

**How can St. Maarten become Plastic Sustainable through the help of Governmental laws, Local
Collaboration and Education?**

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Abstract

In this research paper, it explores the topics of plastic sustainability and plastic waste management with a geographical focus on the country of St. Maarten. The research question posed, seeks to determine “How can St. Maarten become plastic sustainable through the help of governmental laws, local collaboration and education?”. Interviews are conducted to investigate the research topic with representatives from the St. Maarten Development Fund, a non-profit governmental organization, Meadowlands B.V., a local waste management company, and The Green Dream Project Foundation, an educational foundation. These participants are included to reflect the respective knowledge and positionality from the governmental, organizational and communal levels within the society. The research finds that frameworks, local collaboration and education act as contributing factors to the development of plastic sustainability within the country.

In addition, the large disconnect of collaboration among the governmental, organizational and communal levels highlights the challenge that is being faced in encouraging the people and developing the country to become plastic sustainable. Plastic sustainability can be encouraged through the implementation of frameworks, the engagement in local collaboration and through public education which can in-turn ensure a cleaner and safer environment for the country and people of St. Maarten.

How can St. Maarten become Plastic Sustainable through the help of Governmental laws, Local Collaboration and Education?

In accordance to Plastics Europe, they define plastic sustainability as the efforts which lead to a reduction in plastic by promoting the reuse, collection and recycling of plastic waste as well as the acceleration of the transition into a circular economy (Plastics Europe, n.d.). The movement seeks to create an overall long lasting positive change within the environmental sector with the goal of attaining a 100% recovery of plastic waste that can deliver social benefits while at the same time minimising environmental harm. These acts can also be connected to the global strive for increased sustainability that has been promoted by the United Nations with the use of the Sustainable Developmental Goals. In specification to goal 12, Responsible Consumption and Production, target 12.5 indicates the want for a

national recycling rate that can determine the tons of materials recycled in the hopes of reducing waste generation through prevention, reduction, recycling and reuse by the year 2030 (United Nations, n.d.). It may be manageable to implement such innovative initiatives on a governmental and/or organization level, but it may be difficult to encourage them on the local and community level of a society. Collaborations with local entities like community programs, local organizations and educational institutions can be the key to help further these initiatives in reaching the goal of creating long lasting impactful change within the field of plastic sustainability.

In his book ‘Powers of Freedom: Reframing Political Thought’, author Nikolas Rose explains the importance of community in the role of the government in the chapter titled *Community*. By stating that the institution of community can encourage and harness active practices of self management and identity construction, it can further personal ethics and collective allegiances (Rose, 1999). In short, it is an aspect of a society that can foster togetherness in which a community’s behaviour is regulated according to their own values. So as the government generates new desires for changes in their society with strategic initiatives, communities can be used as a vessel to adapt them by allowing communal responsibility and autonomy in furthering its actions. Members can collaborate with officials to provide a more relative and realistic scope of societal problems that the government aims to tackle, and create solutions that are more accurately investigated, mapped, classified, documented and interpreted to make an influential and contextually based change (Rose, 1999). This viewpoint can be used to encourage initiatives like plastic sustainability by providing a community with the necessary tools and education to help further the goal of waste reduction by collaborating with its members and appealing to their communal dynamics.

The country of St. Maarten is a 16 square mile island in the Caribbean region that holds autonomous independence within the Kingdom of the Netherlands. Waste management has proved to be a controversial topic due to its lack of formality and cause for human and environmental harm. In 2016, an open letter of advice pended by the Social Economic Council of the country to the government officials of that time noted a cause for concern with the mismanagement of waste. Entitled “Better Waste Management for Sint Maarten”, the document gave unsolicited advice on the management of waste on the

Pond Island landfill, by noting its key problem being its separation or lack thereof. They propose that an effective solid waste management system that considers how to prevent, recycle and manage solid waste can greatly serve the best interests of the country's population in the aspect of human health as well as its environment (SER, 2016).

Now in more recent times, the country has made strong strides towards a reduction in its waste regarding plastic sustainability. Within the governmental space, the St. Maarten Development Fund whose core goal is to generate programs and finance projects that seek to contribute to the country's social and community development, has recently presented its very first legislation to the government entitled 'Plastic Free SXM'. The primary aim of this legislation is to significantly reduce plastic waste and strengthen environmental sustainability across the country with the ban of waste like plastic shopping bags and polystyrene foam food containers (Soualiga News Today, 2025). Among local organizations, waste companies have also sought to encourage better waste management through the exportation of recyclables with international companies. Waste company 'Meadowlands B.V.', signed a deal to export waste and recyclables to the Florida company 'Cadwell Inc.' in the United States of America in the hopes of ensuring a cleaner and greener St. Maarten for current and future generations (The Daily Herald, 2019). Much has also been done within the community through education as local foundations like 'The Green Dream Project Foundation' have sought to spread awareness regarding plastic waste and its management through partnerships with educational institutions and local companies with the aim to empower students and community members by actively engaging in sustainability initiatives on the island (The Daily Herald, 2024).

In this study, the research question "How can St. Maarten become plastic sustainable through the help of governmental laws, local collaboration and education?" aims to not only spread awareness regarding plastic sustainability in St. Maarten but also highlight the importance and positive impact of governmental and community collaboration in developing and encouraging these initiatives on all levels of the society. As a born and bred St. Maartener with my family history holding a long connection to the country of St. Maarten and its neighbouring islands, sustainability has been taught as a lifestyle for me

growing up. Whether relating to memories of my mother and I cleaning up beaches, participating in ‘SXM Doet’ or to the routine of recycling plastic bottles at one of the first recycle locations that was placed on the Pond Fill road. This topic has always been close to my life and was one of the main reasons why I chose to study the Global Responsibility and Leadership Program at the University of Groningen in Campus Fryslan, as I thought it to be the perfect mixture of politics, governance and sustainability. However, upon these last three years of studying I’ve now come to know how important not only political governance is in furthering changes within a society but how necessary it is to incorporate the communal aspect in its decision making process.

It is one thing to develop an initiative that will impact a country but it is another to make it long lasting within the community. Thus through this thesis project I hope to continue the discussion of plastic sustainability within the country of St. Maarten and also contribute to its continued development in the hopes of making the island greener, cleaner and more sustainable.

