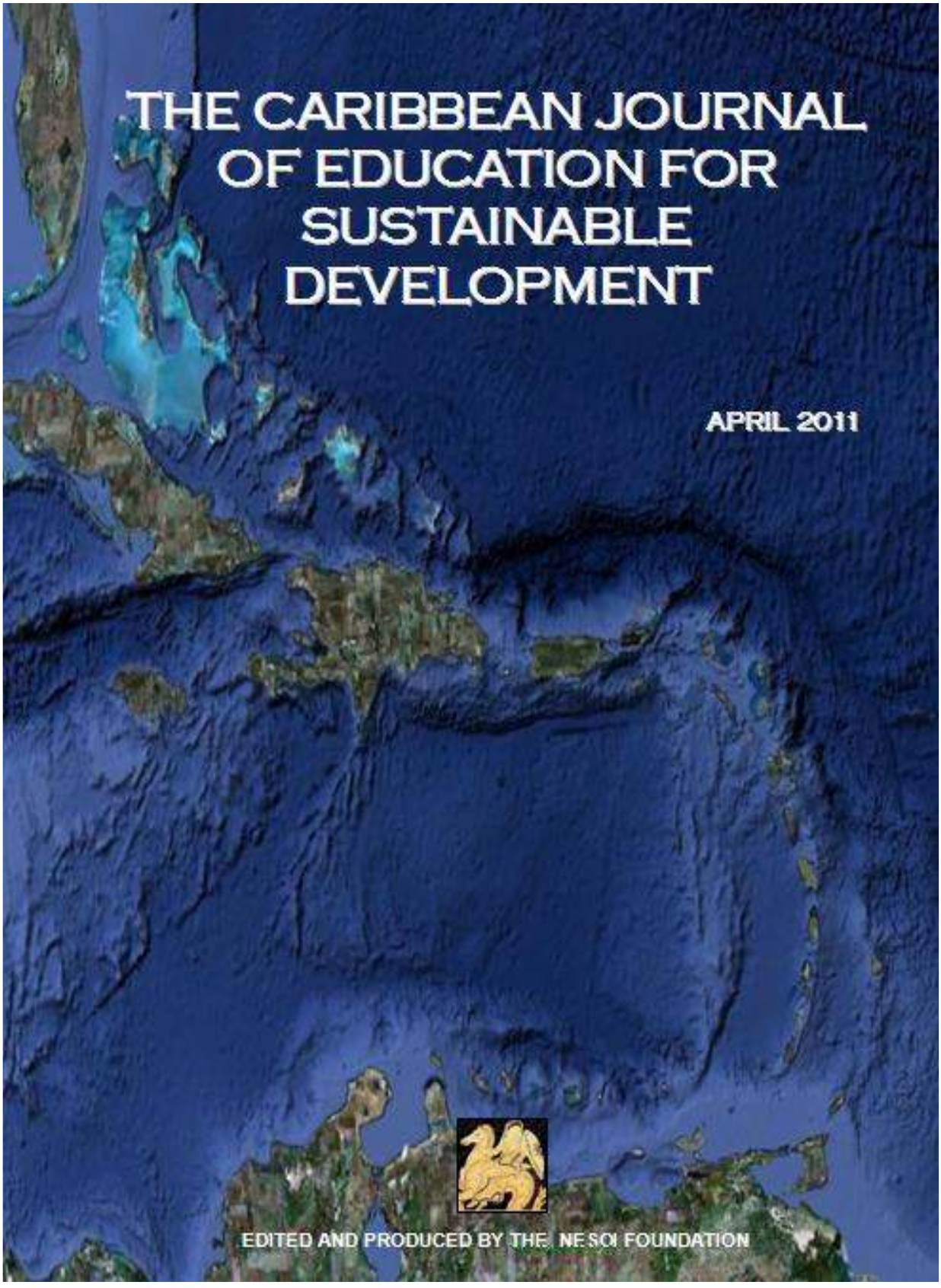
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Environmental Education And Sustainable Development In the Caribbean

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The Nesoi Foundation

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Forward

On the 26th-28th of October, 2010, The United Nations Educational, Scientific and Cultural Organization (UNESCO) held a Regional Conference on Education for Sustainable Development (ESD) in Kingston, Jamaica.
The meeting was attended by ESD experts from all over the Caribbean, including *Jamaica, Antigua and Barbuda, The Bahamas, Suriname, Trinidad and Tobago, Guyana, St. Kitts & Nevis, Belize, Dominica, Barbados, St. Vincent and the Grenadines and Curaçao.*

During the course of the conference several panel discussions were held and it was quickly determined that one of the main limiting factors to the development of ESD within the Caribbean was a lack of in/formal networking and communications between organizations and individuals working regionally within the field.

For this reason, conference participants Dr. Kelley Scudder and Paul Diamond of The Nesoi Foundation suggested developing both an online forum and a regional publication whereby educators, government agencies and Non-Governmental Agencies (NGOS) could voice their experiences in the successes *and* failures of sustainable development planning initiatives. Further, rather than confining this initiative to a scholarly publication Mr. Diamond and Dr. Scudder proposed to provide a forum in which professionals and non-professionals could learn from one another and share their experiences in the development and implementation of ESD initiatives.

Pursuant to these goals a network of ESD contributors were quickly recruited and immediately work began on these endeavours. This, the inaugural issue of **The Caribbean Journal of Education for Sustainable Development** is the culmination of the ideas first broached during the Conference in Kingston. It is our hope that his journal will continue on as a semi-annually or quarterly publication, with active input and participation from both academicians and those working at the grass roots community level.

As stated during the ESD conference in Jamaica, we learn nothing from those lessons that we fail to share with others, we learn a little from our successes, but have the potential to learn the most through the examination of our failures.
Given the significance of the development of sustainable development initiatives, we must learn to share those successes and failures if we are to be effective. This inaugural journal provides a venue whereby we can share past, present and future ESDS initiatives so that we might learn from one another.

About NESOI: The Nesoi Foundation (www.nesoifoundation.org) is a non-profit organization established exclusively for the purpose of furthering research and knowledge of environmental, educational and cultural heritage management in the Caribbean. Nesoi is dedicated to the identification and conservation of cultural and natural resources throughout the Caribbean by the establishment of proactive networks between stakeholders and professionals from various scientific disciplines and backgrounds.

The Nesoi Foundation Team and Working Group members are volunteer scientists, researchers, and other stakeholders from a wide variety of scientific disciplines, including educational and environmental sciences, archaeology, biodiversity, cultural anthropology, marine biology, underwater surveying, GIS mapping, botany, wetland and coastal ecology and many others. We are developers, designers, administrators and frontline researchers who are working together to take Caribbean cultural and natural heritage to new heights and productivity. Nesoi actively recruits dedicated and knowledgeable individuals, taking regional developmental concepts to the forefront of international standards.

What is Education for Sustainable Development?

For nearly 60 years, UNESCO has worked to promote and improve education and it leads the United Nations Decade of Education for Sustainable Development (DESD) 2005-2014.

Education for sustainable development (ESD) is not a particular programme or project, but is rather an umbrella for many forms of education that already exist, and new ones that remain to be created. ESD promotes efforts to rethink educational programmes and systems (both methods and contents) that currently support unsustainable societies. ESD affects all components of education: legislation, policy, finance, curriculum, instruction, learning, assessment, etc. ESD calls for lifelong learning and recognizes the fact that the educational needs of people change over their lifetime. Many individuals and organizations around the world already implement ESD (e.g. a teacher weaving sustainability themes into primary education using participatory methods; a community development worker raising people's awareness on rights which are denied to them; or a public health worker training people to draw water from clean sources). There are many programmes using an ESD approach to learning which is critical for achieving sustainability.

For more information on DESD in general and ESD in particular, please consult the UNESCO Website.
(*Source: http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/education-for-sustainable-development*)

Omar Mohammed
The Cropper Foundation

A Regional Workshop for the Caribbean on Education for Sustainable Development

The Cropper Foundation, along with its main collaborators, will host a Regional Workshop for the Caribbean on Education for Sustainable Development (ESD). This Regional Workshop, which will be held April 28-29th 2011, will be conducted in two parallel sessions – the first of which will seek to assess regional progress and further steps required in implementing and seeking to achieve the goals and objectives of the Decade of Education for Sustainable Development (DESD: 2005 - 2014). The second (parallel) workshop session is being designed to provide an opportunity for Caribbean Youth to express their opinions and discuss their role in sustainable development within the Caribbean and in ensuring their participation in environmental sustainability and governance; as well as providing a career guidance opportunity for youth in the fields of environment/sustainable development. The Cropper Foundation has obtained financial support to conduct these workshops from the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the United Nations Environment Programme's Regional Office for Latin America and the Caribbean (UNEP ROLAC).

Report:

In December 2002, at its fifty-seventh (57th) session, the United Nations General Assembly (UNGA) adopted Resolution 57/254[1] which provided the basis for introducing a United Nations Decade of Education for Sustainable Development (DESD) that would span the period 2005 to 2014. The United Nations Educational, Scientific and Cultural Organisation (UNESCO) was charged with the responsibility of leading and coordinating this initiative. The DESD goal[2] and objectives are clearly articulated in UN Resolution 59/237[3], and the four key objectives identified are given as follows:

- Facilitating networking and collaboration amongst stakeholders on ESD
- Fostering greater quality of teaching and learning of environmental topics
- Supporting countries in achieving the Millennium Development Goals (MDGs) through ESD efforts
- Providing countries with new opportunities and tools to reform education

The DESD was launched in the Caribbean Region in October 2005[4]. This workshop highlighted several issues which needed to be addressed in the region[5] under the DESD umbrella framework, including (but not limited to) the following:

[1] See http://www.un-documents.net/a57r254.htm
[2] The goal of the United Nations Decade of Education for Sustainable Development (2005-2014, DESD), for which UNESCO is the lead agency, is to integrate the principles, values, and practices of sustainable development into all aspects of education and learning. This educational effort will encourage changes in behaviour that will create a more sustainable future in terms of environmental integrity, economic viability, and a just society for present and future generations.
[3] See http://www.undemocracy.com/A-RES-59-237.pdf
[4] in Kingston, Jamaica

- Environmental issues are already beginning to be integrated into the curriculum but this refers to the physical environment – 'blue' and 'green' (sea and land) – issues; there is a need to include social, cultural and economic aspects. The existing curriculum should be reviewed for ESD content; the review should be done in a participatory manner including all stakeholders and especially youth, and results shared with all. ESD needs to be integrated across the curriculum through fusion into all subjects at the pre-, primary, secondary and tertiary levels and not as a separate subject; all stakeholders should be involved in curriculum development

- There was a recognition that culture is an evolving area and as such is central to ESD
- Additional teacher training is required to achieve ESD
- Continuous evaluation must be an important part of ESD, including interviews with stakeholders and lesson assessments
- All future policy statements should include ESD as a specific component such that ESD becomes a part of every country's vision
- ESD must be taken up at the level of the Caribbean Community (CARICOM)

Since the launch of the DESD in the Caribbean in 2005, it would appear that efforts to implement the DESD in the region, and therefore the ability to address the range and depth of the problems/gaps identified at that time, have progressed, albeit relatively slowly – both at national levels and at the level of the region as a whole. It would also seem that certain initiatives have received more attention than others, but that initiatives still remain disconnected and in some cases *ad hoc*. With only half of the Decade remaining, it is important that special emphasis be placed on those aspects which have so far not received sufficient attention including issues such as the ESD framework, teacher training, curriculum development/reform, and education policy.

The year 2010 marked the mid-point of the DESD, and given the finding that significantly more effort is required in the Caribbean to achieve the goals of the DESD, there is now an opportunity to reflect on what has been done since 2005 as a means of planning the way forward. In light of this, and given The Cropper Foundation's interest and experience in ESD to date[6], the Foundation proposes to organize and host a Regional workshop in 2011 which would bring together key ESD practitioners and stakeholders throughout the Caribbean.

The proposed workshop will be conducted in two parallel sessions which will run largely independently of each other. The main objective of each of the two parallel sessions is given below:

1. A Workshop to Follow-up on the DESD which will seek to assess the overall progress in ESD in the Caribbean Region within the context of the DESD as a means of:

[5] For more information on the DESD launch in the Caribbean see: http://portal.unesco.org/en/ev.php-URL_ID=28722&URL_DO=DO_TOPIC&URL_SECTION=201.html; http://www.unesco.org/csi/smis/siv/inter-reg/DESDKingston_report.pdf

[6] See www.thecropperfoundation.org

- developing a comprehensive framework of DESD activities and initiatives which will involve bringing better synergy and thus coherence to activities underway; and catalysing activities and initiatives to fill gaps and address areas which have been neglected to date
- identifying possible mechanisms which would allow for more effective coordination of DESD activities
- enhancing networks and collaboration in support of the DESD
- encouraging donor support for ESD activities within the Region

2. A Workshop for Caribbean youth which will seek to provide an opportunity for discussion on:
    - the main sustainable development challenges in the Caribbean, and the role of governance in addressing these challenges
    - role of youth in efforts towards achieving greater environmental sustainability at the national, regional and global levels, including the involvement of youth in environmental decision-making and governance
    - careers in the field of sustainable development

Geographically, the workshop will cover:

- CARICOM countries;
- Selected islands (including both independent states and territories throughout the Wider Caribbean) including Cuba, Haiti, Dominican Republic, the French islands and the Dutch Antilles.
- Selected counties such as Canada or those from Europe which have been implementing the DESD and provide good examples which might be of use to the Caribbean Region as well as selected experts in ESD from these extra-Caribbean countries.

This Regional Workshop is being supported financially and substantively by several of The Cropper Foundation's partners and collaborators. The workshop forms an integral part of the Trinidad and Tobago National Commission for UNESCO project programme in 2011 and has received great support substantively and financially through the Participation Programme of UNESCO and has highlighted as a follow up initiative by the UNESCO Regional Office for the Caribbean. We have also received financial support from The United Nations Environment Programme's Regional Office for Latin America and the Caribbean and have also collaborated extensively with The University of the West Indies, across all three Regional campuses in the preparation and conceptualising of this workshop.

This Regional Workshop for the Caribbean is by invitation/inquiry only. To request information on the agenda and participation, please contact Ms. Keisha Garcia at kgarcia@thecropperfoundation.org; or Mr. Omar Mohammed, Programme Officer, The Cropper Foundation at omohammed@thecropperfoundation.org or by phone: 626-2628/2564.

