

# Consumer Attitudes towards Segregated Waste Management Practices: Policy and Marketing Implications for the National University of Samoa (NUS)

Eric Groves and Rafia Naz, National University of Samoa

## Abstract

*This research explores consumer attitudes towards segregated waste management practices. It discusses NUS's community waste management initiative, the interim waste management plan, followed by the need for a waste management policy for NUS. This research also deliberates on the predominant role of the University's partnership with the Samoa Recycling and Waste Management Association (SRWMA) for the successful sustainment and marketing of segregated waste management practices at NUS. This study further presents the NUS and SRWMA Marketing Project through its Faculty of Business and Entrepreneurship (FoBE) and Governance, Policy and Planning (GPP) division to collaboratively implement and increase market outreach.*

**Keywords:** waste management, NUS, waste segregation, SRWMA, policy, marketing, consumer

## Introduction

### **Community Waste Management Initiatives at the National University of Samoa**

The National University of Samoa (NUS) was established on February the 14<sup>th</sup> 1984. The establishment of the NUS was seen as the pinnacle of post-secondary education and training in Samoa. Since the establishment of the NUS, a number of initiatives have been implemented to address the general disposal and segregation of waste. Although these initiatives were well intended, they lacked strategic direction and sustainability. This is stated in the Interim Management Plan 2020–2021:

*'Other than the existing, cooperate procedures and operational collection, storage and transportation of waste; the waste management of the NUS has never been addressed in formal writing or policy in the past. All past and existing efforts to address waste management at the NUS have been conducted in the form of projects and donations that are not direct results of NUS policies, strategies and plans.'*

(NUS Interim Waste Management Plan, 2020-2021)

It is clear that all waste management projects and initiatives conducted before the initiation of the Interim Waste Management Plan were community led and not driven by the institution itself. One of the early waste management initiatives was developed and implemented by a Japanese corporation, Yazaki Samoa Company Limited (Co. Ltd). The Yazaki Group is an international automotive manufacturing corporation with factory stations in various locations around the world. Yazaki Samoa Co. Ltd (hereon referred to as 'Yazaki Samoa') was established in 1991 and was the largest private employer in the country (Tsujita, 2002). The Yazaki Samoa driven project was aimed at collecting export waste aluminium cans as part of the corporations 'Promoting Global Environmental Management' initiative (Yazaki, 2004). The project included the distribution of blue collection cages in various locations within the Apia and Vaitele urban areas, which included the NUS. The project was unfortunately short lived as Yazaki Samoa ceased operations on the 25<sup>th</sup> of August 2017 due to a change of business environment (Automotive World, 2017). The only evidence of the project's existence was an abandoned empty blue cage collecting rust at the main NUS Le Papaigalagala Campus.

The National University of Samoa Social Events Committee (NUSSEC) in 2017 jointly funded rubbish bins with the Lausinasina Dancing Group for the Le Papaigalagala Campus made out of iron barrels cut in half and welded to supporting stands. By 2019, none of the iron rubbish bins were in use due to the rust and deterioration caused by the tropical Samoan climate. The NUSSEC also led a ‘Working Bee’ campaign from 2016–2019 which encouraged staff and students to dedicate the last working hour of pay week Friday to picking up rubbish around the NUS campuses. This initiative eventually lost its momentum when the University ceased its social sporting events and its usual pay week recreational staff-get-together Fridays commonly referred to as the ‘Staff Bar’ due to the University’s administrative troubles in 2019 (Ilimalaota, S, personal communication, 28 September 2020). The continuation of past initiatives is critical to ensuring NUSSEC projects are sustainable. This is especially difficult when members are re-elected annually and disrupts the group momentum.

### Interim Waste Management Plan 2020–2021

To commemorate World Recycling Day, the NUS in partnership with the Samoa Recycling and Waste Management Association (SRWMA) and the Ministry of Natural Resources and Environment (MNRE) launched the NUS Interim Waste Management Plan on the 18<sup>th</sup> of March, 2020. The formulation of the plan was a result of an enquiry to the NUS Vice Chancellors Committee by the University’s Occupational, Health and Safety Officer in 2019. The Interim Waste Management Plan aligns itself to the United Nations Sustainable Development Goals, the National Waste Management Strategy 2018–2023 and the NUS Corporate Plan 2017/18–2020/21. The Interim Waste Management Plan is the first strategic document produced by the University to sustainably address waste management. Unlike the community driven waste management initiatives, the Interim Waste Management Plan targets policy, research and marketing in addition to addressing waste management matters pertaining to procedures and infrastructure. This is clearly indicated in its action plan which places emphasis on policy, research and marketing as demonstrated in the below figure.

