

# Goethals News

The Goethals Indian Library & Research Society, Kolkata

Vol. XV

No. 1

SPECIAL ISSUE ON ECOLOGY

January - March 2012



Dear Readers,

Since its inception in 1908, when the Jesuit Fathers of St. Xavier's inherited the treasure trove of books collected by Paul Goethals, SJ (Archbishop of Calcutta 1886 – 1901), the Goethals Library has been a sacred temple of learning. Nurtured with tender loving care by successive fathers, the library not only houses books and manuscripts that are rare and offer glimpses into the past, but also acts as a medium of fostering the pursuit of knowledge.

It is in this context, that the current issue of the newsletter has been stung by the department of Environmental Studies, St. Xavier's College, Kolkata, with focus on a burning issue of the day – climate change. Delving deeper, the quest is to find answers to the riddle of climate refugees – environmentally

displaced multitudes – the fate that will befall them and humanity's response to their plight and ways of mitigating their sufferings.

The issue is also a fine example of collaborative effort between those who impart and those who imbibe knowledge in the hallowed portals of the college. This teacher-student participation is indeed commendable as is evident from the thought and content presented here.

The purpose of the Goethals Library is to disseminate knowledge and provide needed information and all efforts are aimed towards this end. The effort that has gone into the making of this newsletter too will be worth our while if it succeeds in achieving the same.

I hope you enjoy reading through the contents of this newsletter as much as the ones who contributed in presenting it to you.

With Blessings,

Rev. Fr. Dr. J. Felix Raj, SJ  
Director



## Jesuits and Ecology History

Fr. Dr. S. Xavier, HOD,  
Dep. of Environmental Science,  
SXC, Kolkata.

Saint Ignatius in the Spiritual Exercises invites all of us to contemplate creation and to see in it the Creator: dwelling in all creatures and labouring for us in each particular reality and in all of

history (SP. Ex., nos. 234-236). Jesuit commitment to the defense and protection of the nature and environment was realized already during the General Congregation 34 (GC 34, 1995) preparations. A number of postulates were received regarding ecology and the congregation realized that it could not treat in depth. Former General, Fr. Peter Hans Kolvenbach, entrusted the responsibility to the secretariat for social justice to develop a document on the topic. In 1999, under the responsibility of Michael Czerny, the team prepared the document entitled **"We live in Broken world"** (*Promotio Iustitiae*, April 1999, no. 70). This document has, for many years, accompanied the reflection and the work of many Jesuits and lay partners involved in ecological and environmental issues.

The GC endorsed the commitment from previous General Congregations about the *service to the faith and the promotion of justice* (GC 32) and that this engagement should be done *in dialogue within cultures and with the different religions* (GC 34), and to highlight today that this ministry should be developed *at the frontiers* and answering to a *call for reconciliation* (GC 35). GC 35

took it seriously and therefore decided to incorporate the environmental and ecological challenges at the core of the mission of the Society. The call was to establish right relationships and the apostolic response was to build right relationships with God, with one another and with creation (GC 35: Dec 3, No 33-34).

Undoubtedly we live in a broken world, seeking, often desperately, for the Master's healing touch. The desire within oneself is always to move from brokenness to wholeness. The Lord is pleased with the wellbeing of all and he entrusted the Mother Earth to us "to till and take care".

With the appeal of Father General to Social Justice and Ecology Secretariat, a task force comprising of Jesuits and laity was formed. This task force brought out the new document called "Healing a Broken World", (*Promotio Iustitiae*, 2011, no. 106). The document aims to address the effects of the environmental crisis on the poor, marginalized and indigenous people, to develop ways of increasing the awareness and motivation for action among Jesuits and all those involved in various apostolic ministries.

Social Justice and Ecology Secretariat has established Global Ignatian Network (GIAN), specifically to the network issues and activities on Ecology. It has Frs. **Pedro Walpole** (Philippines), **Jim Hug** (Washington, USA.), **José Aguilar** (Colombia), **José Ignacio** (Brussels) and **Xavier Savarimuthu**, (Kolkata, India) as members from different Conferences to monitor and update the Society on the Jesuits' works towards conservation of ecology. GIAN updates through the web <http://ecojesuit.com>.