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Education for Sustainable Development in the Caribbean – Latest Buzzword or a Paradigmatic Shift in Education?

***Abstract**: This paper argues that Education for Sustainable Development (ESD) in the Caribbean is a major shift in conceptualization and approach to education and not just the 'latest buzzword'. The paper traces the beginning of ESD in the Caribbean and reflects on a number of Caribbean initiatives in this area to show how education reoriented to address sustainability can make a significant difference to the present sustainability crisis in the region. In doing so, the paper draws a comparison between existing approaches to education which widens the gap between educational institutions and their communities and an education for sustainable development which interfaces and dialogues with community in order to develop a community's capacity for meeting its basic physical, emotional and spiritual needs while living within the earth's capacity.*

'ESD, I guess that's the latest buzzword' – a passing comment overheard, perhaps too the feeling of too many educators, who view sustainable development education as simply another adjectival phrase for education. I wish to challenge such a perspective by proposing that education for sustainable development is not merely conventional education dressed in a new name but is in fact a radical shift, a paradigmatic shift in education.

The Caribbean launch of the United Nations Decade for Education for Sustainable Development, spearheaded by the Caribbean Network of Teacher Educators for Sustainability, a regional sub-group of the UNESCO International Network of Teacher Education Institutions for Reorienting Teacher Education to Address Sustainability, took place in 2005 in Jamaica. It brought together educators from the region and Florida to reflect critically on and promote education for sustainable development. The launch helped to create a sense of community for educators concerned about the existing ecological and social crisis facing us and the type of education needed to address this. Many of these educators had years of experience in environmental education and were now being asked to explore the other environment – the social and economic and to attend to the interrelatedness between the natural and the built environment. The fundamental questions that emerged were: (1) what do we mean by education for sustainable development, (2) how do we educate for this, in effect, (3) how different is that kind of education from what presently exists. The question remains as relevant today as it did then, as evident in that cursory comment mentioned earlier.

My paper proposes to answer these questions and to show that education for sustainable development (ESD) is a paradigmatic shift. To do this, I will explore the role of education in

developing small island nation states; with reference to select Caribbean texts and examine a number of Caribbean initiatives for education for sustainable development (drawn primarily from the [i]Teachers' Guide for Education for Sustainable Development in the Caribbean). I aim to show how education reoriented to address sustainability can make and is making a significant difference in the present developmental crisis in the region. My primary argument is that ESD re-designs the relationship between educational institutions and community. Unlike conventional education, which tends to widen the gap between educational institutions and their communities, ESD narrows the gap. In actuality it promotes the interfacing and dialogue with communities as a way of developing a community's capacity for meeting its physical, emotional and spiritual needs while living within the earth's capacity. Expressed another way, we can speak about this reoriented approach as locating education in community, as being more community-focused than individual-focused.

I begin with the question, 'What is education for?' In a collection of essays entitled, 'Global Change and Caribbean Vulnerability,' Davies in the foreword identifies a number of environmental and socio-economic challenges facing, (though not unique to), the Caribbean. One of the challenges he identifies is that of poverty and places it as the inevitable result of the continued application of low skills and limited knowledge. For him an improved quality of life can only be achieved and sustained by a corresponding increased level of training. Davies also raises the issue of environmental challenges and the need to change certain cultural habits, such as squatting. Davies succinctly answers the question. Education is for improving the quality of life. He underscores for us the need for education to address in a substantial way, economic, social and environmental issues, in other words, education is for the development of the society.

The model of development craved by many may be seen in this description of sections of Limbo Island by Merle Hodge in the short story of the same name 'great solid mansions set into movie-world vegetation: sculptured trees, vast rolling lawns, flowers growing in obedient formation… [A] "house" [that] looked more like a honeycomb of apartments encasing the whole side of a mountain that overlooked the sea…' [p.124]. Ironically, in this island, underdevelopment has been seen as the ' vanishing if not vanished phenomenon [of] the down-island backyard … homesteads with hens at large, dasheen patch, banana stool, pigeon peas or any other edible thing growing …' [p.126]. As Hodge depicts, in too many countries in the region progress has meant more massive concrete structures, razed hillsides, lots emptied of trees, parking lots replacing wooded areas, degraded coastal areas, more SUVs. More and bigger have replaced the concept 'small is beautiful' as espoused by Schumacher or closer to home, the socialist policies of the 70s in places like Jamaica or the various religious teachings in the region that emphasize the value of 'enough' and of community.

Moreover, in many societies education has been expected to provide upward social mobility; more so in a post emancipation society. As Evans (2001) points out education was the means for escaping the harsh physical conditions of working the soil with little or no return for the effort. Furthermore as she reminds us many of those at the lowest end of the

social order are the groups who have not received the benefits of education and consequently have not enjoyed any social mobility. But laudable as an education for upward social mobility may be, I, however, contend that the emphasis on individual achievement contained in that overall goal of education has come with a high price – the loss of community in significant ways. It is this loss of a sense of community that has contributed much to a myopic view of development.

Notions of upward social mobility have also included for some the appropriation of the 'Great House', its trappings and its exploitative practices. The figure of Morton in Earl Lovelace's *Wine of Astonishment* or the schoolmaster in the novel of the same name both typify the educated who have become the new massa. Both characters are shown in different ways adopting the lifestyle of the former planter class and exploiting the poor to maintain their new found status. Bee, the spiritual leader in Morton's community tries to explain Morton's decision to move into the former planter's house to his wife, Eva

> 'Ivan Morton want to make himself a man for people to recognize and if it mean going to live in that house, he will do it…well, he's a big man, educated. It mean he could live like white people' [9].

Later Bee revises this response as Morton further distances himself from the community and becomes a politician who simply doles out hand-outs in return for the people's votes. Bee comes to recognize that Morton had failed to see his responsibility for the people, to acknowledge community and concludes that Morton 'so stupid he don't even know that unless black people is people he cannot on his own be a man' [136].

Lovelace in these figures critiques an education system that has encouraged the educated to view development as the acquisition of capital and its 'bling' and to see the community, that is, people and the environment, as simply labourers and resources for their use. In effect, what Lovelace uncovers is education's role in replicating the planter system of development, a hierarchical system with those on the alleged upper rungs exploiting those on alleged lower. What is also marked is the failure of the supposed educated to recognize that they cannot truly achieve or develop if the community does not.

Reading Lovelace clarifies that to educate for sustainable development in the Caribbean requires that we radically revise how we educate for the development of our society. I propose that a major aspect of revising how we educate is to re-envision how we create a sense of community, how educational institutions relate to their communities. UNESCO (2003) has identified four principles of education for sustainable development: Learning to know, learning to live together, learning to do, and learning to be. With ESD another is added, 'learning to transform oneself and society'. These are principles that require not just an individual response but a collective response.

Learning to be

Learning to be is a fundamental issue that Caribbean societies have to face. The Caribbean, comprised of postcolonial small island nation states, focuses even now on elsewhere.

Walcott's (1965), 'the starved eye devours the seascape for the morsel/Of a sail' is as relevant today as it was in the sixties; meaning and self- identity are still perceived by far too many as coming through association with or approximation to others beyond these horizons. Focusing on being is thus especially important for a people with a colonial history. Chapman's (2008) description of creative arts strategies for sustainable development and Wiltshire's (2008)'Empowering Teachers with Emotional Coping Skills to Promote Sustainable Development' offer important insights in how to address the question of being.

Chapman's programme emphasizes student-centeredness, participation and action as well as inclusiveness. She moves from a transmissive mode of education to that of a constructivist in which there is the recognition that knowledge also resides in the students and that the students together with the teacher construct knowledge. Such emphasis acknowledges that it is in connecting with the inner being, with the inner source that students' creative powers are released. Students also experience a sense of power, knowledge of possibilities and potential emanating from this kind of connection. This is particularly important for island people who have been too often made to feel that power resides elsewhere and not in their hands, despite their transformation of their societies from enslaved to free and colonial to independent. A sense of community is also promoted in this creative arts programme. Children learn to work collaboratively as they create art pieces, drama pieces. Chapman teaches teachers to combine art, drama, dance, music, playwriting to have their students explore nature. Working 'outdoors' children learn to see and appreciate the environment in which they live even as they come to discover their innate abilities.

The result is that students learn 'to be'; to discover the ability that resides within, like Aldrick, in *The Dragon Can't Dance.* His declaration in, '*The steelband. Nobody didn't have to tell us nothing about the steelband*' [p.180] confirms his discovery of his and his community's creativity. The creation of the steelband emerged, after all, from a people recycling discarded oil drums from the oil fields. Moreover, this ability to create does not belong to the self in the narrow sense of possessions. Again Aldrick's words are instructive, '…and the dragon [costume] ain't even mine. I just make it. It just come out of me like a child who ain't really his father own or his mother own' [p.102]. Possessions determining selfhood are thus countered by the belief that the fact of one's existence is the basis of one's importance; the self-connected to its inner source is able to create and thus becomes/'achieves' selfhood.

Learning to be also means dealing with 'mental' pollution. This is related to thinking of self and one's society in reductive terms, of assimilating false concepts of the self as other, as marginal and less than. Bob Marley's 'emancipate yourself from mental slavery, none but ourselves can free our minds' responds to this issue of mental pollution and clarifies the basis of Wiltshire's (2008) programme. Wiltshire's programme recognizes that sustainable societies cannot be created without addressing the fundamental question of being. To care for and respect others and the environment are dependent, to a great extent, on one's care and respect for self.

Wiltshire's programme helps teachers deal with mental pollution or as he terms it 'internal oppression'. He identifies one major pollutant facing many previously colonized: colonial oppression that is now internalized and expressed as a set of values, attitudes and belief system that negate in various ways the selfhood of the individual. He speaks to teachers changing such negative belief systems for themselves and their students. He advocates as well for teachers to distinguish between students and their behaviours. Collapsing both, teachers refer and produce the 'bad student' instead of seeing the student who is behaving badly. On the surface, Wiltshire's programme may seem to have little to do with sustainable development which focuses on the physical environment and its interfacing with the built environment. But the being of a community is a core driver of the sustainability agenda and, therefore, cannot be treated lightly if our societies are to be transformed to sustainable ones.

Learning to know, learning to live together, learning to do

The other three major aspects of the UNESCO pillars: learning to know, learning to live together, learning to do, together with 'learning to be' in effect chart the way for how a society may be transformed. In this section, I want to centre on how ESD initiatives, positioned in community, help us to accomplish these. Several aspects of this learning in community are illustrated by the other ESD initiatives presented in the Teachers' Guide. Aspects of learning in community include the following:

- Identifying a community's needs
- Listening to community members, engaging in dialogue with them
- Doing the necessary research
- Taking action in partnership with community members

This revisioning of the relation between community and educational institutions means, therefore, moving away from the limited sense of education being the progress of the individual to the broader vision of education being the progress of the community. Aligned to this is the move away from the individual being responsible solely and primarily for the self, to the individual being also responsible for the community.

To develop an individual's sense of responsibility for their community, to make education more than the achievement of the individual requires that the boundaries between learning institutions and their communities become more flexible. Schools need to attend to their communities, engage with them and 'report' to them. For the most part learning institutions operate in relative isolation from their communities, notwithstanding the field trips.

These ESD initiatives, however, represent a major shift towards a greater interface with community. There is more responsiveness to and more responsibility for the places in which learning institutions are located. These initiatives emphasize that education is a way of preparing individuals for their society. They also fulfill to some extent a community's desire for learning institutions to be places where they send their sons and daughters to discover

answers, find solutions to their problems, learn to think critically about their issues and then return to them with enhanced skills and power to change what needs to be change.

To elaborate, I reflect on the approach to infusing ESD into the curriculum as illustrated by infusing ESD into literature described in the Teachers' Guide. The writer, Down (2008) lists the steps for infusion such as identifying objectives of ESD and matching those with that the subject, adjusting the content so that it is more focused on sustainable development, and developing the 'special contribution' the subject makes to the curriculum from a sustainability perspective. More important for purpose of this paper is the community action project which is described. The writer suggests that the project should be linked to the subject and through this project, students address in a concrete way the community needs.

In these projects, students have become involved in waste management, recycling, planting vegetable gardens, creating green spaces, creating peace through literacy, among others. This has allowed students to re-connect with home, to realize how their education can bring direct benefit to the environment and most important to learn that their success is related to their society's progress. What this has also encouraged is mutual respect between the son and daughter who 'left' to be educated and those who have remained.

The importance of connecting with home may perhaps be better illustrated in looking again at Morton in Lovelace's *Wine of Astonishment*. The people in Bonasse Village, where Morton grows up, supports his attendance at school, then college in the hope that he will acquire the skills, the language and the power to represent them and change the situation that threatens the destruction of their culture. The educated Morton returns, however, with new lenses through which he ironically views the people as 'backward' and inferior, their culture valueless. Most important, what Lovelace uncovers is an education not rooted in community. And without books that make visible the society, it is easy for those locked away in classrooms and books to view reductively the place they 'possess'.

The literature and ESD course has much that is commendable but there are also limitations. One is the issue of what constitutes community. The discussion above relates primarily to home communities. A number of students, though, carried out their projects in school yards, school communities and this may have different implications. The major limitation, however, is the lack of a whole institution approach to sustainability issues. Even as students become more aware of the sustainability issues facing their community and are prepared and motivated to take action, the infusion approach without an institutional overarching plan to engage with the development of the community is not as effective as it can be.

The Social Studies community service learning project and the Sandwatch project are also projects that bring together learning institutions and communities. Students learn in classrooms and in the field about various environmental, social and economic situations. To address these they may engage in formal research but also research that includes input from the affected community. And they take action.

In the Social Studies programme, 'community' is identified broadly. Griffith (2008) explains that the term 'community' may refer to an entire neighbourhood, a group of people or an individual. This community could be located outside the school walls or within the school compound. In the latter case, as with Down's students who worked in the school compound, the general discussion may not be totally applicable. It is a question, therefore, that will need further examination. In this discussion we will focus, however, on the larger grouping, the neighbourhood as constituting community.

