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Harmony with Nature

Report of the Secretary-General

Summary

The present report is submitted pursuant to General Assembly resolution A/RES/66/204. As requested in resolution 66/204 the Secretary-General convened an interactive dialogue on Harmony with Nature to commemorate International Mother Earth Day, on 20 April 2012, in order to actively and effectively contribute to the preparatory process for the United Nations Conference on Sustainable Development, held in Rio de Janeiro, Brazil from 20-22 June 2012, and to submit a report on the subject at its sixty-seventh session. The present report of the Secretary-General focuses on the evolving relationship of humankind with nature and draws upon key issues discussed at the interactive dialogue, particularly in the area of science and economics. Concrete recommendations are provided to facilitate further consideration of the theme by Member States.

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I. Introduction

1. In 2011, the General Assembly, by its resolution 66/204, entitled “Harmony with Nature”, requested the Secretary-General to convene, at its sixty-sixth session, an interactive dialogue, to be held at a plenary meeting in commemoration of International Mother Earth Day, on 20 April 2011, with the participation of Member States, United Nations organizations, independent experts and other stakeholders, in order to effectively contribute to the preparatory process of the United Nations Conference on Sustainable Development, commonly referred to as Rio+20, held in Rio de Janeiro, Brazil, from 20-22 June 2012.

2. The interactive dialogue of the General Assembly, examined how human activity has impacted the Earth System, especially by focusing on the areas where such impacts have already affected the regenerative capacity of the planet. It enabled an exchange of ideas and experiences from multiple perspectives, with particular attention to the contribution of science and economics. The present report builds upon the issues addressed at the dialogue.

3. A concrete result of the contribution of the Harmony with Nature process in advancing sustainable development is its recognition in the Rio+20 outcome document, “The Future We Want” which the United Nations General Assembly adopted on 27th July 2012. The document noted that some countries recognize the rights of nature as in the context of the promotion of sustainable development. Harmony with Nature implies an equitable and balanced relationship with the Earth, humanity’s source and sustenance. At the core of this relationship lies both a profound respect for the Earth and acknowledgement of her vital imperative to exist and thrive, as well as acceptance of humanity’s responsibility to restore the health and integrity of the Earth System. This resurrected recognition of human-Earth relationship reaffirms that human existence is inextricably part of Nature, and sets a path forward to acting on that affirmation. The Rio+20 outcome document also recognizes that “Mother Earth” is a common expression in a number of countries and regions.

A. Website on Harmony with Nature

4. In its resolution 66/204 the General Assembly also requested the Secretary-General to continue making use of the existing information portal on sustainable development maintained by the secretariat of the United Nations Conference on Sustainable Development and the Division for Sustainable Development of the Department of Economic and Social Affairs to gather information and contributions on ideas and activities to promote a holistic approach to sustainable development in Harmony with Nature being undertaken to advance the integration of scientific interdisciplinary work, including success stories on the use of traditional knowledge, and existing national legislation**.** The dedicated website on Harmony with Nature was launched at the Rio+20 Conference and can be accessed at: www.harmonywithnatureun.org[1]

[1] UN General Assembly Resolutions A/65/164, 20 December 2010 and A/66/204, 22 December 2011.

5. The first phase of the Harmony with Nature website contains an overview of national law highlighting the role that the Environment has played in Constitutions around the world. Each country page displays relevant constitutional passages containing specific references to the Environment and provides a quick snapshot of when the Environment was first introduced in a country's Constitution. For those countries, where the Environment is not addressed in the Constitution, this overview references the introduction of the most appropriate environmental statute(s).

6. Given the vast and lengthy pieces of environmental statutes and Constitutional provisions enacted over the years by member states, the objective of the site is not to reproduce all pieces of environmental law enacted but to focus on the main piece of environmental law nationally adopted, addressing Constitutions first and the statutes as appropriate. It thus provides both, a quick overview of the evolution of environmental consciousness worldwide as well as some reflection regarding the legal undertaking that has taken place in the journey towards sustainable development.

7. Pursuant to General Assembly resolution A/RES/66/204, the following sections draw upon key issues discussed at the Interactive Dialogue of the General Assembly on Harmony with Nature, particularly in the areas of science and economics.

