THE NEED FOR CHANGE IN THE APPROACH TOWARDS GLOBAL CLIMATE CHANGE & ENVIRONMENT PROTECTION PLANS TO SECURE SUSTAINABLE DEVELOPMENT

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 ISSN: 1923-6654 (print)
ISSN 1923-6662 (online). Available at http://www.ssrn.com/link/OIDA-Intl-Journal-Sustainable-Dev.html

Abstract: Mahatma Gandhi once said *'The world has enough for everyone's need, but not enough for everyone's greed'*. The environmental problems plaguing the world today bear a direct resemblance to this. The selfish attitude of every individual State has led to collective problems, which equally affects everyone in the international community. As a consequence to the Westphalia Treaty, the world witnessed the birth concept of *sovereignty*, which was later expanded to mean *Absolute Sovereignty*. In the first part of this paper, it will be shown how sovereignty has been misused to the effect that challenges like that of the infamous *Tragedy of Commons*, have come to be. It will be dealing exclusively with why international cooperation where the environment is concerned has largely failed. From the perspective of the Environment, cooperation has become difficult due to the inequalities in the status and position of nations, with developing nations feeling a sense of injustice at having their developmental plans curtailed or criticized by already developed nations. This paper hopes to show that there is a need for nations to view themselves as a part of *'One Community'* whereby the actions of one country have an intimate effect on the existence of other nations. This will foster a sense of inter-dependence and mutual benefit amongst nations, which will result in peace and cooperation rather than blame and dictation of terms.

The Second part of the paper aims to focus on the mechanism by which new international environmental agreements can be implemented (once cooperation is achieved). There are mainly two approaches to tackle climate change viz, "top down approach" and "bottom up approach". However this paper will suggest the use of *Flexible Bottom-up Approach* as it intends at synthesizing the benefits of all the approaches that exist for international environmental protection to tackle climate change. This section also hopes to propose an alternate model or approach for fostering International Cooperation among nations where the need for rationalizing standards for environmental protection will come from both, grass root level and international level, the synthesis of which will be a source of international peace and security. The Flexible Bottom-Up Approach will, as shown in this paper, be the key for setting across equal and reasonable standards that will facilitate the economical development interests of countries while simultaneously ensuring environmental protection and conservation. The flexible bottom–Up Approach aims at working on the drawbacks of global comprehensive plans to tackle climate change and putting across novice attempts towards sustainable development.

Keywords: Climate Change, Global Peace & Security, International Cooperation, One Community, Sustainable Development.

INTRODUCTION

This article intent to give an earnest attempt to provide an alternative approach to thinking about the problem of climate change, As an alternative, this article proposes that comprehensive global agreements should recognize that a plurality of lower-level climate agreements of various kinds are likely to provide effective and efficient responses to climate change in long run. The ever increasing complexity of climate change problem propounds that the best solutions will leverage splay-based social movements favoring the production and maintenance of many kinds of legal, economics, and political agreements involving many institutions, from nation-states negotiating international treaties to

agreements involving regional and municipal governments, non-profit organizations, business firms and consumer groups et cetera. The best solution to address global climate change will be a perfect mix of legal, economic, political and social variables.

Currently, the dominant policy approach to thinking about climate change recommends a comprehensive global solutions which recommends in its design the use of various regulatory mechanisms like cap and trade, offset trading, cap on total emission and harmonized carbon taxes to name some. In theory, this approach sounds good but in practice, however, the world leaders have failed to make substantial progress[1]. Total greenhouse gas emission have increased by more than nineteen percent since the Kyoto approach began after a Framework Convention negotiated at the Earth Summit in Rio de Janeiro in 1992[2].According to Intergovernmental Panel on Climate Change, the green house gas emission increased by seventy percent from 1970 to 2004, and overall growth in emissions have accelerated since 2000[3]. Recently, Kyoto's dream for a comprehensive global solution crashed in Copenhagen in December 2009. The Copenhagen conference resulted in a widely publicized failure to extend the Kyoto framework[4]

Such failures clear show that Comprehensive solutions at a global level are not practicable under present circumstances. An appropriate legal international governance mechanism is not in place to implement the global plan; therefore, it is recommended that there should be shift in the focus from global comprehensive plan to a less grand, but more practical "second-best solutions" which will be discussed in detail in later part of the paper.

Before proceeding further, it is important to look in to the concept of climate change and understand what hindrances does it leads to which makes it an urgency which should be solved as soon as possible.

The current policy approach descries the problem of climate change as a global problem. The Earth belongs to every human being, and each is equally affected by climate change be it increases in temperature or change in climatic patters. Climate change has come be known as a single large scientific problem which compromises the atmosphere, oceans, ice packs, forests and land. Climate change is mainly resulted from the extraordinary success of the human species, which has become so technologically adept that its economic and cultural process significantly alters the underlying climate of the entire planet[5].

Mainly, the use of fossil fuels like coal, oil and natural gases since the inception of Industrial Revolution has altered the fundamental dynamics of the atmosphere, ocean, ice packs, forests, land, and planet as a whole. Recent reports suggests that human activities such global as the large scale transformation of the planet through the "earth-moving" construction of cities, housing, industrial sites, farms, dams and transportation infrastructure, may also cumulatively affect global climate[6]. All such activities leads to large scale emission of greenhouse gases – mostly carbon dioxide and methane as well as some other such as nitrous oxide, various hydrocarbons, and black carbon or soot. They cause overall warming or heating of the mean temperature of the atmosphere, oceans, and planetary surface. This has long term consequences such as rising sea levels, more frequent and more violent storms, water shortages, more droughts and forest fires, ocean acidification, and accelerated species extinctions[7].