What is evident is the interface between learning institution and community. Learning is not confined to the classroom. Teaching and learning of a particular topic is done in the classroom and in community. So community needs and topics in the curriculum are matched. These are then addressed through special activities in the community as well as in the classroom. In effect, students advise and help communities through different types of projects. Griffith describes these as (1) direct action. An example of this is students helping a community to eliminate sources of stagnant water to prevent the breeding of mosquitoes. (2) Indirect action, for example, that of collecting canned goods for donation to a homeless shelter. (3) Advocacy. This is illustrated by students creating and passing out pamphlets publicizing a local hazardous waste-collection site.

Such an approach encourages students' involvement with the development of their community and to pay attention to what and how change needs to be introduced in the environment. The chance of the 'educated stranger' returning home with the reductive gaze is significantly reduced.

The caution needed with this approach is the apparent privileging of the position that the 'student' occupies. The student is the one who advises the community, who' brings knowledge' to them, who as Griffith (2008, 62) narrates 'had fun displaying their knowledge and pronouncing words such as "encephalitis" and "hemorrhagic fever."' Students are clearly validated. But nowhere in this narrative, however, is there recorded that the student listens to members in the neighbourhood, seeks their wisdom or have them share their experiences. The valuing of 'indigenous' knowledge appears to be bracketed. There is thus the danger of the creation of a Morton and people of Bonnasse relation. And as discussed earlier such unequal relations carries the possibility of retarding the development of a sustainable society.

The Sandwatch project is distinguished mainly from the other two community teaching/learning experiences in that its lessons take place primarily outdoors, in community. Students observe, monitor beaches, analyze these findings, share them with community and together they take action. Cambers (2008) describes the four main steps in this project as (1) monitoring the beach (2) analyzing the results (3) sharing the findings (4) taking action. One illustration of this is seen in Cambers' narrative about a set of teachers and students in St Vincent who was able to mobilize a community to work with them to clear a drain that was causing health problems for a coastal community.

What is also different about the Sandwatch project is the movement of outdoor learning, community learning to indoor classroom. Cambers (2008) speaks about this as reinforcing what is being taught in the formal curriculum. I suggest that the greater impact would come if the outdoor,' in- community learning' led the curriculum, determine the curriculum and make the issue of sustainability become central.

Also evident is that as students work with a community, help a community address specific needs, their sense of commitment to place increases. The selected place becomes *their* beach, *their* reef that needs protecting. Ultimately it will be *their* community. What I am arguing here is that the study of a beach or a reef in a textbook, though valuable, is less likely to lead to the needed 'ownership' of and commitment to place than the actual involvement in place can provide.

Also notable here is that the community learns along with the students and as students share their findings they are able to involve the community in addressing the problem. The privileging of students and their knowledge can thus be averted.

Yet despite the good work being done in these projects, their effectiveness is limited by the fact that they tend to be marginal to the mainstream work of the learning institutions. And even though we believe that, 'one, one cocoa full basket', that is, in the development of a critical mass it is evident that these programmes have not effected a systems-wide change.

In many native traditions, before education became formalized, teaching and learning of the young was a community affair; the seniors taught the young what they should know about food security, health, how to read the times, how to treat the environment, among other essentials. The teaching and learning was done in community, with practice and theory 'perfectly' blended. The young were taught the traditions and values of the group. A sense of responsibility to one's society was nurtured. The gains were tremendous despite the limitations. On the other hand, the advent of books and formal education has brought many benefits and created space and time for research and has resulted in extended knowledge. But the losses here have been tremendous. Our present way of educating has severed connections between the learners and their community. The teaching of a community's traditions and values has been sidelined; the practice of 'knowledge' has given way to theorizing in classrooms and lecture rooms; the figure of the scholar has been separated from and privileged above the 'farmer' in the field.

Yet if education is to be the change agent as UNESCO has identified for sustainability and many of us have agreed it can be, the way we educate has to change. Education for sustainable development is impelling that change. The ESD initiatives discussed show the beginnings of that change. The change needs, however, to be more extensive and systemic. Perhaps some approximation to these earlier forms is needed, some middle ground found between them and existing education forms. What needs to be absolutely clear is that Education for Sustainability is not the latest buzzword but a call to re-think and re-fashion how we educate our young.

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The Dilemma of Education for Sustainable Development in the Caribbean

Abstract: *It is widely accepted that education ought to be a pivotal instrument for achieving sustainable development. However Education for Sustainable Development initiatives are blurred by the intractable problems associated with the implementation of the concept of sustainable development. This paper will examine such experience particularly in the context of Jamaica and the wider Caribbean, and suggest that in order to be successful ESD should form an integral part of the social–economic and political agenda which must provide clarity and direction for the implementation of development goals.*

Introduction

Numerous studies have been done on issues related to sustainable development; however the composition of sustainable development is complex.
Essentially the difficulty rests on adopting a balanced approach between conservation of nature and economic development. Writing on the origins of Sustainable Development, Adams (1990) is of the view that ideas about nature and change or development in society are among the most subtle and intractable. Arguably, the mutuality between nature and development in the context of societal development path has become difficult to attain because of the pressure for economic growth which, to a greater extent, requires an accelerated utilization of natural resources.

In *Our Common Future* the definition for sustainable development, 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs,' (Brundtland 1987) is based on two concepts. The first is the concept of basic needs and the primacy of development action for the poor. The second involves the idea of environmental limits set by technology and social organization. Elaborating these concepts Adams (1990), notes that this involves a subtle but extremely important transformation of the ecologically based concept of sustainable development, by going beyond concepts of physical sustainability to the socio-economic context of development. In other words the sustainable development of 'our common future' is defined by the achievement of certain social and economic objectives and not by some notional measurement of the health of the environment (Adams 1990). However despite its popularity amongst both academic researchers and policy agencies there is no universally agreed definition of sustainable development. Hence it is often regarded as a 'Catch-all' term which is defined and interpreted in various ways by different authorities (Evans *et al* 1998).

The longitudinal process of Sustainable Development has revealed major gaps which need to be addressed in order to achieve viable sustainable development. One of the gaps is education for sustainable development which lacked focus from the inception stage of sustainable development initiatives. It was adopted as the bedrock of sustainable development by the United Nations in 2005 but the pace of its application on different regions of the world has varied. It has been over five years since its inception but the vigour for understanding and applying ESD is currently being felt in the Caribbean.

Issues of Education for Sustainable Development in the Caribbean

The concept of education for sustainable development (ESD) was discussed at the World summit on Sustainable Development held in Johannesburg, South Africa in August-September 2002. In December 2002, the United Nations (UN) generally assembly adopted a resolution proclaiming the period 2005-2014 to be the decade of ESD (UN 2002). There is a general consensus on the notion of education as an important tool in achieving change and sustainable development. According to Kimatura and Hoshii (2010), education for sustainable development (ESD) aims to change the approach to education that integrates principles, values and practices of sustainable development.

In the Caribbean, a report of the audit, Mainstreaming Environment and Sustainability in Caribbean Universities (MESCA) states that "Sustainability in terms of education is considered as that form of education which engages students in content and practice with sustainability issues". Such education will give students knowledge and expertise on how to use the natural resources of earth more effectively, how to create just and peaceful societies, and the appreciation that man and nature form one co-dependent system Students are enabled to address ethically to environmental, social (including cultural) and economic problems. It is also expected that students will live sustainable life styles that will give service to their communities and develop their abilities to think critically for the future. Sustainability in terms of university management and operations promotes 'green' practices that take into account the environment, the society (including culture) and the economy to ensure safe and efficient operations and community wellbeing."

Many Caribbean Scholars have written on this topic even before the proclamation of the United Nations (UN) decade (2005-2014) on Education for Sustainable Development. For example, Moore (1994) noted "Until recently the disciplines of government in the Caribbean as established by practice were law, economics and to a lesser extent political science. The natural sciences were only of importance as 'in service' qualifications and, with time, the gap between them like that of the rich and poor widened." Indeed most scientist do not 'fancy' themselves in the political arena and the majority of the graduates of the University of the West Indies (UWI) science faculties have been unable to relate their education to the larger development picture (Moore 1994). Thus, she recommends that education for sustainable development requires an understanding of the larger picture and the individuals' responsibility in transforming any development plan into reality. It requires that each graduate of the university understand that picture and be able to recognize that their discipline is specialized skill training for the part to be played (Moore 1994)

Later contributions have emphasized the important point made by Moore. According to Ishemo (2010), there is no clear understanding of the concept of sustainable development among Caribbean higher learning institutions. This problem has far reaching effects on sustainable development initiatives in the Caribbean. Wahad and Hutchinson (2003) also note that there is a growing recognition that sustainable development policies, plans and actions have a better chance of being implemented when they are well understood and supported by an educated and informed public.

The problem of ESD extends further to include adult education. In her recent study Mclean (2009) found that adult education programmes in Jamaica do not significantly address sustainable development. While knowledge was significantly addressed, the programmes failed to motivate useful action. Basically, this is a general tendency echoed in other studies; MESCA report (2010), Parker (2010) and Mochizuki and Fadeeva (2010).

The success of the education sector cannot be attained in isolation of the development of other sectors. Experiences have shown that there are, rarely, adequate resources to develop any sector to optimum level. Under such resource constraints successful development embrace a holistic approach. Sangster (1994) suggests that the education and training process in Jamaica must take place not only in the context of increasingly rapid change but also significantly reduced resources. For that matter he emphasizes that the systems are constantly being called upon to do more with less and that education is in crisis which affect us at the national and local level. An important lesson to be learned from Sangsters' work is that there are shared problems among the sectors which require inter-sectoral or multi-sectoral solutions in order for ESD to bring meaningful outcomes.

Clearly, the lack of effective linkage among modules and courses of studies contributes significantly to the slow progress of implementing ESD in the Caribbean and worldwide education institutions. As stated by Kitamura and Hoshii (2010), the experience in Japan demonstrates that there is a lack of internal consensus to promote ESD combined with a lack of effective guidance designed to enable students to acquire cross-disciplinary perspectives and integrate their learning themselves. Earlier O'Riordan (2000) stated that "the national curriculum is still obsessed with formal structures and assessments. Universities and colleges splatter 'environmental' in front of almost any science course but this is more for the trend than the substance. The way of learning in universities remains divorced from the ethics and justice aspects of resilience, vulnerability and empowerment. Few students are genuinely encouraged to write across the disciplines and even fewer are graded positively for acting in communities or on ethical issues."

While sustainability is promoted as encompassing broad range of overlapping ecological, economic and social concerns it focuses more on good green technologies. Thus sustainability, given its green leanings, is strongly influenced by environmental ideas. The ramifications of the shortfall of sustainability application are vividly demonstrated on how educational institutions interpret ESD. In this regard, Proctor (2010) reminds us that sustainability is about more than being green and that our approach to sustainability quite literally limits our horizons. We have effectively defined sustainability in higher education as

'campus sustainability'. It focuses on and often stops at the boundaries of our college campuses (Proctor 2010). He is correct to express fear that 'if that's all there is to college sustainability we are seriously limiting on students horizons'.

It appears as though the overriding factor seen as retarding ESD is the financial woes facing higher learning institutions in the Caribbean. One of the approaches pursued by tertiary institution is to introduce new courses of study based on prevailing market conditions. Essentially the intention is to generate capital to fill the gap created by reduced government subventions in order to run the institutions. As Ishemo (2010) has observed, institutions are concentrating more on financial sustainability than on an overall education for sustainable development. It is the number of students' recruitment which matters most to progressively increase the institutions income in order to make courses of study viable. The 'market' approach in the running of education institutions is clear testimony that education has become increasingly commoditized both in the region and indeed on a global scale. Its' sacred element as a social service to humanity has been significantly eroded. Thus, the perception of education as a commodity is seen by many educational professionals as having a negative effect, not only on the value of education in general but on the future prospects of students. Undoubtedly, this tendency has grave implications on the relevance of existing education as an engine for sustainable development.

From the above stand point, the fast growing education sector in Jamaica recently prompted the government to intervene. The government is concerned not only about the value of education offered but also about the possibility that the situation might exacerbate the financial deficit of the learning institutions. The government is fearful that taxpayers may one day be called upon to bail out tertiary institutions which fall into financial crisis.

The Minister for information told the *Daily Gleaner* of January 2, 2011 that "the major issues affecting the tertiary sector in Jamaica is the lack of any single regulatory authority to oversee governance which has led to the unbridled and fragmented growth." He emphasized that "the sector is now badly in need of being rationalized and coordinated to be more in line with the national priorities and development goals."
Thus the government is in the process of setting up a Tertiary Education Commission which will become a regulatory authority of higher education institutions in Jamaica.

Conclusion

The problem associated to the understanding and implementation of ESD is intricately linked to the problem relating to the application of the concept of sustainable development. In terms of ESD, first, there is an overwhelming consensus among scholars that its success is essentially hampered by a missing link of courses offered at the tertiary level. Secondly, there is the emphasis on green development at University Campuses which overlook other elements of sustainable development. Thirdly, increasingly education has become commoditized and lost a sacred mission of social service to humanity, of unlocking and developing a critical approach to the major issues afflicting our world.

The implementation of education for sustainable development is not an easy task but Caribbean countries can learn from the success of previous experiences and adopt them accordingly based on the unique circumstances of each country. A good example is the success of implementation of Education for Self Reliance (ESR) in Tanzania. According to Larson (1999), under strong leadership of President Julius Nyerere, ESR as an instrument of development enabled Tanzania to reach its goal of having universal primary education 17 years after becoming independent. According to him, the idea that a country with resources as meagre as those of Tanzania, was able to reach such a goal is remarkable and that countries today have not achieved these even after close to 40 years of independence. The lesson to be learned is that ESD should be an integral part of the political agenda to provide clarity and direction for the implementation of development goals.

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Master Education and Research for Sustainable Development (MERSD) The Making of a Master Programme.

