

CLIMATE CHANGE NEGOTIATIONS

CIVIL SOCIETY PERSPECTIVE



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Shakeel Ahmad Ramay

Sustainable Development Policy Institute

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State of Environment

The development history of Pakistan is quite interesting. Pakistan's economy went through different experiments over the course of time. On occasion, Pakistan followed the protective-economic model, and other times, the open-market model. However, the ubiquitous characteristic remained ignorance of the environment. Although Pakistan is not a big polluter, the prevalent lack of knowledge regarding nature is a major concern.

The environment and poverty are strongly linked and in some cases, determine impact. The underprivileged sections of society are more dependent on natural resources and their judicious distribution, and at the same time, are more vulnerable to economic, social and environmental shocks. Poor management of natural resources further aggravates the situation in Pakistan. The livelihood of millions of people is, both directly and indirectly, dependent on Pakistan's natural assets.

Environment degradation is a well-established fact in Pakistan. Components of the environment, e.g. forests, water, wetlands, land, air, so on and so forth, are not in satisfactory quality. Moreover, their condition continues to deteriorate with time. The land is losing its fertility, due to organic degradation, soil erosion, water logging, salinity and the loss of cover of natural vegetation. Land productivity is increasingly following a decreasing trend, and Pakistan is losing productive soil. Productivity is already very low in Pakistan as compared to the other developed and developing countries.

The water sector also faces issues of environmental degradation and the dilemma of mismanagement. Industrial, solid and household waste further adds to water pollution and the lack of an adequate governance system is exacerbating the situation. Water basins are also depleting very rapidly. The exhaustion of water basins is and will continue to be the cause of major concerns in the future. Pakistan will have to face the problem of scarcity in future, which will result in reduced hydro power generation.

Over-exploitation of forest resources is a common phenomenon, due to lack of awareness among the masses. The quality of air is worsening due to presence of Persistent Organic Pollutants (POPs), the general misuse of natural resources and other unwanted pollutants, such as chemicals. Owing to these problems, Pakistan's biodiversity is sharply declining. The degradation of the health of natural resources is impacting the whole social, economic and environmental fabric of Pakistan.

This current state of the environment imposes heavy costs to the country's weak economic structure. Negligence in the past has further impaired the situation and enhanced the financial burden. The current government is coping with problems in tackling environmental issues, due to the weak economic situation and increasing natural disintegration. World Bank released alarming estimates of the cost of environmental degradation to Pakistan (Table-1).

Table 1: Costs of Damage to Environmental and Natural Resources

Rank	Issue	Estimated Cost (Rs billion)	Range of Estimates (Rs billion)	Estimated Cost (\$ million)
1	Water, sanitation, and hygiene	112.0	—	1,867
2	Agriculture (soil erosion and salinization)	70.0	45.0 to 95.0	1,167
3	Indoor air pollution	67.0	60.0 to 74.0	1,117
4	Urban air pollution	65.0	62.0 to 65.0	1,083
5	Lead exposure	45.0	38.0 to 52.0	750
6	Rangeland degradation	4.2	3.6 to 5.4	70
7	Deforestation	2.7	2.1 to 3.3	45

Source: Pakistan Strategic Country Environmental Assessment Report by World Bank, 2006.

As discussed above, environment and poverty have strong linkage. The dilapidation of environment has also contributed towards the worsening of human development indicators (Table-2).

Table 2: Human Development Index, 2008

Human development index (HDI) value, 2008	0.55
Life expectancy at birth (years) (HDI), 2008	64.6
Adult literacy rate (% ages 15 and older) (HDI), 2008	49.7
Combined gross enrolment ratio for primary, secondary and tertiary schools (%), 2008	40
Life expectancy index	0.66
Education index	0.47
GDP index	0.53
GDP per capita (PPP US\$) rank minus HDI rank	-8

Source: UNDP Report on HDI

Furthermore, the allocation of national funds on environment and poverty are not based on necessity. Government spending on the environment is clearly insufficient. The institutional framework to address environmental issues is weak, but it has been evolving since the formulation and adoption of the Pakistan Environmental Protection Ordinance in 1983. Pakistan, being a signatory to different international agreements, is reframing its institute, legal framework and implementation strategies. We have also established different authorities and organizations, e.g. CDM cell, EPA, GCISC etc and policies and acts e.g. PEPA'97, Environment Policy, 2005, Energy Efficiency policy etc.

Environment Policy 2005 is a pivotal instrument for the response to environmental concerns. The policy also addresses the production sector, both natural and industrial, to attain the objective of sustainable development in Pakistan and mainstreaming environmental knowledge. The policy suggests different methods of enhancing the importance of environment and the judicious use of resources.

The government's performance in addressing the environment exhibited alternating trends.

