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# Environment

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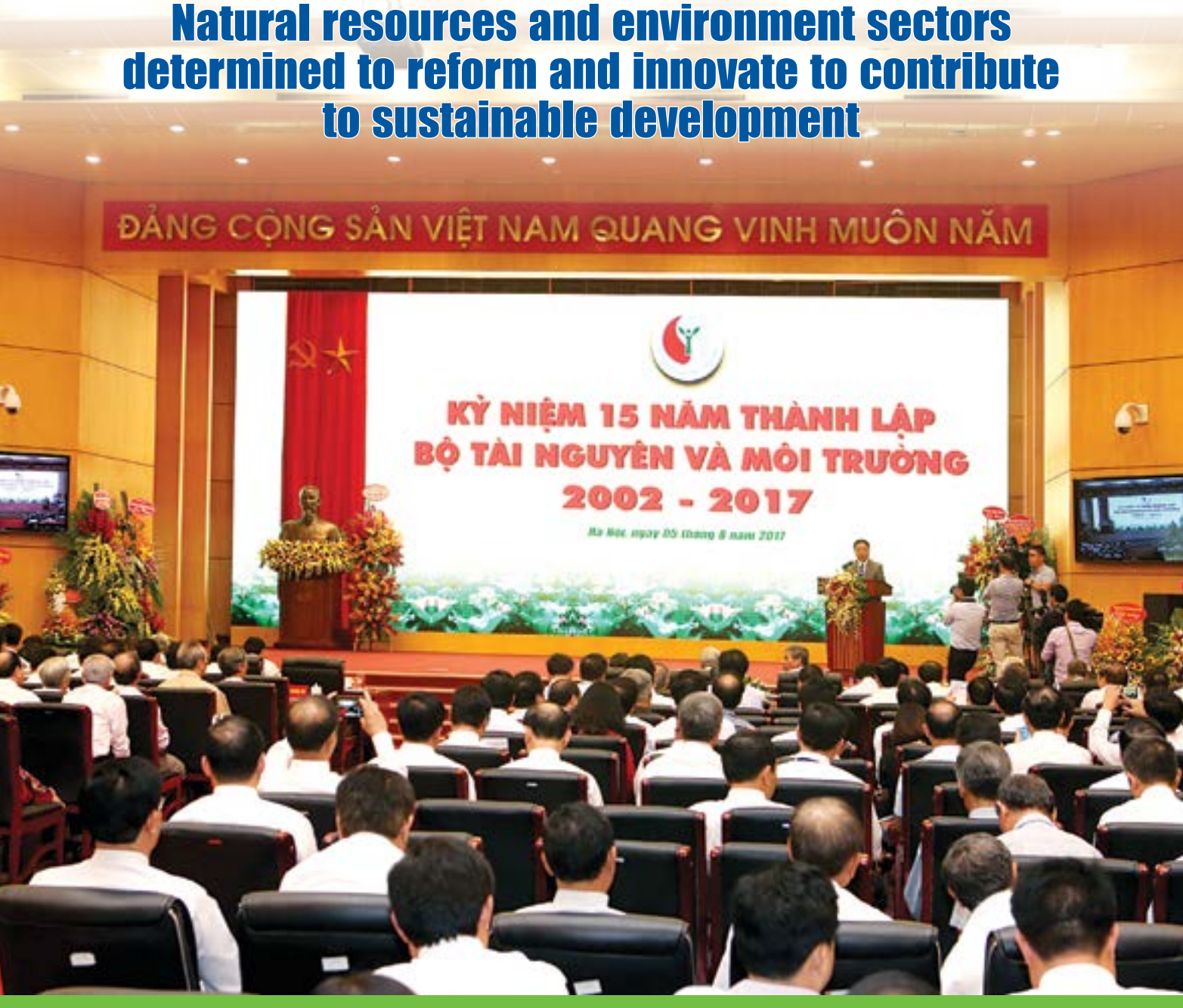
15TH ANNIVERSARY OF THE ESTABLISHMENT OF MONRE

## Natural resources and environment sectors determined to reform and innovate to contribute to sustainable development




**Implementation of the National Strategy on Biodiversity to 2020, vision to 2030**

**Assuring environmental security in Việt Nam: An urgent task**

**Vietnam's Urban Environment Management: Challenges Remain**

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15TH ANNIVERSARY OF THE ESTABLISHMENT OF THE MINISTRY OF NATURAL RESOURCE AND ENVIRONMENT

# Natural resources and environment sectors determined to reform and innovate to contribute to sustainable development


▲ *Minister Trần Hồng Hà makes speech at the ceremony*

On 5th August 2017, Ministry of Natural Resources and Environment (MONRE) organized a ceremony of 15th anniversary of the establishment of the ministry (5/8/2002 - 5/8/2017).

During its 15 years of establishment and development, the sector has spent a great effort to overcome challenges and difficulties to attain significant achievements, contributing to a common cause of the nation development. In the establishment phase of 2002 - 2007, MONRE quickly formulated its functional structure and gradually developed and completed institutions, policies and legal frameworks which were suitable for the nation's integration process. Among the outstanding achievements are the development of Land Law 2003, Law on Environmental Protection 2005, revised Law on Mineral Resources and related regulations. These have created favorable conditions for socioeconomic development activities and enhanced state management of natural resource and environmental management. In particular, MONRE is one of the few ministries which pioneer in applying one stop shop and interrelated one stop shop, opening dialogues with the people and businesses and establishing natural resources and environmental communication channels with organizations and citizens.


▲ *Ceremony of the 15th anniversary of establishment of MONRE*

In the status establishment period of 2007 - 2011, taking advantages of solid foundation of state management from previous periods, MONRE established an important status in contributing to socioeconomic development of the country. With some breakthrough achievements in natural resources and environmental manage-

ment, the sector has gradually increased its contribution and its comparative advantages in boosting an investment environment, in parallel with enhancing environmental protection and initially implementing the climate change response actions.

In the period of enhancing connection and integrated management of 2011 - 2016, in addition to further completing natural resource and environmental regulations and policies, the revisions of technical laws on land, water resources, environment and natural resources and environment management of seas and islands as well as the collaborations among these areas have been boosted. This has been realized through the Communist Party's 11th Central Standing Committee's special resolution on continuing reforms of land administration policies and regulations towards a goal of being a modernization oriented industrialized nation by 2020 with proactive responses to climate change and natural resources and environment management enhancement.

In his speech at the ceremony, Minister Trần Hồng Hà emphasized that MONRE has been constantly trying its best to accomplish the political tasks assigned by the Party, the Government and the people to make a significant contribution in socio-economic development of the nation. In the meantime, Minister requested that in the period of 2016 - 2021, the natural resource and environment sector should gear up for the following priority tasks:

*First,* completing organizational structure from national to local levels to ensure high effectiveness; training and improving capacity for the staff at the local level, promoting integrity, constructiveness, action oriented and being close to the people by being responsive to people and businesses' ideas and requests; enhancing administrative disciplines and supervision and inspection in public servants' performance.

*Second,* advising the Government and the National Assembly for completing institution, mechanism and policy on natural resources and environment in line with domestic practice and international regulations. For the time being, focusing on a comprehensive assessment of regulation compliance to identify and address shortcomings in natural resources and environment regulations and policies; proposing new policies suitable for a development context.

*Third,* strengthening and increasing effectiveness of supervision and inspection of natural resources and environmental compliance. This is an important ongoing task of all management areas by MONRE. In particular, it is necessary to increase effectiveness of cooperation between different levels in inspection to avoid overlaps.

*Fourth,* focusing on administrative reforms, in particular improving land administration access index and public administration performance index (PAPI); improving quality of procedures and public services of the sector, publicize procedures, formulate the system of receiving review and feedback from citizens and businesses to evaluate administrative reforms and public service quality of agencies.

*Fifth,* enhancing basic survey and investigation activities to provide input for developing strategies and plans for socioeconomic development of the country, and effective exploitation, use and protection of natural resources; focus on research and development to provide input for decision making; developing natural resources and environmental database, and increase forecasting capacity.

At the ceremony, delegated by the State President, Minister Trần Hồng Hà conferred Labor Orders for Vice Minister Võ Tuấn Nhân, Vice Minister Nguyễn Thị Phương Hoa and former Vice Minister Chu Phạm Ngọc Hiển, a Labor Order Level Two for Legislative Department for outstanding contribution in period 2011-2016, and Certificates of Merit of National Emulating Officer for four exceptional individuals and Certificates of Merits of 10 outstanding individuals■

**Vũ Nhung**


▲ *Minister Trần Hồng Hà confers Prime Minister's Certificates of Merits for individuals with outstanding achievements*

# Praising ASEAN Biodiversity Hero

On 8th August 2017 in Manila, the Philippines, a ceremony for conferring ASEAN Biodiversity Hero awards was held to praise ASEAN individuals with outstanding contributions to biodiversity conservation. It was one of the celebrating activities of the 50th anniversary of ASEAN establishment.

Biodiversity losses have created negative impact on biodiversity dependent livelihood of over 600 million people in ASEAN member countries. To raise awareness on this issue, ASEAN initiated awards for individuals with significant contributions to biodiversity conservation.

After a thorough selection process, 10 outstanding individuals have been awarded this title. They all are ASEAN member countries' citizens with biodiversity conservation tracked records and high influence on the community. With substantial activities and contributions to national and regional biodiversity conservation, Prof. Dr. Đặng Huy Huỳnh, Vice President of Vietnam Association for Conservation of Nature and Environment (VACNE) is the first Vietnamese to receive such a noble award.

▲ *Prof. Dr. Đặng Huy Huỳnh awarded ASEAN Biodiversity Hero*

To acknowledge his contributions, on August 17, 2017 in Hà Nội, Việt Nam Union of Scientific and Technical Associations organized a ceremony for praising Prof Đặng Huy Huỳnh on this special occasion■

**Hương Mai**

# Senior scientist fosters exchange of knowledge and solutions to conserve Vietnam's biodiversity

Prof. Dr. Đặng Huy Huỳnh is a senior scientist and one of Vietnam's leading experts on biodiversity, natural resources, and the environment. Known as one of his country's most enduring advocates of biodiversity education, he is respected by scientists, colleagues, environmentalists and many other people who have had the opportunity to learn from his wealth of knowledge.

When helming the Institute of Ecology and Biological Resources, he fostered the exchange of knowledge among local and foreign experts to share information and solutions in support of biodiversity conservation in Việt Nam.

"As the leader of the Institute of Ecology and Biological Resources under the Vietnam Academy of Science and Technology during a period of 20 years, Prof. Huỳnh contributed a great deal to research on biodiversity of Việt Nam, presided numerous of key scientific research programs at the state level, investigated principally and participated in many regional and international cooperation projects on biodiversity, published many valuable document such as Vietnam Red Data Book, Checklist of Mammals of Vietnam, and Fauna of Vietnam," said Dr. Nguyễn Ngọc Sinh, chairman of the Vietnam Association for Conservation of Nature and Environment (VACNE).

It was also under Dr. Huỳnh's helm that the Institute of Ecology and Biological Resources became a leading institution in biodiversity research and natural conservation in Việt Nam. Under his leadership, staff of the institute was able to join many research programs of organizations such as BirdLife, the International Union for

▲ *The 2017 ASEAN Biodiversity Hero Prof. Dr. Đặng Huy Huỳnh*

Conservation of Nature (IUCN), and WWF. He encouraged collaboration with foreign experts to foster the exchange of knowledge and solutions. For him, knowledge sharing will help conserve the biological resources of Việt Nam and other countries. Dr. Huỳnh is also known for his significant contributions to the development of strategies and policies for biodiversity conservation in Viet Nam and the ASEAN region. His work as a researcher and educator has led to the development of key pieces of legislation including the Law on Environmental Protection, the Biodiversity Law, and the Law of Forest Protection and Development. He also contributed to the development of the National Action Plan for Biodiversity.

According to Dr. Phan Nguyên Hồng, a researcher at the Central Institute for Natural Resources and Environmental Studies (CRES), Dr. Huỳnh organized biodiversity research programs in the northern border areas of Viet Nam along the Trường Sơn Range and in the Lower Mekong River. "Results from these researches served as a valuable foundation in proposing the establishment of transboundary nature reserves in Indochina such as Lao PDR and Cambodia where the negative impacts of human activities are still not very clear. Therefore it will be examples in the protection of nature if nature reserves in these areas are established and well managed," he said. He added that these regions are also considered by WWP as areas with unique biodiversity that are not found in other parts of the world.

Apart from his research activities, Prof. Huỳnh also has participated in many regional and international conferences. His reports have been highly appreciated by scientists as they contain important, truthful material about the nature and management status in Viet Nam. "Biodiversity conservation with the participation of local people is one of his most valuable suggestions. In some papers, Prof. Huỳnh proposed appropriate policies that are necessary to strengthen the cooperation between scientists and managers of the whole region in the control of illegal trade of threatened wildlife," Dr. Phan Nguyên Hồng said.