"If you are thinking one year ahead, sow a seed
If you are thinking 10 years ahead, plant a tree
If you are thinking 100 years ahead, educate people"

Chinese proverb

Abstract: *This article reports on the development of the master education and research program for sustainable development at the Faculty of Social Sciences of the Anton de Kom University of Suriname (AdeKUS). The education and research program were both developed within 18 months and they are the result of the seed that was sown in October 2005 during the launching of the Decade for Education for Sustainable Development, which was held in Kingston, Jamaica.*

This meeting was organized by Cariscience in conjunction with UWI, Mona and UNESCO. The abovementioned program was not the first choice of the initial project-team. A master program in Law, Economics and Social Development was developed by the project-team. However, during the matchmaking mission, which was held in Mechelen, Belgium this proposal was rejected by the Flemish counterpart i.e. none of the potential counterpart project-leaders showed any interest in the proposed program. The idea for a master education for sustainable development was then introduced and accepted by 3 potential counterpart project-leaders. From that moment all focus was, on the change of mind amongst the team members and everyone else on the faculty staff. This article is a summary of all these activities and/or milestones of the project, leading to the approval of the curriculum of the master program by the faculty assembly in January 2009[7].

After months of preparation finally the pre-partner programme (P.P.P.) was approved by the VLIR-IUC organization in Brussels, Belgium in 2005. The P.P.P. was drawn for a period of 2 consecutive years, June 2005 – June 2007 and the budget for this period was Euro 212,500.- The main purposes of the P.P.P were to make the AdeKUS community aware of the opportunities and possibilities of this new project, to put infrastructure at AdeKUS in

[7] The complete curriculum can be found on http://vlir-iuc.uvs.edu/project3 and appendix 1.

place and to mainstream ideas and philosophies of the donor organization and that of AdeKUS. Six different sub-projects were identified as potential projects to be submitted to the VLIR-IUC organization. Hence, 6 Surinamese project-leaders were appointed.

The second phase was the period towards the Matchmaking mission in March 2007. During this mission the 6 project proposals of the AdeKUS were presented by the 6 project-leaders to a panel of delegates of six Flemish Universities namely: University of Ghent, University of Hasselt, University of Antwerp, University of Leuven, Catholic University of Brussels and the Vrije University of Brussels. The main goal of this mission was to find a Flemish counterpart for each Surinamese project-leader. Upon identification of a potential Flemish counterpart and after a written expression of their interest a selection procedure was put in place in order to make the right match for the Surinamese project-leaders. During this mission none of the Flemish delegates present showed any interest in the project proposal of the Faculty of Social Sciences. It was then, that the project-leader suggested the development of a master program in the field of Education for Sustainable Development. After a brief lay-out of the concepts for this new program, there were 3 interested Flemish delegates. At a certain point 2 of them sent in their application. The right candidate was chosen after a selection procedure.

The next phase was the Formulation mission. The Formulation mission was the most intensive mission and most impressive milestone of the project in terms of achievement of goals together with team members (Surinamese and Flemish), the stakeholders and future beneficiaries of the programme. For this purpose 24 stakeholders, who operates from town were identified. These stakeholders are representatives of CBO's, NGO's and government institutes. The identified stakeholders also represented a wide range of disciplines. The main goal of this mission was to establish the problem tree and the logical framework matrix for each project in order to be able to write the final and total project proposal. Therefore a whole week of extensive consultation rounds with stakeholders, key-persons and team members were organized.

The emerged problem tree for sub-project #3 gives a good insight in the present problems of Suriname and the relations among these problems[8]. According to the problem tree there are many problem areas, but after many more consultation rounds four priority areas were identified by the project team. These problem areas regards: Civil Engagement and Participation, Poverty Alleviation, Entrepreneurship and Community Development.

The next step was the formulation of the logical framework matrix of the project. After completion of this exercise the project proposal was written and sent to VLIR-IUC headquarters together with the other 5 project proposals. After a long and extensive period of negotiation finally the Total Project Proposal for the Partner Programme was approved for a period of 5 years and with a budget of Euro 3,480,000.- in October 2007.

[8] See appendix 2 for an overview of the problem tree

After this date, the project team was finally able to focus on aspects of curriculum development. Again, there were many more consultation rounds with stakeholders, not only the ones operating in town but also the ones living in the interior of Suriname or in other remote areas of Suriname. While designing and developing the curriculum the 4 fundamental rules of ESD, were the golden rules of the project team. These rules regards respect for others including the present and future generations, respect for differences and diversity, respect for the environment and respect for natural resources.

We also realized that sustainable development must be based on sound scientific principles but its achievement cannot only depend on definition, formulae and laboratory techniques. There must be a human dimension. Hence there must be mechanisms to make average people "sustainable development ready". This means that science must work in conjunction with other disciplines to ensure that the principles they support are fully understood and can be translated into meaningful applications. This requires that the circumstances of groups and communities have to be considered in the formulation of a program of sustainable development for as long as people feel themselves disadvantaged for any reason, their main thrust is to deal with the issues they consider important to them such as identity, discrimination, etc. to the exclusion of others that may well be of greater consequence in the long term. Therefore, it is the challenge of science to formulate a program that will generate sustainability and be people friendly instead of to dispossess and deprive groups of people around the Caribbean.

Appendix 1

A. Basic modules Theory: Approaches to Sustainable Development (42 ECTS).

No.	Course	ECT	ECT	Semester
1	Sustainable development: educational theories and International policy	6		1
2	Political planning and institutional policy analysis		6	4
3	Law and sustainable society		3	3
4	Learning for Entrepreneurship		3	3
5	Community development: discourse, theories and paradigms	3		1
6	Worldviews, Cultural education and development	6		1
7	Education, development and change	9		2
8	Human Resources Development and manpower planning		3	4
9	Technology innovations and transfer in third world countries		3	4

B. Basic modules Research Methods and Techniques for Social Sciences (12 ECTS)

No	Course	ECT	ECT	Semester
1	Social Sciences and Research Methods	6		1
2	Advanced qualitative research	3		2
3	Advanced quantitative research	3		2

C. Applied or "Ribbon" modules (21 ECTS)

No	Course	ECT	ECT	Semester
1	Project Cycle Development	6		2
2	Orientation Seminars (interdisciplinary workshops/seminars regarding the 4 pillars of the program: civil engagement and participation, entrepreneurship, community development and poverty alleviation	6		1
3	Leadership and Management	3		1
4	Research seminars (research theme's with sub-theme's) . Democracy, Gender, Civil Participation and Community development . Decentralization, Culture & diversity and Regional Development . Entrepreneurship, Leadership and Management . Poverty & Poverty alleviation, Society, Human Development . Human rights . Etnicity and Social inequity		6	3

D. Thesis Research/Basic Research Modules (36 ECTS)

No	Course	ECT	ECT	Semester
1	Research internship		15	3
2	Preliminary Thesis 3 2e	3		2
3	Master thesis 15 3e		15	3
4	Academic Writing 3 1e	3		1

E. Electives (9 ECTS)

9 ECTs to choose from the optional courses list ECTS.

Appendix 2

Three major branches has been identified within the problem tree, therefore being the three major branches of the target tree as well The three branches of the problem tree are:

1. The branch Government and Policy
2. The branch Sociology and Community Development
3. The branch Economy

The branch Government and policy

During the inter-active workshop of team-members and representatives of the stakeholders it was discussed that government policy is formulated and is still being formulated without consulting with and consent of the stakeholders. Furthermore, there is no exchange of information between policy-makers and the stakeholders and there is no evident use of objective scientific standards while allocating the means. These problems can be solved by educating policy-makers.

While designing the problem and target tree it became clear that all aspects of mal-practices of policy-development and policy-implementation are manifest within the problem tree. While analyzing the strategies it also became clear that there is no possible direct and no short-term solution of this problem. Moreover, it is impossible to tackle the problems directly. However, the project team as well as the representatives of the stakeholders agreed that this branch is so crucial to the development of Suriname that all attempts should be made to nurture this branch in such a way, that Suriname will benefit from it. Therefore, the solution to this problem is not to simply cut down the branch but to nurture it by designing and implementing a masters education and research program in sustainable development, in which (government) policy-makers are being well-trained as well as scholars are being educated to become well-trained policy-makers and highly qualified government personnel.

Emphasize of this masters should be given to the training of experts in identification of the weaknesses in the process of policy-making. Experts with a broader perspective view are

also needed in terms of inter-departmental and inter-discipline collaboration. Policy areas should be approached from different angles at the same time and should also be regarded on objective data. Therefore, with regard to the Branch Government and Policy, the target of the master is aimed on institutional strengthening.

The branch Sociology and Community Development

During the work session the stakeholders and team members also agreed on the importance of the involvement of local communities in development processes. Communities Based Organizations and Non Profit Organizations are the organizations with direct connections to local communities. Therefore knowing there (basic) needs for development and/or improvement of ways of living. While designing and implementing the master education and research program much and careful attention should be given to collaboration with CBO's and NGO 's in order to and with regards to:

- Implement scientific research as a instrument to overall governmental policy-making
- Formulate and implement long term solutions regarding continuation of policy and to prevent ad-hoc policy-making
- Assist communities in their attempts to formulate their own targets in terms of community development
- Community development is a part of (education in) sustainable development
- Education focuses on opportunities of national development
- The reviewing and rewriting of laws, regulations and decrease in order to secure equal distribution of means
- The reviewing and rewriting of laws, regulations and decrease in order to secure control-mechanism
- Emphasize is given to common social attitude.

Collaboration with CBO's and NGO's will strongly nurture the research program of the master in Education in Sustainable Development.

The branch Economy

Last but certainly not least the team-members and representatives of stakeholders agreed on the third branch of the problem tree, which is the Economy branch. Nine problems have been identified. Again, the team was aware of the fact that not all identified problems could be solved directly, but at least the main problems in this area were identified and therefore emphasize could be given with regards to the identification of priority fields of the master and research program itself. In order to achieve equal and more socially accepted distribution of means, it is of great importance that:

- There is a twist of thinking in the area of decision-making
- Formulation of development goals should aimed on overall national development
- Regulations and laws should be revised
- Revision of regulations and laws are prohibitive to economic activities of SME (Small and Medium Enterprises)
- There is a twist of thinking regarding entrepreneurship
- Stimulation of the financing and investment climate

- There is economic growth
- There is an increase of buying capacity and
- An increase of national incentives and poverty alleviation.

Setting the area's and identification of the priority fields such as poverty alleviation for instance will structure the gathering, analyzing and use of data.

After all the work, finally the Master programme (MERSD) was formally launched in October 2010".

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Sustainable Development in Jamaica: The role of Education in achieving Jamaica's Vision 2030

Abstract: *This paper first looks at Sustainable Development and Education for Sustainable Development (ESD) in brief, followed by a description of Jamaica's Vision 2030 and then assess the five roles of ESD from a literature review perceptive in the context of Vision 2030. Using preliminary observation and data collected from students at the University of Technology, Jamaica, the paper looks at four major challenges of ESD and then presents some ideas for the way forward using a web map to look at priorities for sustainability and ESD in achieving Vision 2030.Finally, it presents a brief discussion of the challenges to education for sustainable development using preliminary data gathered from students of the University of Technology, Jamaica, as well as a way forward using a web map to look at priorities for sustainability and ESD in achieving Vision 2030.*

There is this saying that "*there is no poor country that is educated and no country that is educated and poor*". This rhetoric highlights not just the need for education as the engine of growth and development, but also, the fact that such education is needed to transform such country and by extension sustaining it indefinitely.

Sustainable development issues are not new to the world (Corson, 1995). Since the 1970s and certainly since the Brundtland Report in 1987, the notion of sustainable development has taken on a more propelling role in balancing economic interests with that of people, environmental and political development globally (Tilbury, Fein and Schreuder, 2002).

Jamaica is no different in this regard as it seeks to be sustainable in its plans for the future. A signatory to the Agenda 21 agreement at the 1992 Earth Summit in Rio de Janeiro called for a global partnership for sustainable development; through this agreement Jamaica, like many other countries has committed itself to promote sustainability through a great variety of activities and channels. For Jamaica, many plans have been implemented since then, but the most comprehensive is its Vision 2030.

Because of its idealistic features, sustainable development has always been an elusive concept for many and is therefore difficult to conceptualize leading to challenges of operationalizing of the concept in order to make it practical and real in everyday living.

Sustainable Development and Education for Sustainable Development

Sustainable development at its basis definition is development that meets the needs of the present without compromising the fulfillment of the needs of future generations. Education for sustainability which grew out of the 1992 Earth summit has its own challenges in conceptualizing and operationalizing as does its parent concept sustainable development. Since then, various countries have adapted meanings that they can work with and have been trying to implement various activities to promote education for sustainable development.

In 2004, the United Nations Educational, Scientific and Cultural Organization (UNESCO) launched its decade for education for sustainable development (ESD) 2004-2014. In its interim report of 2009, two pedagogical interpretations of ESD were distinguished. First, ESD as a means to transfer the 'appropriate' sets of knowledge, attitudes, values and behaviour; and secondly, ESD as a means to develop people's capacities and opportunities to engage with sustainability issues so that they themselves can determine alternative ways of living. Although there are differences in definitions and focus of sustainable development and education for sustainable development, the process of education is probably the most concrete step any country can take to significantly change mindsets and behaviours in order to achieve sustainability goals.

Literature on ESD

The literature on ESD has burgeoned. According to Gadotti 2010, "sustainability represents an opportunity for the renewal of old education systems founded on competitive principles and values and based on a predatory view of the world and that educating for sustainability means educating for the emergence of a different, possible world." There is little argument that education is a critical tool for achieving sustainable development. In the literature, the themes are wide and varied from issues about values and principles of the Earth Charter initiative relate to educational transformation, namely peace education and education for sustainable development (Toh and Cawagas, 2010).

Jamaica's Vision 2030

Jamaica has embarked on this major thrust to become a first world country by 2030. Dubbed Vision 2030 and using the slogan 'Jamaica the place of choice to raise families, live, work and do business,' is being spearheaded by the Planning Institute of Jamaica in conjunction with many government ministries, NGOs and other stakeholders. Box 1 highlights the key national outcomes that the plan hopes to achieve by the year 2030. Admittedly or not, Jamaica's Vision 2030 is a sustainable development initiative. However, few Jamaicans know and regard it as such.

Box 1 – National Outcomes for Vision 2030 for Jamaica

1. A Healthy and Stable Population
2. World-Class Education and Training
3. Effective Social Protection
4. Authentic and Transformational Culture
5. Security and Safety
6. Effective Governance
7. A Stable Macroeconomy
8. An Enabling Business Environment
9. Strong Economic Infrastructure
10. Energy Security and Efficiency
11. A Technology-Enabled Society
12. Internationally Competitive Industry Structures
13. Sustainable Management and Use of Environmental and Natural Resources
14. Hazard Risk Reduction and Adaptation to Climate Change
15. Sustainable Urban and Rural Development

Critical to the promotion and achievement of those national outcomes is education. Although there are several plans and initiatives occurring in Jamaica currently, these plans lack a sense of cohesive vision. There are many plans but they are fragmented and far removed from average Jamaicans who will be the ones to experience Vision 2030. Box 2 highlights a select few of the national initiatives taking place.

