Strengthening the CDM: A bird's eye view[1]

The principle of Common But Differentiated Responsibility played an important role in defining the responsibilities of participating parties.

Climate change has emerged as the leading environmental threat facing the world today. Under the Kyoto Protocol developed to address this threat, the principle of CBDR (Common But Differentiated Responsibility) played an important role in defining the responsibilities of participating parties. The Kyoto Protocol provided three mechanisms to help mitigate GHG (greenhouse gas) emissions, namely, the ET (emission trading), JI (Joint Implementation), and CDM (Clean Development Mechanism).

Developed countries committed themselves to quantitative emission reduction targets, while developing countries had an opportunity to be part of the solution by virtue of their participation in emission reduction efforts through the CDM, wherein actions taken to reduce GHG emissions are awarded equivalent CERs (Certified Emission Reductions). JI and ET are the mechanisms that enable developed countries to meet their targets by taking actions within themselves. All these mechanisms need to be recognized and credited for raising awareness about climate change and initiating actual action against climate change. However, there is an increasing pressure on the world to reach a consensus by the end of 2009 to set the framework for the next commitment period and define actions needed therein, which need to be stringent than the one defined under the first commitment period. The world needs to build upon the learning of the first phase. The world is at stake and is rightfully demanding a breakthrough.

[1] The viewpoint paper derives extensively from 'The role of CDM in Asia', paper presented in Asia–Europe Environment Forum on 'The Energy Sustainability Challenge: Fuelling cooperation between Asia and Europe' 17–19 September 2008, Dublin, Ireland.

The Energy and Resources Institute
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This discussion paper has been prepared by Prabhat Upadhyaya, Research Associate, Centre for Global Environment Research, TERI, for the 14th Conference of Parties to the United Nations Framework Convention on Climate Change, 1–12 December 2008, Poznań, Poland.

The mismatch of interests between potential investors in CDM projects and project proponents in developing countries has resulted in the recognition of unilaterally generated CERs, that is, emission reduction effected by a developing country party without the participation of a developed country. This also highlights the fact that the participants from developing countries want to play their part in the fight against climate change, even if it is without the real support from the developed world.

It needs to be recalled that the CDM was not designed to judge the achievements of developing countries and provide the 'least cost' opportunities to developed countries. Developing countries see it as a mechanism based on mutual trust, aiding GHG emission reduction through technology transfer. Developed countries have been judging the CDM too harshly, given that it is a first-of-its-kind mechanism. The suggestive corrective measures for the CDM, at times, seem to be motivated by competition concerns. It needs to be kept in mind that not much has been done in terms of technology transfer through the CDM, and so, its full potential has not been exploited. Only 39% of CDM projects, till September 2007, had resulted in some sort of technology transfer (Seres 2007). The actual physical transfer of technology is even less.

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Table 1 gives a clear indication of the relative importance of the CDM in the overall carbon market. The size of this market has doubled in a single year to reach an estimated US $64 billion in 2007 – reflecting the pressures on meeting compliance as per the first commitment period

Table 1 Carbon market (2006/07)

	2006		2007	
	Volume ($MtCO_2e$)	*Value* (MUS$)	*Volume* ($MtCO_2e$)	*Value* (MUS$)
Allowances				
EU ETS	1104	24 436	2 061	50 097
New South Wales	20	225	25	224
Chicago Climate Exchange	10	38	23	72
UK ETS	NA	NA		
Subtotal	**1134**	**24 699**	**2 109**	**50 394**
Project-based transactions				
Primary CDM	537	5 804	551	7 426
Secondary CDM	25	445	240	5 451
JI	16	141	41	499
Other compliance and voluntary transactions	33	146	42	265
Subtotal	**611**	**6 536**	**374**	**13 641**
Total	**1745**	**31 235**	**2983**	**64 035**

EU – European Union; ETS – Emissions Trading Scheme; CDM – Clean Development Mechanism; JI – Joint Implementation

Source Capoor and Ambrosi (2008)

of the Kyoto Protocol. The important point to note here is that the CERs generated from primary CDM projects are nearly one-fourth of those generated through the EU ETS (European Union Emissions Trading Scheme) and are generated at nearly half the price – which is a positive sign vis-á-vis the potential of this mechanism, despite some areas of improvement, as the following sections will reveal. The increasing trend of on-sale of CERs (secondary CDM) reflects that primary CERs are grossly undervalued for the project proponents.

