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### Environmental Management for Sustainability and Conservation

**Dr Louis Cassar**

**Director International Environment Institute**

At some point or other in our lives, we've all heard of the term sustainable development, or its various derivatives. If we asked people around us to define the term, we would probably get many different definitions. It has been said that the concept of sustainability has acquired such a pedigree that no contemporary debate on environment and development is considered complete without it. But do we really know what sustainability is all about, what the measures of sustainability are, and how we should be measuring what constitutes sustainability? I suspect it is often used to justify initiatives that in reality have little that is sustainable about them. In recent times, considerable attention has been focused on indicators. But can we apply numbers or colours to describe quality of life? Are all indicators amenable to quantification in the first instance? Is it realistic to give a price tag to everything around us? So how does one quantify the value of a forest or an open space?

Before we look closely at what constitutes sustainability, let me delve briefly into the history of such notion, since this, like cell phones, has not been around for as long as some of us have. Following the excesses, consumption-wise, of the post-war era, a major conference on the human environment was held as late as 1972. I emphasize 'late' only because the Stockholm Conference was held when it became apparent that environment and development couldn't be considered separately any longer, as a result of large-scale degradation, problems of pollution and the reduction in environmental quality, particularly in Europe and North America. The latter, essentially, illustrated the wide-ranging implications of interconnectedness of nature, of which humans are a part. Even though this event marked the launch of environmental awareness worldwide, strengthening the grassroots environmental lobby and producing a commitment from developed states to 'clean up the world', thus adopting appropriate strategies to control waste, toxic emissions and environmental degradation, it was nonetheless described as a dialogue of the deaf between rich and poor nations. At the time, the Third World wanted industry, even with its attendant pollution problems, as this was, and maybe still is, the only perceived means of improving their lot. On the other side of the fence, the 'North' seemed blissfully apathetic to the problems of its less well-off counterpart. In response to this indifference, Indira Gandhi stated "*of all the pollutants we face, the worst is poverty*".

Between this landmark conference and the better known Earth Summit (World Conference on Environment and Development) in 1992, the road to Rio was marked by a number of milestone events, which, over time, endeavoured to grapple with holistic ideas. Terms such as *eco-development* and *development without destruction* evolved. More importantly key notions were established, in particular that a new era of environmentally-sound economic development was called for, and that growth had to fit within the planet's ecological limits, primarily since the health of the planet had deteriorated seriously since Stockholm (1972). Thus, various attempts were made to integrate environment and development concerns, and the concept of sustainability provided a useful framework for such discussions. Indeed, the Brundtland definition with which most people are probably familiar, i.e. *that humanity has the ability to make development sustainable...to ensure that it meets the needs of the present, without compromising the ability of future generations to meet their own needs*, seemed to have provided a formula for solving all the world's woes. The problem lies in translating this goal into tangible terms, and the challenges inherent in this mission were amply evident during the Rio de

Janeiro UNCED summit. Twenty years after Stockholm, rich nations went to Rio to solve issues of climate change, endangered species and forests, whilst poor nations went with a different agenda, that, again, of curbing poverty. Deja-vu? The difference was that unlike in Stockholm, the south now had a bargaining tool because global environmental challenges had come onto the international agenda, and it was by now clear that issues of climate change, population growth, and deforestation, could not be solved by the north in isolation. Yet these issues were far from priorities in countries where hunger and drought were a daily reality. The Rio conference did, however, make significant strides in at least one key aspect, that of promoting the notion of civic responsibility. Through its Agenda 21 initiative, it highlighted the important role that people had to play in addressing large-scale challenges, emphasizing the power of the local to affect the global.

Since our health is closely linked to that of the planet, mankind has good reason to be worried about the variety and scale of problems the planet currently faces as a result of the crisis of unsustainability. The list is daunting: a warming climate, coupled with a rise in sea-levels and growing pressure on water resources, which will jeopardize the very fundamentals of the lifestyle we presently enjoy, particularly for those populations living on the coast. Add to these, the thinning of the ozone layer, contamination of groundwaters, considerable shrinkage of forests, the loss of as much as 26 billion tones of topsoil annually, the spread of deserts through land mis-management, and the loss of biodiversity. A gloom and doom scenario, but who cares, as long as we have our creature comforts? But will we? The former secretary general of the UN, during the Johannesburg Summit (2002), noted the inability of our institutions to integrate the social, economic and environmental dimensions of development; yet these cannot be considered in isolation. There simply is no social or economic sustainability without a healthy environment. Thirty years after Stockholm, the absence of progress in eradicating poverty was again highlighted. It seems like the richer countries are lost in pursuing their technological advancement, oblivious to the basic human crises happening not so far away.

Looking closer to home, anyone who has lived in Malta throughout the past decades will have observed a rapid change in the character of the country, both through tangible and intangible aspects. First and foremost, it is clear for all to see that the urban footprint has grown by leaps and bounds in quantity. To obtain some perspective, comparing Malta to our European counterparts, the average rate of urban land-cover in the latter is only 8%; in Malta, we have exceeded 27%. In the decades that followed Independence, we have built up more than three and a half times what had been built up in seven thousand years of colonization. Over a span of a few decades, the urban land-mass increased by *circa*. 361%; over this same time frame, the number of dwellings increased by 121%, as the population increased by 29%. Add to this, the substantial proportion of dwellings which presently lie vacant, even while new constructions continue to abound. One could also talk of the questionable aesthetic merit of particular new buildings, where the prerogative seems to be largely that of deriving maximum financial utility by squeezing in as many residential units as possible. Can we honestly talk of quality of life in the midst of this congestion and density? Our natural and rural heritage, translating into our countryside, is fast deteriorating and it is my view that our few remaining relatively pristine areas have been relegated to 'postcard' status, that is, amenable to a nice picture but only if one ignores the context of buildings, quarries, construction sites and rubble that constitute the surroundings. The actual 'experience' of nature is slowly but surely being lost with natural areas now pocketed in isolated refugia. Landscapes are rapidly being fragmented and the unique character which defines the Maltese Mediterranean identity is highly threatened. Increasingly, we are seeing the systematic and rapid conversion of typical townscapes and villages into a faceless urban mass. If we are to continue depending on tourism as a mainstay of our economy, and also bearing in mind the changing trends and new emerging destinations for the global