▲ *Prof Huỳnh giving scientific documents to Vietnam Centre for Heritage of scientists and scholars*

To share his knowledge, Prof. Huỳnh participated in and organized training courses for biologists. He also trained communities on conservation and promotion of biodiversity resources. He organized community movements in the field of environmental protection and biodiversity conservation to encourage the greater involvement of locals in conservation initiatives.

Dr. Nguyễn Ngọc Sinh credits Prof. Huỳnh for his efforts to improve biodiversity education. "As a leading expert, Prof. Huỳnh has supervised dozens of doctors and masters, contributing significantly to manpower for biological sciences in Viet Nam," he said.

The well-loved scientist also raises awareness about community environmental protection and advocates the participation of local communities in strengthening conservation efforts.

Prof. Huỳnh has raised awareness of the need to conserve indigenous knowledge in local communities. Since 2010, Prof. Huỳnh has led the Vietnamese Heritage Tree Event. As chairman of the Heritage Tree Council he contributed to the recognition of nearly 3,000 Heritage Trees belonging to over 100 species in 52/63 provinces and cities throughout the country. "This is a comprehensive solution to mobilize community strength to conserve biodiversity and contribute to sustainable development of the country," Dr. Nguyễn Ngọc Sinh said.

At 84, Prof. Huỳnh remains active in the conservation arena. He serves as the vice chairman of VACNE, a non-governmental organization focused on protecting the natural resources and environment of Viet Nam. Prof. Huỳnh and his colleagues work to raise awareness and promote education on the conservation of natural resources and environmental protection among the general public. The association also seeks to raise awareness and promote education on the conservation of natural resources and environmental protection among the general public. The association also seeks to mobilize community members to protest actions that violate environmental protection laws.

"Prof. Huỳnh is a high-caliber scientist who is working passionately in the field of biodiversity and the environment. He is a dignified and trusted friend and colleague of people in many countries." Dr. Nguyễn Ngọc Sinh - Chairman of Vietnam Association for Conservation of Nature and Environment■

**Mai Hương**

# Prime Minister inspects Formosa's waste treatment system

▲ *Prime Minister Nguyễn Xuân Phúc inspects the waste treatment system of Formosa on July 24*

Prime Minister Nguyễn Xuân Phúc has inspected the waste treatment area and production line of Hưng Nghiệp Formosa Hà Tĩnh Steel Limited Company (FHS) in Hà Tĩnh province, asking the firm must consider the environmental matter to be a vital factor to the implementation of its large-scale steel project. During his working session on July 24 leaders of FHS, which was responsible for the marine environmental incident in four central provinces last year, the PM said the steel plant has been so far the largest foreign investment project in Việt Nam with over 11 billion USD; however, it caused the biggest maritime environmental incident in the country. He recognized the efforts of relevant ministries, sectors and localities in addressing the incident as well as ensuring security, social order and safety, and socio-economic development in the four central affected provinces.

Formosa had admitted its responsibility for the incident and seriously dealt with the consequences, he said, adding that the company is installing the latest equipment of environmental treatment. The moves have demonstrated the investor's determination in their recovery work while affirming the Vietnamese Government's viewpoint of facilitating operation of investors to do business successfully in the country, he added.

He asked FHS to apply the new cutting-edge technologies and equipment in the production line to address the incident, adding that it must consider environmental matter to be a vital factor to the implementation of its large-scale steel project.

The PM assigned the Ministry of Natural Resources and Environment to take responsibility before the Government and the Prime Minister with regards to the installation of monitoring equipment in order to ensure environmental indicators. Regarding recovery and compensation, the PM said the Government will continue allocating resources in a timely fashion facilitate post-incident production recovery in line with the law.

Việt Nam is striving to be one of the countries having the best environment in the region, so authorities at all levels need to enable investors to do business, the PM directed. The Ministry of Natural Resources and Environment affirmed that the marine environment in the four provinces has been safe for beaches, underwater sports, aquatic breeding and preservation■

**Trần Hương**

*(VNA source)*

# Further strict supervision requested for Formosa's waste

The Ministry of Environment and Natural Resources on July 13 asked the People's Committees of Hà Tĩnh, Quảng Bình, Quảng Trị and Thừa Thiên-Huế to maintain strict supervision on waste discharges from the Hưng Nghiệp Formosa Hà Tĩnh Steel Limited Company.

The ministry also requested the localities to strictly follow the rules on submitting regular monitoring reports on the sea environment.

The evaluation of the marine environment in the four central localities one year after the Formosa-related marine environment incident showed that seawater and sediment off the four provinces are now safe for swimming, water sports and aquaculture.

Notably, the indices on toxic substances such as phenol and iron hydroxide are now within permissible limits■

**Trần Tân**

# Việt Nam kicks off update of NDCs to realize Paris Agreement


▲ *MONRE Deputy Minister Võ Tuấn Nhân speaks at the workshop*

A workshop was held in Hà Nội on June 28 to kick off the review and update of Vietnam's nationally determined contributions (NDCs) which are meant to realize the Paris Agreement on climate change.

The event was held by the Ministry of Natural Resources and Environment (MONRE), the UN Development Programme (UNDP), and Germany's Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety. It was attended by members of the steering board for the implementation of the UN Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement; members of the advisory council of the National Committee on climate change; representatives of ministries, sectors, development partners, embassies, businesses, non-governmental organizations; along with domestic and foreign scientists.

The workshop aimed to collect opinions on the content, the roadmap and the role of relevant sides in the review and update of NDCs from now to 2020. MONRE Deputy Minister Võ Tuấn Nhân said NDCs need the participation and thorough consideration of all key concerned parties to ensure the transparency in the NDC implementation. As he stated, Việt Nam should review and update NDCs in a way that can reflect new requirements in the country and the world. The ultimate goal is to ensure Vietnam's NDCs are feasible and reflect the country's utmost efforts. To ensure the updated NDCs' trustworthiness and feasibility, it is necessary to collect documents, information, research findings and climate change response efforts in all fields and from groups affected by climate change, he noted. Nhan also asked development partners, international organizations, non-governmental organizations, ministries and sectors to provide necessary information or conduct supplementary studies to assist the NDC review and update.

The Paris Agreement, adopted in December 2015, is the first legal document that binds each country's responsibility and commitments, through NDCs, to coping with global climate change. Accordingly, each country is expected to submit updated NDCs every 5 years so as to help keep a global temperature rise well below 2 degrees Celsius by the end of this century, and make efforts to limit the temperature increase to 1.5 degrees Celsius and achieve net zero emissions in the latter half of the century■

**Hoàng Đàn**

*(VNA source)*

# Implementation of the National Strategy on Biodiversity to 2020, vision to 2030

**Phạm Anh Cường, Nguyễn Thành Vĩnh**
**Nguyễn Đặng Thu Cúc, Phạm Hạnh Nguyên**
*Biodiversity conservation agency*

***The national strategy on biodiversity to 2020, vision to 2030 has been approved by the Prime Minister at Decision 1250/QD-TTg dated 31/7/2013 with the objectives of conservation and sustainable use of important natural ecosystems, rare and precious species and genetic resources, contribution to the country development towards green economy, and proactive response to climate change. The development of the national strategy on biodiversity plays a very important role in the context of degrading biodiversity in Việt Nam and of a changing world, at the same time supports Việt Nam to implement national commitments to the Convention on Biological Diversity.***

## IMPLEMENTATION OF THE STRATEGY DURING 2013 - 2016

After three years of implementation of the strategy, the biodiversity conservation initially achieved key results. By October 2016, 43/63 provinces and cities approved the biodiversity conservation planning; 166/176 special use forests were established with an area of 2,106,051 ha, accounting for 6.36% territory land; the forest cover rate was 40.84% (by 31/12/2015); 10/16 marine protected areas were established, with an area of 111,211 ha, making up 0.11% marine area nationwide (by June 2016), of which six marine protected areas have officially operated. Particularly, there are 8 Ramsar sites, nine world biosphere reserve sites, two world natural heritage sites and five ASEAN heritage parks (by June 2016).

To enhance species and genetic resources conservation, the Government has promulgated Decree 160/2013/ND-CP on species identification criteria and species management mechanism for species in the List of rare, precious, prioritised for protection species, of which 17 flora species, 83 fauna species, 15 crop species and six animal husbandry species are prioritised for protection; Decision 1671/2015/QD-TTg approving the Programme for genetic resources conservation and sustainable use to 2025, vision to 2030; Decision 1141/QD-TTg approving the Scheme on capacity building on fair and equitable access and sharing of benefits arising from the use of genetic resources 2016 - 2025.

The strategy tasks have been implemented at central and local levels in all fields: conservation of natural ecosystems; conservation of wildlife and rare, precious and endangered animals and crops; sustainable use and implementation of access and benefit sharing from ecosystem and biodiversity services; controlling of activities that cause adverse impacts on

▲ *Bàu Sấu wetland has high biodiversity in Việt Nam*

biodiversity; biodiversity conservation in the context of climate change.

In addition to achievements, the implementation of strategies also expresses some shortcomings, such as the state management assignment and distribution on biodiversity is not clear; the state management bodies on biodiversity is scattered and non-comprehensive; the collaboration between ministries, sectors at central and local levels on biodiversity conservation is ineffective; the regulation on biodiversity conservation is not adequately implemented; the legal enforcement is limited due to resource shortage; the administrative violation penalty mechanism is not strictly enforced, and the regulation for criminal prosecution is not yet available.

Resources for biodiversity conservation are limited, quantitatively and qualitatively short, particularly staff at district and commune levels; the financial resources mostly rely on state budget (around 60 - 80%); the international resources rely on official development assistance (ODA) for short-term projects; therefore, it is difficult to implement conservation commitments in the long-term and the implementation is normally unevenly distributed; specific policies to mobilise legal contribution from organisations and individuals for biodiversity conservation in Việt Nam are not available.

Information and database on biodiversity is scattered at many state management and research agencies; quality of information system and database on biodiversity is not synchronous, therefore restricting information sharing and usage.

Biodiversity conservation in the context of climate change has been initially paid attention to, but policies for biodiversity conservation in the context of climate change are limited, particularly ecosystem-based adaptation to climate change, integration of climate change response to socio-economic development policies and strategies (such as poverty reduction, enhanced food security, sustainable livelihoods development) in high biodiversity areas and areas that are heavily affected by climate change, integration of biodiversity conservation in the National strategy on climate change.

## ENHANCING BIODIVERSITY CONSERVATION AND SUSTAINABLE USE

To enhance the conservation and sustainable use of biodiversity and successful implementation of targets, tasks, priority projects of the Strategy in the upcoming time (2017 - 2020) it is necessary to solve following issues:

Strengthening institutions and state management system on biodiversity in order to manage in a synchronous, effective and comprehensive manner. At the central level, it is necessary to clarify roles, consolidate functions and mandates of the Ministry of Natural Resources and Environment as a focal agency to ensure the overall state management on conservation and development of biodiversity nationwide as regulated in the Law on Biodiversity. At the same time, it is necessary to clarify the roles, functions and tasks of other ministries and sectors as sectoral agencies on state management on biodiversity. It is necessary to identify the leading and coordinating mechanisms among ministries and sectors in development and promulgation of policies in order to avoid duplication and overlapping among policies (promulgated under different laws) on biodiversity (protected areas, species and genetic resources sites). At local levels, it is necessary to strengthen the state management bodies at provincial level, to promote the establishment of a specific agency on biodiversity conservation (within the Subdepartment of environmental protection) to assign one staff with appropriate profession and qualification on biodiversity conservation, initially at provinces and cities that have national parks and protected areas within their management territory.

Finalising legislations and policies on biodiversity conservation: The Law on Biodiversity is a new advanced step to systemize biodiversity conservation. However, some regulations in the Law on Biodiversity (2008) and the Law on Forest Protection and Development (2004) Law on Fishery (2003) have not been clearly defined, leading to overlapping and difficulties during the implementation. Therefore, it is necessary to review and revise these above laws; regulations on biodiversity in the Law on Forest Protection and Development, Law on Fishery must be appropriate and synchronous with regulations in the Law on Biodiversity; in some cases, some regulations of the Law on Biodiversity are inappropriate then should be revised to be appropriate and synchronous.

Enhancing legal enforcement in biodiversity: paying attention, strictly and fully implementing regulations and legislations on nature and biodiversity conservation in development planning; reviewing and approving the investment policy of projects that have adverse impacts on biodiversity, of which particularly focusing on integrating biodiversity into strategic environmental assessment, environmental impact assessment; reviewing, revising, and improving the legal framework on management and protection of wildlife to ensure the feasibility, unification and synchronisation; enhancing and finalising the collaboration mechanism among different forces, particularly public security, customs, forest rangers, marine police, border army, air security, Việt Nam CITES Agency, Interpol… to exchange, share and collaborate to address information and to provide legal support on criminal investigations against criminals on illegal trading and transport

of wildlife and their products; capacity building for legislation enforcement agencies to control illegal consumption of wildlife; continuing to strengthen the prorogation, enhancing awareness and responsibilities of sectors and staff on biodiversity management.

