Measuring development:

policies and indicators

Risto Heikkinen

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Author:	Risto Heikkinen
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Supervisor (Arcada):	Andreas Stenius
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Abstract:

We as human beings have many layered relations, not only to each other but to the planet we inhabit. It provides everything we need to support our life systems. This is easy to conclude, since it is clear that scientific interpretations of our existence, as well as expressions from spirituality to arts are all eventually drawn from relationships between us, the environment, and its laws within. Being the environmental foundation for the external existence of the human race, natural resources are also the foundation of our economic systems and activity. Therefore it is reasonable to question our measurements of development, especially the way does growth in it affect positively towards majority of humans and environment we live in? What is the way we truly want to develop? And what are the methods and measurements that help us to get there? These questions are approached from the perspective of a descriptive and normative comparison study and as a result, answer providing for the relationship of positive development and measurement methods, as well as an example for a corrective solution is offered via core values operating these measurement indexes.

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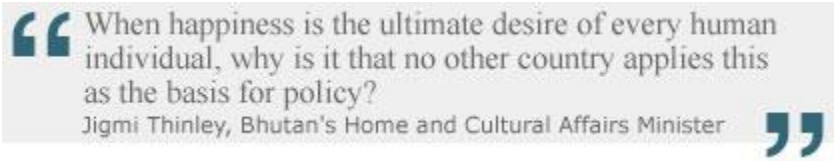


1. Introduction

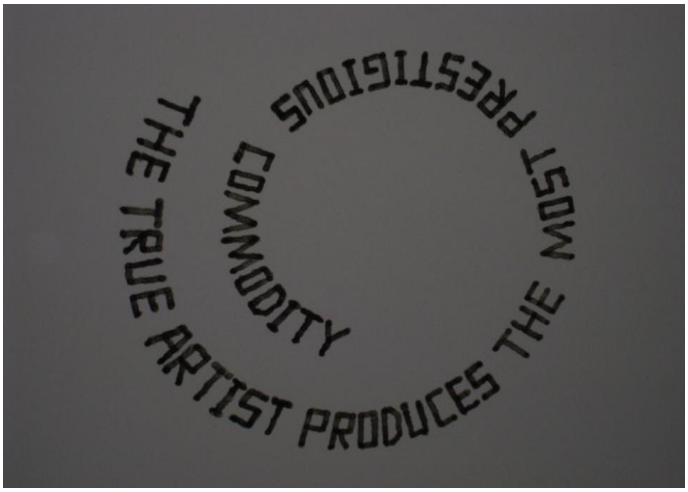
We as a human beings have many layered relations, not only to each other but, to the planet we inhabit. It provides everything we need in order to support our life systems. This includes not only necessities of nutrition and energy making physical development possible, but also nutrition for our growth in mental and spiritual aspects as well in the form of emotions. This is easy to conclude, since it is clear that our scientific interpretations of our existence, as well as personal expressions in form of arts are all eventually drawn from relationships between us, the environment and its laws within.

Being the environmental foundation for the whole external, material, existence of the human race, nature's resources are also the foundation of our economic systems and activity. Since scientific proof for similar planets and similar races still waits to emerge, it is very likely that planet Earth and humans are very rare in the universe, if not unique. Therefore it is reasonable to question our measurements of development, especially with the question does growth in it affect positively towards majority of humans and environment we live in? Statements regarding this

development can be verified from several different cultures, sciences and world-view perspectives throughout the world. Conclusion of measurements also from, for example, report conducted autumn 2009 by a commission set by the French government and led by Professor Joseph E. Stiglitz.

In this paper I aim to recognize, not only the direction led by GDP –based thinking or advantages and issues related to it, but more importantly, possible complementing development measurements which share a purpose of reaching a sustainable development model which can be considered as a prerequisite towards wellbeing and happiness of humanity with the help of economic activity.

What is the way we truly want to develop? And what are the methods and measurements that help us to get there? Most importantly, do humans already have what is needed for it as a whole? It is presumed that happiness and wellbeing can be achieved with quite common traits between humans; therefore I believe that common nominators for prerequisites can be found as well if ideas from different perspectives as well as different parts of the world are observed via methodological help of descriptive and normative comparison study. Via the results of the descriptive methodology, an example for a corrective practice is presented in form of constructive business guidelines and example measurement methods are presented with results.



2.Measuring development

2.1 Introduction to measurements

The Oxford dictionary for advanced learners defines measurement index as follows,

http://www.askoxford.com/concise_oed/measure

verb 1 determine the size, amount, or degree of (something) by comparison with a standard unit. 2 be of (a specified size). 3 (measure out) take an exact quantity of. *4 (measure up) reach the required or expected standard.*

http://www.askoxford.com/concise_oed/index

noun (pl. indexes or especially in technical use indices /indiseez/) 1 an alphabetical list of names, subjects, etc., with references to the places in a book where they occur. 2 an alphabetical list or catalogue of books or documents. *3 an indicator, sign, or measure of something*. 4 a number representing the relative value or magnitude of something in terms of a standard: *a price index.* 5 Mathematics an exponent or other superscript or subscript number appended to a quantity.

Indicators measure policies. Indicators also embody values to be carried into those policies. In today's economics in general, when implementing they tend to carry on policies or actions based on current, often international trends of development, without taking into consideration the values behind such trends. Overcoming this is possible by recognizing the bigger picture and the fact that between values and policy implementation are indicators that mediate between them. Indicators capture imagination easier and help convince the lay people, but it is not always easy for the people to discern that indicators are not value neutral, and that the underlying values and principles eventually determine actions and policies. In fact, one can go beyond this and say that indicators drive society in certain direction. (*Professor Karma Ura, WHO 2008)*.

From the policies implemented through indicators, due to their interrelation, it is possible to gain glimpse of the values that operate behind, both the indicators and policies, by comparing these means with an end they produce.

"In effect, statistical indicators are important for designing and assessing policies aiming at advancing the progress of society, as well as for assessing and influencing the functioning of economic markets." (Stiglitz sen Fitoussi 2009 p.7.)

"What we measure affects what we do; and if our measurements are flawed, decisions may be distorted. Choices between promoting GDP and protecting the environment may be false choices, once environmental degradation is appropriately included in our measurement of economic performance. So too, we often draw inferences about what are good policies by looking at what policies have promoted economic growth; but if our metrics of performance are flawed, so too may be the inferences that we draw." (Stiglitz sen Fitoussi,2009 p.7.)

"Economic growth is intended to be a means to the end of social well-being. However, as society focuses on what is being measured, the means become the end. In other words, Western nations make the mistake of equation economic growth to social well-being." (Dasho Karma Ura and Ms Tshoki Zangmo 2008)

Most measuring methods used in today's societies focus their policies on aspects such as financial development which means growth, nature and environmental condition, and various functions producing societal well-being in mostly material perspectives. In addition to that, great variety of things producing well-being and happiness are valued by standards outside the material and mental dimension. These are as important things to pay attention to, since what good are financial and technological value generated, or achievements from environmental resources, unless it is also a vehicle for that which brings true value, happiness and wellbeing. Therefore must be understood that the environmental resources as a whole are a value-basis for a possibility to any of this to appear and therefore indexes measuring these resources with honesty can be important complementation to what is used by economics.

Oxford dictionary for advanced learners defines environment as follows,

http://www.oxfordadvancedlearnersdictionary.com/dictionary/environment

1.the conditions that affect the behavior and development of somebody/something; the physical conditions that somebody/something exists in.

2.the natural world in which people, animals and plants live

"I suggest that aesthetic sensibilities are a part of the way in which spirituality helps us maintain our sanity. To the medieval monks, it was obvious that through the simple flowers of the field, God had given humanity a gift of healing and peace. Today, we are at last relearning this simple truth."(Dr. David Hoffmann, PhD 2003)

"From economical perspective, measuring happiness and well-being is reasonable as well. Mental and emotional well-being of citizens improves their performance and broadens the intellectual, physical and social resources of a nation. They cause less stress on the national health care-system. Citizens with better emotional and mental health are easier to relate to and work with, tend to be better decision makers, are more creative, and outperform peers in problem-solving, innovation, persistence and productivity." (Med Jones, 2006)

Well-being and happiness are considered often subjective, with more than one definition existing. One example is from Oxford dictionary for advanced learners, which defines *well-being* and *happy* as follows;

well-being - noun the state of being comfortable, healthy, or happy. http://www.askoxford.com/concise_oed/wellbeing

Happy - adjective (happier, happiest) 1 feeling or showing pleasure or contentment. 2 willing to do something. 3 fortunate and convenient: a happy coincidence. 4 in combination informal inclined to use a specified thing excessively or at random: trigger-happy. DERIVATIVES happily adverb happiness noun. http://www.askoxford.com/concise_oed/happy

Subjective life satisfaction is regarded as a measure of an individual's perceived level of well-being and happiness through that unique individuation. It is frequently assessed in surveys via different and often simplified questions. Answers are sometimes used as a synonym for

subjective happiness and subjective well-being. However, due to the different world views accumulated via personification to what in here are viewed by the name of values and policies, these concepts can be seen so much broader than what can be measured in this simplistic way: The most commonly used question probing life satisfaction, as found in the World Values Survey (http://www.worldvaluessurvey.org/) is as follows:
"All things considered, how satisfied are you with your life as a whole these days?"

Respondents are typically asked to respond on a scale of 1-10. Life satisfaction index that includes this is used for example, in the Happy Planet Index. Bias to accuracy in which individual answering the above mentioned question actually considers one's life from every direction via his or her true values, especially with the possible difference between long term and short term happiness, exists. Also the possible environment of questionnaire, result of policies, can produce defenses that influence answers and respondents willingness to answer. This implies that methodologically the measurer cannot affect the level of validity when measuring subjective well-being and happiness of individuals, but only prerequisites. This is the same when approached from perspective of subjective and objective values, that are prerequisites for both, subjective and objective well-being. These are listed, when identifiable, alongside the indicators presented starting with the Gross domestic product, which is somewhat considered as a benchmark index for other measurement indexes viewed here.

value(value), noun 1
[*mass noun*] the regard that something is held to deserve; the importance, worth, or usefulness of something:*your support is of great value*
the material or monetary worth of something:*prints seldom rise in value*[*count noun*] :*equipment is included up to a total value of £500* 2
(**values**) principles or standards of behaviour; one's judgement of what is important in life:
http://oxforddictionaries.com/view/entry/m_en_gb0919770#m_en_gb0919770

2.2 The Gross Domestic Product (GDP)

> Two most used index measurements for development are Gross National Product (GNP) and Gross Domestic Product (GDP). Main difference between these is that where GNP regards value of products made by nationals, for example Finnish people as a whole, GDP focuses on the value of final goods produced by the nation itself, for example Finland. GDP therefore is a basic measure of a country's economic performance and is the market value of all final goods and services made within the borders of an economic area, such as a country, in a defined period usually being a year.