THE IMPACT OF SOVEREIGNTY ON INTERNATIONAL COOPERATION:

The Westphalia Treaty had numerous implications. It ensured that the existing States were freed from any sort of external influences. The two most important impacts of the Treaty were as follows.

First, states emerged as virtually the sole form of substantive constitutional authority in Europe, their authority no longer seriously challenged by the Holy Roman Empire. The Netherlands and Switzerland gained uncontested sovereignty; the German states of the Holy Roman Empire accrued the right to ally outside the empire, while both the diplomatic communications and foreign policy designs of

[1] Urs Steiner Brandt, Gert Tinggaard Svendsen (2002). Hot air in Kyoto, cold air in The Hague—the failure of global climate negotiations, *Energy Policy*, *30*, 1191-1199

[2] Scott Barrett (2007). Why cooperate? The incentive to supply global public goods. USA: Oxford University Press.

[3] IPCC, Fourth Assessment Report: Climate change 2007 (AR 4).

[4] William Anthois and Strobe Talbott (2010). Fast forward:"Ethics and politics in an age of global warming. Brookings Institution Press.

[5] Eric w. Orts (2011). Climate Contracts. Virginia Environmental Law Journal, volume 29, number 3.

[6] Virgina H. Dale (1997).The relationship between land-use change and climate change. Ecological applications, volume 7, number 3

[7] Supra. 3.

contemporary great powers revealed a common understanding of a system of sovereign states. The temporal powers of the Church were also curtailed to the point that they no longer challenged any state's sovereignty. In reaction, Pope Innocent X condemned the treaties of the peace as *"null, void, invalid, iniquitous, unjust, damnable, reprobate, inane, empty of meaning and effect for all time"*.

Second, Westphalia brought an end to intervention in matters of religion, up to then the most commonly practiced abridgement of sovereign prerogatives. After decades of armed contestation, the design of the Peace of Augsburg was finally consolidated, not in the exact form of 1555, but effectively establishing the authority of princes and kings over religion. In ensuing decades, no European state would fight to affect the religious governance of another state, this in stark contrast to the previous 130 years, when wars of religion sundered Europe. As the sovereign states system became more generalized in ensuing decades, this proscription of intervention would become more generalized, too, evolving into a foundational norm of the international system.[8]

Attacks on the Old World Interpretations of Sovereignty

In the mid-1860s, it became evident that an international system controlled by absolute monarchies unsympathetic to any idea of representative government wouldn't work anymore. In this regard the two most severe attacks on sovereignty from political philosophers since World War II came from *Bertrand de Jouvenel* and *Jacques Maritain*. In his prominent work, Jouvenel[9] acknowledges that sovereignty is an important attribute of modern political authority, needed to quell disputes within the state and to muster cooperation in defense against outsiders. But he completely criticizes the modern concept of sovereignty, which creates a power that is above the rules and a power whose decrees are to be considered legitimate simply because they emanate from his will.

In Chapter Two of his enduring work, Jacques Maritain[10] presents his dissatisfaction towards Sovereignty. He added that sovereignty created three problems: (a) Its external dimension has international implications making it incompatible to international law and a world state. (b) The internal dimension, the absolute power held by the state, creates in centralism, not pluralism. (c) The supreme power of a sovereign state is dissimilar to the democratic idea of accountability.

SOVEREIGNTY AND INTERNATIONAL COOPERATION WITH RESPECT TO THE ENVIRONMENT

International law has developed a great deal through the increased co-operation among sovereign States in recent years. International organisation is simply impossible without co-operation among States. International co-operation does indeed depend on a degree of mutual concession among the members of an international organization. In the field of international human rights law, as well as international environmental law, there is a growing awareness that State sovereignty can be an obstacle to their protection. This awareness has good reason in that human rights or the environment can easily be victimized under an authoritarian administration of Nation-States, which place primary importance on economic development, giving priority to the expansion of the scale of economy or burning massive fossil fuels for industrial operations thus polluting the air, rivers and coastal sea waters.

To prevent such abuses of human rights and environmental conditions would logically require super-State controls, as advocated by some human rights and environmental law experts. However political leaders of some developing countries tend to be conservative and reluctant to change the ongoing plans of economic development in a bid to catch up with the developed economies. Such reluctance is backed, if anything, by a sense of State sovereignty. If they were criticized of their reluctance, they would come up with a rebuttal for the alleged principle of non-intervention in domestic affairs. This principle has been so firmly established in international law over a long period of time that unless intervention from an external authority in a human rights or humanitarian or environmental issue can be accepted as falling under a principle of *jus cogens* (peremptory norm), such a rebuttal could not be easily defeated. It does not follow, however, that sovereignty is absolute. Should it be absolute, it would deny the very idea of an international legal order of mankind.[11]

To rely on sovereignty as a fundamental attribute of the State does not necessarily entail exemption from international law either in the form of general international law or treaty obligations. Manifold legal obligations of States co-operating within a network of international instruments may restrain their freedom

[8] Philipott, D. 2010. SOVEREIGNTY. *The Stanford Encyclopedia of Philosophy*, [Accessed: 10 Nov 2013].

