Table 2, the event contributed about 5.9% of wastes daily to the host country or a total of 40.26 tons during the whole two-week event.

Table 2: Relevant information on wastes in Samoa and the Pacific Games

Projected population (2019) a	200,657
Per capita waste generation (household)a	1.06 kg/person
Daily average of wastes disposed at the Tafaigata Landfill (2018 survey)a	52.5 tons
Total waste collected during the Pacific Games	40.26 tons
Daily average of wastes collected during the Pacific Games	3.10 tons
% wastes contributed by the Pacific Games	5.9%
Estimated number of athletes and spectators	6,000 (tbc)
Estimated per capita generation of wastes during the Pacific Games	0.55 kg/person

Source: National Waste Management Strategy of Samoa (2019 to 2023)

With an estimated total number of athletes and spectators during the games of 6000, it is also estimated that the amount of wastes generated by each person is 0.55kg which is significantly lower than the country’s per capita waste generation of 1.06 kg/person. This is fairly reasonable considering the limited types of wastes likely generated during the events and does not reflect the whole day waste generation including times when people are out of the venues. The segregation of food wastes in most of the venues and the waste awareness campaigns may have contributed to the lower per capita generation of wastes during the event.

b. Sampled Wastes for the Waste Audit

Table 3 shows that around 8.5% of the wastes collected and disposed were sampled for the waste audit. This can be considered a very good representative sample of the total wastes generated during the Games and gives a reasonable level of confidence of the waste audit.

Table 3: Sampling of wastes generated during the Pacific Games

Zone	Sampled Wates from General and Recycling Bins (kg)						Total Sample Weight (kg)	Total Collected Weight (kg)	% sampled waste
	Day 1 (11 July)	Day 2 (12 July)	Day 3 (13 July)	Day 4 (15 July)	Day 5 (16 July)	Day 6 (17 July)			
Tuinaimoto	134.2	119.8	115.4	114.4	102.8	155.4	742.0	6092.0	12.2
Apia Park	14.5	60.0	0.0	93.7	104.8	138.0	411.0	7821.0	5.3
Faleula Village	105.1	57.5	66.1	76.3	126.2	64.7	495.8	5501.8	9.0
Total	253.8	237.3	181.5	284.3	333.8	358.1	1648.8	19414.8	8.5

c. Plastic in the Wastes Generated at the Games

Plastic packaging, plastic bags and plastic bottles dominated the proportion of plastics sorted from the sampled wastes. This is very evident in all the collection zones as shown in Figure 2.

Proportion of Plastic in the Sampled Waste in the different zones

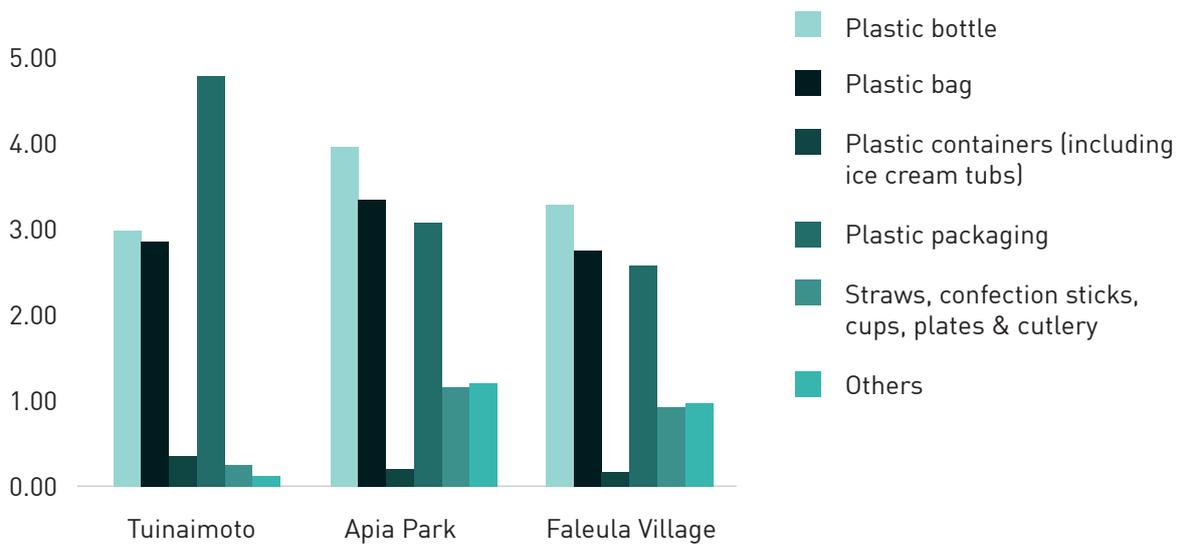


Figure 2: Proportion of plastic in the sampled waste in the different zones

Figure 3 shows a steady decline in the proportion of plastics in the sampled waste from both the general and recyclable bins towards the end of the first week (from 14% to 9%). The second week of the games saw a fluctuating daily proportion of plastics ranging from 11 to 12%. At the end of the waste audit, about 12.35% of plastics are sorted from the sampled waste as shown in Table 4.

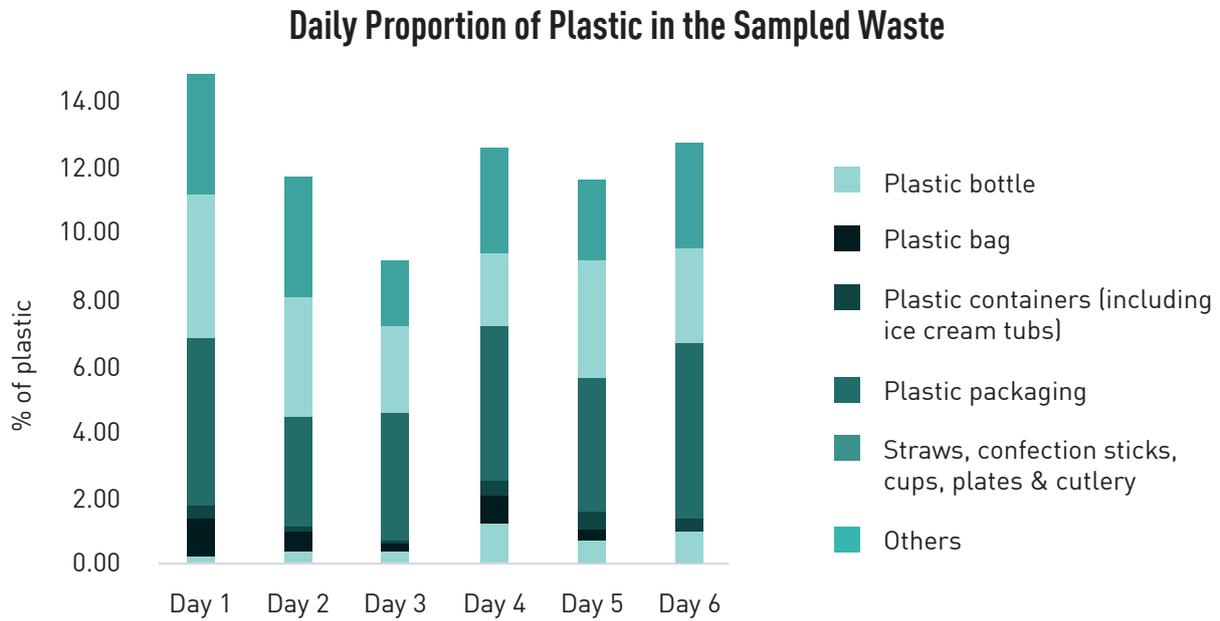


Figure 3: Daily proportion of plastic in the sampled waste

Table 4: Proportion of plastic in the sampled waste

PLASTIC ITEMS		Proportion of Plastics in the General Waste and Recycling Bin (%)							
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Total	Average
Consumer items	Straws, confection sticks, cups, plates & cutlery	1.15	0.60	0.34	0.84	0.35	0.89	4.17	0.69
Packaging items	Plastic bottle	3.70	3.74	1.97	3.27	2.52	3.17	18.36	3.06
	Plastic bag	4.34	3.68	2.63	2.20	3.57	2.98	19.39	3.23
	Plastic Containers (including ice cream tubs)	0.41	0.11	0.25	0.50	0.59	0.40	2.25	0.38
	Plastic packaging	5.19	3.35	3.98	4.72	4.05	5.38	26.67	4.44
	Others	0.13	0.36	0.00	1.16	0.62	0.04	2.31	0.38
Total		14.91	11.84	9.17	12.69	11.69	12.85	12.35	

The most recent survey in 2017¹ showed 16% of plastic in Samoa’s household wastes. Based on this reference value, the Pacific Games was successful in significantly reducing plastic wastes by about 3.65% which equates to about 1.5 tons of plastic reduced based on the total amount of waste generated. This is a very conservative estimate considering that plastic waste generation is relatively higher in events than in normal households.

