



ONLY NEWS PAPER PUBLISHED IN INDIA FOR SCIENTIFIC COMMUNITIES

# NESA

NATIONAL ENVIRONMENTAL SCIENCE ACADEMY

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August 2017



## NESA Award 2017 Notification No. 2 APPLICATIONS ARE INVITED

FOR THE AWARDS 2017  
LAST DATE EXTENDED UPTO

**30<sup>th</sup> SEPTEMBER 2017**

### FELLOWSHIP AWARD

FELLOWSHIP is the highest award given by this Academy. The recipients shall get Citation, Certificate, Memento and a Gold plated medal, and can suffix F.N.E.S.A. after their names.

### BEST SCIENTIST AWARD

The Academy confers BEST SCIENTISTS AWARD every year. The recipient shall get Citation, Certificate, Memento and a Gold plated medal.

### EMINENT SCIENTIST OF THE YEAR

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### SCIENTIST OF THE YEAR AWARD

The recipients shall get Citation, Certificate, Memento and a Gold plated medal.

### ENVIRONMENTALIST OF THE YEAR AWARD

The recipients shall get Citation, Certificate, Memento and a Gold plated medal.

### JR. SCIENTIST OF THE YEAR AWARD

The ACADEMY confers this award to Scientists below the age of 35. The recipients shall get Citation, Certificate, Memento and a Gold plated medal. Applicants should not be more than 35 years on 31-12-2017.

### PRESCRIBED APPLICATION FORMS

Separate application form should be used for separate awards. The forms are non transferable and it can be obtained by sending a bank draft of Rs. 1000-00/\$40 only (per form), drawn in favour of **NATIONAL ENVIRONMENTAL SCIENCE ACADEMY** payable at **NEW DELHI**.

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## South East Asia: A region with spectacular global biodiversity and serious challenges for protecting forests and wildlife

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South East Asia represents a widely divergent area of the Asian continent that enjoys spectacular biodiversity. The region comprises of the nations like Myanmar, Thailand, Vietnam, Cambodia, Laos PDR, Singapore, Brunei, the Philippines, Malaysia and Indonesia. The natural ecosystems of South East Asia are contiguous with North East India and South and South East China. The region harbors three distinct megabiodiverse nations like the Philippines, Malaysia and Indonesia and is also bounded by two other megabiodiverse Asian nations like India and China. Furthermore, the southern reaches of South East Asia rolls into the continent of Oceania; across another megabiodiverse nation like Papua and New Guinea.

Hence, the overall species richness of the region is majestic with rich diversity of landforms, unique vegetation, various agro-climatic regimes, massive virgin forests, unique wildlife, rich estuarine, marine and freshwater ecosystems, spectacular marine life, coral reefs and atolls, rich ethnicity and a diverse culture. In short, it is a



region of our planet that showcases some of the most unique life forms, ecosystems and endemic flora and fauna that is not found anywhere else in the world. It is also important to note that the region has explosive human growth and dense population sharing some of the most beautiful and fragile ecosystems of our planet.

The wildlife represents unique critically endangered mammal species like several species of primates like Lesser apes (gibbons), Greater apes (orangutan), monkeys, Sunda clouded leopard, Indo-Chinese leopards, Asiatic elephants, Borneo elephants, Indo-Chinese tigers, Malayan tigers, Sumatran tigers, Javan rhinoceros, Sumatran rhinoceros to name only a handful in addition to a wide spectrum of invertebrates like insects, mollusks, echinoderms; and divergent vertebrates like spectacular species of birds, fishes, reptiles and amphibians.

Unfortunately, over exploitation and non-judicious use of the natural forest resources of South East Asia has significantly impacted her spectacular biodiversity. Economic backwardness, poor education and awareness, political instability, power struggle, lack of employment opportunities and abject poverty in several nations across the region has pushed human populations into her dense forests for sustenance and survival. The poorly guarded international borders across South East Asia is plagued with problems of trafficking of wildlife and wildlife parts, major and minor forest products, drugs, arms and humans in an alarming proportion. The lawlessness and poor local administration has severely impacted the security of indigenous communities, remote rural residents, forest residents and fringe dwellers and wildlife

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## Endangered city birds in peril

S. K. Basu

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It is unfortunate to note the decline of city bird populations across the planet. Urban pressures across the globe has been showing negative impacts on urban bird population due to a number of anthropogenic factors like loss of appropriate bird habitats such as vanishing city parks or gardens, undeveloped and undisturbed areas and water bodies due to heavy push from the real estate industry in converting urban green spaces into concrete jungles. The rapid need for development of infrastructure is also transforming our cities and towns rapidly pushing local wildlife and biodiversity out of the once available green spaces from the maps of urban areas.