What GDP calls final products consist of products which do not require any additional transformation prior to use, and are presumed to be used by end users instantly in that time period for consumption or investing purposes. Final products are also therefore final energy values consumed to a certain production, and within that production. It can consist of goods or services, which can be assigned a monetary value to represent that energy. Therefore total GDP presents total energy used, valued and measured in monetary terms in a given region for commercial purposes deducted by imported amount of energy in that certain time interval.

Gross Domestic Product is simple and effective when measuring commercial productivity and therefore also material standards of living and consumption in given areas. It is standardized to current GDP, which is measurement expressed in current prices and of the period being measured, and nominal GDP, which is the production of final products valued at current prices. Real GDP has been useful in measuring if production has decreased or increased despite changes in other variables, since it values production of final products at a constant price level.

Components that form Gross Domestic Product are as follows: c*onsumption* in form of private consumption and investment activity, usually the largest component. This includes every form of goods and services consumed by individual or private entity. Investments consist of activities contributing to future consumption by the same entities. Along with private consumption and

investments, GDP includes similar activities performed by public entity, such as the government. These can be defined as *public investments* in form of expenditure of final goods and investment methods stimulating economic activity, and *public expenses* for example in form of maintenance and functional expenses. Finally, besides domestic activity, GDP is affected by relation of *imports* and *exports* across its borders. Imports include supply received for domestic consumption from outside its borders, whereas exports define the amount produced for consumption outside these same borders. In order to see that ratio, exports have positive effect on GDP as imports are deducted from it. Due to the fact that GDP measurement is internationally standardized and measured frequently and consistently, it is reliable and up to date in its purpose.

Simplified formula for GDP is as follows:

+ Private consumption and investments
+ Public investments
+ Public expenses
+ exports
- imports

=GDP in fractional reserve currency adjusted to value of local currency.

Gross Domestic Product is not only measured for a single countries or larger economical areas, but also for smaller segments inside a country. Example of this is useful measurement of GDP per capita, where GDP of defined area is divided by entities inside that area contributing to and affecting it. (Formula at UNDATA -webservice)

2.2.1 Values and policies related to GDP

> Gross Domestic Product has been gaining status as a main measurement of performance and growth slowly over years it has existed, taking attention from the broader picture and actual direction of development, as well as the underlying reasons and values behind it. *"It is widely used by policymakers, economists, international agencies and the media as the primary scorecard of a nation's economic health and well-being. Yet, as we know from its creator Simon Kuznets, the GDP was never intended for this role (Kuznets, 1934)"(Redefining Progress: GPI 2006)*

This usage is well understandable, for GDP was chosen to economic measurement during the time when material well-being was not certain, and building new was necessary right after the world war. It was seen necessary to focus economy in a oversimplified way of growth for providing this well-being quickly to countries many people. It is clear that GDP is a very narrow tool to measuring anything but growth in quantity of commercial production, technically this means spending of energy and resources of that area. Being so simplified, GDP *does* not take *values into account, elements such as environmental issues related to pollution and finite part of the resources available, both attached to economic growth itself*. Therefore it does *not recognize the ratio or quality of the energy resources used to the energy of final products*. It should also be understood that GDP is actually measuring consumption of resources instead of final products although presented differently, for the actual consumption of final goods produced can only be assumed. Therefore when rise in GDP is set as an objective, it automatically means only that consumption of resources rise. This is similar, as said regarding to GNP.

"GNP also fails as a measure of social well-being, since it does not willingly account for assets. Businesses gauge financial condition and performance by using a balance sheet and income statement. Using GNP to measure social well-being (or even economic performance) would be like a firm using only income statement to measure financial condition" (Redefining Progress: GPI 2006)

What is also important, GDP does *not show how large standard deviation of income is,(Stiglitz sen Fitoussi, 2009 p.13.)* so it *logically cannot reflect actual well-being or happiness of people in defined and measured area*. It is said that several *actions that clearly affects negatively to well-being and happiness of the population still contribute positively to Gross Domestic Product (GPI)*. For example weapons manufacturing, health care costs and increased amount of physical spending of natural resources. Same way, there are *several activities that contribute to general well-being and happiness but lower the level of GDP*. Examples of this are activities which do not involve direct commercial activity, such as parenting, mentoring and volunteer work. Similarly, GDP does not *differentiate sustainability of products produced. (Professor Karma Ura, WHO 2008).* Because of this approach, GDP as an indicator embodies only values of itself and carries these to its policies. When these values it presents and implements cannot take into account the quality of the result and reason of the consumption itself, it cannot possibly show the quality to whom it is supposed to bring happiness and wellbeing to reliably, or at all. Statement that GDP does not support or reflect well-being of humans is supported by statistical data and findings in reports, such as released by commission led by Professor Joseph E. Stiglitz fall 2009. It can also be seen in figure below (Fig.2).

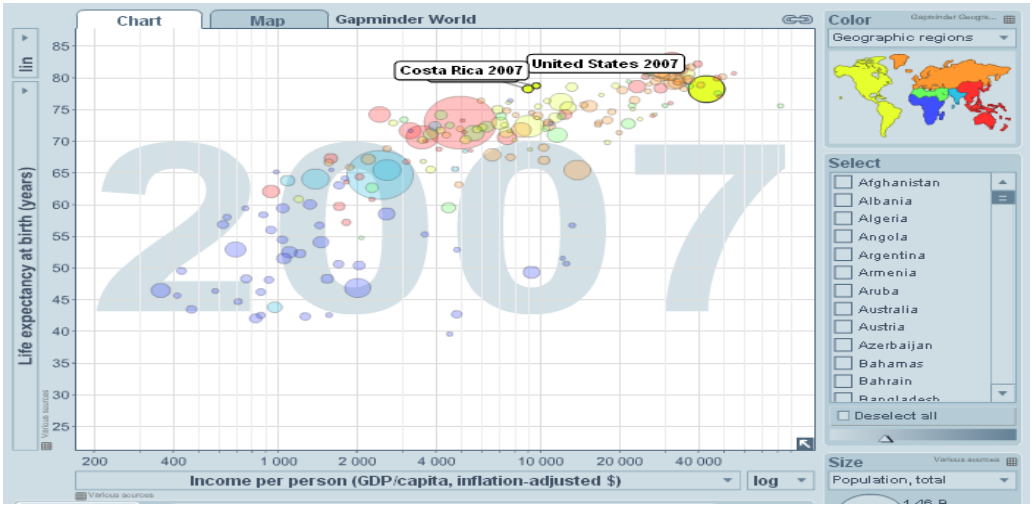


Figure 2. Figure composed from http://www.gapminder.org shows that high life expectancy, which is element considered to positively affect well-being of human beings, does not necessary correlate with strong GDP per capita.

Biologists talk about physical growth as a process which has an optimum level beyond which further growth is no more beneficial. In some cases, depending on the values of growth, it might even be the opposite. Economic growth can be subjected to the same analysis, for similar values shared with both. Aside from the obvious environmental impacts in many layers shown above, there is increasing evidence that *economic growth may have led us to ignore other values of life critical to human well-being*. (*The Happy Planet Index 2.0, by The New Economics Foundation 2009. and Stiglitz sen Fitoussi 2009* p 2.)

In order to maintain growth, western and western influenced capitalist economies have a structural need to sustain demand for consumption one way or another. This means that western style capitalism needs growth for the sake of growth. This is where the indicator in use, the Gross Domestic Product, turns also into its value and its own policy. But this feature sets it at odds with a widely noted fact about human nature – that once our basic material needs are comfortably met, more consumption tends to make little or no positive difference to our well-being and therefore happiness. In social sciences this effect has a name of "hedonic treadmill" and is also understood by Abraham Maslow.

"Internal causes produce individual differences in life satisfaction in the absence of variability in life circumstances. For example, two individuals with the same income may have different levels of income satisfaction. Internal determinants can also produce the same level of life satisfaction in individuals with different life circumstances. For example, two individuals with different levels of income may have the same level of satisfaction with income."
(The Happy Planet Index 2.0, by The New Economics Foundation 2009.)

Internal causes are referred here as individual values, while external causes are referred as policies. Conclusively, identified advantages and issues of pure GDP measurement in economics present via the values and policies it represents, when considering human happiness and well-being, can be defined as follows; It does not consciously measure amounts of what is prerequisite, or resources, for consumption, nor the reason for, or the result of consumption. It

does not identify quality of resources used or quality of what is being consumed, and it aims focus to consider mostly physical and material growth with the help of mental aspects.

Indicator:	**the Gross Domestic Product**
Policies:	**physical and mental growth, profit and gain from measurers perspective, adapted to the usage of economics.**
Values:	**physical and mental growth via profit and external gain.**

It must be recognized that GDP was never meant to be in the use where it is in today's economical society. Nevertheless, it can be usable with full understanding of the index, and when complemented in ways that shift it into a more balanced, proper and correct usage. Additionally a measurement for qualitative values producing actual happiness and well-being to individuals and therefore humanity are needed. *(Stiglitz sen Fitoussi,2009 p.17.).* There exists research showing that amount of income and consumption correlates only to a certain level with happiness and well-being. Therefore, the level of necessary GDP can be the amount of income needed to provide for physical well-being of an individual, since this makes possible shifting individual's focus towards positivity on a larger scale and more freely that manifests the true value. GDP is also recognized to be complemented with dimension of standard deviation in order to be relevant, as the commonly used GDP per capita cannot view real income distribution.

There are several holistic indexes, a few more developed than others, measuring development and performance leading to well-being and happiness which is viewed here in comparison with Gross Domestic Product.