¹Box-1: **Success Stories**

- Promotion of clean fuel, CNG stations and conversion of vehicles to CNG.
- Environmental awareness; Declaration of the year 2009, as Year of Environment in Pakistan.
- Institutionalization of devolution and its rationalization and strengthening.
- The ever increasing use of information technology and government disseminating Information through websites.
- Vaccination of children against communicable diseases.
- Creation of enabling environment for the private sector and civil society for enhancing their contribution to environmental sustainability. In this regard, Corporate Social Responsibility (CSR) funding by the private sector is engaged extensively.
- Large-scale poverty reduction demonstration projects in rural areas focusing on community participation and sustainable use of natural resources, e.g. Mountain Areas Conservancy Project-MACP, Environmental Rehabilitation in NWFP and Punjab Project-ERNP, Protected Areas Management Project-PAMP and Pakistan Wetlands Conservation and Management Project-PWP).
- Improvements in weather forecasting which helps in sound and timely decision making in agricultural practices and better management of natural resources and disasters.
- Supportive role for civil society environmental/rural development organizations, including IUCN, WWF, SDPI, SUNGI Foundation, SHEHRI, Shirkat Gah, RSPs, etc.
- Gradually increasing use of environmental impact assessment for investment programs.
- Integrating environment in disaster management - earthquake and Tasman Spirit Spill.
- Launch of the SMART Programme of Pakistan Environment Protection Agency. SMART is a self-monitoring programme for industries. Government has launched second phase of SMART-II.
- Adoption of Environmental Fiscal Reform [EFR].

¹ NSDS, 2009, Ministry of Environment, Pakistan

State of Economy

The Stern Review on the Economics of Climate Change 2006 indicated that climate change would cause the most massive market failure the world has ever witnessed. The Report suggested that countries have to adapt green production mechanisms to avoid the severe consequences of climate change. The world must immediately divert a huge quantity of financial resources for mitigation, adaptation and technology innovation and transfer. Pakistan, like other developing countries, is deficient in financial wealth and its economy is not also well established, instead undergoing various forms, as earlier discussed.

Pakistan has been categorized as a developing country for a long period of time and its history of economic development is diverse. The 1960s were a golden era of economic development in Pakistan and continued till the 1970s, when Pakistan promoted strong state interventions in all sectors. However, in the 1980s, Pakistan took a U-turn and moved towards more open- and market- oriented economy under the Structural Adjustment Program (SAP). There is strong evidence, which suggests that SAP increased the poverty and inequality in Pakistan.

SAP possessed the following features:

1. Reduction in fiscal deficit
2. Reduction in balance of payment deficit
3. To provide market friendly environment
4. Imposition of tax on agriculture and widen the existed circle of tax
5. Reduction in tariff lines and rate
6. Reduction in subsidies
7. Reduction non-productive public expenditures
8. Alignment of monetary policy with reforms
9. Reduction in public expenditures
10. Deregulation of foreign exchange and investment policy
11. Dismantling public enterprises in the interests of fair competition

The government and IFIs claimed, after the introduction of Structural Adjustment Program (SAP) that poverty had decreased in Pakistan. The neo-liberal school of thought strongly backed the statement, owing to the similarity in their visions of development and poverty reduction through trade-led growth and development. However, empirical results, independent sources and researchers are not ready to accept the claim. Studies conducted by various economists tell an altogether different story. Malik (1996) and Sherize (1995) indicated that poverty exhibited an upward trend from 1987/88 to 1990/91. All studies,

except those funded by IFI, are unanimous in their findings that poverty increased from 1988 onward (for details, see Dr. Kemal's study on SAP). Dr. Parvez, 2007 also pointed out that poverty and inequality increased after the introduction of SAP. However, overall from 1960s to 2000s, poverty, inequality and growth showed a mixed trend (Table-3). The government in 2005 claimed that poverty had decreased from 34.9% in 2001 to 23.4% in 2005. This assertion started a huge debate, which ended without any real conclusion.

Table 3: Trends of Poverty, Inequality and Growth in Pakistan

Decades	Poverty	Inequality	Growth
1960s	↑	↓	↑
1970s	↓	↑	↓
1980s	↓	↓	↑
1990s	↑	↑	↓
2000s	↓	↑	↑

Source: Dr. Sajjad Akhtar, 2007, Linkage of Trade and Poverty,

Pakistan's economy is going through an extremely adverse period of time and facing four major crises: food, fuel (energy), fiscal and frontier (security situation). Macroeconomic stability is a big question mark at present, which is negatively affecting the livelihoods of poor sections of society. Furthermore, it has also shaken the confidence of local and foreign investors. These current predicaments emerged due to weak structural arrangements, and were fueled by unprecedented surges in international food and fuel prices. The economy will feel both short- and long- term impacts from these issues.

The trade performance of Pakistan is also unsatisfactory; imports are increasing and exports are decreasing. A major reason for the trade sector's inadequate performance is a historic inconsistency in policy, as referred to above.

Liberalization of trade was at the heart of all policy in the last two decades. Despite the unilateral liberalization well before the conclusion Uruguay Round, Pakistan could not benefit and its share in international trade fell to 0.12 percent from 0.26 in 1960s (Economic Survey of Pakistan, 2007).

The health of macro- and micro- indicators has been deteriorating for the last few years (Table-4). The worsening of these indicators contributes towards the increased incidences of inequality and poverty. Inflation and unemployment are also on the rise. Government statistics show that unemployment decreased during the last decade but independent sources do not support this claim of the government's. The surge in food prices has further complicated the situation. It is estimated that about 60 million people are living below the poverty line (NSDS, 2009) and half of the population is food-insecure (WFP, 2008). These fragile conditions increase the burden on natural resources, which in turn contributes to environment degradation.