II. Humanity's interaction with the Earth

8. Our species whole recorded history has taken place in the geological period called the Holocene – the brief interval stretching back 10,000 years. Humankind has influenced every aspect of the Earth on a scale akin to the great forces of Nature. Almost all the planet's ecosystems bear the marks of our presence.

9. Probably the best-known aspect of humankind's influence is climate change. Atmospheric carbon dioxide may be at its highest level in 15 million years. Nutrients from fertilizers wash off fields and down rivers, creating stretches of sea where nothing grows except vast algal blooms. Deforestation means vast quantities of soil are being eroded and swept away; rich grasslands are turning to desert; ancient ice formations are melting away; and species everywhere are being pushed toward extinction.

10. A growing number of scientists have already advanced that we have entered a new geological epoch that needs a new name – the Anthropocene. The Anthropocene is a term widely used since its coining by Paul Crutzen and Eugene Stoermer in 2000 to denote the present time interval, in which many geologically significant conditions and processes are profoundly altered by human activities:

(a) Erosion and sediment transport associated with a variety of anthropogenic processes, including colonisation, agriculture, urbanization and global warming.

(b) The chemical composition of the atmosphere, oceans and soils, with significant anthropogenic perturbations of the cycles of elements such as carbon, nitrogen, phosphorous and various metals.

(c) Environmental conditions generated by these perturbations; these include global warming, ocean acidification and spreading oceanic ‘dead zones’.

(d) The biosphere of both on land and in the sea, as a result of habitat loss, predation, species, invasions and the physical and chemical changes noted above.[2]

11. These developments are all connected, and there is a risk of an irreversible cascade of changes leading us into a future that is profoundly different from anything we have faced before. The following sections highlight key human activities that have led us to the Anthropocene.

A. An Epoch of Massive Human Impact on the Earth: the Anthropocene

12. The Earth is over 4.5 billion years old. The last period of time, the Quaternary, includes two epochs, the Pleistocene and the Holocene. The latter—by far the shortest in the geological time scale—began about 10,000 years ago, witnessed by changes in climate that manifest in an ice core from Greenland.

13. The Holocene is the last of a series of interglacial climate phases that have punctuated the severe icehouse climate of the past 2 million years. It is distinguished as an epoch for practical purposes. Many of the surface bodies of sediment on which we live—the soils, river deposits, deltas, coastal plains and so on—were formed during this time.

14. The use of tools was once thought to distinguish humans from all other animals, and among the earliest people who lived in Africa were Homo habilis, the ‘handy man’. Since then, people have been modifying the Earth and, for much of that human story, these changes were achieved by muscle, supplemented first by primitive tools, largely for hunting, and later by fire.

15. From the beginning of the Holocene, evidence for human activities became more widespread, with the rise of agriculture beginning first in the ‘fertile crescent’ of the Middle East and its gradual extension to northern Europe about 6000 years ago. This change from hunting to cultivation leaves a clear fossil record in the pollen preserved in sedimentary successions during this period. And, the clearance of forests, associated with the rise of agriculture, may have begun to elevate carbon dioxide levels in the atmosphere long before the Industrial Revolution.

16. Following the Neolithic revolution of agriculture, humans began to live in villages and towns, and by the third millennium BC the cities of ancient Mesopotamia, the Nile Valley and the Indus Basin were well established and distinctive. Still later, urban cultures spread across the tropical and temperate zones everywhere, with those in Europe, Central and South America and China being diverse and advanced by the first millennium BC. This rate of urbanization has accelerated through time, with the first million strong cities possibly appearing in late medieval times. Now, there are many cities with between 10 and 20 million inhabitants that are rapidly continuing to grow.

[2] International Commission on Stratigraphy, Subcommission on Quaternary Stratigraphy, Working Group on the Anthropocene, http://www.quaternary.stratigraphy.org.uk/workinggroups/anthropocene/

17. Urbanization is a direct result of a population explosion. Since 1800, global population has risen from roughly 1 billion, to 7 billion in 2011 and a projected 9 billion by 2050. Megacities are now the most visible expression of human influence on the planet. The growth of cities is therefore a characteristic feature of the Anthropocene.

18. When numbers of human beings on the earth were small, their economic activity, even if locally damaging, had little effect on the integrity of the planet's life-support system. Plant and animal life was vast and resilient, and human use of it often had a relatively benign effect on the global ecosystem's overall functioning. But today, with 7 billion people and high-energy technology pushing the economy to vastly expanded dimensions, the Earth is in a period when the complex systems that life builds are being dismantled faster than they are being put together.

