

*Peace and Sustainability:
Cornerstones to survival in the 21st century*

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Executive Summary

The aim of this document is to create discussion around the role of peace and its relationship to sustainability. It uses the groundbreaking research done by the EIU on the Global Peace Index to highlight peace research and to create further debate around the relationship of peace, economics and business.

Peace is one of the most powerful and well used words in every language. However, the notion of peace, and its value in the world economy, is not well understood. Historically, peace has been seen as something won by war, or else as an altruistic ideal. There are competing definitions of peace, and most research into peace is, in fact, the study of violent conflict. It difficult to understand what we can't measure and without measurements, it is equally difficult to know whether our actions actually help or hinder the achievement of our goals.

The Global Peace Index is a ground breaking milestone in the study of peace. It is the first time that an index has been created that will rank 120 nations of the world by their peacefulness. Nations are ranked by measuring their 'absence of violence', using metrics that combine both internal and external factors associated with the peacefulness of a nation. Absence of violence is a concept that most people can relate to as being indicative of peace. By measuring the internal peacefulness of a nation, better understanding will emerge of what they can do to improve their peace.

Additionally, there are identifiable structural conditions that create or sustain peace. Having established a Global Peace Index

other social development indicators can now be run against the Index to determine how closely aligned these indicators maybe. This will now allow societies to better understand what drivers help to create or sustain more peaceful societies.

The major challenges facing humanity today are global – climate change, accessible fresh water, ever decreasing bio-diversity and over population. These problems call for global solutions and these solutions will require co-operation on a global scale unparalleled in history. Peace is the essential prerequisite to create the environment to achieve the levels of co-operation necessary.

Economics can help to create the conditions that are necessary to build and maintain peace. However, the economic benefits of peace are not well understood and to date there has been little research done into this field. One of the biggest beneficiaries of peace is business. It is intuitively obvious that prosperity increases in peace. Businesses wish to invest in areas of minimal violence, yet phrases such as 'the economics of peace' or 'the economies of peace' are rarely used, studied or researched.

The Global Peace Index is a rallying call to more adequately fund the study of peace. Studying conflict is not studying peace. Peace studies are not yet widely integrated into broader educational curricula, yet an understanding of why the Vikings became so peaceful or how the cantons of Switzerland coalesced into a peaceful multi-cultural nation might better equip societies and nations to prosper through peace rather than through conflict.

In a violent world, it is prudent to have defensive capabilities and there can be occasions when the judicious application of force is justifiable. But peaceful solutions once brokered and in good faith can create lasting peace and enhanced economic wealth.

The Global Peace Index provides the means for taking a more scientific approach to peace and creating metrics that can be measured, peace can now become a tool for many diverse groups. International aid can be predicated around improving various indicators pertaining to peace. Non-Governmental Organisations (NGOs) will have an improved capacity to know which nations are most likely not to fall into war, therefore being better able to utilize donor's funds. Politicians will have measurements that will enable them to create more peaceful societies at home and business will better understand which are the most stable countries in which to invest.

The establishment of the Global Peace Index is only a starting point in the study of peace. The Index will be refined over time. New metrics will be added, more accurate data obtained and more countries added. Time series extrapolation, once a number of years of Indexes have been produced, will allow for more accurate mapping of the direction in which societies are heading.

Without peace we cannot achieve the levels of cooperation needed to address the issues of climate change, lack of fresh water, ever decreasing bio-diversity and over population. Without peace, we cannot avoid the inevitable escalation of conflict over diminishing resources. We need to put in place international structures that will enhance global peace. It lies within the power of human societies to ease the strains we are putting on the planet.

To achieve this however will require *“new ways of cooperation between government, business and civil society. The warning signs are there for all of us to see. The future now lies in our hands”*. (Millennium Ecosystem Assessment 2005)

CHALLENGES FACING HUMANITY AND THE ROLE OF PEACE

At the beginning of the 21st century, humanity faces global challenges unparalleled in its history. These challenges include climate change, loss of biodiversity, lack of fresh water and overpopulation. The consequences of any one of these challenges could be devastating for all nations and all of humanity. These challenges have now been well-researched and are supported by thousands of scientists. The final chapter of the report highlights some of the extensive research which has been done on the subject.

History records that many great empires were built through war. These successful nations were the strongest competitors. Some might see this as the competition of great nations and would point to historical evidence that great nations and empires have been built on conquest. The world could be viewed through a Darwinian lens where *the fittest survive*.

But at the beginning of the 21st century will humanity's combative nature impinge on our ability to survive? Over the last 50 years two key elements have changed, which has created a need to rethink our role in the world:

- As the issues of climate change, degradation of the soils of the planet, shrinking fish stocks, full use of the available fresh water and overpopulation loom, the world has become interdependent in ways unimaginable only decades ago. Additionally, any conflict over these ever-decreasing natural resources will only deplete the resources further.
- The advances in the development and deployment of small arms, rockets and improvised bombs have made it increasingly difficult to win wars without the popular support of a large majority of the inhabitants in the conflict area.

These challenges need new ways of thinking and the solutions that will arise will need to be inclusive, equitable and acceptable to most nations in the world and their inhabitants. These challenges are unlikely to be solved through coercion and aggression.

Although many people would feel that the prospects are bleak, the reality is that wars and internal conflicts have fallen substantially in the last 25 years.

The first Human Security Report found that the number of armed conflicts has declined since the early 1990's by 40%, additionally genocides and political killings also declined from 1988 to 2001 by 80% and international crises fell by more than 70% between 1981 and 2001.

Since 2001 some of the gains have been lost, but these figures do give hope that humanity can work towards solving its conflicts without resorting to violence. Work needs to be done to reverse the slippage of the last couple of years and to improve on the gains of the late 20th century.

A report recently released by a panel of senior retired army generals heightened the need to improve peace measures because of the potential new areas of conflict related to climate change over the next couple of decades.

'Global climate change presents a serious national security threat which could impact Americans at home, impact United States military operations and heighten global tensions, according to a new study released by a blue-ribbon panel of retired admirals and generals from all branches of the armed services'. – National Security and the Threat of Climate Change Report.