**Figure 1: Interim Management Plan Action Plan**



**Note: The above figure is not inclusive of other activities in the NUS Interim Management Plan Action Plan that do not associate with the terminologies policy, marketing and research.**

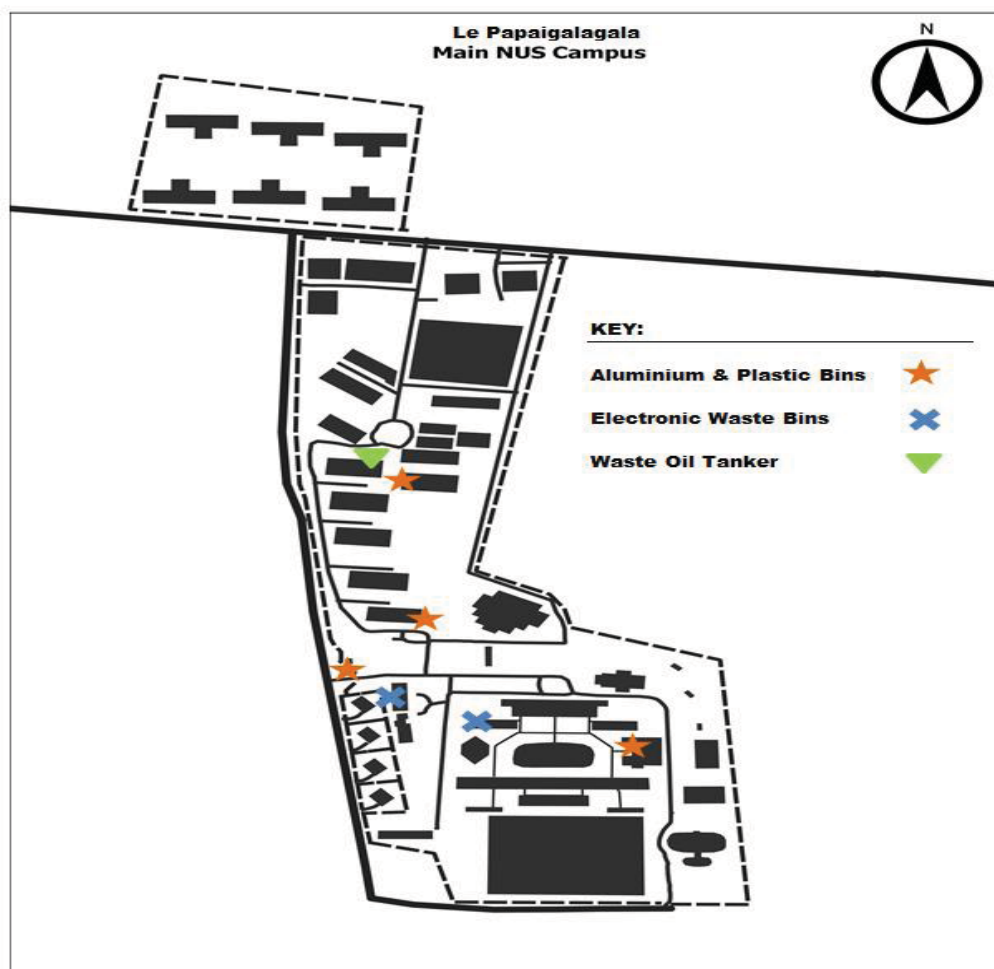
Policy, research and marketing are the main components that make the Interim Waste Management Plan distinctive from previous initiatives at the NUS. These three components are significant to what will make the Interim Waste Management Plan sustainable in the long run. It is vital that these three components go hand in hand as they supplement one another. Research informs the policy, and marketing promotes the policy and the results of the research.

## Introduction of Segregated Bins

As part of the launch of the Interim Waste Management Plan, SRWMA and MNRE donated 25 segregated bins to the University for general waste, aluminium cans, plastic bottles, and also electronic and oil wastes (Mayron, 2020). The segregated bins were distributed throughout the various targeted areas in the Le Papaigalagala Campus. With an approximate student population of 3273, the segregated bins were allocated based on function and student population within particular areas of the Le Papaigalagala Campus (NUS, 2020). Although the existing aluminium and plastic recycling stations have been strategically placed, there is a clear need for more recycle stations to better capture the waste distributed throughout the Le Papaigalagala Campus.

