

THE POLITICS OF WATER

The Issue.

The threat of diminishing access to reliable sources of potable water is fast becoming a critical issue in international affairs. The severity of this trend varies from country to country. However, for all nations whatever their endowment of this resource, the importance of sound water management looms large in their community consciousness. Water management and its related aspects of security, control, conservation together with considerations of quality, quantity, seasonality, peak flows, sources, impoundments and tributary flows are more than matters for national agendas. Water knows and respects no national boundaries and actions affecting it in one jurisdiction, easily causes ripple effects in others, near and far.

Trends.

On a global scale, the phenomenon of global warming which is now placing the polar ice caps in jeopardy, has triggered sober consideration of the implications for rises in ocean levels, destruction of vast marine ecosystems as we know them, and worldwide flooding of low-lying coastal communities. In association are projections of temperature changes and changes in patterns and virulence of wind and ocean currents leading in turn to further changes in patterns of precipitation.

As worldwide, an evolving feature of human settlement patterns is the emergence of large concentrations of population in dense urban communities, the availability of sufficient and secure water supply is of paramount interest. At the same time, increasing pressure is placed on the rural land resource to produce the necessary food and fibre to feed, clothe and house the ever-expanding metropolitan centres of the world.

It is therefore no exaggeration that water has been called the petroleum of the twenty-first century. It is likely to be the cause of increasing international tensions both directly as nations compete for access to supply or in order to conserve resources, and indirectly, as vast populations are forced to migrate across political jurisdictions as supplies in their home countries and regions become depleted.

These tensions will be acerbated by effects on stream flow passing through one country such as excessive water-taking, watercourse pollution and stream flow re-direction. Water cannot be taken for granted any longer. It is a depleting resource, easily compromised as to quality; its distribution is easily subject to manipulation. Precipitation (rainfall and snowfall) is impacted by both human interference and natural conditions.

Like no other natural resource, water is the basic support ingredient for the survival of life on the planet, as we know it.

Relevance.

It is easy to dismiss the relevance of a discussion such as this for micro, island nations such as Dominica. In fact, many have conveniently labelled such areas as “condition takers” in contrast to larger landmasses where actions or failures to act respecting the environment are considered “condition makers”. This is a misleading distinction since all our actions, large and small, together contribute to the condition of the global environment, of which we are all a part. But more significantly, small oceanic landmasses, having once impacted their ecosystems severely, typically lack the resilience to recover either by mass relocations of water consumers or transportation of water from resource surplus areas to areas experiencing deficits.

Significance.

Water plays a significant part in our daily lives. Historically watercourses have been dammed for hydroelectricity, recreation and for aquaculture. Water from such impoundments and other natural sources such as lakes and rivers, or from underground aquifers have been extracted and conducted to population centres for community use. Regular water supply is essential for plant and animal life within both the natural world and the context of managed environments of crop and livestock cultivations.

Rivers and streams have historically been primary transportation corridors for moving large volumes of goods and people. They have been the means of continental explorations and the routes for settlement. They have been the subject of elaborate inter-jurisdictional arrangements for the construction and operation of canals and locks, ferries and steamboats. In many countries and across many continents, the river is still a major mode of transportation.

However, a consideration of water requires an equal attention to issues of water quality as to that of water quantity. Policies and programs for the removal, use, after treatment and return of the resource to the natural system have seldom been as effective as promised in maintaining the natural integrity of the water. The world-wide record shows considerable and continuing contamination of water systems by a variety of polluting systems including agricultural, industrial, municipal wastes, as well as by high sediment loadings, all resulting in major deterioration in water quality.

Today, the world is confronted by incipient disaster areas due to mismanagement of water resources in poor, middle income and rich countries attesting to the prevalence of ignorance, irresponsibility or desperation of countries in adopting effective water

management policies. Sub-Sahara Africa is becoming desolate due to low rainfall and depleted watercourses to the extent of expanding desertification onto formerly productive farmlands. The attendant effect of prolonged drought, decimation of livestock and food supply capability, leading to ecological instability are reaping havoc on economic and social systems to the extent of mass migrations of refugees across vast portions of the continent.

Within the Amazon basin, the increasing incidence of deforestation, hydraulic mining, intensive farming are combining to create an environmental disaster in the making through elevated sedimentation, reduced rainfall, stream contamination by mining-related chemicals, ecological disruptions and the destruction of the social and economic systems of the native peoples.