19. The human footprint - invisible, intangible in our day-to-day lives - may leave a more profound impact than the physical structures of the world's megacities: the impact of atmospheric carbon dioxide on the oceans has already increased their acidity and consequently stressed many organisms that form the basis of many food chains, substantially changing marine ecosystems. Such reaction is already leading to global biodiversity decline and will produce a distinctive event in the future fossil record.

B. The Anthropocene – a new era of geological times

20. In 2002, the Nobel Prize-winning atmospheric chemist Paul Crutzen resurrected the concept of the Anthropocene to denote the current interval of time on Earth in which many key processes are dominated by human influence. The term entered the scientific literature as a vivid expression of the degree of environmental change on Earth caused by humans, and is currently under discussion by the International Commission of Stratigraphy as a potential formal unit of the geological time scale.

21. But when did the Anthropocene really start? Most scientists have assigned the latter part of the 18th century simply because the global effects of human activities have become clearly noticeable. This is the period when data retrieved from glacial ice cores show the beginning of a growth in the atmospheric concentrations of several 'greenhouse gases', in particular carbon dioxide (CO2) and methane (CH4). Such a starting date also coincides with James Watt's invention of the steam engine in 1784.

22. It is difficult to put a precise date on a transition that occurred at different times and rates in different places. It is clear that in 1750, the Industrial Revolution had barely begun but by 1850 it had almost completely transformed Great Britain and had spread to many other countries in Europe and across the Atlantic to North America. Therefore, it has been suggested that the year AD 1800 could reasonably be chosen as the beginning of the Anthropocene.

23. Mankind's growing influence on the environment was recognized as long ago as 1873, when geologist Antonio Stoppani spoke about a "new telluric force which in power and universality may be compared to the greater forces of earth," referring to the "anthropozoic era". And in 1926, V. I. Vernadsky acknowledged the increasing impact of mankind: "The direction in which the processes of evolution must proceed, namely towards

increasing consciousness and thought, and forms having greater and greater influence on their surroundings." Teilhard de Chardin and Vernadsky used the term 'noösphere' — the 'world of thought' — to mark the growing role of human brain-power in shaping its own future and environment.

24. From the late nineteenth century, scientists were becoming aware of the extent of human influence on planet Earth. George Perkins Marsh's influential *Man and Nature* is perhaps the first major work to focus on anthropogenic global change, while Stoppani coined the term 'Anthropozoic' to denote the time of this transformation.

25. Two pre-industrial events have been cited as heralding the beginning of the Anthropocene. The first was the wave of extinctions of the Pleistocene megafauna. The second was the advent of agriculture—the so-called Neolithic Revolution— in the early phases of the Holocene.

26. The Industrial Revolution, with its origins in Great Britain in the 1700s marked the end of agriculture as the most dominant human activity and set the species on a far different trajectory from the one established during most of the Holocene. It was undoubtedly one of the great transitions—and up to now the most significant—in the development of humankind. Also, along the lines of the Industrial Revolution, one of the most dramatic trends of the past half-century has been the widespread abandonment of the farm and the village for a life in the city.

27. For millennia, humans saw Nature as a challenge to be overcome. In the 20th century, however, new technologies, fossil fuels, and a fast-growing population have resulted in a "Great Acceleration" of our own powers. Humankind is now in a position to have far greater impact on the functioning of the Earth System than most of all other life form inhabiting the planet and, has been doing so steadfastly to the point that renewable resources such as soil, forests and fish are being consumed at a rate faster than they can be replenished and greenhouse gases are dangerously increasing in the atmosphere.

28. At the dawn of the 21st century, human effects on the planet include unintentional, but not necessarily unknown, impacts from activities, among others, in the energy, manufacturing and transport sectors which result in air and water pollution, soil degradation, noise and electromagnetic pollution. In contrast, there are also numerous intentional impacts, such as urban development, landscaping, large-scale agriculture, deforestation, and damning of rivers.[3]

29. Such human impacts are embedded in the complex Earth System of atmosphere, lithosphere, hydrosphere, cryosphere and biosphere. The human effects are so numerous and dominant as to constitute an "Anthroposphere" that govern or disrupt the interconnected cycles and functions of the natural Earth System spheres. Even ambitious endeavours being contemplated, especially "climate engineering", urgently need to be assessed for impacts and risks, and relevant governance structures need to be developed.