2.3 Genuine Progress Indicator (GPI)

> "The GPI is one of the first alternatives to the GDP to be vetted by the scientific community and used regularly by governmental and non-governmental organizations worldwide. Redefining Progress advocates for the adoption of the GPI as a tool for sustainable development and planning. " (*Redefining Progress 2009,* http://www.rprogress.org*)*

The developer of the GPI, Redefining Progress, is one of the leading public policy think tanks dedicated to smart economics located in the USA. Redefining Progress declares its purpose as to find solutions that ensure a sustainable and equitable world for future generations. While conventional models for economic growth discount such assets, values, as clean air, safe streets, and cohesive communities, Redefining Progress integrates these assets into a more sustainable economic model. Working with government and advocacy groups, Redefining Progress develops innovative policies that aim to balance economic well-being, environmental preservation, and social justice. Currently GPI is in some form used for example, in Canada in form of GPI Atlantic. "Our policy initiatives address pressing environmental issues such as global climate change and natural resource depletion, while ensuring that both the burdens and the benefits of these policies are shared equally among affected communities. We inject ground-breaking ideas into public dialogue, policy discourse, and decision-making in compelling and nonpartisan ways." (GoGreen: an ecotribe initiative)

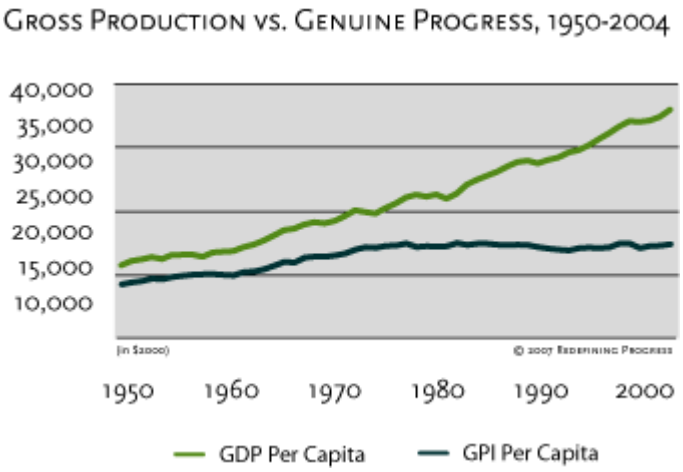


Figure 3. Graph shows how economic growth shown by GDP per Capita seizes to reflect growth in GPI per Capita after certain level of economic activity is reached. The lack of correlation may be caused by differing valuation of same attributes in both of these indexes.

General Process Indicator uses same data as GDP, but values it differently recognizing the direction of causal energy flow in clear situations. It also includes several additions to calculation that is considered to show more realistic picture of the development at hand. Although many of the additions shown are not directly measurable in monetary terms, GPI considers the monetary amount required if an entity was hired to accomplish the aspect or task measured. GPI includes following factors frequently presented in spreadsheet form, where from the actual GPI measurements is calculated as follows:

+ Weighted personal consumption, (1.Personal consumption, 2.Income distribution),Value of household work and parenting, Value of higher education, Value of volunteer work, Services of consumer durables, Services of highway and streets,

- Costs of crime, Loss of leisure time, cost of underemployment, Cost of consumer durables, Cost of commuting, Cost of household pollution abatement, Cost of automobile accidents, Cost of water pollution, Cost of air pollution, Cost of noise pollution, Loss of wetlands, Loss of farmland, Loss of primary forests and damage from logging roads, Depletion of nonrenewable energy resources, Carbon dioxide emission damage, cost of ozone depletion, Net capital investment, Net foreign borrowing,

= GPI (GPI/capita follows).

The resulting indicators in general GPI spreadsheet is as follows; GPI indicator as calculated above. GPI per capita, where total GPI values are divided by number of people involved. Finally,

GPI per capita is compared to GDP per capita from same sources as comparison of correlation between these two indexes (Figure 3).

2.3.1 How GPI Measure Progress

The GPI starts with the same personal consumption data that the GDP is based on, but then makes some crucial distinctions. It adjusts for factors such as income distribution, adds factors such as the value of household and volunteer work, and subtracts factors such as the costs of crime and pollution. Because the GDP and the GPI are both measured in monetary terms, they can be compared on the same scale.

Interesting, but very logical aspects included in GPI measurement are for example, *Income Distribution* is a central theme of GPI. Both economic theory and common sense tell us that the poor benefit more from a given increase in their income than do the rich. Accordingly, the GPI rises when the poor receive a larger percentage of national income, and falls when their share decreases. *Housework, Volunteering, and Higher Education* is added, since much of the most important work in society is done in household and community settings: childcare, home repairs, volunteer work, and so on. The GDP ignores these contributions because no money changes hands. The GPI includes the value of this work figured at the approximate cost of hiring someone to do it. The GPI also takes into account the non-market benefits associated with a more educated population. *Crime* imposes large economic costs on individuals and society in the form of legal fees, medical expenses, damage to property, cost of added security and the like. The GDP treats such expenses as additions to well-being. By contrast, the GPI subtracts the costs arising from crime.

Resource depletion

If today's economic activity depletes the physical resource base available for tomorrow, then it is not creating well-being; rather, it is borrowing it from future generations. The GDP counts such borrowing as current income, the GPI as a current cost.

Pollution

The GDP often counts pollution as a double gain: Income when it is created, and then again when it is cleaned up. The GPI subtracts the costs of air and water pollution as measured by actual damage to human health and the environment.

Long-Term Environmental Damage

Climate change, ozone depletion, and nuclear waste management are long-term costs arising from the use of fossil fuels, chlorofluorocarbons, and atomic energy, respectively. These costs are unaccounted for in commonly used economic indicators. The GPI treats consumption of certain forms of energy and chemicals as costs. It also assigns carbon emission cost to account for the global warming.

Changes in Leisure Time

As a nation becomes wealthier, people should have more latitude to choose between work and free time for family or other activities. In recent years, however, the opposite has occurred. The GDP ignores balanced time use, the GPI treats leisure time as of value.

Defensive Expenditures

The GDP counts as additions to well-being the money people spend to prevent erosion in their quality of life or to compensate for misfortunes of various kinds, such as the medical and repair bills, commuting costs, and household expenditures on pollution control devices. The GPI counts such defensive expenditures as costs rather than as benefits.

Lifespan of Consumer Durables & Public Infrastructure

The GDP confuses the value provided by major consumer purchases (e.g., home appliances) with the amount people spend to buy them. This hides the loss in well-being that results when products wear out quickly. The GPI treats the money spent on capital items as a cost, and the value of the service they provide year after year as a benefit. This applies both to private capital

items and to public infrastructure, such as highways.

Dependence on Foreign Assets

If a nation allows its capital stock to decline, or if it finances consumption out of borrowed capital, it is living beyond its means. *"The GPI counts net additions to the capital stock as contributions to well-being, and treats money borrowed from abroad as reductions. If the borrowed money is used for investment, the negative effects are canceled out. But if the borrowed money is used to finance consumption, the GPI declines." (GPI Report 2006, by Redefining Progress.)*

GPI shows similar idea as Gross National Happiness –principle, described next, by acknowledging clear interconnectedness and correlation due to the clear cause-effect –relations. Also, from every measurement noted in this paper, GPI is the only one including the very important aspect of *volunteer work* into the calculations and therefore the quality of energy flow in work. It recognizes interactive social matrices formed by individuals by their freedom of choice in the form of neighborhoods and communities. As said in GPI, "Whether each additional lawyer, broker, or advertising account executive represents a net gain for the nation is arguable. But there is little questioning that workers in the underserved community and volunteer sectors – the churches and synagogues, civic associations and informal neighborly efforts – are doing work that is desperately needed". GPI measures volunteer work by first estimating the total number of hours volunteered each year from data which is gathered via external surveys. Yearly estimation received from data is transformed from time measurement into monetary sum, rated by standards of independent sector (15,68 USD per hour, 2006). Therefore value of volunteer activities in US stood $131 billion in 2004, which is $447 per capita. Same measurement carried from the year 1950 is $202 per capita, pointing clearly the direction of time usage by people observed. The Genuine Progress Indicator and its variants were conceived as a way to measure changes in national economic with a single aggregate scale. GPI considers households as the basic building blocks of national welfare and thus focuses its measurements towards personal consumption patterns and in clear situations adds positive and negative effects the total of consumption or work done that rises from economic, social and environmental domains. Even

though there are issues related to its ability to measure sustainable welfare as well towards its methodological soundness, GPI can measure and combine rarely measured aspects with account data going back 54 years making it usable utility to many researchers around. As in other measurement indexes, interconnectedness of both the negative and positive aspects makes it difficult to value them accurately, although GPI identifies many important of these with success.

“'Volunteering makes the heart grow stronger,' said David Eisner, CEO of the Corporation. 'More than 61 million Americans volunteer to improve conditions for people in need and to unselfishly give of themselves. While the motivation is altruistic, it is gratifying to learn that their efforts are returning considerable health benefits.'" (World Volunteer Web, 2010)

Indicator:	**the Genuine Progress Indicator**
Policies:	**Development in a cause-effect relationship, direction of energy flow manifesting as positive or negative in relation to well-being and measured in, and converted to, monetary terms.**
Values:	**Quality of energy resources, its transformation to, and results produced, by positive and negative relationships. Actions positive to oneself sometimes negative in the long run and in larger proportional picture, due to interconnectedness.**

GPI calculated for Finland, according to which growth in economics has not correlated with growth in well-being since 1980's. (Tilastokeskus-website, 2010)

2.4 Gross National Happiness (GNH)

> One, maybe most interesting of the balancing indicators to Gross Domestic Product comes from a small, still quite isolated Buddhist country of Bhutan. Bhutan has based its developmental policies on indicators known collectively as Gross National Happiness (GNH), which represents more holistic, spiritual and philosophical view of development due to its background. Similar to some extent with more western concept of the green economics. Bhutan has recognized that without a common vision, or value, founded through indicators of GNH, each individual merely looks to his or her own ends even though welfare is a shared pursuit. Therefore GNH index aims not only to assist building and maintaining this vision and foundation of happiness, but is also a necessary tool for government to protect its cultural- and natural- environmental-, and spiritual heritage. With these aspects as tools, main goal of species wide happiness and understanding of universal interdependence becomes reachable for individuals according to GNH.(Nation Master -statistics, 2011)

GNH consists of a matrix model, where chosen indicators related to processes or policies at hand are defined and their effect is considered together with the values commonly shared in Bhutan. GNH is not a simple formula, but a collection of interrelated and qualitative variables and survey data that aim to provide a perspective broad as possible towards situation it is used in. In order to qualify valid, an indicator with respect to any variable has to have either a positive or a negative influence on well-being and happiness. The direction of causality towards happiness and well-being must be clear. For examples, more lawfulness, more health, and more clean air have a more positive influence on happiness than more crime, illness, and pollution.

