



# EPA YOUTH ESSAY COMPETITION 2012

## “INTEGRATED COASTAL ZONE MANAGEMENT (ICZM) IN GUYANA”

# SUMMARY REPORT

### THE 2012 COMPETITION

Young people are not only the future, they are also the present. More than 45% of the world's population is under 25, with 1.3 billion young people living in developing countries. Their energy, ideas and aspiration are boundless. Youths are key agents of change, but too often the nature and impact of their ideas are not recognised or documented sufficiently, and youths face difficulties being heard and engaged more directly in civic life.

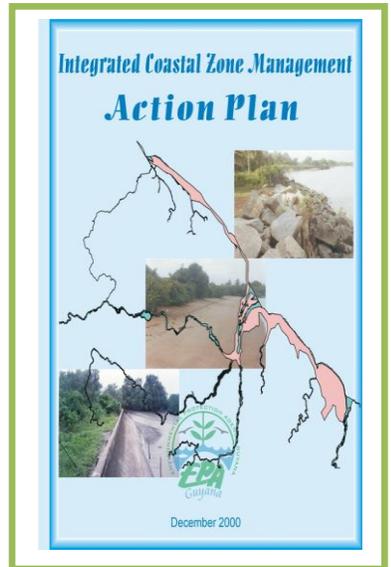
Including young people's views in programming and policy decisions not only reinforce their self-confidence, but also help prepare them to exercise their rights and responsibilities of adulthood and citizenship. The Environmental Protection Agency (EPA) wishes to encourage young people's active participation in a wide variety of activities of their communities in order to develop their full potential by ensuring that young people's views are factored into policy and programme decisions.

In order to provide opportunity for youths to express themselves and have their views and needs heard, the EPA launched its inaugural Youth Essay Competition on March 02, 2012. This Competition targeted University of Guyana students from both the Turkeyen and Berbice Campuses. Further, this initiative was designed and implemented in partnership with the Guyana Mangrove Restoration Project (GMRP).

University of Guyana students were invited to submit essays responding to the following questions:

- *How has coastal degradation affected you, your family, your community, or your country?*
- *With ever-increasing coastal development, how can Integrated Coastal Zone Management (ICZM) reduce conflicts related to the myriad of activities occurring along the coast of Guyana?*
- *What actions can you recommend for strengthening ICZM in Guyana?*

The Essay Competition attracted thirty-eight (38) submissions from two (2) undergraduate programmes (Biology and Environmental Studies) offered by the University of Guyana, Turkeyen Campus (76 % of the submissions came from students enrolled in the B.Sc. Degree, Biology programme). No entries were received from the University of Guyana, Berbice Campus.



### Reviewers' Observations and General Conclusions from Essay Review

Throughout the review process, reviewers were asked to record the coastal issues and benefits of Integrated Coastal Zone Management (ICZM) cited most often by young people, as well as recommendations raised by youths for strengthening ICZM in Guyana. Some of the general conclusions to the questions raised are as follows:

- 1. How has coastal degradation impacted a young person's life, community or country?**
  - Many young people believe that the rapid increase in population along the coast has resulted in the development of illegal squatter settlements, and subsequent increase in marine litter and solid waste generation, which in turn reduces the aesthetic quality of the coast.
  - Discharges and run-off from industrial, mining and agricultural activities (livestock rearing, and overuse of pesticides, fertilizers and herbicides) have resulted in the increase of sediment loads in rivers, and have also



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contributed to the increase in eutrophication in water channels in some communities, thus disrupting the flow of water.

- Youths indicated that the improper disposal of solid waste into drains in many coastal communities has resulted in the blockage of drainage canals which exacerbates the potential for flooding during periods of heavy rainfall.
- Water pollution caused by the improper disposal of sewage can potentially affect the food chain once toxic substances are consumed and bio-accumulate into the tissues of certain aquatic organisms, e.g. fish.
- Most youths indicated that the removal of mangroves along the coast has resulted in the loss of recreational/ entertainment sites. They also highlighted that in many communities, mangroves are harvested for firewood and tannin, as well as for docking of boats by fishermen, and for the construction of ports. Further, over-grazing of cattle in mangrove thriving areas has adversely affected the development of seedlings in some of these areas. These activities they noted, reduce the ecosystem services provided by mangroves, and thus increase the coast's vulnerability to flooding.
- The poor maintenance of man-made sea defences increases the vulnerability of coastal communities to floods especially during breaches in those structures during high tides.
- Coastal degradation, as indicated by most young people, is induced by anthropogenic activities which have resulted in habitat loss and fragmentation due to land conversion for agricultural and housing developments, as well as overexploitation of resources, e.g. overfishing reduces the rate of regeneration of the fish stock.
- Youths highlighted that the flooding experienced along the coast of Guyana in January, 2005, resulted in the loss of income due to damages to infrastructure, personal belongings, agricultural crops and livestock, as well as the proliferation of pests and waterborne diseases. Notably, there was the loss of livelihoods especially by farmers due to the removal of top soil by flood waters, as well as saline intrusion which affected crop production.