The number of conflicts currently running is still substantial and the number of people affected directly or indirectly from war is very high.

CHALLENGES FACING HUMANITY AND THE ROLE OF PEACE

'Although wars and war-deaths are down, there are some 60 armed conflicts raging around the globe. There are still gross abuses of human rights, wide spread war crimes, and ever deadlier acts of terrorism.' – Human Security Report, University of British Columbia

In 2005 the World Refugee Survey stated:

More than 21 million internally displaced persons (IDPs) have been forced from their homes by persecution, war or disaster, but have not left their own countries. The highest numbers were in Sudan (7 million) Colombia (nearly 3 million) and the Democratic Republic of Congo (more than 2 million)

If we cannot solve these major challenges facing humanity, it will not only be the nations directly affected that will suffer. Nations unaffected directly by wars or major environmental disasters will also suffer significant economic loss. The nations of the world are more dependent on the health of each other, economically, financially and ecologically, than at any stage in history. For example, if growth in India or China's economy were to substantially slow as a result of ecological breakdown, the effects on the EU and US economies could be highly significant. Similarly, what would be the effect on India or China's internal cohesion from major economic failures in the EU or the US?

Force is often seen as the most effective way of influencing behaviour. However, human behaviour is also significantly influenced through positive incentives. A more peaceful world, with greater global cooperation would also facilitate growth in the world economies.

As nations became more peaceful, important economic relationships such as trade and investment could be expanded, but to achieve these ends new global economic models need to

be developed that are not nationally based and account appropriately for environmental assets. New international treaties and organisations need to be formed to organise and regulate international relationships on the basis of peace and sustainability. Further chapters in this paper pull together some of the leading thinking on what could constitute the basis of a future global economic model. However, much research, analysis and debate is needed.

Environmental considerations have also become highly important in most societies. One of the interesting relations that have emerged from the Global Peace Index is the relationship between the top 10 nations in the Global Peace Index and their environmental performance ranking. Their environmental performance far exceeded similar nations even with higher per capita incomes. – *Appendix A Table 1*

Business is what underpins the relationships between most nations and provides the platform for personal security and life-meaning for most people on the planet. It seems intuitively obvious that business thrives in peace, yet understanding the inter-relationships between business and peace and how peace is an enabler of wealth is not well understood. An analysis of the most peaceful nations shows a strong correlation between per capita income and peace.

By implementing global strategies that increase the peacefulness of nations the global business environments will become more robust, multi-national organisation will expand as their markets expand and the interlocking investment and trade will help to underpin future peace. Through the correct pricing of sustainability, business and individuals have incentives that will naturally lead individuals and organisations to a peaceful and sustainable future.

PEACE AND ECONOMICS

Background

Although we have the concept of a war industry and the economics of war, few people would relate to a peace industry and the economics of peace. Yet it is evident that business wishes to invest in areas where there is minimal violence. The economic benefits of peace seem obvious.

At the beginning of the 21st century the economic benefits of peace are not well understood and little research is done into the economics of peace. If it is possible to draw conclusions about the economic benefits of peace then it may be possible to transform the world through business-led initiatives.

If it could be demonstrated that peaceful environments had a better propensity for stability, could long term debt be more aggressively priced? If there was a relationship between peacefulness and growth, would more capital inflows result? Similarly, would new investment funds be created that invested in areas of the world that had the fastest improving prospects of peace? These are only some of the questions that could be posed.

Some initial investigations from data obtained from the Global Peace Index show a strong correlation between peace and per capita income. This still raises the question of whether peace breeds prosperity or prosperity breeds peace. A further analysis of business environments show that between 2001 and the present the most peaceful nations business environments improved compared to other countries with the higher or similar per capita income. *Reference Appendix A Table 2*

Today the nations of the world spend approximate \$1.3 trillion dollars on defence, with the US spending nearly half that amount. Yet the expenditure on building peace is negligible. If 1% of the total arms expenditure was diverted to new peace initiatives then \$13 billion could be spent in proactively creating peace. But to understand the best approach, more study needs to be done and the economic models need to be developed. The productivity and wealth creation benefits could be exceptional.

The following sections on economics and peace have been drawn from sources that are exploring the relationship between peace and economics. The commentary aims to create discussion and show the interrelationship between peace and economics, rather than offering definitive solutions. In researching this document, it is evident that there is little research in this field and most of it is based on research undertaken by a group of eminent economists known as The Economists for Peace.

PEACE AND ECONOMICS

A Global Economic Model Inclusive of Peace

We have become accustomed to viewing economics from a national perspective. Most individuals have some knowledge of how the economics of a nation operate. Very few individuals would argue that some services need to be delivered by government. However, the same is not true of the global economy or the services that should be provided globally.

Peace and sustainability should be viewed as key global services that need to be provided for the common good of humanity.

A national economy cannot operate effectively without the provision of public goods or services. So, too, the global market economy cannot be efficient without global public goods or services.

Examples of national public goods and services are infrastructure development, education, public health and economic stimulus.

Examples of global goods and services are peacekeeping and peace building, development aid and environmental regulation.

It could be argued that the under-provision of global public goods and services occurs for much the same reason as at a national level. As Adam Smith noted in 1776 regarding nations 'they may be of the highest degree of advantage to a great society, however the profits could never repay the expenses to any individual or group of individuals'.

Similarly, what is good for the citizens that comprise the nations of the globe cannot be at the expense of the citizens of any one nation or group of nations.

Although the greatest economic good for all citizens is global peace and sustainability, some citizens of any one nation may benefit from the destructive forces unleashed in another nation, or even their own.

Global public response is therefore necessary to fill the gaps left by national responses, just as national public response fills the gaps left by individuals or collections of individuals.

The resulting benefits are not just economic. They may result in greater security without fear, healthier lives and an environment that can sustain more lives.

If we look within the most peaceful nations of the world, there are many attributes of these societies that create their richness which would hold true in creating a global civil society.