The proportion of the different plastic items in the sampled wastes are shown in Figure 4. Plastic bottle, plastic bag and packaging materials dominated the plastic wastes. In comparing the amount of plastic items from the general and recycling waste bins, there is a slight increase in plastic bottles in the recycling bins compared to the general waste bins and a decrease in the proportion of plastic bags and packaging in the recycling bins which demonstrate a awareness on the proper use of labelled bins (Figure 5).

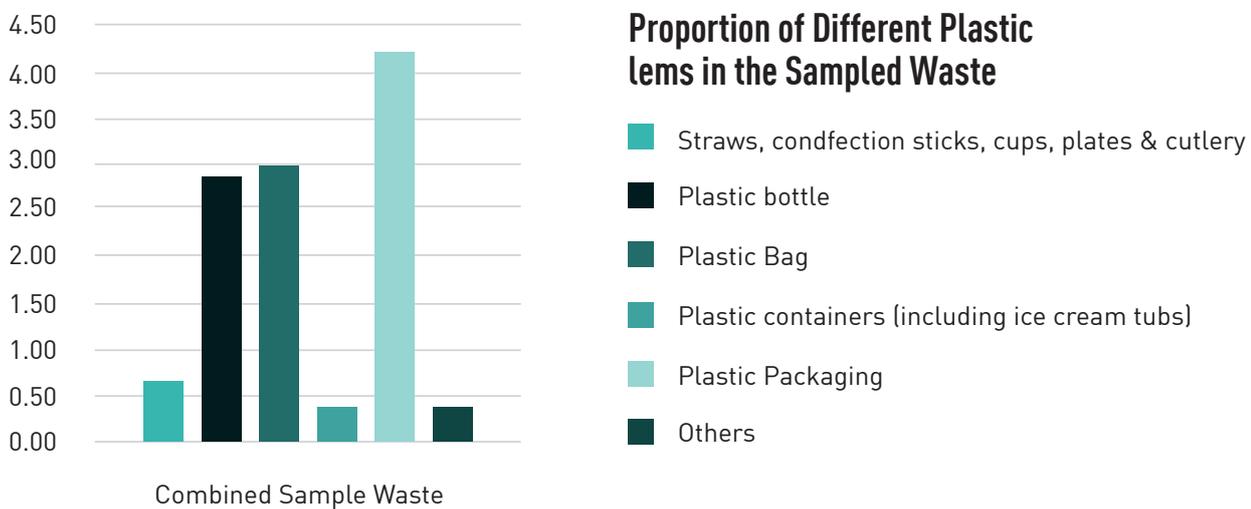


Figure 4: Proportion of different plastic items

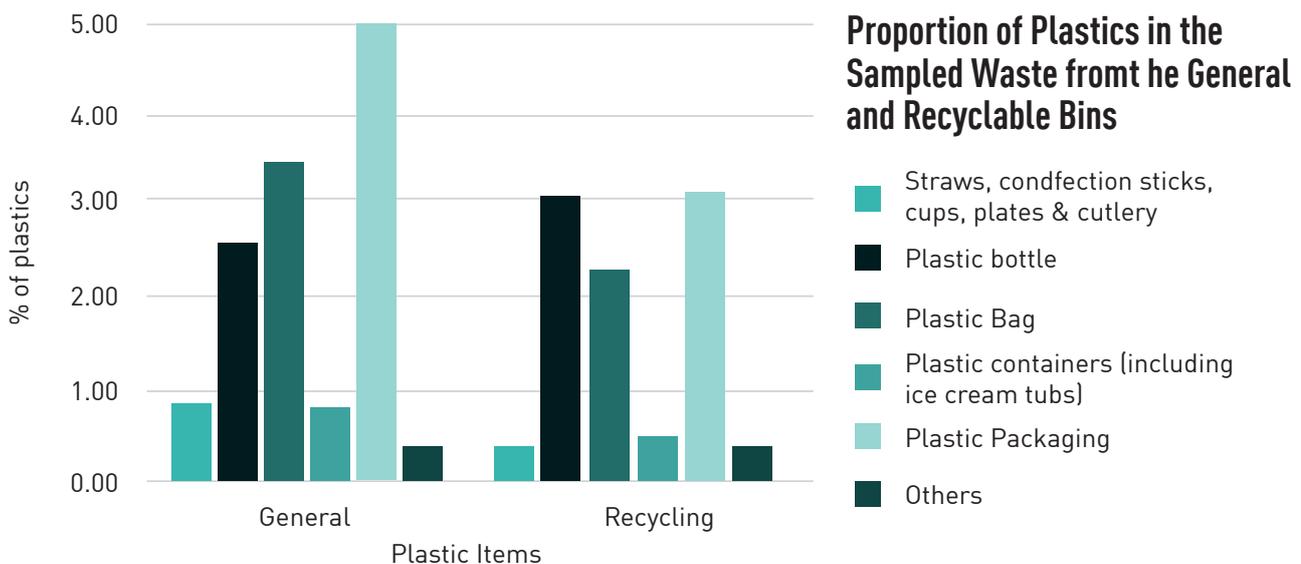


Figure 5: Comparison of generated plastic items

¹National Waste Management Strategy of Samoa (2019-2023)

The Greening initiative in the Games focused on promoting a plastic-free event through provision of reusable water bottles and water refilling stations and eco-bags. Figure 6 shows less than 4% of plastic bottles and bags in the collected waste from the venues. The proportion further dipped towards the end of first week of the games and was maintained at less than 4% proportion throughout the rest of the games. The trendline for water bottles is shown to be slightly decreasing over the duration of the games.

Proportion of Plastic Bottle and Bag in the Sampled Waste Over Time

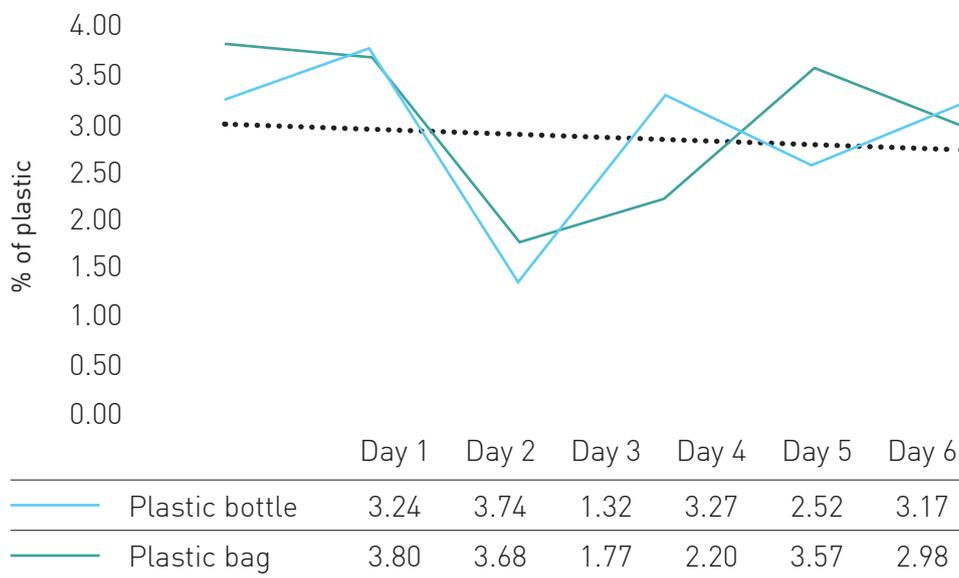


Figure 6: Proportion of plastic bottles and bags

d. Polystyrene Wastes Generated at the Games

Although polystyrene is not included yet in the recent single-use plastic ban in Samoa, there is a strong awareness campaign against its use in the Pacific Games. This is in anticipation of the progressive addition of more items in the legislation apart from the harmful effect polystyrene poses to the environment.