[9] Jouvenel, B. 1963. *Sovereignty; an inquiry into the political good. Translated by J.F. Huntington*. [Chicago]: University of Chicago Press.

[10] Maritain, J., 1951. *Man and the State*, Chicago, IL: University of Chicago Press

[11] Supra 9.

of action and consequently their exercise of sovereignty, but are in fact a form of exercising their sovereignty and may rather enhance the preservation of their legal status of sovereignty politically and economically. Such obligations neither deprive States of their sovereign status nor diminish it. In the words of Steinberger *"Sovereignty in the sense of contemporary international law denotes the basic international legal status of a State that is not subject, within its territorial jurisdiction, to the governmental, executive, legislative, or judicial jurisdiction of a foreign State or to foreign law other than public international law."*[12]

At the heart of the classic notion of sovereignty, natural resources were seen as legitimately falling under the sovereign authority of states on the condition that whoever possessed a resource, and exercised actual control over it, secured a legal title. Although this principle has been extended in recent times to cover the control of resources in a variety of areas (including the continental shelf and "economic zones" that stretch up to 200 nautical miles from coastal states), a new concept was expounded in 1967 as a means for rethinking the legal basis of the appropriation and use of resources – the "common heritage of mankind." Among the key elements of this concept are the exclusion of a right of appropriation; the duty to use resources in the interest of the whole of humanity; and the duty to explore and exploit resources for peaceful purposes only. The notion of the "common heritage" was subject to intense debate in the United Nations and elsewhere; it was, nevertheless, enshrined in two seminal treaties, the *1979 Convention on the Moon and Other Celestial Bodies* and the *1982 Convention on the Law of the Sea.*[13]

Considering all of these factors, and how international law and relations between Nation-States have helped *sovereignty* to evolve, the next step of evolution would be ensure a greater sense of *state responsibility*. Countries must understand that in their furtherance of their individual interests they are creating a problem for each other. That is, the interdependence of every country's survival must come to the fore and countries must acknowledge the fact that where the environment is concerned, they will either sink or swim together. Therefore the highest level of cooperation is the greatest need of the hour today.

This level cooperation is not unachievable, and there are many live examples of such collaborative and team like working of Nation-States. The best example of it can be seen in the way the European Union Countries have managed a significant turn around, where the environment is concerned. The need for a proper coordinated effort to tackle environment related issues came as a result of the following factors:[14]

(a) Issues that were connected to trans-frontier pollution emerged (b) There was a need to determine the workable conditions for free and fair trade (c)The EU countries wanted to ensure a level of development, which occurred efficiently and in a sustainable manner (i.e. Sustainable Growth).

Once the EU ministers had adopted the Environment Policy in 1972, the *Environmental and Protection Service* was established. The first issue tackled was that of water – the polluted River Rhine, which flowed through the heart of Europe. The EAP has a broad set of Community Policies with the many internationally accepted principles embodied in it, such as the *polluter pays principle*. Additionally in 1990, the European Environment Agency was set up with the expressive motive to *"promote integration, the preventive principle, and better implementation"* as the core themes of the environment policy.

The EU's environment related policies are often regarded as one of the EU's major successes. The environmental policy has become a powerful and independent force in environmental politics and economics, representing not just a common denominator of national interests, but a factor that influences public opinion and empowers green pressure groups. The EU Directives have resulted in several sectors undertaking billions of pounds of investments for programmes to improve pollution abatement methods.

THE GENERAL THEORY OF SECOND BEST

The general theorem for the second best optimum states that if there is introduced into a general equilibrium system a constraint which prevents the attainment of one of the Paretian conditions, the other Paretian conditions, although still attainable, are in general, no longer desirable[15]. The optimum situation finally attained may be termed a second best optimum because it is achieved subject to a

[12] Steinberger, H. 2000. SOVEREIGNTY. *Encyclopedia of Public International Law*, IV p. 501. [Accessed: 1 Nov 2013].

[13] Held, D. and Mcgrew, A. 2003. *The global transformations reader*. Cambridge, UK: Polity Press

[14] Mcdonald, F. and Dearden, S. 1994. *European economic integration*. London: Longman.

[15] R.G.Lipsey, Kelvin Lancaster (1957). The General Theory of Second Best. The review of Economic Studies, vol. 24, No. 1

constraint, which, by definition, prevents the attainment of a Paretian optimum.

The general theorem of the second best states that if one of the Paretian optimum condition cannot be fulfilled a second best optimum situation is achieved only by departing from all other optimum condition. It is important to note that even in a single general equilibrium system where there is only one Paretian optimum, there will be a multiplicity of second best optimum positions. This is so because there are many possible combinations of constraints with a second best solution for each combination.

A major issue for policy makers in the environmental domain concerns identifying an appropriate policy instruments, Regulators may have at their disposal a portfolio of potential policy instruments, including products or process bans, technology disclosure, industry self-regulations, and management-based regulations. Different instruments are appropriate for different types of problems in different circumstances.

The use of multiple policies is both environmentally beneficial and at the same time it is economically justified. Let us look at the example of pollution taxes and how does the theory of second best affect instrument choice for environmental and resource planning.

