Transforming our World
in
Harmony with Nature

Integrating Nature while Implementing the UN's Sustainable Development Goals

BEST PRACTICES ON INTEGRATING THE ENVIRONMENTAL PERSPECTIVE INTO THE IMPLEMENTATION OF THE SUSTAINABLE DEVELOPMENT GOALS

Chief authors of the enclosed reports

Marilyn Fowler, MA, PhD.,
Department of Consciousness and Sustainable Development,
John F. Kennedy University,

Joan Kehoe, MSC

Maia Kincaid, PhD.,
Founder of the Sedona International School for Nature and Animal Communication,
Consultant and International Lecturer

Jill Lauri, MBA, MSW

Lee Samatowic, ND

Lisinka Ulatowska, MA, PhD.,
UN Representative, AWN, AWC, IPS,
Coordinator, Commons Cluster of the UN NGO Major Group

Rob Wheeler,
Main UN Representative, Global Ecovillage Network

Layout and Formatting
Tonny van Knotsenburg

Photos
Tonny van Knotsenburg

Contact
Lisinka Ulatowska, Coordinator: CommonsActionUN@gmail.com

TABLE OF CONTENT

Nature and Sustainable Development Goals 6, 7, 11, 12, 15 and 17

A Report Prepared for the 2018 High Level Political Forum
by
the Partnership on the Rights of Nature:
Integrating Nature into the Implementation of the SDGs

Introduction

Human beings are a part of Nature. Each of us is a tiny node affecting the atmosphere, the hydrosphere, the biosphere and the geosphere that together constitute the Earth System with every breath we take, everything we consume, the waste we produce and the actions we do—or do not—take.

When the United Nations adopted the Sustainable Development Goals (SDGs) that lie at the heart of ***Transforming Our World, the 2030 Agenda for Sustainable Development***, UN Member States recognized that "[the goals] are integrated and indivisible and balance the economic, social and environmental."

While the people that make up societies and the goods and services that constitute economies *originate* with Nature, the forms they take, are created by human beings. Human beings are thus able to stand apart and analyse these to determine what changes to make. But people are a miniscule part of Nature. While we can—and are—affecting the planetary boundaries that can support human life, we are unable to stand apart from the vast mysterious forces that inspire Life and Creation within the Universe we inhabit. Living in harmony with Nature requires a more integrated use of our mental faculties.

For this reason the ***Partnership on the Rights of Nature: Integrating Nature into the Implementation of the SDG****s* consists of a range of professionals from quite diverse disciplines: Academics, Indigenous Peoples, people who live from the land and Nature Communicators. We consist of representatives of mainly ECOSOC accredited organizations as well as individuals.

This Report was written with world leaders in mind: Heads of State and Government, Government Ministers, professionals in governments at all levels and civil society innovators in the relevant fields.

The Report consists of separate reports on how Nature can be integrated in the SDGs being focused on during the 2018 High Level Political Forum with their corresponding targets.

They are:

SDG 6 Ensure availability and sustainable management of Water and Sanitation for all;

SDG 7 Ensure access to affordable, reliable, sustainable and modern Energy for all;

SDG 11 Make Human Settlements inclusive, safe, resilient and sustainable;

SDG 12 Ensure sustainable Production and Consumption Patterns;

SDG 15 Protect and promote sustainable use of Terrestrial Ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Each of these reports are full of Actions that can be taken as a means to implementing both the SDGS and their relevant targets. For this reason, we have not added a separate report on SDG 17 - means of implementation - Strengthen the means of implementation and revitalize the global partnership for sustainable development.

This introduction is followed by an executive summary of each of the above-mentioned reports. For easy access to the Means of Implementation, the actions mentioned within each of the reports are summarized at the end under the relevant topic:

- Environment and Nature
- Society and Infrastructure
- Economy, Financing Mechanisms and Research
- Education - Formal and Informal, including through the Media
- Technology
- Policy and Law
- Agriculture

The Report will be sent out to Heads of State and Government, UN Ambassadors in Geneva and New York, and others in government and civil society, starting with those Nations who will be making Voluntary National Reviews.

Transforming our World in Harmony with Nature: Integrating Nature while Implementing the SDGs

EXECUTIVE SUMMARY
June 2018

In addressing the three pillars—*Economy, Society* and *Environment (Nature)*—that support the United Nations 2030 Agenda for Sustainable Development, much emphasis has been placed on the economic and social reforms needed to create a sustainable future. Just as much emphasis must also be given to the third pillar, that of the Natural Environment, given that it is generally acknowledged that the implementation of the UN's Sustainable Development Goals (SDGs) will succeed only to the extent to which we succeed in living in harmony with Nature and within the carrying capacity that the Earth provides.

Nature and the natural environment provide the basic resources that are required to support all of life. We have already degraded the natural environment to such an extent that we have rapidly depleted the natural resource base, are facing increasing shortages across many sectors that are now impacting one another in a complex inter-connected manner, and are undermining even the ability of ecosystems to be able to heal and regenerate or restore themselves.

If we truly want to protect, restore, and promote the sustainable use of both natural resources and the natural environment while achieving all of the various SDGs, we will have to shift from the mind-set of controlling Nature to a mind-set of learning from Nature how to sustain existence in cooperation with all life. An assessment should be made of the entire planet including all of its waterways and water bodies, the terrestrial areas, the desert, and the quality of the air. For the Earth System is one indivisible whole.

By taking responsibility for the well-being of the entire planet we can join as one global community to own the impact of our activities from the past, understand the challenges we face today, and create a new beginning where together we can solve the challenges and issues, which ultimately impact every human being. History has shown that when we come together knowing the issues, taking responsibility for the challenges and for resolving them, miraculous changes may occur. Feeling, listening, and considering the planet before taking action will bring clarity and understanding. The result will be a discontinuation of destructive actions and practices, a renewal of vitality of the earth, a thriving diversity of species, and a sense of pride and joy in community.

The ***Partnership on the Rights of Nature: Integrating Nature into the Implementation of the SDGs***, with the help of the Commons Cluster of the NGO Major Group, have thus undertaken to draft recommendations for how humanity could best implement the SDGs while keeping nature and the natural environment well in mind. We are thus including in this report a chapter on each of the SDGs being addressed at the High Level Political Forum on Sustainable Development in 2018. In this Executive Summary we are including a few of the most salient and we believe insightful points and recommended actions from this year's SDGs. To read our more detailed analysis and all of the action steps you can read either the full report, the individual chapters, or a condensed version of the full report. Read on below for a summary overview from each of this year's SDG reports.

Protect, restore and promote sustainable use of Terrestrial Ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss: SDG 15

The earth can best be seen in its entirety as an interconnected network of ecosystems and resources rather than individual ecosystems in isolated regions confined by national and political boundaries. For example, it is essential to see the value of forests as a system that connects both vast tracts of land as well as a set of inter-connected and essential eco-systems found around the world. Deforestation is not just a local activity; but instead comes from and with a lack of understanding of the role of trees and forests, which have the function of stabilizing the climate, cleansing and maintaining water systems, enhancing soil fertility, and of providing other eco-system services.

There are also unique and important areas of the earth that must be strictly off limits from any type of human interaction except for that which protects and maintains the well-being and integrity of the terrestrial and freshwater biodiversity of each of those particular areas, which are critical as blueprints and stabilizers for all life on the planet, in ways far beyond our understanding.

It is imperative that regenerative practices be adopted and that the proper actions be taken to enable nature to heal itself. For example, with key line ploughing, contouring, and other regenerative land management practices we

can capture and retain water in the soil, natural landscapes and watersheds for long periods of time or even permanently thus bringing back arid and dry land regions to their former ecologically healthy state. In order to move forward with this as rapidly as is needed people living in a region or community will need to be given the support and resources needed to be able to restore the local habitat and ecosystems.

The following types of actions should be undertaken, along with many others, which are included in our full report:

Educate from an earth-based/nature-centred perspective that the water, forests, plains, wetlands, dry lands and all the beings that inhabit these areas are more than just "resources" for human use.

Create educational programs and agreements for international cross cooperation that are inspired from the deeper desire to honour the earth, and all her beings, including all her peoples.

Create financial incentives for effective protection, eco-restoration, and conservation efforts. Give incentives to encourage the development of new enterprises specializing in plant and soil health, reforestation, cleaning toxicity from waterways and prevention of future toxic practices.

Create a network for sharing of information that increases human understanding, respect and reverence for trees and forests.

The importance of restoring degraded land and soils

Soils play a key role in absorbing carbon and filtering water. Soil destruction creates a vicious cycle, in which as less carbon is stored, the world gets hotter, and the land is further degraded. About a third of the world's soil has already been degraded or lost.

It is thus essential that policymakers attend to the earth under our feet. Unless new approaches are adopted, the global amount of arable and productive land per person in 2050 will be only a quarter of the level in 1960, due to growing populations and soil degradation. The following types of actions should thus be undertaken:

Incentives can be provided to farmers who work in harmony with nature, utilizing methods to rebuild the soil and improving nutrients in food. Likewise, individuals and groups who align with Nature to develop and implement innovative, and creative methods for soil restoration and preservation can also receive incentives or financial support.

Tracking the geographical history of desertified and degraded lands and soil and observing the lost ecosystem that sustained the areas previously will give important clues and information as to what must be done to return these areas to their healthy state. We need to focus on the interconnected needs of

all the beings - from the microbes, the mammals, to the grasses and trees, and use this as a mapping for restoration.

Ensure availability and sustainable management of Water and Sanitation for all: SDG 6

Considerations involving sustainable management of water and sanitation for all must include the needs of all of Nature as well as all of humanity. Human beings are just one integral part of the hydro or water subsystem, which also includes plants, animals and the Earth itself. The health of our water systems correlates with the health of the life that depends upon it. When humans hold it as precious, they naturally pay close attention to its ongoing supply and protect it from contamination.

To stimulate interest in regenerating fresh water sources, humans can profit from learning how Nature creates sustainable development using fifteen billion years of experience. We need to recognize that environments producing fresh water are essential to human life. These intact environments can provide valuable learning laboratories for children, students, scientists as well as Nature communicators and can be used in many constructive ways if left undisturbed.

In consideration of our goal to ensure a sustainable supply of clean, life-giving water for all, it is helpful to remind ourselves of the nature of water itself. Water is the most basic element of life, in constant motion on the earth and in the earth's atmosphere. The movement of water is governed by Nature through an intricate planetary system that takes up and releases moisture in complex, interrelating, climatic cycles. Where water is abundant, life flourishes; where water is scarce, life withers.

The health of our water correlates with the health of the life that depends upon it. When water is contaminated in one location, it continues to contaminate all downstream locations within its reach, ultimately polluting the oceans as well as the land.

Human beings make changes to the Earth System at our peril; we are seeing this with climate change. Over time there has been a shift from our understanding of humans as an integral, harmonious part of Nature to humans attempting unsuccessfully to control nature, causing crises such as droughts, fires, conflicts over water and mass extinction of species. Through our development of mega-projects, such as dams, levees, and tapping underground aquifers for intensive agriculture, people have disturbed natural processes so that water availability and management has become a critical issue.

When it comes to waste, human beings are integrally related to Nature and have much to learn from her examples, including by learning how to reuse “waste” and neutralize toxic substances. Nature offers us a free flowing model

that operates with a spirit of sharing and cooperation, both within and between species.

It is to our advantage to follow Nature's example, including that of developing and using circular solutions such as biological waste treatment. Sewage, grey water and other wastes can be broken down using a combination of plants, insects and bacteria and be used to improve soil health and to free nitrogen, phosphorus, methane gas for cooking, and other valuable resources - as is often done in both Ecovillage and some other communities around the world.

Reducing pollution, minimizing release of hazardous chemicals and materials, eliminating untreated wastewater, and substantially increasing safe reuse

Increased funding should be put toward research and development of natural, earth friendly products and technologies to cleanse Earth's water sources. If we support Nature's own ways of purifying and cleansing her water sources, they will gradually regenerate. To enable such a turnaround, we must begin to appreciate both Nature and ourselves for the miracles that we are—a miracle that could never be duplicated by humans ourselves. We must first learn to see and treat ourselves with respect and act in alignment with our best interests, so that creative solutions that benefit all can evolve.

It is thus essential that we bring the Earth and her resources back into balance. This will require that human beings:

- Cease the use of toxic and dangerous chemicals in all sectors.
- Develop earth friendly technology, including non-toxic cleaners and degreasers.
- Create a website where people can exchange best practices and effective incentives.
- Implement legislation prohibiting people from producing products that are not 100% recyclable, and imposing high fines for any pollution or destruction of Nature.

Ecosystems that produce fresh water are essential to human life. If we understand that we are an integral part of these ecosystems, and that our very survival depends on supporting and maintaining their continued health and vitality, we shall be increasing much more than just the system's capacity to produce fresh water. We shall be supporting the growth of microorganisms that live in water, insects, reptiles, birds, huge varieties of animals and plants, each of which is an invaluable marvel of nature in its own right as well as an indispensable part of the web of life. Each ecosystem that produces fresh water helps to sustain life on the planet. Each affects the air we breath, cloud formation, and sustains species worldwide through migration and the dispersal of seeds, all of which keeps the food chain intact.

Governments can take action to protect and restore water-related ecosystems by:

- Creating many more areas that protect nature, such as wildlife sanctuaries.
- Declaring every important water source as protected and designate more and larger areas as protected worldwide.
- Creating legally enforceable legislation with stiff penalties for industries that dump their waste into water.
- Preventing new buildings from being built that would impact such areas.
- Allowing rivers to re-assume their natural form, space and flow wherever possible.

Ensure access to affordable, reliable, sustainable and modern Energy for all: SDG 7

Energy permeates all that is. The sources we use come to us from the sun via the atmosphere, the hydrosphere, and the biosphere, which are the subsystems that form one stable system—the Earth System—within which for thousands of years human beings have been able to survive and prosper. Unfortunately, most of our current sources and uses of energy still consist largely of non-renewable and highly polluting fossil fuels along with nuclear energy and large scale hydro - all with significant adverse impacts on the natural environment.

Likewise, our activities, lifestyle choices and un-sustainable practices are now polluting, degrading and changing the earth systems as well so that instead of providing us with fresh air, clean drinking water, and wholesome foods, comfortable places to live, and inspiring modes of being active, we are changing these subsystems and with it the Earth System as a whole in such a way that it is shifting to a point at which at any time it might no longer be able to support human life. So, our ultimate challenge is to derive energy from all sources without destroying the inherent balance in the Earth System, as we have known it over the millennia we have existed as a species. Our ultimate challenge is to energize all we do while living in harmony with Nature. Human survival depends on this.

The first step in ensuring universal access to affordable, reliable and modern energy services, is deeply assess the current methods of energy production, be they for electricity, fuels, or technology. All aspects of these methods must be assessed for practicality, sustainability, ease of global access, and cost. This will allow us to see the many specific areas where current methods and technologies do not achieve high scores.

We need to trust the capacity for the human community to work together to achieve 100% renewable energy, starting by setting incremental goals and timelines for reaching 50%, then 80%, and then 100% renewable energy globally by 2030 or fairly soon there-after.

Doubling the global rate of improvement in energy efficiency

As individuals it is important for us to be thinking about energy efficiency moment to moment in order to achieve our goals of living sustainably. Double-checking our own personal choices for living sustainably each day can become second nature. With this commitment to personal responsibility we can come together as a global community, collaborate with each other, and share creativity and technology to help our planet heal and thrive.

Looking to Nature, humans can access the answers to improving energy efficiency. In traditional cultures in Africa and elsewhere, buildings were made using materials provided by Nature to keep habitats cool in the summer and warm in the winter. These and other low-tech approaches should become standard as well in both developed and developing countries.

We also need to continue to make progress in exploring and developing renewable and clean energy sources. Given that energy permeates every aspect of the whole Earth System, it is unlikely that we have exhausted all possibilities. We can venture outside of our present way of thinking about energy and the current approaches to energy development. For instance, windmill parks in the ocean have been found to disrupt biodiversity, yet such parks combined with seaweed farms rather enhance biodiversity.

Investing in effective sustainable energy affordable by all

Another challenge in transitioning to sustainable energy all over the world is addressing the investment costs and ensuring that all can afford to invest in such technologies. It is going to take a major transition. However, with sufficient funding invested in the right technologies, it can be done with very little impact on the natural environment. It has been repeatedly shown that renewable energy, conservation and efficiency efforts have incredibly fast pay back times often within a few years. When coupled with the positive results that reverse adverse impacts on the natural environment that tend to come from non-renewable sources of energy, the cost savings that come from making such investments are significant indeed and well-worth making in almost all cases.

Similarly, we need to invest at a scale that is appropriate for where the need lies. Sustainable and renewable sources of energy are inherently distributive in nature. They can best be applied at the local and regional level where the type of source best matches local and regional situations and conditions. Thus funding for small-scale investments needs to be made widely available at this level as well.

The international community currently spends hundreds of billions of dollars a year on fossil fuel and nuclear energy subsidies and has spent trillions of dollars more over the last fifty years. It is now essential that we phase out all subsidies for non-renewable energy and reliant transportation systems as has been agreed to by the UN member states for years; and replace it with the needed funding to invest in making a rapid transition to renewable energy instead.

Either a global partnership initiative or some other type of an international agreement or protocol ought to be established in order to develop policies and assist all countries in phasing out such unsustainable subsidies and replacing them with the investments needed to achieve the Sustainable Development Goals.

Make Cities and Human Settlements inclusive, safe, resilient and sustainable: SDG 11

In the same way that thriving, safe and resilient cities require us to include diverse nationalities, religions and sexes on a basis of equality, other species of animals and plants must be welcomed in cities and human settlements in such a way that people and Nature have a harmonious and symbiotic relationship to form strong, sustainable ecosystems. Green spaces for human beings to relax and to build awareness of their integral place in the intricately interconnected web of life. And respectfully integrating nature and natural resources in the development process when accessing basic goods and services is essential for creating healthy cities and societies.

Planning, Implementation, Housing, and Transportation

Every city and community thus needs to develop a local strategy and plan for achieving the SDGs. We should include children and youth in developing and implementing each of these local plans and provide them with the educational opportunities needed to be able to fully do so in an appropriate manner. All people need and deserve adequate, safe and affordable housing so that all individuals can contribute to and be nurtured by the society and community. The solutions that best serve all life can be found in the immediate environment. We can look to nature to create affordable, sustainable, safe, non-toxic, mildew and mould resistant housing that harmonizes with the surrounding environment.

By taking time to observe the normal flow of movement through a city or a village, minor changes can be made to greatly enhance the natural flow rather than creating an entirely new system. Many systems have a historic explanation, which actually aligned with Nature, but was lost as change progressed. By recovering and revitalizing such systems we can reawaken the heart of the community while helping to reconnect with nature.

Protecting cultural and natural heritage and creating resilience in the face of climate change

Cultural heritage is often connected to the natural surroundings in which a people live; it is the geography that determines the challenges inhabitants must face and the experiences that are relevant to them on a day-to-day basis. Our natural and cultural heritage also roots people in the time in which we live; and connects people to both our past and futures. In so doing, our cultural heritage also connects us to the culture of people worldwide and our natural heritage to the whole Earth System.

Providing educational opportunities to learn about our shared heritage can help people to reconnect with their capacity to care deeply. Such deep caring begins with the self and can be fostered by the implementation of Article 26 (2) of the Universal Declaration of Human Rights (the development of the full human personality). Steps should be taken to protect our cultural and natural heritage by sharing it and communicating about it in a mindful manner through ritual, dance, visual arts, storytelling and music, etc.

We need to create awareness about the devastation that can occur when a people's connection to their cultural or natural heritage is disrupted, as has been done in the past (e.g. to Indigenous Peoples) and is still being done today. Finally, we need to encourage the preservation of wild lands so that biodiversity can flourish and people can get as close to Nature in its original form as possible.

It is important to pay attention to the poorest and most vulnerable people who can then become an invaluable asset if they take pride in the place where they live. The more humans work with nature, the more balance will naturally occur; and as we restore and protect the natural environment deaths from "natural" disasters will decrease while community well-being increases.

During disasters human infrastructure tends to fall away, people in key positions can become unavailable, and what is left is the natural working relationship and bonds among "ordinary" people along with the systems of nature that still remain. It is thus essential to involve the local people in developing preventative and emergency preparedness plans and that we restore the natural environment to create buffer zones around built communities; move people, buildings, and infrastructure out of hazardous areas; and develop resiliency through regenerative practices.

Making cities and human settlements inclusive, safe, resilient and sustainable

It is essential that we learn from Nature as well as from smaller, sustainable communities as we build, design, rebuild, redesign, and further develop our cities and other rural and urban communities. Examples of sustainable practices modelled everywhere in Nature as well as in ecologically-balanced communities include the use of natural, reusable, recyclable and non-toxic building materials; habitat designs that feature compact, dense neighbourhoods surrounded by green open spaces with plenty of room for growing and processing the food, wastes, and other materials upon which the people and community depend; and innovative designs and modes of transportation, heating and cooling, and processing of human and other wastes that use bio-mimicry to emulate nature's time-tested patterns and strategies.

Other examples of sustainable practices that consider Nature include decisions to avoid developing and building in areas prone to geographical and geological conditions such as possible landslides, flooding, earthquakes, or other natural phenomena or where human impact would destabilize natural ecosystems.

In order to learn how we can make cities and human settlements more resilient and sustainable we should introduce and teach principles of Permaculture—a design process that integrates all aspects of the built as well as natural environment. Permaculture includes the art of building gardens and farms using ecosystems that require very little maintenance and that provide optimal conditions for each of the species that live there.

We should also include and teach Education for Sustainable Development in all of our schools. Given the central need for humanity and our communities to reconnect with, value, protect and restore the natural environment, it is essential that our children learn how to do this through both formal and informal educational opportunities. Formal education should incorporate cultural and traditional practices as well to share this deep connection with the earth that has been practiced by indigenous cultures for millennia.

We should make lessons in communication with Nature available with the help of Indigenous Peoples and/or other Nature communicators (many of which are available via the Internet); and take the perspectives of Nature into consideration when developing towns and human settlements.

We also need to remember to honour, respect and appreciate the sanctity of our commons as well as our intangible natural heritage - our shared ecosystems, natural environments, and planet earth itself. Applying these principles should be included as a primary goal within both our local and national planning processes and implementation plans.

New and Innovative Means of Financing; Urban Rural Linkages; and Protection of the Natural Environment

One of the best means for financing the provision of public goods and services would be instituting a Land Value Capture tax (LVCT) whereby tax is taken off of the sale of goods and incomes and is instead placed on the use of the commons i.e. land, natural resources, the electromagnetic spectrum, etc. This tax policy is included in the UN Habitat I, II, & III agreements. Such tax policies encourage landowners to fix up unproductive or run down properties and thus also provides jobs for low-income people that are then paid to do so. They discourage speculation and provide incentives for creating more liveable and compact cities while still protecting and establishing green spaces.

Given that 90% of all waste-water in the developing world flows back into the water shed untreated and that most of the people living in slums lack access to basic sanitation, it is essential that we provide a major focus and attention on dealing with and rectifying these problems. The cheapest and most environmentally benign way to deal with the massive amount of human and biological waste that is created is with biological waste treatment processes, which include composting of human and plant wastes and the use of aquatic plants and settlement ponds to treat waste waters.

When we import goods and services over long distances, we often mask unsustainable practices. Sustainability depends much on the degree to which people are able to meet their needs locally. Connecting urban, peri-urban and rural areas can make positive economic, social and environmental links.

This can be done through a system of rewards and penalties levied on the use of air, energy, water, soils and biodiversity, and the electromagnetic spectrum, by individual people in each locality such as by: levying Land Value Taxes on the use of natural resources; applying Pigouvian taxes whereby any harm done to the Earth System is highly penalized while the person/company that has done the damage is required to restore that part of the Earth System to its original or natural state; and by requiring people to pay if they use more than their fair share of our shared global ecological footprint and providing them with bonuses where they enhance it.

Ensure sustainable Consumption and Production Patterns: SDG 12

Humanity has developed a pattern of consumption and production that is anything but sustainable. As a species we are exceeding a number of planetary boundaries along with the carrying capacity of the earth. In fact, we are currently using more natural resources and are having an ecological impact that is approximately 50% more than the earth can sustain. If all peoples were to have the same lifestyle as the typical North American or European we would need 3 - 5 planet earth's to provide for us all. It is thus essential that humans pay attention to and address current practices of

production and consumption, which are unsustainable both for our planet and for us. And likewise that we adopt and implement sustainable production and consumption practices that will ensure we quit depleting our natural resource base and instead focus on restoring ecosystems and healing the natural environment.

There are many reasons why humanity has developed lifestyles and practices that are far from sustainable; and these must be addressed in a responsible manner if we are to live within the very real constraints of nature. Most of those who have engaged in the UN's sustainable development processes recognize that business as usual will not do; and that a step change in practices and orientation is needed.

With resources now becoming scarce we have finally realized that we will have to take much better care of the resources and bounty of the Earth that is still left. But unfortunately, our economic system still tends to drive us, as a species, to produce and use much more than can be sustained. Companies feel that they have to sell as much as possible in order to compete in the local to global marketplace; and if they do not they will either be driven out of business or swallowed up whole. Most of our media is under-written by advertising encouraging people to buy more all of the time. People are becoming more concerned that if they do not follow the company line they will be out of a job; and are in the habit as well of purchasing more and more, or only the best, as a means to feel better about themselves.
Humanity is beginning to recognize that the food, habitat and natural resources that we need to thrive as well as survive actually exist within a much larger nested set of eco-systems where the air, water, greenery, soils and a large diversity of life live in a balance of give and take: each element or life form giving of itself and receiving in exchange the specific type of nurturing resource it too needs to survive and prosper. In Nature in this larger context there is no waste and relatively little pollution because the waste of one species tends to nurture and sustain the lives of others. As a species we need to learn from nature and create or transform our economies into a circular economy where those things that we produce and use are re-used over and over again as well, the waste product of one thing thus providing the basic nutrients, materials or resources needed to produce other types of things, while thus - like nature - eliminating end waste and avoiding processes that pollute or degrade the natural environment.

If we are to ensure that all of Nature is to survive we must respect Mother Nature and the Earth, take no more than is necessary and give back what is needed to restore the earth's resources for the welfare of future generations and all life on this planet. This will require creating a regenerative circular economy, eliminating waste, and restoring ecosystems, natural water cycles and the natural environment upon which all of life, as well as our economy, is ultimately based. It is imperative that we take immediate action to reverse the effects of our actions. It is up to each of us, individually and collectively, to accept responsibility for saving our Planet.

We must start listening like we have never listened before and hear the cries of both our fellow humans and Nature. We must learn to take and use or consume no more than can be equitably shared by all others, take only what we need and manage/distribute our resources more thoughtfully and effectively. We need to work together, across borders and across nations.

There are many stakeholders, all with their own unique perspectives. Our solutions lie in including all of them in the process. Remembering that at our core we are all the same and have the same basic needs and wants best approaches this. We are all connected and interconnected. We all have valuable and essential wisdom to bring to creating sustainable solutions that benefit all life on this planet.

Implementing the 10-year framework of programs on sustainable consumption and production (10YFP)

Given the extent to which humanity has already degraded the natural environment and is living beyond the carrying capacity of the earth, it is essential that all efforts to implement the 10 YFP be based on making a rapid shift to full sustainability. The Rio Declaration provides essential principles upon which all efforts to shift to a sustainable economy and societies must be based - including the precautionary principle, access to information, living in harmony with nature, etc. All efforts to implement the 10YFP must also be based on abiding by these principles and basing our policies and actions on them.

Similarly, it is essential that all efforts to develop and implement local, national, regional and the global 10YFP include the fundamental need to restore degraded ecosystems, large and small scale water cycles, soil health, and watersheds, etc. Transitioning to regenerative agricultural practices is a must, along with investing in water retention landscaping.

There are also a number of other pre-requisites for transitioning to a fully sustainable economy and society that the 10YFPs also ought to be based upon. This includes transitioning to 100% renewable energy, creating carbon neutral and regenerative societies, phasing out as many toxic pollutants and chemicals as feasibly possible, and creating a fully circular economy where there is no longer any waste. All producers should be required to take responsibility for what they produce throughout the value chain, particularly using such policies as Extended Producer Responsibility. Externalities and tax policies will need to be included in the cost of goods and services. And finally all efforts to implement the 10YFPs should focus on achieving all of the other SDG Goals, Targets and Indicators at the same time.

Responsibly addressing food waste

Roughly one-third of the food produced for human consumption is lost or wasted globally, which amounts to about 1.3 billion tons per year. Reducing food wastage would not only avoid pressure on scarce natural resources but also decrease the need to raise food production by 60 percent in order to meet the 2050 population demand.

In medium and high-income countries food is to a significant extent wasted at the consumption stage, meaning that it is discarded even if it is still suitable for human consumption. On a per-capita basis, about 10 times as much food is wasted in the industrialized world as in developing countries. Food waste in industrialized countries can be reduced by raising awareness among food industries, retailers and consumers.
The causes of food losses and waste in low-income countries are more complex and are mainly connected to financial, managerial and technical limitations in harvesting techniques, storage and cooling facilities in difficult climatic conditions, infrastructure, packaging and marketing systems.

Reducing and eliminating the use of toxic chemicals and other wastes

The toxicity of chemicals increases and poses a threat to humans and the rest of Nature when they are isolated from their natural form and purified. More than 10,000 commonly used chemicals have never even been tested to determine their levels of potential toxicity. All countries have a moral responsibility based on the Universal Declaration and Conventions on Human Rights, etc. to end the usage of chemicals that dramatically hurt human health. The precautionary approach must be used to ensure that all chemicals produced are tested and used in a manner that is totally safe for both humans and the natural environment. Environmental laws need to be established at all levels of government that will ensure their health and safety and should be enshrined in international law through a Global Pact for the Environment.

Policies and regulations are also needed at every level of government to reduce and eliminate waste. All producers should be required to carry out extended producer responsibility for the products they make to ensure that wastes are eliminated throughout the value chain and are instead used to provide basic feed-stocks for other products and processes.

Much work has been done in pioneering green chemistry and bio-mimicry. The results have been phenomenal showing how we can greatly reduce costs and expenditures along with negative impacts on the natural environment if we will watch and learn from nature. We thus need to institute education that teaches the benefits of working in harmony with Nature and with each other in order to keep consumption and waste in balance and in alignment with the needs of all life on the planet.

- Learn from Nature that recycles everything.
- Institute cradle-to-cradle manufacturing.
- Promote zero waste policy as is being done by the EU.
- Require Extended Producer Responsibility
- Adopt socially responsible standards and labelling schemes
- Provide municipal composting programs
- Provide financial incentives for best practices among schools, businesses, within communities, government procurement, etc.
- Adopt and implement zero waste policies as is beginning to be done in the EU. See www.zerowaste.com.
- Fully implement recycling and cradle-to-cradle manufacturing.

We can also promote the idea that consumption does not create happiness. The "art of happiness" can be taught in public schools as a part of shifting our values. At the same time we could provide information and teach about the destructive impact that comes from over-consumption, how advertising encourages people to buy and use more than can be equitably shared by all, the need to transform our advertising policies and eliminate much of the advertising that is so prevalent today, and find other means to underwrite or fund our media activities.

Governments should encourage and provide incentives for all companies to become a member of the Global Compact, which provides standards, activities, and incentives for businesses and organizations to abide by international agreements and set an example for others to follow. Reports coming from civil society organizations should be used to assess both the positive and the negative impact of large corporations on the communities and the nations where they are active, especially where these are paid for by the public sector to provide official development assistance.

Governments should develop policies that require or give preference to procurement of goods that are produced using circular economy practices and that are determined not to have a negative impact on the natural environment. They need to strictly enforce laws that prevent inefficient, corrupt public procurement practices; and adopt policies to hold those personally accountable that engage in corrupt practices or engage in procurement practices that harm the natural environment. And establish citizen panels with a mandate to recommend and set procurement policies that are socially responsible and advance sustainability practices and principles.

Providing information about sustainable development and adopting lifestyles in harmony with nature

It is essential that Education for Sustainable Development (ESD) and information about the 10 Year Framework of Programmes be included in the curriculum and taught at every level of education and across all disciplines and courses of study and in a fully integrated manner. Similarly, every student in the world should be made aware of the Sustainable Development

Goals and how they intersect with and require the teaching and learning about ESD and the 10 YFP.

If we are truly to be serious about achieving all of the various international agreements and all of the other sustainable development policies, laws, regulations and agreements that have been reached, then they must be included in these curriculums and courses of study as well. Currently there is very little understanding among the peoples of the world as to what our governments have actually agreed to do. Very few people for example would know that their government has signed onto more than 600 multi-lateral environmental agreements and treaties. We thus need to determine how such information can be spread both formally and informally throughout society at large as well.

Policies and laws protecting against abuse of Nature should require those harming Nature to work more closely with it, to connect with the majesty, subtlety and intrinsic wisdom and cooperation as well as the destructive and random viciousness that can also be found in the Natural Order; and rectify any harm done through, say, Pigouvian taxes, whereby harm done to Nature (and human beings) is fined and moreover requires restoring Nature to her original or natural state.

The idea that the consumer culture brings happiness and fulfilment has proven to be a dangerous myth of advertising leading to unhappiness and depletion of natural resources. The truth is that satisfaction and quality of life stem from balanced production and consumption that are sustainable for all life in the natural environment.

Finally, there is a great and urgent need to provide sufficient funding to dramatically scale up the development of agriculture extension services and ecosystem restoration processes, research and development throughout the developing world, both of which would more than pay for themselves over time.

SDG 6

Ensure Availability and Sustainable Management of Water and Sanitation for All

Environmentally Conscious

Awareness & Respect

Nurture

Climate Change

Nature

Earth

Restore Balance

BEST PRACTICES ON INTEGRATING THE ENVIRONMENTAL PERSPECTIVE INTO THE IMPLEMENTATION OF SDG 6

Ensure availability and sustainable management of Water and Sanitation for all

Summary

Considerations involving sustainable management of water and sanitation for all must include the needs of all of Nature as well as all of humanity. Human beings are just one integral part of the hydro or water subsystem, which also includes plants, animals and the Earth itself. Ecosystems are an important building block on which biodiversity relies and their need for water must be considered along with that of human beings.

The health of our water correlates with the health of the life that depends upon it. The natural cycle of water controls life on the planet. To achieve universal and equitable access to safe and affordable drinking water for all, it is necessary to recognize that water is the giver and provider of all life. When humans hold it as precious, they naturally pay close attention to its ongoing supply and protect it from contamination.

To address water scarcity and truly promote access to fresh water for all it will be necessary to create a culture of caring for all of Nature as well as all human beings. To stimulate interest in regenerating fresh water sources, humans can profit from learning how Nature creates sustainable development using fifteen billion years of experience. Several simultaneous steps and number of actions are proposed to help achieve this.

Integrated water resources management, including trans-boundary cooperation, requires that we do not treat water-related ecosystems and other aspects of nature as simple commodities to be exploited for the benefit of the few. Rather, we must recognize that environments producing fresh water are essential to human life. These intact environments also constitute valuable learning laboratories for children, students, scientists as well as Nature communicators and can be used in many constructive ways if left undisturbed.