Literature Review

In order to answer the research question proposed, a literature review will be first conducted. It will enable us to situate our research within the existing body of knowledge regarding the topic at hand and provide a foundation for understanding the prior contributions to the field of plastic sustainability and its management around the world and also regionally within the Caribbean. Additionally, this will highlight the challenges of implementing laws and initiatives both on the governmental and community level regarding plastic sustainability through the actions of reusing, reducing, recycling, managing and educating. This review will showcase the efforts that international as well as regional institutions and organizations have put forward to bring such an initiative to life. Throughout this review, the main drivers for the higher levels of participation among the population of citizens, government and institutions will be identified. Furthermore, this review will be conducted in order to gain insight into the topic of plastic sustainability itself and technical development.

The literature review introduces five themes. The themes consist of Technical Development, Plastic Sustainability, Plastic Waste Management, Local Collaboration and Education. In the course of

obtaining vital knowledge that will prove to aid the journey of this research investigation, results of several studies have been acquired which will be thoroughly presented. However, it must be noted that the case studies utilized will hold differing contextualities based primarily on geographic location, culture and finance. Thus, through this, it will showcase the nuanced outcomes of similar approaches that are not to be compared or equated with one another.

Plastic Sustainability

To begin, the word plastics, its chemical makeup and functions within the human and social environment must be discussed. The word plastic originates from ‘pliable’ which is defined as ‘easily shaped’ (Evode et al., 2021). Plastics are also known as polymers that are derived from natural origins like cellulose which make up plant cell walls that help to provide adaptive functions. The lifecycle of plastics are in accordance to the categories of polyvinyl chloride (PVC-U), polystyrene or styrofoam (PS), polypropylene (PP), high-density polyethylene (HDPE), polyethylene terephthalate (PETE), as well as others (Evode et al., 2021). Polyethylene, which is commonly used in the production of plastic materials, holds resistance towards acids, waters, alkali and most organic solvents. However plastics can be separated in thermoplastics and thermosets.

Polyethylene terephthalate (PET), High density polyethylene (HDPE), Low density polyethylene, Polystyrene or Styrofoam (PS) and Polypropylene (PP) are thermoplastic polymers which is a type of thermoplastics that can be melted and molded by heating and hardened by cooling. These types of thermoplastics can be re-shaped and molded into different functions and have various uses irrespectively. Most of their functions range from the packing industry in the uses of bottle caps and shopping bags to the social and human world in the uses of clothing and straws (Evode et al., 2021). Thermosets are plastic polymers that are formed through different heat treatments that aim to attain its desired function. This transformation is not reversible as their molecules cannot be reformed or re-molten, which highlights its contrast to thermoplastics. Polyurethanes and Epoxy Resin are examples of thermosets which are used in applications of adhesives, paints and insulators (Evode et al., 2021).

Through plastic processing this is where polymers or raw plastic materials are transformed into final products that are distributed into the social and human world (Evode et al., 2021). Plastics have become a major commodity worldwide within commercial and industrial products primarily in packaging products (Evode, et al., 2021). Research has shown that about 40% of plastic materials worldwide are used to stock and package finished products from different factories. It has created a hygienic as well as cost effective system that is utilized primarily in areas of beverage and food processing and distribution (Evode, et al. 2021). However, within the post- utilization stage, large amounts of plastics have posed to become a waste burden on the environment. With its artificial polluting effects on the environment, water quality, air cycle, animal as well as human life, it is usually carried out by human activities through the rejection of harmful items after use (Evode et al., 2021).

In specification to the land, these plastics can destroy and lead to the degradation of the soil and the earth's surface. The wastes of plastics can toxify the land due to chemical degradation of its organic decomposition, where micro plastics, which are plastics decomposed under ultraviolet light, can easily penetrate its way into the environment (Evode et al. 2021). Moreover, with a large amount of plastic waste being combusted and released into the environment through incineration and burning, it increases air pollution as well as greenhouse gases effects (Evode et al. 2021). Furthermore, with large percentages of plastic waste accumulating in landfills, it is necessary to generate sustainable and proactive solutions where it can be managed innovatively and safely. Through the means of sustainable management strategies like recycling and landfill regulation, plastic waste can be reduced within the environment and on a society's landfill. This can prove to be beneficial to both the human and social life as well as the environment.

Plastic Waste Management

Due to rapid plastic waste production within the industrial world, it has caused the pollution of both bio-degradable and non-biodegradable plastic waste into the environment derived mainly from human activities (Evode et al., 2021). Governments, social communities and local authorities have established different measures and legislations that can help guide the population to safely dispose of

plastic waste after utilization whilst protecting the environment. Recycling refers to the waste management method that collects waste materials and converts them into raw materials that can be formed to make other valuable products (Evode, et al., 2021). Known as ‘renewing and reusing’ this type of management prevents the harmful pollution of plastic waste into the society and protects the environment. As previously discussed, the chemical make-up of some plastics, specifically thermoplastics, allow for its re-transformation and reuse of its plastics once melted and transformed.

Through the steps of collecting, sorting, washing, shredding, resizing, separating and finally compounding waste plastics, it can be used to create more desired products (Evode, et al., 2021). This not only helps with the natural conservation of the environment and saves fast depleting landfill space but it helps in promoting a sustainable lifestyle within the society. Graham (2024) highlights that without a functional waste management and recycling system, the foundation necessary for sustainable practices within the Caribbean region will always be missing. Thus as literature in connection to St. Maarten regarding plastic waste management is unfortunately limited, an example of Jamaica’s proactive solutions in mitigating their plastic pollution can be spotlighted. The country’s National Environment and Protection Agency (NEPA) and The National Solid Waste Management Authority (NSWMA) collaborated with the aim to tackle plastic waste pollution through a recycling waste management approach that focused on the inclusion of community engagement through projects and partnerships. (Clayton, 2021).

The country lacked the necessary capacity to collect and dispose of their waste in an efficient and environmentally friendly manner (Caribbean Policy research Institute, 2017). However, with an innovative approach NSWMA and NEPA collaborated with partners like recycling centers and local projects to strengthen the island’s capacity to manage its plastic litter and promote a more sustainable living. This can positively affect the management of plastic in landfills as it provides a safer approach to plastic waste disposal and it can also protect all the dimensions of the environment, which links closely to the previously discussed research by Evode (2021).