If we look at it from the theory of first best, the interaction between environmental policy and "pre-existing" distortions that emanates from labour and capital taxes. If one ignores the pre-existing tax distortions and compares pollution taxes and tradable permits, under a broad set of circumstances, the cost-effectiveness and efficiency properties of these two instruments would be same. However, this equivalency does not hold when one examines pollution control policy together with tax policy. One difference between the first and second best outcomes is that the use of revenue generating policy instrument for pollution control provides the opportunity to reduce the levels of other distortionary taxes, such as income and capital taxes[16]. Such "revenue recycling" can lower the overall cost of environmental protection in the presence of distortionary taxes, generating a so called "double-dividend". The double-dividend hypotheses assert that the efficiency gains from reducing distortionary taxes can be more than offset the actual costs of the pollution taxes themselves. Hence, the revenue recycling effect will offset some, but not all of the costs of pollution control[17].

Because of the revenue recycling effect the general equilibrium costs of environmental policy instruments, In particular, the costs are lowest when policy makers use a revenue-neutral approach that combines a pollution tax with a proportionate cut in particularly distortionary taxes. The cost of this combined tax and tax – cut policy are lower than with the use of a single Instruments, whether that single instrument be a pollution tax with no revenue recycling or a freely allocated permit system[18] Therefore, the need for coordinated response in a second – best world can often serve as an economic justification for the use of multiple policy instruments.

CRITIQUE ON THE GLOBAL COMPREHENSIVE PLAN

Waiting for a single worldwide solution to emerge from global negotiations is problematic especially after failure of Kyoto Protocol. While 180 countries have ratified the protocol, the United States has not. Further, considerable disagreements exist even among major states that have signed as to how large a reduction in emission is required[19].

Major debates exits over a number of key issues related to achieving efficient and fair mechanisms at a global level. One relates to who is responsible for the current and immediate future levels of carbon dioxide in the atmosphere. This is related to who should bear the primary burden of paying for solutions[20]. Given the decades-long failure at an international level to reach agreement on efficient, fair, and enforceable reeducation of greenhouse gas emissions, continuing to wait may defeat the possibilities of significant and adaptations and mitigations, in time to prevent tragic disasters. Further, given the important of technological change,

[16]Lee DR, Misiolek WS (1986). Substituting pollution taxation for general taxation: some implications for efficiency in pollution taxation. *Journal of Environmental Economic Management*, 13.

[17]Goulder LH (1998). Environmental policy making in a second-best setting. *Journal of Applied Economics*, 1 (2).

[18]Goulder L H. Parry I.W, Burtaw D (1997) Revenue –raising vs. other approaches to environmental protection; the critical significance of pre-existing tax distortions. *Rand Journal of Economics*, 28 pp. 708-731.

[19] Mathews, H.D., and K. Caldeira. (2008). Stabilizing climate requires near zero emissions. *Geophysical Research Letters*, 35 pp. 1-5.

[20] Najam, A.,S. Huq, and Y. Sokona, (2003), climate negotiations beyond Kyoto: Developing countries concerns and Interests. *Climate Policy*, 3 pp. 221-231.

without numerous innovative technological and institutional efforts at multiple scales, we may not even begin to learn which combined sets of actions are the most efficient in reducing the long-term threat of massive climate change.

The people most hurt by impacts may not have adequate representation at higher levels and may be unable to articulate clear solutions to reduce greenhouse gas emissions and help them adapt to the variety of threats they face[21].

The classic theory of collective action predicts that no one will change behavior and reduce their energy use unless an external authority imposes enforceable rules that changes the incentives faced by those involved. Given the presumption that any collective action problem that has global effects must be solved globally is controversial and not always true.

The term "Social dilemma" refers to settings where uncoordinated decisions motivated by the pursuit of individual benefits generate suboptimal payoffs for others and for self in the long run. Individual maximization of short-term benefits to self leads individuals to take actions that generate lower joint outcomes than could have been achieved. The reason that such situations are considered to be dilemmas is that at least one outcome yields higher returns for all who are involved, but participants posited as maximizing short-term material benefits make independent choices and are not predicted to achieve this outcome. Since the suboptimal joint outcome is equilibrium, however, no one is independently motivated to change their choice, given the predicted choices that other will make[22]. Social dilemmas thus involved a conflict between individual rationality and optimal outcomes for a group[23], even if some individuals cooperate, others are predicted to free-ride on the contributions of the cooperators.

Mancur Olson in his major book, The Logic of Collective Action (1965) analyzed that collective action is a problem because the costs of contributing are concentrated while the benefits are diffused.

Though sole reliance of conventional theory of collective action is doubtable mainly on two grounds, namely, weak empirical support of the theory to small – to – medium size environmental social dilemmas and the existence of multiple externalities at small, medium, and large scales within the global externality, thus, before analyzing efforts to reduce the threat of massive costs related to climate change, it is essential to update the theory of collective action so that future policies are not made on the basis of a theory that appears to be so reasonable but has not received strong empirical support.

For future analyses of how individuals relate to natural resources at multiple scales, the conventional theory of collective action needs revision based on a behavioral theory of human actions and a recognition of the importance of context in affecting levels of trusts and reciprocity of those involved. Further, the application of this theory to climate change also needs to question whether smaller-scale externalities exist from the use energy by individuals and firms and whether that may from a different foundation for future actions. A behavioral theory of the individual assumes that while individuals do not possess perfect information, they are capable of learning more accurate information as they interact in a particular settings-especially when the rules enhances the accuracy and rapidity of feedback.