The generation of polystyrene was very evident in Faleula Village where the athletes stay compared to the other venues in most of the days (Figure 7).

Proportion of Polystyrene in the Sampled Waste from the Different Zones

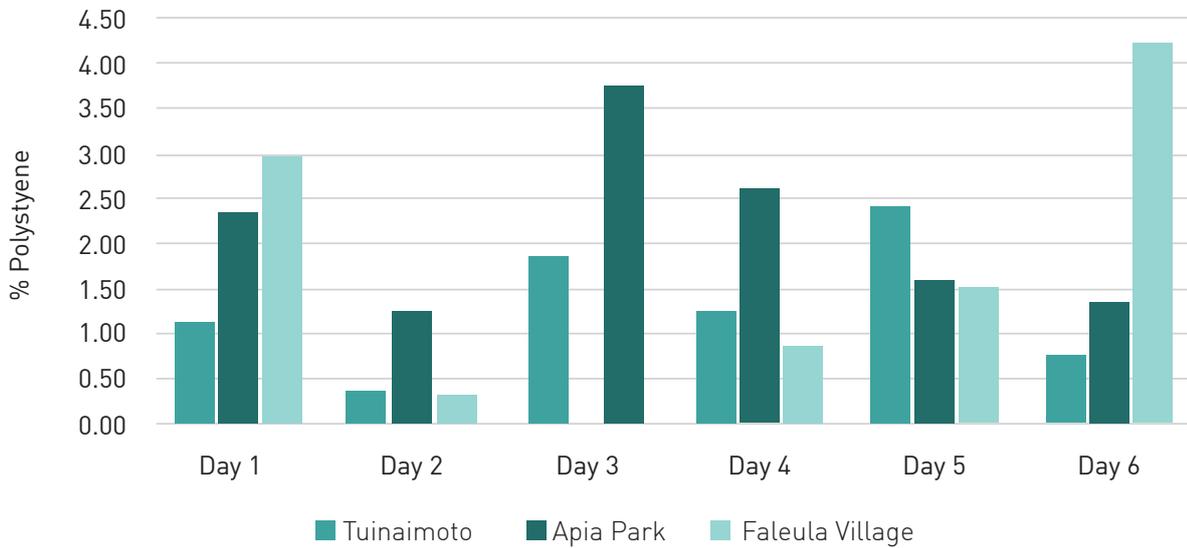


Figure 7: Proportion of polystyrene from the different zones

An average of 2.29% polystyrene is generated in the athlete’s residence which is over the daily average for all the collection zones as shown in Table 5.

Zone	% Polystyrene Waste from Combined General and Recycling Bins							Total	Average
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6			
Tuinaimoto	1.14	0.37	1.87	1.27	2.42	0.75	1.24	1.30	
Apia Park	1.93	1.27	0.00	2.63	1.60	1.36	1.72	1.46	
Faleula Village	3.00	0.33	3.78	0.89	1.51	4.25	2.25	2.29	
Total	1.96	0.59	2.57	1.61	1.82	1.62	1.67	1.69	

There is a consistently lower proportion of polystyrene in the recycling bins as shown in Figure 8 which demonstrates some degree of awareness that this waste item cannot be recycled.

Proportion of Polystyrene in the General and Recycling Bins

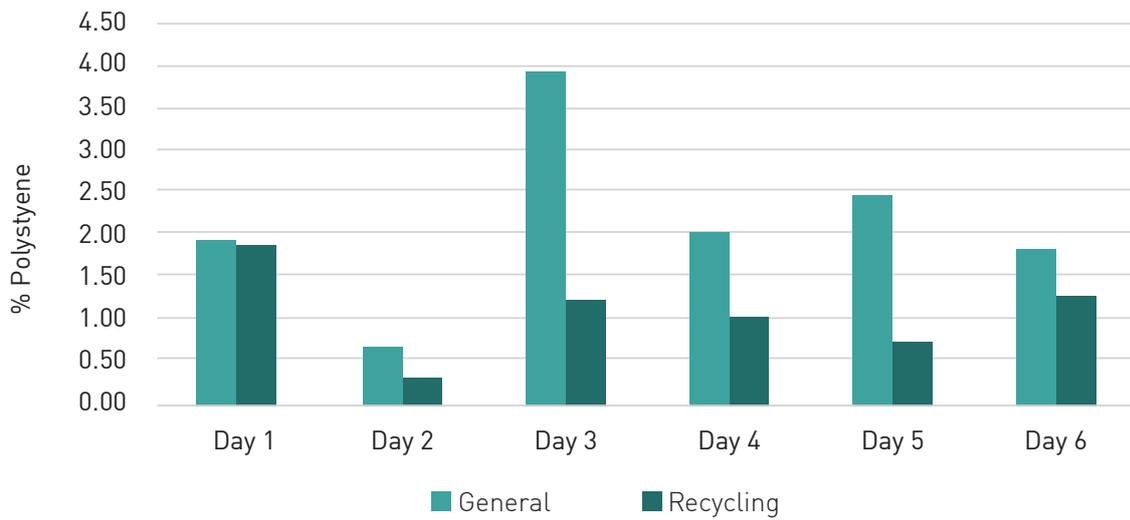


Figure 8: Proportion of polystyrene in the general and recycling bins

The trend of polystyrene wastes generated at the event increases despite awareness campaigns on the harm this may pose to the environment (Figure 9). Samoa may not have enough supply of alternative food packaging materials and because the ban on its use has not been legislated yet, compliance to the request discouraging its use was not followed fully.

Proportion of Polystyrene in the Sampled Waste Over Time

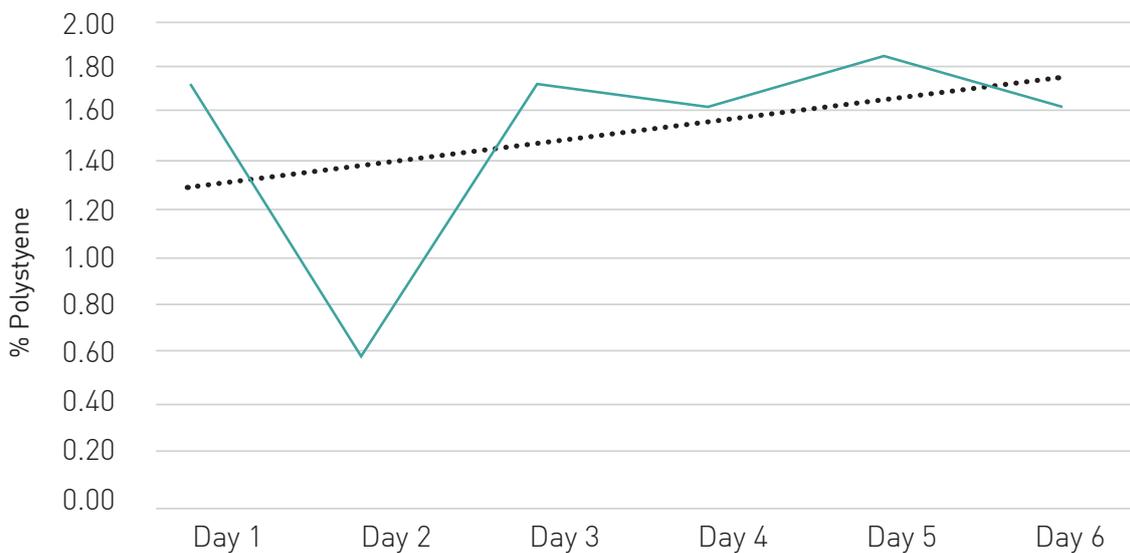


Figure 9 Daily proportion of polystyrene generated

e. Discharge of Wastes in the Right Bin

Putting the right waste in the right bin is another Greening initiative at the Pacific Games. All venues were provided with accessible bins which come in pairs of general waste and recyclable waste.