The map below identifies these targeted locations:

**Figure 2: Map of Segregated Bins on the Le Papaigalagala Campus**



Prior to the launch of the Interim Waste Management Plan and the Yazaki Samoa led initiative, segregated bins have never been introduced formally to the NUS. Segregation of rubbish is relatively a new concept and practice to Samoa as a whole, and consumer awareness is still a major concern (Mayron, 2019). This is clearly evident at the NUS with the segregated bins constantly being misused for general waste. The presumption is that the misuse of segregated bins is due to the lack of awareness and legislation both nationally and within the NUS. This is also suggested by Begum (2009) who has linked it to consumer behaviour. Existing reviews on Higher Education Institutions (HEIs) has treated waste as a material specifying its composition and inventive ways to deal with it to lessen the bulk of dumping material (Armijo de Vega et al., 2008; Babich and Smith, 2010; Felder et al., 2001;

Mason et al., 2003; Mbuligwe, 2002). It is prudent to study and examine the behaviour of consumers to comprehend why the consumers are generating so much waste within the university setting and to be able to vigorously implement initiatives to avert it. Precisely, it is prerequisite to move away from customized methodologies that frame the problem of waste as one at the consumer level in order to account for behaviour to wider factors mirrored in the administration of the institution in its ordinary practices and conducts, a stance that is presently absent from policy (Evans et al., 2013). In order to capture and change consumer behaviours, a civic and 'people-first' approach should be deployed to sustainably change attitudes towards segregated waste management practices (Zarine, 2018). A strong step in the correct direction is to progress supporting legislations.

### **Need for a Waste Management Policy for NUS**

The implementation of the Interim Waste Management Plan will not be successful without the development of supporting legislation. Supporting legislations will provide the grounds for the University to strategically and lawfully enforce its Interim Waste Management Plan. This is why the development of a waste management policy as stipulated in its action plan is very important. The waste management policy will make it mandatory for rubbish to be segregated within all the NUS campuses. The crucial element to writing a good policy is similar to that of research; it has to be built upon what already exists. The waste management policy has to be aligned with existing national legislations. This includes but is not limited to the following:

- Waste Management Act 2010
- Pesticide Regulation 2011
- Health Ordinance 1959
- Ministry of Health Act 2006
- Strategy for the Development of Samoa (SDS) 2017-2021
- National Environment Sector Plan (NESP) 2017-2021
- The National Chemical Profile (NCP) 2010
- National Waste Management Strategy (NWMS) 2018-2023
- Waste (Plastic Bag) Regulation 2018
- Marine Pollution Prevention Act 2008