Table 4: Economic Indicators 2001-08

	2001	2002	2003	2004	2005	2006	2007	2008
GNI/Capita	480	490	520	600	731	831	925	983
GDP Growth % Change/yr	1.8	3.1	4.8	6.4	8.4	5.8	6.8	5.8
Per Capita Income \$	503	582	669	742	847	836	926	1065
Unemployment Rate % Change/yr	7.8	8.3	8.3	7.7	7.7	7.6	6.20	5.32
Export Growth	9.1	2.3	20.1	13.5	16	15.6	4.5	16.3
Import Growth	6.2	-7.5	20.1	21.2	38	39.91	8.22	35.6

Source: Various Issues of Economic Survey of Pakistan

Public spending is aimed in the wrong direction. The share of non-development expenditures is very high, as compared to development expenditures. (Table-5)

Table 5: Public Spending

Public expenditure on health (% of GNP), 2007-08	0.5
Public expenditure on education (% of GDP), 1991	2.6
Public expenditure on education (% of GNP), 2007-08	2.4
Military expenditure (% of GDP), 1990	5.8
Military expenditure (% of GDP), 2008	5.9
Total debt service (% of GDP), 1990	4.8
Total debt service (% of GDP), 2008	5.9

Source: Various issues of Economic Survey of Pakistan

Now Pakistan is facing the problem of power shortage, which is distressing the whole production sector. The industry is being forced to shut down, trade is decreasing, economic activities are shrinking, people are losing and most importantly, the public's distrust for the government is rising. The question now pertains to what strategy the

government will take to solve the problem, and whether or not it will be environment-friendly.

Climate Change

Climate change is an undeniable fact in 21st century and the world is witnessing a rapid change in temperature, precipitation, snow fall, melting of glaciers, sun shine period etc. It is predicted to have a devastating impact on the planet and its inhabitants. IPCC synthesis report, 2007 indicated that about 20 to 30 percent species of animals and plants would be at risk of extinction if global temperature rises from 1.5 to 2.5 degree. This will create a range of problems for humans. Moreover, health issues and disease will sharply increase among human beings. IPCC report states, "The health status of millions of people is projected to be affected through, for example, increases in malnutrition; increased deaths, diseases and injury due to extreme weather events; increased burden of diarrheal diseases; increased frequency of cardio-respiratory diseases due to higher concentrations of ground-level ozone in urban areas related to climate change; and the altered spatial distribution of some infectious diseases."

Agriculture will also become more susceptible to pest and disease attacks. Soil erosion, caused by storms, floods, etc., will limit the agricultural scope for the coming years of the century. Trans-boundary movement of pests and diseases will further complicate the situation. Moreover, the peace and livelihoods of billions of people would be threatened due to the scarcity of water. Water availability, according to the demand of growing population, and need, in different sectors is under a cloud of doubt.

The major sufferers would be Africa and Asia. The fresh water availability will decrease many folds and people will have to suffer. IPCC reported that the water shortage will have severe impacts on South Asian productivity, production and systems of production. The frequency of production shocks and failure of crops will become more common (IPCC, 2007).

Owing to the adverse impact of climate change, natural resources will become scarce. Scarcity always leads to competition to gain the maximum, sometimes at the cost of others, and paves the way for conflicts and wars. R. K. Pachauri, in his speech at the Noble Prize Distribution, said, " Climate change has raised the threat of dramatic population migration, conflict, and war over water and other resources as well as a realignment of power among nations. Some also highlight the possibility of rising tensions between rich and poor nations, health problems caused particularly by water shortages, and crop failures as well as concerns over nuclear proliferation."²

Vulnerabilities are expected to be increased across the globe; however, the extent of these weaknesses would be unequal. Poor people and regions would be more susceptible to

² R K Pachauri, Chairman, IPCC, 10 December 2007 , Speech at Noble Prize Distribution Ceremony, Oslo

³Box-2: Impact of Climate Change on different Sectors

Water Resources

1. Melting rate of glaciers will increase in the Himalaya, Karakoram, and Hindu Kush regions resulting in flash floods to begin with. Increased melting rate will aggravate the process of depletion of water resources. However, some hydrologists are of the view that the rate of snowfall will increase and melting rate will decrease to lower temperature in Himalaya, Karakoram, and Hindu Kush.
2. Watersheds and water basin would be degraded due to erosion and lost of forest cover.
3. Water stresses, drought will increase or vice versa

Agriculture

1. Lower productivity and production,
2. Outbreak and spread of diseases,
3. Shifting in cropping patterns,
4. Soil erosion, salinity and water logging,
5. Increased incident and trans-boundary movement of pests and diseases
6. Livestock would also be impacted by the climate change induced calamities and vulnerabilities. Lower crop productivity will introduce the competition between food and fodder crops in country, Keeping in mind the current situation of food availability in the country, food crops will have to be given top priority.