It is generally observed that the use of the recycling bins is not optimised with very significant contamination. This was confirmed during the audit with as high as 75% contamination observed in Apia Park (Figure 10). This is despite the inclusion of paper as a recyclable waste in the equation, although it was not included in the information tile of what can be collected as recyclable.

Proportion of Waste in the Recycling Bin (with paper)

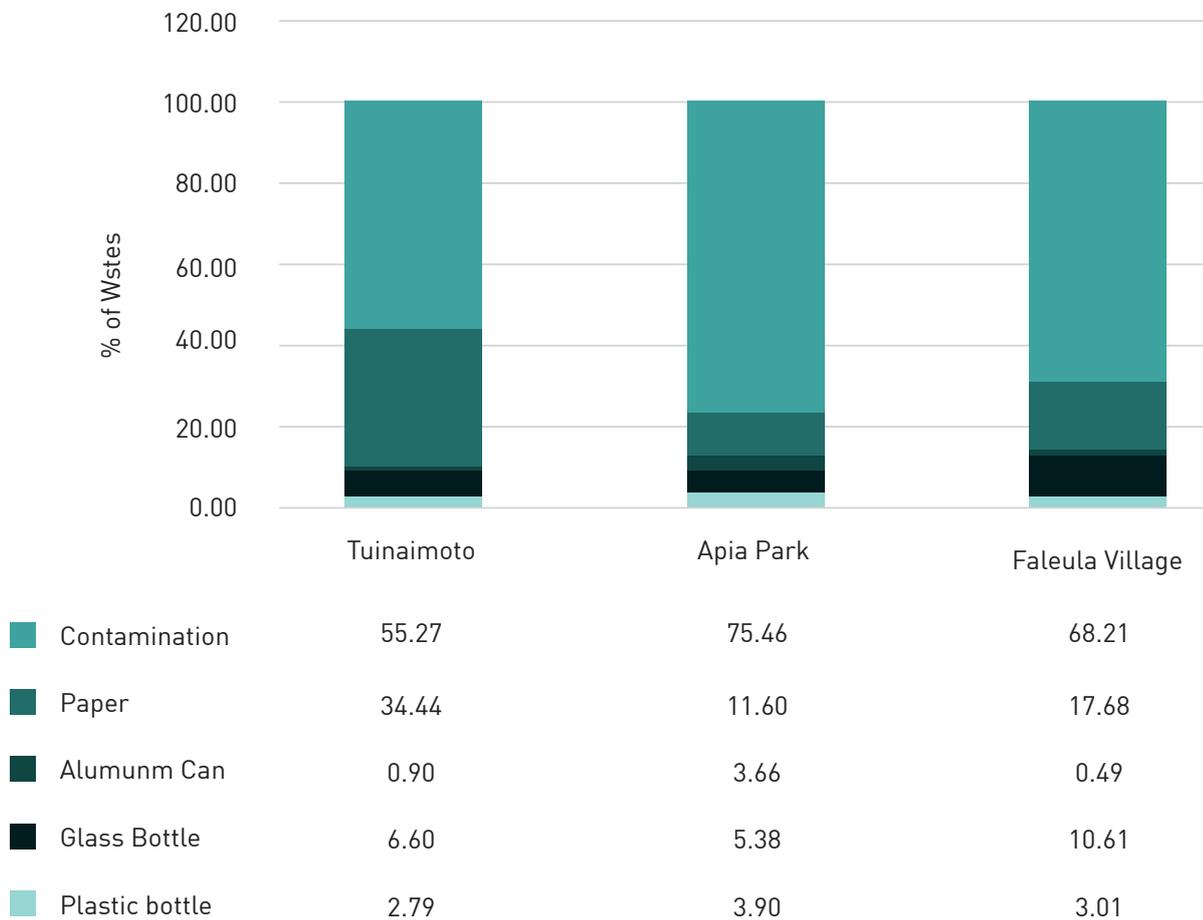


Figure 10: Proportion of waste in the recycling bin (including paper)

Without paper in the calculation, contamination reached over 85 (close to 90%) as shown in Figure 11. This indicates that the region is yet to embrace the value of segregating wastes. The climate for recycling has not adapted yet to the restrictive conditions in the Pacific. SPREP is collaborating with donors and other stakeholders to enable more encouraging options to boost recycling in the region.

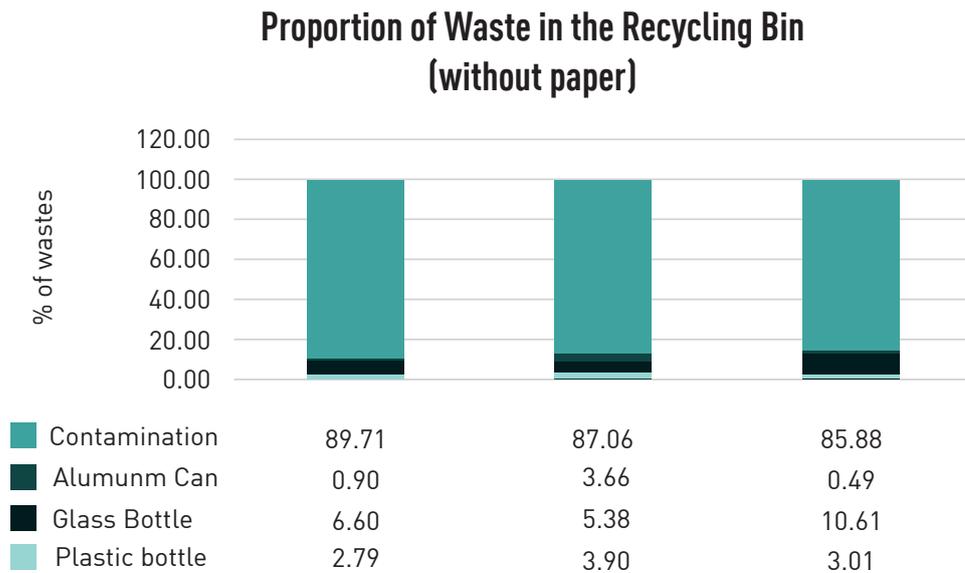


Figure 11: Proportion of waste in the recycling bi (excluding paper)

Significant proportion of paper and glass are found in the recycling bins (Figure 12). The presence of cages for Aluminium cans and water bottles may have contributed to the lower proportion of these items in the recycling bin. It was observed that there was significant amount of Al cans and water bottles collected in the cages. The redemption of these beverage containers may further be boosted through incentive mechanisms which the Government of Samoa is currently exploring.

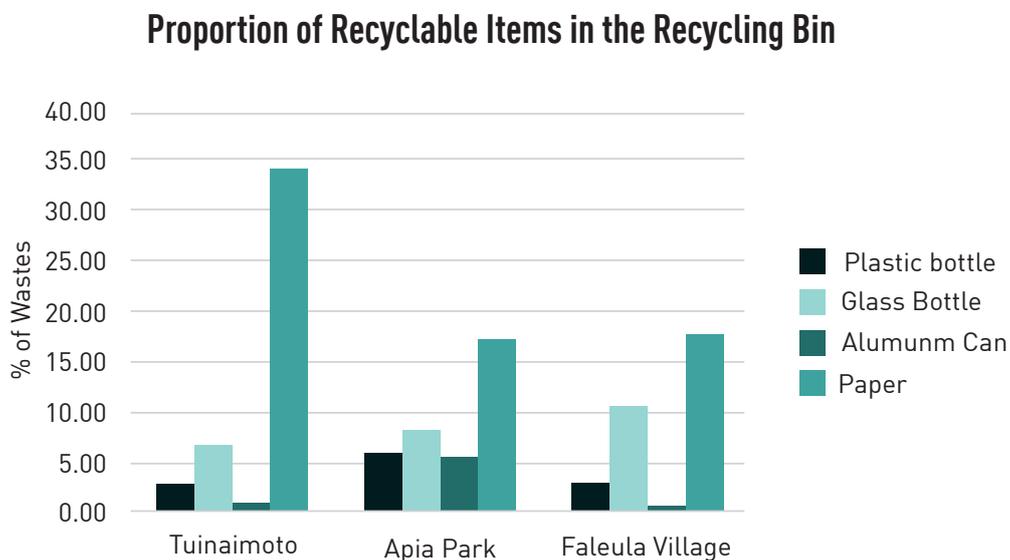


Figure 12: Proportion of recyclable items in the recycling bin from the different zones

The daily proportion of recyclable wastes (plastic bottles, glass bottle, Al can and paper are shown in Figure 13. Results show that paper, which most people are aware as a recyclable item, contributed significantly to the increase in the proportion of recyclable wastes in the designated right bin. A steady linear trend of recyclable wastes as identified in the information tile is observed over time.

