

national conference

“CLIMATE CHANGE INDIA 2008”

22-23 April 2008

NATIONAL SECURITY IMPLICATIONS OF
CLIMATE CHANGE FOR INDIA

BY

Prof amitav mallik

Technology consultant & Security analyst

NATIONAL SECURITY



IS THIS THE FULL PICTURE?

SECURITY IMPLICATIONS OF CLIMATE CHANGE

*NATIONAL SECURITY PERCEPTIONS
HAVE UNDERGONE A MAJOR TRANSFORMATION
SINCE THE END OF THE COLD WAR.*

*NATIONAL SECURITY IS MUCH MORE THAN
PROTECTING NATION'S BORDERS OR PRESERVING THE
SOVEREIGNTY WITH MILITARY MIGHT.*

*THE CONCEPT NOW ENCOMPASSES EVERYTHING THAT
CAN AFFECT NATIONAL INTERESTS -
NATIONAL ASPIRATIONS, CONCERNS AND POTENTIALS
- DOWN TO THE SECURITY AND WELL-BEING OF
ITS CITIZEN AT INDIVIDUAL LEVEL.*

'HUMAN SECURITY' HAS ASSUMED MAJOR IMPORTANCE'

NATIONAL SECURITY PERCEPTIONS



COMPREHENSIVE NATIONAL SECURITY -1

Direct Impact Issues

Territorial Integrity

Defence Preparedness – Maritime Security

Techno-Military Superiority

Strategic Self-Reliance

Information Security

Internal (Homeland) Security

Missile Defence & Space Security

International Power Positioning

COMPREHENSIVE NATIONAL SECURITY -2

Indirect Impact Issues

Energy Security

Logistic Infrastructure

Techno-Economic Security

Rising Population – Resource Constraints

Security of Habitat, Food & Water

HUMAN SECURITY

Health Care & Quality of Life

Efficient, Clean Governance

Environmental Concerns

Societal Harmony

SECURITY IMPLICATIONS OF CLIMATE CHANGE

Climate Scientists tend to think in terms of Decades;
National Security Planning also must look at the long term and hence
Understanding of Climate Change & its effects is very Important.

**While effects of Climate Change on Energy Security and Human Security
are easy to understand, what is not often fully appreciated is the
Connection of Climate Change to rising anarchy & growth of terrorism.
Yet the links are inescapable.**

Climate Change is a slow phenomena that has not attracted the kind of
attention accorded to WMD or the asymmetric threat of terrorism.
CC will act as a threat multiplier for instability in most volatile regions.

**Cumulative consequences of Irreversible Climate Changes
could be more devastating than the visible dangers of the present time.**

'National Security & the Threat of Climate Change' –
A report commissioned by the Pentagon in 2005 sensitised the World

SECURITY IMPLICATIONS OF CLIMATE CHANGE

Advances In Technologies, Rapid Economic Development and
Increasing Impact Of Globalisation have Transformed Our World into
a Multi-polar World with Significant Inter-dependence among Nations.

Asia In 2000 – 60 % Of World Population & 40 % of Global GDP
Asia By 2020 – 50% Of Population & 60% of Global GDP
What Happens in Asia will Affect The World Significantly.

***Climate Change will Affect All Nations, though in Varying Degrees
and hence may create new Stresses and Tensions among Nations.***

Climate Change is a Security Issue with a Global Dimension
that Requires Collective Action & International Cooperation.

Individual Nation Cannot Mitigate the Climate Effects;
Yet Each Nation tends to Concentrate on Its Own Priorities!

SECURITY IMPLICATIONS OF CLIMATE CHANGE

The predicted effects of climate change in the future may include: extreme weather events, frequent droughts & flooding, shrinking glaciers, fresh water shortages, sea level rise, loss of agricultural land, habitat shifts, mass migration & spread of diseases.

In the national and international security context, climate change threatens to add stress factors and new divides within Nation and between Nations – thus fuelling conflicts and even war.

The consequences could very likely create political instability where societal demands exceed the resource availability and create situations beyond the control of local governments.

This could lead to escalating tensions, chaos and mistrust, - conditions where organised crime, fundamentalism & terrorism can thrive and pose a distinct threat to stability and security at all levels – societal, national as well as international.