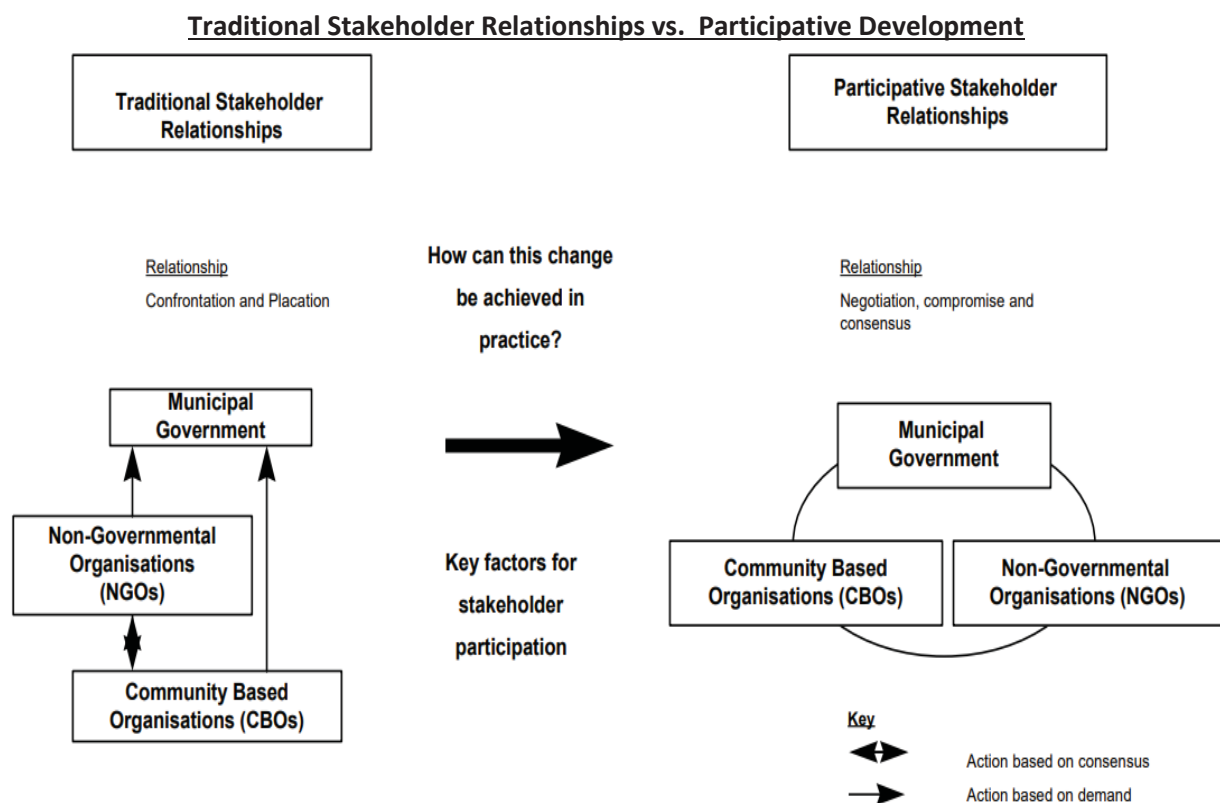
The waste management policy also has to be strategically aligned to the University's Corporate and Waste Management Plans, which will assist in giving the legislation University wide ownership, rather than it being only the implementing divisions. This is vital in assuring that every faculty and division of the University plays its role in the promotion, implementation and monitoring of the waste management policy. Perhaps the most challenging part of developing a waste management policy is its enforcement element. Enforcement is only ever practical when there are sanctions and penalties for non-compliance. As this will be new grounds for the University, it will surely be a debatable area within the policy. NUS needs to efficaciously execute a 'greening' university campus whereby waste management programmes should be prudently planned based on key emphasis and waste categorizations.

### **Importance of Stakeholder Participation for Sustainable Waste Management**

For the NUS to fully engage sustainably in proper waste management practices, the University must collaborate with the relevant stakeholders. Joseph (2006) in his case study of India argues that waste management initiatives without the participation of the relevant stakeholders are inefficient and non-sustainable. Stakeholder involvement and participation is crucial as it gives the University credibility

in sustaining the implementation of its Interim Waste Management Plan and policies. For a small nation like Samoa that has limited resources, engagement with the stakeholders is the perfect way forward as it allows the University to access the existing resources. In the form of a partnership, the University and the stakeholders are in a stronger position to request and bid for resources from the government and donors. This also increases the efficiency of waste management as it widens the influence and coverage of the University's Interim Waste Management Plan and policies. Snel et al (1999) suggests that in order for stakeholder engagement and participation to occur, the approach and relationship between the institution and stakeholders must change from a traditional to a participative municipal centred as demonstrated by Olley (1996) in the below figure:

**Figure 3: Stakeholder Relationship Approaches**



The NUS as a public institution must be inclusive in its approach and transition from the traditional to a participative stakeholder relationship. The NUS must realise that it has an advantage in its role as a tertiary education institution which can potentially allow the University to use its existing programmes to enhance stakeholder participation for sustainable waste management. This approach has been trialled in Nigeria with Ikhuoso (2018) in his investigation of public secondary schools successfully utilising educational programmes to enhance stakeholder participation.

**Samoa Recycling and Waste Management Association (SRWMA) Partnership**

As accentuated in the previous chapter, central to the successful sustainment and marketing of segregated waste management practices at NUS is the University's partnership with SRWMA. The SRWMA was established on World Recycle Day March 18<sup>th</sup> 2017, and is made up of mainly private companies who are devoted to waste segregation and environmental health (SRWMA, 2020). The Association is funded through the annual membership subscriptions and the donor grants from successful project applications. Their vision is "Improving Waste Recycling and the Management of Commercial and Industrial Waste for a Healthier and Cleaner Samoa". The vision is complemented by

three (3) strategic goals: (1) Strengthen Waste Recycling in Samoa, (2) Improve the Management of Commercial and Industrial Waste and, (3) Implement Sustainable Waste Management Mechanisms and Approaches (SRWMA, 2018). What makes SRWMA different from similar societies and movements within Samoa is that its focal and founding members are the main and leading waste management companies within the country. These members handle most of the major waste streams for Samoa such as general, electronic, metal, plastic, glass and oil waste.