**Ankita Agarwal, Shreyasee Chatterjee, Srijita Chakraborty,  
Uplabdh Kalanoria**

*B.Sc Economics, II<sup>nd</sup> Year, SXC, Kolkata.*

Perhaps the most dramatic way the irony of “environmental refugees”, has been emphasized is via filmmaker Roland Emmerich's film 'The Day after Tomorrow', where American citizens flee en masse from lightning and a terrible climatic disturbance from the north only to find themselves – and here is the irony – running up against the fences of the American-Mexican frontier. But before we delve further into the subject of environmental refugees, it is of imperative importance to clearly define what environmental refugees are.” Environmental refugee” popularly refers to a person or persons forced to leave their home region due to sudden and/or long term changes in their local environment. This basic definition is, however, unsatisfactory since it leaves an abundance of unanswered questions and very important questions at that.

Industrialized (developed) nations have contributed the most to global warming and other adverse climatic changes and the repercussions of these actions are felt elsewhere in the world in the form of environmental disasters leading to environment refugees. However, ironically the developed nations have the most stringent anti-migration laws and thus hardly bear any of the brunt of these refugees. Also (ironically again) only the developed nations have the means to provide basic care and nutrition to these people. Another kind of an irony which can be highlighted upon in this context is that though on one hand we have governments who turn a blind eye to the problem of environmental refugees by imposing strict anti-migration laws, and on the other hand we have fierce advocates of the environmental refugee concept (Norman Myers

and his estimation of 150 million refugees, for instance), it is these very fierce advocates who create a spectre of millions of refugees teeming towards the developed nations which reinforces the governments' position of policies of closed borders and hostility towards refugees to protect their own interests.

But at the same time it cannot be denied that there are limits to host countries' capacity, let alone willingness, to take in outsiders. Immigrant aliens present abundant scope for popular resentment, however unjust this reaction is. In the wake of perceived threats to social cohesion and national identity, refugees can become an excuse for outbreaks of ethnic tension and civil disorder, even political upheaval. But there is much scope for preventive policies. It is not all that difficult to state simply what should be done. The problem lies in the fact that local and federal governments around the world seem paralyzed by callousness or a refusal to make hard choices. Should they spend billions to protect unsustainable, sometimes toxic land, with ever-stronger levees or pipe in water across hundreds of miles? Can they afford to permanently relocate endangered populations to affordable housing on less vulnerable, more valuable land? As the industrialized countries which contribute most to these refugees refuse to contribute the most to accepting and resettling these refugees, let us conclude the paper by stating a much more “pragmatic” way of solving this problem whether in the Horn of Africa or Central Asia, or in America. A prime way to tackle desertification, salinization, in fact several sorts of land degradation: planting trees for shelter belts, to retain soil moisture, and to resist soil erosion. Yes, providing for these environmental refugees seems to be such a far-fetched idea given the present scenario, that preventing environmental disasters altogether seems to be a better choice. Ironic.



# Green initiatives

## Microbiological Perspective

Shatarupa Sarkar, Basabdatta Roy, Tilottama Mazumdar, Ananya Jana

Department of Microbiology, SXC, Kolkata

As we stand at the threshold of environmental disaster and catastrophe due to global warming and pollution, the biggest question that comes in our mind is, can unified human action reverse the trend set? We should use every possible resources to overcome the problem. India's strategy for enhancing its action against climate change and pollution is reflected in many of its social and economic development programmes and scientific research. Here, mentioned are some of the important initiatives taken by India for development and implementation of new technologies for a better environment.

India has introduced the latest technologies like the Integrated Gasification Combined Cycle, Circulating Fluidised Bed Combustor, Pressurised Fluidised Bed Combustor and Pressurised

Circulating Fluidised Bed Combustor units. 40 % of ash produced are collected as wet ash and is channelized into ash ponds. Further improvements include Nano-fluid, Waste heat recovery boiler, Controlled Shunt Reactor for reactive power management, Wireless Power Transmission system concept or Microwave Power transmission concept.

Biodiesels like **Jatropha** are the best alternatives to fossil fuels. Algae, the most promising next-generation biofuel source grows quickly by using solar energy efficiently. A device to assimilate sewage with production of electricity is **microbial fuel cell** which converts chemical energy to electrical energy by the catalytic reaction of microbes. A 90% removal of salts from seawater is possible by the use of **Microbial Desalination Cell**.

**Bioremediation** is a cost-effective technology which leads to complete mineralization. In **Oilzapper** there is a cocktail of five bacteria that do not compete amongst themselves and each feeds on only one layer of crude content. **Phytoremediation** is an emerging technology that uses plants to manage a wide variety of environmental pollution. Many microbes like *Bacillus*, *Enterobacter*, *Escherichia*, *Pseudomonas*, certain yeasts and fungi help in bioremediation of metals by bio-absorption and bioaccumulation. The fungi *Aspergillus niger* absorb great amount of U, Cu, Cd etc.