Finding ways to share the wisdom and knowledge of those who understand the complexities of these ecosystems will benefit both human beings as well as Nature. It is important to acknowledge that developing countries are as knowledgeable as developed nations about best practices for maintaining fresh water and sanitation and in fact, may be demonstrating more effective stewardship and better cooperation with Nature, living closer to the Earth.

This document discusses Nature-inspired practices to purify water sources as well as a number of best practices in dealing with open defecation and sanitation issues. It includes as well a variety of useful perspectives and practices to bring the Earth and her resources back into balance.

At our core, humans are social beings who share an integral relationship with Nature. By reinforcing these basic values, leaders can inspire their communities to take action. With the support of local government, people can take the lead themselves. Actions are proposed to help bring this about.

SDG 6 - WATER AND SANITATION

Ensure availability and sustainable management of Water and Sanitation for all

In consideration of our goal to ensure a sustainable supply of clean, life-giving water for all, it is helpful to remind ourselves of the nature of water itself. Water is the most basic element of life, in constant motion on the earth and in the earth's atmosphere. The movement of water is governed by Nature through an intricate planetary system that takes up and releases moisture in complex, interrelating, climatic cycles. Where water is abundant, life flourishes; where water is scarce, life withers.

Because water is a shared resource on the planet—vital to the ongoing survival of not just our species but all species—it is evident that human beings must work together in cooperation to implement this goal. If we approach the implementation of this sustainable development goal from a place of appreciation of clean water for all life, we will set in motion what is required to support us in our efforts.

Sustainable management of water and sanitation for all must include the needs of all of Nature as well as all of humanity. Human beings are just one integral part of the hydro or water subsystem, which also includes plants, animals and the Earth itself. Ecosystems are an important building block on which biodiversity relies and their need for water must be considered along with that of human beings.

The health of our water correlates with the health of the life that depends upon it. When water is contaminated in one location, it continues to contaminate all downstream locations within its reach, ultimately polluting the oceans as well as the land. We are reminded that cooperation for the wellbeing of all life requires that we value water quality everywhere and in every nation, because the quality of water in one nation is intimately connected with the quality of water in another.

The natural cycle of water controls life on the planet. It determines which life forms, and which combinations of life forms exist naturally in each ecosystem. The way the water cycle functions at any given time affects habitats, availability of food, climates, water availability, and performs an important function in the evolution of species and how well they live with one another.

Human beings make changes to the Earth System at their peril; we are seeing this with climate change. Over time there has been a shift from our understanding of humans as an integral, harmonious part of Nature to humans attempting unsuccessfully to control nature, causing crises such as droughts, fires, conflicts over water and mass extinction of species. Through their mega-projects, such as dams, levees, and tapping underground aquifers for intensive agriculture, people have disturbed natural processes so that water availability and management has become a critical issue.

Moving forward in this century and beyond, water quality will continue to grow in importance, partly because of the tremendous growth of the population and urban expansion and development. This increasing human and industrial

growth puts increased stress on the natural water resources, which further erodes our water quality.

Water quality is a very complex subject, in part because water is a complex medium intrinsically tied to the ecology of the Earth. Industrial pollution, including runoff from agricultural areas, urban storm- water runoff, and discharge of untreated sewage, especially in developing countries, is a major cause of water pollution everywhere, including our oceans.

Going forward, it is essential that we work with one another, together as one people, remembering the importance and precious value of water on the planet. It is important we look closely at our daily activities in relation to water use and preservation, as individuals, businesses, communities, nations and as a global community.

It is also necessary that we discuss our needs honestly with regard to water availability and sanitation. To have productive discussions that will allow us to reach our long-term goal, we must initiate greater acceptance of each other, particularly those we have considered "other". From that place of mutual acceptance, together, we open to a perspective from which creative, and effective solutions can emerge.

Human ingenuity is abundant everywhere on the planet. By sharing new ideas, methods, and technologies, we can resolve challenges and learn to live together in harmony with each other and with natural forces. Humans, like water and all other aspects of Nature, are interconnected and interdependent. The wisdom of water shows us our inseparability from each other and all of life. While no single nation can accomplish this goal alone, any one nation can lead the way for others to follow.

TARGETS SDG 6

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all

Water is the giver and provider of all life. When humans hold it as precious, rare, essential, even sacred, they naturally pay close attention to its ongoing supply and protect it from contamination.

What we value as precious, rare or essential to life, or to our livelihood, we pay close attention to and manage with care.

Modern technology has made water available at the turn of a knob, and has promoted a belief that fresh, clean water is always readily available for bathing, drinking and all other purposes.

While most people are aware of how precious water is, many in technologically advanced countries take it for granted. There is an illusion that fresh water is always available and the only imagined inconvenience would be a plumbing issue inhibiting the flow of water to us.

While the technology is truly something to celebrate, we must consider the reality of the dwindling fresh water source and people must be reminded that the faucet could go dry. Nature has not always provided.

Proposed Actions

It would be valuable for young people in technologically advanced countries to have alternate experiences with water as part of their education. This would enable new generations to understand the reality of the preciousness of water and foster the production of new technologies based on the sustainability of water for current and future generations.

In such an educational process, students might:

- Practice living without the technology which makes water so readily available;
- Study water ecology;
- Live in communities where water must be carried and where water is used in whatever form or condition it is found because that is the only option;
- Learn to care for water resources with reverence and respect, as sacred sources;
- Learn to cleanse contaminated water sources using natural methods;
- Learn about using non-toxic, recyclable containers to collect water;
- Explore innovative solutions to desalinating water more efficiently;
- Create water pipelines to dry areas where water can be collected in central places for access by individual households.

6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

Locations where open defecation still continues are prime locations to test and develop new technologies that can be adapted for use in all locations. What is currently utilized in cities with running water and flush toilets is a great feat of technological development but may not be sustainable in the future. By placing priority on bringing new technologies to areas that have been forgotten, sustainable advancement can be made on a planet-wide scale, which will bring greater equitability and wellness to all.

Proposed Actions

- Identify areas where change is needed with regard to equitable sanitation, hygiene and open defecation.
- Publicize the issues worldwide and invite people and organizations to become involved in bringing new technologies that will transform these areas.
- Implement various advanced technologies in these locations to test their effectiveness.
- Monitor and study the technologies to perfect them.
- Adopt these new technologies and sustainable practices for waste and water management in other locations and regions of the world going forward; publicize results widely to build awareness and create alignment with natural earth ecology.
- Focus first on areas in greatest need so that they are transformed and then work on areas of secondary need going forward.

Projected Outcomes

- Immediate improvement of conditions in locations on the planet where change is most needed.
- New awareness among scientists and other technological developers with regard to functioning of newly developed systems.
- The invention of technologies that sustainably manage water as well as waste in harmony with earth systems and planetary boundaries.
- The opportunity to test, perfect and expand ideas and ultimately create new types of sustainable systems that can be implemented in developed nations as well as in developing nations.
- Higher standards of life for the poorest human inhabitants on the planet, bringing new awareness of the potential for greater health to all species of life.
- Funding and support for these new sustainable technologies and practices going forward, recognizing their absolute necessity for the continuation of life on the planet.

Many problems relating to availability of natural resources, such as water and energy, can be resolved if we plan our human settlements so that people live within reach of sufficient water and other resources that serve a particular community. Increasingly, people are able to live and work in smaller communities with the help of the Internet.

So, when we refer to what is “affordable,” it is essential to interpret that in terms of availability as well as in terms of money. If water has to be transported over long distances, it becomes unaffordable for many people. If fresh water sources are depleted or polluted through poor waste management, people will languish for lack of water.

When it comes to waste, human beings are integrally related to Nature and have much to learn from her examples. Everything discarded as waste by one part of an ecosystem is used by other parts of the system. Nature produces no waste. We can all learn many things from natural environments, including how to reuse “waste” and neutralize toxic substances.

All people can participate in recycling inspired by Nature's processes. Where there is no central garbage collection, people can be encouraged to bring waste to central recycling centers. These can become centers for the exchange of goods. Financial reimbursement can be offered as an incentive for people to bring in articles such as aluminum cans, plastic bottles, reusable building materials and other resalable goods. The recycling keeps the cost of reselling materials low, which is advantageous for the economy.

Nature offers us a free flowing model that operates with a spirit of sharing and cooperation, both within and between species. If people worldwide were to pool their information, know-how and best practices, possibly with the help of the Internet, then communities could choose the practices that suit them best to implement this goal.

It is to our advantage to follow Nature's example, including using circular solutions. Sewage, grey water and other waste can be broken down using a combination of plants, insects and bacteria to free nitrogen, phosphorus, methane gas for cooking and other valuable resources.

Waste management, if it follows nature’s example, would be geared to full recycling. Since human beings produce so much toxic waste, the recycling process should be improved to make substances less toxic so they can be recycled and put to good use for the planet. To allow this to come about, people need to develop a desire to fully communicate with life itself, including listening with and to their own physical bodies.

6.3 By 2030, improve water quality by reducing pollution; eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

This has to be a priority now! It is time that we work in conjunction with Nature rather than continuing our ineffective attempts to challenge and control her. We can follow Nature’s way of balance and learn to move with her flow. The solutions lie in the simplicity of Nature and in using natural, non-toxic means

of water purification. Plants and trees filter water naturally. We can learn from them and follow their lead.

It is important to educate humans to help them develop awareness of and respect for Mother Earth, to realize that all of life is interconnected and we are all sharing the same precious resources so there is no point in continuing harmful practices such as dumping dangerous materials into our water systems. With a new understanding of how to live in ways that preserve and protect our precious water, keeping it clean and safe, people can raise awareness in the world through their way of thinking, speaking and being as well as their use of technology and media. Indigenous Peoples can share the knowledge of their wise elders to help people learn a loving way of being in harmony and appreciation of nature and animals.

Increased funding should be put toward research and development of natural, earth friendly products and technologies to cleanse Earth's water sources. If we support Nature's own ways of purifying and cleansing her water sources, they will gradually regenerate. To enable such a turnaround, people must begin to appreciate both Nature and themselves for the miracles that they are—a miracle that can never be duplicated by humans. Human beings must first learn to see and treat themselves with respect and act in alignment with their best interests, so that creative solutions that benefit all can evolve.

Proposed Actions

It is essential to bring the Earth and her resources back into balance. This will require that human beings:

- Cease the use of toxic and dangerous chemicals in all sectors.
- Develop earth friendly technology, including non-toxic cleaners and degreasers.
- Develop clean motors for cars and planes.
- Develop an approach to child rearing that respects the individual's capacity to fulfill his/her potential and develop self-respect as a foundation to developing respect for all life on this planet.
- Create supportive work environments that promote creativity and make it possible for people to have the time and resources for true relaxation and recreation when not working.
- Implement Article 26 (2) of the Universal Declaration of Human Rights.
- Establish formal education using all types of media to promote awareness and understanding, with emphasis on:
    - The primacy of Nature and the need for Nature-inspired solutions. Success stories of Nature-inspired best practices and effective solutions.
    - Student-centered projects that make use of individuals' unique skills and aptitudes to solve real world problems involving pollution and water quality.
- Create incentives for people to develop solutions to problems relating to waste management and cleaning polluted water sources.

- Provide material support for implementing such solutions.
- Create a website where people can exchange best practices and effective incentives.
- Apply commons rent/Land Value Taxation whereby the use of natural resources is paid for by commons rent/Land Value Taxation; and taxes are removed from labor, thereby causing people to make the most of their natural resources and encouraging people to work.
- Implement legislation prohibiting people from producing products that are not 100% recyclable, and imposing high fines for any pollution or destruction of Nature.

Even though many believe they cannot accomplish what is needed because powerful interests are in the way, almost anything is possible when people are motivated by a simple desire to do good, to simply take care of what needs to be taken care of. The more people step up and unite to support the best interests of all life on this planet without fears or political agendas, the more they will naturally take actions in alignment with the highest and best for all life on the planet and unleash the powers inherent in Nature.

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

If we want to address water scarcity and truly promote access to fresh water for all it will be necessary to create a culture of caring for all of Nature and all human beings. As well, we will need to stimulate interest in regenerating fresh water sources by learning how Nature creates sustainable development using 15 billion years of experience stored in the Earth. Addressing water scarcity will involve the following simultaneous steps.

Proposed Actions

- Increase awareness of daily water consumption in homes and in industries.
- Establish a cap on the amount daily water use allowed.
- Promote education in effective, environmentally conscious ways for people to save water.
- Provide incentives for people to be responsible regarding their own water consumption.
- Ensure that big companies declare their use of water and have a daily limit.
- Offer assistance to relocate people who live in very dry places move to locations with easier access to water pipelines.
- Ration water use when in short supply to ensure all have access to a fair share of available fresh water.
- Start a wide-scale education campaign to ensure that all understand:

- The crucial importance of fresh drinking water to themselves personally as well as to all others.
- That access to fresh water must include all species, since leaving out one part of the Earth System from a needed access to fresh water will inevitably have a boomerang effect on one's own wellbeing.
- The importance of exchanging and sharing information among people worldwide via a special website or the websites of relevant UN Specialized Agencies about Nature-based solutions for regenerating fresh water and best practices used by others facing similar fresh water issues.

- Institute enforceable legislation that ensures that all have the necessary access.
- Create a global system that invites all cultures and nationalities to engage in an understanding of planetary water resources and current developments on the planet as a whole.

Where people shift their vision and truly work together for the wellbeing of all people and the planet, they will experience true empowerment to achieve the goal of increased efficiency of water use, becoming aware of the remarkable miracles already happening on a daily basis.

6.5 By 2030, implement integrated water resources management at all levels, including through trans-boundary cooperation as appropriate

Where we treat water-related ecosystems and other aspects of nature as simple commodities to be exploited for the benefit of just a few, we risk depleting and destroying our natural environments, as is happening today.

Ecosystems that produce fresh water are essential to human life. If we understand that we are an integral part of these ecosystems, and that our very survival depends on supporting and maintaining their continued health and vitality, we shall be increasing much more than just the system’s capacity to produce fresh water. We shall be supporting the growth of microorganisms that live in water, insects, reptiles, birds, huge varieties of animals and plants, each of which is an invaluable marvel of nature in its own right as well as an indispensable part of the web of life. Each ecosystem that produces fresh water helps to sustain life on the planet. Each affects the air we breathe, cloud formation, and sustains species worldwide through migration and the dispersal of seeds, all of which keeps the food chain intact.

Once people begin to realize that ecosystems constitute valuable learning laboratories for children, students and scientists as well as Nature communicators; that they are works of art awe-inspiring in their beauty, bringing solace, nurturing, peace, rest for the weary and much more, people will be more inclined to leave these ecosystems intact to perform their many functions and to provide their many benefits to all life.

6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

Proposed Actions

Following are some actions we can take to protect and restore water-related ecosystems:

- Create many more areas that protect nature, such as wildlife sanctuaries.
- Declare every important water source as protected and designate more and larger areas as protected worldwide.
- Create legally enforceable legislation with stiff penalties for industries that dump their waste into water.
- Prevent new buildings from being built that would impact such areas.
- Allow rivers to re-assume their natural form, space and flow wherever possible.

6a. By 2030, expand international cooperation and capacity-building support to developing countries in water and sanitation-related activities and programs, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies

Water is an essential element for human life and throughout the ages much wisdom and know-how has been developed regarding locating and stewarding water sources.

Finding ways to pool this wisdom and know-how will benefit both human beings as well as Nature. It is important to acknowledge that developing countries are as knowledgeable as developed ones and in fact, may be demonstrating more effective stewardship and better cooperation with Nature, living closer to the Earth.

6b. Support and strengthen the participation of local communities in improving water and sanitation management

Ours is a world of abundance, as long as we use what we need and leave the rest untouched. Everything is interconnected and we would be wise to acknowledge that fact.

If we want to purify the water, we must shift our intentions and emphasize values other than pure profit. This will take a new kind of effort that respects basic human needs.

If we want clean drinking water, we absolutely must stop polluting it.

The solutions lie in the simplicity of Nature and in using natural, non-toxic means of water purification. Plants and trees filter water naturally. We can learn from them and follow their lead.

Our human desires for cooperation, collaboration and inclusion are deeply ingrained in our psyche.

At our core, we are social beings who share an integral relationship with

Nature. By reinforcing these basic values, leaders can inspire their communities to take action. With the support of local government, people can take the lead themselves.

Proposed Actions

- Institute a simple education campaign that speaks to the hearts of people, letting them understand deeply why it is essential to save fresh water and improve sanitation even in areas where rainfall is plentiful. (Here organizations such as the Global Ecovillage Network can be extremely helpful.)
- Create incentives to get all people in local communities involved.
- Foster a sacred relationship with water as an element to be treated with dignity, kindness, love and respect by:
  - Providing inspiring stories and demonstrations of best practices.
  - Providing education individually or as a group on how to implement best practices.
  - Offering examples of how people have benefited from implementing one or more of these practices.
  - Eliciting responses from others regarding their successes, the joy of working with others as a part of a group or simply as a part of a larger network.
  - Reinforcing the knowledge that they are doing useful, necessary and effective work for the planet.
  - Supporting the creation and exhibition of works of art that portray water as a beautiful and sacred and create a deep connection with water.
  - Bringing attention to current diverse works of art that emphasize our connection with water and Nature.
  - Showing how water is a part of every living being on this earth, how water is a part of all of our own bodies, and how we are integrally related to all bodies of water.
  - Showing through the arts that water is by nature wild and free.
  - Allowing our music to reflect the voices of water, at is sings and roars.
  - Portraying water's movements in dance as it flows and moves through the world.
- Encourage people to share what they are doing on Facebook and on YouTube, Twitter, Instagram and other social media to increase the potential that these images will go viral.
- Make what is happening in each community known to other local governments via ICLEI and associations of Mayors, etc., and via the web sites of various UN Agencies.

Once people get a sense that they might be able to see, hear, touch, feel, and dance with what they come to see as the nature of water within themselves and all around them, they may more easily realize that we are all part of each other, our fates are intertwined, and water is not an object outside of us but the primary element that makes us what we are.

In our bodies, and emotions, we are one and inseparable. What happens to water happens to human beings. We are connected in both joy and suffering. Human emotions are intimately related to the element of water. Both require natural expression and flow. When dammed up, pressure builds, which can lead to torrential and damaging outpourings. Letting emotions and water flow in harmony with the movement of life, living life gracefully, in harmony and balance with the world around us is essential for the health of each human being, each aspect of Nature and the Earth as a whole.

SDG 7

Ensure access to affordable, reliable, sustainable and modern energy for all

BEST PRACTICES ON INTEGRATING THE ENVIRONMENTAL PERSPECTIVE INTO THE IMPLEMENTATION OF SDG 7

Ensure access to affordable, reliable, sustainable and modern Energy for all

Summary

Energy permeates all that is. The sources we use come to us from the sun via the atmosphere, the hydrosphere, and the biosphere, which are the subsystems that form one stable system—the Earth System—within which for thousands of years human beings have been able to survive and prosper. Unfortunately, most of our current sources and uses of energy still consist largely of non-renewable and highly polluting fossil fuels along with nuclear energy and large scale hydro - all with significant adverse impacts on the natural environment.

To add to this, our activities, lifestyle choices, and un-sustainable practices are now polluting, degrading, and changing the earth systems as well so that instead of providing us with fresh air, clean drinking water, wholesome foods, comfortable places to live, and inspiring modes of being active, we are changing these subsystems and with it the Earth System as a whole in such a way that it is shifting to a point at which at any time it might no longer be able to support human life. So, our ultimate challenge is to derive energy from all sources without destroying the inherent balance in the Earth System, as we have known it over the millennia that we have existed as a species. Our ultimate challenge is to energize all we do while living in harmony with Nature. Human survival depends on this.

What follows are ways in which we can approach this while ensuring access to affordable, reliable, sustainable and modern energy for all, taking into account the well-being of ALL people and Nature as a whole. This is the overarching aim of all organizations and individuals who are a part of the Partnership on the Rights of Nature: Integrating Nature into the Implementation of the SDGs and the Commons Cluster of the NGO Major Group, which is one of its founding organizations.

The creative process of making new Nature-inspired discoveries is built into the structure and workings of the Universe itself - to which we are integrally related. It is up to us to ensure that our science and technology is in harmony with the ecosystems of our planet so that these can continue to support human life as we know it.

Examples are given of Nature inspired energy saving processes already in use as well as guidelines for creating new ones that are sustainable. Some points that are emphasized are: the Rights of Nature that are being implemented in bioregions in many places worldwide, various attempts to imitate or mimic Nature such as BioMimicry, the need to shift away from artificially generated needs that lie at the heart of consumerism to more essential needs and values, returning to simpler technologies, opening ourselves to energy sources not yet considered or developed commercially,

reassessing energy sources we consider "renewable" which solve one problem but then are creating others, etc.

Suggestions for ensuring universal access to energy include ways of evaluating all relevant factors including placing Nature at the centre of all considerations and using technology that is appropriate to each individual community and society.

Educational, Social, and Financing Actions are put forward to increase the share of renewable energy in the global energy mix.

The advantages of both individual and collective action are pointed to if we are to double the rate of improvement in energy efficiency, therefore Actions are proposed that combine educational, social and financial approaches to doubling energy efficiency.

For expanding the access to energy sources that best serve the needs of developing countries, it is suggested that developed countries work closely with them to ensure that infrastructure and technology are expanded in ways that draw on the most suitable resources. Social, technological and financial actions are also suggested.

This Report places Nature in the centre of all considerations for it is based on the premise that people and energy are integral to the Earth System. Both affect the whole. In fact, each human being's activity and also inactivity is constantly affecting all of the subsystems of the Earth System with every breath that we take. This means that each human being and every part of government of all Member States are important to how we generate energy. For this reason, the actions in this report are placed under headings—Educational, Social, Economic, etc., that indicate which action is relevant to which Ministry. We hope that this report will be sent out to all sections of government that deal with the educational, social, economic/financial aspects of generating sustainable energy for all.

SDG 7 - ENERGY

Ensure access to affordable, reliable, sustainable and modern Energy for all

Ensuring access to sustainable energy for all will require the integration of science and technology with Nature in all ecosystems of land and water. If we all work in cooperation with Nature and each other it is possible to create reliable, sustainable and affordable energy for all. New energy sources must work in harmony with Nature and build on what Nature has to offer.

A great deal of technical research is required, and specific scientifically oriented advice will have to be gathered from Nature to determine and prioritize what issues to address. Here are a few issues and concerns.

The focus of SDG 7 is to create a sustainable and effective energy grid for persons across the globe. The creation and development of these new energy sources will come in close contact with the natural environment (Nature) in nearly every case, and as such it is important that a system of checks and balances exists that allows for expansive energy development that still ensures the ecological health of Nature. Recognizing and enforcing fundamental rights of Nature would achieve this balance. Strong, egalitarian rights for vulnerable entities has been an unwavering tenet of all sustainable societies and governments.

Humanity needs to globally adopt a new vision and perspective, realizing that it is essential to incorporate Nature's wisdom in the development of sustainable green technologies. Nature’s rights and energy development work hand in hand to achieve a symbiotic positive outcome for all. For example, solar power, wind power and hydropower can be developed in harmony with ecosystems’ needs.

Low-tech practices can also be encouraged. For instance, it is now common to use triple pane glass without curtains or energy conservation window coverings. Environmental impact and practical considerations need to be assessed if we are to make a global shift to using such things as these. For example, individuals in developing countries probably cannot afford to replace windows with triple pane. In addition, while triple pane glass is probably a big improvement, window coverings would still greatly reduce heating and cooling requirements. We can also greatly improve efficiency both by judiciously opening and closing these in the morning and at night.

Investment in effective sustainable energy affordable by all

Another challenge in transitioning to sustainable energy all over the world is addressing the investment costs and ensuring that all can afford to invest in such technologies. It is going to be a major transition. However, with sufficient funding invested in the right technologies, it can be done with very little impact on the natural environment. The right policies and investment moneys need to be allocated to the right people as necessary. Done well, these dramatic changes can happen with positive impact to the natural environment. Research, assessments and recommendations ought to focus on financing effective sustainable energy methods.

It has been repeatedly shown that renewable energy, conservation and efficiency efforts have incredibly fast pay back times often within a few years. When coupled with the positive results that reverse adverse impacts on the natural environment that tend to come from non-renewable sources of energy, the cost savings that come from making such investments are significant indeed and well-worth making in almost all cases.

Similarly, we need to invest at a scale that is appropriate for where the need lies. Sustainable and renewable sources of energy are inherently distributive in nature. They can best be applied at the local and regional level where the type of source best matches local and regional situations and conditions. Thus funding for small scale investments needs to be made widely available at this level as well.

There is also a point to be made about energy use in industrial agriculture. This source provides a useful overview: http://www.gracelinks.org/118/energy-and-agriculture

This source states “We also need to be aware of the extensive use of energy in industrial agriculture. Today, our industrial system of agriculture consumes and uses an enormous amount of fossil fuels for such things as fertilizer production; irrigation, movement, pumping and over-consumption of water; use of energy intensive farming equipment; along with processing, packaging, storing and transporting of agricultural products; etc.

However, millions of farmers around the globe have been developing much more sustainable systems of production that use far less energy, water and other natural resources; and rather than being harmful to the natural environment are instead restorative and regenerative in nature. These farmers use and have pioneered such best practices as are found in agroforestry, agroecology, organic agriculture, no-till, cover cropping, key lining, contour plowing and conservation agriculture, and restorative landscape management practices, etc.

Such approaches not only use far less energy and can help us restore natural ecosystems and restore soil health; but can also be much more productive, especially in developing countries, where it has been found as stated by UNEP that organic agriculture is 2 - 4 times as productive as conventional agriculture in the developing world.

Most meat, eggs and dairy products are now produced on factory farms, huge industrial livestock operations that raise thousands of animals in confined conditions without access to pasture. Since the animals are unable to graze, factory farms require tremendous quantities of feed produced by industrial crop farms using [the] energy-intensive processes [described above]. Factory farms are also potential sources of ground and surface water pollution, which ultimately requires municipalities and private landowners to expend additional energy on water treatment.

Some factory farms use methane digesters to generate energy (digesters capture methane released during the decomposition of the huge quantities of manure generated onsite, and then burn the gas to produce electricity).

Although this reduces emissions of methane (a potent greenhouse gas), the technology doesn't eliminate solid waste, fails to address other environmental, human health, social and animal welfare problems created by factory farms, and typically requires large subsidies to remain economically viable. Thus, despite being touted as a "green" energy source, methane digesters ultimately serve to subsidize and further entrench the environmentally and socially destructive model of industrial livestock production."

It is time to assess and rethink our needs, uses, and current means of production of energy. Careful reassessment from a global perspective (meaning multi-factorial) will likely bring about a different perspective of true need and value. With re-imagining, reassessing, and re-doing what has always been done, a new paradigm will emerge more clearly leading to new sustainable sources and new clean and creative technologies for fulfilling these needs. The impact of energy creation and consumption is global, not local.

Many are already aware of the new paradigm shifting into focus. It is now a matter of having enough of humanity to recognize and engage the new paradigm. When the proportion of humanity which embraces the concepts of universal connection, love, and oneness, as well as possibility, joy, and a broader sense of time and space reaches 46% of the population then the influence will be able to infiltrate exponentially. There are whole worlds of possibility right in front of us to be accessed. When the population becomes more open minded about a shift in thinking around renewable, sustainable energy we will move into a more creative, more universally cohesive induction of ideas and technologies that will support all Beings on this planet without degrading the environment.

Our solutions lie in our willingness to innovate and explore new creative options. A soft and flexible approach to exploring the problem and potential solutions will allow us to expand the possibilities and prevent missed opportunities. This may require us to push the boundaries of what we believe to be true or even possible. We are only limited by our own beliefs. For example, cats see well in the dark and are not limited by any false beliefs about their vision. If we believe that it is possible, we will see more options.

The movement towards renewable, sustainable energy and products has been gaining popularity and momentum all over the world. While great strides have already been made, the progress is only partial to where we need to be. For instance most of our electricity generating systems already use magnetism in state-of-the-art motors and generators and other energy-sector applications. Magnetism's role for converting energy from one form to another can be explored even further to maximize efficiency of new energy generation methods.

There are ways to harness earth magnetism without converting it into another form of energy first. We can apply our scientific ingenuity to the harnessing and delivery of the energy. There are also ways to capitalize on gravitation, particularly the pull between earth and planets. There are high level frequency locations all over the earth. All points of the earth have the ability to raise the

frequency, even though some areas would be too low to bother with for energy production. But many areas can be elevated usefully to high level frequencies. For instance, there are technologies that were utilized in ancient architecture that recreate the high level frequency state of natural areas. These naturally occurring harmonious frequencies can be utilized in the development of modern technologies.

Some modern technologies (such as cell towers) have disruptive frequencies that negate these natural harmonious frequencies. Disruption can be avoided by eliminating these frequencies or introducing other frequencies to neutralize the concurrent disruptive ones.

With the right technology, the vibratory rate of weaker but pure frequencies can be raised with complementary frequencies and then can be harnessed for energy production. We understand this from the principle of resonance, which states: when two frequencies come together, the lower one raises to meet the higher one. As an example, when a piano is being tuned, a tuning fork is struck and brought close to the string with a similar but weaker frequency. The string will then raise its frequency to match the same rate at which the fork is vibrating.

There are countless models in Nature for us to study and possibly apply to new technologies. For example, the Kreb's Cycle may be a model to how we can translate or convert frequency into energy.

Also, frequency, as vibration, moves particles. There are ways to amplify this form of motion so it becomes bigger and bigger (and more useful) through momentum.

Governments and scientific communities throughout the world recognize that the practice of green chemistry and engineering not only leads to a cleaner and more sustainable earth, but also is economically beneficial with many positive social impacts. These benefits encourage businesses and governments to support the development of sustainable products and processes. Awards and incentives already in place for green chemistry development can be made even more widely known in support of this movement.

The development of Bioplastics is another area of exciting promise, but requires far more development. The term Bioplastics is misleading because it suggests that any polymer derived from the biomass is *environmentally friendly*, which is just not so. Not all bioplastics are biodegradable nor biodegrade more readily than commodity fossil-fuel derived plastics, and many still require high use of energy in their production. However, further development with comparisons of respective life cycle assessments to fossil fuel based production offers a host of favourable possibilities.

Sometimes less is more, and greater strength and effectiveness can be derived from forces that may appear less attractive, but in fact are more powerful because they move with the flow of natural forces and encounter little resistance. For example, more flexible materials such as flaps can be stronger than those which are less so, such as concrete, because concrete by

itself is impenetrable and not very pliable. We often look to harsh impenetrable substances like concrete, when in fact more penetrable options that allow for movement in both directions (eg. flaps) may offer greater flexibility and service.

It is more sustainable to nurture and collaborate harmoniously with natural phenomena, which in many cases have withstood the test of time, rather than resist or try to overpower natural phenomena. It is time that we acknowledge the Earth and Nature as sacred and deserving of our reverence and respect.

Nature has much to teach us about efficiency, conservation and natural power. The solutions are here; we have only to get out of our own way by slowing down and realizing that the solutions may look different from what we expect or pre-determine them to be. When we prematurely fixate on a process or solution without pausing and reflecting on the possibilities, we may miss significant opportunities.

Proposed Actions

Science and Technology

- Support and finance use of the sun, wind and water to produce clean energy.
- Address problems and impacts from burning wastes to produce heat or power. Burning trees for energy production is a highly inefficient method of fuel production. Develop integrated plans for replacing or limiting impacts from wood burning cookstoves including when and where it makes sense to use biogas digesters, integrating production of biochar in installing clean cook stoves, integrating soil and plant restoration and water retention landscaping with the use of such approaches, etc.
- Reassess some of the approaches that we see as renewable for their overall effect on the environment and focus on those that are most sustainable. For instance: Address negative effects and impacts of using bio-fuels as a clean energy fuel. Determine what biofuel feedstocks might be the most viable and have as little negative impacts as possible or conversely the most beneficial results.
- Research and develop options for using biofuels to power vehicles including; jet planes, automobiles, helicopters, boats, ships, trains, and other motorized vehicles.
- Research requirements to transition to electric vehicles that have as little negative impact on the environment as possible.
- Research forms of hydro power with regards to the impact of each one on nature and on human communities and settlement patterns, etc.
- Invest as much now for the types of research mentioned above as we have done to subsidize the development, as well as research, for nuclear power and fossil fuels.
- Study nature's methods of energy production. For example, consider intracellular mechanisms as inspiration for technologies that can be utilized on a larger scale. For instance, the hydra is a water creature which

has cellular mechanisms that give it perpetual life. Some of these mechanisms may inspire technologies useful in producing energy affordable by all.

- Follow Nature's way of recycling everything by using the by-products from one technology as a "fuel" for another technology until there is zero or near zero waste.

Policy

- Politically and financially support innovations, so as to generate new ideas for creation of affordable, sustainable energy.
- Address the problem of legislative and financial parties investing in ways to make these innovative processes "disappear" in order to protect their own assets.

TARGETS SDG 7

7.1 By 2030, ensure universal access to affordable, reliable and modern energy services

The first step in ensuring universal access to affordable, reliable and modern energy services, is to first deeply assess the current methods of energy production, be they for electricity, fuels, or technology. All aspects of these methods must be assessed for practicality, sustainability, ease of global access, and cost. This will allow us to see the many specific areas where current methods and technologies do not achieve high scores. New thinkers from all regions who are not tied into the profits of current means of energy production and resources must then be put into place to access knowledge and bring in new concepts and new ideas that are current with the planetary needs. A new paradigm needs to come in. It will take new thinkers to create the new paradigm and new technologies.

All peoples have the right to the same opportunities and access to affordable, reliable, and modern energy services. As people consider the development of energy technologies to meet the upcoming and ongoing needs it is essential to recognize that the entire community of Nature is an integral part of the equation, even though we might think that only humans have the need for sustainable and sane energy production.

All people have access to the power and intelligence of Nature by acknowledging her as central to the whole.

Humans are an integral part of a universe in which all is interconnected through patterns and natural laws. Everything in the universe is pure energy. Moreover, the whole universe has an inherent rhythm, from the circling of the planets, the ebb and flow of the daily tides, to the workings of the smallest cell. This common connection at the deepest and most sacred, quiet internal places allows for the discovery of universally applicable, relevant, and beautiful insights. From this place of whole hearted receptivity, the solutions to all our questions are accessible.

Some ways in which we can use these Nature inspired insights

Consider carefully the diversity of all environments in all regions that exist on the earth. Follow the guidance of each environment and the natural elements and how these elements renew themselves when considering a new technology. Ask, "does this make sense?" in terms of the universal principles of Nature.

Secondly, consider the natural environment, for and within which the energy is meant and the impact on all beings in the environment from the clouds to the microbes.

Thirdly, consider the socio-impact from the perspective of all people having equal opportunity and access. Give no individual group or persons dominant access or capacity to profit unless it is for the purpose of a recycled rhythm of energy production and benefits all.

Using our creativity to ensure that the technology chosen is appropriate for those who will use it and for their specific environment

All people have a right to equal access to electricity and other energy sources. However, there are communities for whom it would be disruptive to their intentional upholding of traditional ways to incorporate new forms of technology. These communities should be educated as to the benefits and liabilities of incorporating technology, and the final choices made by the community itself. Periodic review of up to date technologies should also be provided to them to keep them abreast of new options that may be more fitting to their evolving interests and needs.

Incentives for the development of appropriate energy sources

Increase reliance on clean fuels and technology by funding development and use of these environmentally sustainable sources of energy.