Proportion of Recyclable Wastes in the Recycling Bin

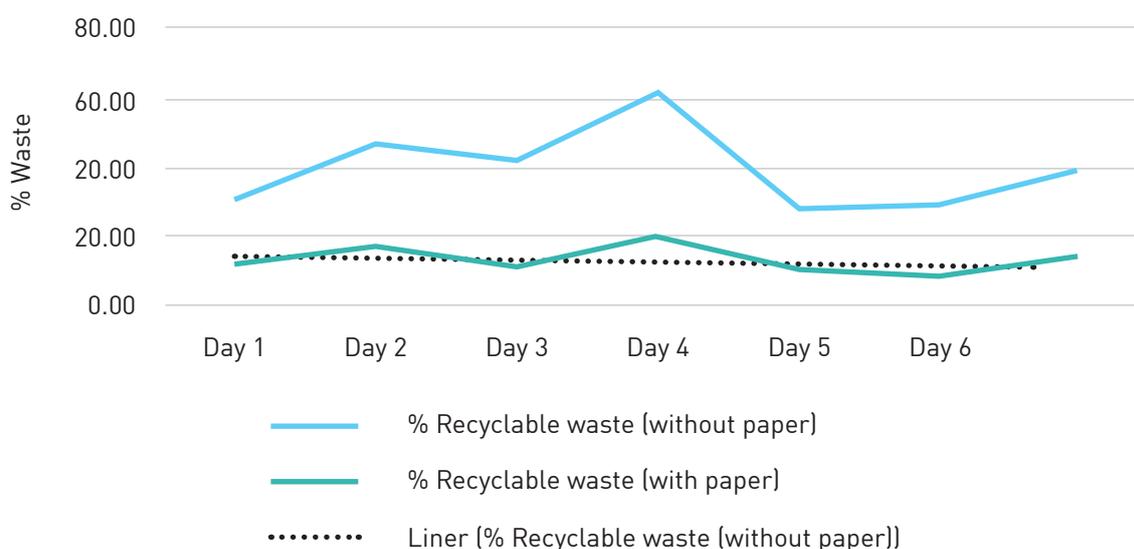


Figure 13 Proportion of recyclable wastes in the recycling bin generated daily

The food suppliers in the two catering venues, Gym 3 at Tuinaimato Sports Complex and Samoa College, were encouraged to dispose food wastes separately in either wheelie bins or buckets, and not in the general waste bins. The initiative is intended to minimise organic wastes going to the landfill which ends up producing leachate and gas. The caterers were advised to give the food wastes to the pigs instead.

Table 6 shows the amount of food wastes collected separately from the catering venues. An estimated 831.78 kg of food wastes are diverted away from the Tafaigata Landfill. This equates to about 21% wastes diverted from the landfill daily, based on the combined weights of wastes collected from the general, recycling bins and the food waste bins.

Table 6: Estimated daily food wastes generated

Location	Daily Food Waste Generated (kg)			Daily Wastes collected (kg)*	Food wastes diverted (%)
	Lunch	Dinner	Total		
Tuinaimato Complex (Gym3)	222.26	432.18	654.44	1.27	2.42
Samoa College	86.44	90.90	177.33	2.63	1.60
Total	308.70	523.08	831.78	0.89	1.51

* Refer to Table 1

f. Waste Composition

Food and organics (35% of wastes) dominate the composition of the combined waste collected from both the general and recycling bins despite the promotion of segregation of food wastes at the catering venues (Figure 14). Although this is below Samoa’s average of 43% organic waste (green waste and food waste), this could have been significantly reduced with better engagement with caterers and monitoring of the catering services.

The event generated significant amount of paper and cardboard (25%) which is twice Samoa’s normal generation of 13% . Plastic, as mentioned earlier, was only 12% of the wastes generated during the Games compared to the normal generation rate of 16% in households which equates to an estimated reduction of 1.5 tons of plastic waste which could have been in Samoa’s waste stream. This reflects the effectiveness of the Greening initiatives towards a plastic-free event.

Composition of Wastes in the Combined Bins

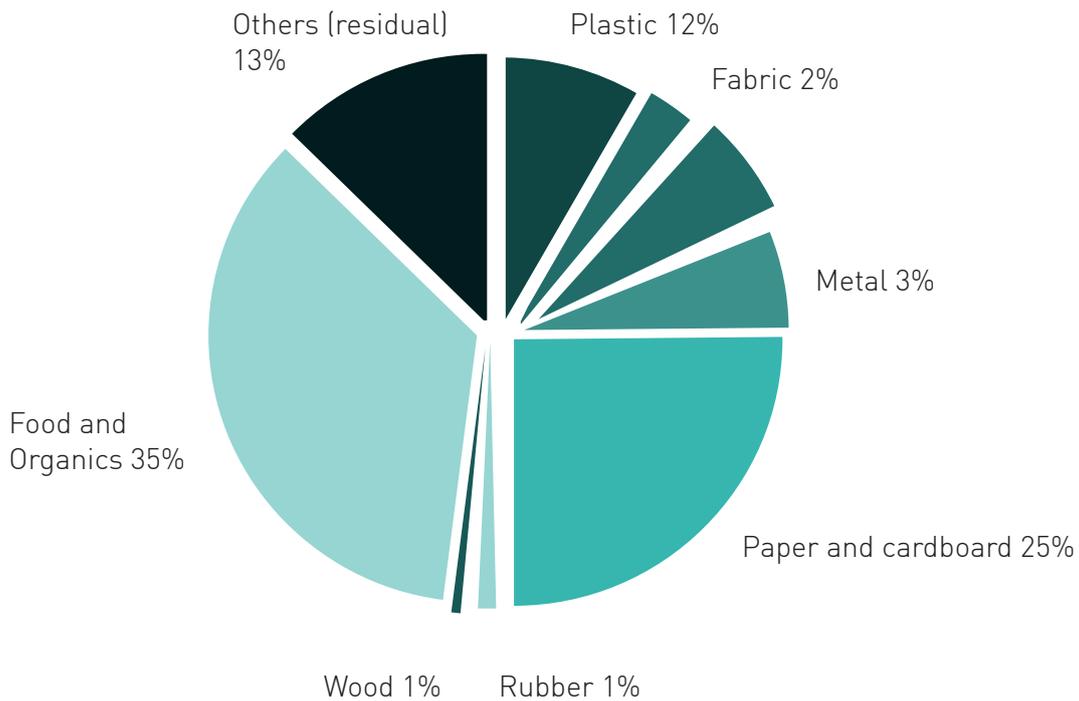


Figure 14: Composition of wastes generated at the Pacific Games

²National Waste Management Strategy of Samoa (2019 to 2023)

Annex XIV:

WASTES GENERATED FROM THE CLEAN-UPS LEADING TO THE XVI PACIFIC GAMES

BACKGROUND:

The Ministry of Natural Resources and Environment (MNRE) initiated three major river clean-ups and part of the town area in Apia to kick start the preparations for the XVI Pacific Games. The events attracted a huge number of government staff, non-government organisations, community groups, families and individual who actively took part in the riverside trekking and collected the wastes littered around.