[3] Mark Lawrence, The Anthropocene – Humans in the Earth System, Second Interactive Dialogue of the General Assembly on Harmony with Nature, April 2012, www.harmonywithnatureun.org

Through their collective impacts, humans have and continue to shape the face of the Earth and its atmosphere on geological time scales.[4]

30. A dominant social paradigm is also at the root of the impact of humankind on the Earth, namely the *human exemptionalism paradigm,* where mankind is viewed as separate from the environment, leading to the long-held belief that humans are the masters of planet Earth. [5]

31. The historical origins of this doctrine have already been addressed in detail in the two previous reports on Harmony with Nature. Suffice to say that today, scientists are admitting that this three-hundred-year-old scientific doctrine is far too simplistic and are finding that physical substances work and exist in terms of highly complex, interdependent, and changeable contexts and relationships. Therefore, scientists have embraced a holistic view of the Earth system where all the elements are interconnected and alterations in anyone of them affects the functioning of the others in countless and, more often than not, unknown ways.

III. Humanity's Transformation in the Anthropocene

32. During the second scientific revolution of the twentieth and twenty-first centuries, many of the assumptions about the relationship between human and environmental systems in Newtonian physics, commonly referred to as classical mechanics, had been challenged and effectively changed. Newtonian physics dealt with the physics of macroscopic objects not moving near the speed of light. It was the physics of things where quantum mechanics and Einstein's relativity did not apply.

33. In the new story of science, the cosmos is a seamlessly interconnected whole on the quantum mechanical level that evolved toward higher levels of complexity through the process of emergence. Everything on the quantum mechanical level is quite literally connected with everything else, and any sense we may have that the collection of particles we call self is isolated and alone is an illusion fostered by a lack of understanding of the actual character of this reality.[6]

34. In the new story about the universe in the biological sciences, the system of life on the Earth is self-organizing on the molecular, cellular, and embryological levels, and interactions between organisms regulate the levels of atmospheric gases and sustain conditions that perpetuate the existence of the whole. Feedback loops between proteins, lipids, nucleic acids, cells, tissues, organs and organisms modify the structures and functions of ecosystem in response to changing conditions in the environment. [7]

35. The new story of science also provides for articulating and disseminating a new understanding of the human relationship with life and the world. In this story, human life

[4] Ibid.
[5] Catton and Dunlap (1978), Environmental Sociology: A New Paradigm, August 29, 2007.
[6] Capital Institute, Economic, Finance, Governance and Ethics for the Anthropocene. A working paper of the Third Millennium Economy Project, June 2012.
[7] Ibid.

and consciousness is emergent and embedded in the whole of the cosmos on the quantum mechanical level and the system of life on the macro level. There is no basis in this story for assuming that our species is separate from and inherently superior to other life forms or that we have a privileged place and function in the cosmos. But there are basis for assuming that we are members of the human family and the commonwealth of life; and that we have a solemn duty to use our capabilities of foresight and empathy for their benefit.[8]

36. Institutions, academia, scientific and civil society organizations are calling for changes in the way humankind relates to the Earth. First and foremost, they are calling for humankind to treat the Earth with respect. Such respect can only be achieved when humankind changes the way it perceives itself towards Nature. They are calling for humankind to shift its role from master to guardian of the Earth. Such change is fundamental to the survival of our species at all levels: environmental, social and economic. Therefore, it has become imperative to make such a huge shift in ourselves and our role in the world.

37. Scientists and scholars in many fields such as environmental sociology, economy and law, advance that the remarkable scientific changes and developments of the last two centuries are practically absent from the framework of contemporary economics. They further explain that the current economic system comfortably rests on the human exemptionalism paradigm and operates on the assumption that the Earth belongs to humans and that the environment is a subset of the human economy.

38. However, since the early 1960s both, scientists and scholars are reminding us that such assumptions are at odds with scientific reality: humankind and its economic goals are a subset of the Earth's environment and resources, and humanity is only one of millions of species that depend on them. According to scientists, when science is taken into account, it becomes clear that the economy is embedded in human society and damaging the environment only serves to damage ourselves. Policy-makers have slowly started to take concerted action on what scientists had been telling us about our negative impact on the environment.