Presently India has to follow a strategic policy by use of low carbon technologies, energy efficient and inexpensive conservation processes. After liberalization, India has been able to develop many new technologies **but lot is yet to be done**. India looks forward to her citizens to develop green technologies to fulfill our mission.



# THE HUMAN FACE OF CLIMATE CHANGE

**Arpita Halder**

*2nd Yr. Student, Zoology, Lady Brabourne College, Kolkata*

**A**nthropogenic activities result in long-term changes to local environment. Climate change is such a change in the earth's climate, especially a change due to an increase in the conditions such as average atmospheric temperature, winds, rain and snowfall. It is happening now all over the world and the rate of change is predicted to increase in the future. Fall in water levels, changes in water chemistry causing diseases and affecting food web relationships are the common features observed in freshwater habitats. Rise of temperature has a significant effect on crop yields and melting of ice caps. Floods, tropical storms and coral bleaching have nowadays become very common in coastal regions. Various health disorders accompanied by heat stress through heat waves are already taking its toll on human life.

The recent changes in climate are creating havoc in both global as well as on regional scale. Shrinking of Arctic sea-ice, rise in sea level and reduction of mountain glaciers is notable in this regard. The future changes in climate mostly depend on the rate of emission of greenhouse gases, population growth, economic development, technology and changes in people's behaviour. The predicted



changes mostly include faster melting of the Greenland ice sheet, unequal water distribution, increased droughts and wildfires, disappearance of vast stretches of rainforest and high levels of CO<sub>2</sub> in the atmosphere. These changes are just on the one side of the coin. The other face deals with a more pertinent question perhaps-

**Are we aware of the other face of climate change which is GLOBAL COOLING another Ice Age to be witnessed in the 21st century?**



# Who should pay for the sins of our rich cousins?

**Suvobrata Ganguly**

*Editor, Core Sector Communiqué*

**G**lobal warming and climate change, it is now more or less established, is the hemlock that has risen due to the churning of the ocean of development by Europe and America in search of prosperity's nectar. It is sad, but also a fact that, while the developed has had their nectar of prosperity, the hemlock of climate change will have to be imbibed by the developing and the poor. This naturally gives rise to questions like, why will India and China sacrifice their pangs for economic development on the altar of sustainability? More importantly, why will the poor of the world suffer for the conspicuous consumption of the rich?

Global warming and climate change have already started baring their fangs and in the foreseeable future give rise to a multitude that will be rendered homeless – environmentally displaced. Needless to say, the rehabilitation and resettlement of these “climate refugees” will call for an effort that has no peer in history and ideally will require resources of unprecedented quantity.

Where will the money come from? Certainly not from the callous offenders, who not only have the most stringent immigration laws but are yet to even coin a term for the people who will bear the brunt of their sins!

At this juncture one must point out the fact that Global Warming, climate change, availability of food, water or environmental displacement are not national issues. They are problems facing mankind and therefore the response, the solutions too will have to be global.

Let the United Nations (simply for the want of a dedicated world body) take on itself the onerous task of mitigation – of reversing the trends and for aiding those who are displaced. Let us start by first building war chest that will finance humanity's efforts to cleanse itself for daring to play God.

Where will the money for this chest that will help absolve come from? Certainly, from the sinners. But how will mankind calculate the amount of sin tax? That too is not without answers.

As production and consumption of steel is the measure of development, the primary contributor to the wealth of nations (apart from being directly guilty of burning fossil fuels), let us calculate the historical consumption of steel. And against this yardstick let us earmark the amount that will be needed to pay for the remedial measures. By these model, nations who have grown by importing steel and the ones who are on the threshold of increasing

their consumption manifold (Brazil, Russia, India) will all have to pay in proportion to their contribution in abetting global warming while the developed world, especially Europe and America will have to pay the lion's share for having created and aided the problem in the first place.

The possibility of such a thing happening? Remote: to put things mildly. For it is not a just world order that created the problem. Conspicuous Consumption and an exploitative mentality created it in the first place and there is no reason to believe that the tiger and the lamb will co-exist in peace as God's creatures.





## SCAPE GOAT



Man's desire to play God has helped unleash the twin menace of Global Warming and Climate Change. In our haste for rapid economic development we have forgotten that we are mere keepers of the Earth for our children and have not got it as an inheritance from our forefathers.

Saurabh Basu  
SNC EARTH SUMMIT

## PRINCESS OF THE POOL



Disaster management is not just about throwing food packets to the marooned. What is needed is a paradigm shift - we have to identify the risk prone areas and have an effective and efficient machinery to reach out a healing hand within moments of the disaster having struck.