Birds are extremely sensitive to the changes in their immediate environment and an important biological indicator of environment quality. The decline of bird population across urban centers is also

indicative of the deteriorating environmental parameters and city ecosystems of the planet. A comprehensive nature based plan is important for the revival of the city avian population with opportunities to

bring back parks, gardens, water bodies and undisturbed patch of forested areas within city limits to accommodate bird populations and smaller mammals to thrive once again. Preserving local biodiversity is not only important for the beautification of the city but extending our life with quality environment and ecosystem.

*Photo credits: S. Ghosh and S. K. Basu*



## ABSTRACTS INVITED

National Conference on

### IMPACT OF ENVIRONMENTAL CHANGES ON INDIAN ECOSYSTEMS

and XXIX Annual Conference of National Environmental Science Academy

*Jointly organised by:*

**NATIONAL ENVIRONMENTAL SCIENCE ACADEMY (NESA)**

&

**Department of Environmental Sciences & Limnology**

**Barkatullah University, Bhopal, Madhya Pradesh**

**on 23-24 December, 2017**

**at Barkatullah University, Bhopal, Madhya Pradesh**

**Abstract Submission Deadline 05.12.2017**

**Last date of Registration 15.12.2017**

### CONFERENCE THEMES & SUB THEMES

- ❖ Changing Environment and Indian Biodiversity
- ❖ Changing Environment and Indian Forestry
- ❖ Changing Environment and Indian Crops
- ❖ Changing Environment and Indian Water Bodies
- ❖ Changing Environment and Indian Climates
- ❖ Changing Environment and Indian Food Security
- ❖ Changing Environment and Indian Soil & Microflora
- ❖ Changing Environment and Health
- ❖ Changing Environment and Seed Production
- ❖ Changing Environment and Marine Flora & Fauna

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## HIMALAYAN ECOSYSTEM AND CLIMATE CHANGE

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Climate Change refers to long-term changes in climate, including changes in average temperature and rainfall due to global warming. It is the result of changes in our weather patterns because of an increase in the earth's average temperature. Himalayan eco-systems are predominantly sensitive to climate changes. The conservation, sustenance of these ecologically fragile regions is a biggest challenge faced being faced at the moment which can get further aggravated due to financial constraints and limited resources.

The Himalaya is young, gigantic and diverse mountain system which is the glory of India on several planes, spiritual, philosophical as well as materialistic, economic and ecological. The Indian Himalayan Region covers about 17% of the country's geographical area along its northern boundary and is home to over 6% of its population. It regulates climate of the entire Indian Subcontinent and feeds the major river systems of the country. There are several valuable plant and animal species, mineral and human societies exclusive to the region with rare or no alternate options elsewhere. It alone represents about one-third of the total forest cover and approximately 45% of the overall good forest cover of the country. The Indian Himalayan Region is a complex and highly vulnerable region because of difficult terrain, severe weather conditions, large forest land, sparse population and dispersed habitations including far-flung small villages difficult to approach, agro pastoral economy with tiny and scattered land holdings more so on slopes with shallow and gravelly soil, low productivity, small and under-developed markets, long international borders, poor connectivity and inadequate general infrastructure.

Based on comprehensive studies carried over north western Himalayas by Bhutiyani, et. al. 2007, for a period 1901-2002, at 95 % confidence level indicated significant increase in air temperature in the north western Himalayan region by about 1.6 C with winter warming at a faster pace. It has been observed that the change in winter precipitation is minimum but there is significant decrease in monsoon precipitation.

Another analysis with respect to climate of Shimla reveals that total precipitation and snowfall for all the season has a decreasing trend. The analysis of twenty years data by (Bhan & Manmohan, 2011, IMD) reveals that the

season tends to end by about 10-12 days earlier per decade leaving long term impacts on agriculture horticulture production of the State. Climate Change may alter the distribution and quality of natural resources in Himalayas and adversely affect the livelihoods of its people. With its economy closely tied to its natural resource base and climate-sensitive sectors such as Agriculture, Horticulture, Irrigation & Public Health, Power and Forestry etc. the region may face a major threat on account of the projected changes in climate. The commonly observed events and likely ones are warming, erratic rainfall, floods, shift in snow line, agriculture and horticulture line, impacts on agriculture production, water resources, forests, natural wetlands, health risk through malaria, water borne disease, Jaundice may increase. Climate Change has a potential to completely and adversely affect the way of human life.