Besides objective causality in describing these interdependent relationships, addition of completive open self-reporting of experiences provides more accurate picture of well-being. The interdependence of all things, instead of divisive abstractive versus conventional and subjective versus objective is a key concept in GNH. For GNH indicators, this cultural concept means that

seeing everything as relational to everything is more useful than seeing everything as separate from everything.

GNH consists of several provisional domains that make up the survey on national level. These are *psychological well-being*, which consists of contentment, life satisfaction and health of the mind. *Domain of health* focuses on the physical aspects of health regarding whole population. *Time use* shows the ratio between different time usages from work to leisure time, socialization and rest. It identifies the importance of balance in time usage. *Domain of education* focuses mainly on participation, skills and educational support among other aspects. *Cultural domain* consists of both diversity, as well as tradition. Both are recognized as important factors to be maintained. *Domain of good governance* evaluates how people perceive various governmental functions in terms of efficiency, honesty and quality. *Domain of community vitality* focuses on relations and interaction between communities in different dimensions from families to larger communities. *Domain of living* standard aims to represent basic economical living standards of citizens of Bhutan. (*Professor Karma Ura, WHO 2008)*

"The GNH screening tools can be applied in two dimensions, at the project level and the policy level. It has been designed to scrutinize projects and policies to be implemented at three levels: those meant for all ministries and sectors, for respective ministries (health, education), and for individual sectors (youth employment)." *(Bridge to Bhutan -website 2011)*

The whole process of GNH after initial data collection is demonstrated in appendix for the purpose of illustrating both, its mathematical and scientific soundness, and resulting complexity. (Appendix 1.)

+Without a possibility to give an honest opinion of its functioning in mediating the values to real life policies in Bhutan, the important aspects related to Gross National Happiness–index are its spiritual and altruistic perspective towards these values that roots itself into Bhutanese Buddhist culture, stating the core meaning of interdependence and balance. Recognition that subjective and objective, therefore the values and policies, and happiness and well-being, are interrelated.

(*Professor Karma Ura, WHO 2008*). Even though it includes several other views embedded that differs GNH from other perspectives, the main reason what makes GNH important is its focus on which is central to the measurement itself, the values. GNH states that the perception of happiness that doesn't take into account the needs of others' happiness is considered irresponsible and egocentric and the pursuit of such happiness is likely to be, not only unethical, but unsustainable in larger societal perspective of living. Equity is also one important aspect commonly recognized that also GNH views of importance. According to GNH, happiness blossoms through enhanced relationships, and is arising unbidden when relationships improve. *In this sense, the whole of development is a progress in relationships and not of individuals alone, and is also visible with the relationship between values and policies mediated by the indicators itself.*

- Challenge in conducting GNH surveys is the volume of questions and the time taken for individual interviews. In initial surveys, enumerators can take more than six hours to interview one respondent. This complexity is reflected in GNH matrix formation as well. GNH also has, due to its mostly qualitative nature, very high diversification of variables used. Therefore instead of clear standardization model, it is made of framework that is modified according to situation at hand. This flexibility can also be considered as a positive asset that broadens its usability. At the moment statistics show that Bhutan is close to sustainability considering the effects on environment (forests, water and clean air). With possible help from western type of advanced technology, the country could rise above many standards of material well-being that can be seen as a prerequisite for happiness as well as well-being in larger scale. Before this improvement, the effects of GNH principle are reduced (Nation Master -statistics 2011) if considered what it could be with new sustainable energy sources.

"In recent years, researchers from several disciplines have begun investigating the benefits of contact with plants, especially trees. In studies of the stress-reducing effects of nature, people recovered more quickly and completely from stress when exposed to plant-rich natural settings, as indicated by lowered blood pressure, heart rate, muscle tension and skin conductance."

(Conductance measurement is considered one of the best physiological measures of autonomic nervous system and stress response). (Dr. David Hoffmann, PhD 2003)

Indicator:	**The Gross National Happiness**
Policies:	**Soundness of rational scientific methodology supported by subjective values. Actions that lead to positive effect for everyone supported.**
Values:	**Quality of Interdependence, of individual and policies of whole. Common values, vision, reflecting to means and to an end. Cause-effect relation with recognition of positive and negative effect towards the interconnectedness.**

2.5 The Happy Planet Index (HPI)

Happy Planet Index is a measurement index developed by an independent think tank, The New Economics Foundation (referred as NEF). It aims to focus on measuring qualities of what truly matters in relation to our well-being in terms of long, happy and meaningful life and reflects it to our relationship with our planet and the consumption of its resources. These are also the values it represents. HPI aims to be the ultimate efficiency ratio aiming to provide information needed in order to shift development into more sustainable direction. NEF has been awarded by the International Society for Quality-of-life Studies' award for the betterment of human condition 2007, for development of HPI.

> "New Economic Foundation considers its aim to improve quality of life by promoting innovative solutions that challenge mainstream thinking on economic, environment and social issues by working in partnerships and putting people first. NEF was founded in 1986 by the leaders of The Other Economic Summit (TOES) which forced issues such as international debt onto the agenda of the G7 and G8 summits. NEF aims to combine rigorous analysis and policy debate with practical solutions on the ground, often run and designed with the help of local people. As HPI shows, NEF creates new ways of measuring progress towards increased well-being and environmental sustainability." (The Happy Planet Index 2.0, by The New Economics Foundation 2006)

> "NEF works with all sections of society in the UK and internationally - civil society, government, individuals, businesses and academia - to create more understanding and strategies for change." (The Happy Planet Index 2.0, by The New Economics Foundation 2006)

Happy Planet Index was launched in July 2006 with a purpose of offering alternative to the seemingly economic obsession with GDP. HPI identifies its values more accurately as health and positive experience of life, forming positive emotions, and the natural resources that human existence is physically dependent on. The goal, the policy of HPI, can be defined as a happiness that does not cost the Earth, and is measuring progress towards this target with both, statistical data and empirical studying. The most important findings provided by the second HPI indexing are: more what is often thought as development and consumption rarely means more happiness and well-being, and countries with same ecological footprint, meaning usage of planetary resources, support lives with differing levels of well-being and happiness.

Also it is important to mention that no country currently achieves three accurate goals given by HPI; ***high life satisfaction, high life expectancy and one-planet living***.

HPI equation in its simplified form is $\text{Happy Planet Index} \sim \frac{\text{Happy Life Years}}{\text{Ecological Footprint}}$

2.5.1 How HPI measures development

This measurement is composed from statistical data gathered from various sources, as well as empirical survey provided by people living in countries included in it's measurements. *Life expectancy* statistics are provided by Human Development Index report (UNDP 2007), whereas *life satisfaction* is measured by numeric scale questionnaires provided by NEF and external sources such as World Values Survey, discussed before. This is in order to provide broader view with differing samples. Third part of measurement, *the ecological footprint*, is based on data provided by WWF's living planet -report 2008. Ecological footprint compares the biocapacity available as resources and absorbing products with the rate it is produced, for example via greenhouse gases. Since this data covers only some countries in measurements, different variables have been used in stepwise linear regression to provide comparable information. These variables include per capita CO2 emissions and GDP growth. Other affecting variables noted include growth of industrial sector, population density and level of urbanization.

> "*Economic development needs to be decoupled from environmental impact and, perhaps more importantly, well-being needs to be further decoupled from economic development."*
>
> *(The Happy Planet Index 2.0, by The New Economics Foundation. 2006)*

+HPI index provides valuable information regarding sustainable, balanced development in physical and mental aspects. Important aspect regarding HPI, besides its simplicity, is its emphasis on ecological perspective and the relation it has with subjective well-being. Where for example GDP focuses on final products in form of physical products and intangible services, HPI focuses consciously on resources that are behind both segments and which provide energy needed for positive action and -result in general. As HPI shows, high subjective well-being and perceived happiness is rarely related to high consumption. This is well seen in difference between USA and Costa Rica, where people in latter live longer and tend to report being happier with ecological footprint that is a quarter of the USA's.

- Even though its name, how HPI actually successes in measuring happiness, besides the ratio between well-being and planet Earth is not certain. This is of course understandable due to the subjective nature of happiness and broadness of the values aimed to be carried into policies. Although it is clear that external prerequisites for potential happiness might be better met where longer living years can be sustained, HPI simplifies from other happiness and freedom providing value variables. These include political freedom, general human rights and labor conditions. Also, the data provided by World Values Survey is rarely conducted, being measured in five year intervals and to be broad for truly measuring happiness reliably. (http://www.worldvaluessurvey.org/)

Index:	**The Happy Planet Index**
Policies:	**Healthy life years in relation to sustainable living towards planet and balanced with the whole.**
Values:	**Happy life years, interconnectedness; humans and planet earth, actions that lead well-being of whole.**