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Before the Protocol entered into force, investors considered the CDM as a key risk factor. However, with 1199 projects from various countries and various sectors registered with the CDM-EB (CDM Executive Board) till date (Figure 1), the CDM presents a successful example of a market-based mechanism for addressing an environmental issue. The CDM has resulted in the issuance of a total of 208 463 749 CERs worldwide by the EB (Figure 2). Biomass, biogas, renewable energy comprising hydro and wind, energy efficiency, landfill, and fugitive-emission-based projects have been the major project types to get

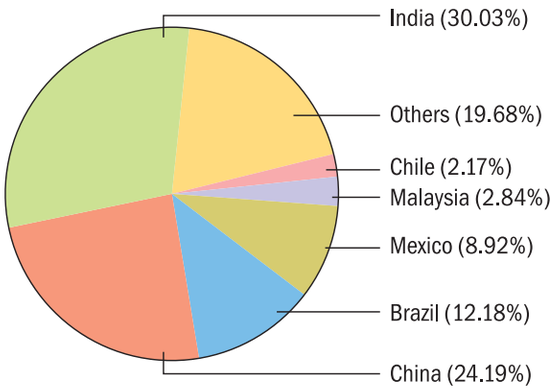

Figure 1 Registered project activities by host parties (total 1199 projects)
Source UNFCCC (2008a)

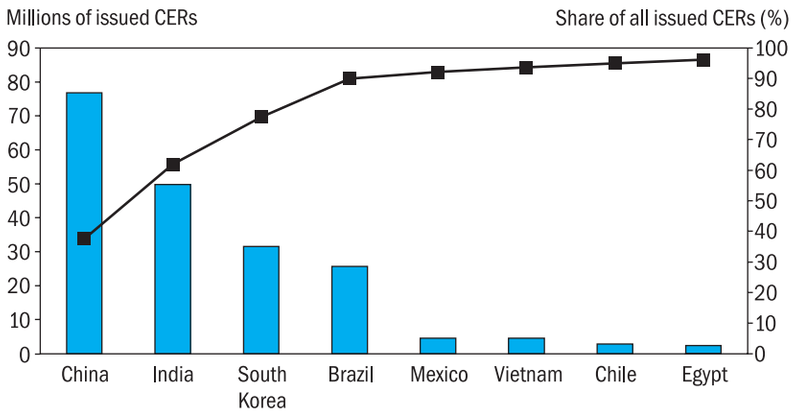

Figure 2 Top countries, by issued CERs (certified emission reductions)
Source CD4CDM (2008)

benefited from the CDM. CDM projects have given an impetus to electricity generation – of the order of 73 099 MW – in various developing countries. A large chunk of this electricity has come from wind, hydro, and biomass-based energy. This has resulted in not only reducing GHG emissions of the country but also promoting energy security. All these facts present the achievements of the CDM. The experience gained in implementing the CDM worldwide shows that there is definitely a scope for improvement in the CDM. However, the area of improvement needs to be approached constructively, and not with an air of destruction surrounding the motives of evaluation, as is being felt now.