Build in financial rewards for individuals, communities and corporations participating in use of clean energy technology.

7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

As human beings moved away from small scale farming toward industrial cities, they stepped away from their direct interaction with Nature for daily energy needs. When we were living closer to Nature, we tapped into natural forms of energy - wind, water, sun, Earth and livestock on a daily basis.

As work diversified, industry developed and towns and cities evolved, the amount of energy required has skyrocketed. The need for energy, people, and materials to be transported over greater distances increased as well. A return to local and small scale energy production relying on interaction with Nature would align us more with sustainable, renewable energy resources. The current phase of rapidly evolving information, communication, and technology would support this shift. For instance, it allows people the opportunity to attend school (including higher education) and to conduct business worldwide from home.

The international community currently spends hundreds of billions of dollars a year on fossil fuel and nuclear energy subsidies and over the last fifty years has spent trillions of dollars more. It is now essential that we phase out all subsidies for non-renewable energy and reliant transportation systems as has been agreed to by the UN member states for years; and replace it with the needed funding to invest in making a rapid transition to renewable energy instead.

Either a global partnership initiative or some other type of an international agreement or protocol ought to be established in order to develop policies and assist all countries in phasing out such unsustainable subsidies and replacing them with the investments needed to achieve the Sustainable Development Goals.

Proposed Actions

Educational

- Form a network to globally share information regarding new technology, including building on the many modalities provided by the UN System.

Social

- Support individuals, communities, corporations and governments that are actively and successfully working toward achieving this goal.

Social and Education

- Trust the capacity for the human community to work together to achieve 100% renewable energy. Set incremental goals and timelines for reaching 50%, then 80%, and then 100% renewable energy globally by 2030.

Social and Financial

- Form co-ops to share renewable energy. Phase out all un-sustainable energy and transport subsidies and replace them with investments to transition to renewable energy systems.

7.3 By 2030, double the global rate of improvement in energy efficiency

As individuals it is important for us to be thinking about energy efficiency moment to moment in order to achieve our goals of living sustainably. Double checking our own personal choices for living sustainably each day can become second nature. With this commitment to personal responsibility we can come together as a global community, collaborate with each other, and share creativity and technology to help our planet heal and thrive.

Looking to Nature, humans can access the answers to improving energy efficiency. In traditional cultures in Africa, there used to be buildings that made use of the materials made available by Nature to keep habitats cool in the summer and warm in the winter. These and other low tech approaches should become standard also in developed countries.

Ancient structures such as igloos, domes, hogans and other indigenous architectural forms naturally insulate against both heat and cold. Such forms could inspire innovative ideas globally to significantly reduce our energy needs.

7.3a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology

When humanity is aligned and united, with awareness of how we are inextricably connected to one another and all life, inspiration and the explosion of innovative ideas is possible. Each individual makes their own invaluable and unique contribution to the whole, lifting us out of dependency

on unsustainable and detrimental fuel sources and into utilizing renewable sustainable energy.

In order to further support the discovery of these solutions it will be beneficial to invest in education and technologies.

Hold a forum that anyone can enter to contribute ideas that lead to new approaches to and sources for the generation of clean and renewable energy. Ideas from all people can be valued, including indigenous peoples, young people, senior citizens, and inventors whose ideas have not been taken seriously providing new avenues to be explored.

Innovative ideas come as inspirations from individuals open to a flow of information that is beyond what currently exists or is accepted. Our current perceived scarcity is connected to our current technology. In the short term, it is necessary to find ways to fuel current technologies that do the least damage to the earth. However, it is important that we look for long term solutions that lift us out of current technology which keeps us dependent on current fuel sources.

There is an opportunity to learn Nature's approach to generating clean energy. This wisdom is often found being utilized by those who are living more closely to Nature, many of whom live in developing countries and also among Indigenous People, small-scale farmers and others that depend directly on Nature to make a living.

Proposed Actions

Educational, Social and Economic

- Provide incentives to individuals, groups and corporations that make use of existing renewable sources.
- Continue progress in exploring and developing renewable and clean energy sources. Given that energy permeates every aspect of the whole Earth System, it is unlikely that we have exhausted all possibilities. We can venture outside of our present way of thinking about energy and the current approaches to energy development. For instance, windmill parks in the ocean have been found to disrupt biodiversity, yet such parks combined with seaweed farms rather enhance biodiversity.
- Offer a substantial prize (from above mentioned international financial flows) to people who develop ideas for clean and renewable energy.
- Reward those working collaboratively and inspiring others to generate new ideas for clean and renewable energy.
- Enlist the help of NGOs worldwide to reach their contacts in outlying areas (NGLIS has a listing). Also enlist those NGOs, Indigenous Peoples, farmers, etc, associated with the UN via Major Groups and other Stakeholders. MIT already has an initiative for research, education, and outreach to efficiently meet global energy needs while minimizing environmental impacts and mitigating climate change, based on simpler forms of creating energy from developing countries that could be used as an example.

- Develop one or more think tanks consisting of creative thinkers including many young people to develop low tech sources of clean and renewable energy including delivery systems that can take this to outlying areas.

7.3b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programs of support

It is imperative to enlist the input of all communities considering expansion into the modern grid to provide the broadest perspective and greatest clarity on needs and desires. The more remote regions have smaller needs, and are good areas for implementation of new low cost self-generating technologies. Nature has many ways to generate energy and every living being is dependent on these mechanisms. We need to look to these mechanisms for translation into larger systems.

Going forward, it is essential that we utilize natural processes with zero emissions, reuse the by-product back into the same process, and/or create safe by-products that can be recycled for other uses, resulting in net zero effect. Each technology must be carefully scrutinized for any detrimental effects that result from that particular form of energy production. In many instances natural forces such as solar, wind, and wave will make a great deal of sense to utilize, as long as the harnessing of these powers is unobtrusive and does not create secondary problems. If we look back throughout history, we realize how many new technologies have been developed that would have previously seemed miraculous. It must be emphasized that there are new, exciting mechanisms that are ready to be discovered and implemented.

People worldwide will benefit as developed countries learn and consider low tech ways of energy production from indigenous people and Nature, and utilize these ideas to replace and transform current harmful energy practices.

Proposed Actions

Education

- Share energy efficient technologies globally as they are developed to help both developed and undeveloped countries reverse their unsustainable energy use, such as oil.

Technology

- Provide safe and unobtrusive facilities for generation, reception and storage for energy.

Financing

- Provide financial incentive for individuals and corporations investing in energy efficiency and supporting the infrastructure and technology for sustainable clean energy development such as impactful tax incentives.

SDG 11
Make Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable

Empowering People

Disrupted Natural Ecosystems

Sustainable Development

Human connection to Nature

Safeguard Heritage

BEST PRACTICES ON INTEGRATING THE ENVIRONMENTAL PERSPECTIVE INTO THE IMPLEMENTATION OF SDG 11

Make Cities and Human Settlements inclusive, safe, resilient and sustainable

Summary

People are an integral part of the whole Earth System, which, like the Sustainable Development Goals (SDGs), is both integrally interlinked and interdependent. No part can be isolated from the rest. Human beings cannot "stand apart", nor can we reliably isolate any one section of a community or any one aspect of which we are an integral part. For this reason, understanding how to make human settlements sustainable and resilient must include a contextual understanding of the larger environment and of Nature itself. To gain this kind of understanding of Nature, we must go beyond hard scientific evidence and formulation. The following Report is a joint initiative by professionals from diverse backgrounds. They include NGO representatives at the UN, people active in Higher Education and highly experienced professional Nature Communicators.

In the same way that thriving, safe and resilient cities require us to include diverse nationalities, religions and sexes on a basis of equality, other species of animals and plants must be welcomed in cities and human settlements in such a way that people and Nature have a harmonious and symbiotic relationship to form strong, sustainable ecosystems.

Green spaces are essential for human beings to relax and to build awareness of their integral place in the intricately interconnected web of life. It is important that people rekindle their inborn capacity to communicate with Nature and that cities and human settlements embrace the innate wisdom and fulfil the needs of plants and animals, as well as people, so that all can flourish.

In many cases, green spaces are already there imprinted on the land. For instance, there may have been an offshoot of a creek, which became a slum area, and which flooded periodically. The green space could be restored to its natural state; and sustainable, affordable and safe housing could be built on higher ground for those who were living there.

Planning, Implementation, Housing, and Transportation

Every city and community needs to develop a local strategy and plan for achieving the SDGs. We should include children and youth in developing and implementing each of the local plans and provide them with the educational opportunities needed to be able to fully do so.

All people need and deserve adequate, safe and affordable housing so that all individuals can contribute to and be nurtured by the society and community. The solutions that best serve all life can be found in the immediate environment. We can look to nature to create affordable, sustainable, safe, non-toxic, mildew and mold resistant housing that harmonizes with the surrounding environment.

By taking time to observe the normal flow of movement through a city or a village, minor changes can be made to greatly enhance the natural flow rather than creating an entirely new transportation system. Many systems have a historic explanation, which actually aligned with Nature, but was lost as change progressed. By recovering and revitalizing such systems we can reawaken the heart of the community while helping to reconnect with nature.

Protecting cultural and natural heritage and creating resilience in the face of climate change.

Our natural and cultural heritage roots people in time in which we live and connect people to both our past and future. In doing so, our cultural heritage also connects us to the culture of people worldwide and our natural heritage to the whole Earth System. It is important to pay attention to the poorest and most vulnerable people who can then become an invaluable asset if they take pride in the place where they live.

The more humans work with Nature, the more balance will naturally occur; and as we restore and protect the natural environment deaths from disasters, caused by human intervention, will decrease. Nature, if given a chance, naturally improves air quality and automatically recycles waste. The more we can appreciate, cooperate with and learn from Nature, for example through biological waste treatment processes, the easier air purification and the management of our excesses in waste production are likely to be.

During disasters human infrastructure tends to fall away, people in key positions can become unavailable, and what is left is the natural working relationship and bonds among "ordinary" people along with the systems of nature that still remain. It is thus essential to involve the local people in developing preventative and emergency preparedness plans and that we restore the natural environment to create buffer zones around built communities; move people, buildings, and infrastructure out of hazardous areas; and develop resiliency through regenerative practices.

This Report contains many suggested actions that align policies and human activity with Nature.

SDG 11- HUMAN SETTLEMENTS

Make Cities and Human Settlements inclusive, safe, resilient and sustainable

It is essential that we learn from Nature as well as from smaller, sustainable communities as we build, design, rebuild, redesign, and further develop our cities and other rural and urban communities.

Examples of sustainable practices modeled everywhere in Nature as well as in ecologically-balanced communities include the use of natural, reusable, recyclable and non-toxic building materials; habitat designs that feature compact, dense neighborhoods surrounded by green open spaces with plenty of room for growing and processing the food, wastes, and other materials upon which the people and community depend; and innovative designs and modes of transportation, heating and cooling, and processing of human and other wastes that use bio-mimicry to emulate 's time-tested patterns and strategies.

Other examples of sustainable practices that consider Nature include decisions to avoid developing and building in areas prone to geographical and geological conditions such as possible landslides, flooding, earthquakes, or other natural phenomena or where human impact would destabilize natural ecosystems.

In the same way that thriving, safe and resilient cities require us to include diverse nationalities, religions and sexes on a basis of equality, we must also include the non-human world of animals and plants in cities and human settlements in such a way that people and Nature have a harmonious and symbiotic relationship to form strong, sustainable ecosystems.

The need to re-connect human communities with the non-human world is crucial.

- Cities have disrupted natural ecosystems, resulting in the eradication of some 150 species each day.
- There are increasing conflicts between city inhabitants and the wild animals whose habitat has been encroached upon by urbanization.
- Modern technological society has led people to minimize or ignore the fact that humans are an integral, inseparable part of Nature. Efforts to stand apart from Nature and guess at Nature's prerequisites have led to increasing present-day threats to our survival.
- Green spaces are essential for human beings to reduce the stress of modern urban life and to rebuild awareness of their integral place in the interconnected web of life.
    - Areas that have been allowed to grow wild in cities and human settlements allow whole ranges of species to thrive, despite urbanization, and thus contribute not only to the resilience of Nature but also to the resilience of cities and their inhabitants as well.

People must rekindle their inborn capacity to communicate with Nature and embrace the innate wisdom of plants and animals so that all can flourish.

Nature and diverse species are an essential part of the multiplicity of life that reinforces and supports all living species, including human beings. Although humans are in constant ***un***conscious communication with Nature as a prerequisite for our survival—for example, our bodies naturally know and respond when we are cold, frightened, hungry, thirsty, and sleepy—our inborn capacity to understand and communicate ***consciously*** with the non-human world is reawakened when people are surrounded by other species.

Proposed Actions

- Introduce principles of Permaculture—the art of building gardens using ecosystems that require very little maintenance and provide optimal conditions for each of the species that live there.
- Include and teach Education for Sustainable Development in all of our schools. (See SDG 4, target 4.7.) Given the central need for humanity and our communities to reconnect with, value, protect and restore the natural environment, it is essential that our children learn how to do this through both formal and informal educational opportunities. Formal education should incorporate cultural and traditional practices as well to share this deep connection with the earth that has been practiced by indigenous cultures for millennia.
- Educate people to recognize the integral relationship between human beings and individual members of the plant and animal kingdoms that are essential for survival, including the many diverse aspects of animal and plant species that can contribute to our personal wellbeing as well as to the welfare of the human species as a whole. Educating people to understand their intrinsic connection to all aspects of Nature increases the likelihood that they will value natural phenomena and treat the non-human world with greater respect.
- Encourage people to use vacant lots and open spaces to create (rooftop and vertical) gardens with plants and animals they enjoy. Stress the joy of such gardens as sources of food, flowers, enjoyment and relaxation.
- Make lessons in communication with Nature available with the help of Indigenous Peoples and/or other Nature communicators (many of which are available via the Internet).
- Take the perspectives of Nature into consideration when developing towns and human settlements.
- Honour, respect and appreciate the sanctity of our commons as well as our intangible natural heritage - our shared ecosystems, natural environments, and planet earth itself. Include these principles as a primary goal within both our local and national planning processes and implementation plans.
- Ensure that every city and community develops a local strategy and plan that focuses on achieving the SDGs. They must be based on the Aichi Biodiversity Accords and the Rio Principles, especially those principles

calling or the full participation of the people in developing and implementing the plan and in being provided with the information needed to be able to fully do so. They need to explicitly focus on achieving all of the Targets included under SDG11, along with all of the other relevant targets and goals, including SDGs 2, 7, 12, 13, 14 and 15.

- Include children and youth in developing and implementing each of the local plans and provide them with the educational opportunities necessary to be able to fully do so at their individual level of competence. This can be done as follows:
  - Start by fully incorporating Education for Sustainable Development in the school systems and curriculum at all levels of education;
  - Teach the SDGs at all levels, as a part of the local planning;
  - Ensure all schools focus on how students can contribute to the local implementation processes;
  - Provide all teachers with in-service training to learn about and incorporate the SDGs in their teaching and educational opportunities;
  - Include a primary focus on what is being done in the local community in response to Goal 11 on Cities and Human Settlements, along with all other pertinent goals and issue areas.
- Fully integrate cities and human settlements (which cover a wide range of territory and area issues) into our National and Regional SDG implementation plans.
- Provide better opportunities for people to stay in their native rural communities and villages and ensure that basic resources and services are made available to meet their daily needs.
- Given that one-third of the people living in cities in the developing world live in slum areas, provide the basic services that are needed by all of those currently living in such abhorrent circumstances and situations.
- Develop new means of funding to make resources available to people in both rural and urban communities to ensure that their basic human needs are met.

TARGETS SDG 11

11.1 By 2030, ensure access for all, to adequate, safe and affordable housing and basic services and upgrade slums

Adequate housing is a matter of survival for all of Nature. In Nature HABITAT is a way for members of a species to become integrated into an ecosystem that nurtures them and to which they contribute in many diverse ways. Habitat provides a means to strengthen not only an entire species but also other interrelated species and ecosystems as well.

To create nurturing habitats for humans that also sustain the natural world, it is in people's interest to help one another find adequate, safe and affordable housing so that individuals can contribute to and be nurtured by society, thus strengthening the human species as a whole. Developing sustainable ecosystems that include habitat for wildlife and native plants creates a vital link in building a sustainable future for human life on Earth.

Solutions that best serve all life are found in the immediate environment. For instance, we can look to Nature to create affordable, sustainable, safe, non-toxic, mildew and mold resistant housing that harmonizes with the surrounding environment. The natural world can be an inspiration for inventors, engineers, architects and builders to study as they design new human environments.

Cities are only as strong and resilient as the weakest part. People without a voice living in slums and hidden from view inevitably weaken the more visible aspects of cities. If we think of a city as a living being, it is vital to pay attention to all parts, working to make every area healthy and thriving. As an interim step to doing away with the slums, these impoverished areas can be made more habitable through public arts and works projects as well as through more accessible public services, such as hospitals, health clinics, and other vital facilities.

When working on this, or any of the SDGs, we have the power to come together with a sense of purpose, united around our highest vision that is heart-centered, heart-supported and heart-driven and inspired by Nature, leaving behind the frantic, constricted energy often found in such planning and implementation processes.

Proposed Actions

In planning and developing our communities, it is important to:

- Use local knowledge, skills and materials while accepting and appreciating Global support.
- Be open and honest about plans for development and accept feedback and information from all interested parties.
- Take the necessary time to connect with, show respect for and cooperate with the place, the people and environment.
- Acknowledge the challenges and needs of all life forms sharing the space.

11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transportation, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

Learning from the natural environment, humans can find greater efficiency and ease in nearly all realms of life. This applies also to the transportation systems (air, road, sea/river and rail). By taking time to observe the normal flow of movement through a city or a village for instance, minor changes in existing transportation systems can often be made to greatly enhance the natural flow of people and goods, as opposed to creating an entirely new system that may not provide significant benefit. Many systems today, such as sea and river ports, rail hubs and highways, have a historic connection with Nature, which has been lost as rapid changes have been made in recent times.

Simple systems that are safe and environmentally respectful are relatively easy to create. Enabling people to connect to one another will enhance safety. For instance, if we relate to each child as our own as is done in communities where all members are interconnected, then we will make sure it is safe.

It is important to engage the people who are most affected by systems (or lack of them) and to provide opportunities to give voice to their experience, to share their wisdom and allow this to inform all activities. This target is about empowering people so that they can join the process. It is about engaging the heart of community, no matter where we are or what the issue.

By working with Nature instead of against her, more sustainable transportation systems can be devised. For example, creating innovative solar-powered or electromagnetically powered transportation systems could sustain a new generation with little or no pollution or waste.

It is time to increase funding to develop new transportation modalities using more sustainable, natural means. Innovative experimentation and creative urban development designs can foster new modalities to put into practice.

Areas for Attention and Focus

- As municipal and intercity rail travel tends to be more sustainable than other existing modes of transport, attention should be focused on making rail systems comfortable, affordable and safe for all.
- When designing sustainable transport systems and improved road safety, it is important to notice the flow of energy, where things are located, where people are going and the trends in activity. The natural world can provide a model for improvements and new systems.
- The natural world provides forms of energy that meet the needs of all life and the environment. Nature uses air, magnetism, and the electro-magnetic spectrum. Research in these areas should be funded for the eventual benefit of all of humanity. For example, bio-mimicry provides a

number of examples for how Nature's designs can help to improve the efficiency of vehicles and modes of transportation. As one example, airplanes are already being redesigned to take advantage of minute changes in wing and body design.

- Look to diverse cultures that have forms of sustainable transportation that can be used more widely, such as bicycles, boats, walking, carpools and citizen owned vans and taxis.
- Envision and implement beauty and cleanliness throughout the cityscape to uplift people and bring in a greater sense of ease and safety in travel.
- Bring standards of transportation up to a level that meets the needs of all. In addition to functional importance, clean, safe transportation is also visually appealing and fosters engagement of people with each other and the environment around them, and even pride of ownership in the community.

11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.

Inclusive urbanization ideally resembles an ecosystem in which each person plays an integral role in the wellbeing of the whole and provides for the needs of the community, and the community in turn helps to take care of inhabitants' needs.
The more a city can take care of the needs of its inhabitants without dependence on expensive and environmentally harmful transport systems to bring in goods and services, the more wealth will be retained locally and the more sustainable a city will be.

Proposed Actions

- Create sustainable development strategies at the local level that are well integrated with the development and implementation of strategies at the national and regional level to enable the implementation of the 2030 Agenda for Sustainable Development;
- List the occupations required by the city for it to become as self-sufficient and sustainable, as possible.
- Ensure that meetings between local government and inhabitants take place and are accessible to the citizens and the press, so that citizens can understand the challenges a particular city faces and think along with their representatives.
- Design cities using natural principles that are the basis for strong and sustainable ecosystems thereby building on time-proven approaches to sustainability.
- Create urban designs that include wild space and green space to allow for the needs of Earth as well as the needs of people. It is important to realize that all of Nature is important. Even insects play a vital role in the web of

life and are thus essential to humans in order to sustain biodiversity and ecosystem functioning.

- Study the shape and movement of life in the environment (for inspiration when planning and developing areas) so as to align the design and development to harmonize with and enhance the surrounding environment.
- Focus on lifestyles and behaviors we want to promote and design spaces that encourage these (e.g. parks, meditation spaces, and spaces for healthy social interaction).
- Use sustainable architecture that can provide housing inexpensively, sustainably and quickly to areas in need; construct homes and community buildings in styles that celebrate the unique heritage of cultures and peoples including compressed earth block or earthen architecture, the use of natural building materials and processes, and indigenous building practices. (See: http:// ecovillage.org/node/5998 under Natural Building and Climate Friendly Architecture for examples.)
- Introduce gratitude into people's experience of service. Gratitude is a feeling that connects people in powerful ways and brings profound awareness. Through small actions and selfless service we can achieve our greatest gains.
- Engage the people who are affected the most in the process and give them opportunity to give voice to their experience and to share their wisdom. Sustainable development has to be about empowering people so that they can join the process. One of the most powerful ways of achieving this is by engaging the heart of a community, no matter where or what the issue. All activities must be inclusive, integrated and sustainable.
- Incorporate the concept of *Love* and *Respect* into sustainable development - Respect for the Earth, plants, animals, insects, minerals, and fellow humans. Teach and encourage children to respect the natural world at a young age. Where cities follow Nature's example, they will be building on time-proven approaches to sustainability.
- Involve inhabitants and their organizations.
  - Draw on the strength and the creativity of citizens by encouraging town- house meetings and encouraging individual citizens to become a part of problem solving groups.
  - Encourage city dwellers themselves to work locally and where there is a shortage in a specific field, to get the necessary education. Where the education does not exist within schools universities in the vicinity, the Internet can be a useful to tool.
  - Involve city dwellers in waste disposal by educating them in the importance of “each doing their part for the wellbeing of all.”
  - Ensure the young, very old and disabled are given the care they need by allowing them to fulfil a useful role where that is possible or ensure that they have caring members of the community to support them.
  - Giving care is a part of individual personal development and many do this gladly.

- Support and build on the work being done by diverse forms of commons.
  - The citizens organize Commons work, often to take care of existing problems that have not (yet) been addressed by governments.
  - Those involved in Commons issues are strongly motivated to succeed because they usually have a common goal and all participants share in both decision-making and benefit sharing.
  - Commons exist in every possible area of human endeavour. There are neighbourhood watches and other forms of security measures organized by citizens. Cooperatives constitute the business branch of the commons and businesses of almost any type are being run as commons. (See below: “cooperatives”). There are groups that organize garbage collections and recycling, Transition Towns which are exploring how to exist without the use of oil, Geocities and Ecovillages, based on active citizen participation. The Ecovillage Network has both an educational system and a handbook for building sustainable villages /cities.
- Involve the private sector.
  - Look for ways in which companies can contribute to the wellbeing of cities and their inhabitants through taxes, providing education for the community and learning situations for students, including in the form of internships.
  - Reward those corporations who return a part of their profits to the city in which they are based, including cooperative businesses that do this as a part of their “Cooperative Identity”.
  - Cooperatives as a part of their “Cooperative Identity” are based in sharing and community consciousness.
  - Cooperatives also contribute to the development of the international community.

  Here are some facts:
    - There are 2.6 million cooperatives enterprises with one billion members worldwide with annual revenues of US$3 trillion.
    - They provide 250 million jobs (2%of jobs in G20 countries) and are active in almost all sectors.
    - They contribute daily to the delivery of the sustainable development goals.

- Provide education
  - Build on SDG 4—lifelong learning—to find out where people's true interests lie and help to make training in these fields possible, thus implementing paragraph 26 (2) of the Universal Declaration of Human Rights.
  - Encourage schools to engage in municipal sustainable development strategies, teaching children how to participate in town house meetings, helping to problem solve, and undertaking hands-on learning and internships.

- Encourage inhabitants, schools, corporations and other organizations to measure their individual and municipal Global (and other) Footprints as a way of legitimizing their activities. This can be a way for businesses and others to gain positive publicity and can eventually become a factor in the assessment of the effectiveness and degree of community mindedness of people and organizations.

- Maximize food production
  - Within towns, encourage people to keep (roof) gardens, use empty lots for children to build school vegetable gardens, and import food from nearby rural areas rather than more distant sources.

- Generate alternative financing resources where these are lacking.
  Alternative forms of financing can include:
  - Barter, for instance via the LETSystem, which creates local currencies to promote the exchange of goods and services in local communities where the economy is flagging.
  - Alternative tax systems such as the Land Value Capture tax (LVCT), whereby the use of the commons (land, natural resources, the electromagnetic spectrum) is taxed and tax is removed from labor.
    - Such tax practices encourage people to work and also to care for buildings and ensure they remain occupied, since tax is being paid on the land on which these stand.
    - These also discourage speculation. In some countries monies saved from this form of taxation render so much savings (e.g. because of drastically reduced bureaucracy) that it is possible to provide inhabitants with a basic income.
  - Tax people and organizations, including businesses, based on their ecological, global and other footprint. Like in the case of LVCT, this helps to preserve natural resources and generates tax revenues that can be removed from labor.

- Make sustainable development strategies known to other cities.
  - By using organizations that connect cities, such as ICLEI and/or via UN, and other web sites and data banks, cities can list their best practices so that cities can inspire one another.

11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage

Nature will protect itself. The question is, "Will it do so in such a way that maintains the conditions that support human life?"

Cultural heritage is often connected to the natural surroundings in which a people live; it is the geography that determines the challenges inhabitants must face and the experiences that are relevant to them on a day-to-day basis.

Our natural and cultural heritage anchors people in historical time and also connects people beyond place and time, spanning both our distant past and

our futures. Our cultural heritage connects us to the culture of people worldwide and to the whole Earth System. Protection and safeguarding our cultural and natural heritage involves building a deeply experienced recognition of the importance of both to our personal wellbeing and capacity to survive.

Proposed Actions

- Safeguard our heritage.
  - Immediately safeguard natural and cultural heritage sites through the prevention of harmful behaviour by developing relevant new laws and implementing and enforcing those that already exist through local, national and international action.
  - Be intentional where we put our focus. Fear, worry, doubt and past regret cannot liberate, whereas living in harmony with Nature brings awareness to new possibilities and the inspiration of the sheer power and natural intelligence of the environment in which we live.
- Ensure education about our natural and cultural heritage.
  - Enable people, with the help of education, to reconnect with their capacity to care deeply. Such deep caring begins with the self and can be fostered by the implementation of Article 26 (2) of the Universal Declaration of Human Rights (the development of the full human personality).
  - Expose people to their own cultural and natural heritage so that they recognize how vital these are to their sense of happiness and wellbeing.
  - Protect our cultural and natural heritage by sharing it and communicating
    about it in a mindful manner through dance, visual arts, storytelling, music.
    - "Everyday we create new stories, new heritage. Foster gratitude to our ancestors for their stories, share these stories."
    - COMMUNICATE in all possible ways. This will make people want to safeguard their natural and cultural heritage, cultivating a deep understanding that these are vital parts of our own home where we can receive sustenance and inspiration at levels not obtainable in any other way, but only if all people take good care of them.
    - Show how connection to our cultural heritage helps people to relax and be inspired by timeless beauty.
  - Foster an appreciation in young people, through formal and informal education as well as the media, for their own culture and how this is connected to others.
    - Encourage pride in one's own community and its history as the most effective safeguard for its treasures. Caring and inclusiveness engender gratitude and celebration in people.

        - Teach specific appreciation for culture—one's own and that of others — as a way of enhancing people's sense of belonging to a certain community as well as their sense of connection to other cultures, helping them to see how cultures are related.
        - Provide insight beyond the specifics of a culture into what connects humanity integrally as a whole with one another and with Nature.
    - Create awareness of the devastation that occurs when a person's connection to their cultural or natural heritage is disrupted, as has been done in the past (e.g. to Indigenous Peoples) and is still being done today.
    - Foster appreciation for Nature.
        - Encourage the preservation of wild lands, particularly jungles, so that biodiversity can flourish and people can get as close to Nature in its original form as possible. Teach that every species is important.
        - Reinforce the understanding of our interdependence with all aspects of Nature and the importance of what we can learn from Nature in terms of building sustainability.
    - As a part of above process, teach all to honour and revere all life, as well as to honour and revere their forbearers while learning to heal that which was not in alignment with the whole of Nature.
        - Be curious and accepting of new information and ways of being that move us toward healing and promote love.

11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations.

The more humans work with Nature, the more balance will naturally occur on the planet's surface, reducing deaths from "natural" disasters. For example, the Global Ecovillage Network has found that buffer zones created by restoring the natural environment and reforesting vulnerable coastal areas can protect local villages when tsunamis hit.

It is important to pay attention to the poorest and most vulnerable people and engage their help on how to improve their life. They can be of invaluable assistance if they take pride in the place where they live. By focusing on the most vulnerable people and the most fragile systems with the purpose of strengthening them, all systems become stronger and greater care is taken to protect them. For instance, if water quality is held as highly important in all areas of a city or country and actions are taken to rectify issues, it is less likely there will be water disasters.

While assisting the most vulnerable, more is learned about the challenges they face and greater cooperation develops. Those assisting others experience the satisfaction of making a difference and those being assisted

feel more appreciated and connected as important members of the community. A new level of interaction begins within the community, which challenges people to be their best and creates a spirit of harmony and interdependence.

We are living in a time where people-to-people collaborative economic systems are rapidly taking hold, based on sharing, caring and community (most easily seen on the Internet.) This new mentality is likely to involve rich and poor in the mutual development process, each providing insights from their unique experience.

When people are connected to their own inner or higher wisdom as well as to each other, (e.g. as often practiced by traditional Indigenous peoples), they have the capacity to form communities with healthy social connections and boundaries.

Collaborative economic systems work to strengthen the bonds of cooperation and interdependence in communities, enhancing the resilience of the entire community as well as its individual members.

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

Nature produces no waste. Everything in Nature is a part of a universal recycling process. Reducing waste of all sorts – from chemical pollution to overproduction – means being mindful of everything we create, ingest, and cultivate, producing less but producing in better ways. More is not always better. We must appreciate what we already have and share these resources in a fair way.

Nature, if given a chance, naturally improves air quality and automatically recycles waste. Where people produce waste of a type and in such quantities that destroys the conditions that support human life, we rob ourselves of the powerful cooperation of Nature. The more we can appreciate, cooperate with and learn from Nature, the easier we will find sustainable ways to manage our excesses in CO_2 and solid waste production.

As people we tend to objectify Nature and see it as something separate and apart from ourselves, while in fact we are integral to Nature and its processes of impetus and response. An impetus that is in harmony with Nature elicits a positive response that will enhance human life; an impetus that is in disharmony with the rest of Nature has a boomerang effect and can often harm us.

Living in harmony with Nature is one of the most important challenges humans face. Humanity's immediate task is to break our old habits and find new ways of doing things that are benevolent and respectful of Nature.

Where people are put into a position where they must meet a challenge seemingly beyond their reach, they often demonstrate unexpected capacities, performing at a much higher level than what was thought possible. Facing

challenges can bring out the best in humanity; create a sense of connection, and mutual appreciation that enables people to thrive. We must look for these hidden strengths within ourselves and our communities and encourage the development of potential in all.

Proposed Actions

- Provide incentives for sustainable business practices at all levels.
  - Impose harsher penalties on polluters. Some of the largest corporations are also some of the worst offenders.
  - Provide incentives for corporations whose practices align with the sustainability of life on the planet.
  - Reward environmentally sustainable practices as well as practices which inspire employees and benefit families and communities.
- Develop non-toxic, sustainable ways to clean the air and manage waste.
  - Given that 90% of all waste-water in the developing world flows back into the water shed untreated and that some 2.6 billion people lack access to basic sanitation, it is essential that we provide a major focus and attention on dealing with and rectifying these problems.
  - The cheapest and most environmentally benign way to deal with the massive amount of human and biological waste that is created is with biological waste treatment processes, which include composting of human and plant wastes and the use of aquatic plants and settlement ponds to treat waste waters.
  - Grey water systems also need to be much more widely used to avoid having to treat such large volumes of wastewater as well
    - The Global Ecovillage Network has done tremendous work at establishing such systems in small communities and many cities have been implementing such systems as pioneers in communities around the world. Now they need to be replicated and scaled up, not only at the local level but also as a part of the national and regional plans.
- Develop new standards and regulation in product manufacture that minimize the creation of pollution and waste.
  - Minimize or eliminate production methods and waste materials that are toxic to life.
  - Be inspired by the life around us for ways to minimize and manage pollution and waste sustainably; for example, study the way trees purify water and clean up toxic environments.

11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

Nature has been our natural home since time immemorial. By creating green spaces that are truly inclusive of Nature, they become places where we can relax, come into our own and feel ourselves to be a part of the larger whole.

As we humans stand on the earth's surface, feeling Nature growing below us, using our feet as support, we become energized. Our thoughts, hopes and wishes are enlivened, offering opportunities for new ways of thinking. Such experiences can remind us that we are loved and teach us how to love in return.

Green spaces in towns can help us to connect back to our natural home and experience our originally supportive connections with the whole Earth System. Such green spaces can achieve this to the degree they are inclusive of and accessible to both human beings and a wide range of other species; "green spaces" also include wild spaces. Access to wild Nature is vital, not only for physical health, but also emotional and spiritual health.

Architects today are equipped to create social infrastructure that will enliven and encourage not only green public spaces but also outdoor public areas for joyous congregating. While examples of enlivening outdoor public areas are found everywhere in the developed world, they are most often absent in blighted areas.

Proposed Actions

- Increase the number of parks (green spaces, See target 11.7) in cities, creating designs that interconnect green spaces as much as possible and provide facilities that make them welcoming to all ages and social backgrounds.
    - Such green spaces help to purify the air, provide shade, stabilize water systems and climate and enable people to relax and appreciate Nature.
    - Where green spaces are linked and allowed to grow wild, thriving ecosystems can flourish, becoming natural gathering places of species that often migrate from one green space to another.
- Provide facilities for diverse types of people (benches for the elderly and disabled, playing fields for children and youth); and HABITAT for animals, plants, insects, birds, trees, and other species.
    - Include areas for dog parks, community gardens with fruit trees and vegetables, safe swimming areas, and wild spaces that honor all of the elements and all life forms and encourage reverence and respect as well as enjoyment and celebration with each other.
- Preserve and expand existing green areas.
    - In many cases, green spaces are already there, imprinted on the land. For instance, there may have been an offshoot of a creek, which became a slum area, flooded periodically. The green space could be restored to its natural state and sustainable housing on higher ground be made for those who were living there.
- Develop motivated "citizen watches" to steward green spaces as caretakers and maintenance crews.
    - Initiate opportunities through citizen groups to educate visitors on the biodiversity of the local environment.
- Encourage people to create roof and other gardens or where this is not possible, keep (individual or communal) plots of land outside of cities

where they plant vegetables and flowers, keep small animals and experience Nature for their own enjoyment. Because gardens have similar positive characteristics to parks, they can help people augment their diets and reduce the stress of urban living.