### 2. How do young people perceive the role of ICZM in reducing coastal resource use conflicts?

- Most youths indicated that ICZM can address resource use conflicts by fostering a cross-sectoral approach to the management of the coastal resources, which encourages the participation of all stakeholders, including the local communities in the decision-making process.
- Reducing conflicts requires inter-ministerial communication which can be facilitated by ICZM.
- Young people stated that ICZM allows for integrated monitoring of environmental impacts along the coast which in turn can reduce degradation and conflicts.
- The promotion of environmental awareness and education of coastal zone issues was recognized as a major role of ICZM which seeks to reduce and even prevent coastal resource use conflicts from arising.
- The application of boundary restrictions, quotas, and periodic usages of areas in order to ensure sustainability of coastal resources was suggested as a means by which ICZM can reduce the overexploitation of coastal resources, e.g. overfishing.
- Youths also recognized that by having an integrated approach towards the management of coastal resources, the development and recommendation of policies for improved coastal zone management can be achieved.
- With an integrated framework for managing coastal resources, ecosystem services and areas for focusing protection and/or restoration efforts can be easily identified, as pointed out by most young people.

### 3. Suggestions for strengthening ICZM in Guyana.

- Young people, overall, recognised the need for the introduction of punitive measures in order to deter possible violations of littering, using an integrated approach.
- The review and update of outdated and obsolete legislation related to the management of the coastal zone was recommended by some youths as they acknowledged the need to identify overlapping responsibilities and jurisdiction of key sector agencies in order to ensure the effective management of the coast and its abundant resources.
- The procurement of necessary equipment for sector agencies to support improved collection, processing, and dissemination of data regarding coastal resources was viewed as a necessity by some young people in order to strengthen ICZM in Guyana.



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- Although most young people highlighted the role of ICZM in raising public awareness regarding coastal issues, many believed that there is need for improvements in educational programmes and methods of appealing to the various target audiences. The following mechanisms for increasing public awareness were recommended by most authors: the need for community workshops, public consultations/ meetings, pilot projects targeting the local communities, and media programmes (television and radio broadcasts, hosting of essay and quiz competitions, publishing of newspaper articles), etc. Some authors also suggested the incorporation of ICZM related courses into secondary schools' curricula in order to appeal to the younger generation and thus foster attitudinal changes at an earlier stage.
- Development of laws regarding the removal of coastal resources, e.g. mangroves, sea shells, etc.
- The need for increased monitoring and enforcement of coastal activities to ensure compliance with environmental requirements was echoed by almost every author. Some young people suggested that improved monitoring and management capabilities should be given specifically to the country's irrigation systems.
- Apart from engaging local communities in the decision-making process, many young people suggested that sustainable livelihood practices need to be promoted in order to safeguard the environment and at the same time, satisfy the economic needs of the local people. The promotion of sustainable fishing techniques was recommended by some authors.
- There was a general agreement that for ICZM to be effective, there is need to promote and support community-based natural resources management.
- Youths also emphasized the need to improve, maintain and monitor sea defence structures along the coastal zone using an integrated approach. The few young people who highlighted the efforts made by the Guyana Mangrove Restoration Project (GMRP) in the management of mangroves along the coast, also suggested that the growth of coastal vegetation should continue to be promoted in order to stabilize dune systems and reduce the effects of coastal erosion.
- Most young people suggested that research on the status and management of coastal resources should be encouraged by tertiary institutions in order to determine the present status of those resources and be able to monitor the evolution of their state.
- Finally, few authors who recognized funding as a major deficiency which hinders the progress of the ICZM programme in Guyana, expressed the need for the provision of budgetary allocations and political support for the sustenance of the ICZM programme. Young people also argued that capacity building is necessary in order to increase technical expertise in the field of ICZM.