CDM: areas of constructive improvement

The CDM has been successful in giving impetus to clean energy projects. The type and size of these projects vary, as they are spread across the world, and a lot of them have been undertaken with very limited involvement, if any, from developed countries. The role of carbon finance in promoting clean energy technologies at the needed scale has not been clear (Nakhooda 2008). The CDM has helped raise awareness regarding global warming and climate change among different quarters of society. Hence, it is all the more important to ensure that the CDM continues to grow and promote environmentally benign practices. At this stage, when all the parties to the Kyoto Protocol are in talks to define climate regime beyond 2012, it is important to re-visit the purpose of the CDM, which was to promote environment-friendly development and build upon the learning derived from its implementations. It is imperative that before going into the next round of commitments, lessons are learnt from the implementation of the CDM, and the mechanism is strengthened further.

Process changes

The CDM is highly affected by market speculations arising due to the uncertainty in the market on post-2012 roles. The recent financial meltdown has not helped its cause either. The economic slowdown is leading to a market slowdown, and it is quite possible that the price of CERs might tumble due to the liquidity crunch in the market. The financial slowdown has coincided with a slowdown in the CDM registration. Surely, this prevents the CDM from playing its role in the global arena. It is essential that the market gives positive signals to investors. At this stage, unfortunately, it seems that rather than removing the barriers to CDM implementation, more and more barriers are being created – largely due to a change in the public perception about the role of the CDM.

The CDM evolved using a 'learning by doing' approach, and it was expected that certain mistakes would be made and corrected during the path to perfection. However, it is time that the CDM moved from 'learning by doing approach' to a more structured governance approach. Approval on a project-by-project basis is costly and highly time consuming (Haites 2008). Without compromising on the basic principles, the CDM needs to maintain market attractiveness for investors. It cannot take the liberty of becoming too strict about the project registration to the level where CDM projects are no longer

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attractive to investors. In recent times, fingers are being pointed towards the CDM, primarily on leakages and additionality, due to a lack of understanding of the original definition of the mechanism and also because arguments by certain project developers have resulted in creating confusion about this mechanism.

It is important that the CDM-EB strikes a balance between decisions that are case-specific and the ones that have policy implications. The stakeholders in a CDM project cycle deserve a system that is capable of dealing with high volumes of projects. The EB should review its existing manpower capacity (Streck 2007) as well as the mode of its operations (IETA 2008). It is important that after every EB meeting, the EB should have a dialogue with representatives from DOEs (designated operational entities) and PDs (project developers) so as to improve the communication and convey the decisions taken at the EB clearly. This will help increase the much-needed communication between the decision-makers and the implementers of the CDM. The UNFCCC (United Nations Framework Convention on Climate Change) has done a good job in keeping all the information related to the CDM on its public website; however, this data is so extensive that a common man gets overwhelmed by the same and finds it hard to understand. The secretariat may like to think about ways to provide information in more user-friendly modules. The EB also needs to check the market distortion over the price of CERs, as many consultants use the price factor to create confusion in the market.

DOEs are the connectors between PDs and the EB. The relationship between the EB and PDs will be as strong or as weak as the DOEs. It is, therefore, important that the capacity of DOEs, in terms of manpower and technical know-how, be increased substantially so that they do not compromise on the quality of the projects. Further, rather than funding their operations through PDs, a revolving fund should be created, which would generate revenue inflows from service charges levied on PDs. This will help remove any bias on the part of DOEs towards a specific project and will alleviate fears towards the environmental sustainability of a project.

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PDs need an early communication about the decisions made during EB meetings on a regular basis. It will be useful if a platform beyond the CDM website is developed for communication amongst PDs so as to facilitate sharing of ideas, especially around proposed methodologies, and working towards standardizing them. A monthly/quarterly meeting to update the decisions and stand of the EB on issues pertaining to PDs can be undertaken. Such a meeting can be web-based and may charge a fee for participation, the proceeds of which may go towards the efficient functioning of the CDM-EB. However, care would need to be taken to protect the business interests of PDs while designing this tool.

The host party needs to strengthen the national approval process so that the projects that are business-as-usual are discouraged at the very initial stage. This will also reduce the burden on the EB due to an increasing CDM pipeline. An effort towards quantifying sustainable development indicators, defined by host nations, needs to be undertaken

so that the subjectivity associated with the same is removed. Also, host nations need to promote policy measures that encourage the uptake of cleaner technologies.