COOPERATION AT VARIOUS LEVELS BASED ON THE FLEXIBLE BOTTOM – UP APPROACH

Actions at Various levels

Most of the actions generating Greenhouse gases are taken at multiple scales, activities could be organized at multiple scales, ranging from households, farms, and cities at a local scale to regions within a state, regional unites that cross state boundaries and the globe[24]. While the presumption is made in many policy discussions that global solutions are necessary for coping with the problems of climate change because of the inadequacy of local and regional efforts, few of these analyses examine the problems that large-scale units may face in developing effective policies related to resources. Though there is a belief that climate change issues can be tackled only at the global level, it is necessary to explore the various other options to ensure that environmental issues are tackled effectively. Action needs to be taken at multiple levels, and not just the international one. The flexible bottom up approach will show how action at multiple levels will enhance the quality of environment protection policies.

Individual, Family, City and National Level

[21] Agrawal, Arun. (2008). *The role of local institutions in adaptation to climate change.* Social Dimensions of Climate Change. [report] Washington, DC. World Bank.

[22] Salder, Todd and Daniel G. Arce M. (2003). Pure public goods versus commons. *Land economics*, 79 (3), pp. 355-68.

[23] *Linbach, Mark Irving, (1996). The cooperator's dilemma. Ann Arbor: University of Michigam Press.*

[24] Kates, Robert W., and Thomas J. Wilbanks. (2003). *Making the global local: responding to climate change*. Cambridge: Cambridge University.

Greenhouse gases emission are the results of an extraordinary large number of actions taken at multiple scales and not just at one level. Decisions at multiple level affect the amount of its generation. For instance, Within a family, decisions as to what form of transportation to use for, what car to purchase, and what investment to make for power consumption have effects on the global atmosphere, even it being minimal on a macro level. Similar decisions within firms are also important, as buildings in general account for "more than 70 percent of the electricity use and almost 40 percent of greenhouse gas emission in the United States".[25] Proposals for substantial increases in energy taxes at a national level to comply with proposed international agreements are strongly urged as the most effective way of changing the choices that individuals and families make, as they make decisions based on individual and family household budgets and do not take the external costs they generate into account. Without shared knowledge about the external costs of these actions, shifts in preference functions to take into account benefits for others, and reduced discount rates, no change at a small scale can be seen.

Discussions and meetings generate information about the prevailing unrecognized costs of individual and family activities as well as sometimes leading to change in the preference of individuals involved. Even without major taxes imposed on energy at a national level, however families that decides to invest in better insulation and more efficient furnaces and other appliances, to join a carpool whenever feasible, and to take other energy- conserving actions can save funds over long run.

Communities can be participatory in the power networks that enable households to invest in renewable energy sources like solar power, which can be used for household energy use and the left over or unused energy can be contributed to the network, which will potentially reduce local energy costs as well as will help in reducing greenhouse gas emissions.

Also, if one closely observes, it can be seen that the efforts at local level are challenging. For instance, the cities for Climate Protection (CCP) campaign intended to encourage the cities to find various different ways of controlling greenhouse gas emissions but found it a tough and challenging task. Part of the problem was that the "problem" was framed so often as a global issue that local politicians and citizens sometimes couldn't see that there are things that can be done at a local level that are important steps in the right direction to reduce greenhouse gas emission and a vital step for sustainable development.[26]

At local level, Retrofitting buildings to add insulation, solar photovoltaic, and more efficient heating systems can be one of the approaches that can be pursued and it may generate a long-term energy cost saving for the firm or family that takes such actions as well as reducing greenhouse gas emissions. The up-front costs of such efforts are effectively discouraging but the private investment will reduce private costs over the long run which can be an encouraging factor. For instance, by a public ballot approved by 81 percent of the voters, Berkeley, California, has adopted a general policy to reduce emissions substantially over time. One of the programs s called Berkeley FIRST (Financing Initiative for Renewable and Solar Technology) and was designed to lessen the obstacle of up-front costs[27].

Also, the local authorities may increase awareness about importance of environmental protection. The city of Toronto, for example, has set up an "environmental portal" that announces more than a dozen current city policies, related publications, and meetings that are focused on climate change[28]. Such creates an informed citizenry, which in return leads to intelligent decision-making and smart choices.

Even the standards set by international organizations and commitments can be used at local level as they are scientifically developed and set by appropriate authorities. For instance, The World Mayors Council on Climate Change was initiated by the mayor of the city of Kyoto, Japan in December 2005, soon after the Kyoto Protocol entered into force. Currently there are 20 members of this alliance, from all religions of the world.[29]

[25]Fuller,MerrianC.,Stephen C. Portis, and Daniel M, Kammen. (2009). Towards a low-carbon economy: Municipal financing for energy efficiency and solar power. *Environment*, 51 (1), pp. 22-32.

[26]Betsi, Michele M. (2001). Mitigating climate change in US cities: Opportunities and obstacles. *Local Environment*, 6 (4), pp. 393-406.

[27]Pope, C, Arden, Majid Ezzati, and Douglas W. Dockery. (2009). Fine-particular air pollution and life expectancy in the United States. *New England Journal of Medicine*, 360 (4), pp. 376-86.

[28]Toronto.ca (2013). *Environment & Energy - Living In Toronto | City of Toronto*. [online] Retrieved from: http://www.toronto.ca/environment/ [Accessed: 19 Aug 2013].

[29]World Mayors Council on Climate Change (2013). Untitled. [online] Retrieved from:

The major point is that many local governments and community organizations have recognized that actions undertaken at a local level are a major source of carbon emissions and that a need exists to tackle these at the local level as well as at higher scales.