Technical Development

To render a society technical means rationale needs to be required in identifying the problems existing in a society and linking them to solutions in a systematic manner (Li, 2011). Li (2011) states that in the hopes of the government solving societal issues, they must conduct these investigations with the use of developmental experts within the community, but also with the help and contribution from the community as well. Rose (1999), states that a community holds the characteristics of sustainable and authentic, thus implementing initiatives from the governmental level can prove to be beneficial in enhancing the community rather than changing it. Additionally, Rose (1999) further states that the community expresses connectivity on a moral level through cultural bonds of values and meanings where their behaviours are regulated subjectively by them. Thus, highlighting the need for the government to focus on enhancing the community, by specifically acting upon community dynamics in solving societal problems (Rose, 1999).

In developing appropriate frameworks experts should recognize the diverse communities within a society, investigate the issue at hand by mapping the problem and its solution to the relative community and classify its main effects by documenting its action and solving its problems (Rose, 1999). By empowering the community as social actors, it can produce locally managed change within the help of the government through funding, consulting and legitimizing (Li, 2011). Additionally, by getting the social relations of a community like its norms, values and characteristics correct, within the governmental space of generating plans and initiatives, it can foster good governance and enhance local capacities for problem management (Li, 2011). In making effective legislations, it is very important to include all actors of a society, like the private sector and its stakeholders. Nyathi & Togo (2020) detail that in African countries, legislation enforcement remains a challenge due to resistance from stakeholders and inconsistent/weak enforcement .

In Kenya, the writers' note the condemnation of the plastic bag ban in 2017 by the local stakeholders due to inefficiency and infeasibility in the implementation that regarded the negative effects of such a ban, like loss in production and profit. The case highlighted the need for effective management of legislations and collaboration with its public through its stakeholders in order to efficiently and

effectively create and implement applicable laws and policies for the country and its people to follow, as this gives stakeholders a sense of belonging and commitment to act upon change (Nyathi & Togo, 2020). Furthermore, they state that a legislation's effectiveness is directly connected to its consistent enforcement and public education, as it helps spread public awareness over the cause of plastic pollution, its harm to the environment and the solutions to help mitigate its negative effects. With limited literature written over this topic relating to St. Maarten specifically, Jamaica's ban on plastic in the form of bags and drinking straws holds relativity regarding the act of proper planning with stakeholders but poor community involvement. Clayton (2021) detailed that Jamaica's staged approach to ban single use plastic aimed to engender a feeling of stewardship for the environment among the community and was shared through different forms of 'traditional' and 'social' communication and messaging like billboards, social media and radio stations, which Da Costa et al. (2020) emphasizes to be the most effective tools of information sharing.

However, as the plan only included the collaboration of the primary private sector stakeholder groups and the government the initiative failed due to its exclusion of an important social actor, the educational system (Clayton, 2021). Even Though a large portion of the community was represented, the government chose to not involve them fully in their discussions regarding the ban implementation, which later failed, and didn't address the probable implications regarding its lack in provision of suitable alternatives for the community to utilize. Evidently, the plan left little to no impact due to its exclusion of the community, a social actor that would have greatly benefited as well as been affected and furthermore was unable to be accurately evaluated due to inefficient action in the collection of data (Clayton, 2021). However, it spotlighted the need for collaboration with local organizations and teaching of proper and effective education within the community, as it can prove to be of much benefit in garnering large amounts of engagement and inciting impactful action.

Local Collaboration

Instituting collaborative governance is considered to be the most important aspect of implementing policies. A government that regulates public institutions in collectively formal decision

making can seek to successfully plan and implement policies that aim to manage programs and public assets (Ain et al. 2021). By involving the public, private parties and non-governmental organizations (NGO's) from various institutions and levels, it can help to formulate difficult objectives and implement them effectively. The actors included in collaborative governance should have the room to contribute and influence the decision making process, with the government playing a great role in providing access to its capital, educational, human and basic resources that can help to better the welfare of its society (Ain et al., 2021). Moreover, Ain et al. (2021) notes that with the government, they have the power and legitimacy to facilitate collaboration activities, intervention policies and generate engagement, which can prove to be valuable in the implementation process of innovative initiatives and further links to the previously discussed section of technical development.

With a focus on Bali, Indonesia, Ain et al. (2021) details the country's efforts to reduce plastic waste through governmental implemented policies and bans, similar to the case studies of Kenya and Jamaica. In 2019, they prohibited the use of disposable plastic drinking water packaging/plastic bags with aims to encourage recycling and further facilitate the spreading of awareness through social actors in mainly schools and among students (Ain et al. 2021). They not only fostered collaboration with its stakeholders to determine the imbalance of alternative resources, but they also provided incentives for their participation by involving the community in their plastic waste reduction efforts. By acting upon cultural dynamics and cultivating community character through the aspects of cleanliness, proper waste disposal and reduced plastic consumption this helped socialize waste management and the community's compliance with its regulations. Moreover, with a great connection to Rose (1999) and Li (2011), Ain (2021) highlights the importance of consistency and effectiveness in regulating policies through the employing of control measures like a monitoring and patrolling system done by control officers, as this ensures the disposal of waste in accordance with its regulations.

This example, can be related back to Kenya's failure at implementing their plastic bag plan due to not only its lack of collaborative involvement with the private and public sector but also its ineffectiveness of carrying out inconsistent monitoring and compliance. Through local collaboration, it

can be seen that the governmental, private and public sector of a country all play vital roles in regards to implementing waste policies and facilitating waste management. Education and socialization have also been noted to play significant roles in furthering meaningful impact and facilitating cultural shifts within the community revolving around plastic waste and its management.

Education

Education is considered to play a vital role in engaging social actors and shifting a society's norms towards more sustainable consumption patterns (Graham, 2024). With plastic waste having a harmful effect on the environment through industrial disposal, inadequate management and daily human activities, this in-turn leads to a negative impact on society. In tourism based economies, this can have a great impact in the country's perception and levels of interaction from foreign nationals. With reference to the case study of Indonesia, Ain (2021) notes that the contamination of their seas and land environment due to plastic pollution has led to the decrease in environmental quality and its decrease in tourism within the city of Bali. To reduce these impacts and spread awareness, countries have chosen to adopt education within its framework of policies and have sought to utilize the educational system to create effective change.