- Provide a funding mechanism for green spaces by adopting land value taxation.
  - Land value taxation places a tax on land while limiting or removing it from sale, income or building.
  - Through land value taxation, we can capture the rise in land value that naturally occurs when parks and green spaces are created - due to the increase in the surrounding property values.
  - This can then provide us with the revenue needed to pay for and establish more parks and green spaces and fund additional public amenities. (This policy recommendation was included in the Habitat 2 outcome agreement and in the policy papers for Habitat 3.)
- Involve those who will be using the green spaces in their planning.
  - Create events where people who live near the site or planned site of the green/public space can provide their input.
- Develop more ways to live life in harmony with Nature and all life sharing the planet with us. Even small acts can produce visible results.
  - Actions taken today will determine how life is experienced in the future. It is how one responds to the challenges presented that allows them to build the strength necessary to continue and to implement the wisdom gained.
  - It is the key element to creating a nurturing, respectful world. Nature is not elitist; it is here for everyone. All humans of all walks of life need to be nurtured by Nature, need to feel that grounding and be reminded that they are loved and can love too.

11a. Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning

In Nature everything is integrally interconnected via the Earth System. In human society the same is true. Currently, to move people and goods, we rely mainly on lengthy transport systems that are costly in fuel, and to the environment. By importing goods and services over long distances, we often mask unsustainable practices.

Sustainability will depend much on the degree to which people are able to meet their needs locally. Connecting urban, peri-urban and rural areas can make positive economic, social and environmental links.

This can be done through a system of rewards and penalties levied on the use of air, energy, water —fresh and from the sea, soils and biodiversity, the electromagnetic spectrum, by individual people in each locality, using for example one or more of the following practices.

- By levying Land Value Capture contributions for the use of natural resources to replace tax on labor. (See above 11.7).

- Through Pigouvian taxes whereby the Earth's capacity to recycle becomes the norm and any harm to the Earth System is highly penalized while the person/company that has done the damage is required to restore that part of the Earth System to its original state.
- By requiring people to pay if they use more than their global footprint of natural resources (see above) and providing them with bonuses where they enhance it.

Each of these ways would provide financing to build the required connections between urban, peri-urban and rural areas, encourage people to work because taxes on labor might no longer be necessary, and perhaps even grant people a basic income to institute more sustainable practices.

There are many ways that the connections between these types of areas and communities can help them to become much more sustainable and it has to be a part of the planning process that each individual community or region goes through at the same time.

For example, biological waste processes probably need to be carried out in peri-urban areas and access to clean water come from nearby and in some cases even further away rural areas; food production would come primarily from rural areas.

Only when the building of transportation systems to connect cities, peri-urban and rural areas in the same vicinity goes hand in hand with sustainable development of these areas, is it possible to ensure these do not mask unsustainable practices.

11b. By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sel1dai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels

The environment as a part of a universal process

Since the Big Bang, the Universe has been diversifying into a wide range of matter and life, including plants, animals and human beings; with the globalization process now unfolding, humans are developing from separate people(s) increasingly into a global whole.

Globalization is an integral part of this universal process, following its own immutable laws and timing that continue to be enacted since before humans developed their own concept of time. Universal timing will therefore always play a role in the enactment of our human goals, even though human beings might not recognize this. For that reason, it is essential that we continue with patience and keep seeding our highest vision of the world we seek and remember that what we might see as a setback can be a part of how the larger Universe works. A positive attitude is extremely important: that we give ourselves credit for what

we have achieved and proceed with a sense of gratitude for all that is good.

Integrated policies and plans

As a part of the National Sustainable Development Strategies, each community, city or village should develop a high-level assessment of its green spaces, weak/ vulnerable areas (for instance slums, dangerous areas), energy uses, energy sources, resource efficiency, resilience to disasters, and climate change indicators and prevention. Here Geographic Information Systems to which all people are linked can be a powerful tool for real-time planning.

Communities, too, can be evaluated with regard to overall “health and wellness” focusing on areas where change is needed and the degree to which they collaborate with neighboring communities that impact them. Indicators of community wellness are based on a foundation of living in harmony with the natural environment in which a community exists. Where communities are in harmony with Nature there is wellness.

Worldwide sharing and cooperation on technology and ideas for quickly transforming all communities to vibrant sustainable dynamic centers will actually lift the spirits of people and create a sense of aliveness and appreciation.

Especially when all voices from all countries are valued. When people come together in these ways to urgently transform living situations it is truly inspiring what can be accomplished in a very small amount of time. Here universal access to the Internet can be a powerful factor.

Where people agree on the absolute necessity to make the required change and use as many means at their disposal as possible, including the fast growing collaborative economy based on sharing, and tools such as the Geographic Information System (GIS) and the Internet; and do this in harmony with universal timing, we can transform our communities by 2030.

Resilience in the face of disasters and climate change

Disasters happen where human beings are at loggerheads with Nature. Since Nature will inevitably win in any head-on conflict; it is up to us to find ways of mitigating disasters by reestablishing a cooperative partnership with Nature based on Nature's terms. Inclusion is a basic principle of Nature as is resource efficiency. For this reason, these two principles are intimately linked with disaster mitigation.

During disasters human infrastructure tends to fall away; people in key positions can become unavailable due to overload, accidents or other unforeseen circumstances. What remains is the natural working relationship and bonds among “ordinary” people (and it helps to develop these before disasters happen;) and the systems of Nature that are still available—for instance, sunlight for warmth and cooking, including for boiling water; vegetation, stones and soil to provide HABITAT and protection from the elements.

Proposed Actions

Following are examples of the actions needed to counter the effects of disasters.

- Restore the natural environment to create buffer zones around built communities; move people, buildings, and infrastructure out of hazardous areas; and develop resiliency through regenerative practices.
- Limit the use of and protect people and the natural environment from coming in contact with toxic substances so as to limit the damage that can come from “Natural” disasters”.
- Get all citizens involved in giving their ideas on all aspects of disaster planning that affects them. Ensure that societies are inclusive and foster collaborative relationships among all inhabitants.
- Provide education to build inclusiveness, collaboration and cooperative decision-making. This can make use of know-how already inherent in cooperative and commons enterprises.
- Build disaster preparedness teams that are trained in working with Nature, life and Earth's Systems, and preferably also are experienced Nature communicators.

11c. Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials.

A city is like a human being: All parts are important and need attention. If we consider all the countries as organs in a larger being—the planet, for instance—we recognize that paying attention to the countries that could use the most assistance helps all nations, particularly if we make use of the ingenuity of people from every nation to develop innovative, sustainable constructions that proudly express the culture of the people and align with Nature.

When insight is shared from one country to another in a program of exchange, each culture of people is honored for its unique wisdom, and all nations are benefitted. In this way nations collaborate on behalf of the highest good for life on the planet and humans live in harmony with Nature.

A typical development model involves sending people from industrialized countries to developing countries to participate in “hands-on” work. In fact, all nations are leaders in their own way and industrialized nations have much to learn from developing nations as well. So those coming from developed countries should be prepared to learn just as much as those they are coming to help. The same is true with North/South cooperation where it is imperative that we all endeavor to learn from one another.

The same might be true when it comes to constructing resilient buildings from local materials. Where people live closer to Nature without great influence from the technologically advanced world, they tend to build using local materials and architecture that is well adapted to protect from heat and cold.

Such cultures often have expertise in building low-tech, resilient and sustainable housing that can be adapted to high tech societies, where building is often automatically associated with expensive high-tech heating and cooling systems that cost much to operate and are often damaging to the environment.

Institutions of higher learning, such as MIT, are already involved in bringing low-tech solutions from developing countries to industrialized countries.

Development practices that have been copied from the developed world and that make extensive use of unsustainable approaches and materials should be replaced by more sustainable processes and practices that are already being developed in both the developing and developed world and that often borrow from indigenous cultures and experiences.

When we appreciate the opportunity to learn from and collaborate with others on behalf of the best outcomes for all, we can make a significant difference even where small development steps are taken because compassion for others is one of our most powerful tools.

SDG 12
Ensure Sustainable Consumption and Production Patterns

National Policies

Indigenous Peoples

Student-centred Education

Life Cycle Analysis

Bio Mimicry

Eliminate waste

Exceeding Planetary Boundaries

International Framework

SDG 12 - SUSTAINABLE CONSUMPTION AND PRODUCTION

Ensure sustainable Consumption and Production Patterns

Humanity has developed a pattern of consumption and production that, as presently practiced, is anything but sustainable. As a species we are exceeding a number of planetary boundaries along with the carrying capacity of the earth. In fact we are currently using more natural resources and are having an ecological impact that is approximately 50% more than the earth can sustain. If all peoples were to have the same lifestyle as the average or typical North American or European we would need 3 - 5 planet earth's to provide for us all. It is thus essential that humans pay attention to and address current practices of production and consumption, which are unsustainable, both to us and to the planet as a whole. And likewise that we adopt and implement sustainable production and consumption practices that will ensure we quit depleting our natural resource base and instead focus on restoring ecosystems and healing the natural environment.

Both our brains and our digestive systems have essential cells designed with the innate wisdom to decide what to create as well as what keep and what to throw out in order to keep our body functioning efficiently, naturally and in a healthy manner. Currently for too many of us these processes are guided to a growing extent by myths of advertising, the cultural milieu and media in general; and thus the co-inciding mind-set and habits created by these beliefs. This has led to over-consumption and over-crowding in both our individual bodies and environment.

It is essential to the health and well-being of each individual that we inform the process with accurate information about what brings health and prosperity to each of us as well as to the whole system in order to form balanced, effective sustainable practices of consumption and production.

For such reasons as this the UN Member States created the SDGs, the 10 Year Framework of Programmes on Sustainable Consumption and Production, and included Goal 12 on ensuring sustainable consumption and production patterns. More particularly they included Target 12.1 calling on "all countries to take action to implement the 10 YFPs"; Target 12.2 to "achieve the sustainable management and efficient use of natural resources"; and Target 12.8 to "ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature". These last two targets are expressly the focus of our recommendations - to make effective and efficient use of our once abundant but now increasingly scarce natural resources - which have been so graciously provided by "Mother Nature"; and to provide the information needed by the Earth's people to create lifestyles which are fully in harmony with nature.

We believe that there are many reasons that humanity has developed lifestyles and practices that are far from sustainable; and that these must be addressed in a responsible manner if we are to change our ways and live within the very real constraints of nature. Most of those who have engaged in the UN's sustainable development processes recognize that business as usual will not do; and that a step change in practices and orientation is

needed. So, let us begin by taking a look at some of the causes of the problems we are facing.

We can begin by looking at a view once held by many that there was plenty more where the last came from and we were not likely to run out, particularly in Western societies that were able to move on to new lands and to acquire and claim more natural resources from elsewhere once their own became scarce. In addition, many held the view that only the strongest were likely to prosper and survive, which unfortunately has been further reinforced by our economic system. And similarly many have believed that man could just go forth and conquer nature in order to survive. This seemed to work well when claiming and “taming” new lands; but in reality has now resulted in the destruction of much land and huge swathes of our earth’s ecosystems.

With resources now becoming scarce we have finally realized that we will have to take much better care of the resources and bounty of the Earth that is still left. But unfortunately, our economic system still tends to drive us, as a species, to produce and use much more than can be sustained. Companies feel that they have to sell as much as possible in order to compete in the local to global marketplace; and if they do not they will either be driven out of business or swallowed up whole. Most of our media is under-written by advertising encouraging people to buy more all of the time. People are becoming more concerned that if they do not follow the company line they will be out of a job; and are in the habit as well of purchasing more and more, or only the best, as a means to feel better about themselves.

In the developing world most of the cities and even some rural areas are jammed full of people lining the roadways and public areas trying to sell whatever they can in order to provide for their basic needs and make a simple living; and in both developed and developing countries' glitzy advertising and commercial establishments drive the economy and encourage people to buy and use more and more useless or unnecessary stuff. Even our media encourage people to engage in recreational activities and pursuits that are undermining both our ability to survive and the quality of life. And unfortunately most externalities (impacts on the natural environment that are externalized instead of being paid for or borne by the producer) are not even included in the purchase price; so people buy things that are cheaper even though they are bad for the environment just because not all the costs are included - for example recycled goods often or usually cost significantly more than those produced using virgin materials even though the recycled product requires less energy, water, and other materials to produce. This occurs largely because our natural resources are priced at a level or rate that is much less than the value they actually provide to our societies and communities, etc. which thus provides a compelling rationale for placing taxes and fees on our natural resource use in order to recover the value lost in their consumption or use.

We are now learning, as a species, that there are also healthier and more sustainable ways to live, as well as to produce and consume, which is why there is now the realization even among governments that we need to limit our natural resource use and live in harmony with nature.

Humanity is beginning to recognize that the food, habitat and natural resources that we need to thrive as well as survive actually exist within a much larger nested set of eco-systems where the air, water, greenery, soils and a large diversity of life live in a balance of give and take: each element or life form giving of itself and receiving in exchange the specific type of nurturing resource it too needs to survive and prosper. In Nature in this larger context there is no waste and relatively little pollution because the waste of one species tends to nurture and sustain the lives of others. As a species we need to learn from nature and create or transform our economies into a circular economy where those things that we produce and use are re-used over and over again as well, the waste product of one thing thus providing the basic nutrients, materials or resources needed to produce other types of things, while thus - like nature - eliminating end waste and avoiding processes that pollute or degrade the natural environment.

if we are to ensure that all of Nature is to survive we must respect Mother Nature and the Earth, take no more than is necessary and give back what is needed to restore the earth's resources for the welfare of future generations and all life on this planet.

This will require creating a regenerative circular economy, eliminating waste, and restoring ecosystems, natural water cycles and the natural environment upon which all of life, as well as our economy, is ultimately based. This in turn will require that all people learn to respect mother earth, live in harmony with nature, and learn how to do such things. Humans have pushed the Earth and our Environment to their limits. The processes that we have put in place are not sustainable. It is imperative that we take immediate action to reverse the effects of our actions. It is up to each of us, individually and collectively, to accept responsibility for saving our Planet.

Humans have moved so far away from our natural life force and natural life flow that we are out of sync with Nature and the planet that we live on. We must start listening like we have never listened before and hear the cries of both our fellow humans and Nature. We must learn to take and use or consume no more than can be equitably shared by all others take only what we need and manage/distribute our resources more thoughtfully and effectively. We need to work together, across borders and across nations. Our challenge is to move back into the flow of life. As we do so, we will learn how to make better use of what we have and waste less.

Right actions will best be carried out in a gentle yet swift manner. Nature offers us wisdom and examples of how we may proceed. We need to strip things down to their basic components and use creativity in finding solutions. We need to look to examples in nature and communities that are demonstrating effective, sustainable production and consumption practices. For example, the pollination process is efficient and without waste.

There are many stakeholders, all with their own unique perspectives. Our solutions lie in including all of them in the process. This is best approached by remembering that at our core we are all the same and have the same basic needs and wants. We are all connected and interconnected. We all have valuable and essential wisdom to bring to creating sustainable solutions that benefit all life on this planet.

Human beings have the capacity to live in harmony both with and within this larger collaborative context of Nature and are already using Nature inspired examples in many different ways, for example through bio-mimicry, biological waste treatment facilities, and in many practices of indigenous cultures. In the section below we include actions under each of the targets that we can take to further increase the numbers of ways we live in harmony with Nature and thereby create a society where neither people nor products are treated as dispensable and we increase our willingness to learn from Nature, including through recycling, re-purposing and reusing.

TARGETS SDG 12

12.1 Implement the 10-year framework of programs on sustainable consumption and production (10YFP), all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries.

Given the extent to which humanity has already degraded the natural environment and is living beyond the carrying capacity of the earth, it is essential that all efforts to implement the 10 YFP be based on making a rapid shift to full sustainability. The Rio Declaration has still not been fully recognized or realized 25 years later. It provides essential principles upon which all efforts to shift to a sustainable economy and societies must be based - including the precautionary principle, access to information, living in harmony with nature, etc. All efforts to implement the 10YFP must also be based on abiding by these principles and basing our policies and actions on them.

Similarly, it is essential that all efforts to develop and implement local, national, regional and the global 10YFP include the fundamental need to restore degraded ecosystems, large and small scale water cycles, soil health, and watersheds, etc. Transitioning to regenerative agricultural practices is a must, along with investing in water retention landscaping.

The strategies for instituting the 10YFPs must also be fundamentally based upon living fully in harmony with nature and fully address target 11.4 and strengthen efforts to protect and safeguard the world's cultural and natural heritage. Similarly, they must include a full effort to institute Education for Sustainable Development at all levels of government and within public and private school systems.

There are also a number of other pre-requisites for transitioning to a fully sustainable economy and society that the 10YFPs also ought to be based upon. This includes transitioning to 100% renewable energy, creating carbon neutral and regenerative societies, phasing out as many toxic pollutants and chemicals as feasibly possible, and creating a fully circular economy where there is no longer any waste. All producers should be required to take responsibility for what they produce throughout the value chain, particularly using such policies as Extended Producer Responsibility. Externalities and tax policies will need to be included in the cost of goods and services. And finally all efforts to implement the 10YFPs should focus on achieving all of the other SDG Goals, Targets and Indicators at the same time.

We will need to train and hire skilled innovative thinkers, objective negotiators and trained mediators to design creative solutions for problems and conflicts that arise in instituting sustainable production and consumption policies and practices.

Develop policies and laws to facilitate people aligning intentions to practice sustainable production and consumption with their actions by objectively

evaluating the effectiveness of outcomes on both the individual and the environment as a whole.

Operationalize the 10YFP on Sustainable Consumption and Production at the local, regional, national, international levels in an integrated manner both vertically and horizontally. Provide significantly more resources in order to implement the 10YFP at these various levels and include the rationale for why it is in everyone's best interests to do so.

Use the development and implementation of the 10YFPs to address geo-engineering and extractive industry obligations through relevant levels of government.

12.2 By 2030, achieve sustainable management and efficient use of natural resources

A first step in meeting this goal will be to determine both how we can make the most efficient use of natural resources along with how they can be used in a fully sustainable manner. This will require us to first figure out how we can avoid depleting each of these resources; and then determining how much each of us can use or consume in order to do so in an equitable and sustainable manner. Thus many of us that are either living in the developed world or in the upper classes in developing countries will probably have to live in smaller houses, drive smaller cars, eat less dairy and meat, and generally reduce our level of consumption rather significantly. However, at the same time we ought to be able to substantially improve the quality of our lives and our general sense of well-being.

Two mental shifts will also be needed:

1. How we view and value resources.
2. How we view and value ourselves.

1. **<u>A mental shift is needed in how people value resources</u>.**
    - Recognize that all resources are in constant interaction with all else and thus an integral, indispensable part of the environment that supports human life and enables us to prosper.
    - Perceive all of reality in terms of whole living systems and processes in which the importance of all parts are recognized and resources are best utilized for the well-being of the whole.
    - Interact with resources in ways that build Nature's own way of conserving resources.
    - Align our thinking with natural processes that have evolved and proven to be sustainable over a period of almost 5 billion years.
2. **<u>A mental shift is needed in how we see ourselves.</u>**
    - Recognize that we are made up of interconnected and interdependent processes. When these processes work together in harmony with one another, balance and health are maintained in the physical, mental and emotional realms and there is a sense of well-being.

- Perceive that when we cooperate with all aspects of ourselves and Nature and align our thoughts and actions with nourishment and ease this creates balanced and sustainable consumption and production choices for the whole system.
- Align our self-perception to be a part of and in sync with Nature and the larger environment.
- Realize that the mind-set of cooperation promotes strength and balance, while engaging in over-consumption and craving fosters weakness and disease.

It is here that the implementation of the fundamental human right 26(2) of the Universal Declaration of Human Rights--the full development of the human personality—can help us remedy this serious social, environmental and economic problem.

Proposed Actions

Commons Rent: Shift tax from labour to a fee for the use of all land and commons resources - resources that all need for their survival: fresh air and water, the seas, land, biodiversity, the electromagnetic spectrum. Use the resulting income gathered nationwide and later worldwide in a fund to restore the global commons and any harm done to communities affected by the exploitation of local resources (in the case of indigenous peoples, resources can only be exploited if prior informed consent is given). Such a fund could also be used to provide a basic income for all people or nationals of a country (as the case might be). This can help to decrease waste of land and biodiversity loss.

Cap the annual use of depletable resources, such as fresh water, species of plants and animals, including fish, and auction permits to the highest bidder for the use of what remains. The permit holder will pass on the costs paid for these resources to those purchasing them. So the use of the resources in their original or processed form is born by all consumers who actually use them. The monies received from the permits are divided among all those living in that economy, reducing the need for people to procure loans to produce food.

Nurture and build on the spontaneously emerging social collaborative economy, through the use of education and financial incentives and policies, whereby people share their labour, goods and services and often give these away for free. These resources are largely available through the Internet. In this system, people work because they love doing what they do; while they benefit from the freely given and dedicated labour of others. Goods and materials are appreciated for what can be done with them. They are not wasted.

The LETS System: This is a barter economy where people create a local currency and then barter goods and services as a means to regenerate flagging economies. This takes into account that one man's trash is another man's treasure. Resources are valued and more wisely used.

Provide student-centred education, where students are individually encouraged to play and learn according to their deepest interests, inner guidance, and where each child is helped to discover how they can reach their own potential.

Indigenous Peoples are leading the way having realized that each individual in a community is invaluable to the survival of the whole tribe and to the careful stewardship of the environment. Some use methods such as vision quests to help people and the community to recognize individual gifts as well as supporting each individual to fulfil his/her potential.

A number of diverse types of student centred schools and universities have been established in developed countries. Great innovations in this field have been implemented by Maria Montessori, A.S. Neil's Summerhill in the UK, the Union for Experimental Schools and Universities based in the US; schools inspired by the teachings of Jidu Krishnamurti; and those inspired by Rudolf Steiner (the Waldorf Schools). All of these approaches to education are based on drawing out the innate wisdom, the creative spark, and unique gifts of each individual while teaching them to work together in mutual respect and cooperation. The types of curriculum and lessons included in these schools ought to be adopted and used in other and particularly public schools as well; and included as recommendations in both local and national action plans for Education for Sustainable Development as well as for Sustainable Consumption and Production. Increasing the number of and extent that students learn self-empowerment will greatly increase the extent to which people are happy with their lives and feel less need to "over consume".

Education and the Media should be encouraged to show the interdependence of the web of life and all subsystems of the Earth together with how this relates to Target 12.2 - achieving sustainable management and efficient use of natural resources.

12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.

In Nature most food is grown and consumed locally within ecosystems where there is no waste. Even when animals and plants migrate they remain a part of the balanced give and take that characterizes ecosystems.

While human cities have many aspects in common with ecosystems, they produce waste for the following reasons:

1. Cities import most of the food needed to feed their residents. Most of it is thus mass produced and transported over long distances with the result that the quality deteriorates, some of it spoils or is damaged and so goes to waste - particularly in the developing world. Also, much of the food sold in restaurants, fast food, smaller stores and even farmer’s markets spoils before it can be purchased and is usually not even composted but instead is just thrown away.

2. The agro-businesses that mass produce food have usually had to go into debt to purchase the land, machinery and labour necessary for large scale food production. These debts necessitate extensive sales that are achieved
    a. By increasing the length of the production and supply chains, which tends to lead to waste through deterioration and spoilage of foods
    b. By increasing the amount of food bought by people through aggressive advertising campaigns. Here food excesses also often go to waste.
3. In order to get the necessary yield they tend to use agricultural practices that destroy the soils and animal and plant species.
4. Agricultural policies often require ploughing under or leaving crops to rot in the field in order to either maintain the price of the crop when too much is produced or when more is produced of a particular crop than can be sold and eaten.
5. In some countries much food is not harvested due to blemishes, spotting, it is irregularly formed, or other aesthetic considerations and is thus left on the ground to rot.

FAO commissioned and published two reports in 2011 and 2013 on food loss and waste, along with a toolkit on best practices, which are essential reading for addressing this target. The first is entitled: Global food losses and food waste – Extent, causes and prevention (www.fao.org/docrep/014/mb060e/mb060e00.pdf).
The second is entitled: Food Wastage Footprint: Impacts on Natural Resources (www.fao.org/nr/sustainability/food-loss-and-waste)

FAO is also organizing a Global Initiative on Food Loss and Waste Reduction: Save Food. Save Food has developed and is implementing a global programme on food loss and waste reduction with more than 900 members. See www.save-food.org.

FAO has also produced a Food Loss Reduction Strategy: http://www.fao.org/fileadmin/user_upload/ags/publications/brochure_phl_low.pdf. Both of these efforts ought to be promoted and supported by all governments and relevant stakeholders.

Although there is today a wide recognition of the major environmental implications of food production, the FAO Impact study provided the first global account of the environmental footprint of food wastage (i.e. both food loss and food waste) along the food supply chain, focusing on impacts on climate, water, land and bio-diversity. It found that without accounting for GHG emissions from land use change, the carbon footprint of food produced and not eaten is estimated to be 3.3 Gtonnes of CO2 equivalent: as such, food wastage ranks as the third top emitter after USA and China.

In addition, farming, including conversion of wild lands and intensification, is a major threat for biodiversity worldwide. However, most of the new impacts of food production on biodiversity occur in low-income regions, such as Sub-Saharan Africa and Latin America, largely due to deforestation caused by

agricultural expansion. This is in line with existing findings showing that, between 1980 and 2000 across the tropics, more than 55 percent of new agricultural land came at the expense of intact forests and another 28 percent came from disturbed forests (Gibbs et al. 2010).

Roughly one-third of food produced for human consumption is lost or wasted globally, which amounts to about 1.3 billion tons per year. Reducing food wastage would not only avoid pressure on scarce natural resources but also decrease the need to raise food production by 60 percent in order to meet the 2050 population demand.

In medium and high-income countries food is to a significant extent wasted at the consumption stage, meaning that it is discarded even if it is still suitable for human consumption. Significant losses also occur early in the food supply chains in the industrialized regions. In low-income countries food is lost mostly during the early and middle stages of the food supply chain; much less food is wasted at the consumer level.

On a per-capita basis, about 10 times as much food is wasted in the industrialized world as in developing countries. Food waste in industrialized countries can be reduced by raising awareness among food industries, retailers and consumers. There is a need to find good and beneficial use for safe food that is presently thrown away.

The causes of food losses and waste in low-income countries are more complex and are mainly connected to financial, managerial and technical limitations in harvesting techniques, storage and cooling facilities in difficult climatic conditions, infrastructure, packaging and marketing systems.

However, we also know that almost 50% of fruit and vegetables are lost or wasted around the world; in the developed world this occurs primarily at the consumer level. While in the developing world losses during post-harvest and distribution stages are often severe, which can be explained by deterioration of perishable crops in the warm and humid climate of many developing countries as well as by seasonality that leads to unsalable gluts.

The study revealed that there are major data gaps in the knowledge of global food loss and waste. Further research in the area is urgently needed; especially considering that food security is a major concern in large parts of the developing world.

Proposed Actions

Agricultural

Review and modify agricultural and marketing practices so as to address the problems mentioned above.

Decrease food losses along production and supply chains.

Develop programs, policies, and legislation at all levels of government that are sufficient to address the problems leading to food loss and waste found within that region or area.

Promote and support the growth of small-scale food production in (rooftop) gardens, or in allotments, at the edge of cities where city dwellers can both grow fresh food and relax; and in vacant lots, community gardens and in school gardens where it is used for both nutritional and educational purposes. This can serve as a model for how we make the choice to preserve and only take/use what we need. Labour saving permaculture can be applied when choosing combinations of plants and animals to tend so that gardens maintain themselves using an eco-system approach. Where people provide their own food, they do not have to buy great quantities at a time, this decreases waste, the food can be eaten while fresh, it contains more nutrients and is better tasting.

Demonstrate the advantages of buying food produced locally. Some restaurants promote a macrobiotic approach by advertising that their foods are all bought locally or within a 50 km radius, for instance.

Decrease biodiversity loss (waste of animal and plant species) through such means as agro-ecology and agroforestry, creating natural buffer zones around farms, and restoring the natural environment through the use of water retention landscaping, etc.

Agriculture
Encourage farmers to use organic methods of farming (which UNEP has found to be 2-4 times as productive as conventional agriculture in the developing world) through education and using monetary incentives. An unceasingly popular approach to help farmers financially who wish to move into organic animal husbandry is for people to “adopt an animal” (a chicken or a cow) by paying a small amount each year to the farmer where the animal is housed. In this way the farmer can gradually take the necessary steps to implement organic methods. Some farmers hold an “open day” and the foster parents of their animals are invited to visit the farm. Many sell produce and this allows a bond to form between the sponsor and “their” cow, etc.

Financial/Tax
Implement Pigouvian taxes on those who destroy the quality of land and biodiversity. Require the offenders to restore Nature to its original quality and pay high penalties.

12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

The toxicity of chemicals increases and poses a threat to humans and the rest of Nature when they are isolated from their natural form and purified. The management of chemicals and waste becomes acute when materials are isolated from their natural relationships. More than 10,000 commonly used chemicals have never even been tested to determine their levels of potential toxicity. All countries have a moral responsibility based on the Universal Declaration and Conventions on Human Rights, etc. to end the usage of

chemicals that dramatically hurt human health. The precautionary approach must be used to ensure that all chemicals produced are tested and used in a manner that is totally safe for both humans and the natural environment. Environmental laws need to be established at all levels of government that will ensure their health and safety and should be enshrined in international law through a Global Pact for the Environment.

UNEP reports that 90% of waste water flows back into the watershed untreated in the developing world, thus contaminating drinking water along with water used for agricultural, bathing, and other human purposes with toxic chemicals and human and animal wastes. Cancer rates are soaring where-ever industrial processes have taken root around the world, but particularly now in the developing world, and those most at risk of environmentally related diseases are typically the poorest sector of the population. It is thus essential that we clean up and eliminate the production and spreading of such toxic chemicals and wastes.

Proposed Actions

- Policies and regulations are needed at every level of government to reduce and eliminate waste. All producers should be required to carry out extended producer responsibility for the products they make to ensure that wastes are eliminated throughout the value chain and are instead used to provide basic feedstock's for other products and processes.
- Much work has been done in pioneering green chemistry and bio-mimicry. The results have been phenomenal showing how we can greatly reduce costs and expenditures along with negative impacts on the natural environment by watching and learning from nature. These R&D efforts now need to be expanded to ensure that benign nature-inspired processes replace toxic and unsustainable processes throughout industry.
- Enable once purified chemicals to return to their natural connections to minimize the destructive practice of purification.

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.

Proposed Actions

Institute education that teaches the benefits of working in harmony with Nature and with each other in order to keep consumption and waste in balance and in alignment with the needs of all life on the planet.

- Learn from Nature that recycles everything.
- Institute cradle-to-cradle manufacturing.
- Promote zero waste policy as is being done by the EU.
- Require Extended Producer Responsibility
- Adopt socially responsible standards and labelling schemes
- Provide municipal composting programs
- Provide financial incentives for best practices among schools, businesses, within communities, government procurement, etc.

Adopt and implement zero waste policies as is beginning to be done in the EU. See among many others: www.zerowaste.com. Fully implement recycling and cradle-to-cradle manufacturing.

Encourage waste recycling by inhabitants of cities who for instance collect aluminium cans and then sell these to companies for income; and by encouraging “garage” sales and second hand shops. Provide incentives and policies that make recycling easy to do.

Humans have created random and arbitrary concepts of what is essential and what is useless. If we can shift to a blank open space, we will see possibilities for living more sustainable. For example, we could develop advertising campaigns that promote recycling and reusing - making it "cool" to recycle.

We can also promote the idea that consumption does not create happiness. The "art of happiness" can be taught in public schools as a part of shifting our values. At the same time, we could provide information and teach about the destructive impact that comes from over-consumption, how advertising encourages people to buy and use more than can be equitably shared by all, the need to transform our advertising policies and eliminate much of the advertising that is so prevalent today, and find other means to underwrite or fund our media activities.

That which people are unfortunately taught to believe improves their lives, through media and popular culture, often leads us to adopt unsustainable practices and to buy unneeded things. We can begin to reverse this by reconnecting with what is real and valuable. We must speak the truth and spread the word - love, light, and truth. In order to develop solutions that benefit both the individual and the entire ecosystem, we need to take time to meditate, listen and be inspired by Nature. We need to intentionally let go of long held beliefs, opinions and "truths" and open up, tune in to our higher wisdom. We can use graphic images that employ humour to reach people and inspire change. A light, yet serious message that goes viral can be a powerful force for implementing new ways of conservation and waste reduction.

12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.

Large corporations functioning on diverse markets worldwide can and sometimes do operate outside of national and even international laws. In this way, they are in a position to use their positions to their narrow advantage and even harm the communities in which they are active. At the same time, their size, their capacity to function globally, to generate income and jobs, and their expertise and good will can be a positive force promoting sustainable development. There are many corporations (especially cooperatives), which have adopted the principle of becoming a constructive force for sustainable development.

As our world and international community focuses on the 2030 Agenda, the pressures for all to adhere to sustainable standards will increase and affect

the behaviour both of the private sector and of their potential customers and clients.

In the past, aid recipients (developing countries) have been reluctant to discuss the negative impact of actions by large corporations for fear it would affect future aid as well as investments in their country and economy. Where other organizations and individuals are encouraged to join the assessment process, companies are beginning to realize the negative publicity bad reports produce, and are likely to use the reporting process to seek positive publicity instead.

Proposed Actions

- Encourage companies to become a member of the Global Compact, which provides standards, activities and incentives for businesses and organizations to abide by international agreements and set an example for others to follow.
- National governments can as a matter of routine write reports, evaluating the usefulness of the aid received from national governments, through their large corporations, or from large corporations directly.
- Citizens can write and publish evaluation of large corporations' impact on their communities—very specific questionnaires that look at all round impact both of what they were commissioned to do and the actual outcome whether good or bad or a mixture of the two.
- Reports by independent CSO groups to assess both the positive and the negative impact of large corporations on the communities and the nations where they are active, especially where these are paid by the public sector to provide official development assistance.
- Financial tally by all of the above to see what the above mentioned large corporations put into a country and what they take out versus the amounts paid to their investors.
- Reports by UN agencies giving an overview each year of evaluations received by corporations, recipient communities and evaluations by outside observers. All these reports can first be shared in confidence with those donors. If the reports are good then that will be positive publicity. If they are negative, the donors can be requested to make amends and if these are not forthcoming, the reports can be made more generally available.
- Encourage large corporations to work together to improve the quality of their products and services through intervision and mutual sharing of best practices.