An international rule of law or a global system of justice is essential to economic growth that will benefit all nations, their citizens and the businesses that operate within their borders. The proposed International Criminal Court, which aims to enforce crimes against humanity, is a foundation. The role of global law needs to be extended to persons, property and contract.

Global institutions will evolve as humanity and the leaders of humanity realize that the survival of their civilizations revolve around the dynamics of global sustainability and peace. Sustainability cannot be achieved without peace.

Similarly the concept of global development can be equated to national economic stimulus and welfare. Although nations and the individuals within these nations may disagree on the nature and levels of welfare, all economically successful nations provide economic stimulus and welfare.

Therefore, a global public initiative is required to fill the gap left by any single nations inability to act for the common global good.

Based on UN University Tony Addison's Post-Conflict Recovery Feb 2005

PEACE AND ECONOMICS

Economic Benefits of Peace

Some ground-breaking research has been undertaken in this area, although work on the economic benefits of peace is in its infancy.

The economic benefits of peacekeeping and peace building are not well understood. According to Collier and Hoeffler, 2004, a typical civil war in a developing country costs at least US\$64 billion dollars. This exceeded the annual global Official Development Assistance in 2004, a significant part of which was committed to post-conflict reconstruction.

Secondly, economic activity is inhibited by high transaction costs associated with weak security of person and property. Private investment falls and is distorted away from employment-generating activities towards quick turnaround activities. This is the natural consequence of uncertainty: risk greatly increases even over a short period time.

Additionally, conflict over scarce resources increases the scarcity of these resources. This may occur through events that destroy the infrastructure that extracts these resources, lack of adequate capital investment into the resources being fought over and the difficulty of transferring the goods to market in a conflict area. The uncertainty of future supply will also build a premium into the cost of the resource.

The sustainability debate takes on new dimensions when conflict scenarios are taken to their logical conclusion. As natural resources such as timber and fresh water become scarce, conflict to control these resources will degrade the resources ever further. This, combined with the uncertainty premium, will drive costs higher.

It can be argued that global public goods and services will be resource-saving by reducing the loss of the investment and output associated

with war, as well as resource-generating by enhancing the efficiency of production and market exchange. Both rich and poor countries bear the cost of conflict whether through increased homeland security, destruction of productive assets or the loss of markets that international businesses could have had to invest in.

The US Department of Defense Schwartz and Randall study of 2003 stated that global warming, if not halted, will be a future catalyst for inter state and civil wars.

The finite level of resources and the effects of the consumption of these resources on the sustainability of our habitat lead to the inevitable question of how to fund global public goods and services to avoid conflict and economically reward sustainable practices.

It should be noted that the economies of the rich nations have more than doubled in the last thirty years, yet they are spending a substantially smaller proportion of their GDP apparent that the resources necessary to fund public global goods and services are available. What is lacking is political will.

As with the maintenance of any asset, the cost of repair accelerates over time when adequate maintenance is not performed. Similarly, environmental damage works in the same way except that resources such as old growth forests and coral reefs have longer lead times to recovery.

By initiating public global goods and services to fund peace building, development aid and conservation, future costs can be alleviated by early action.

Based on UN University Tony Addison's Post-Conflict Recovery Feb 2005

PEACE AND ECONOMICS

The Economic Benefits of Peace and Peacemaking

Johan Galtung coined a concept known as 'positive peace' which is much more than the absence of violence. Positive peace deals with the structural violence that flows from the inequalities and injustices of different political, social and economic systems.

It could be stated that peace is more than the absence of violence - it is the presence of inclusion, fairness and decency.

Many governments structure their international relations around ideas of forceful diplomacy, whilst an economist might think of introducing incentives to induce others to voluntarily change their behaviour.

When hostilities cease, long term peace will only emerge if the underlying causes of the violence have been addressed and dealt with. This is much more likely to be achieved as a result of political, social and economic change than through the presence of extended peacekeeping, although that too is important for breaking impasses between warring parties. It can be seen from the Global Peace Index that many of the most peaceful nations in the world have at one time been aggressive nations. Through structural change they have achieved the respective levels of prosperity today.

Economics clearly has a critical role to play in building, solidifying and maintaining peace. The key to influencing behaviour is to create conditions in which desired behaviour is voluntarily chosen by the participants in pursuit of their own goals.

It can be argued that there is no particular reason why this approach cannot be applied to nations for future peace and sustainability.

The problem lies in identifying a set of conditions for a nation and establishing a set of policies and institutions capable of creating these conditions.

Economic relations between nations can ferment war and worsen structural violence, or alternatively help keep the peace. It is the character of economic relations, not their mere existence, which determines which it will be.

Adam Smith saw this clearly 230 years ago in his comments in "Wealth of Nations" on the British Empire and free trade.

Relationships where the benefits overwhelmingly flow in one direction tend to provoke hostility and conflict, similarly it can be seen that exploitive relationships create incentives for disruption by those being exploited who will tend to try and find ways to destroy or radically restructure the relationship, or take revenge. A balanced relationship is a more efficient relationship, the benefits being achieved at a lower cost.

The effectiveness of mutually beneficial and balanced economic relationships in keeping peace is illustrated by the development and growth of the European Union. These nations have fought numerous wars with each other but now rely on each other's trade.

Since trade and investment are two of the most important economic relations between nations, the expansion of international trade and foreign investment has the potential for being a powerful force in keeping the peace. Unfortunately international institutions have fallen short in lowering trade and investment barriers of developed nations to assist developing nations trade.

PEACE AND ECONOMICS

Joe Stiglitz, former chief economist at the World Bank, argues that 'globalization can be reshaped and when it is, and when it is properly and fairly run with all nations having a voice in policies affecting them, then there is a possibility that it will help create a new global economy in which growth is not only more sustainable and less volatile but the fruits of this growth are more equitably shared'.

Global sustainability is the changing paradigm that underlies a peaceful and more equitable world.