With a focus on Portugal, research conducted within the community highlighted socio-economic factors like education have a great impact on the perception of plastic waste, its awareness and its management (Soares et al., 2021). Soares et al. (2021) states that to induce change in behavior effectively, accurate educational interventions should be created and tailored to specific target groups, as this can help to further the problem's awareness in diverse areas and social groups. In addition, it was also stated that by incorporating environmental education in daily school scenarios it helps to facilitate the younger generations' connection to the environment and its issues posed as it cultivates positive attitudes, knowledge and motivation to act accordingly in creating effective and impactful change (Soares et al., 2021).

In Chile, this plan of action was carried out and promoted by the government through the program scheme 'National Environmental Certification' also known as 'The Green School' (Salazar et al., 2024).

With the program incentivizing plastic and environmental sustainability through certification awards that involve public recognition and access to relative educational materials among young students, it aims to positively impact the children's behaviour regarding the consumption and disposal of plastic. Moreover, schools that incorporated environmental sustainability in their lesson plans and resource management would then become social actors and members of the cooperation networks in their local communities (Salazar et al., 2024). Thus, this highlights the importance education plays in promoting plastic sustainability and further spotlights its ability to shift the cultural norms and perception of its waste management by altering the behavioural patterns of not only the children in schools but the community that they are involved in.

Methodology

For this research, methods have been used to gain diverse and relative perspectives as well as insights into the topic of plastic sustainability itself and plastic sustainability in St. Maarten. It has enabled us to gain an in-depth understanding and utilize a comprehensive approach to analyze the situation at hand on the governmental, organizational and community level. We will first discuss the research method, the participants that took place in the study and the reason as to why it benefitted the research study.

In this research study, a qualitative method of data collection was used. This type of research method allowed the researcher to gain relative information on the country of St. Maarten and its actions regarding plastic sustainability within the governmental, organizational and communal space.

Anthropologist Clifford Geertz (1973) believes that by studying a society contextually, it can give a more subjective view of the society's operations and the members that operate within it. This can help to provide a better understanding of the topic at hand. The primary source of data collection used was semi-structured interviews. These interviews enlisted a short series of questions regarding the plastic sustainability and entailed curated points of discussion that were relative to the position of the participants within the society of St. Maarten. Prior to the start of the interview, participants were sent consent forms that informed them on the idea of the project, the meaning of their participation in the study, the

confidentiality as well as anonymity regarding the data collected and the further use of its information in the research study.

As one of the founding principles of research ethics, its intent is to inform the voluntary participants of their role and rights within a research project upon signing and before the start of its conduction (University Of Oxford, 2021). Ensuring anonymity and confidentiality also serves purpose as it secures high quality research and objectivity when contributing to the overall research results and findings (Eungoo, 2023). The interviews required twenty to thirty minutes of the participants' time and were conducted as well as recorded online over a digital meeting platform. Furthermore, these interviews were then transcribed and coded in order to produce the main findings into themes. These interviews provided a subjective understanding of the overall topic at hand, which in the end allowed for great discourse to be executed and produced high quality research. The history of plastic consumption and pollution in the country, its current actions that target sustainability and its educational efforts in spreading awareness over its negative and positive impacts were discussed with the chosen participants of this project.

The chosen participants were sought out with the intention to retrieve intuitive information that provided relative conceptions of the topic from different positions within the society of St. Maarten. Firstly, on the governmental level, a representative from the St. Maarten Development Fund (SMDF) was chosen to be interviewed. SMDF's core goal is to generate programs and finance projects that seek to contribute to the country's social and community development, thus the choice to include their participation in this project seemed viable and beneficial (St. Maarten Development Fund, n.d.). Moreover, this representative held extensive knowledge over plastic sustainability in St. Maarten and its current journey to make impactful change in creating a safer and cleaner society. They are also positioned within the role of the government, which highlights the authority and power the government and its officials hold in implementing possible initiatives and changes that aim to respond to plastic unsustainability and positively impact the country. Through laws, legislations and regulations, this representative holds information regarding the current government's plans of action in mitigating the

effects of plastic pollution and promoting the positive benefits of plastic sustainability through different avenues.

Secondly, on the organizational level, two representatives from the Meadowlands B.V waste management company were interviewed. The company's main aim is to not only engage in proper waste management through a wide range of services regarding waste collection, but also encourage sustainability through practical methods in regards to reducing plastic waste. This company has made strides in providing sustainable possibilities in the disposal of household plastics through onshore recycling and offshore recyclables exportation. With the aim to contribute to a cleaner and safer environment for the people and country of St. Maarten, their participation in this study provides a subjective understanding of the role local organizations play in regards to plastic waste management. Moreover, the representative held opinions and beliefs on the possible ways local waste management organizations like themselves can encourage plastic sustainability through formal recycling and education among the members of the community.

Lastly, on the communal level, a representative from the Green Dream Project was interviewed. This local educational organization has sought to spread awareness regarding plastic sustainability and waste management through partnerships with educational institutions and local companies. Their aim through their collaborative efforts has been to empower students and community members through active engagement and participation in sustainable initiatives within the country (The Daily Herald, 2024). Moreover, the representative provided a subjective view of the problem of plastic waste on the local community level and highlighted its affectance on the environment of the country. They have spotlighted the importance of incorporating sustainability within the educational system and implementing such sustainable initiatives, like recycling, through school led education and activities, as educating the youth and the community can lead to more long lasting and positive impacts on the local community.

There are some limitations to this research regarding its data collection process. Firstly, though the data retrieved primarily through interviews provided viable information regarding plastic waste in the country and its actions to ensure its sustainability within three key aspects of the society, this did not

showcase a fully rounded representation of all the entities that are necessary to be included in these collaborative projects. Further forms of collaboration on the governmental, organization and community level should be included in the hopes of implementing laws and carrying out initiatives pertaining to plastic sustainability. Moreover, input from other collaborators like further governmental ministries, local foundations and organizations within the public and private sector should have been included to provide a more realistic and relative picture of the complexities in implementing such changes. Secondly, there was no research conducted over plastic sustainability through governmental laws, local collaboration and educational initiatives, irrespectively, on St. Maarten and there was limited research done on neighbouring countries within the Caribbean region.

This provided less contextuality regarding the problem of plastic waste within the region. It also provided less subjectivity in regards to its impacts on the environment, the country and the community of said country. The lack of subjective literature, may not have provided the best understanding of the issue of plastic waste and its affectance within the Caribbean region, let alone St. Maarten. Ultimately, it may have also not spotlighted the underlying influences that contribute to the disengagement or lack of awareness revolving the movement of plastic sustainability, like the possible political, financial, economic and cultural influences.