Resources development for biodiversity conservation: enhancing training for key staff on biodiversity conservation from central to local levels; distributing stable and regular budget for state management on biodiversity at central and local levels; developing investment policies and long-term finance of the State for conservation and sustainable development of biodiversity for the period 2015 - 2020 or 2015 - 2025; diversifying financial sources; promoting research and application of new financial mechanisms to support conservation (carbon finance, payment for biodiversity related services, biodiversity trade-off, genetic resources access and sharing) developing domestic financial mobilization mechanism (from enterprises, communities, individuals…) based on economic incentives (tax, fee reduction…) promoting public private cooperation in biodiversity conservation.

Strengthening information and database on biodiversity: Establish and apply a system on reporting, information sharing and database on biodiversity at all levels (national, provincial, protected area) and gradually integrate biodiversity information into the national statistics system.

Developing policies and investing resources to implement policies on biodiversity conservation in the context of climate change (climate change ecosystem-based adaptation) integration of response to climate change into socio-economic development policies and strategies (poverty reduction, enhanced food security, sustainable livelihood development) at geographical regions with high biodiversity and under substantial impacts from climate change, integration of biodiversity conservation into the national strategy on climate change■

# Việt Nam targets 42% forest coverage by 2020

▲ *Vietnam's forest coverage is expected to increase to 42% by 2020*

Việt Nam aims to increase the nationwide forest coverage to 42%, equivalent to 14.4 million hectares, by 2020, according to the target programme on sustainable forest development during 2016 - 2020 recently approved by the Prime Minister.

The country expects to achieve yearly forestry production growth rate of 5.5 - 6% and have artificial forests produce 20m3 per hectare per year. Exports of woodwork and forestry products are forecast to fetch 8 - 8.5 billion USD.

The sector eyes 25 million jobs with increased incomes, helping reduce poverty and improving livelihoods for forestry workers. The programme sets out three main missions: protecting forest and preserving the nature, improving forest quality and productivity and increasing added value of forest products.

Under the programme, 15% of degrading forests, especially special-use forests, will be recovered and preserved by 2020. Additional 100,000 hectares of special-use forests will be planted while the number of rare species which are on the brink of extinction will be increased. Law enforcement should be promoted to cut down violations on forest development and protection■

**Nhật Minh**
*(VNA source)*

# Việt Nam commits to better bear preservation

The Vietnam Administration of Forestry on July 18, 2017 signed a Memorandum of Understanding (MoU) with Animals Asia on building plans to better protect bears. The MoU is aimed at creating favourable conditions for the administration and Animals Asia to carry out necessary activities to phase out bear bile farming in Việt Nam, increase management of bear raising at rescue centres and preserve bears in natural habitats.

According to the Convention on International Trade in En-

▲ *A bear has been raised at the Vietnam Bear Rescue Centre*

dangered Species of Wild Fauna and Flora office, some 245 Tibetan bears are being kept at 430 bear farms across Việt Nam. Under the MoU, the two sides will commit to cooperating and working with relevant agencies to increase management of bear preservation nationwide via a series of activities, such as completing bear preservation policies, promoting information dissemination and mass communication to raise public awareness on protecting bears and enhancing the adoption of regulations on managing and supervising bear raising activities. They will also work to enhance capacity of bear rescue centres and research more activities to protect bears.

Deputy Head of the Vietnam Administration of Forestry, said on July 7 the MoU was expected to help promote coordination activities between the two sides in research and implementing bear preservation activities nationwide. Jill Robinson, MBE, co-founder and CEO of Animals Asia, said cooperation between the two sides was very important. Animals Asia would try its best to ensure efficiency of joint activities between the two sides in managing bear preservation in Việt Nam. The country's wild bear population has declined sharply over the past 20 years, according to recent surveys carried out in 22 protected areas. The surveys were part of a 3-year collaborative project by the Centre for Environment and Rural Development at Vinh University with the support of conservation and animal welfare organization Free the Bears and Animals Asia■

**Bảo Bình**
*(VNS source)*

# Việt Nam takes action to save primates

Việt Nam will strive to combat the hunt and illegal trade of primates by 2025, with the goal to reducing hunting by 70%. It will also work towards building 3 rescue centres to save and release primates back into the wild. The target has been set in an action plan to conserve primates in Việt Nam until 2025 with a vision to 2030, signed by Deputy Prime Minister Trịnh Đình Dũng on May 10.

According to Decision No 628/QĐ-TTg, the plan requires building an inter-sectoral co-operation mechanism and confiscating shotguns in residential areas where endangered primates in need of protection live. National parks and sanctuaries that are home to rare and endangered primates are also urged to use spatial monitoring and reporting tools to prevent hunting. State budget funds will be earmarked for them to study, protect and monitor primates while expanding forestation to create more living spaces for primates. The scheme aims to boost law enforcement agencies' awareness of conservation work and incorporating primate conservation into a project on strengthening the capacity of sanctuaries. Local communities will be also educated on the role of women and gender equality in conservation while awareness campaigns will be launched to minimize consumption of products originating from primates.

The Government and philanthropists will provide scholarships, especially for women who want to take training courses on primate conservation. In addition, lectures on primate conservation will be added to school and tertiary curricula■

**Châu Long**
*(VNS source)*

# Assuring environmental security in Việt Nam: An urgent task

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Assuring environmental security has become a global issue which requires international efforts and collaborations. Challenges to environmental security have posed threats not only on social, economic and food security but also on national security and humankind survival. At present, environmental security is an urgent issue in Việt Nam. International and domestic researchers have agreed that national security and environmental security are interlinked because environmental security is part of non-traditional security which is a component of national security. Therefore, ensuring environmental security is important for ensuring national security nowadays.

## ENVIRONMENTAL SECURITY FROM NATIONAL SECURITY VIEW POINT

In Việt Nam, the Law on National Security 2004 stipulates that national security is a stability and sustainable development of socialism and Socialist Republic of Việt Nam, and the inviolable independence, sovereignty, unity and territorial integrity. National security is composed of protecting national benefits and removing threats to those benefits. Nowadays, due to the negative points of development as well as rapid globalization, a concept of national security covers not only preventing and responding to war risks but also responding to climate change, pollution, environmental degradation, water shortage, terrorisms, epidemics and transboundary crime. Non-traditional security threats could lead to a collapsibility of a nation or a government without military operations.

One of the emerging non-traditional security issue which receives attention from academia around the world is environmental security. In 1972, environmental security was for the first time ingrate into an agenda of the United Nations (UN) Conference on Human and Environment in Stockholm, Sweden. The UN General Assembly first mentioned environmental security in 1987 in an official document. According to this document, "improper and wasteful management of natural resources poses security threats. Environmental degradation has threatened development and become a cause of social tensions and uprising that have negative impacts such as poverty, illiteracy and diseases."

On April 24, 1986, the accident at Chernobyl Nuclear Power Plant marked the world worst disaster. President Gorbachew then proposed to consider ecological security as a first priority in the former Soviet Union. This helped strengthening the confidence in the importance of environmental security. Right after being elected as the American President, Bill Cliton announced that environmental security was an organic component of national security. In this vein, the Cliton Administration incorporated environmental security into national strategy national security report in 1994. In 1996, EU officially included environmental security as a component of national security. So far, the US, Russia, Japan, the UK, Canada, EU and many other countries have issued a national environmental security strategy.

According to the UN Security Council (1992), environmental security is the scarcity of natural resources, environmental pollution and other threats to the economy that could pose risks to poverty, political instability and could trigger wars. The Millennium project by the UN's Council on America notes that environmental security is ensuring safety and protect against environmental threats due to poor management and design. Despite ongoing controversies, academia has recognized that environmental factors play a direct and indirect role in political tensions and armed conflicts, and agreed that environmental security and national security have strong linkages.

At present, the world is facing some major environmental security issues: climate change (notably global warming), water scarcity, marine resource depletion, ozone depletion, desertification, forest degradation, biodiversity losses and acid rain deposition. In addition, Việt Nam is facing numerous threats regarding environmental security, including climate change, water security, marine security, transboundary pollution and forest and biodiversity degradation.

To address this issue, our Party and Government have affirmed that environmental protection is one of the vital issues of humankind, a crucial factor to ensure human health and life quality, contributing to socioeconomic development, security stability and national defense, and contributing to international integration. In particular, environmental protection and climate change responses are an important part of the 10th Party National Congress. It is emphasized that enhancing natural resource management, environmental protection, and proactive responses to climate change towards sustainable development with a view of ensuring holistic approaches of harmonization of sectors and regions and ensuring readiness to respond to traditional and non-traditional security risks. In addition, environmental security has been mentioned in the Law on Environmental Protection 2014. It is defined as ensuring insignificant negative environmental impact on the political stability and socioeconomic development of the nation. Therefore, it can be said that environmental security has received attention from the international community as well as Việt Nam and has been initially legalized.

## CURRENT STATUS OF ENVIRONMENTAL SECURITY IN VIỆT NAM

***Climate change impact***

It is obvious that one of the most important environmental security issues nowadays is climate change. According to international organizations' assessment, Việt Nam is one of the most vulnerable countries to climate change, in particular increasingly severe storm surges, flooding and drought. Based on a global climate risk indicator report in 2016, Việt Nam is ranked the 7th in terms of long term climate change risks. Data from Institute of Meteorology and Hydrology and Climate Change (IMHEN) and United Nations Development Program (UNDP) show that over the last 30 years, on an annual average, about 500 deaths and missing and up to 1.5% GDP losses have been caused by natural disasters. Averagely, Việt Nam is directly affected by six to seven storm surges per year.

Climate change scenarios 2016 show that an average sea level rise in the period 1993 - 2014 is 3.34 mm/year, of which the southern central coastal area suffers the most, with the sea level rise of above 5.6 mm/year. According to an average scenario, by 2050, the sea level rise will have been 22cm, and 53cm by 2100. Sea level rise causes farm land losses and has direct impacts on food security, economy and water leading to increasing poverty and famine, job losses and migration. Therefore, climate change has been causing temporary or permanent displacement and migration in some severely affected areas.

***Water security***

Statistics show that river basins in Việt Nam account a total area of 1,167,000 km$^2$, of which 72% is located outside of its territory. A total amount of surface water in its territory is about 830 - 840 billion m3 with the majority depends on outside water sources, which pose a great risk of water security. Water security depends heavily on water extraction for socioeconomic development in river basins. Although Việt Nam has participated in multilateral and bilateral cooperation on water security, it is facing numerous challenges.

In Mekong River basin, hydropower dams in China, Laos and Cambodia pose threats to water availability, fish, sediments and ecosystems in Việt Nam.

In addition, the lowering water level in the Mekong River is the main cause of droughts and salinity in the Mekong Delta. Furthermore, the Red River originating from China tends to become more polluted. In the meantime, conflicts in water exploitation and usage are getting more serious, with the main problem of tensions between upstream and downstream and among sectors over wastewater issues.

## MARITIME ENVIRONMENTAL SECURITY

Although Việt Nam has maritime advantages, it is facing a challenge of environmental security and sovereignty. A workshop on environmental security in the East Sea held in the US in 6/2016 addressed measures for protecting natural resources and the environment of the Spratly Archipelago of Việt Nam. Data show that 80% of coral reefs in the East Sea is deteriorating, leading to fish stock decline. Recently, China's large scale illegal construction and developments in the East Sea has been a cause of negative environmental impact in this sea.

At present, 70 - 80% of marine litters are from untreated solid waste wastewater from

▲ *Việt Nam is one of the most vulnerable countries to climate change*

factories, industrial parks, residential areas through rivers to the seas. In addition, capacity in marine pollution control remains limited. In April, 2016, a seriously environmental incident happened the seas in four coastal provinces causing huge socioeconomic losses and marine environmental degradation, and threatening people's livelihood and social security. This shows that some localities have not paid due attention to environmental protection in their economic development. This is an expensive lesson for Việt Nam in harmonizing environmental protection and socioeconomic development.

▲ *Planting mangroves to protect coastal villages and livelihood from wind and wave destruction*

## POLLUTION IN SOME CRITICAL AREAS

The National State of Environment Report period 2011 - 2015 shows that a domestic solid waste collection rate in urban suburbs is about 84 - 85%, 40% in rural areas and only 10% in remoted and isolated areas. A total amount of hazardous waste generated per year is about 800,000 tons. However, only 40% of industrial hazardous waste and 80% of medical hazardous waste are collected, posing great risks to environmental pollution.

In the meantime, forest fire and illegal logging, rapid development of industrial parks, factories and enterprises and enabling environment for attracting investment without adequate considerations for environmental protection in some localities are posing risks to environmental security and human health. There are over 300 industrial parks nationwide and some hundreds of industrial clusters. However, up to 70% of the industrial parks do not have proper wastewater treatment facilities. Over 90% of the production, trade and service facilities do not treat their wastewater. Over 4,000 serious polluters and 55% - 70% of the enterprises are not in compliance with environmental impact assessment or environmental protection commitments. Up to 98% of enterprises violate wastewater treatment regulations and 100% do not have proper treatment for hazardous emission.