Box 2 – Select National Initiatives Taking Place in Jamaica (up to 2011)

1. The infusion of Environmental Education into all levels of the Educational Curricula in Jamaica
2. The Modernization of the Education Sector
3. The School Feeding Programme
4. National Environmental Societies Trust (NEST), an NGO active in the area of environmental education
5. Jamaica Conservation Development Trust (JCDT), have pooled resources to develop an environmental resource centre
6. Environmental issues are raised by the Caribbean Examinations Council (CXC) in all four of the CXC Sciences, including Biology, Chemistry, Integrated Science, and Physics, as well as Agricultural Science
7. Free Education and Health Care
8. Jamaica is a part of the Caribbean Regional Conference on Education for Sustainable Development, New Approaches for the Future
9. Public Sector Modernization Programme
10. Reform of the Justice System

ESD in Achieving Vision 2030

Education is a social process whereby knowledge, skills and values are developed, shared, and transmitted from people to people and where the outcomes lead to the betterment of society. Considering the importance of education to sustainability, there are several roles for ESD. Using available literature, several roles have been identified and are discussed below.

Firstly, education allows the transfer of appropriate sets of knowledge, attitudes, values and behaviours which ultimately lead to a change in mindsets. For Jamaica to achieve Vision 2030, it must make the commitment immediately to increase literacy at all levels, increase the intake into universities and to have an effective tracking system where no child really gets left behind.

Secondly, education should play the role of promoting education that empowers people, in a holistic, integrated, interdisciplinary, and issue oriented way (Corson 1995). It is this can of education that will lead Vision 2030 in a successful way which will enable Jamaicans to act locally with a global vision and orientation.

Thirdly, education should transform the individual where he/she can make a meaningful contribution to his/her community and by extension the country. For example, Sterling (2001) argues for a paradigm shift away from education that is purely transmissive to that of being transformative. For Vision 2030, both constructs will be needed to achieve the plan due to its multidimensional nature.

Fourthly, education should develop people's capacities and opportunities to engage with sustainability issues so that they themselves can determine alternative ways of living. For Vision 2030, this role allows people to learn to be responsible citizens, wanting to participate in the process, engage in lifelong learning, critical thinking and problem-solving in order to make Jamaica a better place.

Fifthly, education for sustainability helps to create awareness of what the values and the vision is of a country. As such, education plays that critical role in shaping the thrust for sustainable living. It is this kind of education that will drive Vision 2030 so that positive values may be implemented into the systems of everyday living and promotes peace for all individual of the society.

Overall, education is central to improving quality of life. Using education for sustainable development, achieves the sustainable development principles. According to UNESCO 2009, this helps to raise the economic status of families; it improves life conditions, lowers infant mortality, and improves the educational

attainment of the next generation, thereby raising the next generation's chances for economic and social well-being.

Challenges to ESD in Jamaica

Achieving Vision 2030 is faced with many challenges amidst economics, but some have little to do with money. Four major challenges are identified and are discussed below.

Firstly, Vision 2030 is being built on inappropriate values. In my undergraduate classes over a two year period (2009-2011), I asked 150 students what is it that Jamaicans value and students always struggle to respond. When they do, the majority of responses are always about music, money and sports. Most people could not specify what they valued or what they thought Jamaicans valued. When the question was asked "what kinds of values will help Jamaica to Achieve Vision 2030", most of the responses had to do with valuing education, ethics, human rights and people voting on issues instead of partisan politics. This shows that Vision 2030 is being built without a clear understanding of what the vision seeks to achieve amongst many Jamaicans. This has the potential to impact the vision negatively.

Secondly, there is high degree of unawareness of Vision 2030 amongst the Jamaican population. Using the same preliminary results of 150 students at the University of Technology, Jamaica, when asked about their awareness of Vision 2030, only 10 % of the students have even heard of the vision. Most of them found it funny and thought the question was a joke. Immediately persons started to ask; When? Where? And how come they have never heard that mentioned anywhere in the media. This tells a lot about the vision that it is not in the hearts of the people and is not a part of the Jamaican lingua. As such, it will be very difficult to achieve a vision when the average person is unaware of the vision moreover; to know their role in shaping this vision.

Thirdly, because there is a limited awareness of Vision 2030, this impacts, the psychological identification with the Vision. For example, when the average Jamaican speaks, they do not speak about "my country" and to the benefit of "my country". As such, the attitudes and discipline needed to achieve the vision is in jeopardy.

A fourth challenge of ESD is that of quality of life. Most of the principles of sustainable development and ESD involve quality of life. In Jamaica, there is little talk about quality of life. Other phrases might be used, but the vast majority of people do not speak the language consistent with having a good quality of life. This is in part due to low levels of academic achievement at the tertiary level and the fact that the concept it not a way of life for people to talk about.

The Way Forward

For Vision 2030 to be a reality, it will require major changes to the sociocultural landscape of the society. The media will need to play a greater role in social change and awareness. There will also need to be major curriculum changes in all levels of the education system for ESD and for quality of life to be adapted as a way of life amongst Jamaicans. Finally, a psychological identification amongst Jamaican's with the vision will be needed so as to develop the right values, attitudes and behaviours to achieve the change in mindsets which will lead to the attainment of Vision 2030. Figure 1 shows some possible links among priority measures in order to achieve Vision 2030.

The diagram suggests that an increase in education for sustainability can impact new values, attitudes and commitment and at the same time developing a quality of life orientation. This can lead to increase social capital, capacity building and evaluation which lead to greater individual and media awareness which contributes to a greater psychological identification of Vision 2030. This should lead to a greater level of readiness of the people for Vision 2030 and, if managed effectively, then ESD can become the centre of development in Jamaica and for Vision 2030. In figure 1, double arrows suggest areas where the priorities may be mutually reinforcing.

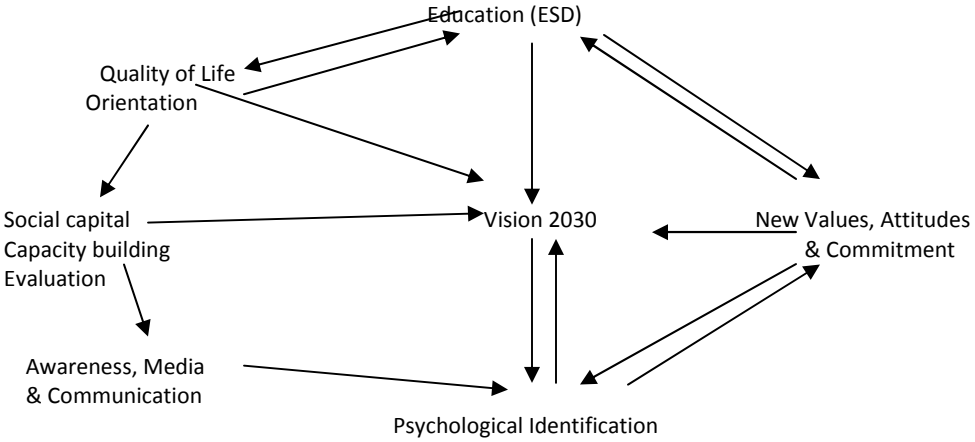

Figure 1 Priorities for Sustainability and ESD in Achieving Vision 2030 (Some correlational links)

Conclusion

There can be no achievement of sustainable development by any successful measure of Vision 2030 without education for sustainable development. The main reason, as put forward by UNESCO 2009, is that EDS stresses new forms of learning, competence and skills development to create a new kind of citizen and a new kind of educational system. Undoubtedly, education is one of the main engines for transforming lives in a more holistic way. Sustainable development emphasizes changing people's behaviours, lifestyles and thinking in new directions. This paper briefly looked at five roles education for sustainable development has to play in Jamaica's vision 2030 as a catalyst for knowledge, attitudes, values and behaviours; empowerment; transformation of the individuals; develop people's capacities and opportunities and to create awareness which ultimately leads to a better quality of life. The paper also presents four challenges to ESD and looked at some of the ways in which it can help to alleviate the challenges of achieving Vision 2030 by using a web map to look at priorities for sustainability and ESD in achieving Vision 2030.

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Education for Sustainable Development (ESD): How to grow and expand a community based ESD project

Abstract: *Sandwatch is a UNESCO sponsored, community environmental and climate change program that stresses grass roots participation by community members. It is active in almost sixty countries worldwide, mostly small island developing states and has been cited in several UNESCO and Commonwealth 'best practices' publications. Sandwatch has been unusually effective in mobilizing and networking schools, community groups and non-governmental organizations globally and the following paper describes some of the tactics used in achieving this.*

So you have started an educational or environmental project within your community to address a local problem with specific goals in mind and now you want to know what strategies can be used to promote, publicize and expand your project. There is of course no right or wrong way of promoting a project; each community is different and has its own set of unique challenges and possible solutions. Communities also differ greatly in the type, amount and quality of resources they can bring to bear on any particular issue. So it falls on you, the project leader, to synthesize a workable, practical set of steps that can be taken towards an achievable set of goals.

By experimenting with a variety of different approaches, some tried and true, such as community meetings or writing letters to the editor, and some more contemporary; such as establishing a website or your own on-line video channel, you will quickly learn what works and what doesn't.

This article is designed to give you some practical advice on what has worked for similar small grass roots community based projects. It is a 'bare bones' set of suggestions and observations that hopefully will stimulate you and your colleagues creative juices and start you thinking 'outside of the box' about techniques that are both effective and fun.

The one common feature in all of these ideas is successfully harnessing your team's creativity, initiative and enthusiasm. Nothing will make your program a success faster than if it can combine effective action with fun, and if you can throw in the possibility of learning some high demand technical skills, the possibilities are endless.

Desktop Publishing and Newsletters

One of the simplest yet most effect strategies you can use to publicizing and promote your project is to regularly publish and distribute a project newsletter several times a year. With just a basic understanding of word processing, you can create professional looking newsletters and other publications with minimal training or effort.

This can be accomplished by using the widely available Microsoft Publisher software, that usually comes bundled as part of MS-Office Suite, though it can also be purchased as a standalone product. By using MS-Publisher, professional looking newsletters and other publications (flyers, posters, invitations etc) can quickly and easily be produced using the free 'design templates' that come pre-installed within the program.
For example if you select one of the pre-made newsletter templates you can then add your own your stories, articles and digital photographs or cut and paste text and photos from other sources and within an hour or so, you have a very professional looking newsletter.

Additional templates can also be found online at a number of websites, including Microsoft's that are free to download and use. For example go to www.microsoft.com and do a search of their website using the key words "FrontPage templates" to find many free designs.

An excellent practice is to have your team; especially students write the articles and take the photographs themselves. Desktop publishing gives students' hands-on experience and improves their writing, spelling, grammar, comprehension and interviewing skills, all of which helps to boost their confidence and self-esteem. This is particularly true if their articles and photos are reprinted in other publications.

Another advantage of having a regularly published newsletter is that it provides articles and photographs that you can also send to other publications, such as your local newspapers or even regional organizations and environmental groups for inclusion in their publications.
In this way you can quickly build up a useful network of contacts with likeminded people and groups that can be an invaluable source of support and even funding.

An offer of reciprocity is often an excellent tactic to use when establishing initial contact with a new organization. Offer to print a story on their project in your newsletter if they print one of your articles in theirs. Having at least one good photo to accompany and illustrate your story is also highly recommended.

Once created, a newsletter can be distributed electronically via the internet as well as by the usual printing and photocopying of issues for distribution within your community. Charging a nominal fee or asking for a voluntary donation for your newsletter can also serve to help cover printing costs.

Please note, that most photo or graphic rich documents, such as newsletters usually produce very large sized files that are *not* suitable for emailing or posting to websites.

For this reason, it is recommended that such publications are converted into a *standard PDF format* first before emailing or posting to a website. This can be easily accomplished by using a free PDF converter utility, numerous examples of which can be found by 'googling' the words "PDF creator, converter".

By converting from the original MS-Publisher or MS-Word document format into a PDF document, the file size will be reduced by approximately 80% with little visible loss of photographic quality.

Using MS-Publisher to create their quarterly newsletter, 'The Sandwatcher', the Caribbean based Sandwatch Foundation; a coastal environmental project has been able to create a publication featuring articles and photographs from dozens of contributors from all over the world.
Each issue is written and produced by students and educators mostly on Small Island Developing States.
www.sandwatch.org

Using Email Effectively

Of all the 'new' high tech communications devices that are currently available, the humble email application is probably the simplest and most cost effective tool at your disposal. Using email it is possible to quickly and easily establish a wide ranging network of contacts both locally and internationally.

A good practice to get into the habit of is to respond to any relevant email message you receive, even if only to acknowledge receipt of it or to inform the sender that you are unable to assist them. Most people appreciate the courtesy of a response, even if it is to say that you are unable to help them.

This is especially true if the person has been of assistance to you or your organisation. Nothing will sour a potentially useful professional contact than not acknowledging their assistance or responding to a follow-up message.

Be proactive. There is a world of possible contacts and organisations out there that could potentially be of immense value to you and your project, if you only take the time to make contact with them.
Use search engines such as Google or Yahoo to research organisations that have similar goals to yours and send them a brief email introducing yourself and your groups' objectives.

If they respond positively then suggest ways in which both your groups could work together and mutually support each other. Offer to write a story on them in your newsletter or ask them if they are aware of sources of funding or training that might be available. The success of these and similar tactics are limited only by how many people and organisations you can contact in order to build mutually beneficial relationships.

Developing Your Own Website

With the massive growth of internet based communications and products globally, every organization, no matter how small, has to have their own website.

Often when you contact a potential funding agency or even an individual that might be interested in supporting your cause, the first thing they do is 'Google' your organisation and check out its website. Not having a website can be (mis)interpreted as an indication that you are not a serious or well organised group or even that your organization is not legitimate.