Results

In the following section, the results of the in-depth interviews from the governmental, organizational and community level will be discussed by including a range of themes relative to the research topic and literature review written above.

In depth Interviews

Based on the interviews conducted the researcher identified five core themes relevant to the research question and has highlighted the ways in which plastic sustainability within the country of St. Maarten can be encouraged. Amongst the participants, their statements have showcased connecting views regarding topics of (1) Plastic Sustainability and Plastic Waste Management, (2) Frameworks, (3) Education, (4) Local Collaboration and (5) Challenges. These viewpoints have been derived from

participants stemming from the governmental, organizational and communal level of the society. The participants are considered knowledgeable within their respective field and have shedded light on such topics from diverse standpoints, sharing perspectives that are representative of the different levels present within the society and country of St. Maarten.

Views on Plastic Sustainability and Plastic Waste Management

The first theme that was identified was the collective viewpoints shared regarding the importance of ensuring plastic sustainability within the country. This theme was discussed early in the interviews and it highlighted the strong sense of responsibility the representatives shared when detailing their respective views on the plastic sustainability and waste management. In ensuring plastic sustainability, it also in-turn ensures the quality of life and the well being of everyone within the society. Furthermore, this links to the preservation of the physical surroundings, the perception of sustainability and the conservation of the green environmental history that the country has always held. The main objective gathered from the interviews was to encourage and secure a cleaner, greener and most importantly safer society for the people and the environment of St. Maarten for now and for generations to come.

This sentiment was detailed by the representative of the St. Maarten Development Fund (SMDF) who stated that ensuring plastic sustainability does not only account for environmental protection but also its perception held by the inhabitants of the country. “If your environment is dirty, it’s unhealthy and that negatively impacts your perception of the realities of quality of life,” they stated (Interview, April 2025). One of the representatives from Meadowlands B.V. expressed similar sentiments, with views on St. Maarten’s ability to go green and maintain its environmental richness from its former days. Through innovation from the waste management sector, their goal is to ascertain that plastics are not polluted back into the environment after single use and are recycled. Moreover, the representative from the Green Dream Project Foundation shared the importance of plastic waste management and its securement in its segregation from the source. The implementation of frameworks have also been highlighted to be of great need in ensuring plastic sustainability across all levels of the society.

Frameworks

For the second theme, the implementation of effective, efficient and relative frameworks was considered to be of great necessity in furthering plastic sustainability and waste management initiatives within the country. The importance of legislations, project plans and community initiatives were highlighted throughout the interview, sharing respective insights from all levels included in the society and this project. The aim of frameworks is to make it easier to know what is acceptable and unacceptable when living in a society and where the government, local organizations and community foundations stand on determining what needs to be done. On the governmental side, the submission of the Plastic Free SXM legislation done by SMDF has aligned itself to such views with a plan to implement a framework to secure plastic sustainability within all aspects of the society and relative to the community of its inhabitants. The legislation plans to ban the importation, production, sale and distribution of items like single use plastics like bags, straws, stirrers, styrofoam containers, cutlery and disposable plates.

With the country not being a producer of plastic, SMDF sought the ban to be implementary as it tackles the problem through a phased approach in which they have collaborated with social entities like wholesalers, large businesses and supermarkets in the hopes of having the implementation plan be efficient and effective. The representative stated that the aim of this legislation is to start holding the government, businesses and the people of St. Maarten accountable for their engagement in plastic waste and encourage the utilization of sustainable alternative methods of consumption. Moreover, through the acts of enlisting fines and employing control methods like quality control officers as well, the legislation aims to further implement their plans effectively through a reporting mechanism directed towards the main distributors of plastic waste, like supermarkets and businesses. However, they have also noted that such a legislation should take into account the relativity of the issue at hand in casting appropriate penalizations. The actions of a person engaging in plastic waste consumption in comparison to a large business are entirely different and warrants reflective approaches of encouraging responsibility. Thus, all levels of the society as stated by the representative “should feel it at their appropriate level to know that it’s illegal” (Interview, April 2025).

From the organizational level, Meadowlands B.V. has also expressed aligning viewpoints on the importance of frameworks. For the company, they concede with the plan of tackling the issue at its source of importation as their main task as a waste company is to solely remove the plastic waste from the country. They conduct such activities through the shipment of recyclables to an offshore exportation site in Florida, The United States Of America, as the country lacks formality within the waste management sector and the company refuses to contribute to the issue of plastic waste pollution and its addition to the ever-growing landfill on the Salt Pond of St. Maarten. They believe that banning the importation of plastics within all levels of the society especially through wholesalers and large scale businesses is necessary to reduce the everyday sight of plastic pollution and encourage personal responsibility among people to act sustainably. Furthermore, they expressed their commendance for the legislation, however, just like SMDF, their want is for the plan to hold longevity within the country by providing and supporting alternative solutions for local companies and businesses, educating the public on its aims along with its importance and executing it properly and effectively.

From the communal level, the Green Dream Project Foundation additionally has concurred the sentiments expressed regarding the necessity of frameworks. The representative stated that starting from the source of plastic importation is necessary but they also expressed that inevitably, plastic waste will find its way into the country and its society. Thus stating that banning is indeed helpful but also highlights the importance of plastic waste segregation and its education within the public of the society. The representative believes that the best way to journey into plastic sustainability and its waste management is to first educate the public and the school system before regulations, rules and laws are drawn up. Furthermore, they believe that this is helpful in spreading the awareness regarding plastic waste pollution throughout the community and also aids in community understanding of proper waste management. They state that “you cannot punish people for what they don’t know, so the best thing is to start educating them” (Interview, May 2025).

The importance of education has been a highlighted topic throughout the discussions, with declarations of importance and needfulness throughout the community in furthering plastic sustainability initiatives among its most impressionable and receptive groups.

Education

The third theme identified was the role education plays in encouraging plastic sustainability and better plastic waste management through the spreading of awareness over its causes, importance and objectives among all levels of the society. Throughout the discussion relativity within education was sighted as a necessity along with the significance of utilizing various forms of mediums for furthering its educational purpose and creating meaningful and impactful change. The representative from SMDF agreed with such ideas by mentioning the need to identify the different audiences present in the society and the importance in using the appropriate methods of communication. Moreover, they highlight that what works for one, may not work for the other by stating that “you want everyone to be on board with this, so you need to find a way to get everyone actively involved” (Interview, April 2025). They have done initiatives like including children in the programming of the legislation through creating activity books meant for coloring along with word searches as they believe that education is an important step in shifting cultural norms and perceptions regarding plastic waste, pollution and waste management.