39. Many economists have challenged the basic tenets of economics. Scholars from various fields across continents are currently analyzing the true purpose of the economy. Should the economy's fundamental purpose continue to be to push toward extreme wealth and advantages that destroy social and ecological well-being or should the economy transform itself and change to preserve and enhance the integrity, resilience and beauty of life, providing rich and fulfilling lives for both individuals and communities?

40. For the most part, our education system has yet to move out of the Holocene era. Students are still taught that we are living in an era that began approximately 12,000 years ago at the end of the last ice age. Teaching students about the increasing negative impact that our human behaviour has had on the Earth could be of great help and would stress the enormous responsibility that we have to live in Harmony with Nature.

[8] Ibid.

41. The foreboding scope and expansion of the Anthroposphere has been put in an economic context by many new economists. Harmony with Nature, vis-à-vis economics, entails underpinning economics with scientific and moral foundations. Without basic laws of physics and ecology, limits to growth are easily overlooked. Meanwhile, without a moral foundation, principles of economics may easily be misapplied. For example, the principle of diminishing marginal utility establishes that more human benefit ensues from poverty alleviation than through the increased consumption of goods and services by the already-wealthy. Yet, without a moral foundation, diminishing marginal utility may only lead producers (and advertisers) to cater to new markets in otherwise satiated societies. [9]

42. Properly grounded, a more ecologically informed economics provides clear rules for sustainability: renewable resource extraction cannot exceed the regeneration rate, pollution overflows cannot exceed absorption capacity, neither extraction nor pollution can threaten essential ecosystem functions, and essential non-renewable resources cannot be depleted faster than the development of their substitutes. [10]

43. Also, it is too often overlooked that economic growth means increasing production and consumption of goods and services in the aggregate. It entails increasing population and/or per capita consumption as indicated by increasing GDP. Therefore, developing solar panels or other green products is not economic growth; it may or may not accompany increasing production and consumption in the aggregate. In the aggregate, economic growth as indicated by increasing GDP proceeds at the competitive exclusion of non-human species. We are consuming our natural resources including non-renewable, at a faster rate than their replenishment. This is despite technological progress and economies of scale, which serve only to maintain (if not exceed) the economic targets.[11]

44. In mainstream economic terms, growth is not only measured in terms of benefits but largely serves to measure the production of wealth. For example, pollution as an environmental negative is reflected as an economic benefit as a result of money spent on clean up and environmental remediation. Thus pollution ends as a positive indicator in GDP.[12] For society to live in harmony with nature, moving beyond GDP is essential since GDP is not designed as an indicator for measuring environmental degradation resulting from human activity, and thus the need to overcome this limitation with regard to sustainable development.[13] In this regard, the outcome document of Rio+20, “The Future We Want”, recognizes the need for broader measures of progress and societal well-being to

[9] Joshua Farley, Economics in Harmony with Nature and Science, Second Interactive Dialogue on Harmony with Nature, April 2012, www.harmonywithnatureun.org
[10] Ibid.
[11] Brian Czech, Steady State Economics for Harmonizing with Nature, Second Interactive Dialogue on Harmony with Nature, April 2012, www.harmonywithnatureun.org
[12] Peter G. Brown and Geoffrey Garver, Right Relationship – Building a Whole Earth Economy, 2009.
[13] Report of the Secretary-General, Harmony with Nature, A/65/314, 19 August 2010 and General Assembly Resolutions on Harmony with Nature, A/65/164, 20 December 2010 and A/66/204, 22 December 2011, www.harmonywithnatureun.org

complement GDP in order to better inform policy decisions. The United Nations will be working to launch a programme of work in this area building on existing initiatives.[14]

45. Numerous scientists, economists, and legal experts have decried the escalating destruction of the Earth's natural systems and called for a rights-based movement for Nature as necessary to recognize our dependence on and interconnectedness with the natural world. They are calling for society to listen to increasingly dire warnings of scientists regarding the environmental impacts of humanity's misguided behaviour patterns, which are grounded in the false assumption that the natural world is property to be manipulated for human benefit. They have expressed urgency to change destructive economic policies that are wresting control of the natural world to build private wealth for the few at the expense of the many. They are insisting that, rather than people and planet serving the infinite growth of the economy, economy must recognize its place as servant to the larger well-being of humans and the Earth itself. [15]

46. In this new system, the rule of law, science, and economics will be grounded in the Earth. As Thomas Berry articulated in *The Great Work*, "there is a need for humans to develop reciprocal economic relationships with other life-forms providing a sustaining pattern of mutual support, as the case with natural life-systems generally". Berry adds that this type of effort will appropriately "place the human within the dynamics of the planet," and that it must be supported by a philosophy and system of law that "provide[s] for the legal rights of the geological and biological as well as human components of the Earth community".