The clean-ups, which were held on the 25th May, 8th June and the 29th June, were intended to create awareness of the Greening of the Games Initiative, which was jointly implemented by the Secretariat of the Pacific Regional Environment Programme (SPREP) and the Government of Samoa mainly through MNRE. SPREP provided full support in terms of promoting the event, logistical support and running the waste/litter audit with MNRE.

WASTE AUDIT:

Waste/litter audit were conducted during the 25th May 2019 clean-up in the four sites: Fuluasou, Gasegase, Vaisagano/Apaula and the Apia town area. Representative samples were taken and sorted according to the Tagaroa Blue app classification. Another audit was done on the 29th June clean-up using the same methodology in the three river sites except the Apia town area.

The volunteers from various organisations such as the National University of Samoa (NUS) students, Australia Pacific Training Coalition (APTC), recyclers and other organisations undertook the waste sorting with guidance from MNRE staff who acted as team leaders and facilitators. SPREP and J-PRISM provided the training and oversaw the conduct of the litter audit.

The weights of the waste collected from the four sites were recorded on the site. Some of the data were validated from the weighbridge database. The sorted litter items were counted and recorded in the data sheet and analysed. Representative samples of about 12% and 8% of the collected wastes were set aside for the litter audit, for the 25 May and 29 June clean-up respectively. Around 3,000 items were sorted.

RESULTS OF THE WASTE AUDIT:

The amount of wastes collected from the clean-up sites including the town area are shown in Table 1. Results indicate an increase in the amount of wastes generated over a month period from the 25th May to the 29th June despite the awareness campaigns. The results indicate the need to further intensify awareness campaigns and enforcement of regulations on littering in coastal communities.

¹<https://www.tangaroablue.org/resources/clean-up-data-collection/data-sheet/>

Table 1: Total wastes collected from the clean-ups

Site	Clean-up Schedule	
	25-May	29-Jun
Fuluaso	541	678
Gasegase	323	317
Vaisagano, Laimatu, Apaula	851	1660
Town	792	199
Total	2507	2854

Table 2 shows the relevant information on the river clean-ups and the litter audit.

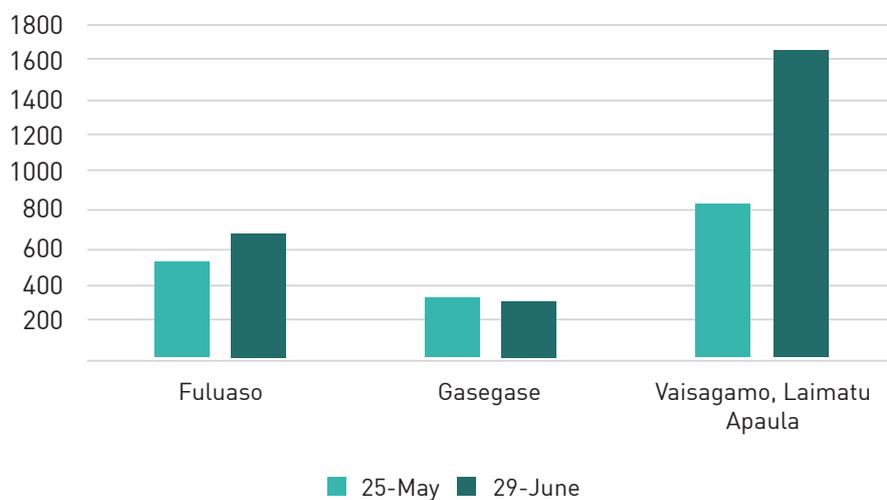
Table 2: Relevant information on river clean-ups

Description	Clean-up Schedule*	
	25 May	29 June
Total weight collected (kg)	1,715	2,110
Total weight sorted (kg)	201	160
% of weight sorted	12%	8%
Total number of items sorted	3,132	3,282
Total number of items collected (extrapolated)	26,722	43,281

* Rivers only - excludes the town area

A comparison of the amount of wastes collected between the sites reveal that the most littered river was the one covering Vaisagano, laimatu and Apaula (Figure 1). The river in Gasegase was the least littered. It was also evident that there was an increase in the amount of wastes littered from the first clean-up to the second clean-up.

Wastes Collected from the Clean-ups



Figures 2 and 3 show the composition of littered waste from the 25 May and 29 June clean-ups, respectively. There was a decrease in the percentage of plastic items after a month (from 62% to 55%), The same decreasing trend was observed with polystyrene (from 12% to 8%), and metals (from 12% to 9%). The relative comparison was based on percentage of the items in the total amount of waste collected from the two events. Despite the increase in total waste collected over the month-period, there was a reduction in plastic and polystyrene items which were the subject of the Greening of the Games Initiative campaigns.

It was observed visually that there were more bulky wastes collected during the 29 June clean-up. These bulky items were not subjected to the audit and may have accounted for the lower percentage of representative samples compared to the 25 May clean-up. Caution should also be exercised when promoting clean-ups since there is likelihood that some community members will throw items not normally collected during regular collection days, such as bulky wastes and green wastes.

Composition of Litter in Sampled Waste from the 25 May Clean-up

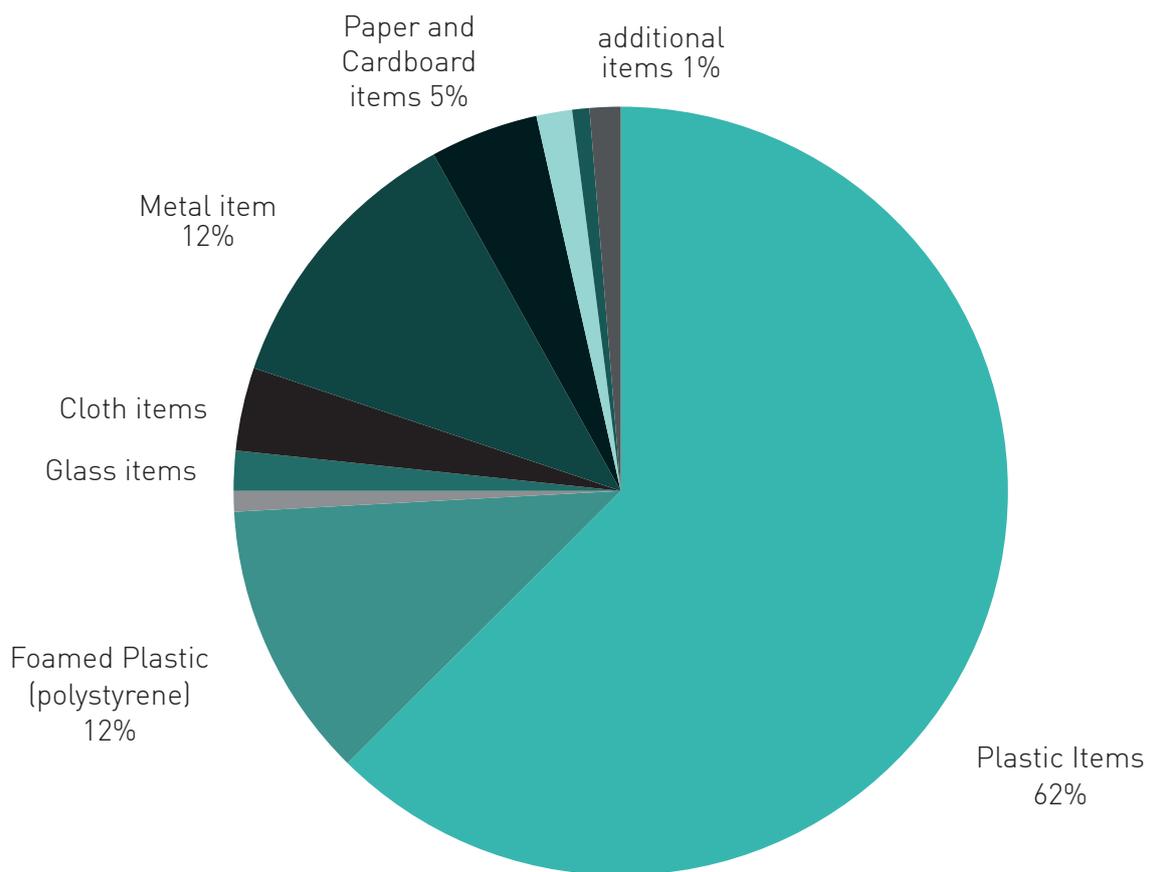


Figure 2: Composition of litter collected (25th May clean-up)