The poverty and frustration of so many of the world's people is a fertile breeding ground for violent conflict. People in desperate economic circumstances tend to reach for extreme solutions. They tend to be much more easily manipulated by demagogues and seem easy prey to aggressors.

Competition for finite resources generates conflict. This competition continues to bring nations and sub-national groups into conflict and as environmental constraints become tighter, conflict is likely to increase. Water and air do not recognize national boundaries: acid rain, air pollution and greenhouse gases are examples. Similarly, people fleeing starvation or conflict will not recognize national boundaries.

Some have argued that the expansion of economic activity itself is inconsistent with maintaining environmental quality – that consumption generates an unavoidable degree of ecological stress. However, developed nations' levels of well-being can be maintained and the developing nations levels of well-being can be improved by:

- improving the efficient use of natural resources
- developing pollution-abating technologies
- a substantial shift towards qualitative based economic growth in the developed nations rather than quantitative based economic growth.

The efficient use of natural resources involves the more intensive and widespread use of recycling non-renewable materials, efficiency improvements in design and operation of energy-using systems and greater use of ecologically benign, renewable energy and materials.

We can create a web of international economic relationships that not only serve our material needs but also provides strong positive incentives to create and keep peace. We can build a world that is more equitable, more prosperous and peaceful.

Source: L.J. Dumas Peacemaking and Peacekeeping, The Economics of Peace and Security Journal Vol.1 No. 2

HOW PEACE CAN HELP

Characteristics of a Culture of Peace

Peaceful nations demonstrate certain characteristics or attributes. Nations at the top of the Global Peace Index manage to balance the interests of the private and public sectors in ways that result in most people feeling that they have a “stake” in the State and social system. These components are best secured by the State being committed to creating a positive environment for business and by business supporting the State. Both need to be committed to promoting the public good and reasonable degrees of equity and or equality of opportunity for all peoples in the system.

Peaceful nations embrace the concept of inclusiveness. If we extend this concept to humanity as a whole, it presents a starting point for the beginnings of global peacefulness.

Most peaceful societies tend to have a range of formal and informal mechanisms for dealing with grievances, conflicts of interest, and questions of marginalisation and exclusion. In particular, they have deliberate and intentional mechanisms for balancing majority prerogatives and minority rights. They also tend to have mechanisms for containing conflict which is inevitable and essential to the effective functioning of all systems. Many would argue that creative friction constructively channelled is the fuel of progress.

Peaceful societies have strong sanctions against direct violence. This is reflected in an independent and an effective police, legal and judicial system which is capable of controlling and preventing direct violence. It is also reflected in high levels of sensitivity against violence as an acceptable way of

settling disputes. What is interesting is that some of the nations ranking in the top twenty have not always been peaceful. They have changed over the years. This means that violent behaviour is not permanent: it can be reversed. Decision-makers can realise that violence is not the most effective instrument for advancing national interests.

The top twenty nations of the Global Peace Index also tend to have quite modest military systems that are largely non-offensive, even if some of them such as Japan are large in per capita terms. Most also tend to pursue what can be called cooperative or common security strategies, advancing national interests and pursuing national security in collaboration with others. They also tend to play active and responsible roles in regional and multilateral institutions. They view the United Nations as the cornerstone of a critical set of global institutions for generating what can be called the international rule of law and the peaceful settlement of disputes.

An awareness of the attributes of peace can provide politicians and decision-makers with a tool to develop peace initiatives, and to create and sustain more peaceful societies. The effectiveness of government actions can then be measured through the Global Peace Index. This information allows governments to better understand what they can do to reduce violence and conflict. And, with this awareness, business could make more confident investment decisions on the basis of actual and predicted stability in a community or nation.

HOW PEACE CAN HELP

Peace Research

Although much worthwhile research has been done into peace, the subject is relatively under studied compared to other disciplines. Although there are many areas that would prove to be fertile ground for research, we have limited this section to some examples pertinent to this paper.

The Global Peace Index is a study of national peacefulness. Using a revised model, regional peace can be measured within nations by city, county or state.

The exercise of understanding and studying the peacefulness of regions within nations is not within the parameters of this study. By studying some of the larger nations regional peacefulness or selected nations with highly varying levels of peacefulness a better picture will emerge of national peacefulness.

One of the key benefits that emerges from the Global Peace Index is the concept of measuring peace. It is very difficult to understand what we can't measure. It is also very difficult to understand the effectiveness of our actions without measurements. Additional methods need to be developed to measure peacefulness.

The Global Peace Index suggests that there are some important differences between peaceful societies and others. Peaceful societies are by and large well integrated and coherent societies. What are the dynamics that caused the most peaceful nations to become more peaceful and how can these attributes be better introduced into society.

What are the mechanisms for promoting cultures of peace and confronting cultures of violence more effectively?

Are there ways of communicating that are effective, assertive and confrontational but lessen the likelihood of violence? What are the mechanisms that stimulate higher levels of empathy and awareness between people, groups, organisations and nations?

Successful cases of non-violent political transformation need to receive more recognition in education. More attention needs to be given to the ways in which people movements in Poland, Bolivia, Uruguay, the Philippines, Eastern Europe and the former Soviet Union, Sub-Saharan Africa and Central Asia have managed to generate very significant political changes through non-violent, principled politics.

There is a lot of work on the relationship between human rights and conflict. Much more attention needs to be given to the ways in which an expansion of universal human rights principles might generate peace.

There are critical relationships between economic well being and peace, or conversely poverty and violence. While this is a complex relationship, the whole issue of economics, development and peace building is one that needs much closer attention.

Interestingly the most peaceful societies tend to be small in area and relatively small in population. In the top 20 nations in the Global Peace Index, only two nations come from the world's top 20 most populous nations and only one from the top 20 largest nations in size.

Peace can be viewed as a dynamic process rather than as a final, attainable end. If peace is viewed in this way then it needs to be continually created in many small ways otherwise it will die. This is analogous to a

HOW PEACE CAN HELP

living system. A systematic study of societies and the interactions of individuals and groups within these societies may shed light on the micro processes of peace and how these generate peaceful processes at the macro level. If there were methods of measuring micro interactions then inter-personal peace could be placed in a more scientific setting.