Methodological issues

The CDM has identified 15 different sectors under which a variety of projects can be registered. Recently, there have been suggestions that few more sectors/technologies be added to the already existing sectoral scopes. Prominent amongst them are nuclear and CCS (carbon capture and storage) technologies. The issues related to nuclear power have been discussed in much detail while defining the sectors initially in the past negotiations, and to raise the same issues again in further negotiations is not desirable. It will lead to a wastage of time and take away the focus from existing and safer technologies. It is estimated that new nuclear plants will generate 350–620 million CERs annually by 2030. The estimated demand for compliance units per year for 2008–12 is 487 million CERs. Thus, the increase in CERs will lead to downward pressure on CER prices and will, thus, make other technological options less attractive.

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CCS is a new technology and still needs to prove itself beyond pilot phase. Ownership of pore spaces and transboundary issues remain the bone of contention and need to be resolved. Also, at the post-closure stage, responsibility needs to be allocated, for example, once the storage capacity has been utilized and the site has been closed, then an entity needs to be clearly identified, who will be responsible for ensuring long-term monitoring and avoiding leakage at the storage site. Once the technology proves itself and the related policy issues are resolved, it could be considered for inclusion in the CDM. Till that time, it should not be included in the CDM. It is advisable that in future also, the credits arising from these technologies are taxed, and the revenue generated is utilized for either undertaking R&D (research and development) in these technologies or developing a revolving fund to promote safer and proven technologies. This will also help in avoiding the debates such as the one surrounding HFC (hydrofluorocarbon) projects at the moment. However, commercialization of CCS might lead to inaction on part of Annex I countries to actually cut their emissions.

The new hydrochlorofluorocarbon-22 facilities should not be allowed to seek credits under the CDM, as such projects have low sustainable development criteria. As has been suggested in SBSTA (Subsidiary Body for Scientific and Technological Advice) meetings, a plant should have an operating history of three years, between 2000 beginning and 2004 end, to be eligible to get benefit under the CDM from destruction of HFC-23. Further, a major chunk of CERs generated from such projects should be earmarked for national activities aimed at promoting adaptation.

Impact on sustainable development of CDM projects

Policies and actions to address climate change should be integrated and linked to sustainable development. Developing countries cannot allocate separate resources for climate change activities due to their limited financial capacities and different overriding priorities, and so, it

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becomes all the more important for them to consider this approach.
The CDM has been able to promote environmentally responsible projects, yet a lot needs to be done on the developmental aspects that were envisaged to be achieved while designing the CDM. Most of the CDM projects have been implemented in industrial facilities, and benefits have failed to percolate down to the community level. Forestry, transport, and community-based projects have not been able to make a mark in the current CDM portfolio. Community-based projects are generally small scale and cover large geographical area. This increases the monitoring cost and raises the chances of leakage, which, if not taken care of, can become a source of liability. Also, the benefit-sharing mechanism in projects in which large communities are involved is not defined. The PoA (programme of activities) approach might be useful in promoting community participation in certain cases.

There is an urgent need to ensure that the development aspect is taken care of in CDM projects. As of now, the sustainable aspect of CDM projects is defined qualitatively, which is subjective in approach. It is important that the sustainable development aspects of the CDM project activities are re-stressed, and an effort is made to quantify them. However, it should not lead to the CDM process becoming more difficult for the project developer. Community-driven projects need a level playing field. Voluntary market-based mechanisms provide the same to some extent (Kumar, Upadhyaya, and Torvanger 2007).