## TRANSBOUNDARY POLLUTION

Over the past years, some nuclear power plants in China have been built near its border with Việt Nam. This is a concerning issue as it is a serious transboundary pollution threat to environmental security and national security. Việt Nam is facing a risk of becoming "a landfill for the world's industrial waste". Statistical reports by General Department of Custom reveal that the year 2011 witnessed 17 cases of hazardous waste transport with the total amount of 573 tons. In 2012, 30 cases with 3,868 tons were detected and sophisticated.

A study by IMHEN in nine Northern provinces shows that the air environment is under pressure of transboundary pollution from East and Southeast of China, in particular in winter time. Due to the seasonal Northeast wind, the air from China (with possible amount of 55% of $SO_2$, 48% of $NO_2$ and 30% of CO) causes acid rain deposition, which leads to reduced pH in lakes and ponds and rapid decline and degradation of ecosystems.

## BIODIVERSITY AND FOREST RESOURCES DEGRADATION

The National State of Environment period 2011 - 2015 also shows that the quality of natural forests continues to decline. Although forest covers tend to increase, most of the forests are planted forests with low biodiversity. In 2014 alone, 3,157 ha of forests suffered from forest fire, increasing by 157.2% compared with the previous year. Over the last 22 years (1990 - 2012), a losing rate of mangrove forests has been 1.7 times higher than the period of 47 previous years (1943 - 1990).

Statistics shows that as of 2012, 56% of mangrove is recently planted with poor diversity and quality.

Biodiversity degradation, invasive alien species and genetically modified organisms tend to increase. Many invasive species such as Mimosa pigra, gold snail, red ear turtle, and viruses causing green ear pig diseases have destroyed plants, horticulture, posing great risks of unbalanced ecosystems and human health. Many wildlife species are now endangered. Some maritime creatures are in serious degradation. According to IUCN Red Book, the number of endangered species in Việt Nam has increased from 25 in 1996 to 188 in 2014.

***Environmental issues in mining***

A current status of mining exploitation in Việt Nam reveals shortcomings. Some large stock mineral resource mines have been divided into fragmented parts. In particular, illegal exploitation of gold, precious stones, tint, lead, coal and sand has created considerable environmental impact, posing risks to environmental security. The issue of "sand thieves" causing bank erosion and pollution has not yet been addressed.

***Some measures for ensuring environmental security in Việt Nam***

*First,* developing a set of environmental security criteria and indicators suitable in the Vietnamese context to assist

policy and decision making processes. This tool will provide information for police makers and decision makers to assess and control environmental security and issue timely measures to ensure environmental security.

*Second,* developing and completing legal documents and mechanisms to prevent, respond and ensure environmental security. This is an urgent task for effective environmental security management, contributing to sustainable development. Improper regulations should be removed. In addition, based on scientific findings, a legal framework and enabling policy mechanism for environmental security should be established. A possibility of developing Law on Climate Change should be studied. Temporarily, environmental and climate change criteria should be studied and integrated into a bill on planning which is under scrutiny by National Assembly and Government.

*Third,* enhancing international and regional cooperation, take advantages of overseas resources such as capital, science and technology and management experience. Environmental security is a global issue that requires joint effort and collaboration of nations and organizations.

*Fourth,* placing importance to scientific and technological research and development to wisely use natural resources, treat pollution, recover from natural disasters and respond to climate change. In the meantime, clean energy such as nuclear power, wind power, solar power should be developed to ease pressure on hydropower and provide energy security.

*Fifth,* promoting propaganda and dissemination of regulations on environmental protection including environmental security; assisting businesses in accessing information and complying with environmental regulations.

*Sixth,* harmonizing socioeconomic development and environmental protection, changing the mindset toward strict pollution control and prevention.

*Seventh,* enhancing biodiversity conservation, forest protection, controlling and banning invasive species, strictly issuing mining permits. In the meantime, capacity building for meteorological forecasting and integrating climate change into national and local strategies, master plans and programs■

# National report issue on urban environment

Vietnam's urban environment, especially in big cities, is facing numerous challenges, including air and water pollution, solid waste treatment and flooding, according to the 2016 National Environmental Report issued on July 21, 2017 in Hà Nội.

The report by the Ministry of Natural Resources and Environment said that on average, during more than 70 days of the year dust concentrations of PM10 and PM2.5 are much higher than the permitted concentration. In the northern region, winter days between November and March often record higher dust concentrations than other days.

Only 42 of about 790 urban areas across the country have wastewater treatment systems meeting standards, the report said. In Hà Nội, only 20.6% of household wastewater is treated before being discharged into the environment. Rivers, lakes and canals in Hà Nội and HCM City are the most polluted, among the Tô Lịch, Lừ and Sét rivers in Hà Nội, and the Tân Hóa - Lò Gốm, Ba Bò, Tham Lương canals in HCM City.

The report also pointed out that 46% of underground water in Hà Nội was found to contain higher than permitted arsenic concentrations, especially in the two districts of Hoàng Mai and Long Biên. Although 85% of solid waste was collected in urban areas of the country, the percentage of solid waste treated according to standards was very small. The report said solid waste was mainly treated by burying and burning, but most dumping sites and incinerators failed to meet standards. Urban areas have suffered from flooding during torrential rains in recent years, especially in Hà Nội and HCM City

**Causes and solutions**

Vehicle fumes and construction sites are mainly to blame for air pollution in urban areas. Coaches and trucks were found to mainly discharge nitrogen dioxide ($NO_2$) and sulfur dioxide ($SO_2$), while motorbikes mainly emit carbon monoxide (CO) and volatile organic compounds (VOC), he said.

Việt Nam now has about 47 million motorbikes and about 3 million cars, he said. Increasing population in urban areas and inadequate infrastructure were responsible for the virtually total absence of wastewater treatment systems meeting standards, he said.

The small rate of solid waste treated in urban areas is attributed to lack of investment and backward technologies for collecting and treating waste, he said. Poor drainage systems due to poor planning in urban areas was the main cause of flooding, he said, adding that high tides triggered by climate change also resulted in the inundations in big cities, such as HCM City.

The report also provided recommendations to remedy the problems. Authorized agencies were advised to tighten control to minimize emission sources, including conducting more checks on vehicle emissions as well as ensuring sanitation at construction sites. Additional wastewater treatment systems need to be built in urban areas and drainage systems upgraded to prevent flooding during torrential rains and high tides. The administration of urban areas was asked to invest more in new technologies to improve their capacity to treat waste■

**Sơn Tùng**

# Prevention, responses and remediation of environmental incidents - Important issue in revising the Law on Environmental Protection 2014

**Nguyễn Thi**
*Ministry of Natural Resources and Environment*

Prevention, responses and remediation of environmental incidents are an important stipulation mentioned in Point 3, Chapter X of the Law on Environmental Protection 2014 and in other articles on environmental protection planning, strategic environmental assessment, environmental impact assessment, environmental protection plans, waste management, environmental monitoring and carrying capacity assessment, with an objective of preventing pollution and environmental incidents. These are important regulations of the Law on Environmental Protection 2014.

According to the definition of environmental incident, storms, flood, oil spills could be classified as environmental incidents. They all have respective preventing, combating and responding mechanisms. However, in practice, the regulations on prevention, response and remediation of environmental incidents have not been effective because the Law on Environmental Protection 2014 fails to provide detail and cover enough measures.

Therefore, it is necessary to revise and complement stipulations on prevention, responses and remediation of environmental incidents. This will influence other stipulations in the law, hence, help overcome the current shortcomings.

## ENVIRONMENTAL INCIDENT PREVENTION

To prevent environmental incidents, Article 108 of the Law on Environmental Protection 2014 stipulates responsibilities of business owners in environmental incident prevention with such measures as drafting a prevention and response plan, installing equipment, training for local responding task forces, regularly checking and supervising safety measures and applying cause removing measures when early signs of incidents are detected. In addition, the Law on Environmental Protection stipulates other environmental incidents' related measures such as environmental protection planning, strategic environmental assessment, environmental impact assessment, waste management, carrying capacity assessment, disclosure of names of rivers whose carrying capacities have reached thresholds, discharging quota determination, environmental protection measures, environmental insurance, environmental rehabilitation and remediation deposit, environmental technical standards, environmental monitoring, environmental public disclosure, and supervision and inspection. These regulations are important in determining a location and technology of a project, controlling waste discharge, monitoring the operation of an entity and minimizing pollution or environmental incidents.

However, these regulations, in particular Article 108 of the LEP 2014 are yet detailed enough for covering environmental incident prevention. Therefore, the following measures for preventing environmental incidents will need to be studied:

Determining a list of potential seriously polluting establishments or establishments with high risks of environmental incidents to have suitable treatment for the projects which types of operations are in the list. The treatment should be legalized from the period of siting and zoning to environmental impact assessment, environmental management plans, environmental protection options. Suitable monitoring measures in the production and trade processes should be carried out with measures for responding to environmental incidents.

Applying Best Available Technology to achieve multiple objectives, including the objective of minimizing waste through best available technology taking into account the relationship between capacity of production and trade establishments and environmental protection requirements to maximize the effectiveness. The BAT application does not necessarily impose any specific technologies or techniques.

▲ *Untreated wastewater being discharged into the environment is a potential risk of environmental incidents*

Rather, it only requires considerations of technological features, geographical locations, environmental conditions, technical feasibility and costs. Therefore, it is necessary to determine application procedures, priorities and special conditions of production and trade establishments applying BAT.

Applying environmental audit to assess environmental compliance of production and trade establishments. In the meantime, it is necessary to apply a tool to study and check documents, data and environmental reports of production and trade establishments in certain time to detect environmental protection errors and violations. Environmental audit, by assessing production inputs and outputs provides clear evidence of pollution and environmental incidents of production and trade establishments. This is an important instrument to determine responsibilities for environmental compensation and environmental criminal of organizations and individuals causing environmental incidents.

Determining relationships between general national technical standards and sectoral national technical standards with the view that sectoral standards needs more stringent. Alternatively, local authorities are delegated to develop local technical standards for individual sectors and types of production and trade establishments in their localities.

Transparency of environmental information and environmental audit is necessary for controlling environmental violations and illegal discharging activities which potentially could lead to environmental incidents through community's supervision and state management. In the meantime, it is necessary to improve roles of community, social organizations and state management authorities. This is important and effective to supervise environmental protection activities.

Regulating training and rehearsal on environmental incident prevention and responses. Because environmental incidents often occur suddenly, complicatedly and unexpectedly which cause fears and confusions among production and trade facilities as well as the surrounding community, training and rehearsal is necessary to provide timely actions.

## RESPONDING TO ENVIRONMENTAL INCIDENTS

At present, mechanisms for responding to incidents and natural disasters are fairly complete, particularly thanks to the Government's Decree 30/2017/ND-CP regulating organizations and activities related to responding to incidents, natural disasters and rescues. This covers environmental incidents. Therefore, it is necessary to consider the revision of the LEP 2014 in line with mechanisms in this decree. However, the decree only provide guidance on mechanisms for directing, advising, training and mobilizing resources when incidents happen without specifying contents and natures of different kinds of incidents. Therefore, mechanisms for responding to environmental incidents need specify:

Redefining environmental incidents to avoid overlaps with natural disaster incidents, chemical incidents, oil spills and fire because these types of incidents have been regulated in other documents. Environmental incidents should be defined as serious environmental degradation or change due to wastes from production, trade or other human activities or impact caused by artificial activities.

Developing criteria for classifying environmental incidents in accordance with different levels of jurisdictions in the system of responding to natural disasters and incidents and rescue so that the determination of who is in charge, advise and implement the responding actions can be done in a timely manner.

Clarifying roles, responsibilities and power of MONRE and DONRE, as this is not fully detailed in Decree 30/2017/ND-CP. It is also necessary to define special mechanisms to mobilize resources for responding to environmental incidents.

## ENVIRONMENTAL INCIDENT REMEDIATION

Environmental incidents can cause such damage as environmental damage (ecosystem degradation, environmental safety losses and environmental pollution), civil damage (health losses, safety dangers, income losses, property damage and negative impact on habitats and livelihood).

According to the "polluters pay" principle, individuals causing environmental incidents shall be responsible for their actions in terms of paying for compensation, civil damage, environmental incident remediation or criminal punishment. However, this principle is not fully realized in the LEP 2014. Therefore, the LEP 2014 needs to have the following additional elements:

For environmental damage, the LEP 2014 only addresses remediation in exploring and exploiting activities in mining, groundwater and in contaminated sites. These regulations however are yet complete. Therefore, it is necessary to issue regulations on remediation in which types and methods for remediation, rehabilitation, restoration are clearly defined. Based on these, costs for cleaning up and compensation can be determined. In the meantime, regulations on ensuring remediation responsibilities such as environmental deposit, environmental insurance, public participation, monitoring mechanisms and implementation arrangement need to be issued.

For civil damage, the LEP 2014 needs to be revised to include regulations on responsibilities for providing proven evidence in which the affected parties do not necessarily provide evidence for claiming for damage, but the environmental incident causing parties need to determine damage rates.