Composition of Litter in Sampled Waste from the 29 June Clean-up

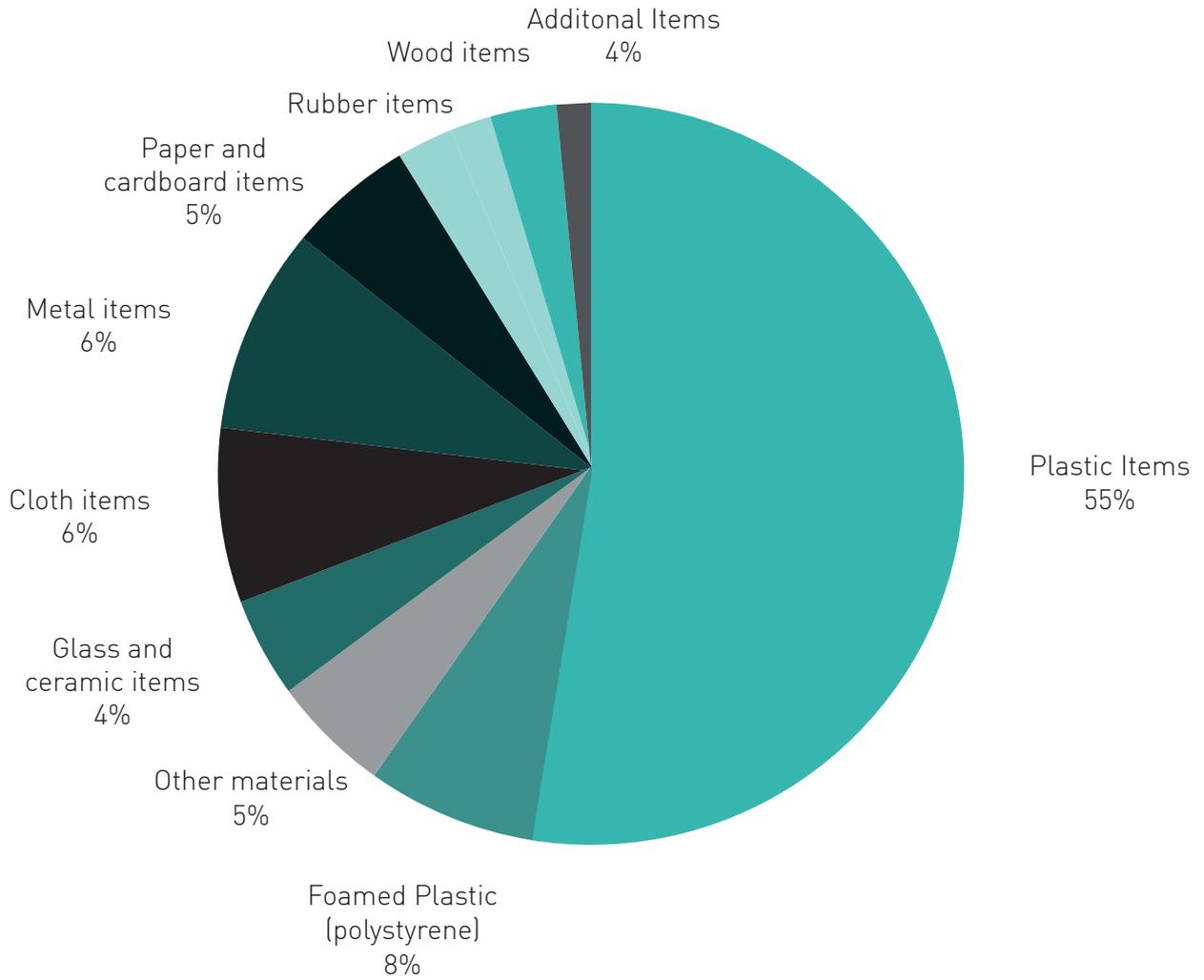


Figure 3: Composition of litter collected (29th June clean-up)

The litter audit in the Apia town area on the 25th May clean-up showed plastic items and metals comprised a significant amount in the collected litter (Figure 4). In comparison with the litter from the river sites, plastic bags, plastic bottles, and foam cups/packs and trays in the town area were generally lower than the river sites (Figure 5). It was apparent that the campaigns on the plastic bag ban and the Greening of the Games initiative focused on these items was effective in the urban area.

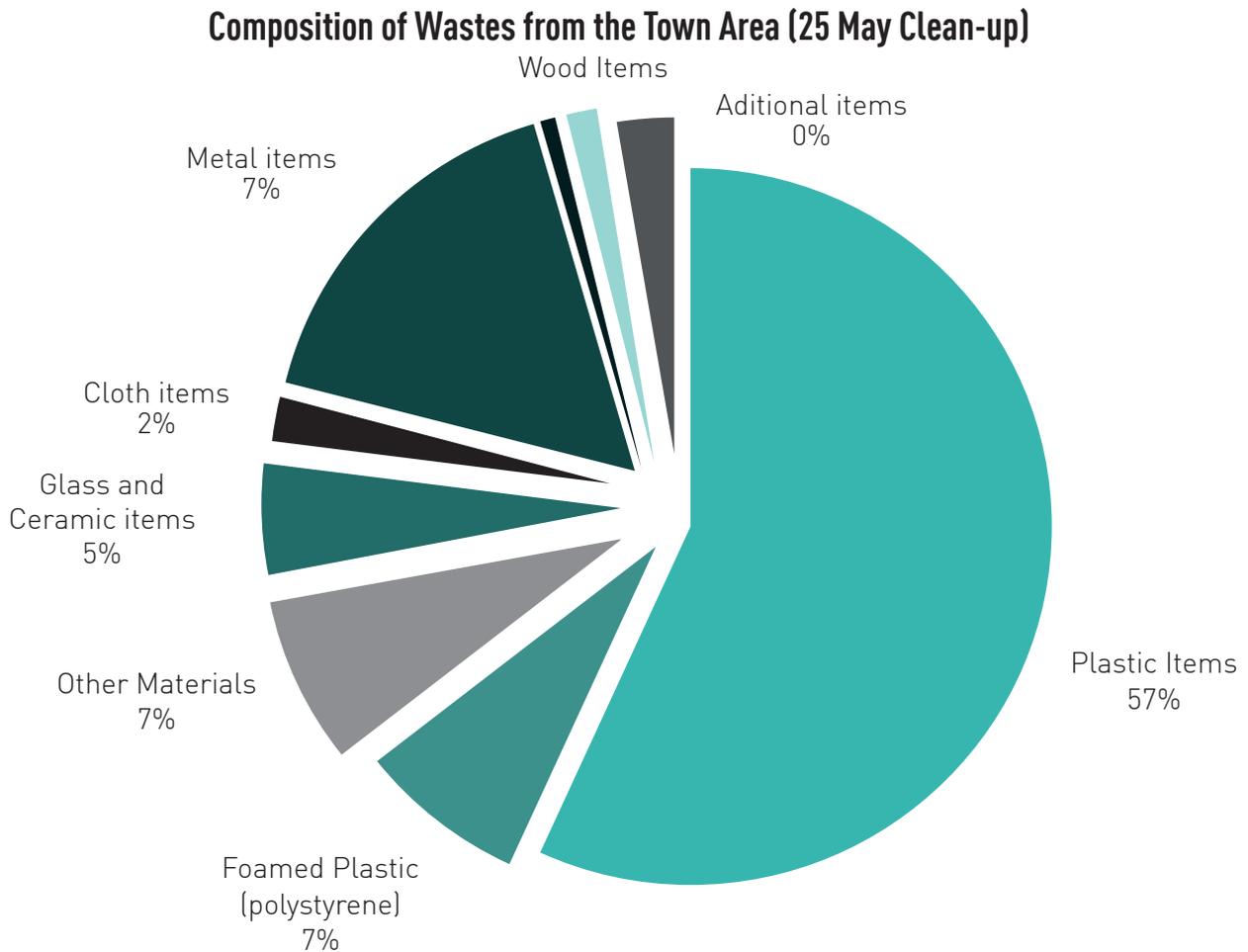
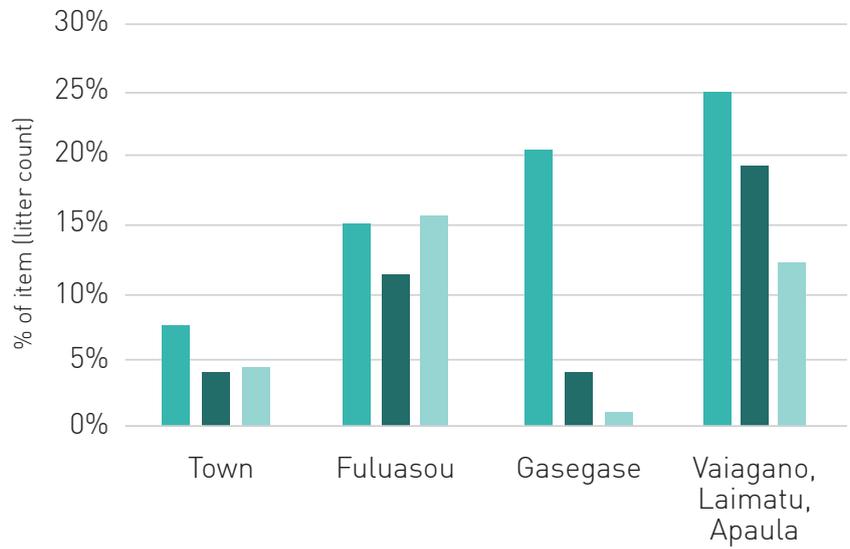