Forestry, Biodiversity and Land Use Changes

1. Depletion of biodiversity;
2. Reduction in forest cover;
3. Shifting of biomass due to change in temperature;
4. Loss of wildlife;
5. Deforestation to make land available for agricultural purpose to nourish the population.

Coastal Zones

1. Risk of soil erosion and degradation;
2. Flooding inundation;
3. Displacement of wetlands and lowlands;
4. Salinization of ground and surface water.

Natural Calamities

1. Increased frequency and severity of occurrence of extreme floods;
2. Increased frequency and severity of occurrence of droughts;
3. Increased frequency and severity of occurrence of cyclones;
4. Increased frequency and severity of occurrence of outbreak of diseases.

Impact of Climate Change on Health

1. Increased frequency and severity of occurrence of diarrhoea;
2. Increased frequency and severity of occurrence of malnourishment;
3. Increased frequency and severity of occurrence of malaria;
4. There would also be heat stresses.

³ IPCC, Synthesis Report, 2007

climate change and adverse impacts, and their helplessness would be higher, as compared to rich people and regions. As Thomas and Twyman, 2005 mentioned, vulnerabilities are higher in developing and least developed countries and their ability and capacity to adapt is limited due to higher level of dependence on natural resources, weak financial and institutional arrangements, and high incidence of poverty, stagnant or diminishing growth of GDP and most importantly absence or weak safety net mechanism.

What Next

Pakistan, as a developing country, has higher incidences of poverty and the country is facing a number of problems. Pakistan is looking for macroeconomic stability, poverty reduction and higher economic growth and development. Power shortage, inflation and unemployment are other problems the country is facing at present. There are a number of options available to Pakistan to tackle the fuel issues, e.g. production of power from fossil fuels, such as oil and coal, and renewable energy sources, like hydro power, etc. However, Pakistan lacks the resources to capitalize on these opportunities, especially renewable energy sources. In addition to this, Pakistan also has some international obligations, which hinder the full capitalization of power generation from fossil fuel.

Pakistan is a signatory to almost all environment related agreements and thus has certain obligations and privileges. Now, the question arises as to how Pakistan will fulfill the dream of development in the presence of all these agreements, which call for more sustainable solutions to all these problems. As part of its privileges, Pakistan can ask for financial and technological help from the developed world. Furthermore, Pakistan can also ask for aid in tackling climate change vulnerabilities under the adaptation window. However, there are certain weaknesses or shortcomings in the international agreements which will be discussed at the Copenhagen in a conference of parties in December, 2009. This will be a superb opportunity for Pakistan to voice its concerns.

International Negotiations

The debate on climate change is very complex and complicated. Uncertainty and inequality of climate change and its impacts make it further convoluted. Scientific evidence suggests that the impact of climate change would be highly unequal due to geography. Poor (developing, least developed and small island countries) regions would be more vulnerable and the existence of some countries (Small Island countries) would be endangered. Developing, least developed and small island countries have a very minor share in historical emissions. However, weak institutional, governance and financial infrastructure make them more vulnerable. Fourth Assessment Report (FAR) 2007, by Intergovernmental Panel on Climate Change (IPCC) also pointed out that the “climate change would be unequal and poor countries would be more vulnerable”.

Developed countries have a major share in the historical buildup of Green House Gas (GHG) emissions. Developed countries made progress and development on the cost of

environment and hence, have left very little room and space for the development of poor countries. Economic development is crucial in eradicating poverty and raising the living standards of its people. Developing countries are deprived in resources, have made restricted advances in technology and have limited capacity for research and development. This situation demands more help and assistance from the developed countries but the response of developed countries, compared to the need, is disappointing.

Developed countries, without realizing their responsibilities, try to shift or transfer the burden of climate change on poor countries. This seems to be a sweeping statement but unfortunately it is reality. Developed countries pressurize poor countries to reduce their emissions but do not fulfill their own obligations.

Bali Action Plan (BAP), adapted at COP-13 in Indonesia, calls for a fairer and more equitable deal, based on the principle of common but differentiated responsibilities, capabilities, equity (article 3.1), precaution (Art. 3.3) and prevention (Rio Declaration and UNFCCC Art. 3.3). Shared Vision rests on the four pillars of BAP, i.e. mitigation, adaptation, finance and technology transfer. The main objective of BAP is to assist the parties in achieving full, effective and sustained implementation of UNFCCC convention.

Shared Vision and Bali Action plan do not undermine the sustainable development goal of developing, least developed and Small Island countries. Shared Vision puts obligations on developed countries regarding financial assistance, technology transfer and capacity of poor countries (Article 4.3 and 4.4). Furthermore, assistance should be measurable, reportable and verifiable. The next step is to ascertain how common and differentiated responsibilities and capabilities would be calculated. Mexico's proposal suggested that it should be guided by three main factors:

1. GHG emission
2. Population
3. Gross Domestic Product

The contribution required from developed countries should be calculated according to different formulas integrating these indicators, and it should be reviewed periodically (Mexico Proposal). China is of the stance that there should be differentiation between "productive and non-productive" emissions. Developed countries should cut down their non-productive emissions, requiring a change in lifestyle, rather than emphasizing on a reduction in emissions from productive sectors in developing countries.