Samir Mandol  
SNC EARTH SUMMIT

## COME ON BABY, LIGHT MY PYRE.



Forest fires are another adverse effect of climate change. Not only are they purging out entire forests but are in effect adding to the problem by exterminating trees that capture carbon dioxide from the atmosphere, our biggest hedge against global warming.

Saurabh Basu  
SNC EARTH SUMMIT

## ACROSS THE RIVER



The search for water, for shelter will force millions to turn into climate refugees - fleeing from the wraths of nature. The problem is bigger than we think and is a catastrophe waiting to happen.

Saurabh Basu  
SNC EARTH SUMMIT

## WATER, WATER EVERYWHERE



Access to clean drinking water is one of the biggest problems facing mankind and as some doomsayer's predict, the next world war will be fought over access to water. The lines are getting longer, the amount scarcer ... the wakeup call has long been sounded.

Samir Mandol  
SNC EARTH SUMMIT



## MONKEY BUSINESS



With massive deforestation, the only hedge against global warming, the problem is being compounded. Rapidly shrinking forest covers are forcing many a species towards the brink, towards extinction.

Saurabh Basu  
SAC EARTH SUMMIT

## TIME TO BUILD THE ARC?



Time is running out for the pillaging and plundering mankind, who, in his haste to embrace the fruits of development, have set on motion events that have the potential of forcing him towards destruction.

Saurabh Basu  
SAC EARTH SUMMIT

## THE HUMAN FACE OF CLIMATE CHANGE



Climate Change will impact the poor and the helpless in the most severe way. Unless we take immediate remedial measures to mitigate their sufferings on a war footing, history will not forgive us.

Suvabrata Ganguly  
SAC EARTH SUMMIT

## GOURMET



The summers are getting warmer, leading to prolonged draughts with adverse effect on the vegetation. Desertification is on the rise as once fertile lands are becoming arid, having a cascading effect on the ecosystem.

Saurabh Basu  
SAC EARTH SUMMIT

## AFTER THE DELUGE



Frequent flooding, the changing course of rivers, rise in the sea levels are endangering vast swaths of coastal areas around the globe, threatening to displace millions from their homes and hearths.

Saurabh Basu  
SAC EARTH SUMMIT



# Global Hunger Index

**Sreejita Dey**

*2nd Year Political Science, SXC, Kolkata*

The International Food Policy Research Institute (IFPRI) seeks sustainable solutions for ending hunger and poverty. IFPRI is one of 15 centers supported by the Consultative Group on International Agricultural Research, an alliance of 64 governments, private foundations, and international and regional organizations.

As its efforts targeted towards this end, the IFPRI releases its global hunger report annually. Growing demand for biofuels, extreme weather and climate change, and increased financial activity through commodity futures markets are the main causes of high and volatile food prices, according to the 2011 Global Hunger Index report, *The Challenge of Hunger: Taming Price Spikes and Excessive Food Price Volatility*. These challenges are exacerbated by historically low levels of grain reserves, export markets for staple commodities that are highly concentrated in a few countries, and lack of timely, accurate information on food production, stock levels, and price forecasting, which can lead to overreaction by policymakers and soaring prices.

"The poorest and most vulnerable people bear the heaviest burden when food prices spike or swing unpredictably," said Klaus von Grebmer, lead author of the report and IFPRI Communications Director. "This report calls for action on several fronts to build resilience and mitigate the effects of volatility, particularly in countries where hunger is most severe."

In order to identify hunger levels and hot spots, the Global Hunger Index scores countries based on three equally weighted indicators: the proportion of people who are undernourished, the proportion of children under five who are underweight, and the child mortality rate. According to the 2011 Index, 26 countries have levels of hunger that are alarming or extremely alarming, and all those with extremely alarming levels—Burundi, Chad, the Democratic Republic of Congo, and Eritrea—are in Sub-Saharan Africa.

"The current crisis in the Horn of Africa, while not unaffected by global prices, highlights the vulnerability of millions of poor people around the world to weather and other shocks, as well as the need to address the root causes of hunger," said Tom Arnold, Chief Executive at Concern Worldwide.

The report, however, provides a picture of the past, not the present, because up-to-the-minute data are still not available.

"This humanitarian tragedy also underscores one of the main motivations behind the Global Hunger Index—the need to provide information," stressed Wolfgang Jamann, Secretary General at Welthungerhilfe. "Although information will not fill people's stomachs, addressing the problem of hunger requires timely data about where and why hunger is occurring."

To tame food price volatility and protect the poor against future shocks, the report makes several policy recommendations focused on the three levels of action:

1. Addressing the drivers of food price volatility;
2. Tackling global market characteristics affecting volatility, including building up stocks by coordinating international food reserves and sharing information on food markets; and
3. Building resilience for the future.