There are ways to encourage them, where they are having a destructive impact on sustainable development to become a force for good. Corporations are typically made up of individuals who at their cores are good. We can be smart and creative about how to reach them and inspire them to do the right thing. The best way to do this is through creating opportunities for them to feel good about themselves rather than pointing the finger of shame at them. The

effectiveness of positive reinforcement is indisputable. It is up to all of us to inspire, motivate, and provide incentives for social responsibility to positively impact corporate policies.

In addition however, we have to recognize that both standards and campaigns encouraging corporate responsibility and showing the negative impacts of some corporate policies are also having a profound impact on companies both across the value chain and around the world.

Adopt and provide financial incentives for ecosystem inspired forms of business, such as cooperative business forms which are owner/worker operated and where all participants therefore benefit from its success; and where both raw materials and other resources are valued maximally. As a part of the Cooperative Identity, many cooperatives give a part of their profits to the community where they are situated and a percentage to global development. This nurtures the economic well-being of the community, creates social cohesion and creates goodwill between people while caring for natural resources. See www.ICA.coop/

Many standards regimes and labelling schemes have been developed by various networks and organizations, including those encouraging and supporting the development of green building practices, energy efficiency, healthy and safe foods, responsible and sustainable fishing and forestry practices, etc. It is crucially important that governments support and promote the use of such standards and labelling schemes. Where appropriate laws and regulations are also needed to ensure that safe and sustainable practices are adopted by all businesses. For example, green building codes can support the transition to more responsible and sustainable building practices.

Similarly, both many companies and also governments are adopting or developing and requiring cradle-to-cradle sustainable consumption and production practices and processes. Many local governments are promoting circular economy initiatives and China has adopted a Circular Economy Law. More commonly eco-industrial parks are being established around the world with the "waste product" from one industrial process providing the basic feed stock for others. Legislation and incentives are needed to drive the transition to a circular economy where waste is eliminated in both consumption and production processes and where we make the best use possible of our increasingly scarce natural resources.

Many governments are also developing and adopting certification schemes such as for organic produce, herbal teas and remedies, fair trade products, etc. Such certification schemes can ensure that companies do live up to the expectations that come with how their products are labelled and promoted. In time all of our local to national SCP plans ought to require that SCP practices are adopted and lived up to by all companies as well. All companies should be required through their chartering and reporting processes to certify that their products are safe and are produced in a fully sustainable manner.

One of the ways that businesses often have a profound but typically either unexpected or ignored impact on the natural environment is in their use of or impact on land. Unfortunately, according to a World Business Council for

Sustainable Development Report entitled, "Land Degradation Neutrality, a Business Perspective" 25% of usable land globally is already degraded, at an estimated economic loss of US$ 40 billion per year. The WBCSD reports that agriculture is an important driver of land degradation, responsible for approximately 80% of deforestation worldwide. But there are also more pressures on land than just agriculture. For example, many industry sectors use land to meet the infrastructure needs that result from increased urbanization. In the developed world up to 7% of land is now buried under concrete while the land area that is available for other uses is in constant decline.

Fortunately, however, as much as 2 billion hectares of degraded land have the potential for restoration, an area larger than South America. The adoption of sustainable land management is estimated to deliver up to US$ 1.4 trillion in increased crop production globally. Additionally, restoring the 10 to 12 million hectares that are degraded every year could secure the cost-efficient sequestration of 20% of global CO2 emissions over two decades.

The WBCSD Report also details guidelines and targets that companies ought to be required to adopt and implement through each country's UNCCD Convention to Combat Desertification national action plans. The report also provides guidelines for monitoring and measuring impact. And it provides a listing of recommendations and opportunities for funding sources. Given that most of the world's governments have agreed both to stop land degradation by 2030 and to develop plans for doing so under both the UNCCD's Ankara Initiative and SDG 15.3, it is essential that we now ensure that businesses take effective action to join in the effort as well and that governments support and provide incentives for businesses to actually do so.
See:
www.un.org/ecosoc/sites/www.un.org.ecosoc/files/files/en/integration/UNCCD.pdf

and

www.unccd.int/en/mediacenter/MediaNews/Pages/highlightdetail.aspx?HighlightID=418

Erasmus University Rotterdam has also developed and is offering an excellent online course to assist businesses in their efforts to help achieve landscape restoration neutrality entitled: Landscape Restoration for Sustainable Development: a Business Approach. All businesses that are serious about helping to achieve this goal ought to enrol upper management in the course; and governments should encourage business leaders to do so as well.
See:
https://www.coursera.org/learn/landscape-restoration-sustainable-development

12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities.

Where imbalances occur in Nature between give and take, a breakdown can occur that affects whole ecosystems. The constant search for balance is a fundamental movement within Nature. It is important therefor that procurement practices that lead to a balance in giving and receiving are both enforced and recognized as fundamental to the well-being of both people and Nature.

Proposed actions

Legal actions

Develop policies that give preference to or require procurement of goods that are produced using circular economy practices and that are determined not to have a negative impact on the natural environment.

Strictly enforce laws that prevent inefficient, corrupt public procurement practices.

Establish citizen panels with a mandate to recommend and set procurement policies that are socially responsible and advance sustainability practices and principles.

Adopt policies and laws to hold those personally accountable that engage in corrupt practices or engage in procurement practices that harm the natural environment.

Educational actions

Encourage citizen watchdog groups that publicize transgressions in local, national and social media and describe the consequences of such malpractices, specifically as they affect parts, or the whole of the population.

In political and history lessons, social studies, etc., make greater use of oral histories where people's experiences at various levels of government are described, and also of group projects where students are asked to solve various problems including those relating to procurement. The more students experience the consequences of malpractice and incompetence, the more they will be inclined to avoid it in their lives and work.

- Document and publicize full life stories of those who are creating sustainable solutions and living in alignment with their vision and in harmony with Nature and all beings on the earth.
- Document and publicize full life stories of people who acted on corrupt values so that people at large see the repercussions of their own actions and those of people in their governments, including in the procurement divisions.

12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.

It is essential that Education for Sustainable Development (ESD) and information about the 10 Year Framework of Programmes (10YFP) on Sustainable Consumption and Production be included in the curriculum and taught at every level of education and across all disciplines and courses of study and in a fully integrated manner. Similarly, every student in the world should be made aware of the Sustainable Development Goals and how they intersect with and require the teaching and learning about ESD and the 10 YFP. If we are truly to be serious about achieving all of the various international agreements and all of the other sustainable development policies, laws, regulations and agreements that have been reached, then they must be included in these curriculums and courses of study as well. Currently there is very little understanding among the peoples of the world as a whole as to what our governments have actually agreed to do. Very few people for example would know that their government has signed onto more than 600 multi-lateral environmental agreements and treaties. We thus need to determine how such information can be spread both formally and informally throughout society at large as well.

- Institute education and training on ways to work in cooperation with each other and with Nature, so that the needs of all parts of the Earth's ecosystem get their needs met and remain in balance. Teach deep listening, negotiation, problem solving, conflict resolution, mediation and creative thinking.

Instead of seeing ourselves as “managing Nature from outside” or “being above Nature”, we must recognize that:

- in every aspect of our lives (the air we breathe, the water we drink, the minerals, animals and plants we eat) we are an integral part of Nature,
- Nature is the womb that nurtures us and allows us to survive and thrive
- Nature includes both destructive as well as beneficial processes, we need to be aware of and respond to both
- Without Nature there can be no human beings or even life on our home planet and so also no society or economy.

For this reason, the interconnectedness and cooperation between aspects of the Earth System is primary for this affects every cell, every atom in the human body and every level of human experience; and the human body/mind/emotional capacity to survive and thrive depends on the quality of our relationships with the rest of Nature. Within this larger context there is an aspect of competition that enables all species to survive and thrive in a process of give and take.

Such a view of Nature will require a paradigm shift in how we deal with:

- Harm being done to Nature
- Formal education
- The media (informal education)

Dealing with harm to Nature

Policies and laws protecting against abuse of Nature should include:

- Requiring those harming Nature to work more closely with Nature, to connect with the majesty, subtlety and intrinsic wisdom and cooperation as well as the destructive and random viciousness that can also be found in the Natural Order.
- Rectifying any harm done through, say, Pigouvian taxes, whereby harm done to Nature (and human beings) is fined and moreover requires restoring Nature to her original state; while, at the same time, the perpetrator is placed in situations where it becomes apparent how that harm to Nature affects him/her personally.

- Instil wonder at the miracle of life and an understanding of the various interactions between different aspects of Nature. This can be achieved through formal education as well as education via the media, by showing the collaborative aspects of Nature and how the "survival of the fittest" depends instead in fact on an exchange between individual plants, animals, species and the systems of water, soils and air that strengthens the capacity to thrive together; and which strengthens their overall interdependence. Show how therefore each aspect of Nature plays an important role within the whole. Many grade schools, particularly in developed countries, include or teach environmental education as a part of the curriculum; and this should be instituted as a part of education for sustainable development in all schools throughout the world.

- Show when dealing with a topic in formal education and in the media the consequences of actions that result from unsustainable lifestyles on one self. For no one, not even the rich and powerful, can escape the consequences of erratic weather patterns, natural disasters caused by global warming, toxins in our water supplies and in the food we eat and in the air we breathe. Show how the consequences of unsustainable consumption and production patterns affect all people--rich and poor alike; and how weather related calamities and disasters are already increasing in both intensity and quantity, are becoming increasingly costlier, and how it will be far cheaper to make the changes needed now than to pay for the costs and consequences caused by our inaction later.

- Show, through education and media, how working with nature and each other, acknowledging the interconnectedness of all life, is the way to sustainable consumption and production. Show how working together, forming communities in harmony internally and with the natural world is the key to sustainability and increased quality of life.

- Institute education at all levels and stages of schooling that shows whereby the consequences at all levels (global to individual) of overuse/abuse of nature is shown in its full ramifications. Students at school should see the ramifications of each policy and action as it relates to their personal well-being and that of others. Use interactive role playing exercises that are taught and used in environmental education programmes to really make the lessons come alive as well as to apply directly to real life.

- Increase the level and extent to which we educate and teach about how indigenous cultures have and still do live in harmony with Nature today.

- The idea that the consumer culture brings happiness and fulfilment has proven to be a dangerous myth of advertising leading to unhappiness and depletion of natural resources. The truth is that satisfaction and quality of life stem from balanced production and consumption that are sustainable for all life in the natural environment.

- Institute education at all levels that gives specific examples of living in harmony with nature and that shows the benefits that can come from living in harmony with nature. Provide contrast with examples and consequences of overuse/abuse of natural resources. Objectively review policies and actions for effectiveness, sustainability and whether or not they promote quality of life and wellbeing for all life.

- Together with above measures, encourage people to measure their ecological footprints as per the Global Footprint Network, to make more sustainable lifestyle choices such as through each country and community's SCP and ESD action plans, and to recognize alternative ways of behaving that has less deleterious effects.

Formal Education might include showing how Nature relates to the human sense of happiness, tranquillity, beauty and other deeply enjoyable experiences

In Mathematics, certain proportions (the Golden Mean, etc.) are the building blocks of the Universe; and when these proportions are used, they bring a sense of stability to our creations because these resonate with the Universe around them. These proportions, when applied to art or artefacts, tend to resonate within our beings and be experienced as beauty that connects people beyond space and time.

In Music, scales are based on relationships that are found throughout the Universe, too; and the same applies. For universal patterns resonate deeply within the human psyche and result in experiences of peace, wonder, beauty.

In Physics, all mass throughout the Universe can also be seen as energy (E=mxc2) that permeates all of human life and determines human mobility. The complex, seemingly chaotic forms we see as clouds, estuaries, etc. are in fact complexities that consist of much simpler shapes (fractals) that reoccur often without people being aware of it. (Mandelbaum)

In Chemistry, *all that is* is built of the same building blocks “From Stardust to Us,” (Brian Swimme and Elisabet Satouris) the same atoms, molecules, etc.

These recycle as people die and are born, so that the same atoms that have been a part of the Earth and/or a star become the building blocks of the human body. These same electrons once in touch with one another remain in constant communication. So the very physical building blocks contain inherent knowledge that might even be tapped.
In Biology: the same goes for one-cell organisms, bacteria. As soon as these contact one another they pass on all their knowledge to one another and this makes it hard for human beings to eradicate them. One cell organisms therefore already have a form of Internet, also high rises, taxis etc. Our bodies are made up of cells so it is possible that each cell has inherent knowledge that can usefully be tapped.
Birds and animals have languages and even separate dialects. Bird song consists of many intricate combinations of sounds that can be distinguished with the help of instruments, but still often please the human ear and result in a sense of tranquillity and peacefulness.
The media, instead of showing a “dog eats dog” world dominated by the survival of the fittest, a world characterized by conflict, could present a larger perspective and show Nature as one great collaborative system in which all parts effect all others—a system in which one species will “eat of” or “cull” another for the sake of its survival, thereby often partaking of the old, very young, sick or weak and leaving the species in tact and possibly even stronger and leaner and thereby more capable of survival and serving as nourishment at a later time. The media could thus be invited to participate in sustainable development consultations and planning processes as active participants and thus expand their understanding and appreciation at the same time as everyone else in a community does as well.

It can then be shown how people destroy this balance and rich diversity on which human life and well-being depends by eradicating whole species directly or by taking away their means of survival (food, shelter).

To nurture this paradigm shift, it is important to call in the help of those who are already living in close communication and cooperation with Nature: Indigenous Peoples, Animal and Nature Communicators, artists who are inspired by Nature, engineers and NGOs who allow themselves to become inspired by Nature to create sustainable human settlements and agriculture; and scientists who have opened new avenues of research by using the collaborative paradigm.

In this paradigm shift, the more each communication with and about Nature can show how an aspect directly affects the individual human being in a positive way, the more Nature will be treated with respect and well-being and an eagerness to learn from her.

The more people are filled with a sense of wonder and appreciation for the Nature around them and see how Nature directly or indirectly affects their own well-being and capacity for survival, the more people will respect Nature in all her expressions.

Here, finally are some other aspects of Nature that contribute to human well-being:

- The interdependence of all aspects of Nature; and how all aspects help one another—the cooperative aspects of *all that is* in all its complexity, which have inspired cooperative forms of business; the phenomenon of the commons that takes the form of open source, sharing of resources (Wikipedia, the Internet); etc.
- How one species helps the survival of another species; and how humans are impacted by this collaboration;
- That the world of Nature is sacred, for it can not be replicated by human beings.

12a. Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production.

Over the decades there has been reluctance among developed countries to share their scientific and technological advancements with developing nations to enable their companies to recapture the money invested in R&D and make an initial profit. Where wealthy countries and corporations have been successful in making unbridled technological advances and maintaining the sales and profits from the resulting commodities in their own hands, they are often now suffering from the consequences of unsustainable production and consumption patterns.

Poorer areas of the world are often best served with technology that is not high-tech. So too, ways are being explored of introducing less high-tech facilities in the everyday of those living in developed countries. In this respect, The Massachusetts Institute for Technology (MIT), aware of the need for people in developed countries to use less technologically complicated tools to save energy, is gathering low-tech solutions to more sustainable living. Developing countries can both help one another and become donors of simpler technological solutions to developed countries.

It might therefore be useful to look at whether the developing world should follow in the exact patterns of behaviour found in developed countries or whether perhaps in some ways the developing world is more advanced in this respect and might even have things to teach more technologically and scientifically advanced nations.

At the same time, now that it is generally accepted that human consumption and production patterns are threatening our capacity as human beings to survive and thrive, it would be good to consider ways in which all --developed and developing countries--can move together to come to grips with this phenomenon.

Here are a few approaches that can be used much more widely to bring about more sustainable patterns of consumption and production:

- Unsustainable patterns can be measured in a number of ways, including through the use of our global footprints. Science and technology have, moreover, produced instruments that can measure the subtle life force of plants and animals; the quality of water, air and soils.
- In Nature everything is interconnected, and therefore in constant flux as the hydrosphere, the atmosphere, the geosphere and the biosphere of which humanity is an integral part interact. The cumulative effects of these interactions are almost impossible to predict. For this reason, accurate measurement and effective ways of dealing with unsustainable patterns of consumption and production, planetary and species health will require more than a purely Western scientific approach which is dominated by an attempt to step back and isolate what we are studying, analyse the part and then decide on the basis of a fragment, how to deal with it.
- In the past, human beings survived by being attuned to Nature in such ways that they could tell which actions were having a destructive impact on their ongoing conditions for survival. They would move or change where they lived or their patterns of food production, etc. temporarily until dangers passed. Many of our 370 million Indigenous Peoples that are spread throughout countries around the world have retained these sensitivities and the skills that allow them to respond in ways that are sustainable for the whole ecosystem. It is important to build on the knowledge, expertise and wisdom existing in Indigenous Cultures to establish capacity to survive sustainably. Many Indigenous cultures retain the capacity to see the affects that unsustainable actions are having on multiple aspects of Nature at once. They have the capacity to respond to whole systems as these interact: the weather patterns, temperatures changes, movements of animals and birds, rate of growth of plants. Indigenous Peoples can act as advisors to Government at all levels and with regard to curriculum design for sustainable development (SDG 4).
- Holistic approaches to life that have existed in ancient religions for many centuries can also inspire us in moving forward to design balanced and sustainable methods of consumption and production.
- In addition, increasing numbers of people around the world have retained the capacity to communicate directly with Nature or have now developed this capacity. In keeping a finger on the pulse of the health of our natural environment, these too are a great potential asset.

- Invest in the establishment and development of research and training centres and efforts on all continents but particularly in the developing world - in collaboration with existing such centres around the world, along with technical institutes and academic institutes. Increase the level of funding available for such activities quite substantially. This could be done in conjunction with the Asian Productivity Organization, the Technology Facilitation Mechanism, UNEP and DTIE, UNCTAD, UNIDO, various Green Business and Sustainable Development Centres, etc.

The Global Ecovillage Network also includes a number of initiatives that could be replicated and scaled up in the developing world that demonstrate how local villagers can be employed through agriculturally based enterprises, while also strengthening the scientific and technological capacity to move towards more sustainable patterns of consumption and production. Sekem Farm and Ecovillage near Cairo in Egypt produces biodynamic organically grown herbal teas with medicinal properties that are processed, packaged and shipped by those living in the nearby villages. They have developed a health centre at Sekem Farm that treats 40,000 local villagers each year, largely using the herbal remedies that are produced on site.

Sekem also provides school programs, including vocational education, for toddlers through adult education, with a University Program at Heliopolis University providing masters programs in such technical fields as sustainable engineering, pharmacology, etc. In addition, more than 800 farmers produce and sell biodynamic organic certified cotton through the Sekem cooperative; and many more villagers produce products from the cloth that are made on and distributed by the farm.
See: www.sekem.com and http://www.hu.edu.eg

Then in Nigeria PaxHerbal Clinic And Research Laboratories has developed a number of programs that are training thousands of local farmers, students, and entrepreneurs to work together to preserve ingenious knowledge using modern technology. These programs are located at and run by the Ewu Monastery - including thirty-two monks, representing fourteen Nigerian tribe who are trained in different fields of discipline such as engineering, farming, philosophy, theology, agriculture, animal husbandry and many others.

Apart from the herbal clinic, the monastery also has a flourishing bakery producing wheat bread prepared under strict hygienic conditions and free of any chemical or additives. They also run a candle factory, a crafts and gifts shop, poultry, a fishpond, a vegetable garden and a large farm. The monastery operates pretty much as an Ecovillage community. In addition, it has begun to work with 7 local villages to assist them in transitioning to sustainable development and becoming Ecovillage communities as well.

PAX NATURAL MEDICINE HOSPITAL & Pharmaco-Vigilance Centre (PNMHPC) is demonstrating, through the practice of evidence-based medicine, that the integration of conventional "orthodox" Medicine and alternative/indigenous Medicine is achievable. As part of its contribution to the development of herbal medicine research in Nigeria, Paxherbals have been

training hundreds of university students from different Nigerian universities and polytechnics in various disciples of the natural sciences such as biochemistry, botany, microbiology, pharmacy, pharmacognosy, laboratory science and others. The Student Industrial Work Experience Scheme is a federal government program that aims to equip students with practical experience and skill to complement their theoretical university knowledge. Every year some 40 -60 students from as many as seven Nigeria universities spend six months to one year at paxherbals undergoing intensive training. Again programs and initiatives such as this could and should be replicated and scaled up throughout the developing world.
See: www.paxherbals.net

Finally there is a great and urgent need to provide sufficient funding to dramatically scale up the development of agriculture extension services and ecosystem restoration processes, research and development throughout the developing world, both of which would more than pay for themselves over time. For information on the newly developing EcoSystem Restoration Camps program which is developing a body of knowledge on the best ecosystem restoration practices and solutions
See: www.ecosystemrestorationcamps.org.

For information about the Global Ecovillage Network's listing of technical consultants that are available to help share and spread community-based and led approaches to sustainable development
See: https://ecovillage.org/our-work/consultancy.

Proposed Actions

- Pool our know how by creating Pools of Sustainable Development Experts consisting of people from diverse cultures worldwide. These can learn from one another and via the Internet, provide assistance to all those, both from developed and developing countries who are seeking ways to develop more sustainable pattern of consumption and production.
- Use these Pools of know-how as a resource to be consulted as needed also by individuals and corporations looking for sustainable solutions.
- Hold regular meetings of these Pools of know-how using the Internet to demonstrate the types of solutions they can provide consisting of advice from both developed and developing countries on how to obtain relevant scientific and technological solutions to produce sustainable patterns of consumption and production. By meeting among themselves and providing consultations via the Internet they remain low-cost since expensive travel is avoided.
- Encourage such Pools of Development Advisors to share among themselves and exhibit the type of balance in giving and receiving that provides ecosystems with their inner stability. They would be low cost and function in the interest for all those involved. Being Nature inspired such Development Advisors' Pools will also tend to be durable, since Nature has had 15 billion years of experience in creating sustainable solutions.

To have impact, the Science and Technology is best grounded on a solid base of internal love and a genuine intention to create sustainability. While this base can only emanate from within, it can be taught, nurtured and inspired. This is best introduced long before children are first exposed to Science and Technology. Ideally it will be a joint effort of Community, Family, School, Media and Government.

12b. Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.

The Global Ecovillage Network has developed a local community impact assessment survey and tool that is quite good and that could easily be modified and used to ascertain the impacts arising from sustainable tourism and their facilities as well
See: https://ecovillage.org/resources/impact-assessment.

Funds should be provided under and through UNEP's Green Economy program and the 10YFP Programme on Sustainable Tourism in order to develop the tools needed to meet this goal and to support the development of an effective program to ensure implementation.
See: web.unep.org/10yfp/programmes/sustainable-tourism-programme and
www.unep.org/10yfp/About/Whatisthe10YFP/tabid/106245/Default.aspx

In addition, a substantial increase in funding needs to be provided so as to be able to develop models demonstrating how both ecotourism facilities and resort communities can be operated and built in as sustainable a manner as possible. Governments need to develop and adopt zoning and building codes to ensure that such facilities are built in as sustainable a manner as possible. And governments at all levels need to adopt legislation stipulating that environmental impact assessments are required and used in the construction and development of all such facilities. The Global Ecovillage Network would be interested in helping to develop such tools and efforts if funding is provided to enable GEN to do so.

Promote sustainable mineral development eliminating violence to humans and other life in extraction industries in accordance with 10YFP and human rights instruments. Ensure that developers have established the necessary financial mechanisms to ensure cradle-to-cradle recycling of the minerals extracted before any extraction development begins. Fully integrate ILO169 and GA Resolution 61/295 into local, regional, national, and international minerals development. Full transparency of development proposals including the financial mechanisms for restoration of natural cycles and human access to life-sustaining natural processes in areas impacted by proposed development.

Enforce the trusteeship principle upon which the United Nations was founded, to protect ecosystems of disputed or colonized territories.

SUSTAINABLE tourism is in essence an equitable exchange between tourists and the inhabitants of the places visited both financially and *in mutual appreciation.* With growth of appreciation there is increased mutual understanding, and caring for the culture visited. This in turn results increased

peace and harmony between the peoples from diverse parts of the world. Mutual appreciation can be brought about by providing information on the relationship and deeper connection to the culture of what the tourist buys and experiences how items the tourist buys are made, (by hand or by machine), how much is earned by the various people who have had a hand in making it and selling it; the types of lives each person leads and how to learn more about each of these aspects of the culture. In this way, people will appreciate the human dimension behind what they buy and experience at a much deeper and more personal level. Such an approach was taken by the Body Shop with regard to the products it sold and the ingredients they used.

Such cultural understanding can also be increased through films and magazines provided by travel agencies, at border crossings and on planes flying into tourist areas. Those working with tourists in a country can be schooled in the cultures of the main traits of the visiting tourists. For instance, how they tend to relate when people “invade” their space, the types of things they seek when visiting the country/region in question.

That facilitating tourism can be a point of connection, educating the visitors and the hosts about the others' cultural norms and needs, promoting clearer communication and mutual benefit to the relationship.

Financial monitoring is relatively easy to do. Monitoring of appreciation can be done through brief questionnaires at the border, or sent out by travel agencies asking what a person appreciated most during his or her visit, what they learned about the culture, and anything they did not relate to.

12c. Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities.

Harmful subsidies and incentives to use fossil fuels must be removed in such a way that Nature benefits and so also do the poorest and most marginalized people and countries.

Fossil fuels and other chemicals have been a driver of industrialization, economic production and social well-being for many people. Oil revenues have been a means of creating better social and economic conditions for the poor in many countries including in some nations in South America, such as Venezuela, but unfortunately these social and economic changes gains have not been sufficiently integrated into economic and societal systems so as to become self-perpetuating.

There is a growing realization that fossil fuels are contributing to climate change and air pollution and are harmful to our health. In a recent study---(BBC World Programme Oct 4th 2017) it was stated that 1 in 8 deaths worldwide could, to a degree, be attributed to air pollution. More and more people, besides those who have been most oppressed, are also realizing that

fossil fuels have also become a means of favouring a few at the expense of the many and that developers to excavate oil are destroying vast areas of pristine Nature and through fracking threatening the quality of our water and increasing the threats of Earthquakes. But the realization of the negative aspects of fossil fuel mining and use is not yet sufficiently widespread to bring about a movement to bring an end to these abuses, especially since carried out by those who have gained great wealth and power through these destructive practices.

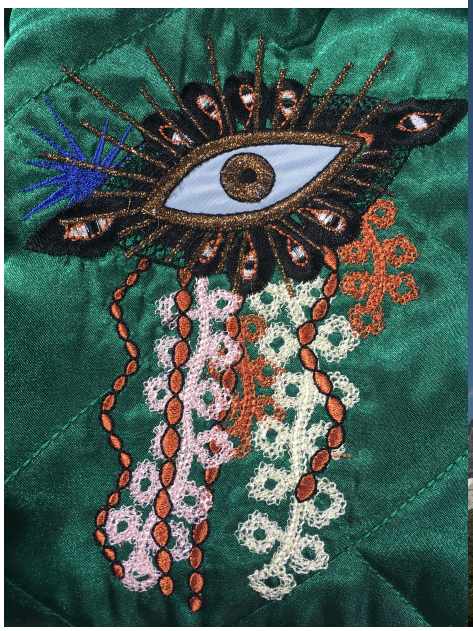
Proposed Actions

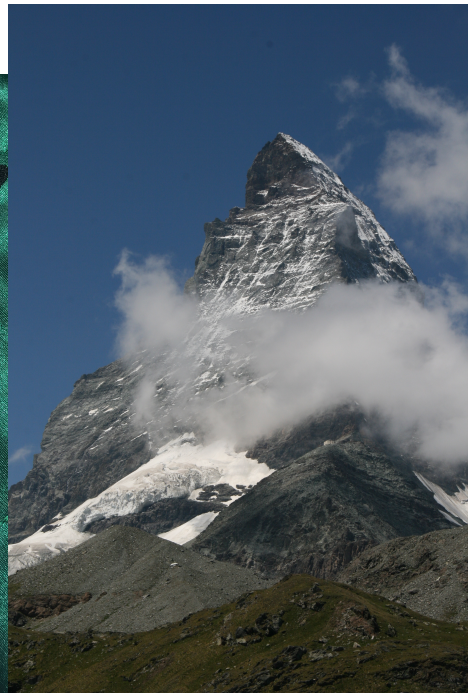
- Mass education of people worldwide via the media (including the Internet and social media) of how the use of fossil fuels **in** a threat to the health of all people. The more people are informed how this effects them and their loved ones personally, the more effective such education will be in persuading people to become carbon neutral. Some arguments that can be used are: Fossil fuels have begun to destroy the environment in a number of ways, including by contributing to climate change, water pollution through fracking, **as** well as increased danger of earth quakes, oil transportation accidents, etc.; and how climate change is bringing about planetary boundaries that are ever less supportive of human life as we see through escalating numbers of disasters and sea-level rise.
- The rapid development of alternatives. Transition Towns are a grass roots movement where people have developed carbon neutral alternatives. They have much to contribute to worldwide understanding. At present there is a substantial increase in the use of solar energy (including wind and water energy). Although these alternatives are an improvement over the use of fossil fuels, natures inspired solutions tend to be more durable. Financial support and capitalization are needed to ensure that renewable energy is available to all peoples, particularly in SIDs, LDCs, and in small, informal, and rural communities and throughout the developing world. Programs need to be established and support provided to grassroots and community based organizations, along with Small and Medium Sized Enterprises to assist all people in accessing such appropriate technologies as: Biogas Digesters, Solar Dryers and Cookers, Solar Water Heaters, Passive Heating and Cooling, Solar Water Pumps and Street Lighting, Natural Lighting - particularly in commercial and public buildings, and energy efficient appliances and components - such as for windows, air conditioning, refrigeration, etc.
- Make an immediate assessment of how fossil fuel-dependent nations can become independent of fossil fuels and can diversify their economies. Suggest specific steps that can be taken.
- Education at all levels and in all contexts, including via the Internet and social media, on how to live without fossil fuels.
  See: https://transitionnetwork.org/
- Financing mechanisms including shifts in the generation of taxes that discourage the use of fossil fuels and promote shared and sustainable use of Nature and the global commons. This can include: Commons Rent; the Feasta Sky Fund; Pigouvian Taxes; and later as we are more advanced as

a global community, the Self-financing World Marshal Plan by Pieter Kooistra.

- Ubiquitous use of carbon footprint measurement of individuals', and organizations' with those who live within their carbon footprint being rewarded by incentives and publicity, a special green plaque to show those who are carbon neutral and fines for the greatest offenders.
- Develop incentives and a realistic plan of action for those who have gained wealth and power through the use of fossil fuels to shift to more sustainable methods.
- Then implement legislation making it illegal to use more than ones carbon footprint; and to excavate for fossil fuels;
- Make use of the International Court of Justice to prosecute major offenders for violating international and cross border environmental laws.
- The creation of an International Environmental Court.
- Prosecution under universal jurisdiction of those who pollute the environment including through carbon emissions and fossil fuel pollution.

SDG 15
Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss





SDG 15 - TERRESTRIAL ECOSYSTEMS

Protect, restore and promote sustainable use of Terrestrial Ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

It is a critical time for all human societies to enter into a frame of mind and attitude of cooperation and partnership with all environments of the earth. There is not a being or form of life that exists in isolation, but instead all beings and all environments are interdependent. Just as destruction affects all life forms, so does repair and renewal. An attitude of alignment with the spiritual core of what it means to be a human on the planet, and our relationship with the spiritual essence of all the beings and environments of the earth will go much further and deeper than what appears on the surface in the direction of sustaining ecosystems. Honouring each life form, its needs, as well as its unique and inextricable importance and great resonance with all beings on the earth and the universe will assure greater success towards a harmonious, peaceful, joyous, and productive planet.

Earth contains its own heartbeat and mind, as well as the collective essence of all inhabitants of the earth. The essential role of humans is meant to be that of caretakers of, and partners with, the earth and all its beings and systems and ecosystems. There is so much potential in the human spirit. Understanding our essential role as givers and caretakers rather than just takers is the nature of the cooperative spirit which will heal, restore, and elevate not just the ecosystems, but will take the human spirit to new levels. This is who and what we are meant to be.

As humans we pride ourselves on our strength and prowess. Recognizing our vulnerability is a new way of experiencing a different kind of strength and prowess. Feeling, listening, and considering before taking action will create clarity of what truly is important and the right way for action that takes into account the well-being of all systems, eco-systems, and all life. The effect will be an exponential decrease in destruction, and faster renewal beyond what we think is possible.

We tend to see problems (and solutions) from a human-only perspective rather than an integrated-species perspective. A great deal of listening to Nature is required to truly move forward if we are to protect, restore, and promote sustainable terrestrial eco-systems. The tendency for humans to take big dramatic steps may not always be the most effective approach for accomplishing what is needed. Certainly there is urgency in what needs to be done, but small effective steps combined with careful listening to, and consideration of Nature with every incremental step may be less costly and allows for adjustments to improve our effectiveness along the way.

Nature is always in alignment with the rhythms and cycles of life and continues to demonstrate adaptability, resilience and regeneration. Nature holds the key to all that we need to know for restoring and protecting sustainable ecosystems. Humans have been consumed by the illusion that we exist outside of Nature and her systems, and have been in denial of our responsibility in the destruction of eco-systems and environments as well as

our sole responsibility to change our ways. By re-aligning with Nature and honouring and respecting how Nature functions, humans can gain clarity as to how to preserve and regenerate individual ecosystems and to improve balance, harmony, resonance and resolution for the improved health of the planet as a whole ecosystem. Humans will need to increase awareness and understanding of Nature in order to wisely discern what practices are of value and what practices are to be discarded to sustain healthy and balanced ecosystems.

When we consider any one system as a whole, for instance when we consider the human physical body with individual organs, and organ systems, we see that all the parts function in harmony on behalf of the wellbeing of the whole. When one organ is out of balance it impacts all other organs and the overall health of the individual – the parts affect the whole. Likewise, the Earth is a whole entity made up of countless systems, eco-systems, sub-systems, species, regions, and countries. All bioregions of the planet are important and deeply connected to every other region. What is occurring in one area will of course have impact on all other areas.

If we remove the international boundaries from the map of the earth to conceptualize the Earth as a whole, we can better consider the overall wellbeing of the land, air, and water, and provide a deeper understanding of the wellbeing of the Earth as a whole, which all life depends upon for survival. By looking at the Earth as a whole there is the opportunity for humans everywhere to take the much needed responsibility and ownership for what is occurring in all areas of the planet, not just in our own immediate environment. International boundaries serve a societal purpose, but artificially divides eco-systems, waterways, and land regions. Assessment and planning of all waterways and waterbodies, terrestrial regions, forests and deserts, and the quality of the air must be considered from this Whole Earth/birds-eye view if we are truly going to protect, restore and promote sustainable use of the Earth resources.

In taking responsibility for the entire planet we join as community to solve the challenges and issues which ultimately impact every human being. History has shown when we come together knowing the issues, taking responsibility for the challenges and for resolving them, miraculous changes may occur. The ingenuity of our species can be seen, experienced and celebrated. Together with the vast wisdom of our cultures and our creativity we have what is necessary at hand to not only solve the issues but also to bring about a new way of living on the planet which has all species, and the planet itself thriving.

The proactive approach is to adopt and live in an attitude of discovery, wonder, consideration, community, joy, and optimism. Rather than being mired in the distress of the destruction, we can gather our hearts and resources in a celebration of moving forward in cooperation and partnership with all of the earth forces and beings. Nature has not lost its way and remains a grounding beacon for humans to return to a more sustainable and meaningful way of life.