47. A key challenge in developing a global governance system built on the rule of ecological law is reinvigorating a transformed sense of democracy, in which individuals and communities embrace their ecological citizenship in the world and act on their responsibility to respect the complex workings of the Earth's life systems. This transformed democracy will reconnect people to the ecological contexts that sustain them, and will recognize and enable maintenance of those connections in good working order over the long term.

48. Until now, thinking about how the economy works only in conventional terms like supply and demand, market dynamics, financial incentives and the like has missed the big picture, that is, a basic scientific understanding of how the Earth life systems on which the economy depends work.

49. We must transform ourselves to sustaining what can be called the "world organism". Alexander von Humboldt, coined the term 200 years ago, explaining that humans are deeply

[14] Outcome document of Rio+20, The Future We Want, paragraph 38.

[15] Vandana Shiva, Statement on Harmony with Nature; Peter G. Brown, Economics and Politics for a Flourishing Earth: Taking Holism Seriously; Cormac Cullinan, Governing People for Earth: The Challenge of the 21st Century; Riane Eisler, The Real Wealth of Nations: Creating and Economics of Partnership, First Interactive Dialogue of the General Assembly on Harmony with Nature, April 2011, www.harmonywithnatureun.org; Linda Sheehan, Earth Law Center, http://earthlawcenter.org; Global Alliance for the Rights of Nature, www.therightsofnature.org

interlinked with the richness of nature, calling on us to enhance our capacities as a part of this world organism, not at its cost.

50. It is important to highlight the extent to which the neoclassical economic paradigm negatively affects sustainable development and efforts to attain Harmony with Nature. An exclusive emphasis on profit making can significantly compromise sustainable development through unsustainable consumption and production. One example of such an approach is the commercial application of the Science of Consumer Psychology or SCP, a specialty which studies how our thoughts, beliefs, feelings and perceptions influence how we buy and relate to goods and services.

51. One formal definition of the field describes SCP as "the study of individuals, groups, or organizations and the processes they use to select, secure, use, and dispose of products, services, experiences, or ideas to satisfy needs and the impacts that these processes have on the consumer and society". [16] The study of consumer behaviour blends elements from psychology, sociology, social anthropology and economics. It studies characteristics of individual consumers such as demographics and behavioural variables in an attempt to understand people's wants. It also tries to assess influences on the consumer from groups such as family, friends, reference groups, and society in general.

52. To further assist producers in their understanding of how consumers react to products, the advancement of Neuromarketing, the study of the brain's responses to ads, brands, and the rest of the messages littering society, is increasingly gaining ground. Neuromarketing is being assisted by medical technology such as Magnetic Resonance Imaging technology (MRI). MRI is a tool used to visualize internal structures of the body and detect in detail electrical frequencies emitted by the brain. It is now being used to study how the brain responds to different visual stimuli in the designing of consumer products.[17]

53. Neuromarketing's raison d'etre derives from the fact that the brain expends only 2 percent of its energy on conscious activity, with the rest devoted largely to unconscious processing. Thus, neuromarketers believe, traditional market research methods – like consumer surveys and focus groups – are inherently inaccurate because the participants can never articulate the unconscious impressions that whet their appetites for certain products.