This is vital to the NUS as the University produces every type of waste due to its multidisciplinary programmes. These include electronic waste from computing programmes and general operations, metal, timber and oil waste from technical programmes, and lastly chemical and clinical waste from scientific and health programmes. This makes SRWMA the ideal partner for the University. However, the NUS should not halt at the successful implementation of its Interim Waste Management Plan as it only targets the internal operations of the University within its campuses. Through the Association, the NUS can potentially have a bigger impact in the private sector and the community. A formal strategic partnership between the NUS and SRWMA must be undertaken in the form of a Memorandum of Understanding in order to sustain a subsisted formal relationship between both parties.

## **Conclusion**

### ***Plastic Bottles and Aluminium Can Recycling Programme***

The NUS through its Faculty of Business and Entrepreneurship (FoBE) and Governance, Policy and Planning (GPP) division are working collaboratively with SRWMA in the implementation of the Plastic Bottles and Aluminium Can Recycling Programme. This programme is funded by Coca-Cola and targets the Samoan village community. The programme has two components:

- (1) Promotional and Awareness Marketing implemented by FoBE and GPP, and;
- (2) Construction of Segregated Waste Bins implemented by the Australian Pacific Training Coalition and GPP.

Before the segregated cages are supplied to the community, it is important that a promotional campaign led by the FoBE Marketing students is conducted to stir awareness, appreciation and ownership within the village communities. This will be trailed first internally within the University using the existing NUS avenues as the first phase. This includes the FoBE Seminar Series, NUSTV, NUS Radio and the NUS Social Media outlets which will be used as platforms to promote proper customer waste segregated practices. As demonstrated in the below Marketing Module, marketing tools such as brochures, posters, banners, audio and video advertisements will be developed and distributed through the various channels. Targeted spaces for brochures and posters will be the Bookshop, Cafeteria, Gymnasium, Student Administration and Financial Services. The phase two of the promotional and awareness marketing component will see the project team utilise private and public avenues, such as radio and television stations and the press.



Figure 4: Marketing Module



The programme's strategy is to use marketing and policy as the main tools to address customer and behaviour attitudes towards waste segregated practices at the NUS. Once the cages are supplied, the project will be monitored and evaluated by the NUS and SRWMA teams. This data will generate a research paper on attitudes towards segregated waste management practices in the Samoan village community.

Accomplishing a sustainable waste management approach is a combined responsibility of the NUS and SRWMA. The main commendations of the scholarship are to raise students' (consumers) awareness through awareness campaigns that can bring about attitude and perception as well as behavioural changes towards waste disposal. Awareness campaigns about segregation of waste, its prominence and its welfare, is recommended for the NUS and environmental issues should be included in the awareness and campaigns to help consumers to better comprehend the relative between waste segregation and how consumer behaviour changes could resolve environment harms. Students' participation and involvement in campaigning and marketing and finding solutions for community environmental problems would bridge gaps between management and students and therefore they would readily uptake better waste management practices. Reinforcing environmental laws will benefit to deliberate on the importance of the environment.

### Acknowledgement

We would like to formally acknowledge our project team, Marina Sua-Kiel (President, SRMWA), Karoline Telefina Sio (SRWMA), Aruna Tuala (NUS-FoBE) and Sameli Tuiloma (NUS-GPP).