The mitigation of emissions is critical for stabilization of temperature below 2 C, lowering vulnerability and saving the earth. Developed countries have been the main contributors towards the historical emission and are responsible for 76% of the cumulative emission today. The per capita emission of GHG and the lifestyle emissions from developed countries are some major contributors, however, the share of developing, least developed and small island countries is very minor. It is estimated that about 100 countries with a population exceeding 1 billion contribute less than 3 percent of cumulative emissions. Developed countries have greater responsibility and capacity to

mitigate, as documented in different agreements and protocols, and have thus committed to certain reductions.

However, these responsibilities do not appear to be carried out to the fullest. Developed countries pledged to decreasing 25-40% of their emissions till 2020 and 50-85% till 2050 from the base level of 1990. They will follow a systematic pathway to fulfill these obligations from the first commitment period (2008-2012) and beyond. Although the lion's share of responsibility lies with them (Table-6), they do not appear to be following the guidelines laid down. According to RCI 95% of reduction targets fall on the parties (individual and group) listed in the table-6.

Table : 6 Mitigation Targets for Developed Parties

	2020 mitigation targets derived from fair shares, expressed as:	
	Fair shares (RCI) %	Reduction below 1990 level (CO ₂ e excl. LUC) %
Australia	2.29	39.7
Canada	3.51	43.0
European Union	33.93	44.4
Japan	9.71	56.2
New Zealand	0.34	40.6
Russian Federation	8.21	20.2
United States	37.80	44.6

Source: Climate Action Network, International

By playing with formulas, they are complicating the scenario. Some major polluters in Annex-1 countries e.g. United States of America and Japan are attempting to change the base year 1990 to 2005. Japan submitted its readiness to reduce emissions, but the calculations were tricky and not easily comprehensible. Practical reduction, according to this formula, is 8-10% from the level of 1990. USA government and its Congress are also aiming to make 2005 the base year, as the level of change required in the last four years is low, as compared to 25-40%.

Canada's role, at present, opposes the spirit of negotiations on climate change. It is working with many other countries and groups to undermine the discussion on emission reductions and the base year. Canada has joined hands with Japan and other countries in order to continuously block the discussion on 2020 targets. Russia is asking for inclusion of nuclear energy in JI and CDM.

On the other hand, the behavior or role of European Union is much more positive and EU is showing serious dedication towards resolving the issue. EU, in its submission, promised to reduce emissions 30 percent from the 1990 and discussed the possibility of further cutbacks if other countries fulfilled their commitments. EU is also playing a vital

role in convincing other parties to understand the seriousness of issue and take concrete steps to move forward.

Developing countries, being non-annex countries, have no obligations or commitments to reduce emissions. But, at Bali meeting, developing countries did offer to reduce GHG emissions voluntarily; however, this is conditional to assistance from the developed countries.

Negotiations on reductions of emissions of GHG are underway and developed countries are attempting to place obligations on non-annex countries under Shared Vision. Non-annex countries, especially fast-growing economies, e.g. China, India, Brazil, South Korea, and Argentina, are opposing these legal bindings. India, at Bali, proposed voluntary commitments, but under stipulations of aid from developed countries. It was stated that all non-annex countries will act through the National Appropriate Mitigation Actions, with provisions of financial and technological support from developed countries, for effective implementation of the mitigation plans.

Now that developed countries are not fulfilling their commitments but are, instead, asking non-annex countries to mitigate, the financial resources provided are far lower than their commitments, e.g. the LDC fund received only 10 percent of the committed resources. The lack of resources in non-annex parties and low financial assistance and technology transfer from developed parties are hindering the mitigation actions in non-annex parties. The negotiation text asked for the use of market instruments and ambitious targets for reduction or phasing out of all types of subsidies for all green gas emitting sectors by Annex 1 & 2 and non-annex parties. It did not distinguish among different parties' state of development, capacity and capabilities.

It is obligatory for the developed parties to help and assist the non-annex parties in implementing the NAMAs at a national level. It will work towards keeping the temperature below 2 C and stabilize the carbon level, whereas it might otherwise lead to a sharp increase in the quantity of carbon – 50% or more in developing countries, especially in economies on the rise. It will also increase the cost of adaptation for developing parties. With the aid of developed countries, adaptation would be easier and at lower costs.

Ambitious targets for reduction or phasing out of all types of subsidies for all green gas emitting sectors by Annex1&2 countries and fast growing economies. Developing, least developed, Small Island and vulnerable countries should be given provisional time to phase out subsidies without compromising their development targets or goals.

Adaptation can be defined as “the adjustment of current and expected impacts relating to climate change, which minimize the impact and help to exploit the beneficial opportunities (IPCC 2007)”. Adaptation can be planned, natural or autonomous. It helps to reduce the cost of climate change through decreasing vulnerabilities and increasing the resilience of communities, economies and environment. Climate Action Network

International calls for an ecosystem-based adaptation, due to the vital role of the ecosystem in maintaining and raising the sustainability of planet.