Peace is a process that encompasses creative and innovative ways of dealing with differences, grievances, challenges to identity and conflict. How do the individuals and groups within the top 20 nations from the Global Peace Index deal with friction?

We need better understanding of the 'DNA' of peace as an integral part of cooperative human relationships. Studies has been done on violent individuals to trace the genes that have created their behaviour, similarly the emotional relationships of flight or fight are well understood. What are the characteristics of people who are peaceful and successful, what are the biological and emotional dynamics that drive people to seek peace?

The pursuit of peace is a dynamic quest for non-violent problem solving. A critical research task, therefore, is expanding the ladder of tried and tested options for individuals, groups, organisations and nations for dealing with the everyday conflict proactively, creatively and non-violently and without adopting a pacifist position.

One of the challenges confronting peace researchers and peace builders is how to maintain and expand areas of stable peace both within and between communities and nations. Are there certain groups, agencies or types of individuals that can expand the qualities of peace into their surrounding communities? How can they be empowered?



MAJOR CHALLENGES FACING HUMANITY

Decreasing Biodiversity

Humanity, along with all species is dependant on our habitat. Degradation of our environment will affect the carrying capacity of life on the planet and this in turn will affect the number of people that the planet can support. Many of the natural resources of the planet when degraded have impacts far beyond what is commonly perceived.

Due to the large body of research that has now been done it is now clear that many of the world's ecosystems are under intense pressure from human encroachment, the harvesting of natural resource and land clearing.

This pressure is causing the destruction or degradation of habitat and species and permanent loss of productivity, threatening biodiversity and with it human well-being. (Intergovernmental Panel on Climate Change Fourth Assessment Report 2007 Working Group 11)

Today we can see significant impacts on many ecosystems and this has been observed in all parts of the globe. The following findings highlight the issues we face:

“The resilience of many ecosystems is likely to be exceeded this century by an unprecedented combination of climate change, associated disturbances (eg flooding, drought, wildfire, insects, ocean acidification), and other global change drivers (e.g. land use change, pollution, over-exploitation of resources). Intergovernmental Panel on Climate Change Fourth Assessment Report 2007 Working Group 11:5)

It is generally recognized that ecosystems are degraded or destroyed when the productivity of the biosphere is not able to keep pace with human consumption and waste generation. This is intimately related to the human population of the planet.

Human consumption is now 23% larger than nature's capacity to regenerate or to absorb our ecological footprint (Millennium Project State of the Future Report 2006)

“... we are using the planet's resources faster than they can be renewed – the latest data available indicates that humanity's Ecological Footprint, our imprint upon the planet, has more than tripled since 1961. Our footprint now exceeds the world's ability to regenerate by about 25%.” (Living Planet Report 2006: 1)

The changing state of global biodiversity and the pressure from human consumption on natural resources brings with it increased human hardship, this is particularly true for the poorer nations whom have less adaptive capacity than richer nations.

The issues relating to decreasing biodiversity are urgent. The earth has entered an era in which humans are the dominating environmental force and environmental crises have sociological and economic consequences.

It can be argued that poor economic performance raises the risk of state failure, which in turn poses a potential threat to international security. Maintaining the health of ecosystems and biodiversity, and promoting sustainable agriculture and economic growth, reduces the risk of state collapse and with it the potential for conflict.

MAJOR CHALLENGES FACING HUMANITY

There appears to be a link between peaceful nations and ecological performance. If increasing the peacefulness of nations who are at the most ecological risk can help them improve their economic performance and mitigate the potential for conflict then this would be of immense value to humanity.

What will be needed is an increased level of co-ordination at both the national and international level. To meet the challenges of bio-diversity, globalization cannot be viewed simply as an economic process describing the movement of goods and services between independent or isolated nations. It will require the formation of complex, interdependent nations and systems. There must be a multi-national approach and international commitments to conserve biodiversity and to help create more peaceful societies. These societies will provide a basis for more sustainability and to share information and critical technologies useful in achieving these ends. Organizations such as the UN and other regional organizations need to be strengthened to meet these ends.

The choices we make can lead to a sustainable society living in harmony with healthy ecosystems or to the collapse of these ecosystems which will then have a dramatic effect on our economies and our ability to survive.

Lack of Fresh Water

Water is a renewable but finite resource. We are now using about half of the fresh water available on the planet. Many nations now have water shortages that threaten the health and economics of these nations.

In recent years the world has seen catastrophic damage and loss of life from an excess of

water – monsoons, tsunamis and floods.

Ironically, at the same time:

“millions of people live without access to adequate or clean water, with little hope their situation will improve as the global water-shortage crisis escalates.” (IRIN 2007)

“By 2050, as much as 40% of the world’s population may have to live in countries with insufficient freshwater stocks to meet the combined needs of agriculture, industry, and domestic use.” (GBN 2007: 9)

By far the largest quantities of water are used in the growing of food and by industry. The water sources for these industries in many cases flow across borders of both states and nations which will add to the potential for conflict.

“Many major rivers now run dry during part of the year. Water withdrawal from lakes and rivers has doubled in the last 40 years. UN agencies estimate that without major changes, by 2050 more than 2 billion people will live in water scare areas. Agriculture accounts for 70% of all human usage of fresh water.” Millennium Project State of the Future Report 2006.

One of the questions that this raises is how do we bring about changes in our agricultural industries globally to become more efficient in water usage and substituting to crops that are more water friendly.

As populations grow and cities increase in size, industrial, agricultural and individual water demands are rising. According to the World Bank, world-wide demand for water is doubling every 21 years. However, population growth alone does not account for increased water demand. Since 1900, there has been

MAJOR CHALLENGES FACING HUMANITY

a six-fold increase in water use for only a four-fold increase in population. This reflects greater water use associated with rising standards of living.