#### Winner:

Among the 38 entries, ten finalists were shortlisted, and these essays were reviewed and assessed in their entirety by a jury composed of representatives of the Environmental Protection Agency (EPA). The finalists were selected following an assessment of the summaries provided which were based on their direct relevance to the questions asked, and the coherence of the synopsis. The winning entry was determined based on its originality of the ideas presented through compelling and novel arguments, its overall relevance to the questions posed, coherence of the material presented, sophistication of the issues discussed, and finally, its marshaling of supporting evidence. Prizes were awarded at the closing Ceremony of the Annual Green Walk (2012), by Mr. Navin Chandarpal, Advisor to the President on Sustainable Development, and Mr. Aditya Persaud, Project Coordinator, Guyana Mangrove Restoration Project (GMRP).

**Anita Wilson** – (19 years old, University of Guyana, Turkeyen Campus, B.Sc. Environmental Studies programme) was declared the Winner of the EPA Youth Essay Competition 2012, on May 21, 2012. Ms. Wilson will be offered an internship at the EPA, within the Environmental Management Division, from **June 18, 2012 to July 20, 2012**, where she will be given an opportunity to contribute to the various programme areas including: Environmental Authorisation, Complaints and Response, Monitoring and Enforcement, and Research and Development.

After careful deliberation by the judging panel, the following authors were deemed worthy of Honourable Mention:

- Raveena Mangal, 20 years old, University of Guyana, Turkeyen Campus, B.Sc. Environmental Studies programme.
- Mintie Pitamber, 24 years old, University of Guyana, Turkeyen Campus, B.Sc. Biology programme.
- Towana Smartt, 21 years old, University of Guyana, Turkeyen Campus, B.Sc. Biology programme.
- Ameela Shiwadas, 28 years old, University of Guyana, Turkeyen Campus, B.Sc. Biology programme.
- Nafeeza Amin, 20 years old, University of Guyana, Turkeyen Campus, B.Sc. Biology programme.



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*“A coastal area is that area which is located near to the sea or ocean, and in most cases it houses most of country’s population, economic activities, and its natural resources. With our country Guyana being no exception to this, coastal degradation is therefore a grave and serious problem within the country which must not be ignored. Over the years, coastal degradation has caused negative impacts within the country in its economic, social and environmental sectors, with flooding being one of the main and most destructive resultants of this coastal misuse and degradation. As a result, finances have been lost, crops and livestock have been killed, homes have been damaged or destroyed, and even lives have been lost in extreme cases. Because of this, management strategies must be implemented to ensure that this degradation is reversed and prevented at all costs, and Integrated Coastal Zone Management can justly serve this purpose, once implemented correctly. Added to this, it can reduce conflicts associated with conflict of interests as it promotes multiple stakeholder involvement and ensures that the objectives of all sectors are achieved, effectively while at the same time sustainably. Within Guyana, Integrated Coastal Zone Management strategies have provided limited results thus far, if enforcement of legislation is ensured and public education and awareness is promoted, it is believed that this management strategy would be strengthened, and the overall objective, which is to manage the resources of the coast in an integrated manner to ensure sustainability, would be easily achieved.” – Anita Wilson*

#### Selected Quotes from Various Essays <sup>1</sup>

*“On a personal note, coastal degradation has affected me and my coastal community of Uitvlugt, West Coast Demerara. The most prevalent form, in my opinion is through the dumping of garbage at the seawalls. For those in the community that acknowledge that the main effect of doing so is the unsightliness and the odour that doing so causes, they then prefer to dump their garbage when the tides are high or rising so that the wave action sweeps it somewhere else along the coast. It is their short term solution that nonetheless gives rise to more pollution.”- Raveena Mangal, 20, University of Guyana, Turkeyen Campus, B.Sc. Environmental Studies programme.*

*“With meager knowledge of coastal erosion and interactions, some people build their houses not far from the sea; with building they destroyed mangroves by clearing. In addition, the vicinity of the sea wall areas in some communities e.g. Enmore, were used as horse racing track fields. These events were supported by many people of the village and other communities; however those areas are susceptible to saline inundation particularly on high tides and they are not used for these events anymore.”- Mintie Pitamber, 24, University of Guyana, Turkeyen Campus, B.Sc. Biology programme.*