TARGETS SDG 15

15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

The earth is an interconnected network of ecosystems and resources, not individual ecosystems in isolated regions confined by national and political boundaries. From this global caretaking perspective, strong obligations and international agreements must be made to protect and restore the resources and ecosystems in each terrestrial region, regardless of national and political boundaries. The water, forests, plains, wetlands, drylands and all the beings that inhabit these areas are more than just "resources" for human use. Protection, maintenance, and nurturing of all earth areas are for the benefit of the earth first. It is essential to educate all peoples from an earth-centred/nature-centred perspective and integrate it into the core of all human society by adopting a mind-set that is supported by language, policies, laws, education, finances, and daily practices, and by the creation of programs for conservation, restoration, and sustainable use that supports nature's integrity first, and human need second.

Assessments of the health of waterways, water bodies, natural reservoirs and forests regardless of national and political boundaries need to be made on a regular basis. This information should be shared from one side of an international border to another side. Cooperation amongst individual countries to clean, restore, and maintain polluted waterways is absolutely essential. Deforestation is not just a local activity but one that has negative impact across international borders, and is due to a lack of understanding of the role of trees and forests as a phenomenon that has the function of allowing the climate to stabilize.

International teams may work together to quickly stabilize the terrestrial areas and waterways to set us on a path of having vital, life giving water, thriving forests, rich and productive topsoil in all locations. These deadlines and goals may be achieved through international competitions and awards for engineering, design and technology. It is suggested that the necessary actions and steps to transform the water and the land be set in motion immediately to assure the ongoing wellbeing of the planet.

As the understanding of the importance of biodiversity is disseminated and incorporated as common knowledge and practice, a new field of specialists may need to be created who understand the complexity of species on the land and in the water and have their services be a part of the process of land development. Likewise, the services of Nature Communicators should become standard in all organizations and departments which have any association with, and effect on Nature so as to assure Nature’s perspective and needs is always considered.

There are unique and important areas of the earth that must be maintained as strictly off limits from any type of human interaction except for that which protects and maintains the well-being and integrity of the terrestrial and freshwater biodiversity of each of those particular areas. These areas are critical as blueprints and stabilizers for all life on the planet, in ways far beyond our understanding.

Proposed Actions

- Provide financial incentives for effective conservation efforts across all international borders.
- Create systems for Global sharing of information as to what is effective and ineffective in efforts to restore and sustain ecosystems in all parts of the world.
- Provide education to improve the understanding of the role and importance of trees and forested areas to all beings of nature and in particular their support for human existence from a global, not just local, perspective. Share information that increases understanding, respect and reverence for trees and forests and waterways. Increase awareness and understanding of the interconnectedness and interdependence between trees, forests, waterways not just for human life but for all life on the planet. Implement this type of education beginning with the youngest of children in their learning institutions.
- Award financial support for individuals and groups who share with the global community the findings in their studies of methods for sustaining healthy ecosystems, promoting restoration, and the preservation of existing ecosystems.
- Apply systemic perspectives in viewing the health of the planet as a whole, specifically understanding the proposals for new development across public and private partnerships within countries, cities, townships, and villages.
- Create educational programs and agreements for international cross cooperation that are inspired from the deeper desire to honour the earth, all her beings, including all her peoples.
- Give incentives to encourage the development of new enterprises specializing in plant and soil health, reforestation, cleaning toxicity from waterways and prevention of future toxic practices. Have all students in schools learn about and be inspired and rewarded for projects and understandings which bring about clean water, thriving forests and animal species.
- Share information about the sources of contamination and toxicity and methods for cleansing and sustaining freshwater ecosystems. Provide incentives for decreasing contamination and increasing cleansing and preserving freshwater biodiversity.
- Provide education to land developers as to how to build in such a way as to maintain forested areas and incentives for doing so. Teach developers

to work in harmony with the natural world based on the importance of biodiversity, plant and animal preservation.

- Create a new field of specialists who understand the complexity of species on the land and have their services be a part of the process of land development in tandem with Nature Communicators.
- Leverage work from the MDG's Earth project as a system of record for the environment and a way of enforcing rule of law with shared environments; land, water, air and space.

15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

The concept of Forest Management needs to be reconsidered. Forests are self-managing. Nature's wisdom has already programmed in its own care and maintenance, from the birth of a new forest, to the progression and succession, maintenance through forest fires that naturally provide management of insect and diseases in a balanced manner, while providing habitat for appropriate flora and fauna. It must be carefully discerned if human involvement is truly essential in any one area of consideration. When it is so deemed that human involvement is essential, only conservative measures that closely follow nature's intention for balanced life should be put into action.

New ideas and methods regarding what sustainable forest management actually entails are needed to fit the new paradigm. It is time for transforming to a universal education or international education model which is focused on outcomes which avoid the industrialized era's outcomes in exchange for the new paradigm where human development is in concert with awe, respect, reverence, and caretaking of the environment.

What humans may think is good for them, may not be good for nature. And only that which is good for nature, is ultimately good for humans. For instance clearcutting of forests is a common practice because it is efficient and economical for harvesting large quantities of timber that can quickly be turned into a commercial commodity. However, this practice is ultimately very disruptive to the forest ecosystem, disrupting homes for fauna, destroying delicate flora, creating the erosion of soils affecting waterways, and ultimately changing micro-climates and the natural rhythm and balance of nature. The disruption and destruction has an exponential impact on downstream environments, ultimately impacting food, water, and climate systems that humans rely on.

Proposed Actions

- Redirect heavy reliance on forests for forest products.
- Actively develop new techniques, technologies, and materials that are sustainable and nature-centric that fulfil human needs without compromising forest integrity.

- Create a global forum for the sharing of practices and discoveries of effective and ineffective methods of forest management and restoration.
- Offer incentives for individuals and groups implementing effective and sustainable forest preservation and regeneration.
- Provide accessibility to forests for people to enjoy, connect and appreciate.
- Create educational opportunities for youth led experience based learning where youth earn wages and attain their education goals in a manner which leverages advances in technology, funded by public and private partnerships.

15.3 By 2030, combat desertification, preserve moisture and nutrition in soil, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land enriched degradation-neutral world

Degraded land has already exceeded the tolerable proportion that nature can manage easily on its own. It is essential that it is in the hearts of all people to hold as high priority the renewal of the land, and that it is backed by law and regulation. The renewal of the land proportion must take place with thorough planning as it is understood that much of the degraded land is developed land, which requires very particular attention as to how to go back into these developed lands and restore a new synergy that includes nature. This will only partially account for the proportion of land that is developed – that is, land that has not been left in its natural state versus undeveloped managed land.

Degraded land is dead land. There really is no proportion of land that is tolerable as degraded land. All land must be nurtured, or left alone to self-nurture. No more than 30% of all land mass must be allowed to be developed. This proportion, while already exceeded, can be partially remedied by a system of nature integration within all developed areas providing as much of an integrated and restored ecosystem as is possible, providing natural cycles of water, vegetation growth, food cycles and safe living habitat for all animals, birds, fish, insects, etc. This will partially, and possibly adequately restore that proportion of land mass populated and enable it to be restored to a completely natural state.

What is seen above the earth is the byproduct of what is taking place below the surface. It is beneficial to emphasize a literal ground-up perspective by recognizing, celebrating, protecting and nurturing the unfamiliar and unseen in the way of insects, microbes, fungi, etc. that make up and create what we call soil.

Tracking the geographical history of desertified and degraded lands and soil and observing the lost ecosystem that sustained the areas previously will give important clues and information as to what must be done to return these areas to their healthy state. We must include concern for the interconnected needs of all the beings - from the microbes, the mammals, to the grasses and trees, and use this as a mapping for restoration.

The drought on the planet is caused by deforestation. As vegetation has been removed the land has become dry and barren. Bringing back the moisture can be accomplished by bringing back the trees and plants and watering them. This practice has a way of in turn adding moisture to the systems of the planet and bringing relief and the opportunity for species to thrive.

Proposed Actions

- Gather information from nature and people who practice known restorative practices such as biodynamic farming for ways to restore degraded land and soil, and restoring nutrient rich farmland.
- Provide incentives for farmers working in harmony with nature, utilizing methods to rebuild the soil and improving nutrients in food.
- Have global networks and forums for sharing information about innovative and effective methods for soil preservation, restoration and farming as they are being developed and utilized all over the world.
- Provide incentives for individuals and groups who align with Nature to develop and implement innovative, creative methods for soil restoration and preservation.
- Implement the new technologies that already exist which can quickly restore topsoil. Make these technologies accessible, and provide incentives for their implementation as well as the development of new ways to maintain a healthy environment for all.
- Focus on health and renewal of land. Study Nature's resilient and adaptive ways of preserving and maintaining balanced and healthy land and soil over time.
- Create measures and accountability for effective practices of sustainable land preservation and renewal.
- Give individuals, governments and corporations incentives to leave land in a natural state, or to create parks where communities may enjoy the many benefits of being in nature.

15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development

Mountainous regions provide majesty, spiritual power, and beauty to the earth, as well as play an extremely important role in influencing global and regional climates and weather conditions. They cover around one-quarter of the earth's land surface and are home to 720 million people around the world. Indirectly, billions more living downstream also benefit from mountains.

Mountains provide freshwater, energy, food, biodiversity, and medicinal products – resources that may become very rare in the coming decades. They are also very prone to climate changes, land degradation, deforestation and natural disasters. In addition, mountain people very often face marginalization, poverty, and the lack of basic services such as health and education.

The challenge is to identify new and sustainable practices and opportunities that can ensure the conservation of the fragile ecosystems while bringing benefits to the mountain regions' highland and lowland communities, including helping to eradicate poverty that often contributes to the degradation of fragile mountain ecosystems.

Education for all humans is essential for all to learn of the importance of mountain ecosystems with all the species common and uncommon to these areas, their relationship to our species and other species on the whole. With an understanding of the lay of the land and how water flows from the mountain regions down to the communities below we see how water moves and one area is impacted by another. As a part of this understanding the importance of leaving areas in their natural state with the biodiversity intact is readily apparent. Using what is learned about the balance of biodiversity brings us more awareness about living in harmony and thriving on the planet.

Proposed Actions

- Educate to increase understanding and respect for the importance of mountain ecosystems to all life on the earth.
- Create international protections for delicate mountain bioregions.
- Create resources, programs, and opportunities that enlists mountain based communities in the protection, restoration, and promotion of the natural resources, biodiversity and ecosystems in ways that also support the health, education, and financial needs of these communities.

15.5 Take urgent and significant action to reduce the degradation of and improve and enrich natural habitats, halt the loss of, support balanced biodiversity and, by 2020, protect, support, and prevent the extinction of threatened species

Time is of the essence for significant and mindful action to take place in the reduction and halting of earth systems and resource degradation, depletion of soils and forests, and the extinction of critical flora and fauna species. With farming practices as they are, we have only approximately 60 years left that farmlands can grow enough food to feed our populations before they are depleted and destroyed unless urgent and significant action is taken. This requires an inter-global mind and heart of community and cooperation not just between all humans and human communities, but in cooperation and partnership with Nature. There is already enough in the way of new and old technologies and methods that have the capability of reducing degradation, improving and enriching natural habitats that can be relied upon for fast action until even newer methods and technologies are discovered and can be implemented.

However, for the long-term, knee-jerk reactions to the crisis at hand will not suffice. For true and deep planetary healing to take place, we must consider our practices in the way that nature herself works – as a system of flow, a process, an evolution. Our issues can only be resolved from an evolutionary standpoint by shifting our understanding and mind-set to that of a sense of interdependence, interconnectedness, a spiritual relationship, and renew our

sense of admiration, respect, and awe - rather than seeing things only as a dire problem to be solved. Coming from this place, fertility and fruition naturally occurs, as does peace, abundance, and joy.

Proposed Actions

- 1.Implement the best of old methodologies and newer technologies quickly in a global fashion to halt further loss of soils, water, species, etc.
- Educate on and create incentives that increase the understanding of and respect for the interconnectedness and interdependence of all life forms on this planet.
- Provide incentives for the development, sharing, and implementation of wholesome, respectful, harmonious and mutually beneficial ideas and actions, programs, and initiatives that effectively promote the sustaining and protecting of the harmony and health of all life.

15.6 Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed

Humans must recognize themselves as an integral species of nature, and move away from seeing themselves as the dominant and deserving species. Humans must adopt an attitude and self-perception of co-existence and of equality whereas "genetic resources" from nature (plants, animals, etc.) is not a right and that such "benefits" to humans plays out to be exploitation of nature. International agreement occurs further down the line. Nature's agreement is the first step. Nature is willing to cooperate with human need, but not human greed. Organizations and individuals who understand the central role of nature on this planet who are understanding and supportive to the paradigm that nature is all of life, and equal if not exceeding all rights, must be in place to protect, and monitor what might be considered sharing of benefits, by putting nature first.

The target of SDG 15 is to protect, restore, and promote sustainable use of terrestrial and water ecosystems. However, this goal cannot be achieved under a legal paradigm that treats nature as mere “property” to fuel incessant growth – the result of which has been the global degradation of nature. One solution is to recognize that nature possesses inherent rights, which shifts our worldview from one that exploits nature to one that respects the needs of both humans and ecosystems. Under this paradigm, the establishment of greater protections and legal guardianship for nature will ensure its protection – an invaluable weapon for a more sustainable world.

The Rights of Nature movement has seen significant victories in recent years. Ecuador recognizes the rights of nature in its constitution, and Bolivia recognizes nature’s rights through two national laws. And in the United States, over forty cities and towns have passed laws recognizing nature’s rights.

There is further precedent established through the rulings of the International Rights of Nature Tribunal, a civil society initiative that makes rulings from a

rights of nature perspective. The Tribunal confirms a tenable model that could be adopted by recognized international courts in the future. Genetic modification is adulteration without consent and is wrongfully employed for human gain, rather than Nature benefit.

The rights of rivers in particular are being recognized worldwide, including in New Zealand (the Whanganui River), Colombia (the Atrato River), and Mexico City (through a new law recognizing the rights of all waterways). Earth Law Centre is committed to achieving legal personhood for more rivers and waterways, and has been a major partner in drafting a Universal Declaration of the Rights of Rivers. The Declaration declares that all rivers are rights-bearing living entities that possess legal standing in a court of law. In this same way, genetic resources are not a “right” for human benefit, but must be considered with the benefit, if any, to Nature first, and human benefit second.

15.7 Take urgent action to end poaching and trafficking of assist and preserve protected species of flora and fauna and address both demand and supply of illegal wildlife products

Consider endangered and threatened species to be international/earth treasures. Provide immediate funding to provide whatever is necessary for the protection of species being threatened by poaching. Work on the supply and the demand. For instance, with the kind of protection put in place killing elephants or tigers should be absolutely impossible. This is what is urgently needed to put an end once and for all to the killing of endangered and threatened species.

Promote a sense of stewardship, and pride in the unique species of a region. Generate a natural desire to protect and celebrate these species through the awareness of their uniqueness and what that provides a region. A good example is Kanha National Park in the heart of India where local residents have come to value the life of a tiger and proudly celebrate their protection in the region because of the many benefits the presence of the species brings. These benefits include employment for the locals in the national parks and other programs to protect the tigers of the region where in the past tigers were poached for the price of their parts. Those who have become protectors of the tiger have been inspired seeing these magnificent animals in the wild, and educating visitors about them. This model at Kahna is an inspiring example of what is possible. The guides there have a true pride in being stewards the big cats and the land they call home.

Provide training, reward, recognition, and remuneration to poachers and traffickers to redirect their activities to that of protecting and restoring protected species of flora and fauna.

15.8 By 2020, introduce measures to strengthen and support native species prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species to maintain balance and healthy biodiversity.

Proposed Actions

- Provide education to increase understanding on the interconnection and inter relation of all life. Take our guide from nature rather than attempting to control nature with current human ideas and opinions which can be easily influenced and misdirected.
- Make a holistic study of ecosystems which have been altered by invasive alien species. Understand all components involved in the introduction and thriving of alien species and how alterations of the ecosystem contribute to the inability of the native species to maintain dominance. Consider measures to counteract and return the land and or water ecosystem to its balanced and biodiverse state that strengthens the entire system, as opposed to harsh measures that are ultimately disruptive in and of themselves.

15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts

Humans have disengaged from our identity as beings of Nature, and tend to see Nature as individual components rather than in integrated whole – within itself, and within our human society. We tend to chase after individual problems and solutions rather than seeking a view of the whole and the integrated solutions that far more efficiently would follow. Creating separate programs, separate budgets, separate organizations is a highly inefficient and costly approach (costly on all accounts).

As we acknowledge that it is we who depend on Nature and not the other way around, we will whole heartedly adopt a Nature-centric, rather than an anthropocentric perspective. We will honour all beings of the Earth and Nature, return to a place of love, joy, and awe for Nature and our Earth home. Integrating ecosystem and biodiversity values will become a natural extension of who we are, how we conduct ourselves, how treat each other, how we support and protect Nature and our resources from Nature.

Proposed Actions

- Provide education and incentives for planners and developers to integrate core Nature-centred values in their projects and offer rewards for projects that have positive impact on biodiversity.
- Utilize unbiased, informed impact research studies in planning and development processes that are conducted by organizations and individuals with proven understanding of and allegiance to a Nature-centred perspective.
- In children's education and in programs to educate community, bring awareness to human values which are priceless but sometimes taken for granted. For instance, family, community, beloved animal family members, nature, clean air, fresh water, peacefulness, a nourishing and delicious meal, etc. Awareness of human values brings peace of mind and fulfilment

often without spending money because the things we value most often are simply about making time for them.

- Honour all humans as an integral part of what biodiversity fundamentally means, whereby all peoples have value and a place in the implementation of Earth-centred programs, uplifting humanity, consequently reducing poverty.

15a. Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems

Life (Nature) tends to arrange itself in ecosystems which, when left to their own devices enable biodiversity to thrive. Nature has done this since the dawn of the earth, within natural cycles of ebb and flow, of change and evolution, deconstructed and reconstructed from earth events such as earthquakes, ice ages, volcanoes, and the like.

Nature if left alone recovers from the ravages created by human beings. Ecosystems will recover and biodiversity will renew and increase without the need for humans. The question is whether humans can recover from the ravages we create.

Financial resources become a requirement to fulfil the task at hand. Financial resources need to be creatively generated and utilized. This will require a combination of legislative action, reorientation of the tax system to generate the necessary funds, scaling use of the environment down in size, education, and new incentivized programs.

Prioritization of financial resources to individuals and groups effectively conserving and sustaining biodiversity and ecosystems becomes an incentive and an example to others. There are a number of financing mechanisms that can help to bring forth conditions where all people have an opportunity to prosper and also Nature.

Proposed Actions

- Make Ecocide a crime against peace. Much work has been done to prepare the way by Polly Higgins. Higgins wrote an award-winning book called Eradicating Ecocide: Laws and Governance to Prevent the Destruction of Our Planet (1st Ed 2010, 2nd Ed 2015). In her book she sets out a full proposal that was submitted to the United Nations. Her second book, Earth is our Business (pub. 2012), examines Ecocide law from the perspective of business impact and includes the draft Ecocide Act and indictments that were used in the mock Ecocide trial held in the UK Supreme Court in 2011.
- Create a World Environmental Court. Much preparatory discussion has already taken place within the UN on this topic.
- Once legislation has been passed, funds can be generated through levying fines which can be done with great care to ensure that the rich do not benefit by being willing to pay fines to continue business as usual.

- Take steps to discourage the harm of the environment while raising financial resources which can include:
    - Placing a strict cap on the use of depletable resources to allow these to regenerate themselves.
    - b. Levy a tax on all who wish to make use of those resources (Commons rent) that are still available once the cap has been enforced. Since all people will have to make use of natural resources (water, soils, solar energy etc., that enable the cultivation of food) whether directly or via companies that make them available (water, gas, electricity companies, etc.) all will be contributing to the tax according to their use. This system is of course already in existence, although the size of the tax varies. The tax on the use of natural resources will allow governments to take away tax on labour thus encouraging people to work and thus stimulating the economy.
- Place extremely heavy fines on anyone who harms the environment. Combine these with strictly enforced laws to ensure resources that have been degraded are restored to their original state of health. This will help to deter large and wealthy corporations from making use of resources by simply paying the extra costs. (known as Pigouvian taxes.)
- Make exempt indigenous peoples and others that can prove that they live sustainably off the land and enable ecosystems to flourish.

The above financing mechanisms are just two examples of many more that exist. Many are found under the title cap and share (as opposed to cap and trade.)

- Show through education in every field (social sciences, community building, decision making, education, business cooperatives, etc.), how social and economic structures based on ecosystem-inspired approaches (cooperation and empowerment of all individuals) have throughout known history promoted and produced prosperity and peace.
- Establish official funding for conservation and sustainable use of biodiversity and ecosystems through grants and established trusts.

15b. Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation

1. Establish avenues of financial support through specialized structures, taxation, incentives and paybacks which motivate individuals and groups to focus efforts on sustainable forest management, conservation, reforestation, and protection of all forms, species, and ecosystems of Nature.

2. One of the most important resources to nurture is the creative passion and identification with nature inherent in the minds and hearts of the young.

Foster a close connection and reverence for all life and all of nature from birth. Develop this reverence in the youngsters that will one day maintain and lead the world. Allow for this connection, respect, and understanding to be fostered as the most significant creative resource for sustainable management of what are considered human needs, which is the forerunner to the need of sustainable management and conservation measures.

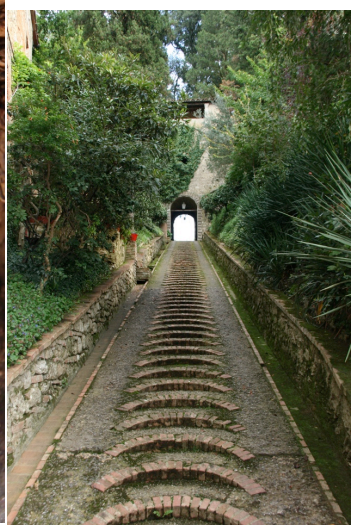
15c. Enhance global support for efforts to combat poaching and trafficking of preserve and increase respect and reverence for protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities

1. Provide training, reward, recognition, and remuneration to poachers and traffickers to redirect their activities to that of protecting and restoring protected species of flora and fauna.

2. Provide education and financial incentives, to increase respect and reverence for all life, motivate the protection of all species and assist in increased support for communities to pursue sustainable livelihood opportunities that are in harmony with Nature and supportive of all life.

3. Focus world-wide attention on examples of individuals and communities that are living in harmony with their environment and each other and are thriving.

SDG 17
Means of Implementation



SDG 17 - MEANS OF IMPLEMENTATION

Strengthen the Means of Implementation and revitalize the global partnership for sustainable development

The above 5 reports have suggested many actions that diverse ministries of governments (national and local) and educational establishments can take. These actions can be seen as Means of Implementation although they in most cases go beyond financing and partnerships.

They are summarized in this section under the headings of the subject areas to which they relate. This, we hope, will make them more easily accessible to those who will implement them. They are arranged under each of the following headings together with the SDG and target they relate to specifically.

The headings are:

- Environment and Nature
- Society and Infrastructure
- Economy and Financing Mechanisms
- Education - Formal and Informal, including through the Media and Research
- Technology
- Policy and Law
- Agriculture

We should be most grateful if you would forward this report to those who can put it to use. This would include Ministries of the Environment, Social affairs, the Economy, Development, Education, Agriculture as well as the Legal Department; and also to the relevant educational establishments. There are a number of curriculum suggestions that will be useful for schools at all levels. Many of the are just now looking for ways to integrate the Sustainable Development Goals.

Environment and Nature

Goal 11 - Make Cities and Human Settlements inclusive, safe, resilient and sustainable

- Introduce principles of Permaculture—the art of building gardens using ecosystems that require very little maintenance and provide optimal conditions for each of the species that live there.
- Include and teach Education for Sustainable Development in all of our schools. (See SDG 4, target 4.7.) Given the central need for humanity and our communities to reconnect with, value, protect and restore the natural environment, it is essential that our children learn how to do this through both formal and informal educational opportunities. Formal education should incorporate cultural and traditional practices as well to share this deep connection with the earth that has been practiced by indigenous cultures for millennia.
- Educate people to recognize the integral relationship between human beings and individual members of the plant and animal kingdoms that are essential for survival, including the many diverse aspects of animal and plant species that can contribute to our personal wellbeing as well as to the welfare of the human species as a whole. Educating people to understand their intrinsic connection to all aspects of Nature increases the likelihood that they will value natural phenomena and treat the non-human world with greater respect.
- Encourage people to use vacant lots and open spaces to create (rooftop and vertical) gardens with plants and animals they enjoy. Stress the joy of such gardens as sources of food, flowers, enjoyment and relaxation.
- Make lessons in communication with Nature available with the help of Indigenous Peoples and/or other Nature communicators (many of which are available via the Internet).
- Take the perspectives of Nature into consideration when developing towns and human settlements.
- Honour, respect and appreciate the sanctity of our commons as well as our intangible natural heritage - our shared ecosystems, natural environments, and planet earth itself. Include these principles as a primary goal within both our local and national planning processes and implementation plans.
- Ensure that every city and community develops a local strategy and plan that focuses on achieving the SDGs. They must be based on the Aichi Biodiversity Accords and the Rio Principles, especially those principles calling or the full participation of the people in developing and implementing the plan and in being provided with the information needed to be able to fully do so. They need to explicitly focus on achieving all of the Targets included under SDG11, along with all of the other relevant targets and goals, including SDGs 2, 7, 12, 13, 14 and 15.
- Include children and youth in developing and implementing each of the

local plans and provide them with the educational opportunities necessary to be able to fully do so at their individual level of competence.

11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage.

- Safeguard our heritage.
  - Immediately safeguard natural and cultural heritage sites through the prevention of harmful behaviour by developing relevant new laws and implementing and enforcing those that already exist through local, national and international action.
  - Be intentional where we put our focus. Fear, worry, doubt and past regret cannot liberate, whereas living in harmony with Nature brings awareness to new possibilities and the inspiration of the sheer power and natural intelligence of the environment in which we live.
- Ensure education about our natural and cultural heritage.
  - Enable people, with the help of education, to reconnect with their capacity to care deeply. Such deep caring begins with the self and can be fostered by the implementation of Article 26 (2) of the Universal Declaration of Human Rights (the development of the full human personality).
  - Expose people to their own cultural and natural heritage so that they recognize how vital these are to their sense of happiness and wellbeing.
  - Protect our cultural and natural heritage by sharing it and communicating about it in a mindful manner through dance, visual arts, storytelling, music. Every day we create new stories, new heritage. Foster gratitude to our ancestors for their stories, share these stories.
  - COMMUNICATE in all possible ways about our natural and cultural heritage. This will make people want to safeguard these, as they cultivate a deep understanding that these are vital parts of our own home where we can receive sustenance and inspiration at levels not obtainable in any other way, but only if all people take good care of them.
  - Culture is often born out of a community's connection to its natural environment. Show how connection to our cultural heritage helps people to relax and be inspired by timeless beauty.
  - Foster an appreciation in young people, through formal and informal education as well as the media, for their own culture and how this is connected to others. Encourage pride in one’s own community and its history as the most effective safeguard for its treasures. Caring and inclusiveness engender gratitude and celebration in people.
  - Teach specific appreciation for culture—one's own and that of others—as a way of enhancing people's sense of belonging to a certain community as well as their sense of connection to other cultures, helping them to see how cultures are related.
  - Provide insight beyond the specifics of a culture into what connects humanity integrally as a whole with one another and with Nature.

- Create awareness of the devastation that occurs when a person's connection to their cultural or natural heritage is disrupted, as has been done in the past (e.g. to Indigenous Peoples) and is still being done today.

- Foster appreciation for Nature.
  - Encourage the preservation of wild lands, particularly jungles, so that biodiversity can flourish and people can get as close to Nature in its original form as possible. Teach that every species is important.
  - Reinforce the understanding of our interdependence with all aspects of Nature and the importance of what we can learn from Nature in terms of building sustainability.
  - As a part of above process, teach all to honour and revere all life, as well as to honour and revere their forbearers while learning to heal that which was not in alignment with the whole of Nature.
  - Be curious and accepting of new information and ways of being that move us toward healing and promote love.

11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

- Develop more ways to live life in harmony with Nature and all life sharing the planet with us. Even small acts can produce visible results.
  - Actions taken today will determine how life is experienced in the future. It is how we each respond to the challenges presented that allows us to build the strength necessary to continue and to implement the wisdom gained.
  - Our actions are a key element to creating a nurturing, respectful world. Nature is not elitist, it is here for everyone. All humans of all walks of life can cherish Nature and be nurtured by Nature in return. We all have a need to feel that grounding and be reminded that they are loved and can love too.

Goal 12 - Ensure sustainable Consumption and Production Patterns

12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

- Much work has been done in pioneering green chemistry and bio-mimicry. The results have been phenomenal showing how we can greatly reduce costs and expenditures along with negative impacts on the natural environment by watching and learning from Nature. These R&D efforts now need to be expanded to ensure that benign Nature-inspired processes replace toxic and unsustainable processes throughout industry.

- Enable once purified chemicals to return to their natural connections to minimize the destructive practice of purification.

12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with Nature.

- It is essential that Education for Sustainable Development (ESD) and information about the 10 Year Framework of Programmes (10YFP) on Sustainable Consumption and Production be included in the curriculum and taught at every level of education and across all disciplines and courses of study and in a fully integrated manner. Similarly, every student in the world should be made aware of the Sustainable Development Goals and how they intersect with and require the teaching and learning about ESD and the 10 YFP.
- Institute education and training on ways to work in cooperation with each other and with Nature, so that the needs of all parts of the Earth's ecosystem get their needs met and remain in balance.
- Instead of seeing ourselves as “managing Nature from outside” or “being above Nature”, we must recognize that:
  in every aspect of our lives (the air we breathe, the water we drink, the minerals, animals and plants we eat) we are an integral part of Nature,
- Nature is the womb that nurtures us and allows us to survive and thrive
- Nature includes both destructive as well as beneficial processes, we need to be aware of and respond to both
- Without Nature there can be no human beings or even life on our home planet and so also no society or economy.
- For this reason, the interconnectedness and cooperation between aspects of the Earth System is primary for this affects every cell, every atom in the human body and every level of human experience; and the human body/mind/emotional capacity to survive and thrive depends on the quality of our relationships with the rest of Nature. Within this larger context there is an aspect of competition that enables all species to survive and thrive in a process of give and take. Such a view of Nature will require a paradigm shift in how we deal with:
- Harm being done to Nature
- Formal education, and
- The media (informal education)
- Dealing with harm to Nature:
  - Policies and laws protecting against abuse of Nature should include the requirement that those harming Nature work more closely with Nature, to connect with the majesty, subtlety and intrinsic wisdom and cooperation as well as the destructive and random viciousness that can also be found in the Natural Order.

- Rectifying any harm done through, say, Pigouvian taxes, whereby harm done to Nature (and human beings) is fined and moreover requires restoring Nature to her original state; while, at the same time, the perpetrator is placed in situations where it becomes apparent how that harm to Nature affects him/her personally.

- Instil wonder at the miracle of life and an understanding of the various interactions between different aspects of Nature. This can be achieved through formal education as well as education via the media, by showing the collaborative aspects of Nature and how the "survival of the fittest" depends instead in fact on an exchange between individual plants, animals, species and the systems of water, soils and air that strengthens the capacity to thrive together; and which strengthens their overall interdependence. Show how therefore each aspect of
- Nature plays an important role within the whole. Many grade schools, particularly in developed countries, include or teach environmental education as a part of the curriculum; and this should be instituted as a part of education for sustainable development in all schools throughout the world.
- Show when dealing with a topic in formal education and in the media the consequences of actions that result from unsustainable lifestyles on one self. For no one, not even the rich and powerful, can escape the consequences of erratic weather patterns, natural disasters caused by global warming, toxins in our water supplies and in the food we eat and in the air we breathe. Show how the consequences of unsustainable consumption and production patterns affect all people--rich and poor alike; and how weather related calamities and disasters are already increasing in both intensity and quantity, are becoming increasingly costlier, and how it will be far cheaper to make the changes needed now than to pay for the costs and consequences caused by our inaction later.
- Show, through education and media, how working with Nature and each other, acknowledging the interconnectedness of all life, is the way to sustainable consumption and production. Show how working together, forming communities in harmony internally and with the natural world is the key to sustainability and increased quality of life.
- Institute education at all levels and stages of schooling that shows whereby the consequences at all levels (global to individual) of overuse/abuse of Nature is shown in its full ramifications. Students at school should see the ramifications of each policy and action as it relates to their personal well-being and that of others.
- Use interactive role playing exercises that are taught and used in environmental education programmes to really make the lessons come alive as well as to apply directly to real life.
- Increase the level and extent to which we educate and teach about how indigenous cultures have and still do live in harmony with Nature today.
- The idea that the consumer culture brings happiness and fulfilment has proven to be a dangerous myth of advertising leading to unhappiness and depletion of natural resources. The truth is that satisfaction and quality of

life stem from balanced production and consumption that are sustainable for all life in them natural environment.

- Institute education at all levels that gives specific examples of living in harmony with Nature and that shows the benefits that can come from living in harmony with Nature. Provide contrast with examples and consequences of overuse/abuse of natural resources. Objectively review policies and actions for effectiveness, sustainability and whether or not they promote quality of life and wellbeing for all life.
- Together with above measures, encourage people to measure their ecological footprints as per the Global Footprint Network, to make more sustainable lifestyle choices such as through each country and community's SCP and ESD action plans, and to recognize alternative ways of behaving that has less deleterious effects.
- Formal Education might include showing how Nature relates to the human sense of happiness, tranquillity, beauty and other deeply enjoyable experiences:
  - In Mathematics, certain proportions (the Golden Mean, etc.) are the building blocks of the Universe; and when these proportions are used, they bring a sense of stability to our creations because these resonate with the Universe around them. These proportions, when applied to art or artifacts, tend to resonate within our beings and be experienced as beauty that connects people beyond space and time.
  - In Music, scales are based on relationships that are found throughout the Universe, too; and the same applies. For universal patterns resonate deeply within the human psyche and result in experiences of peace, wonder, beauty.
  - In Physics, all mass throughout the Universe can also be seen as energy (E=mxc2) that permeates all of human life and determines human mobility. The complex, seemingly chaotic forms we see as clouds, estuaries, etc. are in fact complexities that consist of much simpler shapes (fractals) that reoccur often without people being aware of it. (Mandelbaum)
  - In Chemistry, all that is is built of the same building blocks “From Stardust to Us,” (Brian Swimme and Elisabet Satouris) the same atoms, molecules, etc. These recycle as people die and are born, so that the same atoms that have been a part of the Earth and/or a star become the building blocks of the human body. These same electrons once in touch with one another remain in constant communication. So the very physical building blocks contain inherent knowledge that might even be tapped.
  - In Biology: the same goes for one-cell organisms, bacteria. As soon as these contact one another they pass on all their knowledge to one another and this makes it hard for human beings to eradicate them. One cell organisms therefore already have a form of Internet, also high rises, taxis etc. Our bodies are made up of cells so it is possible that each cell has inherent knowledge that can usefully be tapped. Birds and animals have languages and even separate dialects. Bird song consists of many intricate combinations of sounds that can be

distinguished with the help of instruments, but still often please the human ear and result in a sense of tranquillity and peacefulness.
    - The media, instead of showing a “dog eats dog” world dominated by the survival of the fittest, a world characterized by conflict, could present a larger perspective and show Nature as one great collaborative system in which all parts effect all others—a system in which one species will “eat of” or “cull” another for the sake of its survival, thereby often partaking of the old, very young, sick or weak and leaving the species intact and possibly even stronger and leaner and thereby more capable of survival and serving as nourishment at a later time. The media could thus be invited to participate in sustainable development consultations and planning processes as active participants and thus expand their understanding and appreciation at the same time as everyone else in a community does as well.
    - It can then be shown how people destroy this balance and rich diversity on which human life and well-being depends by eradicating whole species directly or by taking away their means of survival (food, shelter).
- To nurture this paradigm shift, it is important to call in the help of those who are already living in close communication and cooperation with Nature: Indigenous Peoples, Animal and Nature Communicators, artists who are inspired by Nature, engineers and NGOs who allow themselves to become inspired by Nature to create sustainable human settlements and agriculture; and scientists who have opened new avenues of research by using the collaborative paradigm.
- In this paradigm shift, the more each communication with and about Nature can show how an aspect directly affects the individual human being in a positive way, the more Nature will be treated with respect and well-being and an eagerness to learn from her.
- The more people are filled with a sense of wonder and appreciation for the Nature around them and see how Nature directly or indirectly affects their own well-being and capacity for survival, the more people will respect Nature in all her expressions.
- Here, finally are some other aspects of Nature that contribute to human well-being:
    - The interdependence of all aspects of Nature; and how all aspects help one another—the cooperative aspects of all that is in all its complexity, which have inspired cooperative forms of business; the phenomenon of the commons that takes the form of open source, sharing of resources (Wikipedia, the Internet); etc.
    - How one species helps the survival of another species; and how humans are impacted by this collaboration;
    - That the world of Nature is sacred, for it cannot be replicated by human beings.