In sum, to respond to a new circumstance, it is expected that revision of the LEP 2014 and associated regulations on environmental incident prevention and responses will provide significant changes in improving environmental regulations to increase effectiveness of state management of environmental management■

# Vietnam's Urban Environment Management: Challenges Remain

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As of December 2016, Việt Nam has 795 towns with an urbanization rate of 35.5%. Rapid urbanization has created an overload for infrastructure and negative environmental impact. Over the past years, urban environmental management has made considerable progress. This includes the improvement of urban environmental protection regulations and policies, increase in investment and resources for urban environmental protection, implementation of projects and programs on environmental quality improvement and remediation, and improved air and water quality in some urban areas. However, shortcomings and obstacles remain in pollution control and planning which have led to ongoing pollution in numerous urban areas, in particular big cities.

## URBAN PLANNING INTEGRATED WITH ENVIRONMENTAL PROTECTION

As early as in 1998, Prime Minister approved an orientation master plan for urban development in Việt Nam to 2020. In 2009, it was revised and reapproved for urban development to 2020 with a vision to 2050. The master plan was developed on the basis of sustainability, suitable spatial planning and wise use of natural resources and energy, environmental protection and ecological balance. Using this master plan as a guide, Prime Minister issued regulations on urban development of five big cities: Hà Nội, Thừa Thiên-Huế, Đà Nẵng, Hồ Chí Minh and Cần Thơ.

At a local level, some provinces and cities have developed and approved their urban development master plans, for example Bắc Giang, Hải Phòng and Bình Thuận. In other places, urban development has been integrated into socioeconomic development master plans. These master plans include urban management into environmental protection. As for Hà Nội, urban development has been mentioned in the Capital City Law. Some other cities, notably Đà Nẵng, have effectively realized urban development planning and achieved considerable success. Đà Nẵng is one of the few cities which are considered as a green, clean, beautiful and most livable city in Việt Nam.

▲ *Đà Nẵng is considered as the green, clean, beautiful and most livable city in Việt Nam*

However, the implementation of urban development master plans has encountered numerous issues both at national and local levels. The most pressing issue is rapid urbanization while infrastructure insufficiently meets requirements, leading to serious traffic jams, flooding due to overloaded sewage systems and increasing pollution. For big and old cities, it is difficult to implement the master plans regarding urban zoning. In addition, climate change and sea level rise have put additional pressure on the outdated infrastructure of coastal cities.

## DEVELOPING AND COMPLETING ENVIRONMENTAL REGULATIONS

Environmental protection and urban environmental management have been detailed in current regulations. For example, the Law on Environmental Protection 2014 has updated stipulations on water, air and solid waste management. National environmental technical regu-

▲ *Automatic Air Monitoring Station in Hồng Hà Commune (Hạ Long City, Quảng Ninh)*

lations and standards have been regularly reviewed and updated. These are among advanced measures for urban environmental management. However, some specific regulations on solid waste and air pollution control in urban areas are still needed. In addition, big gaps exist between regulations and their enforcement and compliance.

## INVESTMENT AND RESOURCE MOBILIZATION IN URBAN ENVIRONMENTAL PROTECTION

In the period of 2012 - 2016, investment and resources for urban environmental management continued to increase and diversify. At the national and local levels, programs and projects on environmental management were implemented and expanded. However, most resources were from state budgets. The projects mainly focused on construction of sanitary landfills, hospital waste treatment and centralized wastewater treatment.

The rate of urban works with environmental treatment facilities has increased by 4-5% compared to the previous period. The implementation of a master plan of medical waste treatment for the period 2011 - 2015 has contributed to minimizing untreated medical waste discharge. In addition, international aid and loan projects as well as private sector contribution have enhanced urban environmental management. In this period, ODA funding for environmental projects was estimated at about 3,769 million USD. In addition, socialization funding for solid waste collection and treatment has increased.

However, funding for urban environmental management has failed to meet demand. Allocation of resources for urban environmental management has been imbalanced. Private sector involvement in urban environmental projects remains limited due to insufficient enabling polices.

## ENVIRONMENTAL MONITORING

Urban areas are one of the key areas for regular environmental monitoring. Environmental monitoring has been implemented for a long period to provide necessary information for environmental management, education, propaganda and development of environmental remediation programs. In addition, automatic environmental monitoring stations have been expanded, mostly in urban areas.

Over some years of implementation, environmental monitoring results have contributed to identifying pollution sources and provide input to development of environmental reports, management and public disclosure. However, the number of automatic monitoring stations remains very small that insufficiently provides input for assessment and publication of the state of the environment. Therefore, environmental quality projects remain limited. In addition, funding for operating monitoring station is insufficient, leading to incomplete assessment of environmental quality trends.

## PUBLIC DISCLOSURE, AWARENESS RAISING AND COMMUNITY MOBILIZATION

In urban areas, thanks to easy access to environmental information, with the majority of population having good education, environmental awareness is relatively higher than population in other areas. To meet demand, various forms of environmental information have been introduced. However, a considerable proportion of the population has not paid due attention to environmental protection and still maintain environmentally unfriendly habits. Therefore, public awareness raising for urban population needs to continue.

To address shortcomings in environmental management, it is necessary to take priority measures of dust and air pollution control, improving drainage of urban canals and rivers, sewage systems, wastewater and solid waste treatment and urban planning. In addition, it is necessary to implement comprehensive measures to overcome challenges to mitigate and remedy pollution in urban areas. These have been highlighted in Prime Minister's Directive 25/CT-TTg dated 31/8/2016 on some urgent measures for environmental protection, including urban environmental protection■

# Hà Nội needs to restore its clean air

**Prof Dr. Phạm Ngọc Đăng**
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About 50 years ago, Hà Nội was a small and beautiful city with leafy streets, numerous lakes and clean rivers and canals. It has developed rapidly with its area and population about ten times more than before. Increasing industry and construction activities are associated with increasing motor vehicles. As a result, it has suffered from severe air pollution, in particular dust and odor from sewage and polluted ponds, lakes and rivers. This has created negative impact on human health and ecology, and tourism industry.

## AIR QUALITY IS CRUCIAL FOR HUMAN SOCIOECONOMIC DEVELOPMENT

People can survive for 7 - 10 days without food, 2 - 3 days without water, but only 2 - 3 minutes without air. Air pollution can cause respiratory diseases (nasal infection, sore throat, bronchitis, pneumonia, tuberculosis and asthma), cardiovascular diseases, neurological disorders and skin diseases. Therefore, air pollution is detrimental to human health and can cause economic losses and tourism reduction.

According to a survey by Health Department, Ministry of Transport, in 2011, the total expenditure of respiratory disease diagnosis and treatment, as well as income losses due to illness or having to stay home to look after sick family members is considerable. At present, on average, the cost is 1,538 VND per capita per day in Hà Nội. With the total population of 3 million people, the cost is estimated at about 80.19 million USD per year. A report of General Department of Tourism shows that although tourists are interested in visiting craft villages, they do not want to revisit due to air pollution.

***Air Quality Index (AQI) and AQI in some countries***

AQT is often used to assess air pollution. AQI is classified into two types: single AQI abbreviated as AQIi to assess individual air pollutants, and AQI 0 to assess the air quality in an area which is an average of the sum of individual AQIi.

Air pollution is divided into five levels: good (AQI = 0 - 50), non-polluted (AQI = 51 - 100), mild polluted (AQI = 101 - 200), severely polluted (AQI = 201 - 300), and extremely polluted (AQI > 300).

At present, the assessment of individual air pollutants is the same in all countries. However, since 2000, the assessment of air pollution for a region or a city has differed. Some countries follow a traditional approach which uses AQI0, the average sum of individual AQIi, to assess the air quality of a region. These countries include Mexico, Europe, Hong Kong, Singapore, Malaysia and India. Some other countries use AQIi of air pollutant with the highest value as the AQI0 to assess air quality of a region. These countries include the US, Canada, China, the UK, Thailand and Việt Nam.

## ASSESSMENT OF AIR POLLUTION IN HÀ NỘI

***Dust air pollution***

Results in the period of 2011 - 2015 from some automatic air monitoring stations in urban areas show that PM10 in Hà Nội in 2011 is the highest with a decreasing trend in the following years. This shows some improvement in air quality in Hà Nội.

Hà Nội has the highest AQI in terms of dust, compared with other cities such as Đà Nẵng, Việt Trì, Hạ Long, Huế, Nha Trang. With AQI of dust being 232 (116/50 x 100), the year 2011 is the most polluting, classified as severe polluting. However, in 2015, AQI dust, year is 146 (73/50 x 100) or mild polluting. In these cities, the air in Đà Nẵng is not polluted and cleanest.

## AIR POLLUTION DUE TO CO, $SO_2$, $NO_2$, $O_3$

Air monitoring results of the period 2012 - 2016 reveal that $NO_2$, SO2 and CO are mainly from vehicles. $SO_2$ also comes from fuel and coal combustion. Therefore, in urban areas, the most air polluted area is roads.

Some big cities such as Hà Nội and Hạ Long have suffered from mild $NO_2$ pollution whereas other medium and small cities are not polluted in terms of $NO_2$ yet.

For $SO_2$ and CO, the monitored values are still lower the permited levels of QCVN 05:2013. However, for CO, the monitored levels are higher that the permited levels in rush hours near transport routes.

$O_3$ is a secondary polluted which is generated from the interaction between air pollutants such as Nox, HC and VOC and unltraviolet. In automatic monitoring stations near main transport routes, $O_3$ concentration is observed to have exceeded the permited level for many days in a year.

Therefore, it can be assessed that the air in Hà Nội has been severely polluted in terms of TPS and PM10. Other air pollutants such as CO, $SO_2$, $NO_2$ and $O_3$ basically have been lower or around the permited levels. According to a study by Yale and Columbia Universities, Hà Nội is in the top ten of most air polluted cities in the world. However, this assessemnt is based on the US Environmental Protection Agency guideline. On 3 March, 2016, the US Embassy in Hà Nội announced that the moni-

tored level of PM5.0 and PM2.5 in the rush hours of 8 -9am was 383 μg/m$^3$. The monitoring results by the Vietnam Environment Administration's station on Nguyễn Văn Cừ street also showed that the $PM_{10}$ suddenly rose to around 270 μg/m$^3$ around 8 - 9am on that day. Based on these results, the mass media published that air in Hà Nội was extremely polluted. This is incorrect because the monitored levels were only observed at that time, which could have been caused by a one-off natural interference like a strong wind. The published levels were not the daily average levels (monitored in 24 hours) and hence could not be used as a representative for assessing air pollution in Hà Nội. In practice, to assess the air pollution level of an area for a day, parameters of 24 hour monitoring should be used. Similarly, to assess the annual pollution level, the average level of 365 days (24hours a day) should be used. A parameter monitored at a single certain time could not be used to assess the general pollution level. Even when the level announced by the US Embassy were the daily average level, the daily level estimated would have only been 383μg/m3:150μg/m3 x 100 = 255, which would indicate severe pollution only, not extremely or dangerously polluted like Beijing. The AQI dust of Beijing has been between 300 and 500, which indicates extreme pollution. In those polluting days, the Beijing government had to take measures to reduce the number of vehicles on the roads and suspended some big emitting factories. In the meantime, it recommended that vulnerable people should not go out. In addition, air pollutants in Beijing are more complex than those in Hà Nội. Monitoring results show that about 50% of dust in Hà Nội composes of soil and particulates, and the rest is dangerous black carbon which are generated from fuel combustion. On the contrary, in Beijing, air pollution is mainly due to transport, industry and numerous coal fired heating systems which generates high levels of black carbon. In addition, air pollution in Beijing in terms of $SO_2$ is more severe than in Hà Nội.

## SOME MEASURES TO RESTORE AIR QUALITY IN HÀ NỘI

It should be noted that air pollution in Hà Nội is mainly from motor vehicles, big and small scale industrial activities, construction activities, and dust litters from construction material transport. Odour pollution is due to $CH_4$, $H_2S$, $NH_3$ and VOC from open sewage and polluted lakes and rivers.

Therefore, the following urgent measures can be taken:

*First,* enhancing air environment management capacity in Hà Nội, for example, establishing a division of air environment management, recruit more air environment specialists and conducting training on air enviornment management for staff;

*Second,* increasing propaganda and guidance on the implementation of regulations on air environment, mobilizing active participation from the public, industries, non-governmental organizations in air environment and environmental protection, increasing self-monitoring activities and counter-pollution activities.

*Third,* increasing controlling and supervising dust pollution from construction, demolishing activities, road and bridge works.

*Fourth,* incresing inspection and control of construction material transport vehicles, especially at night time.

*Fifth,* regularly checking all motor vehicles for their emissions (EURO2, EURO3, EURO4) and banning those who are not in compliance with the national technical regulations.

*Sixth,* collecting, transporting and treating properly all domestic waste, regularly clean up the streets, watering the streets during dry days.

*Seventh,* developing public transport means to meet demand, reducing individual motors and cars.