# Fukushima in the US?

**Prof. Romit Beed**

*Dept. of Computer Science, SXC, Kolkata*

**T**here are 104 nuclear reactors in the United States. If one of them lost both primary and backup power for even a matter of hours, it could lead to a meltdown and an airborne radioactive plume.

These radioactive plumes from severe nuclear accidents were calculated by NRDC based on the actual weather patterns of March 11-12, 2011

These five nuclear power plants had emergency shutdowns in 2011:

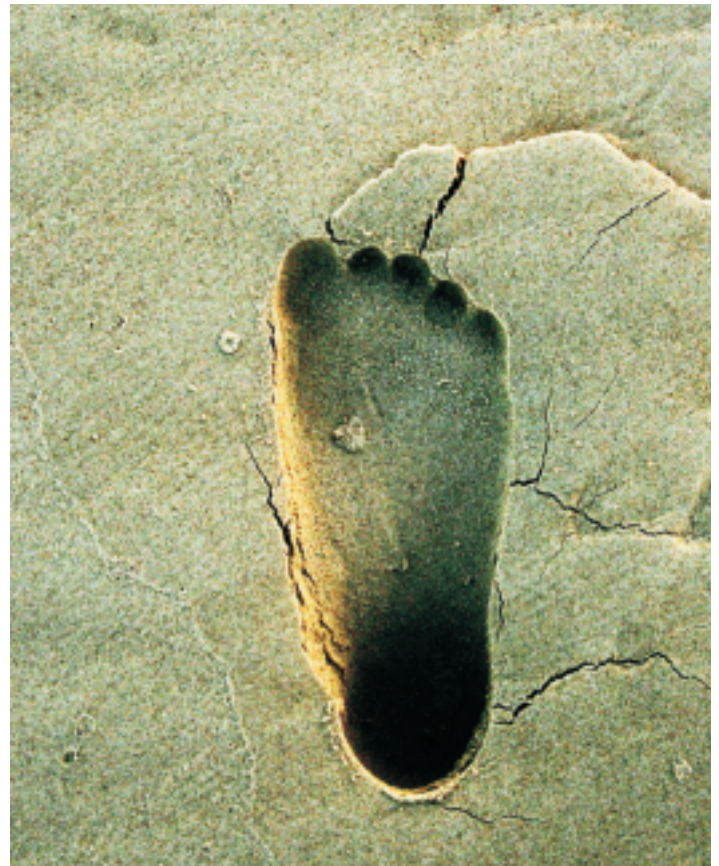
- Calvert Cliffs - Lusby, MD (due to hurricane)
- North Anna - Louisa, VA (due to earthquake)
- Ft Calhoun - Ft Calhoun, NE (due to flooding)
- Browns Ferry - Athens, AL (due to tornado)
- Surry - Surry, VA (due to tornado)

A future severe nuclear accident at a U.S. nuclear power plant is a real possibility. In 2011 five nuclear power plants in the United States lost primary power due to earthquake or extreme weather events, including tornados, hurricanes, and flooding. Fortunately backup power systems kicked in at these plants and a disaster was averted. But weather is not the only risk factor. Other risk factors include:

**Type of reactor** – There are two types of reactors operating in the United States: Boiling Water Reactors (BWRs) and Pressurized Water Reactors (PWRs). Some experts judge that the design and structure of BWRs do not protect against the release of radiation during a severe accident as effectively as PWRs. The four reactors involved in the Fukushima nuclear crisis were BWRs.

**Age of reactor** – Reactors were designed to operate for 40 years, yet the regulatory body that oversees nuclear safety in the United States, the Nuclear Regulatory Commission, has relicensed some nuclear power plants to operate for 60 years, well beyond their originally engineered design lifetime. On the map, NRDC experts assigned a red flag to a reactor if the NRC has approved the reactor to operate for 60 years.

**Power level of reactor** – The NRC has approved many utility operators to increase the operating power of their nuclear reactors, including for Fukushima-type reactors, and in some cases multiple times and to significantly higher power levels. These so-called "power uprates" push reactors beyond what they were originally engineered to do, and could increase the radiation hazard if a nuclear accident occurred. On the map, NRDC experts assigned a red flag if the NRC has granted a



reactor a power uprate.