Fortunately creating websites is a relatively simple and inexpensive process for anyone with a good working knowledge of word processing or related computer skills.
There are many website creation programmes on the market that differ greatly in complexity and price, but a good starting programme for beginners is Microsoft's FrontPage. Similar to the MS-Publisher newsletter program mentioned above, it allows novice users to quickly cut and paste text and photos into any one of a large number of pre-made website templates. In this way you can easily establish a simple yet professional looking website on your computer.

Once you have created your website using FrontPage or a similar product you now have to have it hosted online so that others can view it. This is accomplished by uploading your program to a private website hosting company or to your local internet service provider (ISP). As there are literally hundreds of thousands of web hosting companies worldwide you might have to investigate which of them meets your needs and budget best.

Often the easiest method, if not necessarily the cheapest, is to ask the local company that provides your internet access to help you set up a website with them.
In this way you can quickly build up a working relationship with them that can be invaluable in terms of technical support that you may need or even as a source of possible funding for your project.
Offering to mention on your website and newsletter that you're local IPS is hosting your site and helping to maintain it, is a common way of reducing costs and gaining some local corporate sponsorship.

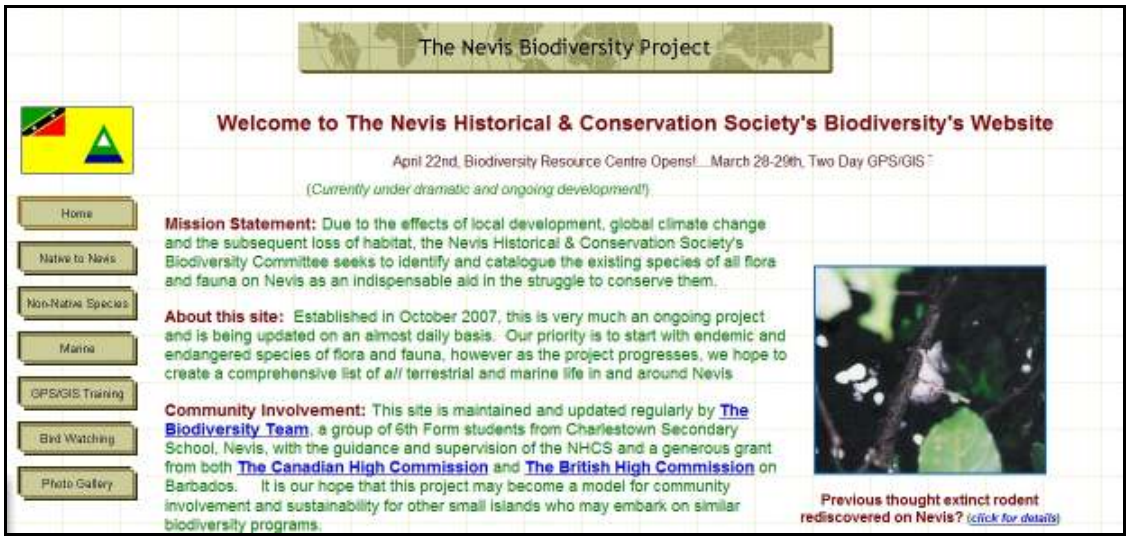
High school students often have much better computer skills than their teachers, so another good tactic to investigate is having a local student or two help build and maintain your website as a personal project or even as a class project for credits. In this way not only are you benefiting from their skills at little cost, but they are also gaining valuable real world work experience and improving their technical skills.

Regardless of who creates and maintains your website there two important points to remember.

- Regularly update your website with new stories, photos, links and other information. Nothing will turn away viewers of your website faster than seeing the same old information and photographs on it week after week, month after month.

- Also make sure that more than one person in your organisation knows how to access and maintain the website. In this way, if your webmaster should leave your group, the website isn't abandoned because no one else knows how to do the work.

Again, students are usually far more computer savvy and technically knowledgeable than most teachers, even computer teachers, so they are an invaluable source of free information and labour for your project; don't be afraid to use them. They will be learning new skills and experiences just by helping you, so it is a mutually beneficial relationship. And as often happens, once a student starts working on an interesting and challenging project it can open their eyes to a range of possibilities that may not have occurred to them via usual teaching methods.



Using the MS-FrontPage application and its pre-designed website templates, 6th form high school students on the island of Nevis, Eastern Caribbean were able to create and maintain a biodiversity website, a first in the region. www.bio-diversity-nevis.org

Using Social Networking Websites to Your Advantage

You may have noticed the rapidly growing popularity of so-called 'social networking sites', such as MySpace, Facebook and Twitter. Students have been using these programs effectively for several years but it is only recently that educators and other professionals have started to investigate their usefulness as a teaching or even marketing tools. There are several advantages in using these programs to publicize and network your project. They are totally free to use, they are extremely easy to use, students love both using them and finding new uses for them and they provide a potential network audience of tens of millions of viewers.

One of the simplest uses you can exploit is establishing a 'Project Forum' on Facebook. This can act as a simplified project website but it is also a fast and easy way to let large numbers of people know basic information about your project and about upcoming events that your group is planning. Once you have set up your 'Forum' and let all your 'Facebook friends' know about it, they can choose to join your forum, post questions, answers, comments, suggestions, links to related groups/sites and even add photos and videos. Each posting can also be forwarded automatically to everyone on your 'friends list' so it is very easy for everyone to keep abreast of the latest updates and developments.

Utilizing Video in Support of Your Project

YouTube is also a potentially powerful tool, like Facebook, it is free to use and has numerous options and tools that can be used to highlight and publicize your project to a

wide audience. You Tube is a video hosting website, on which you can establish your own dedicated video channel, which is a bit like having your own TV station, which people can subscribe to for free and every time you post a new video, they are automatically informed. It even informs you as to how many times your videos have been viewed, which is useful data as it can indicate how successful you have been in publicizing your project.

Using this facility and widely available inexpensive digital video cameras (even in cell phones) it is extremely easy to film, edit and produce simple videos or even short movies. Once again its usefulness is limited only by the creativity and resourcefulness of your team; technical skills are not a prerequisite!

To get started, I would recommend having your team members or students conduct video interviews with local officials or visiting experts. Then you simply transfer the video from your camera onto a computer, then log into YouTube and upload the video. It is really no more difficult than sending an email as the process is almost identical.

Don't forget to email the person whom you interviewed the link to their YouTube video! In most cases they will forward the link to all their friends and coworkers which serves to further promote your project and video channel.

Once you and your students see how simple and fun this video utility can be to use, you can easily make the process even more creative by using freely available video editing software to add opening titles, closing credits, back ground music, sub-titles and a host of other special effects. Essentially you can make you own short movies or documentaries.

Windows based computers come preloaded with a program called Windows Movie Maker (it's called Windows Live Movie Maker in Windows 7) that is one of the easiest ways to edit and produce simple videos. Microsoft even has a series of short "how-to" videos on their website that shows novice users how to start using the product.
www.microsoft.com/windowsxp/using/moviemaker/getstarted/default.mspx

If you have ever created a PowerPoint Presentation, then you can use Movie Maker as the process is almost identical, except you cut and paste short video clips rather than static photos.
I have seen teachers and students start to produce edited and modified videos within an hour or two of using the program for the first time. It's really that easy.

I have been told that Mac has a very similar product called I-movie that is even easier to use than Movie Maker.

Using MS-Movie Maker for the first time, primary students and teachers at the Hope Town School, in the Bahamas were able to create and edit a 3 minute video about how climate change is effecting their local environment and post it on YouTube. Their video went on to win $750USD in a UNESCO sponsored climate change video contest! (Their video can be seen at http://www.youtube.com/watch?v=N56eMXfeIV0)

The Do's and Don'ts of PowerPoint

An invaluable and widely used tool is the presentation program PowerPoint.
I am sure everyone has seen PowerPoint presentations at workshops, seminars, professional development meetings etc. It's basically a digital slide show designed to quickly and effectively broadcast ideas to an audience. It is simple to learn and usually comes preinstalled with MS-Office Suite. As with Publisher and FrontPage, it also has lots of pre-made design templates for you to use freely.

Given that a picture is worth a thousand words, PowerPoint is a great program and well worth learning, especially for use at community meetings, science fairs and other gatherings that you might want to showcase your project and its goals.

As effective as PowerPoint is, there are a few recommended guidelines to follow as to its effective use:

- Try to limit the number of slides in a presentation to a maximum of 20.
- Use a relevant photo or two on each slide with short bullet points to highlight specific points you want to make.

- Try if possible to avoid slides that are text heavy and require your audience to do a lot of reading.
- Choose a font style, size and colour that is easy to read at a distance, especially if it printed over the top of a photograph. I.e., don't use a cursive, dark blue font to label a dark photograph.

PowerPoint is designed to be a presentation aid to emphasize your main points; it should not be used as the sole source of your presentation.

Another advantage of PowerPoint is that it can easily be adapted for use on TV! Community TV channels are always eager to find new locally produced content for their viewers and a well-made, relevant PowerPoint presentation that highlights a local environmental project or educational initiative will often be shown several times per day/week, usually for free.

In the Cook Islands, South Pacific more than a dozen schools scattered across several islands got together and each created PowerPoint presentations highlighting how climate change, over development and other issues has already impacted their fragile environments. Use of old photographs to show 'before & after' comparisons are a particularly powerful tool.
*(**Photo:** Avarua Beach, Ruatonga, courtesy of the St. Joseph's School Sandwatch Team)*

Make Your Local Media Work for You

Whenever you have a special event such as a guest speaker, a field trip, a training session or similar, make sure to create and send out a one (1) page *'press release'* to all local media outlets, newspapers, radio and TV. The press release should be sent out a week before the scheduled event, so as to give the media a chance to publicize it before the event takes place, and to send a representative or reporter to cover the event.

If the local media doesn't send reporters, cameramen or photographers to cover your event you should write a short news article yourself and send it to them.
Invariably they will use your story especially if it's short, to the point and is accompanied by several photographs of happy, smiling students listening to a guest speaker or learning some new technical skills or working to improve the local environment.

Regularly submitting articles to local newspapers and making yourself available to speak on about your project and related issues on local TV and radio are also excellent ways to keep the public engaged and informed about your goals.

To draw attention to climate change and other environmental issues Sandwatch students of Stanmore Bay Primary School in Auckland, New Zealand 'adopted' a critically endangered Maui Dolphin and regularly used both the local and internet based media to 'get the word out' about their projects.
Remember, newspapers love to print stories featuring smiling children doing good deeds! (Photo: Teacher Robyn Bennet)

Conclusion

As stated at the beginning of this chapter, there is no right and wrong way of promoting your project, each community is different with its own set of unique challenges and solutions. The key is for you and your group to be equally unique in your outlook, initiative and creativity.

Don't be afraid to use a variety of different approaches, some will work and some won't, that's how you learn. Involve students and young people as much as possible; try to instill in them both a sense of enthusiasm and a sense of community by not only involving them in the project but also by encouraging the learning of new technical skills, real world job experiences and exposure to experts in fields and disciplines that they might not otherwise have contact.

Creatively use all the available computer technologies, use the media, use the wider global community to showcase and advertise your project and especially highlight your successes!
There is little point in having developed a truly excellent grass-roots educational or environmental program if no one outside of your small group knows anything about it.

Be proactive, don't wait for others to come and ask "*Hey how did you accomplish that?*" go to them first and say "*Here is what we are planning, can you help?*"

Don't reinvent the wheel, ask other groups, even in other countries with similar objectives and goals what have they tried, what worked, and what didn't and adapt their ideas for your own community and build upon their successes.

Remember "*Success breeds success"*, and it's a lot easier to solve a problem and get ongoing support and funding with a series of small successful steps than trying to solve a huge problem with one grand complex plan.

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Sandwatch: A Practical Issue Based Action-oriented Approach to ESD
Cambers, Belmar, Brito-Feliz, Diamond, Key, Paul and Townsend.

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Small Scale Salt Production and Heritage Management Planning in The Bahamas: Community Based Sustainable Program Development A Viable Option?

Abstract*: This study addresses a grassroots sustainable development program that was initiated in the out islands of The Bahamas; Rum Cay. In this case, members of the community were asked to participate in and identify environmentally sustainable projects, as opposed to those that had been previously identified by 'outside' foreign agencies. This program was conducted through cooperative efforts between Eckerd College in the United States, The Antiquities, Monuments and Museums Corporation of The Bahamas, The Center for Caribbean Archaeology and Environmental Research and The NESOI Foundation.*

Brief Review of Economic History of Rum Cay

Settled in the late 18th Century by British Loyalists, Rum Cay once prospered as one of the largest exporters of salt and pineapples in The Bahamas. By the early 1900s hurricanes and a failing salt industry resulted in a steep decline in economic opportunities for those living on the island. Development projects, initiated by foreign investors have failed to thrive and the geographic isolation of this island is not conducive to the development of family owned hotels or tourism industries. Therefore, as with many out-lying islands, residents are forced to seek employment abroad, while children reside on the island with extended families. Currently, fewer than ninety people reside on this island. During the course of this study several residents expressed their desire to remain on Rum Cay; to raise their families on the island and to be able to earn a living from locally derived resources. Therefore, the focus of this study addresses viable sources of revenue based on resources that can be produced locally and that can provide a sustainable source of short and long term income for those residing on Rum Cay.

Heritage Tourism: Not Always the Answer

Heritage tourism has been described by many anthropologists and political analysts as the quintessential means for revenue generation in conjunction with cultural resource management initiatives (Chambers: 1999; Di Giovine:2002; McKercher: 2008). However, these initiatives are not the most viable solution for economic stability or heritage management in communities that are not easily accessed by national or international tourists. In the case of Rum Cay, flights are limited and the promise of an extensive high-end tourism complex has yet to come to fruition. Most tourists arrive in Rum Cay by way of privately held vessels, as a provision stop while in route to other

islands. Thus, the Last Stop is an apropos name for one of the islands only shops. Until development projects are completed and tourism becomes a viable source of income it is imperative that islanders seek out other forms of revenue. During the course of this research community members were asked to identify viable and impractical industries on the island. Everyone interviewed expressed concern with the delay of the development project currently slated for the island. Most felt that the government had abandoned them by not forcing developers to complete this project in a timely manner.