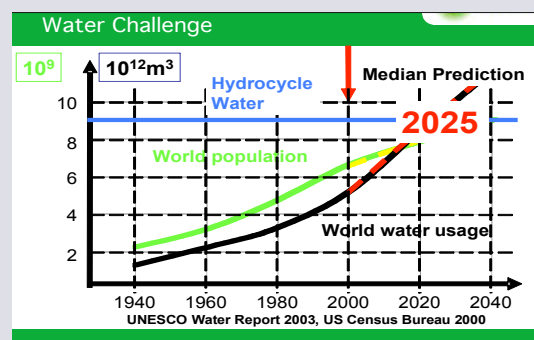
Consumption patterns show an ever-increasing desire for products that require high levels of water. (IRIN)

Water reduction is occurring through environmental change and human exploitation. Climate change will only exacerbate the problem. According to the United Nations Water Development Report of March 2006,

Water quality is deteriorating also:

“... increased pollution is damaging ecosystems and the health, lives and livelihoods of those without access to adequate, safe drinking water and basic sanitation” IRIN:1

The primary indirect driver of water degradation and loss of rivers, lakes, freshwater marches, and other inland wetlands (including loss of species or reductions of populations in these systems) has been population growth and economic development.



Estimates are that water consumption, at current rates of increase will pass the available fresh water on the planet. This will lead to some areas still having an abundance but others falling well short of what is needed even for basic survival.

Other practices are also adding to our water shortage one example is salinity, caused by industrial farming and over-extraction. Additionally, continued degradation of water quality increases the prevalence of disease.

As demand for fresh water reaches the limits of supply, potential conflicts may loom between regions, states and nations that share freshwater reserves. Many countries get substantial amounts of their water from rivers that cross the borders of neighbouring countries where relations are already strained.

Today, with more than 500 million people living in semi-arid areas and more than 200 million in arid areas, access to water and water allocation is a key source of tension. (Impacts of Climate Change 2007:8)

Virtually all of the world's major rivers run through a number of different countries:

“yet there are few international structures, treaties or institutions in place to efficiently and peacefully manage shared water resources.” (GNS 2007: 9)

Access to adequate fresh water and increased water demands require cooperation between nations. Nations will be drawn into water disputes unless they establish agreements on how to share reservoirs, rivers and underground water supplies. In this context, water is likely to become a future cause of war between nations. Peace needs to be proactively undertaken between these nations.

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The Global Peace Index provides the ability to measure the progress of these nations towards or away from peace.

There is an urgent need for increased international management and cooperation if conflicts over water are to be avoided. Despite increased recognition that the present crisis is a combination of the interrelated factors of environmental damage, inadequate governance, overpopulation and climate change, learning to share water will also build peace.

Overpopulation

In the 20th century, world population grew from about 1.5 billion to 6 billion at the end of the century. Over the last 50 years the rate of growth in population has not been matched before in human history.

It is estimated that the majority of population growth will occur in urban areas of developing countries. Millennium Project State of the Future Report 2006

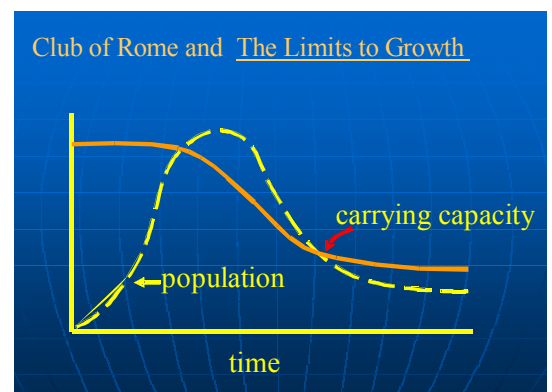
Overpopulation is best understood, not in terms of global population density, but as the numbers of people in an area relative to its resources and the capacity of the environment to sustain human activities, that is, its carrying capacity. Under this definition overpopulation might be corrected with no change in the number of people.

An area is overpopulated when the population cannot be maintained without rapidly depleting non-renewable resources (or without converting renewable resources into non-renewable ones) and without degrading the capacity of the environment to support the population.

By this standard, the planet overall and many individual nations are already overpopulated.

By 2050 the fertility rate of the world will have fallen below replacement levels for 75% of the world. Current estimates see the world population peaking at 9 billion people. Millennium Project State of the Future Report 2006

The graph below highlights the worst possible scenario for humanity where the population of the planet exceeds the carrying capacity of the planet to sustain life.



Population trajectories indicate world population reached:

- 2.5 billion in 1950
- 6.1 billion in 2000
- 6.6 billion in 2007 today

Projections are the world population will reach:

- 7.2 billion by 2015
- 9 billion by 2050

Source: Millennium Project

At some point the increasing population of the planet will be utilizing so many resources that the degradation of these resources will decrease the planet's ability to sustain life. It can be seen by the studies on bio-diversity that this point is approaching. If the solutions

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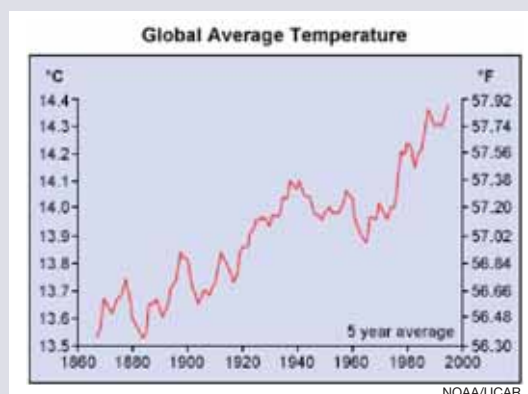
are not peaceful then the wars that will be fought over the remaining resources will only deplete those remaining resources even further.

Leaders of the future must work in harmony. To do this they need models, tools and systems that enable them to react cohesively and with a vision beyond the short term interests of individual nation states. Without peace between nations it will be impossible to create the necessary environment that will nurture the qualities necessary to achieve sustainability.

Climate Change

In recent years climate change or global warming has become one of the most researched areas in environmental studies.