Within the organizational level, Meadowlands B.V. has also expressed similar viewpoints on the need for education in furthering plastic sustainable initiatives. As the company has engaged in plastic waste recycling for around eight years, they stated that they first started in the schools through educating the young classes and collaborating with other figures and entities in trying to create awareness. They believe that doing so will lead to positive chain reactions regarding plastic sustainability and its waste pollution, as the children will begin to educate the people around them and craft positive habits for protecting the environment. One of the representatives stated that “if your children are saying, mommy don’t throw away that bottle, let’s carry it to Meadowlands, you think of a generation that will not only change their parents’ mind but also their own” (Interview, May 2025). Furthermore, they noted that education is also apparent at their recyclables disposal site, with instructions informing the general public

of the items to recyclable and where to dispose of them as they currently have partnered with international companies like Coca-Cola to generate attention and visibility. For them, this decreases the level of plastic waste disposal at the Salt Pond Landfill and increases the level of recycling done by the community, with one of them stating that “They have to unlearn in order to relearn” (Interview, May 2025).

From the communal level, The Green Dream Project Foundation concedes with the importance of education for plastic sustainability ensurance as the foundation’s main aim is to do just that. With a primary focus on schools but an ever-growing collaboration with local businesses, the foundation’s objective is to educate the public but most importantly the school system on plastic waste and sustainability through segregation. The foundation engages with all schools from the primary to the secondary level on the Dutch side of the country with the aim to create creative and innovative solutions for students to learn from and practice. The representative highlighted the role of the Green Ambassadors in the schools in coordinating strategies for plastic waste segregation and working with the students to encourage personal and social responsibility of plastic waste pollution. They also note the importance interactive activities like associations play in furthering engagement with students’ personal responsibility, as this teaches them various responsibilities and also pushes them to gain independence within the school environment, with the representative stating that “I let the students speak for me in part of this environmental club, so when I go to their school assemblies, I don’t talk” (Interview, May 2025).

Furthermore, the representative also highlights the role incentives play in engaging the students to participate in such activities with the use of vouchers. They explain that students can participate in the foundation’s recycling exchange program which encourages them to bring plastic recyclable material from their homes and from within their schools in exchange for a discount at their cafeteria, stating that “this instills in their mind, how to go about taking care of the environment and the community” (Interview, May 2025). The representative also expressed similar views on the importance of plastic sustainability and plastic waste management education for children in relation to Meadowlands’ B.V. views. They believe in children educating their parents which leads to the people around them, stating that “the youngsters today inspire” (Interview, May 2025), thus erupting in more awareness.

Local Collaboration

For the fourth theme, collaboration was identified to be one of the main importances regarding the encouragement of plastic sustainability and its waste management, but specifically through the focus of local collaborative efforts from all levels of the society. From the governmental side, the representative from SMDF expressed similar sentiments as they believe in collaboration playing a crucial role in any type of program, stating that “if you want to bring about change, you need to get as many people as you can on your side to be supportive of your endeavors and you also want someone else to champion the cause with you” (Interview, April 2025). They highlighted their close collaboration with environmental protectionist groups within the country like Environmental Protection in the Caribbean (EPIC) and the Nature Foundation when working on the Plastic Free SXM project, as efforts like such further the initiatives done to tackle plastic sustainability within the country. In addition, the representative also details their collaborations with the private sector with the wants of organizing plastic sustainability related initiatives like pledges and also creating outputs to educate businesses on how to become more plastic free. Moreover, in regards to their legislation implementation, SMDF collaborated with local entities like wholesalers, health and economic enforcement officers as well as local artists with the aim to create a relative, reflective and realistic plan that took into account the most important aspects and members of the society.

Collaboration ensures a more effective and efficient plan of action, but also structures the society to work together in solving a problem with creative and innovative solutions. Within the organizational level, Meadowlands B.V. expressed similar thoughts and emphasized the importance of the public sector to engage in collaborative efforts with the private sector, but specifically waste management companies. With the company engaging in offshore exportation of their recyclables, they cite the need for the government to collaborate with local entities that are well versed in knowledge and acquainted with networks regarding plastic exportation. As the company themselves collaborates with an offshore recycling company, they highlight the importance of balers within the waste management sector and the value in collaborating with them to ensure the removal of plastic waste from the country. One of the

representatives highlighted that if the government engaged in collaboration with balers, this would result in increased volumes of recyclables exportation, less plastic waste in the society and local collective action.

Moreover, they detail the need for neutrality and objectivity regarding waste management and emphasize the importance of maintaining a common goal with the exclusion of political and/or subjective matters. Their hope is for all the elements of the country to work and grow together rather than staying in the same place, with them stating “at the end of the day we’re all going the same direction of getting the island clean and benefiting Sint Maarten” (Interview, May 2025). From the communal level, The Green Dream Project Foundation has also concurred with the importance of local collaboration. The representative highlighted the important role collaboration plays in innovation, the spreading of awareness and in addition, believes that balers play a crucial role in the process of plastic waste removal. Moreover, collaborating with well known organizations like SXM Doet can help in engaging the public and executing social initiatives through activities like beach clean ups and seminars. However, the representative highlights that sustainability through longevity needs to be of importance in order to create lasting impact and the need for formalization within the waste sector in order to contribute to proper plastic waste management instead of landfill growth.

Challenges

Lastly, the final theme identified was the existence of challenges that pose a hindrance to the ensurement of plastic sustainability and its waste management within the country. From the governmental level, SMDF shedded light on the lack of infrastructure necessary for management purposes in regards to waste management and the repurposing of plastic waste. They detailed that due to the country’s limited access to physical and capital resources that would be needed to formalize the waste sector and upcycle plastic waste, the plan to ban plastics from importation is considered to be more effective in tackling the issue. Additionally, the representative states that such a system would require more participation from the community in recycling their plastics at a central point.