Figure 4: Composition of litter from the town area

Comparison of littered items across the different sites (25 May clean up)



Plastic bags supermarket, garbage, dog poo, ice	8%	15%	21%	25%
Plastic drink bottles (water, juice, milk, soft drink)	4%	11%	4%	20%
Foam cup, food packs & trays	4%	16%	1%	12%

Figure 5: Composition of selected litter items from the 25 May clean-up

There was a significant increase in the amount of plastic items littered in Fuluasou and Gasegase river sites which was about twice as much over a month period as shown in Figure 6. There was no change in the amount of polystyrene littered in Fuluasou river site but an increase in the Gasegase river site. Littering of metal items increased significantly in Fuluasou and Gasegase river sites by about 70%.

In contrast, the plastic, polystyrene and metal litter showed a significant decrease by as much as 60% in Vaisagano/Laimatu/Apaula river sites.

Litter Count of Major Items from the Clean-ups

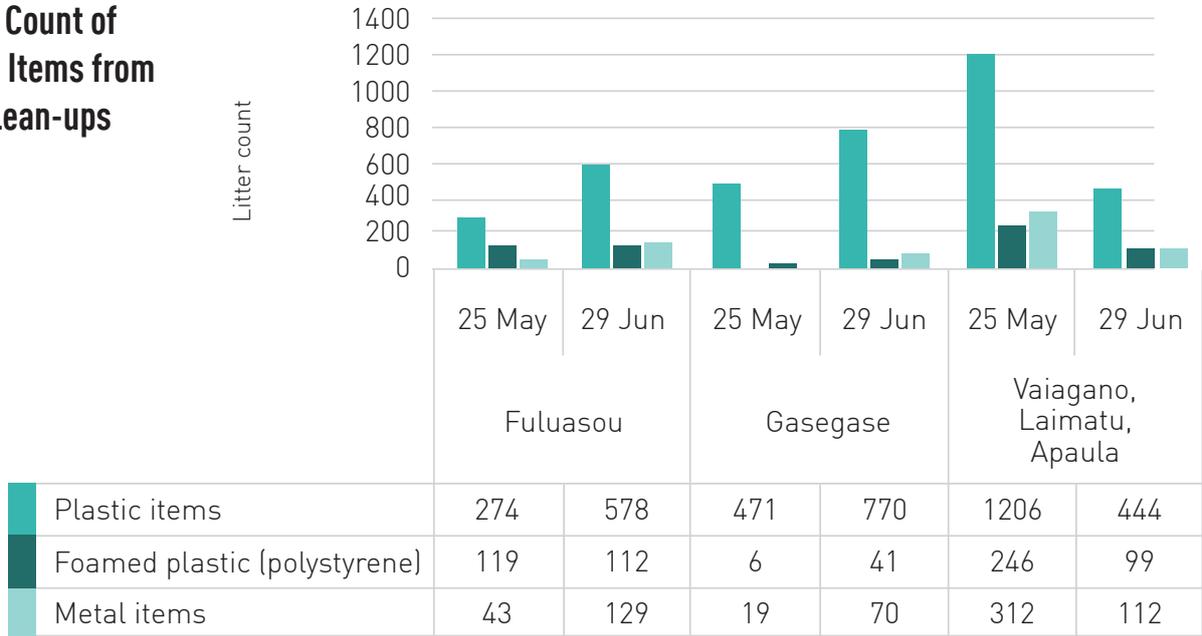


Figure 6: Litter count of major items from the river clean-ups

In terms of composition based on total litter count (Figure 7), it is encouraging to note that there was a consistent decrease in the amount of plastic items across all sites. Again, this shows some degree of positive outcome in behaviour towards plastic wastes.

Composition of the Major Litter Items from the Clean-ups

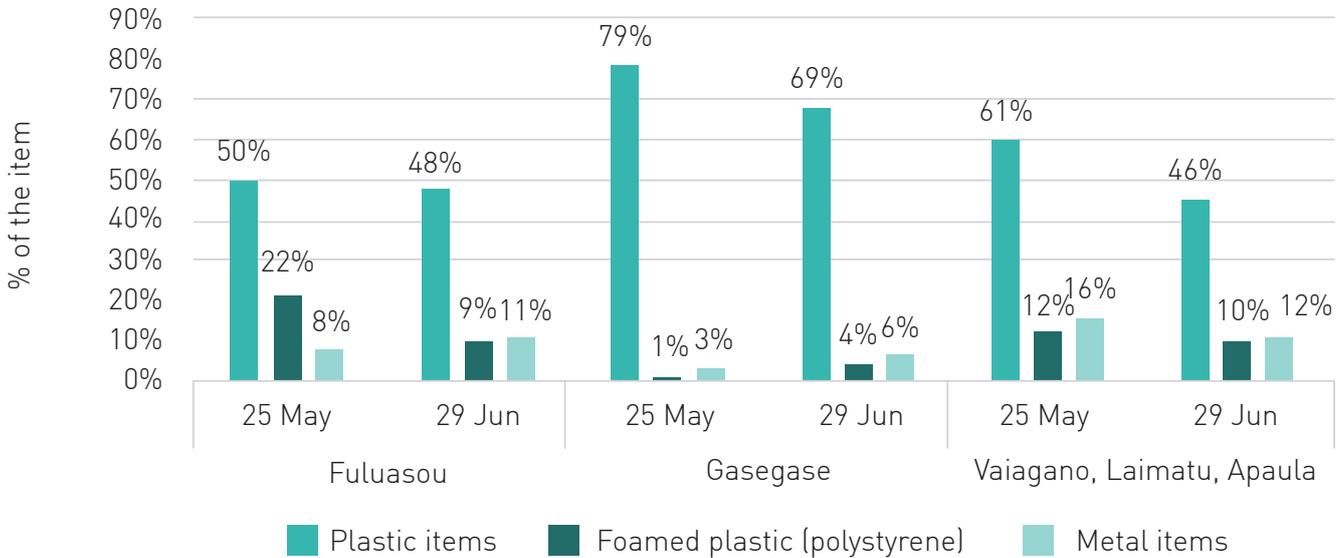


Figure 7: Composition of major littered items from the river clean-ups





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