*Eighth,* applying dust control measures and emission treatment in small and big industries, encourging households and restaurants to switch from coal fired to gas fired stoves ir biomass stoves, cleaning up polluted rivers and lakes, and further developing air monitoring stations, especially automatic ones.

*Ninth,* planting more trees, protecting and encourging green space in all possible areas (terrances, corridors, walls and roofs)

Air pollution has created negative impact on human health, economic losess and tourism reduction. For sustainable development for the people and the capital city, it is necessary to restore the once clean air of Hà Nội. It is very difficult, but not imppossible with political will and support from community and scientist. Hopefully this would be done in the near future■

▲ *Air pollution is getting more severe in Hà Nội*

# Resolving environmental disputes using mediation: A case study in Đà Nẵng

**Dương Thị Phương Anh, Nguyễn Trung Thắng**
**Hoàng Hồng Hạnh, Hoàng Thị Hiền**
*Institute of Strategy and Policy on Natural Resources and Environment*

At present, environmental disputes have been becoming an issue with the increasing number of cases and their complication. Environmental dispute resolution has primarily been based on administrative approach. However, with function overlaps of concerned authorities, their over workload and their uncoordinated performance, environmental dispute resolution has been slow, causing social outrage. To address this problem, it is necessary to develop a mechanism for mediation based environmental dispute resolution that is suitable to the Vietnamese context.

## PROTOCOL OF MEDIATION BASED ENVIRONMENTAL DISPUTE RESOLUTION

In 2013, with support from Asia Foundation, Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE) conducted a study and proposed a mechanism for mediation based environmental dispute resolution. A result of this study is a guidance for mediation based environmental dispute resolution.

The guidance outlines six steps of a process of mediation based environmental dispute resolution: receiving the case and establishing conditions for resolving an environmental dispute, organizing dialogues among concerned parties, investigating the case, developing mediation options, organizing negotiation to agree on an option and organizing the mediation option. According to this guidance, when an environmental dispute happens, communal people's committee is the first administrative body to receive citizens' complaints. Case officers of the communal people's community process the case and report to the committees' leaders for classification. For small scale cases, the communal people's committee is responsible for organizing mediation for the dispute, as stipulated in the Law on Environmental Protection 2014 and regulations on grassroot level mediation. For big scale cases, the case is transferred to higher people's committees for being processed.

After receiving the case from the communal committee, District or provincial people's committees determine scopes of issues, contents of disputes and requests from concerned parties. They then investigate possibilities of applying the mediation approach. If the concerned parties agree on the mediation approach, the committee establish a mediation based enviromental dispute resolution team. Based on collected information, the team draft a plan for resolving the dispute using mediation.

After the team leader approves the plan, the team members contact and organize dialouges among the concerned parties. It then conducts investigation and determines reasons for dispute and damage due to environmental degradation and pollution. Based on the investigation results, the team develops mediation options which ensure hamornised benefits and interests of concerned parties. In this process, the team consult with concerned parties and organize negotiations to reach concensus. It then monitors the parties' compliance with their committements. However, during the process, different alternative approaches could be used, provided that the case is solved successfully.

## MEDIATION BASED ENVIRONMENTAL DISPUTE RESOLUTION IN HỒ RÁI AREA

Over the past few years, local people in Hồ Rái area (Phước Thuận Hamlet, Hòa Nhơn Commune, Hòa Vang District, Đà Nẵng City) have been surrounded by dust and noise from stone mining activities and material carrying trucks of 12 mines in the region. The mining companies did not comply with previously approved environmental impact assessment reported. The trucks were often overloaded that littered roads and generated dust. In addition, roads were not dampened which resulted in dust, in particular along main intersections. Among the 12 operating mines in Phước Thuận Hamlet, up to nine mines use inter-hamlet roads as their transport route, causing serious dust problems. The local people therefore had to change their living styles. They closed doors during daytime and only start their routine activities during night time when the trucks stop working. In

addition, due to considerable elevation differences between the mines and Hồ Rái, soil erosion occurred when it rained, leading to cultivating land losses. However, compliance with environmental requirements and compensation for local farmers for their crop damage did not meet their expectation. This problem has led to local people blocking transport routes for several times to protest.

To address this problem, in 2016, ISPONRE in collaboration with Đà Nẵng DONRE implemented a pilot project on mediation based environmental dispute resolution. The pilot project used steps for dispute resolutions as recommended in the guiding document. Following the steps, a communal dispute resolution and a departmental dispute resolution were established. The two teams reviewed scope and nature of the case, then developed a damage assessment report. It was revealed that a large area of farm land had been damaged (2.85 ha) for a long period of time (2011 - 2016) and that the dispute had not been fully addressed. The resolution conducted previously by the commune focused only on determination of crop damage and discussions with the mining companies on compensation duration and rates for crop damage. Based on the collected information, the two teams developed a plan for resolving the dispute, studied current regulations on damage compensation, estimated damage and proposed measures for addressing three main issues of irrigating water shortage, soil damage and land compensation. In the meantime, they organized meetings with the farmers and mining companies to understand their expectations and wishes. The teams then developed options for solving environmental degradation issues.

With assistance of the departmental resolution team and legal advisors, on 4 March, 2016, the communal resolution team of Hòa Nhơn organised the first mediation meeting with participation of all concerned parties (representatives of 17 households and 3 companies). The meeting was successful with an agreement between the companies and affected households on the damage and suitable and feasible proposed options. It was also agreed upon reports on the environmental disputes prepared by the two mediation teams. In particular, the issue of losing land for rice cropping and water shortage was proposedly being solved by converting from rice cultivatio to melaleuca plantation to prevent soil errosion. Site determination and implementation were also discussed and agreed on in subsequent meetings.

▲ *A mediation meeting in Hồ Rái with participation of representatives of companies and local people on 4 March, 2016*

Therefore, the pilot test of using mediation based dispute resolution has achieved expected results. The two sides have agreed on measure for resolving the dispute. In the meantim, communal officers' knowledge and skills of mediation resolution has improved.

## DIFFICULTIES, CHALLENGES AND SOME RECOMMENDATIONS FOR MEDIATION BASED ENVIRONMETAL DISPUTE RESOLUTION IN HỒ RÁI

The difficulties encountered in the dispute resolution process in Hồ Rái area include prolong duration, untrained officers and unclear divisions of tasks among team members. The mediation team faced numerous difficulties. In the meantime, it was not easy to collect information and evidence, and to determine the issues, as detailed guidance on damage assessment was not available and mediation guidance was not legalized. In addition, the dispute resolution remained dependent on business's good wills. In fact, if the companies only pay compensation for damage without addressing pollution issues, the complaints would continue.

The pilot of using the mediation based environmental dispute resolution approach in Hòa Nhơn has shown mixed sussessful and challenging evidence. Therefore, to complete the protocol for mediation based dispute resolution, it is necessary to scale up the pilot to other provinces. The guidance will then be officially issued that helps local authorities to apply. In addition, it is necessary to develop guidance for mediation skills, collection of evidence, methods for determining causes of the issues, damage assessment and mediation option development■

# Implementation of corporate social responsibility and compliance of environmental protection rules among small- and medium-sized enterprises in Việt Nam

***The implementation of corporate social responsibility (CSR) will help small- and medium-sized enterprises (SMEs) achieve sustainable development by complying with environmental protection regulations; minimising the chance of environmental pollution; recycling waste; saving natural resources, etc. However, Vietnamese SMEs are having difficulty fulfilling their CSR duty and complying with local regulations on environmental protection. The Vietnam Environment Administration Magazine (VEM) spoke with Nguyễn Ngọc Lý, Director of the Centre for Environment and Community Research, to better understand the issue.***

▲ *Nguyễn Ngọc Lý – Director of the Centre for Research of Environment and Community*

✶***VEM: Can you talk about some of the available policies of the State that support Vietnamese SMEs in their production and business as well as in conducting CSR and environmental protection activities?***

***Ms. Nguyễn Ngọc Lý:*** In Viet Nam, to fulfill their CSR duty, enterprises must conform to current laws and legal policies such as the Law of Enterprises, the Law of Labour, the Law of Environmental Protection 2014 and the Law of Inspection and Examination. Regarding environmental protection, enterprises must be accountable for the impact of their activities on the environment and the community, which are displayed through controlling pollution, processing and recycling waste and saving natural resources. If they strictly follow the rules, there will be plenty of benefits for them.

At the moment, supportive policies for SMEs have focused only on production, as stated in Decree 90/2001/ND-CP and Decree 56/2009/ND-CP, issued by the government, regulating the assistance available to SMEs. According to the two decrees, the government can provide advantageous opportunities and conditions for SMEs to renovate their technologies and machines to develop new products and services and modernise their production and management systems to improve the quality of products and services and their competitiveness in the market. In addition, the Law of Small- and Medium-Sized Enterprises is being reviewed by the National Assembly, and it will be an important foundation for supporting the development of SMEs.

Although there is no specific policy to help SMEs conduct CSR activities to improve their ability to control pollution and protect the environment, the Law of Environmental Protection 2014 points out that enterprises can borrow from the Environmental Protection Fund to build the collective wastewater treatment system, clean polluted areas, monitor the quality of the environment and produce environmentally-friendly output.

✶***VEM: What are the opportunities and challenges that Vietnamese SMEs have met with while following CSR and environmental protection regulations?***

***Ms. Nguyễn Ngọc Lý:*** Conducting CSR activities will help enterprises create a safer, healthier working environment, making employees focus on their work and increasing labour productivity. In addition, compliance with environmental protection policies will put businesses in a charge-free situation. According to Decree 155/2016/ND-CP, an enterprise can be fined from the lowest level of dozens of millions of dong to

▲ *SMEs need providing training programmes that specialised in environmental protection*

the highest of VND1-2 billion if it violates environmental protection rules. The important thing is the enterprises can reach higher profits if they do well in protecting the environment. For example, Hướng Hóa Quảng Trị Tapioca Starch Company saves around VND15 billion each year from collecting wastewater and processing biogas, while Văn Điển Fused Magnesium Phosphate Fertiliser Joint Stock Company saves around VND30-40 billion each year for re-using solid waste.

In addition to opportunities, enterprises have encountered many challenges in conducting CSR activities and following environmental protection rules. Despite the government issuing supportive policies to help SMEs improve their business and production, it has only provided solutions without any instruments or materials to implement those policies. Vietnamese SMEs have only just gotten used to the concept of CSR, and there are no specific policies and training programmes on this issue. Although the Ministry of Natural Resources and Environment has asked local departments to organise training courses on environmental protection for all enterprises, SMEs have been left out of the policy. Moreover, the training courses only provide information on current regulations, not instructions for how local businesses can comply with environmental protection rules. Local SMEs are confused when applying environmental protection rules in practice as many of the rules are listed in various legal documents, such as the Law of Environmental Protection 2014, the Law of Water Resources 2012, the Law of Inspection and Examination, the Law of Taxation on Environmental Protection and other decrees and circulars.

***✶VEM: Can you suggest some solutions to encourage SMEs to conduct CSR activities and follow current environmental production rules?***

***Ms. Nguyễn Ngọc Lý:*** We need to support SMEs in gaining access to finance and advanced technologies. The government needs to release the set of legal documents on environmental protection. The Vietnamese economy should be an environmental-industrial one, which is able to administrate the available technologies and improve them based on Viet Nam's conditions. Those technologies must be standardised so that all SMEs are able to use them, while they are also supported by practical policies such as tax cuts and business financing.

A business always targets profit, thus a business sees environmental protection as being too costly and harmful to its profit margin. This idea is inaccurate, and we need to organise a training programme that focuses on environmental protection, instructs local businesses on ways to develop their environmental protection plans and educates them on environmental protection. In addition, we need to promote the names of typical local enterprises that have performed well in both making profits and protecting the environment, as examples for others to follow■

***✶Thank you!***

**Châu Loan**
*(Implemented)*

# Impression of Success of the International Fair - Exhibition on Environmental Technology and Ecological Products in 2017

From 11 - 13/5/2017, in Hồ Chí Minh city, Ministry of Natural Resources and Environment (MONRE) in collaboration with Ministry of Science and Technology (MOST), Vietnam Chamber of Commerce and Industry (VCCI), Directorate for Standards, Metrology and Quality, Asian Productivity Organization (APO) co-organized the International Fair - Exhibition on Environmental Technologies and Ecological Products (EPIF 2017), entitled "Green Technologies and Products - Action for the Future".

Speaking at the EPIF 2017 Opening Ceremony, Deputy Minister of MONRE, Võ Tuấn Nhân emphasized that in the context of increasing competition in the region and the world, businesses need to approach and have specific strategies for environmentally-friendly services and products (Eco-products) to meet the growing awaremess amd demand of consumers as well as stringent regulations in joining global supply chains. EPIF 2017 was an important event to disseminate and raise awareness of consumers and the public about sustainable growth and development through the production and consumption of green and environmentally-friendly products, technologies and services. This was one of the actions and highlights of "The Month of Action for the Environment", in response to World Environment Day 2017 launched by MONRE.