While many factors continue to influence climate, scientists have determined that human activities have become a dominant force, and are responsible for most of the warming observed over the past 50 years. Human-caused climate change has resulted primarily from changes in the amounts of greenhouse gases in the atmosphere, but also from changes in small particles (aerosols) as well as from changes in land use. Intergovernmental Panel on Climate Change 4th Assessment Report 2007 Working Group I Report: 105



We now know that the world is heating up. In the 20th century the average temperature of the earth's surface increased by an estimated 0.6°C.

Although 0.6 degrees may not seem a large increase over the century, the rate of change is however accelerating and unless corrected mankind may face an environment that is hotter than at any stage since its existence. As the speed of change increases it becomes increasingly difficult for species to adjust, including human beings

Observational evidence from all continents and most oceans shows that many natural systems are being affected by regional climate changes, particularly temperature increases" ... Global warming "has had a discernible influence on many physical and biological systems" Intergovernmental Panel on Climate Change 4th Assessment Report 2007 Working Group II Report: 1-2

Large re-insurance companies estimate the annual economic loss due to climate change could reach \$150-200 billion a year within a decade. – Millennium Project, State of the Future Report 2006

Exposure to projected climate change is likely to also affect the health status of millions of people with:

- increases in malnutrition
- increased deaths, disease and injury from extreme weather
- increased diarrhoeal disease
- increased frequency of cardio-respiratory diseases

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Intergovernmental Panel on Climate Change
2007 Working Group II Report

When pushed past a certain threshold the damage of these natural events increases exponentially. If natural buffers have been eliminated, that threshold is lower.

Other effects of climate change will include changes in agricultural yields, species extinctions and increases in the range of disease-causing organisms. Additionally, climate change can slow the pace of progress toward sustainable development either directly through increased exposure to adverse impacts or indirectly through the erosion of our capacity to adapt.

The Stern Review on the Economics of Climate Change released in October 2006 states.

“Unabated climate change could cost the world at least 5% of GDP each year; if more dramatic predictions come to pass, the cost could be more than 20% of GDP.”
Stern Report 2006

Through creating an environment of global peace, nations will be better equipped to manage situations that potentially could lead to conflict. Co-operative and inclusive ways of managing global resources, economies and lifestyles will help to alleviate the potential for conflict that climate change could create.

It is clear that the impacts of climate change can be mitigated or greatly varied depending on the levels of co-operation that nations can achieve and the strength of our global institutions.

USES OF THE GLOBAL PEACE INDEX

How Governments can Improve their Nation's Peacefulness

The Global Peace Index is a measure that governments can use to help increase the peacefulness of their nations. Nations hold the key to peace and can improve their nation's peacefulness by supporting initiatives at national and local levels and by using the Global Peace Index to measure the success of their initiatives.

The methodology of the Global Peace Index can also be adapted to help measure the peacefulness of regions within a nation, there is no reason why it cannot be used even at the level of cities, towns or counties. By using only the internal indicators as a measure the methodology can now be tailored for use internally.

By having a measurement, various programs can now be evaluated for their effectiveness. By applying programs to small areas many initiatives can be evaluated with cost effectiveness to assess which programs are the most effective. This now provides an effective way of assessing the costs and effectiveness of peace. Further economic models would need to be built up to understand the full benefits to the community. These models would cover such components as costs of incarceration, reduced policing, improved business environment, lessened security and the soft benefit of improved happiness within the local community.

Probably one of the greatest challenges to government action in improving peace is to sustain the initiatives over time. Having a mechanism to measure progress provides the justification to sustain the initiatives.

Governments will now also have a tool by which they can measure their own performance against their peace building programs. Governments may decide to focus on particular indicators that perform more poorly thereby, over time, improving their performance.

The Global Peace Index may also provide a tool for which the people of a nation, state, county or city can hold their governments accountable. Peace, well-being and happiness are all closely related, therefore peace should be of significance in any political process.

Benefits to Business

A widespread but mistaken view is that international business interests are at odds with creating responsible and peaceful societies. There is a clear relationship between peace and an improving business environment. In fact, it can be argued that the success of global business is linked directly to the stability and civil order that peace provides.

Business benefits greatly from an environment of peace. Understanding the attributes of peace allows governments to better understand what they can do to improve the business environment. This knowledge allows business to make more confident investment decisions on the basis of actual and predicted stability in a community or nation.

The costs to business of increased levels of violence needs to be analyzed and understood. These costs will vary from business to business, but these types of analyses may show that some businesses become more viable in higher levels of violence than other businesses. Conversely, some businesses may be more beneficial to economic recovery as nations improve peacefulness.

USES OF THE GLOBAL PEACE INDEX

There is a correlation between per capita income and peacefulness. This leads to some important questions: Why do more peaceful nations experience better economic performance than less peaceful nations? How can the predictors of growth be leveraged in less peaceful environments? How can the global community identify what kinds of business would benefit from increased national peacefulness and encourage business in these areas?

Through understanding the peacefulness of nations, business is better equipped to make successful investments. The life of most infrastructure can be measured in decades. If it was known that a country was moving towards peacefulness then it would provide a more secure place to invest with decreasing costs of business as the nation increased its peacefulness. Additionally, the local market should improve and expand with increased peacefulness.

As nations become more peaceful the costs of business will decrease. Security costs, insurance premiums and costs of transport are some of the areas where savings will be made. Additionally, it will be easier to hire expatriates and management's time will move away from security issues to more productive uses of time.

If the direction of peacefulness can be measured then new forms investment analysis could be done. Would bonds be more aggressively priced for nations that were becoming peaceful due to decreased business risk? Could funds be established that invested in countries that had increasing peacefulness? Would loans be more secure and could banks be more aggressive with their loan portfolios in nations whose peacefulness was improving?

Uses for International Negotiations

International action to achieve peace should provide an overall direction for practical policies and diplomacy. The Global Peace Index can help shape new forms of international relationships. By measuring the peacefulness of nations, it is now possible to tie international relationship to quantifiable levels of improved performance in peace.

International aid can be tied to programs that worked on the structural elements of peace and the Global Peace Index or its methodology could be used as a tool to measure the improvements towards to goals that were tied to the aid.