tourism market, urgent pro-active action is needed at, minimally, three levels. We need to safeguard our remaining heritage – natural and cultural – at every cost. We need to ensure that our activities, social, economic and otherwise, do not continue to jeopardize the environmental resources on which we depend. We must also set about utilizing our technological skills and manpower not only to plough on ahead, but to mitigate and remedy the damage that has already been done.

The University's role in all of this is three-fold. First, as an academic institution, and the country's think-tank, it has a responsibility to contribute to the debate, both in philosophical and in practical terms. Because of the various disciplines that the University hosts, it is in a unique position to address the multiple dimensions of sustainability and to contribute to cross-fertilisation and integration across different interests. It is often critical to move beyond the reductionist approach of working solely within disciplinary boundaries and to acknowledge the need to move out of our comfort zones if we are to address our responsibility to meet societal challenges. There is simply no room for disconnected ivory tower research in areas where there is so much potential to contribute real solutions to real problems.

Second, the University also needs to constantly provide training to specialists who, upon entering the work-force, can take a leading role in tackling the challenges outlined. These may stem from various areas, from the laboratory scientist to the socio-economist dealing with stakeholders. While it is recognized that mono-disciplinary training is necessary for specialized work, it may not suffice, where environmental management is concerned, in isolation. There is also a need for complementary specialists who can span different subject areas, and hence training also needs to incorporate inter-disciplinarity and trans-disciplinarity. Sustainable development is a cross-cutting concept with strong interactions between ecology, economy, society and technology, each with different mindsets and agendas. For sustainable development to become more than a buzz word, it is crucial that barriers be pulled down in the pursuit of a holistic goal. The term environmental management, which provides a framework for dealing with issues of sustainability, has a common sense ring to it, but what it entails in terms of philosophy, methodology and content, is far from obvious. Past students of the International Environment Institute can readily attest to this fact, having been called on, during their time with us, to develop competencies in a range of areas, including life, earth and social sciences, ecological economics, resource planning and management, and others. The success of the Institute lies precisely in its mission to create synergies with other entities within this University and beyond. On the curricular front, apart from courses offered by the Institute at undergraduate and postgraduate level, the University, jointly with James Madison University, will offer a Master in Sustainable Environmental Resources Management (SERM), scheduled to open next academic year.

The Institute has also endeavoured to keep its roots in the real world, and has hence developed a reputation as a research partner, particularly but not exclusively in the Mediterranean region. Opportunities are immense, as is evident from our involvement in projects across the Mediterranean, the Maghrebian Sahara, and beyond, in areas such as the Guiana Shield within the Amazon Basin, and the East African Albertine Rift. We have ensured that research is not an optional extra but rather guides our didactic output, seeking to develop a research-oriented culture amongst our students, who not only hear about aspects like environmental assessment in the classroom, but also develop first-hand experience of what this implies. In environmental management, professionals are not dealing simply with figures and documents, but rather with people, who may be deeply affected by decisions taken and measures implemented. Hence, it is critical that training provided enables graduates to consider all relevant scientific aspects, while bearing in mind social and economic dimensions.

The third role that the University plays is in instilling a sense of civic responsibility amongst its graduates. As has been stated over and over, the university experience is not just about classes and books, but also about growing in life and contributing to society. There is a mistaken perception that 'environment' is the domain of hippy environmentalists or hard-core scientists. As is amply evident, what happens to our environment affects everyone. One of the current hotly debated issues in Malta is that of illegal immigration. Whatever one's personal views, there is no denying that at least one of the facets leading to this phenomenon is environmental change and degradation. Could this be an early warning of things to come? If climate change predictions are correct, the Maltese Islands will become warmer and more arid, conditions more hostile than those which we are used to. If the environment cannot support the lifestyle we are accustomed to, and if conditions become more extreme and hence unpleasant to live in, will people in Mediterranean Europe be rendered environmental refugees in the not too distant future? Our society can no longer think in terms of adapting to climate change through convenience measures, as we are now well aware that this is only aggravating and intensifying the problem. We need a far more fundamental change, not only in behaviour but also in the way we think.

Our generation may be guilty of subscribing to sustainable thinking but not applying the principles. We are used to big solutions and simple one-tool approaches, but the biggest challenge lies with incremental change, and therein also lies the greatest impact. The social dimension of sustainability requires that we integrate change into the very foundations of the way we live, including the beliefs we share and the ethics we follow. An environmental way of living cannot be an 'add-on' but needs to be central to our everyday lives, something taught in our families and schools, and arising from our value systems, and from a sense of civic duty, not only to our local community but also to our global brethren. Each country is primarily responsible for shaping its own future, but in today's globalised world, this is only true to a point. What each of us does has a small but significant impact, and we must recognize the power of individual action, and the responsibility that goes with it. Our focus should now be on globalization of solidarity; there is simply no other choice in economic, political or moral terms.