54. Perhaps the technological issue of this epoch, the Anthropocene, is not so much the generation of know-how, but rather the prudent identification of "know-what" – namely the assessment of the technology choices available - and "know-why" - a participatory analysis of the socio-economic and environmental needs that technology is to address. It is time to reintegrate social policy into socio-economic and environmental issues in order to identify which issues we should direct our technological progress to, and which basic principles should guide our decisions. Can humanity as a whole truly afford large expenditures on research and development toward the marginal improvement of consumer goods? Or should we marshall our technological forces toward restoring humankind's harmony with the

[16] http://psychology.about.com/od/branchesofpsycholog1/a/consumer-psychology.htm
[17] http://www.pbs.org/wgbh/pages/frontline/shows/persuaders/etc/neuro.html

atmosphere, hydrosphere, and biosphere? Such questions fall under the rubric of technology and risk assessment, with a rich history intertwined with that of ecological economics. [18]

55. Despite the many constraints from our current economic system which prevent us from moving fully towards sustainable development, many people worldwide from different walks of life strive to teach and build profound awareness that we must learn to grow in different ways than with our current and heavily promoted and advertised hyper-consumption society, which is at the heart of our current global economic system. To accommodate our current lifestyle for the 9 billion people estimated by 2050, we would need several more planets. We therefore must redefine and transform ourselves in meaningful ways to stop the deleterious impact we are having on the Earth and on ourselves. To recall Mahatma Ghandi, "the Earth provides enough to satisfy every man's needs, but not every man's greed".

56. Therefore, to achieve Harmony with Nature, will require new thinking and a major cultural shift. Much of the suffering, hunger, poverty and violence challenging the world today is also a symptom of the prevailing "domination paradigm". When combined with the highly developed technology of today, that paradigm is leading us beyond the planetary boundaries, and is simply not sustainable.[19]

57. Scientists and scholars from the different social branches have already predicted that unless there is a global catastrophe, mankind will remain a major environmental force for the foreseeable future. A daunting task lies ahead for society to move beyond the Anthropocene. This will require changes in human behaviour at all scales and also changes in all those structures intentionally built to prevent humankind from moving to sustainable development pathways. Transforming humankind in the Anthropocene means building a culture that works with the Earth instead of against it.

IV. Ethics for a human-Earth relationship

58. Our present situation can be summarized by the simple statement of the writer Thomas Berry: "in the 20th century, the glory of the human has become the desolation of the Earth. And now, the desolation of the Earth is becoming the destiny of the human. Henceforth, the measure of all human institutions, professions, and programmes and activities will be the extent to which they inhibit, ignore or foster a mutually enhancing human-Earth relationship.[20]

59. Scholars are telling us that time has come to change from an economic system which is constantly being reaffirmed on unscientific assumptions about the dynamics of market systems deriving from neoclassical economic theory into an economic system rooted in scientific and valid assumptions about the relationship between human and environmental systems.

[18] Pat Mooney, Who will control the Green Economy, Second Interactive Dialogue of the General Assembly on Harmony with Nature, April 2012, www.harmonywithnatureun.org

[19] Riane Eisler, The Real Wealth of Nations: Creating an Economics of Partnerships, First Interactive Dialogue of the General Assembly on Harmony with Nature, April 2011, www.harmonywithnatureun.org

[20] Thomas Berry, The Dream of the Earth, 1988.

60. It also means that this new economic approach must be taught and predicated on a different conception of value that implicitly recognizes that the ultimate value is preserving and protecting the natural resources and environmental systems that enable life's flourishing on planet Earth.

61. Recent scientific advances highlight the need to carefully consider the long term, aggregate impact of human activities on those Earth system processes that constitute our environmental life support systems. Science also now recognizes and teaches us that the Earth System processes are dominated by non-linear feedbacks and complex interactions between the living biosphere (species, ecosystems) and physical processes.

62. We know that the climate system is not just an atmospheric phenomenon but involves exchanges of gases and energy between the atmosphere, oceans, land, and lithosphere. Landscape ecosystems and watersheds not only provide many of the essential conditions and resources for sustainable livelihoods, such as fresh water and fertile soils, but also are tightly linked to global-scale processes and climate change.

63. Protection of planetary life support systems is clearly a new category of scientifically defined goods and services that demand a new kind of governance response. It is of vital importance that this governance be based on non-market criteria.

64. Just as scientists and scholars from several fields – physics, economics, law, sociology, finance, governance - have acknowledged that our education still rests on outmoded assumptions that the Earth is subservient to our existing economic system, so do many of our moral beliefs and ethical principles in which they are expressed. This does not mean that all our existing moral beliefs must be discarded or overturned but it does invite testing, adjusting, and re-envisioning them in the same way that scientific assumptions have been tested, adjusted and re-envisioned over the centuries.