Goal 15 - Protect, restore and promote sustainable use of Terrestrial Ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

15.3 By 2030, combat desertification, preserve moisture and nutrition in soil, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land enriched degradation-neutral world

- Focus on health and renewal of land. Study Nature's resilient and adaptive ways of preserving and maintaining balanced and healthy land and soil over time.

Society and Infrastructure

Goal 6 - Ensure availability and sustainable management of Water and Sanitation for all

6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

- **Action: Introducing best practices**
  - Identify areas where change is needed with regard to equitable sanitation, hygiene
  - and open defecation; publicize the issues worldwide and invite people and organizations to become
  - involved in bringing new technologies that will transform these areas.
  - Implement various advanced technologies in these locations to test their
  - effectiveness.
  - Monitor and study the technologies to perfect them.
  - Adopt these new technologies and sustainable practices for waste and water
  - management in other locations and regions of the world; publicize results widely to build awareness and create alignment with natural earth ecology.
  - Focus first on areas in greatest need so that they are transformed and then work on areas of secondary need going forward.

Projected Outcomes

- Immediate improvement of conditions in locations on the planet where change is most needed.
- New awareness among scientists and other technological developers with regard to functioning of newly developed systems.
- The invention of technologies that sustainably manage water as well as waste in harmony with earth systems and planetary boundaries.
- The opportunity to test, perfect and expand ideas and ultimately create new types of sustainable systems that can be implemented in developed nations as well as in developing nations.
- Higher standards of life for the poorest human inhabitants on the planet, bringing new awareness of the potential for greater health to all species of life.
- Funding and support for these new sustainable technologies and practices going forward, recognizing their absolute necessity for the continuation of life on the planet.

- **Action: Joint waste management**
  - Encourage all people to participate in recycling inspired by

Nature's processes.

- Where there is no central garbage collection, people can be encouraged to bring waste to central recycling centres. These can become centres for the exchange of goods. Financial reimbursement can be offered as an incentive for people to bring in articles such as aluminium cans, plastic bottles, reusable building materials and other resalable goods.

- The recycling keeps the cost of reselling materials low, which is advantageous for the economy.
- Use a combination of plants, insects and bacteria to free nitrogen, phosphorus, methane gas for cooking and other valuable resources. Sewage, grey water and other waste can be broken down.

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

- Offer assistance to relocate people who live in very dry places to locations with easier access to water pipelines.

6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

- Allow rivers to re-assume their natural form, space and flow wherever possible.

<u>Goal 7 - Ensure access to affordable, reliable, sustainable and modern Energy for all</u>

7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

- Form a network to globally share information on new technology, including by working with the Internet, the UN System and civil society networks to bring those many existing modalities to the attention of people worldwide.
- Support individuals, communities, corporations and governments that are actively and successfully working toward achieving this goal and encourage them to integrate into the above system.
- Trust the capacity of the global community to work together to achieve 100% renewable energy. Set incremental goals and timelines for reaching 50%, then 80%, and then 100% renewable energy globally by 2030.
- Form and support co-ops to share renewable energy, so that both the energy and the decision making are shared equitably by stakeholders.

7a. By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology

- Offer a substantial prize to people who develop ideas for clean and renewable energy. Socially responsible corporations might be willing to finance such a widely publicized initiative.
- Reward those working collaboratively and inspiring others to generate new ideas for clean and renewable energy.
- Enlist the help of NGOs worldwide to reach their contacts in outlying areas (NGLS has a listing). Also enlist those NGOs, Indigenous Peoples, farmers, etc., associated with the UN via Major Groups and other Stakeholders.
- Work closely with establishments such as the Massachusetts Institute for Technology (MIT), which already have initiatives for research, education, and outreach to efficiently meet global energy needs while minimizing environmental impacts and mitigating climate change, based on simpler forms of creating energy from developing countries.)
- Develop one or more think tanks consisting of creative thinkers including many young people to develop low tech sources of clean and renewable energy including delivery systems that can take this to outlying areas.

7b. By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programs of support

- Share energy efficient technologies globally as they are developed to help ***both*** developed and developing countries to reverse their unsustainable energy use, such as oil. Both developed and developing nations are important contributors as well as beneficiaries to this all-way flow.
- Provide safe and unobtrusive facilities for generation, reception and storage for energy.

<u>Goal 11 - Make Cities and Human Settlements inclusive, safe, resilient and sustainable</u>

- Take the perspectives of Nature into consideration when developing towns and human settlements.
- Honor, respect and appreciate the sanctity of our commons as well as our intangible natural heritage - our shared ecosystems, natural environments, and Planet Earth itself. Include these principles as a primary goal within both our local and national planning processes and implementation plans.
- Ensure that every city and community develops a local strategy and plan

that focuses on achieving the SDGs. They must be based on the Aichi Biodiversity Accords and the Rio Principles, especially those principles calling or the full participation of the people in developing and implementing the plan and in being provided with the information needed to be able to fully do so. They need to explicitly focus on achieving all of the Targets included under SDG11, along with all of the other relevant targets and goals, including SDGs 2, 7, 12, 13, 14 and 15.

- Include children and youth in developing and implementing each of the local plans and provide them with the educational opportunities necessary to be able to fully do so at their individual level of competence. (See for specifics under Education as it relates to this goal.
- Fully integrate cities and human settlements (which cover a wide range of territory and area issues) into our National and Regional SDG implementation plans
- Provide better opportunities for people to stay in their native rural communities and villages and ensure that basic resources and services are made available to meet their daily needs.
- Given that one-third of the people living in cities in the developing world live in slum areas, provide the basic services that are needed by all of those currently living in such abhorrent circumstances and situations.

11.1 By 2030, ensure access for all, to adequate, safe and affordable housing and basic services and upgrade slums

- In planning and developing our communities, it is important to:
  - Use local knowledge, skills and materials while accepting and appreciating global support.
  - Be open and honest about plans for development and accept feedback and information from all interested parties.
  - Take the necessary time to connect with, show respect for and cooperate with the place, the people and environment.
  - Acknowledge the challenges and the needs of all life forms sharing the space.

11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transportation, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.

- As municipal and intercity rail travel tends to be more sustainable than other existing modes of transport, attention should be focused on making rail systems comfortable, affordable and safe for all.
  - When designing sustainable transport systems and improved road safety, it is important to notice the flow of energy, where things are located, where people are going and the trends in activity. The natural world can provide a model for improvements and new systems.

- The natural world provides forms of energy that meet the needs of all life and the environment. Nature uses air, magnetism, and the electro-magnetic spectrum. Research in these areas should be funded for the eventual benefit of all of humanity. For example, bio-mimicry provides a number of examples for how Nature's designs can help to improve the efficiency of vehicles and modes of transportation. As one example, airplanes are already being redesigned to take advantage of minute changes in wing and body design.
- Look to diverse cultures that have forms of sustainable transportation that can be used more widely, such as bicycles, boats, walking, carpools and citizen owned vans and taxis.
- Envision and implement beauty and cleanliness throughout the cityscape to uplift people and bring in a greater sense of ease and safety in travel.
- Bring standards of transportation up to a level that meets the needs of all. In addition to functional importance, clean, safe transportation is also visually appealing and fosters engagement of people with each other and the environment around them, and even pride of ownership in the community.

11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.

- Create sustainable development strategies at the local level that are well integrated with the development and implementation of strategies at the national and regional level to enable the implementation of the 2030 Agenda for Sustainable Development;
- List the occupations required by the city for it to become as self-sufficient and sustainable, as possible.
- Ensure that meetings between local government and inhabitants take place and are accessible to the citizens and the press, so that citizens can understand the challenges a particular city faces and think along with their representatives.
- Design cities using natural principles that are the basis for strong and sustainable ecosystems thereby building on time-proven approaches to sustainability.
- Create urban designs that include wild space and green space to allow for-the needs of Earth as well as the needs of people. It is important to realize that all of Nature is important. Even insects play a vital role in the web of life and are thus essential to humans in order to sustain biodiversity and ecosystem functioning.
- Study the shape and movement of life in the environment (for inspiration when planning and developing areas) so as to align the design and development to harmonize with and enhance the surrounding environment.

- Focus on lifestyles and behaviours we want to promote and design spaces that encourage these (e.g. parks, meditation spaces, and spaces for healthy social interaction).
- Use sustainable architecture that can provide housing inexpensively, sustainably and quickly to areas in need; construct homes and community buildings in styles that celebrate the unique heritage of cultures and peoples including compressed earth block or earthen architecture, the use of natural building materials and processes, and indigenous building practices. (See: http:// ecovillage.org/node/5998 under Natural Building and Climate Friendly Architecture for examples.)
- Introduce gratitude into people's experience of service. Gratitude is a feeling that connects people in powerful ways and brings profound awareness. Through small actions and selfless service, we can achieve our greatest gains.
- Engage the people who are affected the most in the process and give them opportunity to give voice to their experience and to share their wisdom. Sustainable development has to be about empowering people so that they can join the process. One of the most powerful ways of achieving this is by engaging the heart of a community, no matter where or what the issue. All activities must be inclusive, integrated and sustainable.
- Involve inhabitants and their organizations.
    - Draw on the strength and the creativity of citizens by encouraging town-house meetings and encouraging individual citizens to become a part of problem solving groups.
    - Encourage city dwellers themselves to work locally and where there is a shortage in a specific field, to get the necessary education. Where the education does not exist within schools universities in the vicinity, the Internet can be a useful to tool.
    - Involve city dwellers in waste disposal by educating them in the importance of “each doing their part for the wellbeing of all.”
    - Ensure the young, very old and disabled are given the care they need by allowing them to fulfil a useful role where that is possible or ensure that they have caring members of the community to support them.
    - Giving care is a part of individual personal development and many do this gladly.
- Maximize food production
    - Within towns, encourage people to keep (roof) gardens, use empty lots for children to build school vegetable gardens, and import food from nearby rural areas rather than more distant sources.
- Make sustainable development strategies known to other cities. By using organizations that connect cities, such as ICLEI and/or via UN, and other web sites and data banks, cities can list their best practices so that cities can inspire one another.

11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

- Increase the number of parks (green spaces, See target 11.7) in cities, creating designs that interconnect green spaces as much as possible and provide facilities that make them welcoming to all ages and social backgrounds.
  - Such green spaces help to purify the air, provide shade, stabilize water systems and climate and enable people to relax and appreciate Nature.
  - Where green spaces are linked and allowed to grow wild, thriving ecosystems can flourish, becoming natural gathering places of species that often migrate from one green space to another.
- Provide facilities for diverse types of people (benches for the elderly and disabled, playing fields for children and youth); and HABITAT for animals, plants, insects, birds, trees, and other species.
  - Include areas for dog parks, community gardens with fruit trees and vegetables, safe swimming areas, and wild spaces that honor all of the elements and all life forms and encourage reverence and respect as well as enjoyment and celebration with each other.
- Preserve and expand existing green areas.
  - In many cases, green spaces are already there, imprinted on the land. For instance, there may have been an offshoot of a creek, which became a slum area, flooded periodically. The green space could be restored to its natural state and sustainable housing on higher ground be made for those who were living there.
  - Develop motivated “citizen watches” to steward green spaces as caretakers and maintenance crews.
  - Initiate opportunities through citizen groups to educate visitors on the biodiversity of the local environment.
- Encourage people to create roof and other gardens or where this is not possible, keep (individual or communal) plots of land outside of cities where they plant vegetables and flowers, keep small animals and experience Nature for their own enjoyment. Because gardens have similar positive characteristics to parks, they can help people augment their diets and reduce the stress of urban living.
- Involve those who will be using the green spaces in their planning.
  - Create events where people who live near the site or planned site of the green/public space can provide their input.

11b. By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sel1dai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.

- Following are examples of the actions needed to counter the effects of disasters.
  - Restore the natural environment to create buffer zones around built communities; move people, buildings, and infrastructure out of hazardous areas; and develop resiliency through regenerative practices.
  - Limit the use of and protect people and the natural environment from coming in contact with toxic substances so as to limit the damage that can come from “natural” disasters.
  - Get all citizens involved in giving their ideas on all aspects of disaster planning that affects them. Ensure that societies are inclusive and foster collaborative relationships among all inhabitants.
  - Provide education to build inclusiveness, collaboration and cooperative decision-making. This can make use of know-how already inherent in cooperative and commons enterprises.
  - Build disaster preparedness teams that are trained in working with Nature, life and Earth's Systems, and preferably also are experienced Nature communicators.

Goal 12 - Ensure sustainable Consumption and Production Patterns

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.

- Encourage waste recycling by inhabitants of cities who for instance collect aluminum cans and then sell these to companies for income; and by encouraging “garage” sales and second hand shops. Provide incentives and policies that make recycling easy to do.

12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.

- Social pressure can be exerted on corporations to encourage them to become maximally socially responsible. Here are some ways:
  - Encourage companies to become a member of the Global Compact, which provides standards, activities and incentives for businesses and organizations to abide by international agreements and set an example for others to follow.
  - National governments can as a matter of routine write reports, evaluating the usefulness of the aid received from national governments, through their large corporations, or from large corporations directly.
  - Citizens can write and publish evaluation of large corporations' impact on their communities—very specific questionnaires that look at all round impact both of
  - what they were commissioned to do and the actual outcome whether good or bad or a mixture of the two.

- Reports by independent CSO groups to assess both the positive and the negative impact of large corporations on the communities and the nations where they are active, especially where these are paid by the public sector to provide official development assistance.
- Financial tally by all of the above to see what the above mentioned large corporations put into a country and what they take out versus the amounts paid to their investors.
- Reports by UN agencies giving an overview each year of evaluations received by corporations, recipient communities and evaluations by outside observers.
    - All these reports can first be shared in confidence with those donors. If the reports are good then that will be positive publicity. If they are negative, the donors can be requested to make amends and if these are not forthcoming, the reports can be made more generally available.
- Encourage large corporations to work together to improve the quality of their products and services through inter-vision and mutual sharing of best practices.
    - There are ways to encourage them, where they are having a destructive impact on sustainable development to become a force for good. Corporations are typically made up of individuals who at their cores are good. We can be smart and creative about how to reach them and inspire them to do the right thing. The best way to do this is through creating opportunities for them to feel good about themselves rather than pointing the finger of shame at them. The effectiveness of positive reinforcement is indisputable. It is up to all of us to inspire, motivate, and provide incentives for social responsibility to positively impact corporate policies. However, we have to recognize that both standards and campaigns encouraging corporate responsibility and showing the negative impacts of some corporate policies are also having a profound impact on companies both across the value chain and around the world.
- Adopt and provide financial incentives for ecosystem inspired forms of business, such as cooperative business forms which are owner/worker operated and where all participants therefore benefit from its success; and where both raw materials and other resources are valued maximally. As a part of the Cooperative Identity, the many cooperatives gives a part of their profits to the community where they are situated and a percentage to global development. This nurtures the economic well being of the community, creates social cohesion and creates goodwill between people while caring for natural resources. See www.ICA.coop/
- Many standards regimes and labelling schemes have been developed by various networks and organizations, including those encouraging and supporting the development of green building practices, energy efficiency, healthy and safe foods, responsible and sustainable fishing and forestry practices, etc. It is crucially important that governments

support and promote the use of such standards and labelling schemes. Where appropriate laws and regulations are also needed to ensure that safe and sustainable practices are adopted by all businesses. For example, green building codes can support the transition to more responsible and sustainable building practices. Similarly, both many companies and also governments are adopting or developing and requiring cradle-to-cradle sustainable consumption and production practices and processes. Many local governments are promoting circular economy initiatives and China has adopted a Circular Economy Law. More commonly eco- industrial parks are being established around the world with the "waste product" from one industrial process providing the basic feed stock for others. Legislation and incentives are needed to drive the transition to a circular economy where waste is eliminated in both consumption and production processes and where we make the best use possible of our increasingly scarce natural resources.

- Many governments are also developing and adopting certification schemes such as for organic produce, herbal teas and remedies, fair trade products, etc. Such certification schemes can ensure that companies do live up to the expectations that come with how their products are labelled and promoted. In time all of our local to national SCP plans ought to require that SCP practices are adopted and lived up to by all companies as well. All companies should be required through their chartering and reporting processes to certify that their products are safe and are produced in a fully sustainable manner.
- The WBCSD Report also details guidelines and targets that companies ought to be required to adopt and implement through each country's UNCCD Convention to Combat Desertification national action plans. The report also provides guidelines for monitoring and measuring impact. And it provides a listing of recommendations and opportunities for funding sources. Given that most of the world's governments have agreed both to stop land degradation by 2030 and to develop plans for doing so under both the UNCCD's Ankara Initiative and SDG 15.3, it is essential that we now ensure that businesses take effective action to join in the effort as well and that governments support and provide incentives for businesses to actually do so. See: **www.un.org/ecosoc/sites/www.un.org.ecosoc/files/files/en/integration/UNCCD.pdfand**
- **www.unccd.int/en/mediacenter/MediaNews/Pages/highlightdetail.aspx?HighlightID=418**

12c. Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities.

- The rapid development of alternatives. Transition Towns are a grass roots movement where people have developed carbon neutral alternatives. They have much to contribute to worldwide understanding. At present there is a substantial increase in the use of solar energy (including wind and water energy). Although these alternatives are an improvement over the use of fossil fuels, natures inspired solutions tend to be more durable.
- Make an immediate assessment of how fossil fuel-dependent nations can become independent of fossil fuels and can diversify their economies. Suggest specific steps that can be taken.
- Ubiquitous use of carbon footprint measurement of individuals', and organizations' with those who live within their carbon footprint being rewarded by incentives and publicity, a special green plaque to show those who are carbon neutral and fines for the greatest offenders.

Goal 15 - Protect, restore and promote sustainable use of Terrestrial Ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

- Ongoing sustainability of water for all living beings requires that
  - we constantly assess the health of waterways, water bodies and natural reservoirs on the planet; and share information among countries;
  - cooperation amongst individual countries to clean and restore polluted waterways; and
  - that international teams may work together to quickly stabilize the terrestrial areas to ensure we have vital, life giving water in all locations, thriving forests, rich and productive topsoil.
- Such actions can be encouraged through international competitions and awards for engineering, design and technology.
- The necessary actions and steps to transform the water and the land must be set in motion immediately to assure the ongoing wellbeing of planet.
- Apply systemic perspectives in viewing the health of the planet as a whole, specifically understanding the proposals for new development from this perspective across public and private partnerships within countries, cities, townships, and villages.

15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

- Redirect heavy reliance on forests for forest products.
- Provide accessibility to forests for people to enjoy, connect and appreciate.

15.3 By 2030, combat desertification, preserve moisture and nutrition in soil, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land enriched degradation-neutral world

- Have global networks and forums for sharing information about innovative and effective methods for soil preservation, restoration and farming as they are being developed and utilized all over the world.

15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts

- Utilize unbiased, informed impact research studies in planning and development processes that are conducted by organizations and individuals with proven understanding of and allegiance to a Nature-centred perspective.
- Honour all humans as an integral part of what biodiversity fundamentally means, whereby all peoples have value and a place in the implementation of Earth-centred programs, uplifting humanity, consequently reducing poverty.

Economy, Financing Mechanisms and Research

Goal 6 - Ensure availability and sustainable management of Water and Sanitation for all

6.3 By 2030, improve water quality by reducing pollution; eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

- Apply commons rent/Land Value Taxation whereby the use of natural resources is paid for by commons rent/Land Value Taxation; and taxes are removed from labour, thereby causing people to make the most of their natural resources and encouraging people to work.

Goal 7 - Ensure access to affordable, reliable, sustainable and modern Energy for all

- Invest as much now for the types of research mentioned above as we have done to subsidize the development, as well as research, for nuclear power and fossil fuels.)
- Politically and financially support innovations, so as to generate new ideas for creation of affordable, sustainable energy while addressing the problem of legislative and financial parties investing in ways to make these innovative processes "disappear" in order to protect their own assets.

7b. By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programs of support

- Provide financial incentive for individuals and corporations investing in energy efficiency and supporting the infrastructure and technology for sustainable clean energy development, such as impactful tax incentives.

Goal 11 - Make Cities and Human Settlements inclusive, safe, resilient and sustainable

- Develop new means of funding to make resources available to people in both rural and urban communities to ensure that their basic human needs are met. This can be done by raising commons rent whereby use of natural resources is taxed (as is now often already done with water) and taxes are removed from labor.)

11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

- Involve the private sector.
  - Look for ways in which companies can contribute to the wellbeing of cities and their inhabitants through taxes, providing education for the community and learning situations for students, including in the form of internships.
  - Reward those corporations who return a part of their profits to the city in which they are based, including cooperative businesses that do this as a part of their "Cooperative Identity". Cooperatives as a part of their "Cooperative Identity" are based in sharing and community consciousness. Cooperatives also contribute to the development of the international community.
    Here are some facts:
    - There are 2.6 million cooperatives enterprises with one billion members worldwide with annual revenues of US$3 trillion.
    - They provide 250 million jobs (2%of jobs in G20 countries) and are active in almost all sectors.
    - They contribute daily to the delivery of the sustainable development goals.
- Generate alternative financing resources where these are lacking. Alternative forms of financing can include:
  - Barter, for instance via the LETSystem, which creates local currencies to promote the exchange of goods and services in local communities where the economy is flagging.
  - Alternative tax systems such as the Land Value Capture tax (LVCT), whereby the use of the commons (land, natural resources, the electromagnetic spectrum) is taxed and tax is removed from labour. Such tax practices encourage people to work and also to care for buildings and ensure they remain occupied, since tax is being paid on the land on which these stand. These also discourage speculation. In some countries monies saved-from this form of taxation render so much savings (e.g. because of drastically reduced bureaucracy) that it is possible to provide inhabitants with a basic income.
  - Tax people and organizations, including businesses, based on their ecological, global and other footprint. Like in the case of LVCT, this helps to preserve natural resources and generates tax revenues that can be removed from labour.

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

- Provide incentives for sustainable business practices at all levels.
- Impose harsher penalties on polluters. Some of the largest corporations are also some of the worst offenders.

- Provide incentives for corporations whose practices align with the sustainability of life on the planet.
- Reward environmentally sustainable practices as well as practices which inspire employees and benefit families and communities.

11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

- Provide a funding mechanism for green spaces by adopting land value taxation.
  - Land value taxation places a tax on land while limiting or removing it from sale, income or building.
  - Through land value taxation, we can capture the rise in land value that naturally occurs when parks and green spaces are created - due to the increase in the surrounding property values.
  - This can then provide us with the revenue needed to pay for and establish more parks and green spaces and fund additional public amenities. (This policy recommendation was included in the Habitat2 outcome agreement and in the policy papers for Habitat 3.)

Goal 12 - Ensure sustainable Consumption and Production Patterns

12.2 By 2030, achieve sustainable management and efficient use of natural resources

- Commons Rent: Shift tax from labour to a fee for the use of all land and commons resources - resources that all need for their survival: fresh air and water, the seas, land, biodiversity, the electromagnetic spectrum. Use the resulting income gathered nationwide and later worldwide in a fund to restore the global commons and any harm done to communities affected by the exploitation of local resources (in the case of indigenous peoples, resources can only be exploited if prior informed consent is given). Such a fund could also be used to provide a basic income for all people or nationals of a country (as the case might be). This can help to decrease waste of land and biodiversity loss.
- Cap the annual use of depletable resources, such as fresh water, species of plants and animals, including fish, and auction permits to the highest bidder for the use of what remains. The permit holder will pass on the costs paid for these resources to those purchasing them. So the use of the resources in their original or processed form is born by all consumers who actually use them. The monies received from the permits are divided among all those living in that economy, reducing the need for people to procure loans to produce food.
- Nurture and build on the spontaneously emerging social collaborative economy, through the use of education and financial incentives and policies, whereby people share their labour, goods and services and often give these away for free. These resources are largely available through

the Internet. In this system, people work because they love doing what they do; while they benefit from the freely given and dedicated labour of others. Goods and materials are appreciated for what can be done with them. They are not wasted.

- The LETS System: This is a barter economy where people create a local currency and then barter goods and services as a means to regenerate flagging economies. This takes into account that one man's trash is another man's treasure. Resources are valued and more wisely used.

12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses

- Implement Pigouvian taxes on those who destroy the quality of land and biodiversity. Require the offenders to restore Nature to its original quality and pay high penalties.

12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

- Provide financial incentives for ecosystem inspired forms of business, such as cooperative business forms which are owner/worker operated and where all participants therefore benefit from its success; and where both raw materials and other resources are valued maximally. As a part of the Cooperative Identity, the many cooperatives gives a part of their profits to the community where they are situated and a percentage to global development. This nurtures the economic well-being of the community, creates social cohesion and creates goodwill between people while caring for natural resources. See www.ICA.coop/

12c. Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities

- Financial support and capitalization are needed to ensure that renewable energy is available to all peoples, particularly in SIDs, LDCs, and in small, informal, and rural communities and throughout the developing world. Programs need to be established and support provided to grassroots and community based organizations, along with Small and Medium Sized Enterprises to assist all people in accessing such appropriate technologies as: Biogas Digesters, Solar Dryers and Cookers, Solar Water Heaters, Passive Heating and Cooling, Solar Water Pumps and Street Lighting, Natural Lighting - particularly in commercial and public buildings, and energy efficient appliances and components - such as for windows, air

- Financing mechanisms including shifts in the generation of taxes that discourage the use of fossil fuels and promote shared and sustainable use of Nature and the global commons. This can include: Commons Rent; the Feasta Sky Fund; Pigouvian Taxes; and later as we are more advanced as a global community, the Self-financing World Marshal Plan by Pieter Kooistra.

Goal 15 - Protect, restore and promote sustainable use of Terrestrial Ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

- Provide financial incentives for effective conservation efforts across all international borders.
- Award financial support for individuals and groups who share with the global community the findings in their studies of methods for sustaining healthy ecosystems, promoting restoration, and the preservation of existing ecosystems.
- Give incentives to encourage the development of new enterprises specializing in plant and soil health, reforestation, cleaning toxicity from waterways and prevention of future toxic practices. Have all students in schools learn about and be inspired and rewarded for projects and understandings which bring about clean water, thriving forests and animal species.

15.3 By 2030, combat desertification, preserve moisture and nutrition in soil, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land enriched degradation-neutral world

- Provide incentives for farmers working in harmony with nature, utilizing methods to rebuild the soil and improving nutrients in food.
- Implement the new technologies that already exist which can quickly restore topsoil. Make these technologies accessible, and provide incentives for their implementation as well as the development of new ways to maintain a healthy environment for all.
- Give individuals, governments and corporations incentives to leave land in a natural state, or to create parks where communities may enjoy the many benefits of being in nature.

15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development

- Create resources, programs, and opportunities that enlists mountain based communities in the protection, restoration, and promotion of the natural resources, biodiversity and ecosystems in ways that also support the health, education, and financial needs of these communities.

15.5 Take urgent and significant action to reduce the degradation of and improve and enrich natural habitats, halt the loss of, support balanced biodiversity and, by 2020, protect, support, and prevent the extinction of threatened species

- Provide incentives for the development, sharing, and implementation of wholesome, respectful, harmonious and mutually beneficial ideas and actions, programs, and initiatives that effectively promote the sustaining and protecting of the harmony and health of all. life.

15.a Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems

- Once legislation has been passed, funds can be generated through levying fines which can be done with great care to ensure that the rich do not benefit by being willing to pay fines to continue business as usual.
- Take steps to discourage the harm of the environment while raising financial resources which can include:

  a. Placing a strict cap on the use of depletable resources to allow these to regenerate themselves.

  b. Levy a tax on all who wish to make use of those resources (Commons rent) that are still available once the cap has been enforced. Since all people will have to make use of natural resources (water, soils, solar energy etc., that enable the cultivation of food) whether directly or via companies that make them available (water, gas, electricity companies, etc.) all will be contributing to the tax according to their use. This system is of course already in existence, although the size of the tax varies. The tax on the use of natural resources will allow governments to take away tax on labour thus encouraging people to work and thus stimulating the economy.
- Place extremely heavy fines on anyone who harms the environment. Combine these with strictly enforced laws to ensure resources that have been degraded are restored to their original state of health. This will help to deter large and wealthy corporations from making use of resources by simply paying the extra costs. (known as Pigouvian taxes.)
- Make exempt indigenous peoples and others that can prove that they live sustainably off the land and enable ecosystems to flourish. The above financing mechanisms are just two examples of many more that exist. Many are found under the title cap and share (as opposed to cap and trade.)
- Show through education in every field (social sciences, community building, decision making, education, business cooperatives, etc.), how social and economic structures based on ecosystem-inspired approaches (cooperation and empowerment of all individuals) have throughout known history promoted and produced prosperity and peace.
- Establish official funding for conservation and sustainable use of biodiversity and ecosystems through grants and established trusts.

15b. Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation

- Establish avenues of financial support through specialized structures, taxation, incentives and paybacks which motivate individuals and groups to focus efforts on sustainable forest management, conservation, reforestation, and protection of all forms, species, and ecosystems of Nature.

Education - Formal and Informal, including through the Media and Research

Goal 6 - Ensure availability and sustainable management of Water and Sanitation for all

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all

- To sensitize young people to the importance of water that seems so abundant in developed nations, it would be valuable for young people in technologically advanced countries to have alternate experiences with water as part of their education. This would enable new generations to understand the reality of the preciousness of water and foster the production of new technologies based on the sustainability of water for current and future generations. In such an educational process, students might:
  - Practice living without the technology which makes water so readily available;
  - Study water ecology;
  - Live in communities where water must be carried and where water is used in
  - whatever form or condition it is found because that is the only option;
  - Learn to care for water resources with reverence and respect, as sacred sources;
  - Learn to cleanse contaminated water sources using natural methods;
  - Learn about using non-toxic, recyclable containers to collect water;
  - Explore innovative solutions to desalinating water more efficiently;
  - Create water pipelines to dry areas where water can be collected in central places
  - for access by individual households.

6.3. By 2030, improve water quality by reducing pollution; eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

- **To bring the Earth and her resources back into balance will require a fundamental change in the respect we develop for ourselves and as a result can then experience for Nature.**
  Here are some possible steps:
  - Implement Article 26 (2) of the Universal Declaration of Human Rights to allow each to realize his or her own potential;
  - In both formal and informal education, use
    - stories of Nature-inspired best practices and effective solutions to promote understanding of the primacy of Nature and the need for Nature-inspired solutions;
    - student-centred projects that make use of individuals' unique skills and aptitudes to solve real world problems involving

pollution and water quality.
  - Combine this with supportive work environments that promote creativity and make it possible for people to relax in Nature when not working.
  - Provide material support for implementing such solutions.
  - Create a website where people can exchange best practices and effective incentives.

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

- Increase awareness of daily water consumption in homes and in industries.
- Promote education in effective, environmentally conscious ways for people to save water.
- Provide incentives for people to be responsible regarding their own water consumption.
- Start a wide-scale education campaign to ensure that all understand:
  - The crucial importance of fresh drinking water to themselves personally as well as to all others.
  - That access to fresh water must include all species, since leaving out one part of the Earth System from a needed access to fresh water will inevitably have a boomerang effect on one's own wellbeing.
  - Share information among people worldwide via a special website or the websites of relevant UN Specialized Agencies about Nature-based solutions for regenerating fresh water and best practices used by others facing similar fresh water issues.
- Create a global system that invites all cultures and nationalities to engage in an understanding of planetary water resources and current developments on the planet as a whole.

6b. Support and strengthen the participation of local communities in improving water and sanitation management

- Institute a simple education campaign that speaks to the hearts of people, letting them understand deeply why it is essential to save fresh water and improve sanitation even in areas where rainfall is plentiful. (Here organizations such as the Global Ecovillage Network can be extremely helpful.)
- Create incentives to get all people in local communities involved.
- Foster a sacred relationship with water as an element to be treated with dignity, kindness, love and respect by:
  - Providing inspiring stories and demonstrations of best practices:
  - Providing education individually or as a group on how to implement best practices.

- Offering examples of how people have benefited from implementing one or more of these practices.
- Eliciting responses from others regarding their successes, the joy of working with others as a part of a group or simply as a part of a larger network.
- Reinforcing the knowledge that they are doing useful, necessary and effective work for the planet.
- Supporting the creation and exhibition of works of art that portray water as a beautiful and sacred and create a deep connection with water.
- Bringing attention to current diverse works of art that emphasize our connection with water and Nature.
- Showing how water is a part of every living being on this earth, how water is a part of all of our own bodies, and how we are integrally related to all bodies of water.
- Showing through the arts that water is by Nature wild and free.
- Allowing our music to reflect the voices of water, at is sings and roars.
- Portraying water's movements in dance as it flows and moves through the world.

- Encourage people to share what they are doing on Facebook and on YouTube,
- Twitter, Instagram and other social media to increase the potential that these images will go viral.
- Make what is happening in each community known to other local governments via ICLEI and associations of Mayors, etc., and via the web sites of various UN Agencies.

Goal 11 - Make Cities and Human Settlements inclusive, safe, resilient and sustainable

- Teach principles of Permaculture—the art of building gardens using ecosystems that require very little maintenance and provide optimal conditions for each of the species that live there.
- Teach Education for Sustainable Development in all schools. (See SDG 4, target 4.7.) Given the central need for humanity and our communities to reconnect with, value, protect and restore the natural environment, it is essential that our children learn how to do this through both formal and informal educational opportunities. Formal education should incorporate cultural and traditional practices as well to share this deep connection with the earth that has been practiced by indigenous cultures for millennia.
- Educate people to recognize the integral relationship between human beings and individual members of the plant and animal kingdoms that are essential for survival, including the many diverse aspects of animal and plant species that can contribute to our personal wellbeing as well as to the welfare of the human species as a whole. Educating people to understand their intrinsic connection to all aspects of Nature increases the likelihood that they will value natural phenomena and treat the non-human world with greater respect.