Ecosystem services include provision of food, water, timber, fuel and fiber; regulating services that help control climate, floods, disease, waste and water quality; supporting services such as soil formation, photosynthesis and nutrient cycling, and cultural services which include non-material benefits such as heritage and spiritual, religious and inspirational benefits (see Annex 1). (Millennium Ecosystem Assessment, 2005)

Adaption is the main concern of weak countries, and they are, thus, emphasizing on a fair and acceptable deal through intense current negotiation. BAP emphasize on more concrete action plans and support from the developed parties. The parties have unanimously agreed that “low-lying and other small island countries, countries with low-lying coastal, arid and semi-arid areas or areas liable to floods, drought and desertification, and developing countries with fragile mountainous ecosystems are particularly vulnerable to the adverse effects of climate change”. The vast majority of the vulnerable countries have poor resources, are lesser advanced, and suffer from a lack of technology to adapt. In addition, their economies are natural-resource based and the human development index is low. All these factors hinder the implementation and functioning of competent adaptation instruments and policies in these countries.

- (a) *[Small island countries;*
- (b) *Countries with low-lying coastal areas;*
- (c) *Countries with arid and semi-arid areas, forested areas and areas liable to forest decay;*
- (d) *Countries with areas prone to natural disasters;*
- (e) *Countries with areas liable to drought and desertification;*
- (f) *Countries with areas of high urban atmospheric pollution;*
- (g) *Countries with areas with fragile ecosystems, including mountainous ecosystems;*
- (h) *Countries whose economies are highly dependent on income generated from the production, processing and export, and/or on consumption of fossil fuels and associated energy-intensive products; and*
- (i) *Land-locked and transit countries.]*
- (ii) *[[Particularly vulnerable populations, groups and communities] [Groups requiring special protection], especially women, children, the elderly and indigenous peoples, local communities, rural populations, subsistence fishermen and coastal communities and critical infrastructure including through promoting a gender perspective and a community-based approach to adaptation, if appropriate;]*
- (iii) *[Particularly vulnerable ecosystems and species, including through promoting an ecosystem-based approach to adaptation understood as sustainable ecosystem management, conservation and restoration activities, where appropriate, to support adaptation;]*

UNFCCC convention, Kyoto Protocol and Bali Action Plan call for financial and technological assistance from developed countries to help these countries in adapting to climate change. The current negotiation text also calls for enhanced financial resources,

technology transfer, enhanced actions on adaptation and its means of implementation and so on. Developing nations have suggested the establishment of the Adaptation Fund, with its own board and procedures under the UNFCCC. Annex 1 countries should contribute more to the Adaptation Fund and UNFCCC should also garner aid from other viable financial resources.

There should be a mechanism to access the fund and it should give priority to most vulnerable countries. However, Saudi Arabia is pushing for inclusion of “Adaptation to Impact of Response Measures”. Saudi Arabia is of the opinion that the mitigation measures will impact its export of fossil fuel, which will greatly hamper its economy.

Currently, as aforementioned, developed countries are not fulfilling their commitment in supporting poor countries in adapting to climate change. Developed countries are insisting on contributing only negligible funds for adaptation. Yvo de Boer (UNFCCC Executive Secretary) proposed a 10-billion US\$ fund to start with, which was intensely criticized by the developing countries and civil society. Climate Action Network International suggested that the minimum amount to start should be 150 billion US\$ per year, even though this, too, is viewed as a lower amount than necessary.

Developing countries are emphasizing on adaptation methods and developed countries are emphasizing on mitigation measures. The former are of the view that they are not responsible for the historical accumulation of carbon in the atmosphere and their present emissions are also well below the permitted levels. At the same time, they are more vulnerable, which requires immediate actions to minimize the impact of climate change. But the developed countries are of the view that mitigation is immediately required to keep the temperature below the 2C. Fast-growing economies should be committed to some levels and go for clean energy. Both parties are insisting on their own points and the debate continues.

Stern Report stated that urgent actions on provision of financial resources are required; otherwise, the cost of mitigation and adaptation will increase manifold. The severity of climate change increase and in proportion, the capacity to cope with its effects will decrease. UNFCCC considers finance as an important instrument to fully implement the convention. Mitigation and adaptation, in developing countries, are directly dependent on the financial resources provided by the developed parties. BAP calls for improved, accessible, adequate, predictable and sustainable resources. It is an obligation on developed parties to provide financial support to developing parties. ‘First Ten Years’ by UNFCCC clearly pointed out that developed parties have committed to provide the financial resources to developing parties for several years.

Developing parties have found financial aid a vital instrument for mitigation, adaptation and technology transfer to be implemented. They are pressing for an immediate step from the developed parties, in the shape of funds according to the need of developing parties and on the basis of historical responsibilities. Financial resources should be provided on the grant or concessional basis rather than loans. They are also asking for the establishment of new institutions and resources for financial assistance and creation of

new funds. However, developed parties are insisting that existing institutions are sufficient for creating the necessary funds (Benito Muller, Luis Gomez-Echeverri April 2009).