If a person received one rad of radiation from a nuclear accident, it would increase one's chance of getting cancer by 1 in 1,000 (averaged over all ages and both sexes). And although the NRC believes that the chances of a severe accident with fallout in a core meltdown for any one of the 104 U.S. nuclear reactors is small (probability of less than 1 in 10,000 per year), can we afford the risk? Millions of Japanese people were exposed to radiation from Fukushima, increasing their risk of developing cancer, and the cost of the Fukushima accident is projected to exceed US\$100 billion, and the environmental effects will last for generations.

With 6 million Americans living within 10 miles of a U.S. nuclear power plant – the evacuation zone defined by the federal government – and more than 120 million Americans living within 50 miles of a U.S. nuclear power plant – the distance the U.S. government told Americans to evacuate from the area around the Fukushima plant – Americans cannot afford to stand by and hope the worst won't happen in the states, especially with extreme weather intensifying around the globe.

Currently 23 U.S. nuclear reactors are the same type of reactor, a boiling water reactor (BWRs), which was involved in the Fukushima nuclear disaster. Some BWRs are operating near major American cities like Philadelphia. Nearly all of the 104 nuclear reactors operating in the United States were designed and built three to four decades ago. Despite being originally engineered for a 40-year lifespan, the NRC has approved 71 reactors at 32 nuclear power plants to operate for 60 years. And 90 percent of U.S. nuclear reactors have had their operating power increased beyond the original design engineered for them.

It is time to ponder, global warming is nearer home than America thought.



# Let no man put asunder



**Prof. Mahua Basu**

*Dept. of Environmental Studies, SXC, Kolkata*

The variety of life on Earth, its biological diversity is commonly referred to as biodiversity. The number of species of plants, animals, and microorganisms, the enormous diversity of genes in these species, the different ecosystems on the planet, such as deserts, rainforests and coral reefs are all part of a biologically diverse Earth. The mighty elephant and the tiny ant that it tramples under its feet are all linked by some unknown thread of creation and the extinction of one can and does lead to a chain of events that threaten all. Therefore, while we dominate this planet, we still need to preserve the diversity of its life forms.

It has long been feared that human activity is causing massive extinctions. Despite increased efforts at conservation, it has not been enough and biodiversity losses continue. The costs associated with deteriorating or vanishing ecosystems are still beyond comprehension. And sustainable development which is being touted as the “answer” that will help avert all ecological problems, is but a mere candle in the wind.

One type of ecosystem that perhaps is neglected more than any other and is perhaps also the richest in biodiversity is the coral reefs.

Coral reefs are useful to the environment and to humans in a number of ways. However, all around the world, much of the world's marine biodiversity face threats from humans. It is feared that very soon, many reefs could die off leading to consequences whose extent is unimaginable.

The climate is changing. The earth is warming up, and there is now overwhelming scientific consensus that it is not only happening, but is actually human-induced. With global warming on the increase and species and their habitats on the decrease, chances for ecosystems to adapt naturally are diminishing what is more, even without sounding alarmist, one can say that the threat of entire ecosystems being wiped out has never been more palpable in the history of mankind than it is now. Many are agreed that climate change may be one of the greatest threats facing the planet. Recent years show increasing temperatures in various regions, and/or increasing extremities in weather patterns. And this increasingly hotter world is playing havoc with biodiversity – the melting polar caps are forcing the fragile and frozen life support system to snap. Desertification and erratic weather patterns are throwing challenges to other parts of the Earth to which the ecosystem which has evolved over millions of years have no answers.

Can man's greed alone destroy God's creation? It can and unfortunately it is.