Himalaya's legacy places a high value on the environment and the maintenance of ecological balance. Deforestation, landslides, Cloud burst, land degradation, desertification and Glacier Lake Outbursts Floods (GLOF) are some of the common but critical environmental issues in the Himalayan regions. The major challenges currently faced by the Himalayan environment are the escalation of such issues through atmospheric as well as man-induced interferences.



Panoramic View of West Rongbuk Glacier during an analysis of Everest 1921 and 2009 (top) by Major E.O. Wheeler and in 2009 (bottom) by David Breashears. Acknowledgement: SSAPCC, DEST.

## Birds: Diversity, Importance, Uses and Exploitation

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Birds represent phenomenal global biodiversity; and have distribution spread across the globe throughout all major continents. Several species are migratory in nature, and therefore move phenomenal distances from one continent to another across vast oceans, forests and land masses according to the variability of the seasons. The spectacular diversity among birds with respect to shape, size, color, plumage, beak, feet, tail, food habits, courting behaviors, parental devotions and the ecosystem in which they thrive around the globe is truly amazing in the real sense of the term.

The wide diversity among different species with respect to shape and size of nests, shape, size and unique color of eggs, camouflage patterns, parental care, hunting and foraging practices and strategies and territorial aggressive behavior and bird migrations are some of the most challenging and intriguing research topics of dedicated bird researchers, bird ecologist and conservationists and enthusiastic birders. The ability of birds to exploit their natural ecosystems in which they survive to the best of their ability, evolutionary adaptations and survival strategies is highly inspirational. Gregarious, colony forming birds in remote island habitats, inaccessible landforms, marine islands, atolls, archipelagos, and their high adaptability to their immediate environment has attracted researchers for centuries. Intriguing bird behavior, migration pattern, dynamics of bird flight and migratory routes and passages are only being slowly revealed through modern research and application of advanced technology and approaches.

We are getting to know some of the exciting secrets of bird life only fairly recently; although the human fascination for birds has been reported from the very early days of modern human civilizations across the globe. Birds have been inscribed on ancient hieroglyphic writings in Egypt; and in seals, pillars or rock edicts found across Mayan, Indus, Sumerian and Chinese civilization sites. Even in modern times several species of birds across the different nations around the globe have been included in their respective currency (bank notes and coins) and postage stamps; as well as in national emblems, coat of arms and national flags.

Another important aspect of birds is their economic use and exploitation as well as their integration into human society as recreational pets, source of high quality protein food (meat and eggs) and body parts used for various domestic and industrial purposes. Poultryies around the world serve as important production centers of bird meat and egg consumed by substantial section of global human population. Bird species (chicken, ducks, geese, quails, domestic pigeons, turkey) are exploited commercially for human consumption (meat and eggs), skin for leather production, feathers and bones for various industrial and

commercial applications. Millions of people are employed around the globe associated with the poultry and allied industries. Some birds are used as game species for recreational hunting (ducks, geese and pheasants). Several government and non-government organizations are involved in the commercial production, breeding and release of different game bird species for recreational hunting without endangering their wild populations.

However, in spite of the majestic diversity of bird species and their close association to human history, society, culture and ethnicity; large number of bird species is getting extinct or are close to extinction due to several anthropogenic impact related factors. Some of the factors impacting global wild bird populations are industrial and infrastructural developments, expansion of agricultural lands; human encroachment into protected habitats and fragile ecosystems; environmental pollution; uncontrolled, unmonitored and unrestricted natural and anthropogenic wildfires; habitat degradation, habitat destruction and habitat fragmentation; diseases (bird flu) have decimated many wild bird populations in different corners of the globe together with

