

Greenhouse Gas Emissions and Global Mitigation Efforts

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The Current Situation

Climate change is a significant global challenge and has been linked directly to excessive greenhouse emissions. The effect is gradual changes in temperature, precipitation, and a rise in sea levels resulting in changes in the frequency, intensity, and duration of extreme events. Climate change will impact different regions based on their sensitivity and adaptive capacity and, therefore, their vulnerability.¹

A vast number of citizens depend on climate sensitive sectors like agriculture, forestry, and fishery for livelihood. The adverse impact of climate change in the form of declining rainfall and rising temperatures along with the increased possibility of drought and flooding threatens food security and livelihood in the economy. World economy, which mainly depends on natural resources such as agriculture, forestry, coastlines, and water resources also faces a challenge. This could pose excessive stress on the ecological and socio-economic system that is already facing tremendous pressures due to rapid industrialization, organization and economic development. Human beings are altering the earth climate in profound ways through burning fossil fuel that emit carbon dioxide, a heat trapping greenhouse gases. Because of these issues, the world has reason to be concerned about climate change.

For the sake of perspective, we can note that in 1999 US contributed 22% of carbon emissions, China 14.8%, and Russia 6.8%. The world carbon dioxide emission in 2004 totaled 27 billion tons. Of this US accounted for 5.9 billion tons, China 4.7, Russia 4.7, Japan 1.3, and India 1.1 billion tons. Gases such as carbon dioxide and carbon monoxide and chlorofluorocarbons can affect the environment many thousands of kilogram from the point of emission so it is evident that pollutant gases know no boundaries so collective action by all the countries is necessary.²

The disturbance in the global atmosphere at one place

¹ Gupta, Vijaya, "Climate Change and Domestic Mitigation Efforts," *Economic and Political Weekly* March 5, 2005.

² ADB: Asia Least-cost Greenhouse Gas Abatement Strategy, Asian Development Bank, GEF, UNDP, India.1998.

can transform the atmosphere of another place is known as tele-connections, a concept given by John Van Neumann, who used the term butterfly effect on climate. On the El Niño southern oscillation phenomenon, the change in the sea's surface temperature in the Pacific Ocean is reflected in changes in the Indian monsoons and changes in Southern America and Africa.

So, no single country or group of countries, however resourceful or environment conscious can solve the problem of global warming. There has to be a global cooperation system in place to minimize the greenhouse gases.

Individual Government Action

Many governments have been making plans to implement environmental regulations. However, there are some examples that have been more effective than others, and for that purpose, we will look at the UK government's Energy White Paper and the plan of the Parliament of New South Wales.

In the UK's Energy White Paper, the UK sets out to cut carbon emissions by 60% in the next fifty years. Although, this may seem to be a very ambitious plan, the UK has set out a clear plan of objectives complete with incentives. The proposal includes a new carbon trading system which came into effect 2005. Its purpose is to give energy suppliers and consumers incentive to switch to cleaner energy by speeding up changes to build efficiency in new homes, regulations and to set tougher standards for energy. It sets out to provide new incentive for energy suppliers in order to help consumers improve energy efficiency and to create new research centers. The UK hopes to set up Fuel Cells to put the UK at the forefront of "clean fuel technologies." The plan also supports cleaner coal technology and helps existing viable reserves. The UK is also working with the EU and car manufacturers as well to improve vehicle efficiency.³ Another government that we can look to as an example is the Parliament of New South Wales. The Energy Advisory Council was created by the parliament to advise the Minister for Energy on the development of a sustainable energy industry. The government has set aside 65 million for development in the next three years. The

idea centers on creating “high-quality” jobs for future generations.⁴

NGO Efforts

NGOs (Greenpeace, Friends of the Earth, WWF, Ozone Action etc.) nationally and globally are already addressing issues in response to greenhouse emissions for almost half the century. Many NGOs fall into three groupings: campaigners, research-based orgs or think-tank groups, and business alliances. NGOs are not exclusive but have also carved a space to be among an epistemic community “of actors including scientist, government and other public sector officials, and politicians, who come to share a common interpretation of the science behind an environmental problem and the broad policy and political requirements in response.”