Continuous and aggressive exploitation of the surface and underground water resources of the Western United States including California, New Mexico, Arizona and Nevada in order to serve high water consumption uses of urban growth, intensive agriculture and major recreation. The security of these major population and economic areas is a high priority political issue that must seek to address future sources of water, costs of accessibility and availability, responsible management and effective user fees to ensure responsible use.

Caribbean Policy Survey.

The above brief discussion holds important lessons and directions for the islands of the Caribbean. The issues raised demand some thoughtful, regional consideration by these jurisdictions both on an insular and a regional basis that might lead to the earliest policy responses on several related fronts:

- (1) As an island archipelago, the surrounding water systems of ocean and seas that frame their reality are a critical dimension to their existence.
- (2) Because of the small size of each island unit, their terrestrial environments are typically fragile ecological systems, capable of a disastrous downward spiral with minimal interference.
- (3) The process of growth and development requires an holistic approach to the planning for and use of the national and regional natural resources.
- (4) The management of on-land water resources including natural surface flows and artificial drainage systems, sustained vegetation cover, the release of chemicals into the environment (pesticides, fungicides and herbicides, in particular) are inter-dependent and sensitive operations for careful action.
- (5) With increasing local populations, accompanied by patterns of increasing population concentration, will also come concerns of water supply, distribution and waste water treatment and release.

- (6) Local population growth rates in combination with overall increases in standards of living lead to increasing rates of water consumption per capita.
- (7) When the above growth patterns are combined with additional high consumption rates of populations as a result of seasonal and year round residents from first World countries, water quantity and quality assumes a critical level which cannot be ignored.
- (8) New exotic demands for water as a result of structural changes in the local economies especially as a result of tourism have indicated that in some islands this need can only be met at the expense or inconvenience of local population requirements. This includes, swimming pools. Maintaining private water storage pressures for fire fighting, golf courses etc.
- (9) Emerging patterns in some jurisdictions show that this combination may already have led to unsustainable levels of water-mining at a rate that cannot be naturally replenished. Second level solutions are now common in many islands which have resorted to large scale salt water desalination.
- (10) Those islands which are slowly coming to terms with the decreasing importance of the export of agricultural staples such as sugar and bananas must now intelligently look towards other options. The most appealing is the planned and structured introduction of larger scale cultivation of alternative food crops for local and regional consumption; scientific, commercial livestock operations (poultry, pork, mutton, dairy products) on a import replacement and displacement; fruit and horticultural operations. Such a response as suggested above will require reliable (all-season) availability of good quality water supply, planned irrigation systems, and effective farm waste treatment systems.
- (11) Islands with a generous endowment of high quality and quantity of fresh water resources cannot continue to take this treasure for granted. The nature and basis for economic growth, settlement and land use must be explicitly planned with regard to national water budgets as both a contribution to such growth and as constraints on how, when and where such growth occurs.
- (12) Because of a complex topography, islands such as Dominica possess a highly complex drainage system requiring an informed and supportive land and water stewardship approach in how the water resources are regarded and managed. This is an integrated system from source to the shore and even beyond. Demarcation of water catchment areas and conservation districts is only a beginning. Responsible land clearance practices, advisability of terracing, suitability of particular crops in inappropriate areas, type and intensity of chemical applications are all issues to be addressed.
- (13) Legislation, regulations and prosecutions are not necessarily the most effective responses. Demonstration, education information and conservation incentives may be just as, or even more, persuasive in the long run.

On a regional scale, the question of the management of the ocean resources which we all share has occasionally reared its head, without satisfactory resolution. So far, the issue has mainly centred on territorial rights with regard to fishing. Of increasing importance is the matter of exploration of the surrounding seas and oceans for oil and gas. Except for Trinidad and Tobago and more recently Jamaica, no other Eastern Caribbean jurisdiction appears sensitive and protective of its rights and obligations in exercising its sovereignty under international law in this regard.

Equally disconcerting is the fact that so far, the various regional jurisdictions have shown an alarming impotence to conduct surveillance of ocean going ships in order to curtail and penalize the practice of garbage dumping in these waters. As the Caribbean continues to be a highly travelled route for cargo ships and bulk petroleum carriers, including nuclear wastes, the risks of contamination, the costs of containment and clean-up are assured of becoming inevitable issues in their futures. This is especially ironic as most islands are aggressively moving to an economic agenda based on mass tourism identified with pristine waters and enticing shorelines.