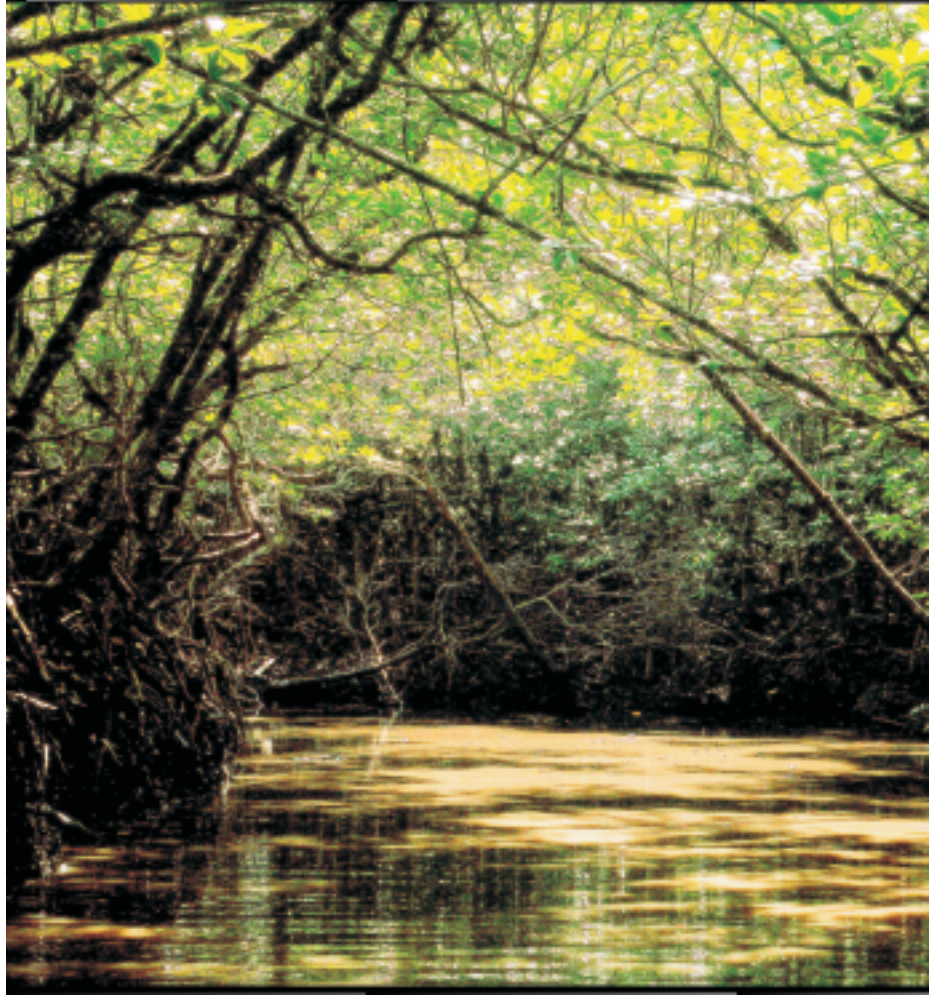


# Mangroves : The Coast Guards of West Bengal

**Prof. Mahua Basu**

*Dept. of Environmental Studies, SXC, Kolkata*

Mangroves are various kinds of trees up to medium height and shrubs that grow in saline coastal sediment habitats in the tropics and sub-tropics mainly between latitudes 25 degrees north and 25 degrees south. The Sunderban forest is the largest estuarine mangrove forest in the world located in 24 Paraganas district of West Bengal (India) and Bangladesh. In India it covers an area of 9630sq kilometers out of which 4226 sq kilometers is mangrove forest. Due to its beauty and richness of wildlife it was declared a world natural heritage site by UNESCO in 1974 and a natural park in 1984. However Sunderbans is facing a serious threat to its eco-system from poaching and rampant felling of trees. The depletion of mangroves in the Sunderbans can be attributed to the increasing levels of salinity in the western part owing to tectonic movement. Another problem threatening the Sunderbans mangrove ecology is the collection of tiger prawn seeds. In the process of collection tiger prawn seeds using nylon nets mangrove seedlings are destroyed eliminating the possibility of regeneration. Increased exploitation of the forest is directly related to the decrease in the tiger population in the Sunderbans.



AREA UNDER MANGROVES (ha.)

State	1987	1997
West Bengal (Sunderbans)	420	212.3
Andaman and Nicobar Island	119	96.6
Maharashtra	33	12.4
Gujarat	26	99.1
Andhra Pradesh	20	38.3
Tamil Nadu	15	2.1
Orissa	15	21.1
Karnataka	6	0.3
Goa	20	0.5
Kerala	Sparse	Nil
Total	674	482.7

The following data clearly shows the importance of Sunderbans in preservation of mangroves and how much we are lagging behind.

Mangroves are buffers between the land and the sea. Coastlines throughout the world are facing serious problems of coastal erosions and rising sea levels due to global warming have increased the threats by several folds. Mangroves not only help in preventing soil erosion but also act as catalysts in reclaiming land from the seas. Mangrove forests and estuaries are the breeding and nursery grounds for a number of marine organisms including the commercially shrimp, crab and fish species thus making a commercial and biodiversity hot spot. Hence the loss of mangroves will have direct economic repercussions through loss of fishing industry. In the scenario of global warming even most of the coastal areas will be flooded mangroves can possibly a gene bank for cultivating salt tolerant species of crops, dwindle the number of Bengal Tigers...