*“What ICZM aims to do is to ensure that livelihoods are protected, while at the same time the resources are used in such a manner that they will be available for future generations. The general objective is not that daily activities must be stopped, but that they continue at a level and in such a way that is beneficial to all.” - Anita Wilson, 19, University of Guyana, Turkeyen Campus, B.Sc. Environmental Studies programme.*

*“The sustenance of the ICZM programme will require money. Therefore, to ensure the continuity of the programme, budgetary funds should be allocated to the ICZM programme. The funding for the programme should be the responsibility of the government and it can be supplemented by non-governmental agencies.” – Ameela Shiwdas, 28, University of Guyana, Turkeyen Campus, B.Sc. Biology programme.*

*“Public awareness and education is vital in the strengthening of ICZM, as an informed public is more likely to promote what they know within and outside of their community.” - Annalisa Marks, 21, University of Guyana, Turkeyen Campus, B.Sc. Environmental Studies programme.*

<sup>1</sup> Quotes were selected from the pool of 38 summaries and finalists’ essays submitted. They represent views of the essay authors and not necessarily those of the Environmental Protection Agency (EPA).



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### Summary/Essay Review Panel:

- Ms. Marle Reyes, Senior Environmental Officer, Research and Development Unit.
- Mr. Mahendra Saywack, Environmental Officer, Integrated Coastal Zone Management Unit.
- Ms. Aretha Forde, Environmental Officer, Education, Information and Training Division.
- Ms. Anzaleen Hoosein, Environmental Officer, Industry, Infrastructure and Energy Unit.
- Ms. Felicia Adams, Environmental Officer, Industry, Infrastructure and Energy Unit.
- Ms. Dulcie Abraham, Environmental Officer, Industry, Infrastructure and Energy Unit.



Winner of the EPA Youth Essay Competition 2012, Anita Wilson receives her awards from Mr. Navin Chandarpal, Advisor to the President on Sustainable Development (above) and Mr. Aditya Persaud, Project Coordinator, Guyana Mangrove Restoration Project (below) at the closing Ceremony of the Annual Green Walk, 2012.





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### WINNING ESSAY

-Anita Wilson

Coastal degradation in simplest terms can be described as the phenomenon or act of decreasing the character or quality of the coast, that area of land located next to the sea or ocean. Generally, coastal areas contain the bulk of a country's natural resources, are fertile, encouraging agricultural production, contain biodiversity in both flora and fauna, and house the majority of the country's population. Our nation, Guyana, is no exception to this, with ninety percent of our population inhabiting the coastal zone, and the majority of our economic activities being concentrated in this zone due to the vast resource distribution and fertile land. Over the years, not only in our country but across the globe as well, destruction and abuse of coastal resources have begun and have continued to occur leading to widespread degradation of these coastal areas. Although it may be caused by natural phenomena such as natural disasters and erosion, widespread coastal degradation at its current levels is mainly a resultant of anthropogenic or human activities such as, pollution from untreated domestic sewage, overexploitation of local fisheries, destructive fishing practices, widespread deforestation, and removal of natural sea defenses, with mangrove forests being a practical example of this, and other practices such as unsustainable coastal tourism and industrial development.

Coastal degradation is a very real and troubling phenomenon occurring in Guyana, and as it continues to occur, the effects of this are continually being felt by the persons who inhabit the coast and the general Guyanese population. One of the most significant and well known effects of coastal degradation that was felt by our country was the intense flooding experienced along the coastal zone in the year of 2005, following a few days of intense rainfall. Because the coastal zone is already two metres below sea level, it is already vulnerable to flooding during high tides and periods of heavy rainfall, so much so, that seawalls are erected to act as a method of defense. The flood which occurred in 2005, which is sometimes described as a crisis, although a result of several factors, was intensified by coastal degradation through pollution of these coastal areas which prevented proper drainage. This flood is said to have devastated the entire coastal region, with almost half of Guyana's population of about seven hundred thousand having been affected, through loss of livestock, personal belongings and disease outbreaks of leptospirosis, dengue and other water associated illnesses, with some even resulting in death. Even after the flood waters began to recede, additional effects were felt, with farmers recording loss of millions of dollars through death and damage of agricultural crops and livestock, there was damage to homes, appliances and furniture, and even the Gross Domestic Product was affected because of the great loss felt by the agricultural and fisheries sectors.