The benefits from reduced greenhouse gas emission are not just global in scope. The benefits are disseminated across scales-from the domestic to the global. Thus, because units smaller than the global have sought to reduce emissions, at least certain marginal decrease of greenhouse gas emission is in the offing to result from projects undertaken at multiple scales while waiting for global polices to evolve and do the work.

In the present time, the metropolitan population, whether in industrial or developing countries are realizing that there is an inherent conflict between the automobile and the city. Urban air pollution from vehicles is evolving as a leading health issue in hundreds of cities. Worsening congestion also takes a direct economic toll in rising costs in time and gasoline, apart from undisputed effects on environment.

As the new century advances, the world is reconsidering the urban role of automobiles in one of the most fundamental shift in transportation thinking in a century. The challenge is to redesign communities, making public transport and making streets pedestrian and bicycle friendly. This also means replacing parking lots with public parks, grounds and fields. The urban lifestyle should aim at systematically restore health by incorporating exercise into daily routines while reducing carbon emissions and air pollution. The ratio of parks to parking lots may be the best single indicator of the livability of a city – an indication of whether the city is designed for people or for cars[30].

Added cost in cities that are dedicated to overhauls is a psychological and spiritual one, a deprivation of contract with the natural world. There is growing body of indication that there is an innate human need for contract with nature. Ecologists and psychologists have both been aware of this for some time. The biophilia hypothesis suggests that there is an instinctive bond between human beings and other living systems. Edward O. Wilson introduced and popularized the hypothesis in his book, *Biophilia* (1984)[31]. He defines biophilia as "the urge to affiliate with other forms of life".[32]

Therefore, in designing the cities, the designers should realize the importance of Parks and public space as they are very important to a democratic society as they are the only places where people meet as equals, in a city. Parks are as essential to the physical and emotional health of a city as the water supply or electrical supply. They fulfill the need of Biophilia.

In the city of Bogota in Colombia the policy makers wanted to know what could be done for the 70 percent –the majority- who did not own cars[33]. The city banned the parking of cars on sidewalks, created or renovates 1.200 parks, introduced a highly successful bus-based rapid transit system, built, hundreds of kilometers of bicycle paths and pedestrian streets, reduced rush hours traffic by 40 percent, planted 100,000 trees., and involved local citizens directly in the improvement of their neighborhoods. In doing this, he created a sense of civic pride among the city's 8 million residents, making the streets of Bogota in this strife-torn country safer than those in Washington, D.C[34].

Historically cities took food and water from the neighboring countryside, However, today cities usually depends on distant sources for basic facilities. For example Los Angeles takes much of its water from the Colorado River (970 Kilometers away). Mexico City's burgeoning population living at an altitude of 3,000 meters relies on the costly pumping of water from 150 Kilometers away, then which must be lifted 1,000 meters or more to increase its inadequate water supplies. Beijing is plans to draw water from Yangtze River basin (1, 2000 Kilometers) away.[35] The increasing scarcity of water coupled with the high cost of the energy devoted in carrying water over long distances may eventually begin to restrict the growth of some cities.

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http://www.worldmayorscouncil.org/ [Accessed: 19 Aug 2013].

[30] Esa.un.org (2013). *World Urbanization Prospects, the 2011 Revision*. [online] Retrieved from: http://esa.un.org/unup [Accessed: 24 Aug 2013].

[31] Wilson, Edward O. (1984). *Biophilia*. Cambridge: Cambridge: Harvard University Press.

[32] Kellert, S. and Wilson, E. (1995). *The Biophilia hypothesis*. Washington, D.C.: Island Press.

[33] Lyman, F. (2007). Twice Gates to the City: A Dozen Ways To Build Strong, Livable and Sustainable Cities. *World and Pictures Magazine*, Iss. 5.

[34] Nanninga, C. (2004). Energy Efficient Transport-A Solution for China. *Voices of Grassroots.*

[35] *Country Report of the People's Republic of China*. Country Resources. [report] Marseilles. Chinese Ministry of Water Resources, World Water Council, pp. 60-61.

As a city's design becomes a part of the local landscape, including the local ecology. Therefore buildings can be re-designed to be heated and cooled by natural forces. Cities can live to a great extent on recycled water that is cleaned and used repeatedly. The "flush and forget" water system is likely to become too expensive for many water less cities.[36]

Some of the most innovative public transportation systems are those that transport large numbers of people from personal vehicles to public transportation system. This can be seen in Curitiba and Bogotá. The success of Bogota's bus rapid transit (BRT) system, TransMilenio, which uses special express lanes to move people quickly through the city, is being replicated not only in six other Colombian cities but elsewhere too: Mexico City, Sao Paulo, Hanoi, Seoul, Taipei, and Quito. In China, Beijing is one of the 20 cities developing BRT system.[37]

Some cities are reducing traffic congestion and air pollution by charging the cars for entering the city. Singapore, has levied a tax on all roads leading into the city. Electronic sensors help to identify each car and then subsequently debit the owner's credit card. The system had reduced the number of cars in Singapore, while also providing both mobility and cleaner air to its citizens.[38]

In London (where the average speed of automobiles was comparable to that of a horse-drawn carriage a century ago) - a congestion fee was accepted in early 2003. The preliminary $10 charge on all motorists driving into the center city between 7 a.m. and 6:30 p.m. produced immediate results, by reducing the number of vehicles. This permitted traffic to flow more freely and cut pollution and noise.[39] In the first year following this new tax being introduced, the number of people using buses to travel to the central city increased by 38 percent. Also delays reduced by 30 percent, and vehicles speeds on main streets increased by 21 percent. Since the congestion charge was introduced, the daily traffic flow into central London during peak hours had been reduced by 70,000, which is a reduction of 3 percent, but the number of bicycles had increased by 50 percent.[40]