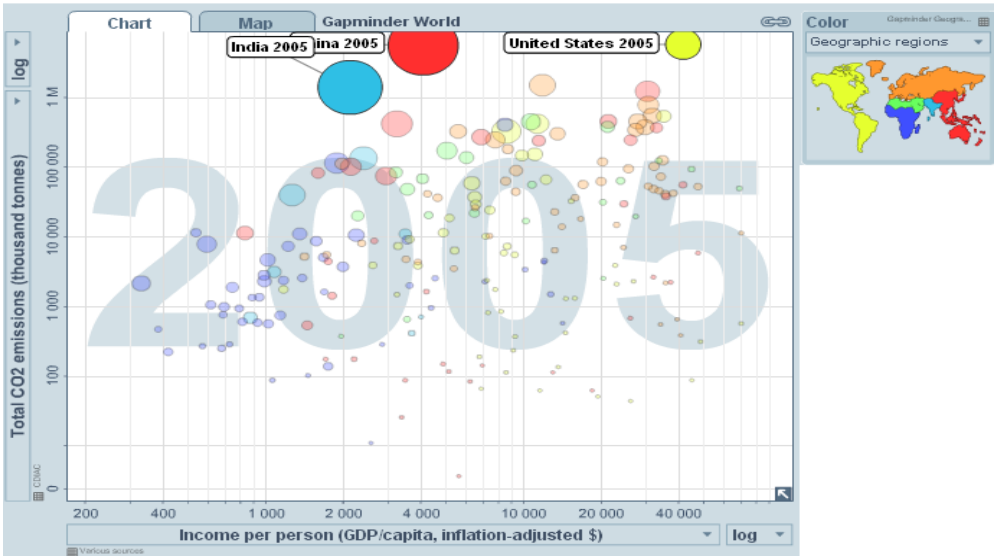


Figure 4. Sshows year 2005 co2 emissions to GDP per capita –ratio in different regions. http://www.gapminder.org (1 Costa Rica GDP per capita 11,500$, USA 46,900$ 2008 estimate, CIA –world fact book)

2.6 Greenhouse Developmental Rights (GDR)

The Greenhouse Developmental Rights framework is aimed to bring one answer to increasing global climate issue and developmental issues together. It was developed together by Heinrich Böll Foundation and Stockholm Environment Institute from the climate protection agenda laid by United Nations. GDR framework operates in very ambitious context of lowering climate warming and emissions leading to it in global level, while still making possible for less developed countries to pursuit constructive development towards well-being in material perspective, where necessary. This minimum level of well-being is described inside the framework as the *development threshold*, which is defined above global poverty level. GDR also takes intranational income disparities formally into account, instead of common national per capita averages.

According to GDR, by holding clear "350 –line" in unit for carbon dioxide emissions as a value, and therefore holding global temperature rise in 2 degrees Celsius, development towards policy of well-being can be attained together. It lays out strategies in order to achieve this, and also description to dialect between countries of geographic north and south, how these two emission producers identified could harmonize their development, as well as efforts towards minimizing emissions. The issue described by GDR is the relationship between this development and CO2 emissions resulting when it is pursued.

One main point in the GDR framework is defined as the *development threshold*. It takes perspective that physical development should be aimed not only to gain freedom from poverty, but to achieve dignified and sustainable ways of life in a global perspective. GDR development threshold is a level of welfare below which people are not expected to share the costs of the climate transition responsibility. This means level above basic needs, but well short of today's levels "affluent" consumption. According to the GDR -report, approximately 70 percent of the population that lives below the development threshold is responsible for only approximately 15

percent of all cumulative emissions. The actual level of the development threshold differs in global perspective and between countries with subjective variation, especially when presented in clear monetary terms. GDR uses example amount of approximately 20$ per day per person or equivalent in its calculations.

Key themes, values and policies in GDR, are capacity and responsibility. Effort share based on these principles is common, sound and ethically reasonable method. *Capacity* quantified in GDR is done in a manner that accounts for intranational disparities in income in respect to above explained development threshold. Example of this can be seen considering what GDR defines as key countries, USA, China and India, in chart below, where capacity above development threshold is visible in green color and yellow under it (Figure 4.).(GDR framework 2009)

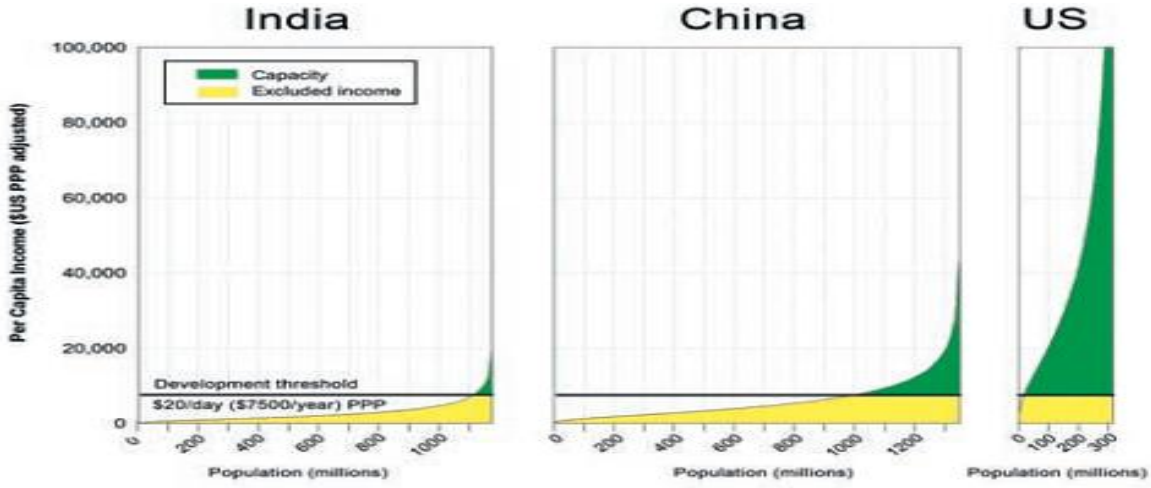


Figure 4: Capacity: income above the development threshold.

Responsibility according to GDR is defined by cumulative CO2 –emissions from fossil fuel consumption since 1990, although it is recognized that there is several "correct" definitions for this. The year 1990 is considered reasonable one, largely because earlier emissions were usually (though not always) made in ignorance of the harms they were causing. By the metric responsibility is higher in wealthy countries and effectively zero in the poorest countries. As a contrast for high capacity and responsibility countries such as USA, countries with high emissions such as China and India have relatively low responsibility.

2.6.1 How GDR measures development

There are many formulas which have properties needed in GDR framework, but one mostly used is the one that defines a simple weighted sum of responsibility and capacity, and also allows different weights to be given to each: RCI = a R + b C

The capacity 'C' of a country is the sum of all individual incomes above the development threshold. For example, let's assume that in a country 10 per cent people have yearly incomes above US $9,000. In that case, the individual incomes of this group above the threshold are added up to arrive at the country's capacity index.

Responsibility index 'R' is calculated as the total of a country's cumulative per capita CO_2 emissions from fossil fuel consumption since 1990, above the developmental threshold.

The result, *"RCI"*, comes from Responsibility/Capability Indicator.

GDR specifies that A. and B. sum to 1, so that as the paired weights go from A =1 and B = 0 at one extreme, A=0 and B=1 at the other, the RCI goes from being exactly equal to responsibility(R) to being exactly equal to capacity(C).

GRD framework suggests that obligations would presumably be passed down to individual level from national level, another level of "c" and "r". Finally the aim of GDR is to be able to built a framework upon the principles of common but differentiated responsibilities and respective capabilities. *What is notable to acknowledge is that "costs" cumulating from emissions should be seen as future investments or opportunities.*

+GDR framework is scientifically well constructed for its measuring purpose. Even though the relation of man made CO2 emissions to climate change is still controversial when different researches and values, for example behind carbon trade, are observed. For the financial profit making motives of the participants seem to go in front of the actual purpose of environmental protection as a policy intented in carbon trade. One resulting example of the policy reflecting these values can be seen in form of the so-called **geoengineering-programs**. However, besides reasonable *development threshold* perspective, GDR framework consists valuable directions and guidelines to cross-country co-operation and interaction towards sustainability. These parties are defined as North and South. According to GDR framework, the North in particular has work to

do to convince the world that it is willing to engage seriously in a global effort to protect the climate by demonstrating its readiness to reduce its domestic emissions and therefore engage positively towards the stabilization of the climate. Until now, northern countries have been capable only to partially engage in meeting commitments done in, for example Kyoto or Rio. North also must agree to, and begin to deliver, the technological and financial support needed to accelerate mitigation in developing countries. This can enable the South to launch its own transition into low-carbon development path according to agreements done and grow positively.

GDR sees the main challenge of the North, what it defines as many broken promises towards the South in the past, and is expected to take the lead in new trust building process to make up for its responsibilities towards the South. This requires at least transparent and equally fair and honest procedures.

The South, too, is hoped to act dramatically to overcome this international lack of trust recognized. It is appropriate for South to act voluntarily for trust-building period to become successful. It is necessary that South starts to operate towards this positive development on its own, as well with real effort and be willing and open to contract with North when equal, honest, and fair commitment is presented. Perhaps even to engage further than these commitments require in friendly way to show solidarity and forgiveness. Prominent examples regarding this can be seen in South Africa's commitment to drive towards an emissions peak by 2025 (Earthlife Africa Jhb -websource), by Indonesia 25% reduction (Springerlinks publication -websource) and South Korea's announcement to support long-term goal of cutting emissions aggressively (Bloomberg 2009). Finally, GDR report says that the South should demonstrate that it is serious in its desire to prioritize in eradication of poverty and building sustainable human development in a positive way instead of previous happenings regarding the development.

Indicator:	**The Greenhouse developmental Rights**
Policies:	**Shared responsibilities and capabilities towards development via transparent dialogue. Balanced development, sustained to 350 line of carbon emissions.**
Values:	**Common responsibility according to capability. Teamwork and relationship via trust and openness. Keeping planet Earth physically inhabitable to humans.**

2.7 Other notable sources

2.7.1 Facebook Global Happiness Index

A Facebook researchers group have recently presented what is called "the new Facebook Global Happiness Index" for the US and other English speaking countries. It is based on collected data from the mentioned social media network site for two years, being mostly what is called "status updates", of 100 million users. "*Status or mood updates are small fields were users can easily inform the community about what they are doing or how they feel."*

"*According to this index Americans tend to be happy on holidays, such as Christmas or Thanksgiving, and Fridays. They are considerably sadder on Mondays and when celebrities, for example Michael Jackson, die.*" (FGHI -team). However, the researchers responsible for this index agree that status updates via Facebook might be used for communicating with others rather than expressing personal feelings truthfully and intentionally. Facebook "global happiness index" represents approach very similar to GDP, with very similar challenges: quantitativeness instead of reliable qualitative perspective, and it is actually a measurement based on results of externally visible (previous) policies without any actual reliable values behind it. Therefore it

also shows how social media might actually connect humans reliably only in quantitative dimension instead of any relevant qualitative dimension. The Facebook happiness index, similarly to the Gross Domestic Product, is therefore not able to distinct, for example, love from apathy or well-being from sorrow, and is irrelevant measurement of what its name suggests or anything thereof.