Summary of NGO activities

Campaigners: familiar environmental groups

- high public profile direct action and lobbying campaigns
- combine media, grass roots, legislative, direct action, corporate, market, and public education strategies

NGOs such as Greenpeace, “have gained access to meaningful institutions” such as governments and corporations and have had the ability to bring vast awareness on behalf of grassroots issues. Environmental NGO (ENGO) Greenpeace states, “We don’t accept money from governments or corporations – and our financial independence is what allows us to pressure both.” NGOs will continue to build bridges from the inevitable and growing problematic realities of grassroots communities (such as limiting greenhouse emissions in fuel usages, food security, etc.).⁵

Think-Tanks: groups of professional scientists and analysts engage in technical and policy dialogue and mediation with stakeholders around specific themes and ‘bottlenecks’ in the policy process.

³ http://www.ukace.org/pubs/briefing/F3_13.pdf

⁴ <http://www.environment.gov.au/esd/La21/guide/pubs/tweed.pdf>

⁵ Rodger A. Payne. “Deliberating Global Environmental Politics” *Journal of Peace Research*, Vol. 33, No. 2 (May, 1996), pp. 129-136.
<http://links.jstor.org/sici?sici=0022-3433%28199605%2933%3A2%3C129%3ADGEP%3E2.0.CO%3B2-5>

- Develops policies and priorities
- Promotes policy solutions such as ‘contraction and convergence’
- Provides info., ideas, and solutions to global environment problems

Business Alliances: groups representing the interest or perspectives of the business community.

- Business leadership, policy development, best practice, global outreach
- Promotes clean energy technologies as solutions to certain environment problems

(Adapted from “Table: Brief description of prominent NGOs within the climate change debate”)⁶

World Efforts in the Reduction of Greenhouse Gas Emissions

The evolution of what eventually became the Kyoto Protocol started out as the Berlin Mandate. The Mandate set out to discuss and present ideas for a “stronger and more detailed commitment for industrialized countries” in the discussion and formation of an international agreement regarding greenhouse gas emission.⁷ Two years after the Berlin Mandate, the Kyoto Protocol was adopted in 1997 in Kyoto, Japan, and it “entered into force on February 16, 2005.”⁸

During the eight years between the adoption of the agreement and the implementation of the agreement, complex negotiations took place in which rules and implications were discussed and defined. “The rules and requirement for implementation of the Kyoto Protocol were further elaborated in a package of decisions called the Marrakesh accords.”⁹ At the time of adoption, eighty four countries had agreed to the Protocol, but many were apprehensive about bringing the Protocol into force since many clarifications were still needed.¹⁰

⁶ Clair Gough and Simon Shackley. “The Respectable Politics of Climate Change: The Epistemic Communities and NGOs” *International Affairs (Royal Institute of International Affairs 1944)*, Vol. 77, No. 2. (Apr., 2001), pp. 329-345.

<http://links.jstor.org/sici?sici=0020-5850%28200104%2977%3A2%3C329%3ATRPOCC%3E2.0.CO%3B2-2>

⁷ United Nations Framework Convention on Climate Change Website. http://unfccc.int/kyoto_protocol/items/2830.php

⁸ *Ibid.*

⁹ “Kyoto Protocol Reference Manual on Accounting of Emissions and Assigned Amounts” UNFCCC Secretariat

¹⁰ *Ibid.*

The Kyoto Protocol keeps countries accountable and works towards new goals for the future. However, it hasn't accomplished its desired objective as hoped.

As taken from the United Nations Framework Convention on Climate Change Website, "[t]o participate in the mechanisms, Annex I Parties must meet, among others, the following eligibility requirements:"

- "They must have ratified the Kyoto Protocol
- They must have calculated their assigned amount, as referred to in Articles 3.7 and 3.8 and Annex B of the Protocol in terms of tonnes of CO₂-equivalent emissions.
- They must have in place a national system for estimating emissions and removals of greenhouse gases within their territory.
- They must have in place a national registry to record and track the creation and movement of ERUs, CERs, AAUs and RMUs and must annually report such information to the secretariat.
- They must annually report information on emissions and removals to the secretariat.

There is much debate about the United States not signing the Kyoto Protocol. While big advances were made with countries like Russia agreeing to sign the protocol, many remain unsatisfied that the U.S. with its responsibility as a superpower, would not participate in such an important agreement.