SECURITY IMPLICATIONS OF CLIMATE CHANGE

Global temperature has increased by 0.6-07⁰ C over the past 100 years. The earth is getting warmer at a faster rate than in the past 5000 years. If allowed to deteriorate to irreversible levels (> 2⁰ C), this could pose grave implications for the national security concerns of most nations.

Climate change, Energy security and National security are closely linked, solutions to one affecting the other. Hence 'Security Specialists' must join the environmentalists to address possible implications of climate change to national security.

Poor, developing countries will be worst affected by Climate changes. India, with high dependence on Monsoon for agriculture, glacial melts for river water, long coastline and disputes with neighboring countries, will be among the first to face the adverse effects of Climate Change.

Considering the possible risks from irreversible effects of Climate Change, Indian security establishment must assess the risks and factor these in the development & security planning process.

SECURITY IMPLICATIONS OF CLIMATE CHANGE

Implications of Climate Change for National Security may include –

1. Potential for Conflict or War over Environmental Resources
2. Techno-Economic issues of managing rising Energy Demand and compulsions of Emission reductions.
3. Consequences of Glacial melt and loss of water flow in rivers
4. Sea Level rise causing mass migration / displaced population
5. Changes to predictable Weather Patterns (Monsoon) and its impact
6. Higher Operational Risk in border areas/costal defence installations
7. Impact on Human Security, Societal Harmony, International Stability

SECURITY IMPLICATIONS OF CLIMATE CHANGE

Implications of Climate Change for Energy Security -

Energy Security is about ensuring adequate energy resources for Human Welfare, Economic Development and Military / Security Needs.

India imports over 70% of its requirement of oil and this may grow to 90 % by 2020 with 'business as usual'.

Energy demands of India & China will rise sharply in immediate future, prompting higher use of hydro-carbon resources which would directly add to GHG emission – exacerbating Climate Change.

Enhancing Energy Efficiencies, harnessing clean coal techniques and developing Renewable technologies on high priority are the real options to address the conflicting requirements of more Energy & less GHG.

India will need to utilize all avenues to ensure Energy Security – Strategic Oil Reserves, Energy Efficiency & Energy Conservation, Clean Coal, Solar, Wind, Alt-Fuels and Nuclear Energy Technologies.

SECURITY IMPLICATIONS OF CLIMATE CHANGE FOR INDIA

India is 7th largest in the world and 2nd largest in Asia.
It has land frontier of 15,200 km and coastline of 7516 km.

Impact of Climate Change on Water Resources will be a major challenge
Predictions indicate winter temp rise of 3.2^oC by 2050 and 4.5^oC by 2080
triggering irreversible changes to Monsoon patterns and causing serious
Erosion of Glacial Ice reserves that feed major rivers with fresh water.
{21% reduction in Glacial surface area noted from 1964-2004}

**Changes in river water flow can intensify existing water dispute within India
and also intra-state with Pakistan (J&K) & China (Tibet).**

Global Glacial melting can cause Sea level rise. 25-40 cm rise predicted by 2040
Submerging of vast areas of coastal mangroves & cultivable land will
force population displacement within the country as well as across border.

Inter-state rivalries will intensify among States of India.
Resource & Infrastructure shortages could create difficult conditions for Govt.

Mass Migration from Bangladesh or Sri Lanka – a serious security challenge

SECURITY IMPLICATIONS OF CLIMATE CHANGE FOR INDIA

Agricultural Production will be seriously affected by water scarcity as 80%
of water resources in India is used for Agriculture.

Higher average temp will also lead to reduced agricultural yield, creating
food shortages in addition to fresh water scarcity.

High temp & humidity can reduce human efficiency and spread diseases.

**Where Climate Change coincides with adverse socio-economic conditions,
Chaos and Anarchy can fuel Crime, Militancy and Terrorism**

Climate change will also directly affect the efficiency of Security Forces.
Frequent deployment of Armed Forces for civil distress will be detrimental
to Military Preparedness to face direct threats to National Security.

Reluctance of the developed countries to help fast developing countries
like China or India in mitigation of CC effects, for concerns of
techno-economic competition, – can be perceived as 'Climate Weapon'.

**Increasing divide between the rich and poor can push the world in to
escalating conflicts and even war on resources / livelihood.**

SECURITY IMPLICATIONS OF CLIMATE CHANGE

The Other Side

Implications of Nuclear War on Global Climate

According to the same group that predicted Nuclear Winter in 1980s,
A Nuclear War between India & Pakistan
could witness cumulative use of 500 KT (50x10) warhead by each.