## References

- Armijo de Vega C, Benítez SO, and Barreto, M.E.R. 2008. "Solid Waste Characterization and recycling for a university campus". *Waste Management* 28 (1): 521–526. doi:10.1016/j.wasman.2008.03.022
- Asian Development Bank, 2012, 'Solid Waste Management in the Pacific: Samoa Country Snapshot', Asian Development Bank Organisation, Retrieved from: <https://www.adb.org/sites/default/files/publication/42663/solid-waste-management-samoa.pdf> (Accessed 28 September 2020)
- Automotive World. 2017. 'The closing ceremony of Yazaki EDS Samoa Ltd', Automotive World, Retrieved from: <https://www.automotiveworld.com/news-releases/closing-ceremony-yazaki-eds-samoa-ltd/#:~:text=August%2025%2C%202017-,Yazaki%20Samoa%20is%20to%20close%20its%20operation%20due%20to%20the,Yazaki%20Corporation%2C%20today%20August%2025%2C> (Accessed 28 September 2020)
- Babich R, Smith S. 2010. "Cradle to Grave: An Analysis of Sustainable Food Systems in a University Setting". *Journal of Culinary Science & Technology*, 8 (4): 180-190. doi:10.1080/15428052.2010.535747
- Begum, A. R., Siwar, C., Pereira, J. J. and Jaafar, A.B. 2009. "Attitude and behavioral factors in waste management in the construction industry of Malaysia". *Resources, Conservation and Recycling Journal*, Retrieved from: <file:///C:/Users/e.groves/Downloads/2009AttitudeandbehavioralfactorsinwastemanagementintheconstructionindustryofMalaysia.pdf> (Accessed 28 September 2020)
- Evans D., Campbell, H., and Murcott, A. 2013. 'A brief History of food waste and the social sciences. in Waste Matters: New Perspectives on Food and Society'. Evans D. Campbell H. and Murcott A (ed.). London: Wiley-Blackwell.
- Felder, M.A.J, Petrell, R.J, and Duff, S.J.B. 2001. "A solid waste audit and directions for waste reduction at the University of British Columbia". *Waste Management & Research*, 19 (4): 354 - 365. doi: 10.1177/0734242X0101900412
- Ikhuso, A. O. 2018. "The Role of Educational Programs to enhance Stakeholder Participation for Sustainable Waste Management in Developing Countries: An Investigation into Public Secondary Schools in Nigeria." *International Journal of Waste Resources*, doi: 10.4172/2252-5211.1000350, Retrieved from: <https://www.longdom.org/open-access/the-role-of-educational-programs-to-enhance-stakeholder-participation-for-sustainable-waste-management-in-developing-countries-an-2252-5211-1000350.pdf> (Accessed 21 October 2020)
- Joseph, K., 2006. "Stakeholder participation for sustainable waste management." *Habitat International* 30 (4): 863-871, Elsevier, Retrieved from: [http://www.hia21.eu/dwnld/20131229\\_Stakeholder%20participation%20for%20sustainable%20waste%20management.pdf](http://www.hia21.eu/dwnld/20131229_Stakeholder%20participation%20for%20sustainable%20waste%20management.pdf) (Accessed 21 October 2020)
- Mason, I.G, Brooking, A.K, Oberender, A, Harford, J. M, and Horsley, P.G. 2003. "Implementation of a zero waste program at a university campus". *Resources, Conservation and Recycling*, 38 (4): 256-269. doi: 10.1016/S0921-3449(02)00147-7
- Mayron, S. 2019. 'Recycling collection now available at Farmer Joes', *Samoa Observer*, Retrieved from: <https://www.samoaoobserver.ws/category/article/48278> (Accessed 28 September 2020)
- Mayron, S. 2020. 'National University clean up plan launched', *Samoa Observer*, Retrieved from: <https://www.samoaoobserver.ws/category/article/59997> (Accessed 28 September 2020)
- Mbuligwe, S. E. 2002. "Institutional solid waste management practices in developing countries: A case study of three academic institutions in Tanzania". *Resources, Conservation and Recycling*, 35(3): 131-146. doi: 10.1016/S0921-3449(01)00113-6.