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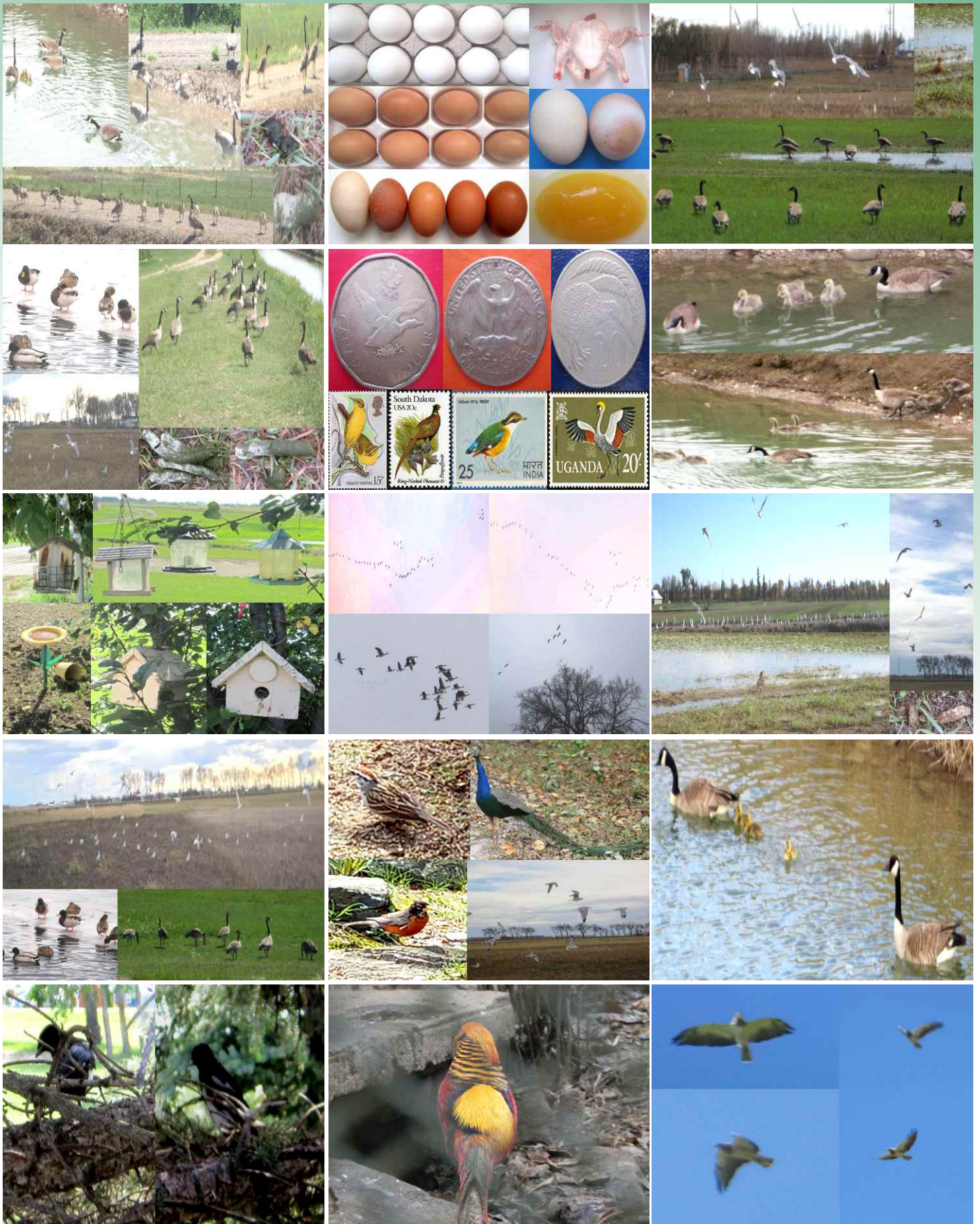


Photo credit: S. K. Basu

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**Release of E-newsletter of NESA during the function of BeB held at India Islamic Cultural Centre, Lodhi Road, New Delhi on 29th June 2017 on the occasion of Ceremonial Function for the Distribution of the Certificates to the Students of BeB**

(Left to right) Prof. Riaz Umar, Vice President, BeB; Mr. Sirajudin Qureshi, President, IICC; Mr. S.M. Khan, Director General, Ministry of Information and Broadcasting, Government of India; Mr. Hammad Ahmed, President, BeB and Md. Mohsin Alam, IRS, Addl. Director General, Income Tax, Govt. of India.

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poaching and capture of wild birds for the illegal global wildlife trade and under ground pet markets.

Indiscriminate hunting of migratory birds by both professional and amateur hunters and poachers, mass poisoning of birds by farmers treating them as pests to protect crops, fruit orchards and other high value commercial agricultural enterprises, high demand of wild and migratory bird meat for sustainability among various marginal communities, over exploitation and over hunting of flocking bird species by mass hunting by poacher groups for easy profit have been severely impacting several global bird species. For example the wild populations of Indian hill mynah and various species of parakeets found across the Indian subcontinent are being seriously

impacted due to capture of nestlings and fledglings by trackers and poachers for the unique ability of these species to mimic human speech. Several tropical and sub-tropical bird species with majestic, colored plumage like parrots, cockatoos, macaws, pheasants, pigeons, birds of paradise and colorful aquatic birds unique for their shape, size and plumage are being regularly captured and sold into illegal wildlife trade markets decimating their wild populations. Remote rural communities being heavily dependent on their shrinking local forest resources are also responsible for negatively impacting wild bird populations for their heavy dependence on wild bird meat and eggs as cheap source of their dietary proteins.