If it were possible to know which nations are moving towards peace then development programs could be set to enhance their progress, similarly nations that were moving away from peace would need different types of programs. Development aid maybe more suited to nations that were improving their peace and peace-building may better suited to nations that were moving away from peace.

Treaties between nations could be built around both nations improving their peacefulness. By placing emphasis on the external measures of peace treaties could be developed that aimed at certain improvements in peacefulness, thereby creating the right environment of trust and cooperation to enhance the likelihood of success for sustainability initiatives.

Furthermore, there may be scope to establish an international alliance called P10 that includes government representatives from the top 10 most peaceful nations of the Global Peace Index. The P10 may play a particular role in the funding, support or thought-leadership in peaceful initiatives.

USES OF THE GLOBAL PEACE INDEX

At various levels within the Global Peace Index nations there may be alliances of nations aligned along economic, religious, political or social lines, with the specific aim of aiding each country within that alliance to improve their internal and external peacefulness.

Enhance Education

There is a positive relationship between education and peace, ie peace is necessary for education and education is an essential element of creating and sustaining peace, however teaching peace is not currently a core part of the education curriculum in most nations.

Once the drivers of peace are better understood and incorporated into the education syllabus our future leaders of society will become better equipped to create peace in their working environments. Students that have a better understanding of peace will become more discerning voters.

The Global Peace Index and other tools that will be developed in the future could be incorporated into high school and university studies. It allows students to know what the indicators of peace are and why these measurements are used to measure the peacefulness of societies.

Incorporating case studies of the most peaceful nations into education curriculum would improve our understanding of the key factors in everyday life that helped create a more peaceful society.

The economics of peace are still in their infancy but as more knowledge becomes available and the subject is incorporated into syllabuses society, business and individuals will benefit through a better understanding of how to generate wealth.

Similarly understanding the economies of nations that are peaceful will provide models by which less developed nations can benefit in their quest to improve their status.

If history taught why nations became peaceful and how they sustained their peace then the nation would be better equipped to create peace both within its borders and in its relations with its neighbours.

Benefits to Non-Governmental Organisations (NGOs)

NGOs provide a valuable service in helping to create conditions for growth and sustainability in many developing nations by providing aid for development infrastructure such as clean water, agricultural enhancements, famine relief, education, micro credit and other areas.

It will be easier to justify aid money that is directed to towards initiatives that may enhance the capabilities of nations or societies to avoid potential future violent conflict.

By understanding the level of peacefulness and the direction of those societies towards or away from peacefulness then it would be easier to understand what type of aid would be more appropriately provided.

The Global Peace Index also has the potential to provide a tool for NGOs to hold their recipients accountable. Additionally, it can provide a tool for donors to hold NGOs accountable.

The Global Peace Index provides NGOs with a an additional measure by which they can understand, assist and work with other NGOs, fostering a better appreciation of other NGOs work. By matching the locations in which an NGO operates their programmes

USES OF THE GLOBAL PEACE INDEX

with those countries rankings on the index, a collective view of the operating environment and 'peacefulness metric' can be measured. Overlaps in some countries may lead to opportunities to broaden programmes to build peace still within the charter of each NGO.

Over time, the Global Peace Index will provide a benchmark for all NGOs of the overall relative performance of the world in working towards peace. Thereby offering a macro view of the relevance and importance of their combined work.

APPENDIX A

Peacefulness creates Environmental Stability – Table 1

	Top 10 GPI	Enviro Perf	Enviro Health	Per Capita
Norway	1	18	5	1
New Zealand	2	1	14	24
Denmark	3	7	11	4
Ireland	4	9	9	3
Japan	5	14	16	8
Finland	6	3	5	11
Sweden	7	2	1	7
Canada	8	8	9	20
Portugal	9	11	17	38
Austria	10	6	15	9
Average	5.5	7.9	10.2	12.5

The following table represents the top five per capita income nations which were not in the top 10 most peaceful nations

Control	GPI	Enviro Perf	Enviro Health	Per Capita
Switzerland	13	16	12	2
United States	97	28	12	6
United Kingdom	48	5	4	10
Netherlands	20	27	20	12
France	33	12	2	14
Average	40	17.6	10	8.8

The statistics have been sourced from the Economist World Fact book 2007

For per capita income the top three countries were not covered by the Global Peace Index therefore 3 was subtracted from the per capita income rank to normalize the ranking. These countries were Luxemburg, Bermuda and Channel Islands.

Finding: There is a strong correlation between peacefulness and environmental performance. The five countries not in the top 10 of the GPI had a per capita income about the average of the top 10 GPI countries. The environmental quality of the two groups was nearly identical. However, the environmental performance of the top 10 countries from the GPI was exceptionally high.

APPENDIX A

Table 2: Business Environment Improvements Associated with Peace (Source: EIU)

	Top 10 GPI	Bus Env 2001	Bus Env 2006	Per Capita
Norway	1	17	16	1
New Zealand	2	12	13	24
Denmark	3	1	1	4
Ireland	4	10	5	3
Japan	5	28	27	8
Finland	6	6	2	11
Sweden	7	11	11	7
Canada	8	2	3	20
Portugal	9	32	29	38
Austria	10	18	17	9
Average	5.5	13.7	12.4	12.5

The following table represents the top five per capita income nations which were not in the top 10 most peaceful nations

Control	GPI	Bus Env 2001	Bus Env 2006	Per Capita
Switzerland	13	9	9	2
United States	97	5	8	6
United Kingdom	48	4	7	10
Netherlands	20	7	5	12
France	33	16	17	14
Average	40	8.2	9.2	8.8

For per capita income the top three countries were not covered by the Global Peace Index therefore 3 was subtracted from the per capita income rank to normalize the ranking. These countries were Luxemburg, Bermuda and Channel Islands.

Finding: There is a relationship between peace and improving business environment, the major difference between the control group and the top 10 of the Global Peace Index was the slip in rankings of the UK and the US who are both engaged in multiple wars



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