65. In the year 1500, every person of science in Europe knew one thing for absolutely certain: the sun and the planets traveled around the Earth. People were being educated under such premise and all astronomy texts said so. In those times, the Earth was at the center of the Universe. Then Copernicus put the Earth, which had long been considered the immobile center of the universe, spun it on an axis and had it moving around the sun.

66. The various scientific revolutions that have taken place over the centuries have significantly changed and moved away from a reductionist to a holistic approach in the observation, perception and study of the Earth System and the role of humans in the Universe. They have been able to discern, retain and build upon those discoveries that have assisted humanity in its quest for the holistic understanding of the Universe.

67. Science should inform the current economic system to remove humankind from revolving around the axis of profit alone. The present economic system has not succeeded in overcoming the poverty afflicting over a billion people worldwide, nor ensured an equitable distribution of goods and services, nor husbanded the Earth's resources. The findings of Science need to be applied to transform the economic paradigm to address these social and environmental challenges.

V. Conclusion

68. Time has come for new thinking to develop an economic system that revolves around the Earth and takes on board the scientific advances of the last hundred years. A new economic system is needed which discerns, retains and builds upon those areas and practices that can allow people to create a sustainable society.

69. A new economic system needs to have at its core a profound respect for the Earth upon which humankind exists and revolves. The Earth has given much to humankind and time has come for humankind to reciprocate.

70. In the words of Vaclav Havel: “Only humankind’s understanding of its place in the universe will allow the development of new models of behaviour, scales of values, and objectives in life and, through these means, to finally bind a new spirit and meaning to specific regulations, treaties and institutions”.

71. There are many voices of scientists, scholars, environmental lawyers, political activists, artists and citizens echoing, illustrating, and enlarging upon the reflections contained in this report. They are urging a vision of Nature as the complex of living and non-living substance that constitute the biosphere – the habitat of all life. They are calling to stop considering Nature as a collection of resource objects and inputs to feed the world’s economy and start considering Nature as the interdependent parts of an integrated ecological system deriving from and existing in an infinite universe.[21]

72. Although scientists have insights on physical reality, they are themselves unable to predict more than a fraction of nature’s behavior. The humbleness that comes with recognizing that humankind’s understanding of the world is only a glimmer of reality gives renewed validity to earlier views on the importance of that ‘glimmer of acquaintance” for society’s well-being and humankind’s flourishing. Even glimpses of reality, the awe they inspire and the respect they generate are better than ignorance for the continuity of life and should give reason for living in conformity with the nature that envelops all living creatures.[22]

73. We often forget that we did not weave the web of life; we are merely a strand in it. Whatever we do to the web, we do it to ourselves.[23] Our planet Earth has a history, and a complex one that took hundreds of millions of years to form the habitable surroundings that we enjoy today. The accelerating expansion of technological power, combined with the explosive growth of the world population, together with unsustainable consumption and production patterns, bring unparalleled challenges to the environment. [24]

74. We are at a perilous point where our knowledge, our powers, and our masses have irredeemably wrecked our environment. Our world hangs in the balance and never has more

[21] Barbara Baudot, Statement by the Triglav Circle on Harmony with Nature, November 2011, www.triglavcircleonline.org

[22] Ibid.

[23] Chief Seattle (1780-1866)

[24] Owen Gingerich, The Harmony of Nature, Second Interactive Dialogue of the General Assembly on Harmony with Nature, April 2012, www.harmonywithnatureun.org

been asked of diplomacy[25]. It is the story of our place in the Universe that we need to rewrite.

VI. Recommendations

75. The significant impact of human activities on the Earth System has been widely acknowledged by the United Nations, the international and scientific community, major groups and other stakeholders worldwide. Drawing on the foregoing discussion, the Interactive Dialogues of the General Assembly on Harmony with Nature, the outcome of the Rio+20 Conference entitled, "The Future We Want", as well as the above analysis, Member States may wish to take into account the following recommendations:

(a) Draw on the Harmony with Nature approach in their consideration of sustainable development policy issues at all levels.

(b) Ensure that policy-making in sustainable development is informed by the current scientific findings of the impacts of humanity on the Earth's ecosystem.

(c) Showcase further, through the United Nations Harmony with Nature website, the work being undertaken in keeping with paragraph 40 of "The Future We Want", to develop holistic and integrated approaches to sustainable development that will guide humanity to live in Harmony with Nature and lead to efforts to restore the health and integrity of the Earth's ecosystem.

[25] Ibid.