Additionally, the removal of mangrove forests is one aspect of coastal degradation which continues to devastate our country, Guyana. Mangroves act as a natural sea defense protecting vulnerable coastlines from wave action as they hold the soil together preventing soil erosion. Not only do they shield inland areas during storms, minimizing damage and preventing flooding, but they also provide homes for several species of plants and animals. Added to this, mangroves contribute to Guyana's fishing industry, break down pollutants, and play a significant role in the sequestration of carbon. Unsustainable deforestation and removal of mangrove forests has impacted Guyana severely as the coastal zone is now more prone to flooding, leaving the ninety percent of the country's population who live within this area, that is already naturally low-lying, vulnerable to flooding and its effects, as experienced in the year 2005. This form of coastal degradation has affected the country so greatly that the government of Guyana is now trying to implement preventative and reversible strategies to correct this, with the development of the Guyana Mangrove Restoration Project which aims to '*augment Guyana's sea defence by protecting, restoring and managing the natural coastline barrier provided by our mangrove forests*' (Mangrove Restoration Project, 2011). The development of this project came with the realisation that the removal of these mangrove forests greatly threatened coastal communities, causing easy flooding, destruction of homes and property, as well as the loss of biodiversity through the destruction of habitats. Another significant impact as a result of this form of degradation is the immense loss of revenue and income due to the damage to agricultural, tourism and fisheries sectors, and loss of resources.

Integrated Coastal Zone Management (ICZM) is a process for the management of the coast that utilises what is described as an integrated approach, taking into consideration all aspects of the coastal zone, including geographical and political boundaries, in an attempt to achieve sustainability. Humanity has always had a close relationship with the coast. Traditional uses of coastal space include trade and conquest, migration and defence, and in some cases, a focus for cultural and spiritual identity (Carter, 1988). Whether we choose to acknowledge it or not, the coastal zone is crucially important to Guyana, as it is in many other coastal states, houses the bulk of the country's population, and accounts for a significant portion of the economic activities, and therefore income, within the country. It is no surprise that conflict of interests can easily arise in the use and management of

coastal resources, as this zone usually involves a myriad of activities, such as industry, tourism, fishing and aquaculture, to name a few, making the coastal zone a difficult area to manage. In instances where several different agencies are responsible for differing aspects of the same physical areas and different uses of the coastal zone, there often occurs the undertaking of similar or identical tasks by several agencies, which may sometimes produce antagonistic effects with competing objectives and goals. In an attempt to avoid this, and with the ever-increasing coastal development that is currently occurring, Integrated Coastal Zone Management is a vital and essential tool in the management of coastal resources and activities, if sustainable use is to be ensured. The integration principle of Integrated Coastal Zone Management was developed in Agenda 21 as a tool to pursue Sustainable Development in coastal zones, which requires: "*new approaches to marine and coastal area management and development, at the national, sub regional, regional, and global levels, approaches that are integrated in content and are precautionary and anticipatory in ambit*" (Agenda 21, 17.2, 1992).

Integrated Coastal Zone Management can reduce conflicts in the activities occurring along the coast of Guyana mainly through the involvement and integration of the key stakeholders that utilise the coastal zone and whose activities impact the coast in some way. As the name suggests, this is merely a strategy which aims to integrate or involve all concerned persons and sectors to ensure that their objectives and activities do not clash with those of any other sector, while at the same time promoting sustainable use of the resources. Integrated Coastal Zone Management takes into consideration, for example, fishermen who utilize the waters for their income, persons living along the coastline, those involved in agriculture, those involved in tourism and any other sector that uses the resources of the coast. What Integrated Coastal Zone Management aims to do, is to ensure that livelihoods are protected while at the same time the resources are used in such a manner that they will be available for future generations. The general objective is not that daily activities must be stopped, but that they continue at a level and in such a way that is beneficial to all. As coastal development continues to occur, there is also the development and introduction of new sectors and industries in these coastal areas, which would eventually add more strain on the resources present in this area. Without efficient management and monitoring, the resources available here can become easily depleted as the concerned sectors would be fully committed to achieving their own objectives, and would be completely negligent of the objectives and resource needs of other sectors that may be utilizing identical or similar resources. Added to this, the activity of one sector could hinder the activity of another, for example, development of the tourism industry along the coast can affect the local villagers, local fishermen, and other persons involved in activities around the area selected to be a tourism site or tourist destination. Through the implementation of Integrated Coastal Zone Management, the tourist destination could be developed, while at the same time local fishermen would be able to continue their daily activities and villagers would not be affected. This type of management of coastal resources involves strategies such as the implementation of boundaries and restrictions, assigning of quotas, and periodic usage of areas, among others, so as to ensure all indigenous activities occurring within the coastal zone are allowed to continue, while at the same time resources are used wisely, and this not only promotes sustainability but it also reduces the conflicts related to the myriad of activities occurring along the coast, with Guyana being no exception.