The Caribbean nations have failed to undertake an independent approach to the management of their offshore marine resources. Again, the irony is that surrounded by a rich fishing environment, the islands are net importers of fish and fish products at a time when foreign fleets range through their waters with impunity, irresponsibly endangering the survival of regional stocks because of their poor harvesting practices.

The quality of offshore reefs and underwater fisheries is under severe stress in some areas not only due to over exposure by direct contact. A more alarming aspect of the Caribbean coastal water management dilemma is that despite the aggressive move to enticing water-based tourism, and the construction of large resort complexes along those coastlines, few of these islands have installed proper facilities for the processing of human waste, which inevitably ends up in the coastal waters, sometimes with embarrassing consequences. Because of the proximity of these islands to each other, the best of individual intentions and actions is not enough. Combined and mutually supportive action is required within some umbrella framework that is not limited by the political nuances of the area.

The Political Economy of Water.

As important as the above issues might be, they do not of themselves heighten the level of attention with which the people of the Caribbean ought to view the water issue in all its dimensions. This is clearly seen in the fractured and disaggregated approach with which they have approached the management of this vital resource within their own territories. While there yet may be a little time remaining to adopt a coordinated effort in this regard, it is clear that some deep thinking must be undertaken for a cohesive framework towards integrated water management. Economists no longer regard

water as a “free good” to be used and abused without regard for price or cost. Water carries a high intrinsic value as a material necessary to sustain life. The higher the quality of this resource, the more it ought to be “valued”. Water, properly managed and made available, is a necessary deterrent to a wide variety of tropical diseases. Without access to clean water, communities will inevitably bear the cost of an explosive health catastrophe with heavy demands on an already stressed care system. Without corrective action, the consequences are a disease-prone population and an unproductive labour force. Mention has already been made of the impending importance of water availability to a re-invigorated Caribbean agriculture.

On the other hand, current trends in economic growth and development programs seem to indicate that these initiatives are proceeding at the risk of compromising the quality and quantity of national water systems. Restated, if we continue on the development path as at present, we will destroy our vital water capacities. This concern can be illustrated in the following examples

- (a) Land hungry rural populations are being forced to move higher and higher into areas of steep mountainous topography to establish peasant cultivations;
- (b) Methods of land clearance (clear cutting, brush burning) encourage slope instability, high rates of erosion and poor water retention
- (c) Replacement vegetation comprising domestic root crops and vegetables require continual weed prevention, usually addressed by equally offensive measures of weedicides (chemical impacts) or hand weeding (erosion).
- (d) The results of increased run-off peaks and even flooding, containing high chemical loads and sediments will in turn destroy off-shore marine habitats and fisheries.
- (e) Rapid unplanned or ill-planned urbanization places pressure on the delivery of municipal water systems and the satisfactory treatment of urban storm and sanitary waste effluents.
- (f) Manufacturing and industrial activity required to meet the demands of a modernizing nation must be increasingly sensitive to the environmental effects of their operations. Not only must countries choose wisely the types, sizes and intensities of manufacturing activity they wish to attract and establish. They also need to establish clear, determined and enforceable protocols under which such businesses operate.
- (g) The conscious shift or unconscious drift to an alternative tourism-based economy will generate an appetite for large quantities and excessively high quality of water for a wide variety of related needs.

In all of this there is a calculable price in allowing the unacceptable to occur and a cost in rectifying the effects of policy and operational errors. No country can simply close its eyes to these signs and signals and hope for the best. Although we cannot achieve the optimum immediately or overnight, we must have the wisdom and audacity to assess

what we have and what is needed and to move resolutely to overcome the deficits and challenges.

In recent times, and as part of various austerity and revenue recovery regimes, many countries are being encouraged (and even pressured) by external financial agencies to adopt policies of commercializing water supply. Whether undertaken by para-statal enterprises or by a private agency under government licence, the commercialization of water is now conceived in many quarters as an established cost recovery and revenue generation instrument to be operated like electricity or telephone services. Already, in some regional jurisdictions, the prospect of privately delivered piped water on a cost-plus-profit basis is on the national agenda, under the presumption of service interruption in the event of inability to pay by consumers, regardless of means. Such a proposal was implemented under duress in parts of Southern Africa and created such a level of social and political unrest as to suggest caution in implementing this type of policy in this part of the world. Even so, a case can validly be made for some realistic level of user fees related to metered volumes used in order to help defray delivery cost, as well as to promote good management, including conservation.