▲ *Deputy Minister of Natural Resources and Environment Võ Tuấn Nhân made the opening remarks*

Deputy Minister of MOST, Trần Việt Thanh said that in Việt Nam, sustainable development is one of the basic contents for implementing the reform of economic growth model. EPIF 2017 was a bridge for domestic and foreign companies to introduce their products; to promote their brands, green technologies and services; to establish partnerships, support and transfer technology; and to contribute to the sustainable development in Việt Nam. At the same time, it was a forum for experts, scientists, managers, business community to exchange, develop strategies, identify needs and challenges, and propose solutions to promote green productivity in Việt Nam as well as in the region.


▲ *Deputy Director General of VEA Nguyễn Thế Đồng awarded Certificates of Merit to 20 outstanding enterprises participating in the Fair - Exhibition*

Also, at the opening ceremony, the Vietnam Environment Administration (VEA) awarded Certificates of Merit to 20 outstanding enterprises participating in the Fair - Exhibition, thereby promoting propaganda and encourag-

ing enterprises to promote the application of advanced and environmentally -friendly science and technology, and renovation of the production process towards saving energy, reducing wastes and greenhouse gas emissions.

EPIF 2017 had the participation of 166 leading companies from Japan, South Korea, China, Thailand, Federal Republic of Germany, Việt Nam... with about 220 booths displaying and introducing products, technologies and services in the field of environment and energy, including: domestic and industrial solid waste and wastewater treatment, hazardous gas and waste treatment, biological monitoring equipment, biotechnology; energy saving products; industrial maintenance and cleaning services, waste reusing and recycling service; environmentally- friendly materials such as steel, polymer materials; environmentally-friendly accessories and components for industries such as power generation, electronics, semiconductor, automobile, packaging, furniture, embroidery/textiles...

Enhancing cooperation on environmental technology with Japan and South Korea

Within the framework of EPIF 2017, the Việt Nam - Japan Environmental Technology and Eco-products, the Workshop on the Application of Environmentally-friendly Technologies in Waste Treatment, and the Việt Nam-South Korea Environmental Technology Cooperation Forum were organized. This was a series of activities organized by MONRE in collaboration with relevant agencies to share information on policies and investment needs of Việt Nam in environmental protection, and to introduce advanced environmental technologies while promoting trade among countries.

In the context of globalization, Việt Nam gradually integrates and exchanges with the world's environmental science and technology, in which Japan and Korea are the two countries with leading environmental industry with outstanding products and technologies such as technology for treatment of exhaust gases in thermal power plants; waste treatment technology by pyrolysis and melting plasma furnace system, and nano-technology to filter polluted water.

At the Forum, Deputy Director General of VEA, Nguyễn Thế Đồng met with the representative from South Korean Ministry of Environment Kim Min Ji. The two sides discussed the three main contents, which were endorsed by the two Ministers at the 13th Việt Nam - South Korea Environment Ministerial Meeting in late March 2017, including the signing of the Memorandum of Understanding between the two sides, the organization of the Việt Nam - South Korea Ministerial Conference and the elaboration of medium- and long-term cooperation plans.

▲ *Forum on environmental technology cooperation between Việt Nam and South Korea on 12 May, 2017*

Throughout the series of events, domestic and foreign enterprises have come to understand more about environmentally-friendly technology development policies, current status and development potential for environmental industry in Việt Nam. At the same time, it opened up opportunities for cooperation, investment promotion and technology transfer on green production technology and clean energy among the parties towards sustainable development.

Experience sharing on green growth and greenhouse gas emission reduction

In addition to these activities, the EPIF 2017 also hosted two other important events, the International Forum for the Environment and Economics: Action for the Future Towards Sustainable Development, and the Low Carbon Multilateral Dialogue and Nationally Determined Contribution (NDC) Workshop. The Forum and the Workshop attracted the attention of more than 100 participants from 15 countries in the region and the world.

This was an opportunity for delegates to discuss and share experiences on green growth, goals and efforts to reduce greenhouse gas (GHG) emissions of Việt Nam, the preparation for NDC implementation; and at the same time, it introduced the concept of circular economy, the role of clean technology in the industrialization, and strategies to respond to climate change. Thereby, it has proposed technology solutions to reduce GHG emissions to help Việt Nam develop resources and mobilize the participation of business community in sustainable development in the circular economy in order to contribute to the implementation of the National Climate Change Strategy and the National Green Growth Strategy■

**Giáng Hương - Đinh Hương**
*(Implemented)*

# Renewing methodology and promoting creativity in scientific research on environmental protection

***In recent years, the viewpoint, orientation, policy and legislations of the Party and the State on environmental protection have been developed based on scientific, philosophical and practical bases. It could be seen that scientific research is playing an increasingly important role and crucial role in development of policies and legislations and in state management and implementation of environmental protection tasks. To better understand this topic, on the occasion of the World Environment Day 2017, the Vietnam Environment Administration Magazine (VEM) had an interview with Ms. Nguyễn Song Tùng - Deputy Director of Human Geography Institute, Vietnam Academy of Social Sciences, one of the most outstanding scientists in environmental protection which was awarded the Vietnam Environment Award 2017 by the Ministry of Natural Resources and Environment (MONRE).***

▲ *Ms. Nguyễn Song Tùng Deputy Director of Human Geography Institute*

✶***VEM: Can you tell us some major results of scientific research in environmental protection by yourself as well as by the Institute of Human Geography recently?***

***Ms. Nguyễn Song Tùng:*** Since 1994, I have worked at the Socio-economic Geography Center, which is now the Institute of Human Geography. In the last 20 years, in the area of environmental protection, I focused on studying issues relating to policies and social critics, and reviewing legal documents on environmental protection, particularly environmental science, climate change, sustainable development, human geography, green economics, and socialization of environmental protection…

With fundamental research case studies, I participated in many researches which contribute to the formulation, revision and review of legislations on environmental protection such as: the Law on Environmental Protection 2014, National Master Plan on Biodiversity Conservation to 2020, vision to 2030; the Joint Statement between the National Committee with Development partners on the implementation of the Paris Agreement in Việt Nam; national solutions in the implementation of Agenda 21 on sustainable development…

In addition, my colleagues and I implemented some scientific researches such as: Research "Basic solutions to develop green economy models in agriculture in Việt Nam during 2011 - 2020", implemented during 2011 - 2012. The research clarified theoretical foundations on green economy in agriculture, experience of other countries in development of green economy in agriculture; at the same time, proposed solutions to enhance awareness of local people on development of agriculture production models towards green economy; Research "Study to develop regional coordination mechanism and policies in responding to climate change in Việt Nam", implemented during 2013 - 2015. The results of the research addressed the scientific foundation on mechanism, and policies on regional linkage in responding to climate change; analysed features of climate change in different regions of Việt Nam; assessed the possibility, challenge and outlook of regional linkage, from which to propose viewpoints, orientations and solutions on mechanism, policies and strategies on regional linkage in responding to natural disasters, climate change…

In addition, in the report requesting the Vietnam Environment Award 2017, I also proposed to MONRE new research orientations combining scientific research and policy advisement on environment, with following researches: new orientations in ecological agriculture development; green agriculture; green consumption in sustainable development; public - private cooperation in promoting urban environment service; propaganda and awareness raising for staff of the Vietnam Academy of Social Sciences on environmental protection.

✶***VEM: Can you share with us some difficulties as well as advantages in scientific research in environmental protection currently?***

***Ms. Nguyễn Song Tùng:*** regarding advantages, recently, the Party and the State have paid great attention to environmental protection through special treatment policies for scientists having outstanding studies on environmental protection. The awarding and honouring activities are considerably well organized in all levels, which support and nourish young talents and high quality human resources for the country.

At the Vietnam Academy of Social Sciences and the Institute of Human Geography

▲ *Individuals and organizations have outstanding achievements in environmental protection at Vietnam Environment Award 2017*

in particular, the Party's committee and the Management board have paid great attention and proved substantial support. The Institute has developed and created a fair and favourable mechanism for all young talents to develop in studying and performing. Particularly, trainings and capacity building are provided through participating in researches at the Institute, Ministerial and State levels; through researching, and experience sharing on scientific research and expertise exchange…

However, in addition to advantages, there are difficulties such as: key national scientific programs have not paid great attention on contents relating to environmental protection in terms of social science and humanity. The Institute has not accessed to substantial financial resources for research on environmental protection, accessed to information and technical reports on environment as research materials and improvement in research quality. On the other hand, research products are currently transferred just through publications on magazines and books but not yet to environment policy making agencies for policy consultancy and advice.

In addition, the mechanism to support an effective, professional and friendly working environment to promote the creativity of young talents is not available. In reality, talents in general and young talents in particular always need favourable physical equipment to create and to nourish dreams and passions and to implement big ambitions. This is also an important incentive for young talents to develop.

✶***VEM: Do you have any recommendations to build capacity, knowledge, creativity, and aspirations for young scientists, particularly on environmental protection?***

***Ms. Nguyễn Song Tùng:*** to make scientific research on environmental protection to be meaningful and practical, in addition to basic knowledge on environmental protection, it is necessary to focus on approaches and methodology on social science and humanity. Research approaches and methodologies are usually effectively applied in environmental protection studies such as "top - down, bottom - up" approaches, systemic approaches, inter-sectoral approaches, interview methods, social inventory, group discussion… in addition, it is necessary to focus on some groups in society.

For research staff, it is necessary to implement capacity building and awareness raising for staff of the Việt Nam Academy of Social Sciences on environmental protection to enhance the quality of the integration of environmental knowledge into social and humidity studies; at the same time, to create accumulative effects on the community. This is an important activity to promote the relationship between the Vietnam Academy of Social Sciences and MONRE. In addition, to further promote the scientific research on environmental protection in general, it is necessary to enhance investment budget to implement research on environmental protection, to enhance close cooperation among state management agencies, training facilities, localities and research institutes to achieve maximum outcomes in research, training and application of research results.

Particularly, for the young generation - the future of the country, it is important to train the young generation on environmental protection awareness, particularly: collaboration with the Youth Union of the Vietnam Academy of Social Sciences to organise trainings and awareness raising for the youth on environmental protection; organize competitions, develop and expand models on energy savings, implement sustainable consumption practice, apply environmental knowledge in research activities for integration into social and humanity policies… From the creative and effective implementation, the task has brought meaningful outcomes for the socialization of environmental protection. At the same time, the implementation of above tasks orientates Việt Nam to participate and implement the United Nations Decade of Education for Sustainable Development (2005 - 2015) which contributes to environmental protection training for the young generation in general and young scientific staff in particular.

In addition, to enhance capacity, knowledge, creativity, and passion for young scientists, it is necessary to have the attention of different levels; renew research methods, in order to gradually apply advanced and modern experience in the world, propose comprehensive and feasible solutions. From my own experience in the past, many proposed research ideas have been applied in reality such as the organization of the Youth forum on environmental protection at the Vietnam Academy of Social Sciences; the propaganda of environmental protection messages to all staff of the Vietnam Academy of Social Sciences by diverse methods that are easy to remember and to understand■

✶***VEM: Thank you!***

**Châu Loan**
*(Implemented)*

## T-TECH VIỆT NAM:
# Provider of optimal waste treatment solutions in Việt Nam

***With increased socio-economic development, the demand for materials and commodities that generate vast amounts of waste and pollute the environment also rises. To address the problems of waste treatment, Dr Nguyễn Đình Trọng, Chairman of technology firm T-Tech Việt Nam Corporation (T-Tech), conducted research to provide the most efficient, cost-saving solutions that would match the Vietnamese conditions and support environmental protection activities.***

***T-Tech was honoured at the 2017 Eco-products International Fair (EPIF) held in Hồ Chí Minh City from May 11 - 13. The Vietnam Environment Administration Magazine (VEM) spoke to Dr. Trọng about the company's waste treatment solutions and technologies.***


▲ *Dr. Nguyễn Đình Trọng*
*Chairman of Việt Nam T-Tech Corporation*

✶***VEM: Can you tell us about your company and the major fields in which it operates?***

***Dr. Nguyễn Đình Trọng:*** T-Tech was founded on November 6, 2002, to make high-quality, scientific and technological products, such as devices to test building materials, machines to evaluate the quality of buildings, uninterruptible power supply (UPS), power inverter, as well as broadcasting equipment and telecommunication electronics.

Five years ago, the company started developing waste treatment technologies and is now focussing on three main products: Daily-living waste incinerator, medical waste incinerator and industrial waste incinerator. These 3 types of incinerators help provide various solutions to handle waste, and ensure clean environment for the people and the society. The incinerators produced by T-Tech are well-designed, integrated with modern technologies and are in compliance with local conditions and environmental regulations.