## New Arrivals

1. Abbey Banner by Robin Pierzina, Magazine of St. John's Abbey, 2011.
2. African Development Fund by Pope XVI Benedict, Caritas in Veritate, 2009.
3. Anglo-Indian Studies by Melvyn Brown, 3, Elliot Road, 2002.
4. Body of Clay, Soul of Fire by Matthew Welch, Afton Historical Society Press, 2001.
5. Derozio His Background and Cultural Milieu by Sakti Sadhan Mukhopadhyay, Kidderpore College, Kolkata, 2008.
6. Dragons & Dreams by Melvyn Brown, 3, Elliot Road, 2003.
7. Gospel and Acts by Donald Jackson, Veritas, 2005.
8. Making of a Museum by Rammohan College, Raja Rammohan Museum Committee, 2009.
9. National Atlas & Thematic Mapping by National Atlas of India, Calcutta, 2009.
10. Revisiting Rammohun Roy's Political Agenda by Partha Pratim Basu, F.A.R form Ministry of Culture, 2009.
11. Science, Technology & Values, by Job Kozhamthadam, ASSR Publications, Pune, 2003.
12. Science, Technology & Values, by Job Kozhamthadam, ASSR Publication, Pune, 2005.
13. Stoked - Five Artists of Fire and Clay by Matthew Welch, St. John's University Press, 2010.
14. Studies on Hinduism, by Fr. O.C.D Zacharias, J.M. Press, 1950.
15. Surprised by Grace, by V. James. Keogh S.J, Jamshedpur Jesuit Society, Jamshedpur, 1998.
16. The Development Debate Critical Perspectives, by S.P Srivastava, Rawat Publication, Delhi, 1998.
17. The Anglo-Indian Archives Melvyn Brown, 3, Elliot Road, 2001.
18. The Bengal Obituary, by P. Thankappan Nair, Punthi Pustak, Calcutta, 1991.
19. The Changing Face of Globalization, by Samir Dasgupta, SAGE Publications, New Delhi, 2004.
20. The Founders of Indus Valley Civilisations and Their Later History, by Naval Viyogi, Delhi, 1995.
21. The Imperial Guptas, by S. R. Goyal, Kusumanjali Book World, Jodhpur, 2005.
22. The Political Economy of Hunger, by Jean Dreze, Amartya Sen & Athar Hussain, Oxford University Press, Delhi, 1998.
23. The Scenario of Population Growth in India, by Dhirendranath Konar, Akansha Publishing House, New Delhi, 2004.
24. Transforming India Social and Political Dynamics of Democracy, by R Francine Frankel, Zoya Hasan, Rajeev Bhargava & Balveer Arora, Oxford University Press, New Delhi, 2000.
25. World Civilizations, by J. Philip Adler & Randallc Pouwels, Thomson Wadsworth, 2006
26. WTO & Asian Union, by Rajkumar Sen & Fr. J. Felix Raj, Deep & Deep Publication, New Delhi, 2009.

## Researchers at Goethals

**Debnath Som**, on Art, Kolkata.  
**Dipankar Basu**, on Rabindranath Tagore & St. Xavier's, Kolkata  
**Fr. Victor Edwin S.J.**, on Christian – Muslim Dialogue, Delhi.  
**Gordon Campbell Thomas**, on Family History.  
**Heba Ahmed**, on Art, Kolkata.  
**Indrani Dasgupta**, on The Herald 100 years back, Kolkata.  
**Jacqueung Fardinands**, on Family History, Australia.  
**Lazarus Anthony**, on Indian Christianity, Kolkata.  
**Shri Vais Bagaria**, on Art, Kolkata.  
**Sr. Phulkumari Xalxo**, Fmm, on Jesuits, Kolkata.  
**Sreya Chatterjee**, on Park Street & Surrounding, Kolkata.  
**Sukti Sita Bhattacharya**, on C.N. Banerjee.  
**Tamal Mitra**, on St. Xavier's College Magazine, Kolkata.  
**Tania Bhattacharya**, on 100 years of Christmas in Calcutta, Kolkata.

## Mails & Emails

An impressive collection of pre and post renaissance art works.  
 ~ **Debnath Som**, Kolkata.

Very well preserved and maintained. I appreciate the atmosphere for study and reflection.  
 ~ **Sreya Chatterjee**, Kolkata



## Donation of Books

We are thankful to **Fr. Bernard de Give** for the complimentary copy of 'A Trappist Meeting - Monks from Tibet' by Bernard de Give, Monk of Scourmont.

We are thankful to **Mr. Melvyn Brown**, Founder Ambassadors For Jesus for the donation of the following Books

1. An Introduction to Anglo-Indian History
2. Social Anthropology of the Anglo-Indian Race
3. The Golden Book of Anglo-Indian Studies
4. Encyclopaedia Anglo-Indian
5. The Anglo-Indian Archives
6. Dragons & Dreams Anglo-Indian Fairy Tales and
7. Annual Weekly copies of The Herald 2011