Few will deny the merits of export sales of surplus fresh water to foreign consumers, either as bulk sales or bottled for ready use. The mechanics for so doing will always remain a controversial issue as the perception of individuals reaping profits from what can truly be accepted as a national birthright may not be palatable. Sales by and through a government entity may be more appealing. A large surplus of quality water supply can be the catalyst for a variety of secondary products and processes, including foodstuff (vegetable and livestock), intensive horticulture, pharmaceuticals and cosmetics, electronics etc.

Summary, Conclusions and Directions.

Caribbean island states can no longer be mute bystanders or uninformed players on the global scene related to the issues surrounding water. Issues of global warming, polar ice melt and a potential rise in ocean levels may to a greater or lesser extent affect island coastal communities and tourism infrastructure. Strong representation and intervention internationally, in combination with similarly concerned countries may now be overdue. Maintaining the integrity of the regional marine jurisdictions is a critical dimension to the life, environment and economy of these islands. It must also be recognized that effective ownership and management of our ocean resources require continuing surveillance, research, documentation and monitoring. These responsibilities are obviously beyond the capability and resources of single national jurisdictions. Recognizing, too, that some metropolitan countries (France, the Netherlands, the United States, Great Britain) and several other countries in Central and South America may be parties of interest further complicates a search for resolution of these concerns.

In a region where so many states rely primarily on tourism as the most hopeful engine of growth for their economies, that so few have taken a more enlightened approach to the treatment of sewage wastes which continue to be disgorged into the surrounding seas and oceans. As the size and intensity of urbanization increases; as more and more large-scale tourism development enclaves are established along coastal regions; as more and more land is cleared for both urban and agricultural purposes leading to ever-increasing risks of soil erosion; and, as more complex industrial processes are established, it is incumbent on governments that the surrounding seas are protected.

The Caribbean Sea cannot continue to be regarded as a bottom-less sewage pit. If aggressive controls are to be placed on or required of extra-regional interlopers/operators such as tourist liners, cargo carriers, nuclear waste carriers, bulk tank carriers, for example, Caribbean jurisdictions cannot avoid subjecting themselves to equally demanding standards and codes of conduct.

Many island nations have passed beyond the point of water sufficiency, and are actively involved in water mining (where the rate of extraction exceeds the rate of resource replenishment) supplemented by water desalination. In time, this may well require importation of quality fresh water to meet the needs of a discriminating tourism sector and specialized manufacturing processes. In anticipation of such a day, one can expect an age of new relationships between water surplus and water deficit islands.

Accordingly, islands that continue to be blessed with regular, abundant rainfall because of a combination of favourable wind currents, topography and vegetation would do well to engage in forward-thinking pro-active strategies for environmental protection of the above conducive conditions. In addition, measures need to be put in place for the conservation and utilization of ground water resources in a manner that minimizes adverse impacts. Equally, water surplus jurisdictions should aggressively seek to attract industries reliant on good quality water (in combination with programs for effective waste water treatment). Included in this category are pharmaceuticals, health products, alcoholic and non-alcoholic drinks) and bottled water. Lastly, in such cases, there would be rich opportunities of exploring the lucrative trade in bulk water shipments to regional and extra-regional water-poor areas.

The greatest risk at the present time is that of short term decisions that may compromise or even jeopardize the future opportunities that a water-based economy can offer. An immediate study of the framework for the above concept discussed and an identification of the risk creation factors together with policies for their minimization should be high priorities on the national agenda. One ill-conceived decision or one poorly managed program can effectively destroy the “oil resource of the 21st century”.

It is time to realize that the attitude that water is a free gift of nature is wrong and potentially leads to misuse and abuse of a vital resource. Water is a critical component of development and growth and possesses significant utility only when it is available in the

amounts, at those times, in such a quality and at those prices to those who want it. It is to be conserved and managed as a matter of public policy and at public expense (with or without complementary private land owner stewardship.) It is a national endowment to be enjoyed by all the people. The economic benefits of water entering the commercial stream through market sales should accrue only to the public at large and should not occur under conditions of private exploitation and profit..

Dominica is one of the few Caribbean territories with an attractive prospect for benefiting from the urgent preparation of an enlightened water management policy.

Given its urgency, that task is overdue.

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