Technology transfer through the CDM

Apart from taking action on their own, industries have yet not been able to utilize the CDM effectively to the expected level. A part of the reason for this is the inability of the mechanism to promote actual technology transfer from developed to developing countries. A study conducted by the UNFCCC suggested that only 39% of the 2293 projects in the CDM pipeline, as of September 2007, have resulted in some sort of technology transfer. This transfer can be both in terms of physical technology or know-how of the technology. These 39% projects result in 64% emission reduction, primarily because most of them are related to industrial gas projects. Most of the projects in the CDM are unilateral (with no developed country partner involved) or small scale, so technology transfer in such cases has been of a limited nature. Japan has been a dominant supplier of technology for energy efficiency in industries. The rates of technology transfer are higher for Ecuador, Honduras, and Mexico, and significantly lower than average for India (Seres 2007). Clearly, the CDM needs to help promote technology transfer so that large emission reduction potential can be achieved. This cannot be achieved without the active participation of Annex I parties willing to share know-how, especially of technologies that are important from climate change perspective. Without technology transfer, only a limited amount of reductions can be achieved. The involvement of developed economies is also not optimized. It is important that rather than focusing on criticizing that CDM projects are limited to few specific types, the focus should be on motivating the industries in developed economies to transfer the technology to developing countries.

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Accelerating the CDM cycle

Delays lead to high transactional costs, high additional risk, and reduced efficiency (IETA 2008). This further affects the mechanism's contribution to sustainable development and serves as a big disincentive for participation of private players. In recent times, there has been a sudden slowdown in CDM registration. An analysis of the reasons behind the same needs to be done and communicated as soon as possible, so that these can be addressed in upcoming projects. A slowdown is a negative signal and needs to be tackled objectively. There are some potential issues that can be addressed if the EB, Methodology Panel, and Accreditation Panel are converted into full-time bodies having individuals who are fully dedicated to the task at hand. Also the manpower of the EB needs to be increased substantially, so that the workload can be managed effectively. This will speed up the whole CDM process, reduce the issuance time, and thus, send a much-needed positive signal to the investors who, of late, have started to head towards voluntary carbon markets due to structural glitches in the CDM cycle. This will call for an increased capacity-building effort to train manpower on the related issues. The CDM is a project-based mechanism, so the completion of the CDM cycle takes time. It makes it all the important to increase the workforce substantially or change the approach towards CDM registration. Timelines for different aspects of the CDM should be defined, so that an in-built check is maintained. The CDM process needs to be made less bureaucratic and more transparent.

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Strengthening programmatic CDM

In a bid to promote small-scale projects, a programmatic CDM approach has been suggested. The approach has the potential to take the CDM to the next level, and it can help the CDM to shift from project-by-project approach to a broader approach, wherein a programme in principle is approved. Such an approach will help in reducing the time spend on identical project proposals. Also, it might lead to reduction in transaction costs. DOEs will become central in this approach, as they will be the one with whom the decision to include a CPA (CDM Programme Activity) would rest. It is, therefore, important to ensure that the DOEs do not have any incentive to include the CPA into a programmatic CDM. However, it is even more important at this stage to increase the capacity of consultants and DOEs to take up such projects. The EB needs to provide clear procedures and guidelines, besides creating awareness at the government level, where relevant policies can be influenced, once benefit from such an approach is identified.

Introducing sectoral crediting of emission reductions below a no-loss target

The move towards introducing a sectoral approach to carbon commitments – which is strikingly similar to a programmatic CDM approach in various aspects while attempting to corner developing countries into accepting targets of some nature – will set back the progress on GHG emission reductions by several years. It is imperative to focus on strengthening the CDM mechanism on the basis of hard-learned lessons. Discarding it at this stage to start a new learning process from scratch would first require that the parties be brought on common

starting line, and then, they re-negotiate the whole process. This will take time, which is nothing short of a luxury now.