Index:	**Facebook global happiness index**
values:	**Percieved happiness externally determined**
policies:	**happiness as externally measured quantity**

2.7.2 Comparison with Maslow's hierarchy of needs

Views to holistic measurements, and more importantly ways to connect existing ones in a positive way, can be found in different branches of psychology and philosophy, with high support from biology and especially spirituality. Somewhat fulfilling roles of individual emphasis of GDP and fellowship emphasis from GNH can best be seen when comparing their views and valuation with a commonly accepted theory. One example is the hierarchy of psychological needs by Abraham Maslow, and theory developed from it by Clayton Alderfer, called the ERG theory.

These focus not only on these needs, but also positive traits and their manifestations from step to step. It must be understood that Maslow's theory is to be viewed as individuals projecting these needs, negative values, and positive values manifesting to whole, and cannot be affected by policies of governing legislations regardless of the individual him, or herself. Therefore external policies cannot fundamentally affect the values or needs of individuals. Maslow's hierarchy also states that in order to achieve higher levels of this hierarchy, it is necessary to ensure fulfillment

of the needs providing basics for well-being. Maslow defines these needs together as physiological- and safety needs, which include basic resources for physical human living. It also shows that values above these can best be fulfilled outside the spectrum of financial activity and perhaps even the material dimension. It is also clear that ultimately Maslow's hierarchy reflects only what Abraham Maslow himself has identified as needs, and cannot be stated to have absolute validity or reliability to humans in general.

Indicator:	**Abraham Maslows hierarchy of needs**
Policies:	**Fulfillment via elimination of needs identified to be adverse to well-being and happiness**
Values:	**Needs identified. Elimination of needs, for example via fulfillment.**

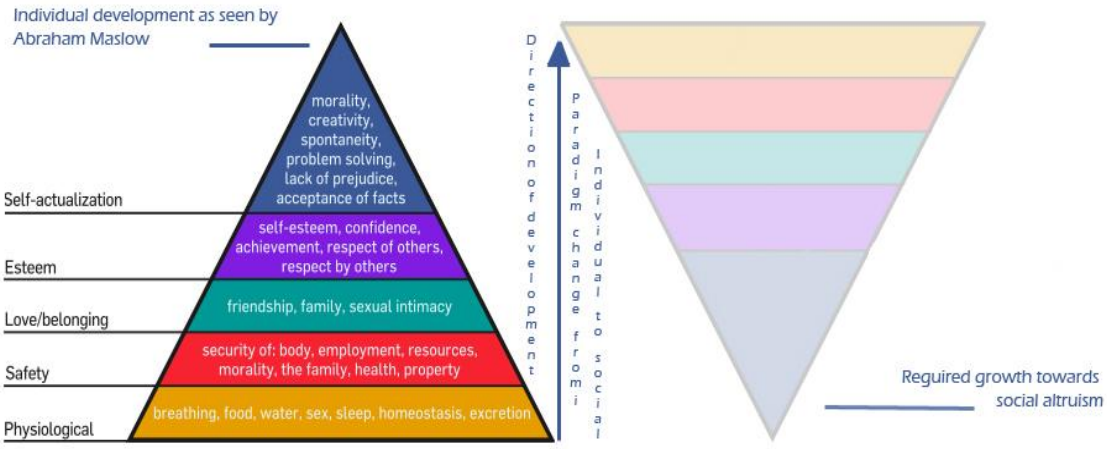


Figure 5. Above shows the relationship between individual development as seen by Abraham Maslow and possible paradigm change from individual to more holistic and socially altruistic, in order for it to be sustainable and ethical considering the whole: When individual development reaches higher, increases therefore the possibility, and necessity, for socially altruistic behavior inversely. That is actually the middle levels of love and belonging of the pyramid, resembling the idea of the golden rule.

The first two steps of the pyramid are levels that factors outside individual, such as governmental institutions, can positively affect. According to Maslow, satisfied individual physiological and safety needs are therefore prerequisite for fulfillment of upper needs to be possible to emerge. This can be applied relatively when global macro –level is considered, and is focus of every measurement index presented in this paper. The GDR -framework is clearly focused towards the first step, but includes principles with further measurement adaptability. Similarly, the Happy Planet Index is affecting these first steps with measurement focus towards the steps above these. The next two steps, according to Maslow and what he describes in turquoise and purple, start to emerge more freely when individual physiological and safety needs are well enough met, or fear of these are reduced. These middle levels of love and belonging, and esteem, can be seen as a turning point where individuals focus may, and usually does, shift from the first basic needs focusing on individual self towards needs for community and relationships around them.

The most important levels of love and belonging, which produce esteem and actual happiness, can best be met by voluntary and equal interaction. This more balanced focus allows also the defensive approach and pressure towards bottom levels of the pyramid to ease. It is also clear, that from these levels of love and belonging sprouts fulfillment to every other step described in the Maslow's pyramid, being the actual need behind all of these.

Capstone of the Maslow's pyramid, which he defines as level of indigo, is viewed as a goal of the individual development. This can be reached sustainably and permanently with relative ease, with well-functioning lower levels which require functions as individual as well as community, or as a whole. Indigo level of self-actualization is reached by adjusting individual's personal needs to the needs of relationships and the whole in order to achieve sustainable balance in subjective and objective, between individualism and fellowship. The level of self-actualization can also be achieved via economics by accumulation of material wealth so large that it does not offer anything, or any fulfillment anymore. For it has so exceedingly fulfilled its usable purpose of building the first two levels presented in Maslow's pyramid. Therefore there is no other direction to go than holistic spiritual. Often it seems that people with this accumulation, due to the nature of economy, stay in the material egoistic pursuit for they have been required to work

and act in ways that take them more far away from the altruistic, emotional and therefore purely spiritual. Current usage of the GDP measurement can assist in every step of Maslows hierarchy, with the exception of the most important step to happiness, of love and belonging. This is supported by both Maslow and Alderfer, and is also visible in effect called the hedonist treadmill.

"Alderfer also proposed a regression theory to go along with the ERG theory. He said that when needs in a higher category are not met then individuals redouble the efforts invested in a lower category need. For example if self-actualization or self-esteem is not met then individuals will invest more effort in the relatedness category in the hopes of achieving the higher need."(Principles of management, Carpenter, Bauer, Erdogan. 2009.)

Therefore in order for this hierarchy to be sustainable and balanced, as according to the above picture, the most important step is what is called the level of love and belonging for it enables that overall sustainability by taking pressure from steps before it by reducing fear, and providing for the healthy development of the steps above it. Support of this step is the main focus in measurement indexes Gross National Happiness and the Genuine Progress Indicator, although attention is set towards every other step as well.

*"In today's materialistic society, if you have money and power, you seem to have many friends. But they are not friends of yours; they are the friends of your money and power. When you lose your wealth and influence, you will find it very difficult to track these people down." (*His Holiness the Dalai Lama)

Like mentioned, institutions such as government or companies via commercial activity, can have clear positive effect only on the first two levels of Maslow's hierarchy providing the prerequisites for the possibility of reaching higher levels in a sustainable and responsible way. Purpose of making this possible can be seen as a natural purpose of every measurement index compared in this paper; for due to the nature of the measurement goals and values, there are objective views above self-interests involved providing level of trustworthiness.

3. Comparative Study of measures of well-being and development

The reason for conducting a comparative study on these specimens is the similarity they share in some respects, and differing viewpoints in others, both of which become under focus in this case. These measurements ultimately all grow from the same need and understanding of values, which since realized in various locations, cultures and by diversified individuals, follow diverse methodological paths towards the same and common policy of hope, species wide happiness and well-being with the help of economic development. Simplified, every measure compared with GDP stems from the same reason: the understanding that current economic development is destructive, and it needs something to balance, that can help reach that goal of happiness and well-being in global development.

The goal is clearly to find a corrective perspective related to development by shifting focus on well-being and happiness providing meaningful individual development in a sustainable way via common values that in NEF's words "do not cost the planet". Comparative study is also relevant since the amount of indexes is few so all of them can be conclusively identified and studied, individually and together.

3.1 Descriptive comparison

The specimen, being the measurement indexes, is described here with the conclusions of the strengths and weaknesses drawn from them presented here for the analysis purpose. Strengths and weaknesses identified include both, from external opinion visible in all sources listed as well as interpreted by writer personally, and are combination of values and policies mediated via indicator. For the indicators competitive, there are no threats or opportunities involved. After first figure there is specifications of every measurement index presented.

Table 1. Strenghts and weaknesses of measurement indexes

Attribute / Index	**Strengths**	**Weaknesses**
GDP *(The Gross Domestic Product)*	+ measures material and mental growth effectively -+measures consumption of material and mental resources	- oversimplified and narrow spectrum of growth, - complete lack of qualitative dimension of reason and result (-wellbeing of economy, not wellbeing of human beings.)
GPI *(Genuine Progress Indicator)*	+ identifies aspects of growth outside economics + identifies direction of qualitative energy flow and interconnectedness of aspects.	- simplifications for complexity of topic
GNH *(The Gross National Happiness)*	+identifies broader wellbeing with economics only as possible means,+ recognition of relationships, interconnectedness and balance. + qualitative preferred instead of quantitative. + flexible.	- complex methodology and subjective surveys - low quantitative standardization, - flexible.
HPI *(The Happy Planet Index)*	+ simplicity, + ecological focus towards resources, + subjective qualitative aspect. + balance in development.	- oversimplifications, - incomplete source data for its purpose.
GDR *(The Greenhouse Developmental Rights)*	+ methodologically simple and sound for its purpose, + recognition of interconnectedness and dialogue + capabilities and responsibilities of parties interrelate.	- measures narrowly anything but climate, - does not identify clearly reason or results.