Their main goal is to accommodate the members of the society in the most applicable and effective ways possible in furthering the aims of their legislation. Moreover, the representative highlights the significance of culture regarding recycling as it plays a large role in the stagnation of plastic sustainability. They detail that “St. Maarten has not had a population that actively seeks to recycle” (Interview, April 2025), and further continues to highlight the need for incremental initiatives that acknowledges people’s positionality and considers restrictions like accessibility, finances and education. Furthermore, establishing individual responsibility was also mentioned as a challenge due to its constraint in encouraging behavioral changes regarding plastic waste, with the representative stating that “we don’t want to make the individual changes that will get us to the reality that we want” (Interview, April 2025). With the legislation, SMDF’s goal is to establish rules and regulations regarding plastic waste management in the society and encourage cultural shifts that can help to reshape the perceptions of plastic waste pollution and its management.

On the organizational level, Meadowlands B.V. cites problems like the lack of collaboration and education, longevity of plans and limited access to physical and capital resources as main challenges that pose hindrance to ensuring plastic sustainability. With views discussed in the previous section, the company highlights the importance of local collaborations with the public sector in promoting innovative solutions. The lack of collaboration with the government restricts the company from furthering the removal of plastic waste at large volumes and the inefficiency in educating the public on plastic waste awareness acts as a barrier in enlightening the community of its importance. In addition, the durability of actionary plans was also highlighted as a challenge due to the country’s struggle to establish efficient and effective plans. The company believes in the efforts of the government in furthering plastic waste management initiatives, but they also express their concerns for its implementation and execution.

Furthermore, the company detailed similar stances to SMDF, noting that the limited access to physical and capital resources plays a great role in posing restrictions as well. Without such resources, the waste management sector seizes to innovate and grow which ultimately contributes to the stagnation or decline in plastic waste management. On the communal level, The Green Dream Project Foundation

shares concurring views in challenges posed regarding the lack of formalization within the waste management sector to be a limiting factor. The unregulated landfill contributes to the lack of plastic waste management and in turn limits the sustainable behaviors and endeavors of persons seeking to engage in plastic recycling and waste separation. The representative also details that such issues stem from the lack of physical and capital resources needed for investment from the governmental side, as local private organizations can only do so much with the limited access to resources they have. Investments into facilities, machinery and equipment that aim to help formalize the waste sector and encourage plastic waste management through upcycling is seen as a challenge, thus engaging in offshore exportation, as for now, is highlighted to be a more effective and suitable approach.

Discussion and Analysis

With the help of in-depth interviews, the researcher was able to identify the core themes detailed throughout the interviews and furthermore has been able to highlight links to the literature review written for this project. Firstly, for the themes of plastic sustainability and plastic waste management, the views shared by the participants in regards to recyclable plastics like polystyrene and styrofoam and its need for recycling and better waste management coincides with the research done by Evode et al. (2021). The research focused on the types of plastics present within a society and its effects on the human and physical environment through the visibility of single use plastics in the environment and the effects it can have on human health and perception. Moreover, it spotlights the use of recycling as a tool of plastic waste management by collecting and bailing plastics that can be recycled and reused for future purposes and for the purpose of landfill reduction. This connects to the results collected as support was expressed for recycling as an effective plastic waste management initiative.

Furthermore, this theme also coincides with the research from Graham (2024) and The Caribbean Policy research Institute (2017) since it focuses on the importance of a functional waste management and recycling system and the cruciality of having physical and capital resources and capacity to invest in it. Based on the results the representatives highlighted the country's inability to practice plastic waste management on a larger scale level and cited the lack of resources, awareness, collaboration and

education for its stagnancy. This was determined as the main reason for certain plastics to be banned from import from the governmental level as it would prove to be more effective and suitable in the absence of a formalized plastic waste managed sector. However in the research done by Clayton (2021) where it focuses on the benefits of implementing plastic sustainable initiatives and engaging with the community in the efforts of recycling in the country of Jamaica, this connects well to the results. The research cites collaboration with local projects and corporations that are involved in the plastic waste management sector as an effective way to manage the island's plastic litter but also promote a more sustainable living.

Therefore, after discussing the importance of plastic sustainability and plastic waste management it becomes apparent that the investment in a formalized waste management sector that seeks to reduce plastic waste through effective initiatives like recycling is necessary along with the need for collaboration with local projects and corporations to help reduce plastic pollution and also promote a more sustainable living.

Secondly, the use of frameworks was identified to be of need for the encouragement of plastic sustainability and waste management within the country. Based on the representative from SMDF, frameworks like legislations are aimed to specify what is acceptable and unacceptable when living in a society and also helps with aiding the government in determining proactive solutions to issues posed. This coincides with the research done by Li (2011) and Rose (1999) as it discusses the need for identifying problems existing in a society and providing relative solutions to help resolve them in a systematic approach. Moreover, the research also discusses the importance of employing development experts in regards to solving societal issues which also coincides with the research done by Nyathi & Togo (2020). With the research highlighting the cause of ineffective plans to be the resistance met by the society and its weak enforcement in African countries like Kenya, it links to the results of the importance in collaboration, which was highlighted by SMDF's collaboration with the private and public sector by including entities like wholesalers and environmental sustainable foundations and figures like health and economic control officers.

The research emphasizes the importance of including the community in such society efforts as it can make possible initiatives more effective and also give the actors a sense of belonging and commitment in creating change. Additionally, the results gathered showcased the need for local collaboration with the community as it can help to shape the perception, behavior and values of plastic responsibility. This relates well to the research done by Rose (1999) as it cites the importance of the government to engage with the cultural values and dynamics present within the community and utilize them to enhance their initiatives with relative solutions. Furthermore, the use of effective communication approaches was highlighted within the results, as the representatives from all the levels noted the importance of relativity in the efforts of educating the public over the awareness of plastic pollution, sustainability and waste management through different forms of communication. This coincides with the research done by Da Costa et al. (2020) as it establishes that by sharing information through ‘traditional’ and ‘social media’ platforms, it proves to be the most effective, which relates well to the efforts of SMDF, Meadowlands and the Green Dream Project Foundation in educating the public about plastic sustainability’s importance within the country. Therefore, after discussing the importance of frameworks like legislations in furthering plastic sustainability and waste management initiatives within the country, the importance of collaboration and engagement with the community has been brought to the forefront, noting its benefits in creating and implementing relative solutions to societal issues.