This sectoral approach will face a lot many implementation problems, and most of the developing countries are not at all ready for the same. Availability of data to define sector baseline and boundaries will be a big challenge. Also, no credit will be issued to an entity for taking better steps unless it meets the target. Such a sectoral approach will also affect the carbon prices negatively and may also lead to inaction in home on part of Annex I parties. Few countries have suggested a limit on purchase of CERs from specific countries, which might lead to fewer buyers for the credits, resulting in low bargain power. Further, such an approach will unnecessarily complicate the CDM, making it unattractive for PDs. Also, there is no surety that technology shall be supplied. It is important to recall here that the primary reason for excluding developing countries and LDCs (least developed countries) from any emission reduction commitment was the lack of capability to undertake additional investments. The sectoral approach would tantamount to a backdoor entry to impose quantitative performance targets on developing nations. This would be in complete violation of the spirit of the FCCC and would entail measuring developing country industry and developed countries on the same scale on GHG emissions (or energy efficiency), with all other competitive advantages for the developed world remaining intact — technology superiority, better infrastructure, fuel quality, and so on. Sectoral approaches would require the industry in developing countries and LDCs to incur additional cost, which would affect their competitiveness. It should be considered only if other measures to protect domestic industry are available, such as exemptions from WTO (World Trade Organization) agreements.

Sectoral approach will also affect the carbon prices negatively and may also lead to inaction in home on part of Annex I parties

Positive or negative lists of project activity types

Creating positive and negative lists of project activities will be helpful in making the functioning of the EB more efficient. Such lists can be country specific so as to take local conditions into consideration. A lot of effort needs to be put into making this option operational, as such lists need to be localized and revised from time to time. Also, the positive list project activities should be promoted intensively, as the ambit of technological options under the CDM would be reduced, once we have such lists in place.

Differentiate the eligibility of parties to host CDM project activities

The a move to differentiate the eligibility of parties to host CDM project activities could lead to differences amongst developing countries. It is not advisable to differentiate the eligibility of parties to host CDM projects at this stage. To undertake such an approach, it is important that appropriate indicators be defined. The CER supply would also reduce substantially, and the participation of developing countries in the fight against climate change will also reduce significantly. It is advisable that rather than adopting this approach, steps be taken to ensure that the CDM in LDCs and Africa becomes more attractive. Efforts are needed to make implementation of the CDM possible in such countries.

Technologies should be passed on to LDCs so as to promote environment integrity or the registration process should be made simpler for such parties. The approach should be to promote the CDM in these countries and not to limit the playing field available with developing countries. The ambit of small-scale CDM project activities in LDCs or SIDS (small island developing states) can be increased. This will make CDM project activities easily accessible.

Include technology transfer as an additional criterion for registration of project activities

Such a proposal is welcome, but its implementation will be dependent on active participation of developed countries as well. Sharing of technical know-how should be made mandatory for industries in developed countries. Also, it will be important to agree upon what is meant by technology transfer. Transferring technologies and removing the IPR (intellectual property rights) barriers surrounding them should be made mandatory for developed countries, at least for technologies crucial for tackling climate change, otherwise, such a criterion will be difficult to fulfil. If such criteria are developed, then very few projects will be registered, as PDs will become dependent on partners from developed economies for technology, which has not happened to a substantial level even now.

Creating additional sources for adaptation fund

Of the three flexibility mechanisms, only the CDM contributes 2% of issued CERs towards the functioning of adaptation fund, which was created to support adaptation activities in developing countries. These CERs need to be monetized before making the fund available. It is important to increase the funding available to adaptation fund for carrying out activities in developing countries. The CDM alone cannot meet the demand for adaptation activities. Developed countries should also support the adaptation fund monetarily. Extending the share of proceeds on the basis of unit issuance makes better option, as the monetary inflow would be substantial and the activity would be in line with the way adaptation tax is currently levied on the CDM. Thus, the implementation can take lessons from the CDM. Also, the fear of not taking into account the un-traded units will be addressed.