In the absence of an economically stable tourist based center, i.e., hotel, seasonal residential, vacation destination, revenue must be generated through other venues. Several people interviewed expressed concern with illegal revenue generating activities found on other islands. A few residents of Rum Cay indicated that they had moved to the island to avoid the drug-trade environment of other islands. As one participant stated "Our children need to be able to come home and they need to be able to earn an *honest* living. But what do they have to come back to now? Nothing." This study addresses the viability of the development of an economically and environmentally sustainable development plan; salt production and distribution initiatives.

During the course of this study EDS workshops were conducted with Rum Cay All Ages School and various owners of small businesses on the island to provide residents with the forum to identify sustainable economic program initiatives. Students and local business owners readily identified the problems associated with tourism based industrial efforts. In particular, they recognized the lack of economic and political power that they, themselves had in the decision-making processes of these endeavours. Past efforts by government agencies and NGOs have focused upon bringing 'specialists' in from abroad. In this case members of the community were asked to identify at least one economically and environmentally viable sustainable development project.

Salt: The Untapped Gold Mine

By the early 19th Century The Bahamas was exporting three million bushels of salt from twenty-five acres (Ministry of Education and Culture 1980:8). During this time the population of Rum Cay was close to nine hundred (900) and by 1849 Rum Cay was exporting more than 500,000 bushels of salt and was considered the most productive salt producer in The Bahamas (Craton 1998:396; Ministry of Education and Culture 1980:29). However, by the late 1800s high American import tariffs brought about a complete collapse of the salt industry on Rum Cay. Salt ponds are still raked on the island. However, these salts are only used for local consumption and are not exported for sale. Salt represents the most abundant resource on Rum Cay today.

The market for exotic or gourmet salts has increased dramatically during the past several years. These high-end salts retail for as much as $8 to $27 for 2 to 6 ounce containers! (www.salttraders.com/Detail.bok?no=7,

http://www.earthy.com/Salts_of_the_World_C65.cfm,
http://www.saltworks.us/shop/product.asp?idProduct=277).

These salts are marketed as 'finishing salts'. For example, gourmet finishing salts samples of six 2 ounce containers are sold through Meadowlands for $57.95 (Figure 1).

Meadowlands Gourmet Salt
6 Two Ounce Containers $57.95
Figure 1

Kelley Scudder and Eckerd College student, Ruby Belik took samples of the Rum Cay salt to distributors in the United States. A gourmet salt company, Briarwood, sampled some of the salts from Rum Cay and is working to market them in the United States. Currently, This Company is working with residents on Rum Cay to develop a comprehensive marketing strategy to ensure that profits are maximized for Rum Cay salt producers and that adequate distribution can be ensured.

Until the long term demand for this market could be determined it was highly recommended that production costs be minimized and developed so that production can increase, with minimal modifications as needed. Currently, salt is being processed on Rum Cay utilizing the same methods used in the 19th Century, with minor modifications (Figure 2).

Salt Processing in the Nineteenth Century

1.Grant of Salt Ponds

2. Salt Ponds Divided into Shares

3. Shares Divided into Pans (shallow flats of ½ acre each)

4. Salt Water Irrigation of Pans (by canal/hand)

5. Evaporation by the Sun

6. Deposits of Saline Crystals

7. Raking of the Salt into Brownish Heaps

8. Drying and Bleaching by the Sun

9. Stored under Thatched Roof huts

10. Shovelled into Bags and/or Baskets

11. Transported to Sea

12. Loaded onto Tankers for Export

Figure2
Salt Processing in the Nineteenth Century by Michael Cartwright

The modification of this process would be minimal as most all salts used for local consumption are still processed in this manner. Should demand increase dramatically, the brined additive and conveyor belt system used in the twentieth century could be readily implemented. However, it should be noted that the primary marketing strategy for exotic salts relies heavily on the concept of cottage based industry. Once industrialized production occurs the marketing approach would have to shift accordingly. Interviews and surveys of local residents indicated that the development and implementation of Educational Sustainable Development projects would require older residents, who still hold a great understanding of salt raking and processing, to become active participants in the educational process. Just as children still learn traditional medicine and softwood procurement and process from more mature members of the community, they would also benefit greatly from formalized training programs developed and managed by those most familiar with the processes. This type of locally based, semi-formal educational initiative is crucial to the success of this ESD in

that the older residents still retain a working knowledge and understanding of these processes.

One of the problems identified in exportation of Rum Cay salt on a larger scale, is that of transportation. Limited mail boat service and customs procedures do not make mailing of salts a viable option. Currently, whenever residents of Rum Cay visit the US, they bring salts as checked luggage. This is problematic on several levels. First, there is no consistency in timely delivery. Secondly, the cost of excess baggage has increased significantly. Thirdly, this system relies on the cooperative efforts of islanders transporting the salts, contacts in Miami who are willing to serve as drop points, and the efforts of additional volunteers, who are willing to transport the product from Miami to St. Petersburg, Florida. Until the demand increase becomes sufficient enough to establish an incentive for consistent production and a more efficient means of transportation is identified, the viability of salt production, as a means to economic stability will not be possible.

In the past, well intended outside agents have sent economic and marketing specialists to the island in order to 'educate' the community on the development of economically viable programs. These efforts have included workshops on the manufacturing of seashell jewellery and items for the tourism industry produced from glass and shells. Neither project was economically viable in that similar goods are already available in Nassau and can be purchased at an extremely low cost from distributors in nearby Haiti and the Dominican Republic.

As indicated in the case of Rum Cay, ESD programs are often developed externally by governing agencies or NGOs, with limited regard to the community at large. It is imperative that communities be given the opportunity, not only to implement programs, but to be an integral part of the program development. Although scientists, politicians, economists and other agents may have a great deal to offer with regard to logistical support, it is those living within any community who have a comprehensive understanding of cultural and natural resources available to them. . Rubber stamped program development does not work; what works in Nassau will not necessarily work in Rum Cay. In order for Education for Sustainable Development Programs to become effective in any community they must be developed from within.

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Education for Sustainable Development in Curaçao

Education for Sustainable Development (ESD) in Curaçao is in its infant stages compared to some of the other island attending the UNESCO workshop on ESD in Jamaica in from 26 to 28 October 2010. There is no general policy on the matter of ESD in Curaçao. Schools on an *ad hoc* basis dedicate attention to ESD. Non-Governmental Organizations (NGOs) play an important role in ESD with two of these being *Friends of the Earth* and *Carmabi* (www.carmbi.org).

Curaçao, with an area of 444 square kilometres, since 10 October 2010 has become an autonomous country within the Kingdom of the Netherlands and is inhabited by approximately 142,180 (Curacao Bureau of Statistics 2010) inhabitants of over forty nationalities. It has three official languages, Dutch, Papiamento and English. The Dutch Kingdom is currently made up of the Netherlands, *Aruba, Curaçao* and *St. Maarten*. Aruba, Curaçao and St. Maarten are Dutch overseas, self-governing countries in the Caribbean. Defence and foreign affairs are Kingdom responsibilities, while the people hold Dutch nationality and citizenship and have full mobility to the Netherlands. *Bonaire, Saba* and *St. Eustatius* can now be defined as a type of Dutch municipality. Previously, the Kingdom of the Netherlands was made up of the Netherlands, the Netherlands Antilles and Aruba. The Netherlands Antilles and Aruba were Dutch overseas self-governing countries. The Netherlands Antilles was a federation of the five islands: Curaçao, Bonaire, Saba, St. Eustatius, and St. Maarten. The Netherlands Antilles went through a process of constitutional change. These changes took effect in on 10 October 2010. After implementation, Curaçao was freed from a double bureaucratic layer. The federal government layer of the country the Netherlands Antilles ceased to exist and the island government of Curaçao now only has a single layer of government. The expectations are that this will not only lower the cost of government but will also lead to a more effective and decisive government that will be able to support the development of the island.

On 10 October 2010, Curaçao became an autonomous country within the Dutch Kingdom. On that day, Gerrit Schotte a young man of 36 years old became the First Prime Minister of the new country. He campaigned on the issue of sustainability, especially green energy. The expectations are high, especially on the issue of sustainable development and more specific green energy.

Two years ago, on 10 March 2008, *Friends of the Earth* (Amigu di Tera[9]) sent several youngsters on two international expeditions to Antarctica. The expedition was headed by the Englishman Robert Swan[10] also known as the Ice Man.

2

Three people of the island with Robert Swan on Antarctica

After they returned they became spokespersons for ESD. In 2009, two of these youngsters created the *'Green Bus'* and lived for several days in a sustainable way, communicating via the media and inviting the public into the bus. They demonstrated that living sustainable was possible.

Green bus

A local sportsman and activist, Ryan de Jongh raised national awareness for sustainable development when he kayaked around the island two years ago on 10 and 11 November 2008 and again from St. Maarten to Curaçao a year ago, arriving on 27 December 2009 in the harbour of Curaçao.

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ww.cbs.an/population/population_b3b.asp"Cu

This trip took 22 days and the distance covered was over 1600 kilometers[11]. He did this to raise awareness for ESD and raise funds for the foundation Carmabi to open a visitor's center. The objectives of this foundation are: conservation, research and education. Last year the government cut the subsidy to this foundation by seventy-five percent.

These two projects were very successful as the news media played an important role and the whole community was involved. The agenda for these two events showcased sustainability, but still the policy making process is slow and there wasn't a real spot in the education program of the island dedicated to ESD goals. Students are taught subjects, like science, in the traditional program, along with the very successful educational program that Carmabi has been offering in schools since 1985; the program was incorporated into the school program in 1997[12].

This is all about to change with the establishment of the *UNESCO Chair, Caribbean Small Island Developing States* that will systematically organize ESD on an academic level, with the objective to disseminate information to all levels of society via schools and media. The Chair is part of the University of the Netherlands Antilles (UNA)[13] and is a joint venture with Carmabi.

The university is carefully positioning the Chair locally and regionally by networking. The UNA adopted sustainable development as its research goal in 2005, but real progress has been slow. In 2010, as the Chair has begun to operate, everything is in place for continued progress and an international conference has been planned for March 2011.

The case of Curaçao demonstrates that youth should be especially targeted for ESD program development, as evidenced in the Antarctica and kayak events by creating local role models, covered by mass media and especially new media, can be extremely effective. They not only create enthusiasm but can effect permanent change if the efforts are well executed.

In the 1980s Curaçao had to become active in developing its economy. This was a response to a number of negative impacts on the economy, including the closing of the Shell refinery in Curaçao in 1985, a recession in the international ship repair business, damage to tourism resulting from the devaluation of the Venezuelan Bolivar in 1983, and a change in American fiscal policy that affected the financial sector in 1987.

Curaçao Bureau of Statistics 2010

e.com/archives/54-ryan-de-jongh-completed-clear-water-challenge-3

[12] http://www.carmabi.org/education

[13] www.una.an

The role models for Curaçao were Singapore, Barbados and Aruba. Still, it took until 2005 for Curaçao to see economic growth. Initially sustainability was not a priority, but things have changed. Increasingly stakeholders are demanding that development be sustainable. This is a very sensitive matter as the modernization of Curaçao started with the arrival of the oil refinery in 1918, and expanded later with the development of tourism. Today these two sectors still play an important role and have a significant impact on the sustainability of developments on the island.

In 2005 the University of the Netherlands Antilles (UNA) published *An Initial Approach Towards Integral Development: The view of the Kingdom from a Caribbean perspective* (*Een aanzet tot integrale ontwikkeling; Bezien vanuit het Caribische deel van het Koninkrijk*). This was followed by the annual *UNA Publications 2006* which was dedicated to the topic of sustainable development, but still there has not been a serious public debate on sustainable development.

The idea of sustainable development is not new. People around the world have, for a long time, recognised the need for balance in our societies between the environment, society and the economy. What is new is the term, and the ways in which it is being used. As the world is becoming smaller and more complex, it is becoming harder to balance these interests successfully. Sustainable Development is an attempt to do just that. The United Nations and the World Bank played an important role in defining sustainable development and putting on the global agenda. There are many definitions, but the key point is that for a nation to develop in a sustainable way, it must consider and balance three factors – economic, social and environmental. The advancement of one without the others will lead to unbalanced and unsustainable development. In other words, there is a need to balance the three P's (People, Planet and Profit).

One of the areas that is of concern to the *United Nations Department of Economic and Social Affairs Division for Sustainable Development* (UNDESA-DSD) is Small Island Developing States (SIDS). The *Rio Earth Summit*, held in Rio de Janeiro in 1992, started a discussion on the governance of SIDS. It became increasingly clear that SIDS are the territories that will notice the negative effects of our modern lifestyles first and in time will be the ones that are most sensitive to the impact of these effects (especially global climate change). However, in addition to global effects, SIDS faces a series of specific, localized problems and should be very careful with their long term development strategies. It is a cliché to say that, "*In SIDS there is less room for error*".

The practical problems SIDS are encountering are the following:

- Limited and finite space, mandates the need for careful planning to manage or limit the amount of development
- Little or no agricultural production, resulting in significant import of goods (and associated pollution from packaging materials)
- High levels of imported goods means high levels of exported hard currency and loss of local capital for investment

- Few natural resources that can be extracted sustainably
- A very limited internal financial and consumer market.

Globally, the debate on sustainable development changed after three events; the devastation of Hurricane Katrina in 2005, the publication of Al Gore's *An Inconvenient Truth* in 2006, and the price of crude oil passing $100/barrel barrier by the end 2007. Sustainable development is no longer an issue for activists and small left leaning political parties, but has become a mainstream issue.

In 2005, a national conference hosted by the University of the Netherlands Antilles on the development of the island favoured the idea of sustainable development and adopted the Millennium Development Goals and the concept of a Small Island Developing State and a theoretical framework for sustainable development has evolved for Curaçao since then.

The first elements of this framework are the three P's: *Planet, People and Profit*.
An article by Veld discussed the concept of Master of the Universe, which he contrasted with the concept of the indigenous people of the new world.
Master of the Universe refers to the philosophy that humans rule, that they are separate from nature and that they need to conquer and subjugate nature in order to develop humanity. Native Americans however see the human as part of nature and live and develop in harmony with nature and not at its expense. The concepts of sustainable development give rise to the rebirth of the Indigenous philosophy.

Sustainable development is advanced in an institutional setting. This setting can be described as an arrangement of organizations that can be grouped as Government and Governmental Organizations representing *People*, Non-Governmental Organizations representing *Planet* and Profit Organizations representing *Profit* (*see Figure 1*)

Classification of organizations and the three P's.