Thirdly, local collaboration was highlighted to be of great necessity in furthering the objectives of plastic sustainability and plastic waste management encouragement. In the interviews, local collaboration was highlighted on the governmental level, with their engagement with public sector entities and foundations, the organizational level, with their collaboration with offshore waste exportation sites, and on the communal level, with local groups and community events collaboration. These efforts are emphasized to be an important aspect in implementing policies and successfully managing initiatives and programs which coincides with the research done by Ain et al. (2021). The research cites that the involvement of the public, private and non-governmental organizations from various institutions and levels can help to formulate difficult objectives and implement them effectively, which can also coincide

with the research already discussed by Rose (1999) and Li (2011). Moreover, Ain et al. (2021) notes that by connecting all the levels of the society through collaborative approaches, this continues the socialization of plastic sustainability and its waste management within the community through the development of community character and cultural values.

Furthermore, this also relates well to the results collected with the representatives highlighting the importance in collaborating with local actors as they emphasize the objective to move forward as a collective and champion their will for positive and long lasting change. Therefore, after discussing the need for local collaboration within the country in regards to plastic sustainability and waste management, an emphasis on the inclusion of all the levels of the society was noted to effectively bring about change and manage initiatives that prioritized the development of plastic sustainable values through culture and community character.

Lastly, education was identified and discussed to be a shared factor in the encouragement and ensurement of plastic sustainability within the country. Among the participants of this project, they all emphasize the importance of education through enlightening the public and spreading awareness. They also noted that engaging with social aspects of the society can help to reshape the perceptions, habits and norms towards plastic sustainability and its waste management. This relates well to the research done by Graham (2021) as it highlights the importance education plays in shifting social norms towards sustainable consumption patterns. These results also coincide with the research done by Soares et al. (2021) as it focuses on the value of utilizing socio-economic factors like education to further such objectives and create lasting benefits.

Among the participants, they emphasized the vital role education plays in furthering plastic sustainability and detailed the importance of collaborating with the school system and the younger generation. They believe that by incorporating plastic sustainability and plastic waste management in schools through education, activities and incentives it can lead to heightened awareness and better habits. These results relate well to the already discussed research by Ain et al. (2021) and the research done by Salazar et al. (2024) as it focuses on the benefits of having programs that incentivize student's

participation in plastic waste management initiatives through certificates and highlights the positive impacts they can have on their behavior regarding plastic consumption. Moreover, such certificates can be used within the schools to allow students access to resources linked to environmental sustainability, which similarly relates to the efforts of the Green Dream Project Foundation. Furthermore, the participants also believe that by educating the younger population through the school system it can cause a chain effect in educating the people around them.

This coincides with the research done by Salazar et al. (2024) and additionally with Soares et al. (2021) as they mention that schools can become social actors within their community and help to develop positive attitudes, knowledge and motivation regarding plastic sustainability and its waste management and create effective and impactful change. Therefore, after discussing the importance of education in furthering plastic sustainable and waste management objectives, it is apparent that this would not only aid in spreading awareness regarding the benefits of plastic sustainability and its waste management but also create positive changes in the behavior of young people within the school system and the community surrounding them.

Recommendations

There are a few recommendations the researcher would like to propose regarding the topic. Firstly, based on the results and discussion provided, the researcher recommends for all aspects of society mentioned within the project to work together as a collective. The research highlighted a large disconnect of collaboration among the governmental, organizational and communal levels regarding plastic waste and sustainability initiatives. With each level generating their own respective proactive methods of mitigation or adaptation measures, there hasn't been much of an initiative to engage in collaborative efforts from the governmental position. The government of Sint Maarten holds much power in the implementation of laws and regulations, thus by engaging in partnerships with or incorporating local waste management organizations and plastic sustainability oriented educational foundations into their initiatives, this can cause a more infusive, harmonious and long lasting impact on the country.

Secondly, the researcher proposes for the country to engage in more local solutions within the waste management sector in addition to ensuring plastic waste sustainability. Though this requires major changes in the economy that will take ample time and copious amounts of resources, the researcher believes that if the country can sort its own waste by altering its waste management sector. This can provide the country an opportunity to become self dependent and self governing in all aspects possible to them. Thus, by generating local solutions to local problems this can encourage the incorporation of existing local actors and initiatives relative to the society, its people, its geographical make up and most importantly, its problem at hand. Lastly, the researcher would like to suggest the formalization of the Landfill as a final recommendation.

In tackling the existing problems associated with land waste management within the country, the landfill poses an opportunity for the country to engage in efficient and effective waste organization. This can help to regulate the system of waste management by advocating for innovation that is reflective of the current climate times and issues present in the society like the Climate Change Crisis and Plastic Pollution. In addition, this can help to ensure the preservation of the environment within the country, safeguarding its land quality from polluting degradation, protecting the air quality from Greenhouse Gas emissions and ensuring the health of its members of the society through preventive and safer methods of waste disposal. In formalizing the landfill, this can create a space for the protection of the environment and its people but also usher in creative and innovative methods of plastic waste prevention and sustainability.

Conclusion

In conclusion, this research investigated the question posed of “How can St. Maarten become Plastic Sustainable through the help of governmental laws, local collaboration and education”. With the help of interviews that collected relative and nuanced viewpoints from perspectives of the governmental, organizational and communal levels within the society, the research question was answered. The findings showcased the importance governmental laws like frameworks, local collaboration, with local waste management companies and education within the school system play in encouraging and ensuring plastic

sustainability within the country of St. Maarten. However, there is one limitation to this study that hinders the generalizability and relativity of the results and findings regarding the system of plastic sustainability and plastic waste management within the country. The input from the citizens of St. Maarten was not included in the research of this project.

This aspect would have provided relative information over the advantages or disadvantages associated with the encouragement of plastic sustainability within the country from the level of the society that experiences its first hand impacts. By utilizing interviews, surveys, or questionnaires, this could have been ideal in obtaining personal, relative and representative information and viewpoints regarding the topic at hand from diverse members of the society. Moreover, participants could have detailed their personal willingness or restriction to participate in the activities regarding plastic sustainability which would have also given them an opportunity to express their standpoints that may reflect societal implications that may encourage or discourage them of their participation like finance, knowledge, culture or identity. Thus for further research, the researcher advises the inclusion of citizens within its conduction. This can not only prove to represent a more micro outlook on the topic but also encompass a well rounded view of plastic sustainability, its benefits, impacts and restrictions within the country of St. Maarten.

To remain a clean, green and safe society for all living beings, the country, its entities and citizens must do their part and work together in order to safeguard the natural essence of our land and sea and further help to protect our green history for the future generations to come.

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