In sum

The experience with the CDM, thus far, should be regarded as an experiment, which provided a platform to raise the awareness on and action around climate change in developing countries. Steps to streamline the CDM cycle and make it efficient will go a long way in giving the much-needed positive signal to project developers. However, the current discussion point seems to make the CDM cycle more bureaucratic. The conditions should not be played with too much. We can't afford to waste the collective developments made in reaching this stage of making markets work in favour of the environment. No system is faultless. It is important to continue growing with passing time. The administrative aspects of the CDM are strengthened, so that the CDM can deal with the volume of projects it has to manage and monitor. Avenues to generate funding for running it more efficiently need to be identified. The lessons learnt from implementing the CDM in past

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three-and-a-half years need to be internalized as soon as possible, so that the CDM can reach more countries.

The spirit and motivation behind the CDM need to be retained. Any effort to replace the CDM with something totally new can possibly lead to the collapse of carbon market from supply side and will be a big setback to fight against climate change. The mechanism should be independent to be able to run on its own without too many interventions. At the same time, it is important to focus on the fact that the CDM needs to reduce GHG emissions, rather than focusing on the point that it leads to the generation of carbon credits. In the fight against climate change, the means adopted to fight are equally important as the final victory. Often, it's the journey, which is more rewarding than the destination itself. A new path cannot be laid down at this time, but it's important that the path being followed is the righteous one.

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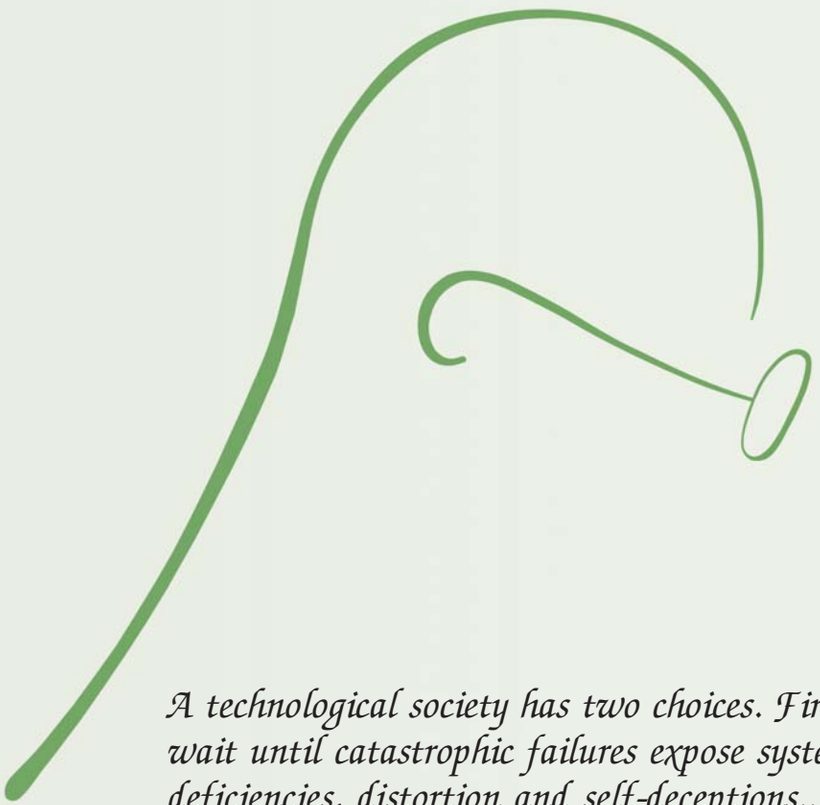

A technological society has two choices. First it can wait until catastrophic failures expose systemic deficiencies, distortion and self-deceptions...

Secondly, a culture can provide social checks and balances to correct for systemic distortion prior to catastrophic failures.

Mahatma Gandhi

For further details, contact

Suruchi Bhadwal
Area Convener
Centre for Global Environment Research
TERI
Darbari Seth Block
IHC Complex, Lodhi Road
New Delhi – 110 003

Tel. 2468 2100 or 4150 4900
Fax 2468 2144 or 2468 2145
India +91 • Delhi (0) 11
E-mail suruchib@teri.res.in
Web www.teriin.org