Another reason why Integrated Coastal Zone Management reduces conflicts is because it promotes and encourages the participation of the general public through education and awareness. As a strategy to efficiently managing the resources of the coast, Integrated Coastal Zone Management promotes the educating of local persons and communities about the importance of the coastal zone, ways in which it is being degraded, and the role they can play in preventing, and maybe reversing, this coastal degradation. By raising awareness among local communities, sustainability is almost ensured as these are the persons who utilise the resources, and thus, would be most affected if the resources become depleted. This very reason alone is why most of these persons are usually willing and inclined to take part in coastal protection activities, and are in support of these management strategies and techniques. Through awareness, general concern is built which later translates into actions, which is what is essentially desired to produce positive results from any management strategy. Once implemented correctly and enforced, Integrated Coastal Zone Management will ensure that coastal degradation is kept at a minimum, resources are utilised at a sustainable level, and that the protection of the coastal zone is basically ensured.

Although Integrated Coastal Zone Management is recognized and trying to be implemented into coastal zone protection and management strategies, there is still much to be desired to ensure the efficient management of these coastal resources. There is need for the development of laws and legislation to support these management strategies, as well as proper monitoring to ensure that these rules and regulations are enforced, and are not merely ignored. Under the Guyana Mangrove Restoration Project, for instance, On the 29 January 2010, in exercise of the powers conferred upon him by Section 42 of the Forest Act, and after consultation with the Guyana Forestry Commission, the Minister of Agriculture made an amendment to Regulation 17, of the Principal Regulations by the substitution of the following: "**Protected Trees** 17. (1) **No bullet-wood tree or red, black or white mangrove trees shall be felled without first obtaining the permission in writing of an authorized forest officer not below the rank of an Assistant Commissioner of Forests.**" Despite this, however, there is very little enforcement of this law and very little is done to ensure that this rule is adhered to. In order for Integrated Coastal Zone management to be successful in Guyana, or anywhere else, it needs to be ensured that legislation for the management of the coastal resources are not only known, but enforced so that management strategies would not prove futile in any way.

Another tool for strengthening Integrated Coastal Zone Management in Guyana is to completely promote and encourage education and awareness among the general public of coastal degradation and issues surrounding the protection of the coastal zone. By informing the public, public participation would be endorsed to its maximum, and this could almost guarantee the success of the strategy. Without the participation and willingness of the public

to be involved, Integrated Coastal Zone Management, or any other management plans, would fail because these persons are necessary to implement the methods of the strategy. The best way to strengthen Integrated Coastal Zone Management in Guyana is to ensure that the general public is informed about the problems of coastal degradation and the roles they are expected to play to ensure that these coastal resources are sustained.

Coastal degradation is a very grave issue within Guyana, as the majority of its activities occur in this zone and about ninety percent of the population inhabits this zone. As such, it is important to ensure that this zone is protected, and the implementation of Integrated Coastal Zone Management is an excellent way to achieve this. As long as these management strategies are implemented and enforced, sustainable use of coastal resources should and will be guaranteed, and conflicts due to difference of interests would be reduced at all levels of development.

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The Youth Essay Competition is an activity targeting University of Guyana students, and managed by the Guyana Environmental Protection Agency (EPA). Launched for the first time in 2012, its objective is to provide an opportunity for youths to share their views on critical development issues, thereby supporting the Agency's role in promoting Environmental Education. The 2012 Competition was designed and implemented in partnership with the University of Guyana, Turkeyen and Berbice Campuses, and the Guyana Mangrove Restoration Project (GMRP).