**STOP AIR POLLUTION**



**CLEAN INDIA  
GREEN INDIA**



Crisp articles are invited for publication in NESA Newsletter, specially on Clean Ganga, Linking of Rivers, Watershed Management and Wasteland Development.

Publication Division, NESA

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alike. Lack of social security and abject poverty has helped flourishing trade on capture and sale of precious local wildlife, illegally harvested forest products, wildlife products and body parts and illegal wildlife trade and poaching across the vast remote areas.

Unless there is strong cooperation and coordination among the countries within South East Asia like Joint Conservation Initiative (JCI) for conserving and protecting local wildlife, forests and biodiversity; very little can be expected in protecting the spectacular biodiversity of the region. Corruption, negligence, nepotism, malpractices together with poverty has been the boon behind the thriving illegal wildlife trade markets spread across South East Asia with strong and highly influential networks from South and South East China and Hong Kong operating them.

Thriving illegal wildlife markets have also been reported from Myanmar, Thailand, Vietnam, Cambodia, Laos PDR and Indonesia. The region has huge economic disparity with very high income nations like Singapore, Brunei and Malaysia on one hand; and middle income nations like the Thailand, the Philippines, Indonesia and Vietnam on the other; along with nations impacted with abject poverty such as Myanmar, Cambodia and Laos PDR on the other side the spectrum. The huge economic disparity of the region along with unequal wealth distribution; and uncontrolled explosive growth of human population has been turning out to be a serious challenge for the local biodiversity.

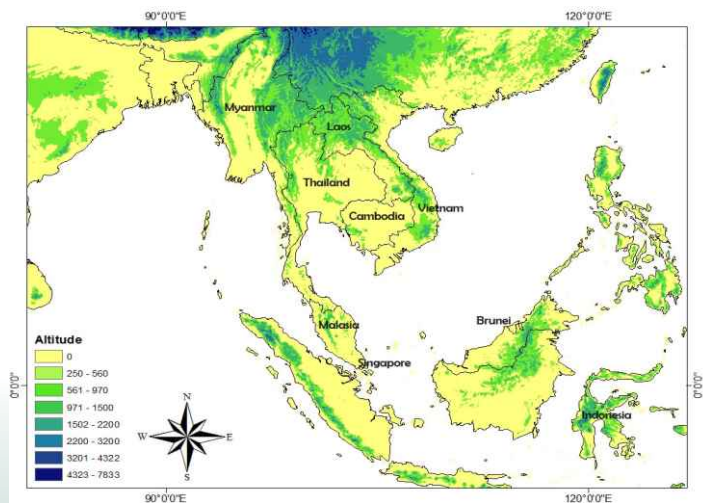


Photo credit: S. K. Basu

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## INVITATION OF RESEARCH ARTICLES for the PUBLICATION in NESA Journals

**INTERNATIONAL JOURNAL ON  
AGRICULTURAL SCIENCES - NAAS RATING 2.60**  
**INTERNATIONAL JOURNAL ON  
ENVIRONMENTAL SCIENCES - NAAS RATING 3.06**  
**INTERNATIONAL JOURNAL ON  
BIOLOGICAL SCIENCES - NAAS RATING 3.14**  
**INDIAN JOURNAL OF  
UNANI MEDICINE - ISSN NO. 0976-4526**

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## URGE EVERYONE TO DO TREE PLANTATION

The trees are great donors, they keep giving their services whether in the form of fruits, flowers, medicines, herbs or shelter selflessly and we the gainers gain non ending things from them thanklessly and cut them for our greed of one or the other things. Trees are priceles. They never demands anything from us in return of their services, even then we don't care. Trees work endlessly without a second's break. They absorb the most harmful carbon dioxide gas and in return provide us the pure oxygen which is our life which indirectly helps in slowing down the global warming effect. Deforestation is normal these days, thus creating many environmental problems such as it can lead to environmental imbalance, air pollution, global warming, soil erosion etc. The forest cover of the whole world has drastically depleted over a period of time owing to the human needs and activities. Thus there is great need of plantation for the reducing the earth temperature.