Proposed Ideas

Which are the main features of the New Model?

- a. Global citizens are the center in this model,
- b. Sharing information, having discussion and reaching solutions with consensus;
- c. All members are equal and can communicate freely with each other;
- d. Use internet, media and others organization (universities, NGO and local volunteers and civil society groups)
- e. Focus on the bottom-up process as common citizens can play an important role in the Model;

How Does the Model works?

- a. Sharing of information through internet online, offline method like special collections in the universities or schools, and advertising.

- b. Sharing of both tacit and explicit knowledge,
- c. Use of open source database, My SQL, Wikipedia, which let people get the knowledge and express their own knowledge;
- d. Local knowledge banks should be developed based on traditional and indigenous knowledge of citizens depending on country-to-country, region-to-region and area-to-area. E.g. in India environment friendly and cheaper sources of energy can be distilled from ratan-jyot (zadropa) can be mixed with diesel oil to produce bio-diesel. Bio-diesel can also be extracted from the seeds of trees like mango, neem etc.
- e. Lifestyles apart from European and American lifestyles will get familiarity and acceptance
- f. People can join or quit the team freely;
- g. People who participate can increase their benefits and improvement of environment
- h. The information can guide the citizens to allocate their capital, technology, plans, and opportunities of job or education.

Why we chose this Model?

- a. The Model is a worldwide organization. Every citizens of the world can participate freely.
- b. The cost to participate in this activity is very low.
- c. The bargaining power of citizens towards private and public sector will be enhanced as they can create considerable pressure on them to adopt ecological friendly policies.
- d. The urge to participate in these activities will come from inner self of individual as they notice the whole process and support it in any possible manner.
- f. they have the flexibility to use any renewable resource like solar, hydra, wind etc, depending on the availability in the area of residence.

Implementations

Government:

- (1) The government should give tax incentives to people who are making an effort to limit the greenhouse gases.
- (2) The government should actively provide necessary information to people, and make appropriate channels to smoothen the process.
- (3) Government should create necessary regulations to support the organization goals. Such regulations make sure that the money of citizens is safe and they are responsible to make good use of funds so that investment activities are more likely to result in better global environment

International Organizations

United Nations should make sure that the citizens of all the countries come together and evolve the consensus. UN can also provide financial support to the organization.

Application

- (1) Individuals want to take initiative since powerful countries are not signing the environment agreement (Kyoto Protocol). Global citizens should come forward and participate in solving this environment challenge
- (2) A few people decide to propose this project, doing advertising throughout several channels like university, library, conferences and media.
- (3) Once the project meets strong acceptance, because it is reliable, it needs the creation of some open source databases to get and give information one each other
- (4) The main challenge is to attract people will of investing money in the project. Here it is important to ensure a fair finance transaction avoiding any possibility of speculation.
- (5) People have invested their money and decide about the destination of benefits: individual or social benefits.
- (6) In the investment, people will use the money to buy new-technologies or just improving the existing technologies.(to decrease CO₂ emissions of course)
- (7) People gain social and even individual benefits (in the long-time).

(8) If people gain benefits, they will continue investing the new-technologies, it will be more attractive for the other people, they will join the investment, try to gain benefits too.

Potential Areas of Improvement

- a. How to supervise the money and resources allocation in this system?
- b. This organization has probability to lose control, because most of its activities are based on the individual's quality.
- c. The people will be confused at the beginning times, it will cost a lot to guide the people to do some effort by themselves.
- d. People always take care of the short-term benefit. It's very difficult to let them realize the future benefits for the whole Earth.

Conclusion

- (1) Reforming the traditional treatment for greenhouse problem, we want to create a new conception of the global governance that emphasizes individuals efforts in the whole process.
- (2) Because of the greenhouse problem is closed to everyone's daily life, so if we want to solve or release it, everyone has to take part in the activity and try their best for himself.
- (3) In this Model, most of the capital and resource are allocated in a global visual angle, every part has a bargain power in the discussing process.
- (4) Greenhouse problem has a very familiar relationship with the industry, only the international cooperation can solve it in an effective way.
- (5) There must be a beneficial-producing circle for solving the greenhouse problem.

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