

## **Science Education for Sustainable Development, Pt. 1**

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The preamble to the Declaration emanating from the 1999 World Conference on Science, held under the aegis of UNESCO and the International Council for Science (ICSU), considered that “access to scientific knowledge for peaceful purposes from a very early age is part of the right to education belonging to all men and women and that science education is essential for human development, for creating endogenous scientific capacity and for having active and informed citizens.” When we extend this to the idea of sustainable development, one goal of science education should be to help to build human capacity with respect to the proper management of resources for the betterment of individuals and society. Part 1 of this article will consider this goal with respect to science education for citizenship, while Part 2 will examine science education for future career scientists.

Day-to-day activities in our communities are characterised by a mix of modern and indigenous technological activity. Modern technology is visible in the form of radios, televisions, cell phones, computers, video games, and so on. Concurrently, indigenous technologies are used in areas such as food preservation, agriculture, fishing, building construction, and hunting. Although these indigenous activities may be more pronounced in rural areas, they exist in urban settings as well. Many of these spheres of activity involve the harnessing of natural resources for human benefit. Yet, there is little evidence that these indigenous technologies are being drawn upon in the process of educating for sustainable development. Further, there is little evidence that these technologies are being researched in a systematic way in the Caribbean. Without this research, the opportunities for capitalising on students’ background activities and building on them by incorporating newer, scientific ideas are missed. Not only that, but the opportunity for having students develop an appreciation for the ways in which the preservation of the environment may be enhanced, even as they engage in indigenous technological activity, is also missed.

Education for sustainable development in our communities (both rural and urban) requires that our citizens be empowered to see themselves as being responsible for the care and conservation of the environment to the extent that they would be willing to challenge any action by the state or other agencies that may be deemed to be detrimental to the environment, and even to engage in research themselves to support their case.

There are emerging accounts of watchdog groups in the Caribbean that are performing such functions. In Trinidad and Tobago, non-governmental organisations (NGOs) such as Fishermen and Friends of the Sea have been active in this regard. Two researchers, Leach and Fairhead, recount that the South East Hunters’ Association of Trinidad and Tobago engaged in citizen science when they challenged the results of a master’s thesis, in which it was claimed that hunting was the main cause of wildlife depletion in a particular area. At the core of this debate were differences about data collection procedures used by the conventional scientists and the hunters themselves.

For the effective practice of citizen science, there must be citizens who have had an exposure to science and/or extensive knowledge of good traditional environmental practices to equip them to analyse issues that are impacting on life in their communities, and to take appropriate action based on **informed** judgement. One goal of science education in our schools should therefore be to produce citizens who can engage in citizen science as described above. This calls for the establishment of school/community links, which could open up many new possibilities for how science could be taught.

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