Table 2. Descriptive comparison of Indexes

Attribute / Index	**GDP**	**GPI**	**GNH**	**GDR**	**HPI**
Year developed	Approx.1934	1995	Approx.1972	2008	2006
Developers	Simon Kuznets*	Redefining Progress **	King of Bhutan	SEInstitute / HBFoundation**	New economics foundation**
Location where developed	USA/Pennsylvania	USA	Bhutan	Scandinavia/Europe	UK / Europe
Usable data available from	Early 1930's	1950	1972	1990	2007
To	today	2004 (today)	2006 (today)	2030 (speculation)	2009
Possibility to implement	Global	Global	Not defined (global only)	Global (only)	Global
Methodology					
-Calculation / formula	X	X		X	X
-Matrix/framework		X	X	X	
-Empirical			X		X

*Simon Kuznets can be credited developing GNP, from which GDP has evolved. **Mark implicates (independent) think tank

Table 2. continues

Attribute / Index	**GDP**	**GPI**	**GNH**	**GDR**	**HPI**
Qualitative		X	X	X	X
Resources			X		X
Final goods		X	X		
Quantitative	X	X	X	X	X
Resources		X	X	X	X
final goods	X	X			
Objective well being					
Economy	X	X*	X	X	X
Ecology/nature		X*	X	X	X
Holistic recognition		X*	X		
subjective well being			X		X*

*These aspects are noted, but only partial.

With the comparisons shown above, GNH and the GPI have most holistic spectrum and value elements from the measurements included here. From the similarity between these two, although sprouting from completely different backgrounds, a connection between values can be found. Clear examples of this are the focus of actual quality, or qualitative approach, to values and interconnectedness of individual persons and aspects making the whole in relationships. Although the rest of the measurements seem more directly focused on their special focal point, this focusing gives definitely more accuracy into analysis in their special context and measurement purpose than two previously mentioned indexes.

4. Results and discussion

Figure 6.Many different, still the same. The paradox of GDP and GNH

Although there exists common nominators and themes in goals of the indexes viewed, equally important aspect is to consider the ways they differ and can therefore complement each other when ideas and elements are combined and viewed, or used, together. For they all share the purpose of reaching the goal of species wide well-being and happiness and are therefore not competing. Instead of policy of mere quantitative focus towards the end products and consumption of resources, the values, focus needs to be set qualitatively towards these same phases of process. Start and the result of it. Each of the aspects, values, important to development is present in these indexes together and it is interesting to see how diversified world views affect the composition of these measurements. For they share similar values underneath this diversification. This is best seen in between index of GPI compared to GNH that have differences at least in cultural and geographical background, as well as political stand point and spiritual perspective, but share similar values.

Main difference between GDP and other measurement indexes compared here are different values. Latter focuses the policy of profit and positive effect to a larger spectrum than measurer itself, and recognizes positive effect much broader than, and not always correlating with, financial profit.

Similarly to Maslow's hierarchy of needs, GDP measures values and resources inversely and has therefore values only of itself. This means that it has no values embedded besides sustenance of economics, corporations within it, and the Central banking-system on top, which in this current structure is growth. Growth is defined via profit, and the profit for central banks occurs via interests and other service costs keeping it relevant. Central bank being, monopolistic, globally oligopolistic closed economy on top of the visible economics, where the visible economics are its forced profitable customer.

Figure 7. Shows results concluded in visible form. Policies from Gross domestic product and values it is based on.

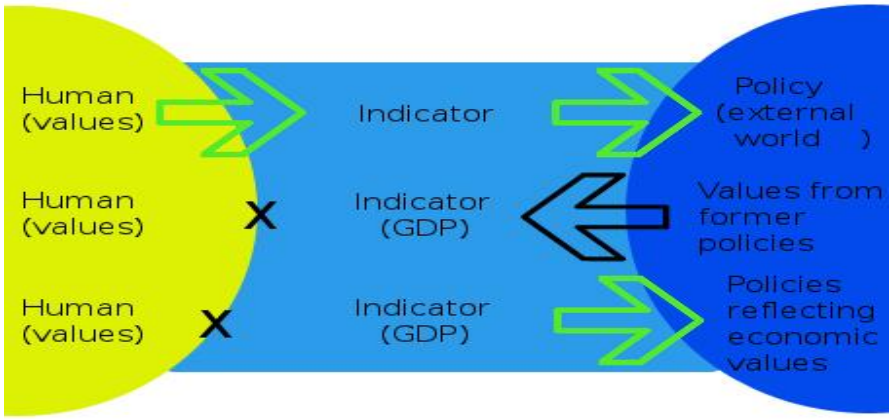
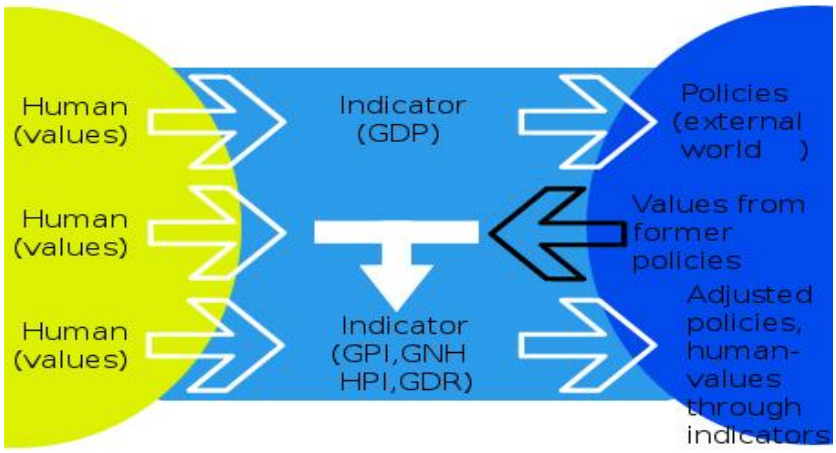


Figure 7. Policies from comparable measurement indexes and values it is based on



Other measurements have values from humanity outside the scope of measurer itself, this means that these values aim to sustenance of humans and not economics for the sake of itself. Together all these values embody the so-called Golden rule, which is in the same time the connecting factor behind the spiritual and ethical inheritance between the geographical areas where from these measurements sprout alive, and is shown later in this paper.

Clear trend is that recognition of our relations, interconnectedness, and our global existence is not well sustained by values operating in current economic development. From these measurements can be seen that policy of more holistic quality, which can balance development towards well-being, is needed and welcomed. For this will reflect from individual human level as well as to whole humanity on planet Earth. On the other hand, sovereign self-responsibility visible in western capitalism is welcomed complementation in eastern focus of GNH to balance the parental role between society and individual as much as broader holistic understanding represented by GNH is needed to wake individuals from "GDP –tunnel vision" of separateness. This has manifested itself, for example in the form of central banking-system and banking sector that operates within the law-structure of corporation, and therefore forces economic growth on interrelated public and private sector same way to GDP with motives to profit and growth.

Without quality recognized, it is possible to measure what well-being and happiness is presumed to be, instead of well-being and happiness itself, or to whom, quantitatively. When GDP is an indicator, or value itself, it has only quantitative dimension. Therefore as long as GDP is followed in any interaction activity of humans, including economics, it will reduce unavoidably the overall human wellbeing and happiness in global scale. This cannot be changed via government policies or regulations, beyond lowering the thresholds meaning change within these institutions, for otherwise this can lead to tyranny.

> "That government is best which governs least." (Thomas Jefferson)

"It became clear during our discussion that the main cause of depression was not a lack of material necessities but a deprivation of the affection of the others."

(His holiness the Dalai Lama.)

4.1 Idea with development threshold and standard deviation

Top 1% owns more than 90% of US combined. "(Working Group on Extreme Inequality)

"Highest 10% 34.7% of income or consumption" (Nationsencyclopedia Costa Rica 1996)

Besides lack of true values, lack of standard deviation is a large deficit in Gross Domestic Product, as is concluded in the report conducted by professor Stiglitz and his commission, and also visible in above links provided.

GDR -framework innovates a level called the *development threshold* presented with GDR itself. GPI -indicator views a *correlation line,* which shows correlation between well-being and income only to some extent, by correlating the gross domestic product with genuine progress indicator itself.

Therefore it could be suggested that when standard deviation for GDP per capita (sometimes known as GINI co-efficient) is calculated, aim would be to view it in comparison with reference where the standard deviation of income is the amount between the predefined *development threshold* and the income/happiness -"correlation line" *at most,* with possible help from the approach of GNH. Focus on this goal as a reference instead of policy in nation and global level by freewill of individuals, could affect persons economical decision making towards more holistic well-being presenting to some extent values found in measurements above. This effects what can be seen in two first parts of Maslow's hierarchy of needs. In this sense, standard deviation connected to development measuring would be optimal when being between these two

threshold ideas, similar of GDR -framework's development threshold, and GPI's income/happiness correlation, both varying on diversified factors in the area measured.

“For since growth in GDP does not correlate with happiness after safety needs are met, it can be said that what this economics define as profit does not bring happiness after reducing fear of safety. For if presumed that gain of profit to oneself should bring something of value to oneself, and therefore profit should bring happiness if that can be seen as its purpose, the definition of profit then must be flawed.
As quote from Professor Stiqlitz in the beginning of this paper also notes, this is when profit is taken as an indicator itself with values defined by economics, which has values (well-being of economy) different than (values and wellbeing of) human beings. For if this does not bring happiness, therefore more fulfilling happiness must exist. This means that there must be next dimension of “profit” beyond mental and material, that adds to the current definition of profit. Perhaps this can be described as spiritual “profit” that adds another level of happiness that economics cannot give, due to the spirit countering nature of it?.”

3.2 Values common behind the measurements itself

In order to emerge relevant measurement for development, goals should reflect, or more like support the values central to the development itself. When focusing attention to the detail that one of these measurements, the Gross National Happiness, is consciously built upon the spiritual and ethical values of the geographic are it is developed in, light can be shed to the background of indicators here, for similar heritage behind other measurements also exists. Considering the policies mediated via the measurement indexes visible in this paper, and glimpse of the values identified behind these policies, it is also reasonable and interesting to see do the values mediated to policies via other measurement indexes support, and correlate with, similarly the ethical and spiritual heritage present in

geographical and cultural areas the same way that the GNH -indicator? Because this has effect on the way people overall treat each other, not only in governance or business, and can help defining the actual values operating behind the measurement indexes compared here.