The negotiation text by UNFCCC highlighted the need for new financial mechanisms and operationalization of these mechanisms. All resources should be exploited to fulfill the needs of developing parties. According to the text, the mechanism shall ensure:

- 4(a) These financial resources are predictable, stable and delivered in a timely manner;
- (b) These financial resources shall be essentially grant-based, particularly for adaptation, without prejudice to possible concessional loan arrangements in appropriate form, to meet the need of a specific programme;
- (c) The level of the new funding is initially set at between 0.5 to 1% of the GDP of Annex 1 and 2 parties; and
- (d) The Executive Board, established to govern and manage the financial mechanism shall determine the allocations for mitigation and adaptation, to be periodically reviewed, taking into account the historical imbalances in and the urgency of funding for adaptation.

The negotiation text also suggested a strong involvement of private sector. UNFCCC, in its publication, 'Investment and Financial Flows to Address Climate Change', stated that the private sector's share in financial and investment flow is 86%. Moreover, the investment will triple till 2030. So, the involvement of the private sector will help to address the challenge in a better way.

However, the debate, on the amount of financial resources and the mechanisms of financial assistance, is underway. As discussed above, developed and developing parties are proposing different amounts. Many believe that the finance issue can cause a major stalemate at Copenhagen. So it is suggested that it should be tackled with greater dedication and on the foundation of the principle of equity.

The implementation of mitigation and adaptation strategies requires finance and technology, both being crucial and essential elements in combating the challenge of climate change. New and environmentally-sound technologies will help the world to control and mitigate climate change. Energy-efficient technologies facilitate a decline in anthropogenic emissions and an incline in the sustainability of energy resources, for longer periods, to support the needs of an increasing population. The creation of renewable-energy technologies will pave the way for new and environment-friendly energy resources e.g. biofuels. However, technologies should be developed within the context of local needs, so as to meet the challenge.

UNFCCC lacks no clarity about the importance of technology transfer. Different articles of Convention categorically talk about the importance of technology and the immediacy of issue.

⁴ Negotiation text by UNFCCC

- Article 4.1 – promote and cooperation on technology/technological for furthering the understanding of the climate impacts
- Article 4.3 - transfer of technologies in the context of full incremental costs
- Article 4.5 – development and enhancement of capacities
- Article 4.7 – effective implementation taking into account economic, social development and poverty eradication
- Article 4.8 and 4.9 – specific needs and specific situations of technology for countries (4.8) and least developed countries (4.9)

All the parties involved are in the process of establishing a Multilateral Technology Acquisition Fund and a framework for technology transfer. This framework categorically will talk about the research and development, deployment, transfer and diffusion of environmentally sound technologies. Funds will provide the required resources to acquire the technology and, furthermore, Research & Development at the national level. Developing parties are asking for maximum representation, especially of more vulnerable parties, in the Executive Board of Fund.

The politics of technology transfer are interesting. While the developed parties are talking about environment friendly technologies and technologies for mitigation and adaptation, they are silent about the issue of Intellectual Property Rights (IPRs). Currently, technology innovation mainly belongs to the private sector. They are canvassing for higher protection and strict IPR rules. Developed parties' governments are also supporting companies. Recently, USA Senate passed a bill for strict implementation of IPR rules with all trading partners, to which, even other developed parties are no exception.

Developing parties, however, are asking for a more flexible regime of IPRs, as their poverty will disable them from paying the costs. They are calling for more help from developed parties to address the issue of IPRs, as well as for the creation of a fund to finance the IPRs, which would make this technology affordable for developing parties. However, at this stage of the debate, it is difficult to predict the outcome.

Pakistan's Stance

The Copenhagen climate change meetings in December 2009 are expected to cement global efforts beyond 2012, when the commitments spelt out in the Kyoto Protocol expire. The outcomes of the negotiations will be a Copenhagen Protocol, or several binding decisions on addressing the challenge of climate change. This will include delegations of about 189 countries, which will engage extensively to develop a fair, equitable and acceptable framework for all parties involved, as well as representation of other units. It is hoped by world community, and especially by the most vulnerable groups, that their leaders and representatives will be able to develop a framework to save the planet and secure the future of their coming generations, based on the agreed pillars of mitigation, adaptation, technology and financial resources.

The commitment period (2005-12) of Kyoto Protocol could not achieve its objectives, due to non-fulfillment of commitments from developed countries, primarily from USA. US Congress is likely to make its commitments conditional on emissions reduction pledges by developing countries, although their share in the historic build up of GHG emissions is very low and, in certain cases, negligible. Developing countries rejected this argument and US refused to fulfill its commitments. Although the new US government is moving positively to reduce the emissions, differences regarding the base year still remain. Ratification from USA, being the largest emitter, to fulfill commitments for reduction is direly needed.

Time is running out, and the problem will be out of control in the near future and cost would grow to be beyond capabilities and capacities. Secretary General Ban Ki Moon stated that the "...time has come to take decisive actions at a global scale". He also called for a comprehensive agreement under the UNFCCC process that tackles climate change on all fronts, including adaptation, mitigation, clean technologies, deforestation and resource mobilization (UN General Assembly, Plenary Session on Climate Change, 2007). G-8 and G-20 also showed their concerns and called for urgent steps.