- Ministry of Agriculture and Fisheries. 2011. *'Pesticides Regulation 2011'*, Ministry of Agriculture and Fisheries, Government of Samoa, Retrieved from: <https://pafpnet.spc.int/attachments/article/695/Samoa%20Pesticides%20Regulations%202011.pdf> (Accessed 28 September 2020)
- Ministry of Finance. 2016. *'Strategy for the Development of Samoa 2016/17-2019/20'*, Ministry of Finance, Government of Samoa, Retrieved from: <https://policy.asiapacificenergy.org/sites/default/files/Strategy%20For%20The%20Development%20Of%20Samoa%202016%3A17-2019%3A20%20%28EN%29.pdf> (Accessed 28 September 2020)
- Ministry of Health, 2006, *'Ministry of Health Act 2006'*, Ministry of Health, Government of Samoa, Retrieved from: <http://extwprlegs1.fao.org/docs/pdf/sam88411.pdf> (Accessed 28 September 2020)
- Ministry of Health. 2010. *'Health Ordinance 1959'*, Consolidated Acts of Samoa 2010, Ministry of Health, Government of Samoa, Retrieved from: [http://www.vertic.org/media/National%20Legislation/Samoa/WS\\_Health\\_Ordinance\\_1959.pdf](http://www.vertic.org/media/National%20Legislation/Samoa/WS_Health_Ordinance_1959.pdf) (Accessed 28 September 2020)
- Ministry of Natural Resources and Environment (MNRE). 2008. *'Marine Pollution Prevention Act 2008'*, Ministry of Natural Resources and Environment, Government of Samoa, Retrieved from: <https://www.mnre.gov.ws/mnre-redesign/wp-content/uploads/2017/08/Marine-Pollution-Prevention-Act-2008.pdf> (Accessed 28 September 2020)
- MNRE. 2010a. *'The National Chemical Profile (NCP) 2010'* Ministry of Natural Resources and Environment, Government of Samoa.
- MNRE. 2010b. *'Waste Management Act 2010'*, Ministry of Natural Resources and Environment, Government of Samoa, Retrieved from: <http://extwprlegs1.fao.org/docs/pdf/sam110362.pdf> (Accessed 28 September 2020)
- MNRE. 2017. *'National Environment Sector Plan (NESP) 2017-2021'*, Ministry of Natural Resources and Environment, Government of Samoa, Retrieved from: <https://samoa-data.sprep.org/system/files/NESP-2017-2021.pdf> (Accessed 28 September 2020)
- MNRE. 2018. *'Waste (Plastic Bag) Regulation 2018'*, Ministry of Natural Resources and Environment, Government of Samoa.
- MNRE. 2019. *'National Waste Management Strategy 2019–2023'*, Ministry of Natural Resources and Environment, Government of Samoa, Retrieved from: <https://www.sprep.org/attachments/VirLib/Samoa/national-waste-management-strategy-2019-2023.pdf> (Accessed 28 September 2020)
- NUS. 2019. *'Interim Waste Management Plan 2020 – 2021'*, National University of Samoa, Retrieved from: <https://drive.google.com/file/d/1lf5eZ9yXIM0007HrV1GNb8YZ0OrV551Q/view?usp=sharing> (Accessed 28 September 2020)
- NUS. 2020. *'Statistical Digest 2018'*, National University of Samoa, p.4
- Olley, J. 1996. *"Stakeholder Participation in Latin America"*, Unpublished MSc Project, Water, Engineering and Development Centre: Institute of Development Engineering. Loughborough University, Retrieved from: <https://www.lboro.ac.uk/orgs/well/resources/well-studies/full-reports-pdf/task0069.pdf> (Accessed 28 September 2020)
- Samoa Recycling and Waste Management Association (SRWMA). 2020. *'SRWMA Constitution 2020'*, Samoa Recycling and Waste Management Association.
- Snel, M., and Ali, M. 1999. *"Stakeholder analysis in local solid waste management schemes"*, WELL Study", Loughborough University, UK, Retrieved from: <https://www.lboro.ac.uk/orgs/well/resources/well-studies/full-reports-pdf/task0069.pdf> (Accessed 28 September 2020)
- SRWMA. 2018. *'Samoa Recycling and Waste Management Association Strategic Plan 2018-2023'*, Samoa Recycling and Waste Management Association.

- Tsujita, M. 2002. 'Becoming a Factory Girl: Young Samoan Women and a Japanese Factory.' Masters of Arts Thesis in Pacific Island Studies, University of Hawaii, Retrieved from: [https://scholarspace.manoa.hawaii.edu/bitstream/10125/21132/Tsujita\\_2002\\_r.pdf](https://scholarspace.manoa.hawaii.edu/bitstream/10125/21132/Tsujita_2002_r.pdf) (Accessed 28 September 2020)
- Yazaki Ltd. 2004. '*Promoting Global Environmental Management*', The Globe, Yazaki Group, Retrieved from: [https://www.yazaki-group.com/global/pdf/ser2004\\_07.pdf](https://www.yazaki-group.com/global/pdf/ser2004_07.pdf) (Accessed 28 September 2020)
- Zarine, N. 2018. '*Facilitating Behavior Change in Complex Waste Management Systems*', Acumen Academy, Retrieved from: <https://www.acumenacademy.org/blog/facilitating-behavior-change-complex-waste-management-systems> (Accessed 28 September 2020)