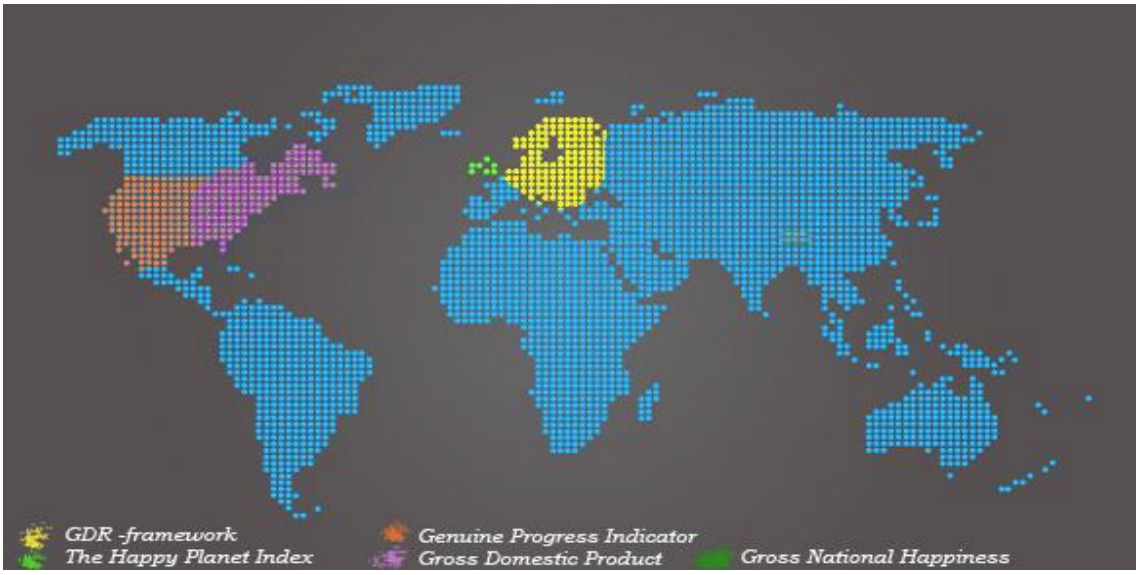


Figure 8. Shows the way the different indexes are located from west to east, close to northern hemisphere. Index of GPI has been also in use to some extent in Australia and Canada, idea of HPI also in some extent in Thailand.

The collected values from these measurement indexes and values from the spiritual and ethical heritage in above visible areas where these are developed (Fig.8), include indirectly and directly the same exact values mediated to policies via them. This means that policies collected from these measurement indexes represent the same which are present in the identifiable value systems operating behind them in the same areas. These are identified as Buddhism and Christianity and the comparison of these are presented in appendix of this paper.

"Do not lay up for yourselves treasures on earth, where moth and rust destroy and where thieves break in and steal; but lay up for yourselves treasures in heaven, where neither moth nor rust destroys and where thieves do not break in and steal. For where your treasure is, there your heart will be." (*NKJW Bible Matt 6:19)*

Table 3. Values operating behind measurement indexes compared, (Appendix 2)

Values (spiritual heritage)	**Indicators** (Religions)	**Policies** (values operating measurement indexes)
Golden rule (Many, for example, Udana varga 5:18, Sutta Nipata 705, concept of karma and Dharma, and the noble eightfold path)	Buddhism	Responsibility – capability, Interconnectedness, Actions that lead to positive effect for everyone, cause-effect relationships.
Golden rule (Many, for example, NKJV The Holy Bible, Matt. 7:12 and Luke 6:36)	Christianity	Happy life years, balance, profit to oneself can be sometimes negative in larger scale, and also other way around.

Values and policies share a common stand, all being derivations of the Golden rule. This is the basis behind the spiritual inheritance and traditions in the same geographical areas of measurements, and also behind the policies of these same measurements. "Do unto others as you wish them do to you".

These are also what economists publicly want, and believe can be achieved within the economic structure: transparency, stability, and strengthening of the financial system with resources. All of these values are derivations of the Golden rule. More importantly, common policy and focus in every measurement index present here emphasis the importance of relationships, within and between people, between values and policies, and cause and effect. If not proclaiming it directly, emphasizing it indirectly. According these indexes, relationships established according to current economic paradigm are not working towards happiness and well-being, for this is one major reason for their creation. It is important to understand, that relationships based on principles encouraged by the Gross Domestic Product are almost inverse, and therefore nearly completely opposite, to that of a Golden rule.

"The lesson in every chapter of this book is that our Gross National Happiness depends on how we teach and live our values" (Arthur C. Brooks 2008)

"I believe that the purpose of life is to be happy. From the moment of birth, every human being wants happiness and does not want suffering." (*His Holiness the Dalai Lama)*

3.2.1 Example guidelines to constructive commercial activity

"Of liberty I would say that, in the whole plenitude of its extent, it is unobstructed action according to our will. But rightful liberty is unobstructed action according to our will within limits drawn around us by the equal rights of others. I do not add 'within the limits of the law,' because law is often but the tyrant's will, and always so when it violates the right of an individual." (Thomas Jefferson)

Without qualitative perspective, it is possible to measure only what well-being and happiness is presumed to be, instead of well-being and happiness itself quantitatively. This cannot be changed via external institutions, beyond lowering the thresholds via internal change that can lead to tyranny. Therefore an example of guidelines to individual person for more constructive, although far from perfect, commercial interaction is suggested here.

+Should not create, or invent, new threats to people and therefore cannot be a solution to threat invented.
+Should assist and help towards positive and constructive behavior. At least lower the threshold towards positivity in people.
+Should respect the interconnectedness and unity that exists between the people behind the visible spectrum and forms.
+Preferably ethical, not moral. For ethical is merciful, forgiving law, whereas moral can lack that dimension. (See the middle level in Maslow hierarchy.)
→ Does not aim focus to weaknesses of individuals and does not aim to manipulate or take advantage of them.

→ Always to be voluntary, (diversity in oneness, voluntary because that oneness) - Service oriented.

These guidelines are usable only by individual or small business entrepreneur, instead of an institutional organization, such as government, which operates in corporate law structure and makes this challenging. This represents possible paradigm change to make the actual positive change.

"In general, people with greater well-being invest more hours in volunteer service work, and volunteer work promotes positive well-being." (Volunteer work and well-being, Journal of Health and social behavior 2001 vol.42 (June). p.115-131)

5. Notes

> "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness." (The Declaration of independence of the United States of America.)

Even if it the cause-effect relation for this could not be clearly defined, it seems that majority of the people in today's global economy is trying to pursuit happiness at the cost of liberty, or freedom (due to the nature of money as debt, (Modern Money mechanics, by Federal Reserve), which limits the flow of life. By focusing on the fact of reason given to us by his holiness Dalai Lama, every human being is longing for love. That is the fundamental need from a child to adult and is also supported via Maslow's hierarchy. Understanding of this ultimate motivation behind every individual human brings a genuine compassion to, and towards the whole creation. By observing the story of life and teachings of LORD Jesus Christ shown in the Holy Bible, which from human perspective is a road of unspeakable tragic beauty,

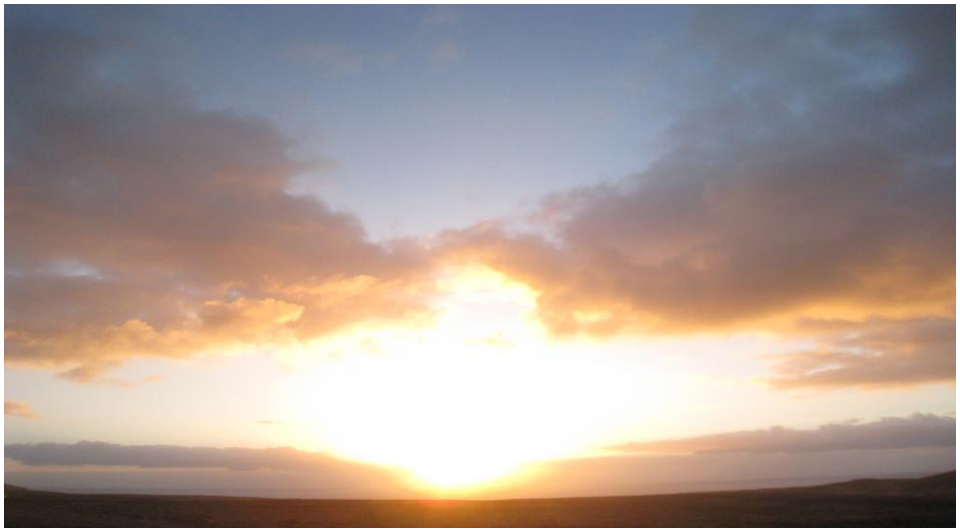
compassion and love, it can be seen that everlasting happiness is something beyond material and ultimately mental views although including steps in every element in both. Only thing we must die for is the not-understanding of this love and compassion and accept the road and values that are offered, for example, in the sermon on the mount into our mutual interaction. For this fulfills the law of love beyond the seeming separation that the economy is currently based on.

"it's the economy, stupid"

(the presidential campaign of Bill Clinton 1992.)

"From my own limited experience I have found that the greatest degree of inner tranquility comes from the development of love and compassion."

(*His Holiness the Dalai Lama)*



"A new commandment I give to you, that you love one another; as I have loved you, that you also love one another". (NKJV the Holy Bible John 13:34)

5.1 Further questions

- Since paid work seem to bring well-being to a certain point and volunteer work seem to bring happiness /well-being after that point. Is there clear correlation between growth in volunteer work and well-being? For voluntary working, as volunteering in general, seems to correlate with at least the sense of happiness.

- Is there inverse correlation between growth in debt and well-being when standard deviation is taken to calculations? When influence of temporary growth in economical work is taken into notice, especially in long term consideration. For growth in debt, shown as growth in money supply, requires more growth in economy. Growth in economy is currently achieved via growth in GDP, therefore reducing the possibility, for example, to voluntary activity.

- GDP measures consumption. Consumption treats consumables as resources. Therefore GDP also treats consumables as resources. If consumables = material resources + labor, then GDP deducted of "energy value" of, and connected to, labor measures physical resources used, because priceless "energy value" of innovation and inspiration is not included into the measurement. Does therefore GDP only measure these resources instead of "growth of, and economic well? And can growth in physical aspect of economics today be in correlation with overall well-being of human beings? Or adverse to it?

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Appendices

+Example of the Gross National Happiness matrix formation

+Comparison of spiritual -ethical -perspectives of geographical areas of the measurement indexes.

+Visual map of the relation between values, measurement indexes and policies.