Public Domain (People)	Civil Society (Planet)	Private Market (Profit)
Inter-governmental Organizations (IGO)	International Non Governmental Organizations (INGO)	Multi National Corporations (MNC) or Global Corporations
Core Government	Associations	International Organizations
Semi Government	Foundations	Captive Market

On 26 October 1983, 25 years ago, the Netherlands Antilles became the first Associate Member of UNESCO, leading the way for five other Associate Members. And Willemstad, Curaçao was put on the World Heritage List in 1997. But Curacao has focused on education, especially on instruction in the native language as the language of instruction in schools.

At the occasion of the celebration of the 25th anniversary of Associate Membership, the Minister of Education stated that in the next cycle the concept of SIDS will be embraced.

Lately the Curaçao Tourist Board is embracing the concept of sustainable development through its program for eco-tourism.

The UNA installed a Chair Good Governance in 2005 and a Chair on Sustainable Technology in 2008, both sponsored by corporations. One of the sponsors is the biggest commercial bank on the island.

In the mid-1980s the law on zoning restrictions was approved. This regulates development on the island. Maintaining the plan is difficult, because of the great pressure exerted by developers on government and politicians. There is an Environmental Agency; its functioning is difficult because of a lack of qualified personnel and resources, and because of political intervention.

To cope with global changes Curaçao implemented Structural Adjustment Plans. One of the measures was the reduction of subsidies to NGOs operating in the area of

sustainable development and poverty reduction. This gap has been filled with funds made available by the Dutch government.

Due to the constant pressure from NGOs the government has changed its policies to address the sustainable development agenda. Not only was another five star hotel project been put on hold, giving priority to maintaining a conservation area, but the future of the refinery is being discussed, and plastic bags have been banned.

For several years there has been some talk of formulating a Master Plan for Sustainable Development of the Island, but such a plan has not yet been produced.

Conclusion

NGOs and outside pressure play an important role in advancing the sustainable development agenda. Although a great deal of policy work has been done, and the foundations have been laid for the implementation of a sustainable development strategy, the conclusion can only be that some important elements are still missing. The legal foundations for sustainability are still weak. Political support is not sufficiently stable, and long term planning is weak. There is still no Master Plan. The lack of political support might be a consequence of lack of understanding of the political benefits of sustainable development.

The NGOs play a crucial role in balancing the three P's. The *Amigunan di tera* and the UNA have been especially important in this context. The government of the Netherlands also functions as a balancing force. Several constraints on sustainability can be recognized:
- lack of a sustainable development philosophy or ideology
- lack of political support
- lack of community support
- lack of a Master Plan
- lack of legislation
- lack of enforcement.

Curaçao is on the road to sustainable development but still has a long way to go. However, in the long term SIDS have no choice but to embrace sustainable development.

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Integrating Communities in the Sustainable Protection of Important Resources: A Case Study of The Bahamas Blue Holes

Abstract: *The long term goal of this study is to evaluate how local/community based knowledge and scientific knowledge can be integrated for the sustainable protection of important resources using a case study of the blue holes of The Bahamas. This study was conducted as part of a larger projected funded by National Geographic and The Antiquities, Monuments, and Museums Corporation of The Bahamas. The goals of this expedition are to study issues of climate change, biology, paleontology, archaeology, water resource management, outreach and education in the blue holes. This paper specifically addresses the ways in which the project integrated members of the community in the development of ESD programs focusing upon the protection of blue holes of The Bahamas.*

Brief introduction to Blue Holes

Little is known about the aquatic cave systems throughout The Bahamas; also known as blue holes. Blue holes get their name from the contrast between the dark blue water of their depths and the shallow, lighter blue water around them. Some blue holes are enclosed by land (inland), and others exist in the sea (marine). These blue holes represent a window into the region's unique ecological and cultural past. Blue holes are subsurface voids in the carbonate bedrock that extend below sea level for most of their depth. They contain tidally influenced waters that are fresh on the surface, deep marine water, and mixed water chemistry at the halocline, and may provide access to submerged cave passages (Mylroie et al. 1995).

Recent research into the blue holes has revealed new climatological, paleontological, and archaeological data (Pateman 2007, Steadman et al. 2007). However, blue holes are not locally recognized for their cultural or ecological importance. The indigenous people of The Bahamas (Lucayans) regarded blue holes as spiritual or sacred, and used them as burial grounds (Palmer 1991, Pateman 2007). However, more contemporary communities regard blue holes with more mystery and fear. Bahamian fairy tales are filled with stories of monsters and other mystical beings living in these blue holes.

These include the Lusca (part squid, part shark and part octopus), which has been said to attack swimmers and boats. Also there are stories of mermaids, who will either grant good fortune or will take you into a blue hole and feed you to a Lusca.

Despite this cultural fear, historic settlements and industries were deliberately located in close proximity to blue holes (Rock Sound in Eleuthera and Saw Mill in Abaco). This is because the blue holes are a direct connection to the fresh water lens on the islands and specifically in their local communities. This is compounded by the fact that approximately ninety percent of the freshwater lenses are within five meters of the ground surface (Seeley 1992). The groundwater resource is, therefore, fragile and highly vulnerable to saltwater intrusion, anthropocentric contamination and overexploitation.

Involving the Community

Many of the blue holes are under the immediate threat from widespread, large scale, unsustainable tourism resorts and development. Additionally, the local communities and governmental decision makers have limited knowledge about blue holes and their related benefits. Blue holes are unique and complex ecosystems that due to their fragile chemical and physical structure can be easily disrupted or damaged. Uncontrolled or inappropriate access, over use of land and development are just a few examples of harm to this national resource.

It is for these reasons, that the expedition involves all members of the local communities for the areas that blue holes are going to be studied. It would be impossible to development any ESD initiatives without the inclusion of all of these stakeholders. Meetings with the island administrators and various local government stakeholders are arranged as soon as the team arrives in each community, to inform all interested individuals about the goals of the project. Additionally, a community wide presentation is arranged; so that we can we can educate all members of the various communities on the science behind blue holes and the importance of their protection and conservation (*see figure 1*).

If the meetings are held towards the end of the project, community members can see what has been found and the problems associated with the absence of community inclusionary measures in ESD planning is evident. In the past, scientists working throughout The Bahamas have come into communities, gathered what information they felt was desirable, and left the area without sharing their goals or findings with local communities. Scientists would complain that the locals were not protecting important/vital resources and indeed, these resources have oftentimes been destroyed. This is why one of the primary objectives of this project included an outreach and education component. For the sustainable protection of any resource, it is vital to educate the local community on their importance.

Figure 1. The Author giving a community presentation on the archaeology of Blue Holes Moore's Island, The Abacos

We also found because of our openness and willigness to share information with local communtiies, they were also more forethcoming with information. People would take us to blue holes they knew about in very remote locations. Also, we tended to attract large crowds especially school age children to the field site (figures 2 and 3), no matter how remote. Impromptu lectures in the field were a common occorance after the divers recovered new artifacts (for example see figure 2) and brought them to the surface.

Figure 2. The Author showing local community members skeletal remains of a Lucayan Indian, Moore's Island, The Abacos

Figure 3. Local school children and sound technician watch as divers return from an expedition being filmed by NOVA, The Bluffs, South Andros

Future Steps and What Can Be Learnt From the Community

Agencies with the mandate for the protection of natural and cultural resources invest in scientific research, receive advice from scientific committees and assure stakeholders that their decisions are scientifically grounded. The regulations that these agencies produce employ scientific concepts and foundations. The attention to the scientific foundation of resource management issues is consistent with the prevailing approach that this foundation must be an integral part of the decision-making process and policy forming process. On the contrary, many environmental activists attribute less importance to the science foundation of environmental issues relative to other aspects, such as social, ethical and economic dimensions (Orr 1999). It can be further argued that science cannot constitute the central axis in environmental discourse without also including the socio-economic and cultural imperatives of the local communities.

Therefore, as part of the author's dissertation research, the next step in integrating the community into long term protection of the blue holes is an ethnographic survey to be conducted March 2011. The major themes of this survey are: 1) General Awareness, Perceptions and Knowledge; 2) Locations and Nations of Blue Holes; 3) Uses of Blue Holes; 4) Stories, Events and Significance of Blue Holes; and 5) Conservation. It through this survey that the author wishes to find local priorities for the long term use and protection of blue holes throughout The Bahamas. Additionally, through oral histories, we can understand how the role of blue holes has changed in the livelihood of local communities.

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The Decade of Education for Sustainable Development
If not now -- When? If not by us --by Whom?

Quite possibly this is the most important themed period that UNESCO has ever entered. Our very existence and that of future generations could hinge on how well we learn our sustainability lessons now! The time has long passed when resources could be squandered, wasted or used without a future plan for either renewability or preservation. We must ensure that we are educated on this topic to be able to pass on this imperative information to the young. As my title suggests--if we do not accept the challenge, now, when will it happen and who will do it?

I accepted the challenge long before UNESCO created the theme for this period. It was a no brainer for me to see into the future when you live on a piece of paradise only 1 mile wide and 6 miles long. Paradises draw people because of their beauty, safety and unique lifestyles. The minute people purchase a piece of this paradise--they set about to develop it into a replica of all the other "paradise lost" spots! Human nature is a strange beast. Our cay (pronounced key) is a popular tourist destination for all the right reasons: foreign country but less than an hour away from the US with easy access, gorgeous water, beaches, fishing and diving, sailing and boating with virtually no crime and enjoyable level of lifestyle. Traffic consists of bicycles and golf carts and people are pleasant and welcoming. Is it any reason why the whole world would not want "something" here on Elbow Cay in Hope Town, Abaco, Bahamas?

I am a Principal and a teacher in an original one room, red and white, 115 year old, wooden schoolhouse. Talk about sustainability! This historic building has stood solidly despite severe hurricanes for over a century. Some modernization has taken place over the 30 years I have been at the helm, but the historic look has prevailed. That building is the basis of our belief that our small community of 600 people (triple that number during the winter for second home owners and tourists) must retain its image for many more generations. The school is located on a narrow rise between the famous harbour and our azure beaches. It is the perfect location for utilizing the best classroom--the outdoors! During the 80's we were besieged by long line vessels off our shore decimating our fish stock. Their lines, hooks and cyalume chemical light sticks littered our beaches. We rolled into action at school (60 students) and cleaned the beaches, took pictures of the items and wrote to our Prime Minister and Members of Parliament. Soon the national papers were full of outcries and all the permits for "research" were lifted! Chalk one up for the kids and fish!

Next we tackled the captured dolphin issue which resulted (after 2 long years) of the "no capture" rule in the Bahamas. That took our school beginning a chain poem that circulated to all schools in The Bahamas titled “They Should Swim Free". During the 80's UNEP offered Children's Environmental Workshops every year all over the US. We enjoyed attending and sharing our environmental issues with other youth who had similar or different issues where they lived. It gave our students a much more global perspective and a heightened awareness of the world as a whole and what they would face as future adults. We also attended conferences in England, Scotland and other Caribbean countries. Over the years we tackled various garbage and pollution issues; from burning our garbage, US aquarium companies ruining reefs catching tropical fish, writing letters to government officials to set aside land for our endangered Bahamas Parrot to live in and nest, protection of mangroves, studying marine mammals make up of our beaches and harbour pollution.

We were definitely on the right track we felt--empowering students and instilling confidence in how to go about solving problems in their community. We wove all these activities into required curricular classroom lessons very easily. Our lives took a shift in the 90's when our world was turned literally upside down from several major hurricanes all within a few years of each other. Seems we would just put things back together and another one was aimed at us! Our dunes, beaches and barrier reefs were all compromised. Students helped replant sea oats on newly restored (by beach scraping bulldozers) dunes and then studied their growth, they wrote and illustrated a comic book entitled " Kids Constructively Caring"; showing what kids can do to help their environment, continually interviewed tourists about how they viewed our struggling reefs and then wrote a pamphlet on Reef Etiquette and Identification for tourist hotels and rental homes.

We were introduced to the UNESCO "Sandwatch Program "during the late 90's. This programme fits not only into any school's curriculum - on all levels- but is a teacher of life and sustainability skills. Those of us fortunate enough to be island dwellers know that the best classroom is the outdoors and that the beach sites are the very best of all. Sandwatch combines monitoring, measuring, collecting, graphing, testing and comparing. You and students measure the beach at high and low tides, the types of sand, wave heights, currents, wind, uses of the beach, vegetation types and any animal life among other things. During your comparative studies you conduct beach debris clean-ups and monitor changes to beach caused by nature or development. Our island is surrounded by the third largest barrier reef system in the world and our’ swim to patch reefs’ have been the object of our class study for several years. The students love to periodically swim out to the reef and monitor for changes. After a strong storm a huge fishing net washed onto our patch reef area that we had been studying. It wedged onto the reef and was causing damage. Several boys and teachers swam out and cut the net off bit by bit. The remains of the net now are nearly buried on the beach acting as a sand container to prevent any further run off on a vulnerable area of the beach. From

trash to treasure! The Sandwatch project has spread all over the world and we who are involved like to think it is Sustainability in Practice. Our school will continue to be a leader in teaching students sustainability practices in the hands on methods.
For--if not now--WHEN? And if not by us --then by WHOM? We have no time to waste---

Submitting a Paper to The Caribbean Journal of Education for Sustainable Development

The Caribbean Journal of Education for Sustainable Development welcomes submissions from contributors on general or specific ESD themes.
We also welcome submissions from frontline ESD researchers and educators working at the grass roots and community level, as well as academics working at the college or university level.
The following are general guide lines for submission.

- A typical article will not exceed 10 pages, double spaced (about 2,500 words)
- Please write clearly and concisely, with stated objectives and terms, with your thesis supported by cited references.
- All art work, photographs, charts, maps and tables must be camera ready, high resolution and ideally sent separately i.e.) not embedded in a document.
- A short biographical note should be included by the author(s) of each article. These should include, full name, affiliations, postal address, telephone, email.
- Abstracts of not more than 150 words are required and should give a brief but insightful overview of the article.
- Articles should be submitted by email and in editable MS Word format.
- Please use British spelling.

Please note: Editors will determine the appropriate venue for articles submitted; as peer reviewed or general publication section publication.

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