- Encourage people to use vacant lots and open spaces to create (rooftop and vertical) gardens with plants and animals they enjoy. Stress the joy of such gardens as sources of food, flowers, enjoyment and relaxation.
- Make lessons in communication with Nature available with the help of Indigenous Peoples and/or other Nature communicators (many of which are available via the Internet).
- Include children and youth in developing and implementing each of the local plans and provide them with the educational opportunities necessary to be able to fully do so at their individual level of competence.
  This can be done as follows:
  - Start by fully incorporating Education for Sustainable Development in
  - the school systems and curriculum at all levels of education;
  - Teach the SDGs at all levels, as a part of the local planning;
  - Ensure all schools focus on how students can contribute to the local implementation processes;
  - Provide all teachers with in-service training to learn about and
  - incorporate the SDGs in their teaching and educational opportunities;
  - Include a primary focus on what is being done in the local community in
  - response to Goal 11 on Cities and Human Settlements, along with all
  - other pertinent goals and issue areas.

11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

- Incorporate the concept of Love and Respect into sustainable development - Respect for the Earth, plants, animals, insects, minerals, and fellow humans. Teach and encourage children to respect the natural world at a young age. Where cities follow Nature's example, they will be building on time-proven approaches to sustainability.
- Involve inhabitants and their organizations.
- Draw on the strength and the creativity of citizens by encouraging town-house meetings and encouraging individual citizens to become a part of problem solving groups.
- Encourage city dwellers themselves to work locally and where there is a shortage in a specific field, to get the necessary education. Where the education does not exist within schools universities in the vicinity, the Internet can be a useful to tool.
- Involve city dwellers in waste disposal by educating them in the importance of “each doing their part for the wellbeing of all.”
- Ensure the young, very old and disabled are given the care they need by allowing them to fulfil a useful role where that is possible or ensure that they have caring members of the community to support them. Giving care is a part of individual personal development and many do this gladly.
- Support and build on the work being done by diverse forms of commons.
  - The citizens organize Commons work, often to take care of existing

problems that have not (yet) been addressed by governments.
    - Those involved in Commons issues are strongly motivated to succeed because they usually have a common goal and all participants share in both decision-making and benefit sharing.
    - Commons exist in every possible area of human endeavour. There are neighbourhood watches and other forms of security measures organized by citizens. Cooperatives constitute the business branch of the commons and businesses of almost any type are being run as commons. (See below: “cooperatives”). There are groups that organize garbage collections and recycling, Transition Towns which are exploring how to exist without the use of oil, Geocities and Ecovillages, based on active citizen participation. The Ecovillage Network has both an-educational system and a handbook for building sustainable villages/cities.
- Provide education. Build on SDG 4—lifelong learning—to find out where people's true interests lie and help to make training in these fields possible, thus implementing paragraph 26 (2) of the Universal Declaration of Human Rights.
- Encourage schools to engage in municipal sustainable development strategies, teaching children how to participate in town house meetings, helping to problem solve, and undertaking hands-on learning and internships.
- Encourage inhabitants, schools, corporations and other organizations to measure their individual and municipal Global (and other) Footprints as a way of legitimizing their activities. This can be a way for businesses and others to gain positive publicity and can eventually become a factor in the assessment of the effectiveness and degree of community mindedness of people and organizations.

11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage

- Ensure education about our natural and cultural heritage.
    - Enable people, with the help of education, to reconnect with their capacity to care deeply. Such deep caring begins with the self and can be fostered by the implementation of Article 26 (2) of the Universal Declaration of Human Rights (the development of the full human personality).
    - Expose people to their own cultural and natural heritage so that they recognize how vital these are to their sense of happiness and wellbeing.
    - Protect our cultural and natural heritage by sharing it and communicating about it in a mindful manner through dance, visual arts, storytelling, music. Every day we create new stories, new heritage. Foster gratitude to our ancestors for their stories, share these stories.
    - COMMUNICATE in all possible ways. This will make people want to safeguard their natural and cultural heritage, cultivating a deep understanding that these are vital parts of our own home where we can

receive sustenance and inspiration at levels not obtainable in any other way, but only if all people take good care of them.
    - Show how connection to our cultural heritage helps people to relax and be inspired by timeless beauty.
    - Foster an appreciation in young people, through formal and informal education as well as the media, for their own culture and how this is connected to others. Encourage pride in one's own community and its history as the most effective safeguard for its treasures. Caring and inclusiveness engender gratitude and celebration in people.
    - Teach specific appreciation for culture—one's own and that of others—as a way of enhancing people's sense of belonging to a certain community as well as their sense of connection to other cultures, helping them to see how cultures are related.
    - Provide insight beyond the specifics of a culture into what connects humanity integrally as a whole with one another and with Nature.
    - Create awareness of the devastation that occurs when a person's connection to their cultural or natural heritage is disrupted, as has been done in the past (e.g. to Indigenous Peoples) and is still being done today.
- Foster appreciation for Nature.
    - Encourage the preservation of wild lands, particularly jungles, so that biodiversity can flourish and people can get as close to Nature in its original form as possible. Teach that every species is important.
    - Reinforce the understanding of our interdependence with all aspects of Nature and the importance of what we can learn from Nature in terms of building sustainability.
    - As a part of above process, teach all to honour and revere all life, as well as to honour and revere their forbearers while learning to heal that which was not in alignment with the whole of Nature.
    - Be curious and accepting of new information and ways of being that move us toward healing and promote love.

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

- Be inspired by the life around us for ways to minimize and manage pollution and waste sustainably; for example, study the way trees purify water and clean up toxic environments.

11b. By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sel1dai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels

Following are examples of the educational actions needed to counter the effects of disasters.

- Get all citizens involved in giving their ideas on all aspects of disaster planning that affects them. Ensure that societies are inclusive and foster-collaborative relationships among all inhabitants.
- Provide education to build inclusiveness, collaboration and cooperative decision-making. This can make use of know-how already inherent in cooperative and commons enterprises.
- Build disaster preparedness teams that are trained in working with Nature, life and Earth's Systems, and preferably also are experienced Nature communicators.

Goal 12 - Ensure sustainable Consumption and Production Patterns

12.2 By 2030, achieve sustainable management and efficient use of natural resources

- Provide student-centre education, where students are individually encouraged to play and learn according to their deepest interests, inner guidance, and where each child is helped to discover how they can reach their own potential.
- Indigenous Peoples are leading the way having realized that each individual in a community is invaluable to the survival of the whole tribe and to the careful stewardship of the environment. Some use methods such as vision quests to help people and the community to recognize individual gifts as well as supporting each individual to fulfill his/her potential.
- A number of diverse types of student centred schools and universities have been established in developed countries. Great innovations in this field have been-implemented by Maria Montessori, A.S. Neil's Summerhill in the UK, the Union for Experimental Schools and Universities based in the US; schools inspired by the teachings of Jidu Krishnamurti; and those inspired by Rudolf Steiner (the Waldorf Schools). All of these approaches to education are based on drawing out the innate wisdom, the creative spark, and unique gifts of each individual while teaching them to work together in mutual respect and cooperation. The types of curriculum and lessons included in these schools ought to be adopted and used-in other and particularly public schools as well; and included as recommendations in both local and national action plans for Education for Sustainable Development as well as for Sustainable Consumption and Production. Increasing the number of and extent that students learn self-empowerment will greatly increase the extent to which people are happy with their lives and feel less need to "over consume".
- Education and the Media should be encouraged to show the interdependence of the web of life and all subsystems of the Earth

together with how this relates to Target 12.2 - achieving sustainable management and efficient use of natural resources.

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

- Institute education that teaches the benefits of working in harmony with Nature and with each other in order to keep consumption and waste in balance and in alignment with the needs of all life on the planet.
  - Learn from Nature that recycles everything.
  - Institute cradle-to-cradle manufacturing.
  - Promote zero waste policy as is being done by the EU.
  - Require Extended Producer Responsibility
  - Adopt socially responsible standards and labelling schemes
  - Provide municipal composting programs
  - Provide financial incentives for best practices among schools, businesses, within communities, government procurement, etc.
- Humans have created random and arbitrary concepts of what is essential and what is useless. If we can shift to a blank open space, we will see possibilities for living more sustainable. For example we could develop advertising campaigns that promote recycling and reusing - making it "cool" to recycle.
- We can also promote the idea that consumption does not create happiness. The "art of happiness" can be taught in public schools as a part of shifting our values.
- At the same time we could provide information and teach about the destructive impact that comes from over-consumption, how advertising encourages people to buy and use more than can be equitably shared by all, the need to transform our advertising policies and eliminate much of the advertising that is so prevalent today, and find other means to underwrite or fund our media activities.
- That which people are unfortunately taught to believe improves their lives, through media and popular culture, often leads us to adopt unsustainable practices and to buy unneeded things. We can begin to reverse this by reconnecting with what is real and valuable. We must speak the truth and spread the word - love, light, and truth. In order to develop solutions that benefit both the individual and the entire ecosystem, we need to take time to meditate, listen and be inspired by Nature. We need to intentionally let go of long held beliefs, opinions and "truths" and open up, tune in to our higher wisdom. We can use graphic images that employ humour to reach people and inspire change. A light, yet serious message that goes viral can be a powerful force for implementing new ways of conservation and waste reduction.

12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

- Erasmus University Rotterdam is offering an excellent online course to assist businesses in their efforts to help achieve landscape restoration neutrality entitled: Landscape Restoration for Sustainable Development: a Business Approach. All businesses that are serious about helping to achieve this goal ought to enroll upper management in the course; and governments should encourage business leaders to do so as well.
  See: https://www.coursera.org/learn/landscape-restoration-sustainable-development

12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities

- Encourage citizen watchdog groups that publicize transgressions in local, national and social media and describe the consequences of such malpractices, specifically as they affect parts, or the whole of the population.
- In political and history lessons, social studies, etc., make greater use of oral histories where people's experiences at various levels of government are described, and also of group projects where students are asked to solve various problems including those relating to procurement. The more students experience the consequences of malpractice and incompetence, the more they will be inclined to avoid it in their lives and work.
- Document and publicize full life stories of those who are creating sustainable solutions and living in alignment with their vision and in harmony with Nature and all beings on the earth.
- Document and publicize full life stories of people who acted on corrupt values so that people at large see the repercussions of their own actions and those of people in their governments, including in the procurement divisions.

12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with Nature

- It is essential that Education for Sustainable Development (ESD) and information about the 10 Year Framework of Programmes (10YFP) on Sustainable Consumption and Production be included in the curriculum and taught at every level of education and across all disciplines and courses of study and in a fully integrated manner. Similarly, every student in the world should be made aware of the Sustainable Development Goals and how they intersect with and require the teaching and learning about ESD and the 10 YFP.
- Institute education and training on ways to work in cooperation with each other and with Nature, so that the needs of all parts of the Earth's

ecosystem get their needs met and remain in balance.

- Instead of seeing ourselves as “managing Nature from outside” or “being above Nature”, we must recognize that:
  - in every aspect of our lives (the air we breathe, the water we drink, the
  - minerals, animals and plants we eat) we are an integral part of Nature,
  - Nature is the womb that nurtures us and allows us to survive and thrive
  - Nature includes both destructive as well as beneficial processes, we need
  - to be aware of and respond to both
  - Without Nature there can be no human beings or even life on our home
  - planet and so also no society or economy.

For this reason, the interconnectedness and cooperation between aspects of the Earth System is primary for this affects every cell, every atom in the human body and every level of human experience; and the human body/mind/emotional capacity to survive and thrive depends on the quality of our relationships with the rest of Nature. Within this larger context there is an aspect of competition that enables all species to survive and thrive in a process of give and take. Such a view of Nature will require a paradigm shift in how we deal with:

- Harm being done to Nature
- Formal education
- The media (informal education)

Dealing with harm to Nature

Policies and laws protecting against abuse of Nature should include:

- the requirement that those harming Nature work more closely with Nature, to connect with the majesty, subtlety and intrinsic wisdom and cooperation as well as the destructive and random viciousness that can also be found in the Natural Order.
- Rectifying any harm done through, say, Pigouvian taxes, whereby harm done to Nature (and human beings) is fined and moreover requires restoring Nature to her original state; while, at the same time, the perpetrator is placed in situations where it becomes apparent how that harm to Nature affects him/her personally.

- Instil wonder at the miracle of life and an understanding of the various interactions between different aspects of Nature. This can be achieved through formal education as well as education via the media, by showing the collaborative aspects of Nature and how the "survival of the fittest" depends instead in fact on an exchange between individual plants, animals, species and the systems of water, soils and air that strengthens the capacity to thrive together; and which strengthens their overall interdependence. Show how therefore each aspect of Nature plays an important role within the whole. Many grade schools, particularly in developed countries, include or teach environmental education as a part of the curriculum; and this should be instituted as a part of education for sustainable development in all schools throughout the world.
- Show when dealing with a topic in formal education and in the media the consequences of actions that result from unsustainable lifestyles on one self. For no one, not even the rich and powerful, can escape the

consequences of erratic weather patterns, natural disasters caused by global warming, toxins in our water supplies and in the food we eat and in the air we breathe. Show how the consequences of unsustainable consumption and production patterns affect all people--rich and poor alike; and how weather related calamities and disasters are already increasing in both intensity and quantity, are becoming increasingly costlier, and how it will be far cheaper to make the changes needed now than to pay for the costs and consequences caused by our inaction later.

- Show, through education and media, how working with Nature and each other, acknowledging the interconnectedness of all life, is the way to sustainable consumption and production. Show how working together, forming communities in harmony internally and with the natural world is the key to sustainability and increased quality of life.
- Institute education at all levels and stages of schooling that shows whereby the consequences at all levels (global to individual) of overuse/abuse of Nature is shown in its full ramifications. Students at school should see the ramifications of each policy and action as it relates to their personal well-being and that of others.
- Use interactive role playing exercises that are taught and used in environmental education programmes to really make the lessons come alive as well as to apply directly to real life.
- Increase the level and extent to which we educate and teach about how indigenous cultures have and still do live in harmony with Nature today.
- The idea that the consumer culture brings happiness and fulfillment has proven to be a dangerous myth of advertising leading to unhappiness and depletion of natural resources. The truth is that satisfaction and quality of life stem from balanced production and consumption that are sustainable for all life in them natural environment.
- Institute education at all levels that gives specific examples of living in harmony with Nature and that shows the benefits that can come from living in harmony with Nature. Provide contrast with examples and consequences of overuse/abuse of natural resources. Objectively review policies and actions for effectiveness, sustainability and whether or not they promote quality of life and wellbeing for all life.
- Together with above measures, encourage people to measure their ecological footprints as per the Global Footprint Network, to make more sustainable lifestyle choices such as through each country and community's SCP and ESD action plans, and to recognize alternative ways of behaving that has less deleterious effects.

Formal Education might include showing how Nature relates to the human sense of happiness, tranquillity, beauty and other deeply enjoyable experiences

- In Mathematics, certain proportions (the Golden Mean, etc.) are the building blocks of the Universe; and when these proportions are used, they bring a sense of stability to our creations because these resonate with the Universe around them. These proportions, when applied to art or artifacts, tend to resonate within our beings and be experienced as beauty that connects people beyond space and time.
- In Music, scales are based on relationships that are found throughout the Universe, too; and the same applies. For universal patterns resonate deeply within the human psyche and result in experiences of peace, wonder, beauty.
- In Physics, all mass throughout the Universe can also be seen as energy (E=mxc2) that permeates all of human life and determines human mobility. The complex, seemingly chaotic forms we see as clouds, estuaries, etc. are in fact complexities that consist of much simpler shapes (fractals) that reoccur often without people being aware of it. (Mandelbaum)
- In Chemistry, all that is is built of the same building blocks "From Stardust to Us," (Brian Swimme and Elisabet Satouris) the same atoms, molecules, etc. These recycle as people die and are born, so that the same atoms that have been a part of the Earth and/or a star become the building blocks of the human body. These same electrons once in touch with one another remain in constant communication. So the very physical building blocks contain inherent knowledge that might even be tapped.
- In Biology: the same goes for one-cell organisms, bacteria. As soon as these contact one another they pass on all their knowledge to one another and this makes it hard for human beings to eradicate them. One cell organisms therefore already have a form of Internet, also high rises, taxis etc. Our bodies are made up of cells so it is possible that each cell has inherent knowledge that can usefully be tapped. Birds and animals have languages and even separate dialects. Bird song consists of many intricate combinations of sounds that can be distinguished with the help of instruments, but still often please the human ear and result in a sense of tranquillity and peacefulness.

The media

Instead of showing a "dog eats dog" world dominated by the survival of the fittest, a world characterized by conflict, could present a larger perspective and show Nature as one great collaborative system in which all parts effect all others—a system in which one species will "eat of" or "cull" another for the sake of its survival, thereby often partaking of the old, very young, sick or weak and leaving the species intact and possibly even stronger and leaner and thereby more capable of survival and serving as nourishment at a later time. The media could thus be invited to participate in sustainable development consultations and planning processes as active participants and thus expand their understanding and appreciation at the same time as everyone else in a community does as well.

- It can then be shown how people destroy this balance and rich diversity on which human life and well-being depends by eradicating whole species directly or by taking away their means of survival (food, shelter).
- To nurture this paradigm shift, it is important to call in the help of those who are already living in close communication and cooperation with Nature: Indigenous Peoples, Animal and Nature Communicators, artists who are inspired by Nature, engineers and NGOs who allow themselves to become inspired by Nature to create sustainable human settlements and agriculture; and scientists who have opened new avenues of research by using the collaborative paradigm.
- In this paradigm shift, the more each communication with and about Nature can show how an aspect directly affects the individual human being in a positive way, the more Nature will be treated with respect and well-being and an eagerness to learn from her.
- The more people are filled with a sense of wonder and appreciation for the Nature around them and see how Nature directly or indirectly affects their own well-being and capacity for survival, the more people will respect Nature in all her expressions.

Here, finally are some other aspects of Nature that contribute to human well-being:

- The interdependence of all aspects of Nature; and how all aspects help one another—the cooperative aspects of all that is in all its complexity, which have inspired cooperative forms of business; the phenomenon of the commons that takes the form of open source, sharing of resources (Wikipedia, the Internet); etc.
- How one species helps the survival of another species; and how humans are impacted by this collaboration;
- That the world of Nature is sacred, for it cannot be replicated by human beings.

12a. Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production

- Pool our know how by creating Pools of Sustainable Development Experts consisting of people from diverse cultures worldwide. These can learn from one another and via the Internet, provide assistance to all those, both from developed and developing countries who are seeking ways to develop more sustainable pattern of consumption and production.
  - Use these Pools of know-how as a resource to be consulted as needed also by individuals and corporations looking for sustainable solutions.
  - Hold regular meetings of these Pools of know-how using the Internet to
  - demonstrate the types of solutions they can provide consisting of advice
  - from both developed and developing countries on how to obtain relevant
  - scientific and technological solutions to produce sustainable patterns of

- consumption and production. By meeting among themselves and providing
- consultations via the Internet they remain low-cost since expensive travel is
- avoided.
- Encourage such Pools of Development Advisors to share among
- themselves and exhibit the type of balance in giving and receiving that
- provides ecosystems with their inner stability. They would be low cost and
- function in the interest for all those involved. Being Nature inspired such
- Development Advisors' Pools will also tend to be durable, since Nature has
- had 15 billion years of experience in creating sustainable solutions.

- To have impact, the Science and Technology is best grounded on a solid base of internal love and a genuine intention to create sustainability. While this base can only emanate from within, it can be taught, nurtured and inspired. This is best introduced long before children are first exposed to Science and Technology. Ideally it will be a joint effort of Community, Family, School, Media and Government.

12c. Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities

- Mass education of people worldwide via the media (including the Internet and social media) of how the use of fossil fuels in a threat to the health of all people. The more people are informed how this effects them and their loved ones personally, the more effective such education will be in persuading people to become carbon neutral. Some arguments that can be used are: Fossil fuels have begun to destroy the environment in a number of ways, including by contributing to climate change, water pollution through fracking, as well as increased danger of earth quakes, oil transportation accidents, etc.; and how climate change is bringing about planetary boundaries that are ever less supportive of human life as we see through escalating numbers of disasters and sea-level rise.
- Education at all levels and in all contexts, including via the Internet and social media, on how to live without fossil fuels. See https://transitionnetwork.org/

Goal 15 - Protect, restore and promote sustainable use of Terrestrial Ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

- Provide financial incentives for effective conservation efforts across all international borders.
- Create systems for global sharing of information as to what is effective and ineffective in efforts to restore and sustain ecosystems in all parts of the world.
- Provide education to improve the understanding of the role and importance of trees and forested areas to all beings of nature and in particular their support for human existence from a global, not just local, perspective. Share information that increases understanding, respect and reverence for trees and forests and waterways. Increase awareness and understanding of the interconnectedness and interdependence between trees, forests, waterways not just for human life but for all life on the planet. Implement this type of education beginning with the youngest of children in their learning institutions.
- Create educational programs and agreements for international cross cooperation that are inspired from the deeper desire to honor the earth, all her beings, including all her peoples.
- Share information about the sources of contamination and toxicity and methods for cleansing and sustaining freshwater ecosystems. Provide incentives for decreasing contamination and increasing cleansing and preserving freshwater biodiversity.
- Provide education to land developers as to how to build in such a way as to maintain forested areas and incentives for doing so. Teach developers to work in harmony with the natural world based on the importance of biodiversity, plant and animal preservation.
- Create a new field of specialists who understand the complexity of species on the land and have their services be a part of the process of land development in tandem with Nature Communicators.

15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

- Actively develop new techniques, technologies, and materials that are sustainable and nature-centric that fulfil human needs without compromising forest integrity.
- Create a global forum for the sharing of practices and discoveries of effective and ineffective methods of forest management and restoration.
- Offer incentives for individuals and groups implementing effective and sustainable forest preservation and regeneration.
- Create educational opportunities for youth led experience based learning where youth earn wages and attain their education goals in a manner which leverages advances in technology, funded by public and private partnerships.

15.3 By 2030, combat desertification, preserve moisture and nutrition in soil, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land enriched degradation-neutral world

- Gather information from nature and people who practice known restorative practices such as biodynamic farming for ways to restore degraded land and soil, and restoring nutrient rich farmland.
- Have global networks and forums for sharing information about innovative and effective methods for soil preservation, restoration and farming as they are being developed and utilized all over the world.
- Implement the new technologies that already exist which can quickly restore topsoil. Make these technologies accessible, and provide incentives for their implementation as
- well as the development of new ways to maintain a healthy environment for all.

15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development

- Educate to increase understanding and respect for the importance of mountain
- ecosystems to all life on the Earth.

15.5 Take urgent and significant action to reduce the degradation of and improve and enrich natural habitats, halt the loss of, support balanced biodiversity and, by 2020, protect, support, and prevent the extinction of threatened species

- Educate on and create incentives that increase the understanding of and respect for the interconnectedness and interdependence of all life forms on this planet.

15.8 By 2020, introduce measures to strengthen and support native species prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species to maintain balance and healthy biodiversity.

- Provide education to increase understanding on the interconnection and inter relation of all life. Take our guide from nature rather than attempting to control nature with current human ideas and opinions which can be easily influenced and misdirected.
- Make a holistic study of ecosystems which have been altered by invasive alien species. Understand all components involved in the introduction and thriving of alien species and how alterations of the ecosystem contribute to the inability of the native species to maintain dominance. Consider measures to counteract and return the land and or water ecosystem to its

balanced and biodiverse state that strengthens the entire system, as opposed to harsh measures that are ultimately disruptive in and of themselves.

15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts

- Provide education and incentives for planners and developers to integrate core Nature-centred values in their projects and offer rewards for projects that have positive impact on biodiversity.
- In children's education and in programs to educate community, bring awareness to human values which are priceless but sometimes taken for granted. For instance, family, community, beloved animal family members, nature, clean air, fresh water, peacefulness, a nourishing and delicious meal, etc. Awareness of human values brings peace of mind and fulfilment often without spending money because the things we value most often are simply about making time for them.

15b. Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation

- One of the most important resources to nurture is the creative passion and identification with nature inherent in the minds and hearts of the young. Foster a close connection and reverence for all life and all of nature from birth. Develop this reverence in the youngsters that will one day maintain and lead the world. Allow for this connection, respect, and understanding to be fostered as the most significant creative resource for sustainable management of what are considered human needs, which is the forerunner to the need of sustainable management and conservation measures.

15c. Enhance global support for efforts to combat poaching and trafficking of preserve and increase respect and reverence for protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities

- Provide training, reward, recognition, and remuneration to poachers and traffickers to redirect their activities to that of protecting and restoring protected species of flora and fauna.
- Provide education and financial incentives, to increase respect and reverence for all life, motivate the protection of all species and assist in increased support for communities to pursue sustainable livelihood opportunities that are in harmony with Nature and supportive of all life.
- Focus world-wide attention on examples of individuals and communities living in harmony with their environment and each other and are thriving.

Technology

Goal 6 - Ensure availability and sustainable management of Water and Sanitation for all

6.3. By 2030, improve water quality by reducing pollution; eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

- To bring the Earth and her resources back into balance, make the use of toxic and dangerous chemicals in all sectors illegal; and develop earth friendly technology, including non-toxic cleaners; degreasers and clean motors for cars and planes.

Goal 7- Ensure access to affordable, reliable, sustainable and modern Energy for all

- Support and finance use of the sun, wind and water to produce clean energy.
- Address problems and impacts from burning wastes to produce heat or power. Burning trees for energy production is a highly inefficient method of fuel production.
- Develop integrated plans for replacing or limiting impacts from wood burning cookstoves including when and where it makes sense to use biogas digesters, integrating production of biochar in installing clean cook stoves, integrating soil and plant restoration and water retention landscaping with the use of such approaches, etc.
- Reassess some of the approaches that we see as renewable for their overall effect on the environment and focus on those that are most sustainable.
  For instance:
  - Address negative effects and impacts of using bio-fuels as a clean energy fuel. What biofuel feedstocks might be the most viable and have as little negative impacts as possible or conversely the most beneficial results;
  - Research and develop options for using biofuels to power vehicles including; jet planes, automobiles, helicopters, boats, ships, trains, and other motorized vehicles, as well as alternatives;
  - Research requirements to transition to electric vehicles that have as little negative impact on the environment as possible, as well as other alternative;
  - Research forms of hydro power with regards to the impact of each one on Nature and on human communities and settlement patterns, etc.
- Study Nature's methods of energy production. For example, consider intracellular mechanisms as inspiration for technologies that can be utilized on a larger scale. For instance, the hydra is a water creature which

has cellular mechanisms that give it perpetual life. Some of these mechanisms may inspire technologies useful in producing energy affordable by all.

- Follow Nature's way of recycling everything by using the by-products from one technology as a "fuel" for another technology until there is zero or near zero waste.

Goal 11 - Make Cities and Human Settlements inclusive, safe, resilient and sustainable

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

- Develop non-toxic, sustainable ways to clean the air and manage waste.
- Given that 90% of all waste-water in the developing world flows back into the water shed untreated and that some 2.6 billion people lack access to basic sanitation, it is essential that we provide a major focus and attention on dealing with and rectifying these problems.
- The cheapest and most environmentally benign way to deal with the massive amount of human and biological waste that is created is with biological waste treatment processes, which include composting of human and plant wastes and the use of aquatic plants and settlement ponds to treat waste waters.
- Grey water systems also need to be much more widely used to avoid having to treat such large volumes of wastewater as well. The Global Ecovillage Network has done much work at establishing such systems in small communities and many cities have been implementing such systems as pioneers in communities around the world. Now they need to be replicated and scaled up, not only at the local level but also as a part of the national and regional plans.

Goal 15. Protect, restore and promote sustainable use of Terrestrial Ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

15.3 By 2030, combat desertification, preserve moisture and nutrition in soil, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land enriched degradation-neutral world

- Implement the new technologies that already exist which can quickly restore topsoil. Make these technologies accessible, and provide incentives for their implementation as well as the development of new ways to maintain a healthy environment for all.

15.5 Take urgent and significant action to reduce the degradation of and improve and enrich natural habitats, halt the loss of, support balanced biodiversity and, by 2020, protect, support, and prevent the extinction of threatened species

- Implement the best of old methodologies and newer technologies quickly in a global fashion to halt further loss of soils, water, species, etc.

Policy and Law

Goal 6 - Ensure availability and sustainable management of Water and Sanitation for all

6.3. By 2030, improve water quality by reducing pollution; eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

- Implement legislation prohibiting people from producing products that are not 100%
- recyclable, and imposing high fines for any pollution or destruction of Nature.
- Cease the use of toxic and dangerous chemicals in all sectors.

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

- Establish a cap on the amount daily water use allowed.
- Ensure that big companies declare their use of water and have a daily limit.
- Ration water use when in short supply to ensure all have access to a fair share of available fresh water.
- Institute enforceable legislation that ensures that all have the necessary access.

6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

- Create many more areas that protect Nature, such as wildlife sanctuaries.
- Declare every important water source as protected; and designate more and larger areas as protected worldwide.
- Create legally enforceable legislation with stiff penalties for industries that dump their waste into water.
- Prevent new buildings from being built that would impact such areas.

Goal 11 - Make Cities and Human Settlements inclusive, safe, resilient and sustainable

11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage

- Immediately safeguard natural and cultural heritage sites through the prevention of harmful behaviour by developing relevant new laws and implementing and enforcing those that already exist through local, national and international action.

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

- Develop new standards and regulation in product manufacture that minimize the creation of pollution and waste.
- Minimize or eliminate production methods and waste materials that are toxic to life.

11b. By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sel1dai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels

- Limit the use of and protect people and the natural environment from coming in contact with toxic substances so as to limit the damage that can come from “Natural” disasters.

Goal 12 - Ensure sustainable Consumption and Production Patterns

12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

- Policies and regulations are needed at every level of government to reduce and eliminate waste. All producers should be required to carry out extended producer responsibility for the products they make to ensure that wastes are eliminated throughout the value chain and are instead used to provide basic feedstock’s for other products and processes.

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

- Adopt and implement zero waste policies as is beginning to be done in the EU. See among many others: www.zerowaste.com. Fully implement recycling and cradle-to-cradle manufacturing.

12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities

- Develop policies that give preference to or require procurement of goods that are produced using circular economy practices and that are determined not to have a negative impact on the natural environment.
- Strictly enforce laws that prevent inefficient, corrupt public procurement practices.
- Establish citizen panels with a mandate to recommend and set procurement policies that are socially responsible and advance sustainability practices and principles.
- Adopt policies and laws to hold those personally accountable that engage in corrupt practices or engage in procurement practices that harm the natural environment.

12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with Nature

- Dealing with harm to Nature, policies and laws protecting against abuse of Nature should include:
  - Requiring those harming Nature to work more closely with Nature, to connect with the majesty, subtlety and intrinsic wisdom and cooperation as well as the destructive and random viciousness that can also be found in the Natural Order.
  - Rectifying any harm done through, say, Pigouvian taxes, whereby harm done to Nature (and human beings) is fined and moreover requires
  - Restoring Nature to her original state; while, at the same time, the perpetrator is placed in situations where it becomes apparent how that harm to Nature affects him/her personally. As a part of making amends for harm done to Nature, the perpetrator should be exposed to education and described under that heading.

12c. Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities

- Implement legislation making it illegal to use more than ones carbon footprint; and to excavate for fossil fuels;
- Make use of the International Court of Justice to prosecute major offenders for violating international and cross border environmental laws.
- The creation of an International Environmental Court.
- Prosecution under universal jurisdiction of those who pollute the environment including through carbon emissions and fossil fuel pollution.

Goal 15. Protect, restore and promote sustainable use of Terrestrial Ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

- Leverage work from the MDG's Earth project as a system of record for the environment and a way of enforcing rule of law with shared environments; land, water, air and space.

15.3 By 2030, combat desertification, preserve moisture and nutrition in soil, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land enriched degradation-neutral world

- Create measures and accountability for effective practices of sustainable land preservation and renewal.

15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development

- Create international protections for delicate mountain bioregions.

15a. Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems

- Make Ecocide a crime against peace. Much work has been done to prepare the way by Polly Higgins. Higgins wrote an award-winning book called Eradicating Ecocide: Laws and Governance to Prevent the Destruction of Our Planet (1st Ed 2010, 2nd Ed 2015). In her book she sets out a full proposal that was submitted to the United Nations. Her

second book, Earth is our Business (pub. 2012), examines Ecocide law from the perspective of business impact and includes the draft Ecocide Act and indictments that were used in the mock Ecocide trial held in the UK Supreme Court in 2011.

- Create a World Environmental Court. Much preparatory discussion has already taken place within the UN on this topic.

Agriculture

Goal 12 - Ensure sustainable Consumption and Production Patterns

12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses

- Review and modify agricultural and marketing practices so as to address the problems mentioned above.
- Decrease food losses along production and supply chains.
- Develop programs, policies, and legislation at all levels of government that are sufficient to address the problems leading to food loss and waste found within that region or area.
- Promote and support the growth of small-scale food production in (rooftop) gardens, or in allotments, at the edge of cities where city dwellers can both grow fresh food and relax; and in vacant lots, community gardens and in school gardens where it is used for both nutritional and educational purposes. This can serve as a model for how we make the choice to preserve and only take/use what we need.
- Labour saving permaculture can be applied when choosing combinations of plants and animals to tend so that gardens maintain themselves using an eco-system approach. Where people provide their own food, they do not have to buy great quantities at a time, this decreases waste, the food can be eaten while fresh, it contains more nutrients and is better tasting.
- Demonstrate the advantages of buying food produced locally. Some restaurants promote a macrobiotic approach by advertising that their foods are all bought locally or within a 50 km radius, for instance.
- Decrease biodiversity loss (waste of animal and plant species) through such means as agro-ecology and agroforestry, creating natural buffer zones around farms, and restoring the natural environment through the use of water retention landscaping, etc.
- Encourage farmers to use organic methods of farming (which UNEP has found to be 2-4 times as productive as conventional agriculture in the developing world) through education and using monetary incentives. An unceasingly popular approach to help farmers financially who wish to move into organic animal husbandry is for people to “adopt an animal” (a chicken or a cow) by paying a small amount each year to the farmer where the animal is housed. In this way the farmer can gradually take the necessary steps to implement organic methods. Some farmers hold an “open day” and the foster parents of their animals are invited to visit the farm. Many sell produce and this allows a bond to form between the sponsor and “their” cow, etc.

About the Partnership on the Rights of Nature. Integrating Nature into the Implementation of the SDGs, our Endorsers and Chief Editors

The Partnership on the Rights of Nature. Integrating Nature into the Implementation of the SDGs consists of academic institutions, indigenous peoples, nature communicators, NGOs accredited to the UN and other organizations and individuals. These together with other colleagues from around the world participated in giving input to the reports. Often contributing organizations asked to be mentioned as special endorsers. This depended often on the degree to which they had participated, their interests and expertise. Since each of the reports was preceded by a listing of diverse special endorsers, editors, etc., we decided to streamline this combined document and mention only the chief editors at the beginning who had worked on various of the original reports.