Another example would be Milan announcing in July 2007, the imposition of a "pollution charge" of $14 on vehicles entering its historic center in daytime hours during the week. Other cities like New York, Sao Paulo, San Francisco, and Barcelona have also used similar measures.[41]

The United States, which has remained behind Europe in developing varied urban transport systems, has been gripped by a "complete streets" crusade. This is an effort to ensure that streets are pedestrian and bicycle friendly in addition to being friendly to cars. Many American communities do not have sidewalks and bike lanes, making it problematic for pedestrians and cyclists to get around safely, especially in streets that receive heavy traffic.[42] Using bicycles can be very advantageous. It reduces congestion, lessens air pollution, and moderates obesity. But most importantly it does not emit the climate-disrupting carbon dioxide It is also inexpensive. Bicycles increase mobility while reducing congestion and the area of land paved over. For parking, the advantage is far greater, with 20 bicycles using the space needed to park a car.[43] Many cities are shifting to using bicycles. In the US, nearly 75% of the police use bicycles for regular patrols. They are more successful and make 50% more arrests per day than officers in squad cars. Monetarily, the operating cost of a bicycle is minor in comparison to police cars.[44] The key to achieving the potential of bicycles is to ensure a bicycle-friendly system of transport. This can be done by providing bicycle trails or designated street lanes for bicycle. Netherlands, Denmark and Germany have strong

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[36] Register, Register (2006). *Ecocities*. Gabriola, BC: New Society Publishers.

[37] Brown, Lester (2011). *Plan B 3.0 Mobilizing to Save Civilization*. New York: W.W. Norton.

[38] Molly O' Meara Sheehan, "Making Better Transportation Choices," in Lester R. Brown et al., State of the World 2001 (New York: W.W.Norton & Company, 2001), p. 116.

[39] deloitte Research (2003). *Combating Gridlock: How Pricing Road Use Can Ease Congestion*. [online] Retrieved from: http://www.vta.org/expresslanes/pdf/combat_gridlock.pdf [Accessed: 18 Aug 2013].

[40] Unknown. (2004). *Transport for London, Central London Congestion Charging: Impacts Monitoring*. Second Annual Report. [report] London: p. 39.

[41] Planetark.org (2007). *World Environment News - Milan to Impose "Pollution Charge" on Cars - Planet Ark*. [online] Retrieved from: http://www.planetark.org/dailynewsstory.cfm/newsid/43199/story.htm [Accessed: 30 Aug 2013].

[42] Ritter, John (2007). Narrowed Roads Gain Acceptance in Colo., Elsewhere. *USA Today*, 29 July.

[43] O'Meara, M. (1999). *Reinventing Cities for People and the Planet*. Washington D.C.: Worldwatch Institute. http://www.worldwatch.org/system/files/EWP147.pdf [Accessed: 14 Aug 2013].

[44] Supra at 30, pg. no. 200

controls to promote bicycle use.[45] Rail and bicycle and more specifically their combination into a single transport system, makes a city much more livable. Places that encourage the use of public transport reduce noise and pollution congestions.

Where water pollution control is concerned, water enters a city, becomes contaminated with human and industrial wastes, and exits the city precariously toxic. Industrial waste discharged into rivers and lakes, making water (surface and underground) unsafe for drinking.

Though the state of California is the 12th largest emitter of greenhouse gases in the world, it is also one of the leading states in adopting policies related to climate change.[46] One example is in 2006, the California legislature passed the Global Warming Solutions Act, directed at reducing greenhouse gas emissions in its territory by 25% by 2020. It required radical lessening of emissions in major industries, like oil and gas refineries.[47]

Regional And International Level

Historically European nations have always been at the forefront of international cooperation. The first international organization ironically was an environmental organization that dealt with how best to use the River Rhine. It was the Rhine Commission, which was set up in 1815 by the famous Congress of Vienna. The Congress of Vienna itself is the best example of international conference, being a forum where all the European nations' leaders came and discussed how to cooperate and prevent wars like that of the Hundred Year Wars, and the Napoleonic wars. The Congress of Vienna created a trend where country leaders met annually and there was almost a hundred years of peace (till the outbreak of world war I). However the Congress itself can be considered to be the application of a famous French legal scholar, Emeric Crucé's idea of "one republic World Government". The renowned scholar wrote a book in the 1600's stating that countries shouldn't be made based on linguistic basis (or any other common basis), believing that eventually countries would come together and form that one government. It was his idea that was discussed in the first of the many European Congresses in 1815.[48] After this several water sharing bodies were created for different rivers in Europe.