100 warheads represent only 0.3 % of all nuclear weapons today,
and less than 0.03 % of explosive power of the Global Nuke Arsenal.

BUT

Besides death and devastation, the resultant smoke from fires (mostly Urban)
could reduce global average surface temperature by several degrees
due to smoke trapped in the stratosphere for substantial duration.

Global Security implications of such an event could be very grave,
creating stresses and conflicts beyond the control of the Governments.

This could seriously compromise potential for international cooperation
for collectively working to mitigate and reverse the effects of Climate Change.

Moving universally towards 'Zero Nuclear Weapons' has become very important.

SECURITY IMPLICATIONS OF CLIMATE CHANGE

REPORT OF THE GERMAN ADVISORY COUNCIL ON GLOBAL CHANGE

Defines "Conflict Constellation" as causal linkages at the interface of
Environment and Society, whose dynamics can lead to social destabilization.

Conflict Constellations -

1. Climate-induced degradation of fresh water resources
2. Climate-induced decline of food production
3. Climate-induced increase in storm & flood disasters
4. Environmentally induced mass migration

TEN INITIATIVES RECOMMENDED -

1. Shaping of global political change
2. Pursuing international climate policy
3. Transforming energy systems to low carbon, sustainable one
4. Developing mitigation strategies through partnerships
5. Supporting adaptation strategies for developing countries
6. Managing migration through cooperation & international law
7. Subsidizing fragile-weak states under climate threat
8. Expanding global information & early warning systems
9. Reforming the United Nations for Climate induced Risks
10. Garnering financial resources to implement the above.

SECURITY IMPLICATIONS OF CLIMATE CHANGE

*Foreign Policy & National Security Implications of Global Climate Change
CISS, London – 2007*

Scenario 1. Expected Climate Change – Best Scenario

(Average global temperature rise of 1.3°C by 2040)

Heightened internal & cross-border tensions due to inequitable distribution of resources and large scale migration – Weak, failing states more vulnerable

Scenario 2. Severe Climate Changes

(Temperature rise of 2.6°C by 2040)

Most nations would be overwhelmed by the scale of nonlinear changes. Internal cohesion and international coordination will be under great stress. Sea level rise, fresh water scarce city, spread of disease – increasing chaos. Regional conflicts & war quite likely.

Scenario 3. The Catastrophic Scenario

(Temperature rise of 5.6°C by 2100)

Inconceivable challenges for human society to adapt. Collapse of cohesive governance at all levels. Possible rule of organised crime, Fracture of human society with rise of fundamentalism & terrorism

SECURITY IMPLICATIONS OF CLIMATE CHANGE FOR INDIA

IN SUMMARY

Unless concerted actions are taken to mitigate and reverse Climate Change, Effects of Climate Change will overstretch the adaptive capacities of many Societies and Nations within next few decades – inevitable Security Risk!

Poor infrastructure, corrupt practices and poor governance make the threat of climate change even more grave for India, because even good policies will suffer poor implementation in the self-centric leadership.

Defence forces should enhance the operational capability under challenging climate conditions and bring new focus on energy efficiency to reduce dependence on imported oil and vulnerabilities of the logistic infrastructure.

National Security implications of climate change should be fully integrated into national security planning and national defence strategies. This could strengthen policy initiatives for mitigating CC effects.

Lack of united approach to mitigate and roll back climate change raises grave international security concerns as it tends to further divide the world, rather than bring all nations together to combat a common threat to humanity.



*The Age of Consequences
has already started !*

thank you

SECURITY IMPLICATIONS OF CLIMATE CHANGE

IPCC 2007 HAS CONCLUDED THAT -

- While natural forces have always influenced the earth's climate (and always will);
Human-induced changes in the levels of atmospheric GHG are playing an increasing role in the observed changes in global climate.
- After considering the influences of the known causes of climate change, natural and human-induced, the significant increase in the average global temperatures over the last half century can be attributed to human activities with a certainty of more than 90 percent.
- Those temperature increases have already affected various natural systems in many global regions and hence future changes to the climate are inevitable.
(unless immediate steps are taken to arrest and reverse the trend)