Compelling scientific evidence has convinced the world that climate change is a serious issue; the impact is evident, severe and increasing, but serious drastic interventions are missing. Developed and developing country debate is on; segregation is evident, which hinders the achieving of desired results. Developing countries and least developing demand that developed countries should reduce the emissions because they are responsible for today's concentration of green house gases and global warming. Developed countries are asking for inclusion of developing countries, especially fast-growing economies like China, India and Brazil, in efforts to reduce emissions. China, India and Brazil are part of G-77 and these countries, having played a very dominant and positive role in negotiations then, are now cashing their affiliation with G-77 and the status of developing countries. Priorities and positions of these countries are changing, due to the state of their economies. Developed countries are focusing on reducing emissions, whereas developing countries fear negative fall-out of emissions, in their efforts to achieve economic development and reduce poverty. There are divisions in the routes of G-77. Furthermore, the extent of climate change is unequal across regions and countries, or even within the countries. This scenario is pushing some least developed countries, especially the Small Island states, to reconsider their own positions, even if these are at variance from the rest of G-77.

Pakistan is a signatory to UNFCCC, as a non Annex 1 country, and has also adopted the Kyoto Protocol in 1997. Pakistan has not been able to develop a comprehensive inventory of GHG emission sources and sinks, as well as prioritized feasible mitigation and adaptation options. For the forthcoming Copenhagen Conference, Pakistan will have to defend its status as a non Annex 1 country against any unjustified emission control restrictions and push its agenda for global cooperation for adaptations, including financial resources and technology transfer and investment in scientific research.

Pakistan is also a member of G-77. The economy of the country is emergent and facing a number of problems e.g. population growth, growing poverty, illiteracy, unemployment, energy. The scarcity of resources, lack of capacity and capabilities further complicate the situation. A new prescription from the UNFCCC to commit for cleaner technology, reduce emissions, without providing financial and technological assistance, will make it difficult for Pakistan to achieve sustainable development goals. The agreed framework at UNFCCC will have to be adopted by all countries, taking into consideration the state of development, financial health and technology including Pakistan. These circumstances require a comprehensive plan and position by Pakistan at the upcoming meeting of UNFCCC to present its concerns and problems to protect its economy and people.

Pakistan's stance should be;

1. Pakistan should actively pursue the agenda of strong and visible reduction commitments from the developed countries. Reduction commitments should 40-45 percent by 2020 and minimum 85 percent in 2050. Pakistan should also ask for defined mechanisms to ensure the fulfillment of commitments from the developed parties.
2. Adaptation should be on the main agenda and priority being the vulnerable countries. Pakistan should emphasize the Adaptation Fund and flexible mechanism for the operation of the fund. Pakistan should also ask for the inclusion of developing and vulnerable countries in the executive board of fund.
3. Pakistan should support 1.5C level
4. Pakistan should lobby with other parties to avoid bringing emission reductions for it and other developing parties.
5. Pakistan should support the continuation of Kyoto Protocol and remind the developed parties to fulfill the commitments made under the protocol.
6. Pakistan should group with other countries and support G77 and China for the deeper cuts from the developed parties.
7. Call for urgent establishment of Adaptation Fund, new mechanisms of finance and technology fund. Endowments for these Funds should be generated from developed parties. The mechanisms designed to use these funding should be flexible and easy.
8. Pakistan should highlight the issue of IPR in technology transfer.
9. Calling for the availability of funds to adapt to climate change in Pakistan
10. Pakistan should ask for the risk management mechanisms. But it should take a clear position that risk insurance should be one of the instruments, not the only.
11. Being the neighbor of two big polluters, it should ask for the implementation of Principle 21 of Stockholm Declaration, which states that activities within their jurisdiction or control shall not damage the environment of other States or areas beyond national jurisdiction, and recognizing their responsibilities to urgently mitigate emissions that are, through causing climate change, damaging, and will continue to damage, areas beyond their national jurisdiction.
12. Pakistan should strongly advocate for finance and technology as the country does not have capacity and capability to respond this demand.

13. Pakistan should play a positive role at international negotiation through strong willingness to control emission through NAMA.
14. Pakistan should also support reportable and measureable reductions by developed countries and voluntary actions by developing countries.
15. Pakistan should ask for more financial and technology helps for renewable energy and energy efficiency.
16. Pakistan should ask for special and differential treatment for developing, least developed and Small Island States for technology transfer.
17. Expressing willingness to an inspirational goal of emission reduction for developing countries in consonance with our highest priority to attain energy security, while clearly underlining that our economic profile, prohibitive cost of low carbon technology and our over-riding priority to alleviate poverty in Pakistan do not allow us to impose a definitive cap on our emissions;
18. Rejecting firmly any linkage between the climate change and international trade to the detriment of our trade competitiveness;
19. Emphasizing that for Pakistan the key priority is to adapt to climate change, as opposed to mitigate, given our extremely low carbon emission status;

A nationally appropriate clause should be created for developing, least developed, Small Island, and vulnerable countries. Annex 1&2 countries should not be given flexibility under this clause.

Each country should give the national schedule of mitigation measures and quantifiable pathway of emissions of greenhouse gases till 2050. Pakistan should strongly advocate for finance and technology aid, as the country does not have capacity and capability to respond to this demand.

If developed countries succeed in taking 2005 as the base year, then other parties should advocate for 95% decrease in the emissions from the 2020 level.