Even after this in what became known as the "Concert of Europe", Immanuel Kant's philosophy of "perpetual peace" was seen in action. Kant claimed that when leaders of nations met periodically, it increased the possibility of a perpetual peace. The Concert of Europe paved the way of future international cooperation by creating a framework for a more institutional and structured form of cooperation.[49]

The EU Model is the most successful international model for regional cooperation. The model works in the following manner: Most of the EU's legislations are resultant from international agreements. This ensures that the EU member states take their international obligations very seriously. Once a law is adopted, this law (EU Law) supersedes any of the individual member states' laws. The European Court of Justice ensures compliance to these EU laws. It may seem as though the EU's success depends largely on the enforcement and implementation mechanisms in place. This is only partly true, because the level of compliance to the laws is much higher in the EU.[50] The four major tenets that have aided the functioning of the EU include:

(a) Robert Schuman and Konrad Adenauer, devised a new kind of politics built on a supranational "community method". This was contrary to the established balance-of-power model. (b) Leadership generated by the Franco-German axis has been and will continue to remain the motivating power behind European integration. (c) There is a strong desire backed by political will to share sovereignty. The member states strive to construct strong, legally based, common institutions to oversee all integrations.

A consensus approach combined with solidarity and tolerance. The EU approach believes in not isolating any member state when they are faced with problems (such as Greece in the most recent crisis). More than that there is a reluctance to work with policies

[45] Supra at 36.

[46] Engel, K. (2006). State and local climate change initiatives: what is motivating state and local governments to address a global problem and what does this say about federalism and environmental law. *Urban Lawyer*, 38.

[47] Global warming solutions Act of 2006, Calif. Assembly Bill 32.

[48] Sands, P., Klein, P. and Bowett, D. 2001. *Bowett's law of international institutions*. London: Sweet & Maxwell.

[49] Klabbers, J. and Wallendahl, A. 2011. *Research handbook on the law of international organizations*. Cheltenham: Edward Elgar.

[50] Schaik, Lousie. (2009). The Sustainability of the EU's Model for Climate Diplomacy. In: Oberthur, S. eds. (2009). The New Climate Policies of the European Union: Internal Legislation and Climate Diplomacy, Brussels: VUB Press.

without the consent of the vast majority of member states.[51]

Other regional groups have not adopted all the features of the EU model, which is a fusion of transnational and supranational methods. Though many developed countries, have called for better integration, they have also contested the deputation of sovereignty that is necessary for developing successful supranational institutions. They seem to prefer an "intergovernmental model of integration." An exception to the integration process is Asia. Here cooperation rather than institutional integration has been more useful leading to the EU model being shunned. The Association of Southeast Asian Nations (ASEAN) for example was created on "a loose concept of regional economic and political cooperation with a light set of institution."[52]

CONCLUSION

The problem is that the commons are both more widespread and more important today than when it was written about. Problems of the commons have not diminished, and the lag between understanding and action can be long. While some commons problems have been addressed successfully, others continue to emerge. Some – such as the threat of global climate change – are both more important and more difficult than the problems of the past. Since sovereign nations cannot be compelled to act against their own wishes, successful cooperation is needed through a flexible bottom - up approach, which involves actions at multiple levels because no single approach guarantees a sure path of success. Gustav Stresemann's[53] remark puts the entire debate between sovereignty and international cooperation into perspective: "*Here we encounter two conflicting concepts with which we must come to grips in our time: the idea of national solidarity and the idea of international cooperation. To contrast national solidarity and international cooperation as two opposites seems foolish to me."* It is irrefutable that we cannot survive without each other; on the contrary, we can only survive and hope to live prosperously if we cooperate with each other. Any form of international cooperation can only succeed if countries come with the willingness to cooperate. This is one of the major criticisms of "Negotiation" being used as a method of dispute resolution, where it is believed that Countries come to the table with pre – determined hardline stands, that invariably end up hampering the negotiation process. This shouldn't be the case especially where environmental cooperation is concerned. There are regional institutions that have been cooperating successfully for years and years. It is therefore incorrect to say that international cooperation is a utopian idea, because there is empirical evidence to suggest otherwise.

Each regional organization has had its fair share of hiccups, but that never led to them disbanding. If we consider international organizations as people interacting, then there are bound to be differences of opinion and approach. These differences cannot be used against us, where we are divided and left unable to reach some common solution. There are ways to incorporate human differences and still cooperate. International relations and interactions should be done with a spirit of compromise. It cannot be about winning anymore because this competitiveness will be the ultimate end of the world, as we know it. One such example is the cold war, where countries competing nearly brought the world to a nuclear war. This never happened because countries realized that it would mean the extinction of mankind. Admittedly one problem that will be faced in international cooperation is that of the lack of homogeneity where economic level of countries is concerned. But this concern can be countered with the notion that, if a greater level of cooperation is not achieved irrespective of economic welfare and status, then the whole world is doomed to extinction. If developing/underdeveloped countries wish to grow, they can do so without repeating the mistakes of the greater nations, which are what led the world to be in its abysmal position in the first place. Growth can occur in a sustainable manner, such that future generations are not harmed. What is required is mindfulness of the implications of each nation state's actions of the world community. Countries can no longer hope to exist in isolation. This means that "State Responsibility" is the need of the hour, in order to ensure sustainable development.

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[51] Cameron, F. (2013). The European Union as a Model for Regional Integration. [online] Retrieved from: http://www.cfr.org/world/european-union-model-regional-integration/p22935[Accessed: 22 Aug 2013].

[52] Bilal, S. 2005. "Can the EU Be a Model of Regional Integration? Risks and challenges for developing countries", paper presented at *CODESRIA - Globalisation Studies Network (GSN) Second International Conference on Globalisation: Overcoming Exclusion, Strengthening Inclusion*, Dakar, Senegal, 29 August to 31 August, 2005. Dakar, Senegal.

[53] The former Chancellor of Germany, and foreign minister of Germany, responsible for many an economic turn around for Germany until his unfortunate premature death in 1929