✶***VEM: How are T-Tech's incinerators different from the available products in Việt Nam?***

***Dr. Nguyễn Đình Trọng:*** At the moment, the impediments for Việt Nam in its waste treatment process are uncategorised waste and the high cost of burning waste in the rural areas. Therefore, T-Tech has installed many waste incinerators for the local people to meet the conditions in their areas. A typical product is the CNC natural-gas daily-living waste incinerator, which is equipped with two primary combustion chambers and two secondary combustion chambers. This product does not need a large area to be stationed, produces no secondary pollution, costs users a quarter to a half than for imported products, and is locally made and easy to operate, maintain and upgrade. Besides these, the incinerator is equipped with an optimal thermal radiation system and an intelligent convective heat airflow system to increase the internal temperature and take advantage of the excess heat, raising the efficiency of the incinerator. It is made from fire-resistant materials, which help it endure heat of up to 1,750°C, and operate durably and consistently. A CNC incinerator is designed better than other available products in the market, as it is equipped with a waste-drying chamber, a waste combustion chamber, two gas and ash burn-out chambers, a heat sink and a gas saving chamber, as well as a dust trap chamber, and a stainless steel chimney to withstand acidic and toxic environment. It has a height of more than 20m, creating a perfect line from drying waste, incineration, combustion ash, burning gas, saving gas, heat-sink, and dust traps that are integrated in a synchronous, easy-to-op-


▲ *A T-Tech Việt Nam's incinerator is stationed in An Châu Town, Sơn Động District, Bắc Giang Province*

erate and highly-efficient system and produce emission that meet Vietnam's current standards.

The company's waste treatment solutions can purify wastes to reach the ratio of landfilled wastes at below 10%. After being combusted, inorganic wastes such as bricks, tiles, building materials and their ashes are mixed with cement and chippings to produce non-fired bricks. Vegetables and clean organic wastes are used to produce organic fertilisers. Plastic and nylon wastes are recycled to raise income for the company and reduce the amount of dioxin and furan compounds generated during the combustion process. At least 5% of the clean organic wastes are composted to produce gas, which will increase the temperature of the incinerator and improve the quality of emission generated by the burning process. Waste paper, cardboard boxes and wooden objects are either burnt or recycled. After successful experiments, T-Tech Việt Nam has stationed its incinerators in many provinces such as Bắc Giang, Hà Giang, Long An, Trà Vinh, Nam Định and Nghệ An.

***✶VEM: Some businesses find the waste treatment industry highly risky, as it needs big investment but offers small profits. What do you have to say about this?***

***Dr. Nguyễn Đình Trọng:*** No company can avoid risks and failures while operating in a new field, if it has not studied and researched the market, and prepared efficient business plans and strategies. Many companies and scientists have studied waste treatment solutions but have failed to apply their ideas in practice for various reasons, such as the low quality of market research and product development, and low capital. Meanwhile, the amount of State budget allocated for this sector is low, so companies and individuals would surely fail if they only depended on the State disbursement to develop highly efficient waste treatment solutions. In addition to this, a company investing more than VND1.2 million per tonne in the waste treatment industry would suffer loss from the beginning, if it is unable to earn from the recycled products. Those that work in this sector must be patient, determined, competent, have sufficient capital and must have done adequate research about the market.

***✶VEM: What policies should the State and the Government implement to support businesses that develop and deploy waste treatment solutions, and technologies in Việt Nam?***

***Dr. Nguyễn Đình Trọng:*** Government agencies need to deeply integrate into the environmental technology market to find out highly-competent businesses and provide supportive policies for them. A lot of the Vietnamese companies are competent, but they have low capital and few opportunities to demonstrate their technologies, so they cannot draw the attention of the authorities. Therefore, the State and the Government should create a preferential mechanism and policy to encourage companies whose technologies are advanced, creative, efficient and environment-friendly. They should also make the market fairer for every company, and avoid bias while selecting and approving projects. However, the companies themselves are still the most important factor, as they should have large amount of capital, master their technologies, understand the market, and must be well-organised to provide practical and effective solutions for the community■

***✶VEM: Thank you!***

**Phương Linh**

*(Implemented)*

# Need for regulations on ecological industrial zones in Việt Nam

***In the early 1990s, a concept of ecological industrial zones was introduced. However, in Việt Nam, this remains a new concept. With support from the Global Environment Facility and the Swiss State Secretariat for Economic Affairs (SECO), since 2014, the Ministry of Planning and Investment and UNIDO have been implementing the project on Eco-industrial Parks towards sustainable industrial zones for Việt Nam. To have a better understanding of eco-industrial parks and the support from the International Finance Corporate (IFC), a member of the World Bank Group in promoting eco-industrial parks in Việt Nam, Vietnam Environment Administration Magazine (VEM) interviews the manager of Việtnam's Industrial Resource Efficiency Program, Ms. Vũ Tường Anh.***

✶***VEM: Can you give an overview on the model of eco-industrial parks that the project is aiming for?***

***Ms. Vũ Tường Anh:*** According to the world definition, an eco-industrial park comprises of a group of businesses in an industrial zone with close relationships in terms of benefits and with common goals of performing high quality social, economic and environmental activities through cooperation in natural resources and environmental management. In a traditional model of industrial zones, businesses manage resource input and wastes separately; hence the total amount of consumed resources and discharged waste is huge. In the model of eco-industrial parks, in addition to effective use of resources and waste minimization in individual businesses, resource management is viewed using a holistic approach in which resources and energy can be used from a common source and waste of one business can be input of another.

Three factors of an eco-industrial zone are resource efficiency, cleaner production in each business in the industrial zone; industrial symbiosis, and waste exchange and green infrastructure.

✶***VEM: In your opinion, what are opportunities and challenges of industrial parks and businesses when transforming to eco-industrial park model?***

***Ms. Vũ Tường Anh:*** The eco-industrial park model employs a close pattern which allows material exchange, waste recycling, energy circulation to minimize waste, brings about economic benefit and minimizes environmental impact. Therefore, businesses applying the eco-industrial park model gain significant economic benefits by

▲ *Ms Vũ Tường Anh, manager of Việt Nam's Industrial Resource Efficiency Program, IFC*

exchanging, transferring or selling their by-products to other businesses in the park so that both sides are better-off. The businesses benefit from reducing costs of resources and waste treatment, and increasing their profits and market competitiveness. For industrial park investors, this model attracts high quality businesses into the park. However, the current difficulty is that no specific legal framework for eco-industrial parks exists. For example, for an industrial symbiosis project, there are no legal documents facilitating waste exchange among businesses in the same park.

✶***VEM: What has IFC supported the transform to eco-industrial park model?***

***Ms. Vũ Tường Anh:*** At present, IFC is providing support to MPI to draft a technical guideline for eco-industrial parks. The document will be finalized by the 4th quarter of 2017 to contribute to enhancing industrial sustainable development in Việt Nam. IFC also is cooperating with MPI to assess potential for implementing industrial symbiosis and waste exchange under eco-industrial park models in Hòa Khánh Industrial Park (Đà Nẵng) and Trà Nóc 1, 2 (Cần Thơ). In the meantime, IFC is collaborating with Sài Gòn High Tech Park to assess the potential for renewable energy projects which are one of the eco-solutions to high tech parks. In addition, IFC will provide technical assistance to some industrial parks to implement industrial symbiosis, increase resources and business efficiency and reduce waste discharged to the environment.

✶***VEM: What do you recommend for promoting eco-industrial parks in Việt Nam?***

***Ms. Vũ Tường Anh:*** Eco-industrial parks are a suitable pathway for environmentally and socially responsible business development. However, the government needs to is-

***A handbook for developing eco-industrial parks in Asian developing countries prepared by Asian Development Bank defines seven principles for developing an industrial park towards an eco-industrial park. They are nature harmonization, energy systems, resource and waste management, water supply and drainage, effective eco-industrial park management, development/rehabilitation and local community collaboration. It is estimated that there are about 30 eco-industrial parks in the world that can be classified into 5 groups: agriculture, resource recycling, renewable energy, power plants and oil refinery or chemicals.***

▲ *Cần Thơ People Committee leaders visit wastewater treatment facilities in Trà Nóc 1 Eco-Industrial Park*

sue enabling policies as well as specific regulations on promoting resources efficiency, waste recycling and circulation, waste minimization at source in industrial parks and businesses. Businesses inside industrial parks need to change their mindset in utilizing resource and waste to optimize resource use in their operation and make use of waste from other businesses' operation. In addition, businesses need to have a vision and a plan for a long term production development with sustainable investment in combination with short term measures such as resource and energy saving, production cost minimizing and waste treatment.

✶***VEM: Thank you!***

**Hương Trần**

*(Implemented)*

# Beijing creates anti-smog police to tackle air polluters

Beijing will create an environmental police force aimed at tackling deadly smog, after the Chinese capital spent the first week of 2017 mostly shrouded in a thick haze of pollution. The new law enforcement outfit will patrol the streets, eyes peeled for open-air barbecues, trash burning and dusty roads that violate regulations, the city's acting mayor Cai Qi said.

Beijing will also shut its last coal-fired power plant and reduce coal consumption by 30% this year. Officials will shut 500 factories and 300,000 older vehicles will be taken off the road. The capital is frequently beset with toxic smog and levels of harmful air pollution in 2015 were more than eight times those recommended by the World Health Organization.

China declared a "war on pollution" in 2014, but has struggled to deliver the sweeping change many had hoped to see and government inspections routinely find pollutions flouting the law.

The week before, inspection teams from the environment ministry found some companies resuming operations despite a government ban, known as a "red alert", aimed at curbing smog. More than 500 construction sites and businesses and 10,000 vehicles violated measures to reduce air pollution.

But Beijing's new police squad may do little to help residents breathe easy. Its focus on local, street-level sources of pollution ignores the steel factories and coal-fired power plants just outside the city limits in neighbouring Hebei province, or the more than 5m cars clogging the roads. Cars account for about 31% of the most harmful type of air pollution, according to China's environmental ministry.

While officials are aware heavy industry and automobiles are the largest sources of pollution, the government has been reluctant to impose sweeping change for fear of economic repercussions and potential unrest from fired workers. Beijing education authorities did bow to public pressure last week, agreeing to install air purifiers in school classrooms after more than a year of campaigning by concerned parents. A study earlier this year found acrid air is linked to at least one million deaths a year in China, and contributed to a third of all fatalities in major cities, on par with smoking. Another research paper said the smog had shortened life expectancies by five and a half years in parts of China.

**Bảo Bình**

*(The Guardian source)*

# Hồ Chí Minh City to build 23 million USD wastewater treatment plant

The People's Committee of Hồ Chí Minh City has asked for the Prime Minister's permission to build a wastewater treatment plant with a total cost of 522 billion VND (23 million USD). The plant will be built under the form of private-public partnership (PPP) on an area of almost 12,000m$^2$ in Linh Trung ward, Thủ Đức district. It has a designed capacity of 65,000 m$^3$/day.

The factory is aimed at treating wastewater from Nhum, Xuân Trường and Gò Cát streams, and part of wastewater from Dĩ An district of Bình Dương province before discharging into Cai stream that runs through the Saigon Hi-Tech Park.

The project is part of the city's efforts to implement commitments to investors in the park on sustainable development and improving water quality of the Đồng Nai-Saigon Rivers. Hồ Chí Minh City initially planned to allocate its budget for the project. However, due to a lack of funding, the project's investment form is now changed into the PPP model■

**Phương Tâm**
*(VNA source)*

# Đà Nẵng to have first waste-to-electricity project

The Empire Group and ViDe Bridge Limited Company of Vietnam will implement a project producing electricity from urban solid waste using advanced technology in the central city of Đà Nẵng.

The two companies signed a cooperation agreement with the Intec GmbH Group and Juvema fund on the project's implementation at the Vietnam-Germany economic forum chaired by Prime Minister Nguyễn Xuân Phúc in early July. According to a report of the Ministry of Natural Resources and Environment, Vietnam discharges 40 million tonnes of domestic waste and 65 million tonnes of waste from industrial and agriculture production every year. In Đà Nẵng alone, about 700 tonnes of solid waste are buried at the Khánh Sơn dumping ground each day.

▲ *Đà Nẵng to have first waste-to-electricity project*

Coco Tran, Deputy Director General of the Empire Group, said that the first phase of the project will treat 400,000 tonnes of waste a year to produce 350 million kWh of electricity and 24,000 tonnes of coke, while reducing 500,000 tonnes of $CO_2$. Later on, the project will be expanded to other cities nationwide■

**Bùi Hằng**

# Conference seeks ways to ensure sustainable energy for Việt Nam

More than 30 Vietnamese and foreign researchers in environment, information technology and energy gathered at a conference in the Mekong city of Cần Thơ on May 15 to develop research programmes on ensuring sustainable and safe energy resources for Việt Nam. Participants pointed to shortcomings in managing and exploiting energy resources in Vietnam. Currently, the country mostly generates energy from non-renewable fossil fuels such as coal and oil, which are also exported at low prices.

This has depleted national resources, while resulting in environmental pollution, they said, suggesting that Việt Nam can replace the fuels with renewable resources such as solar, wind, rain, tide, trees, and geothermal energy.

Meanwhile, researchers from the UK's Salford University proposed a long-term cooperation strategy with their Vietnamese peers in using modern technology to develop sustainable and safe energy. The programme calls for the exchange of lecturers and students between Cần Thơ University and Salford University.

At the same time, Trần Hà Đông Quân from the Cần Thơ-based Korea-Vietnam Incubator Park revealed that businesses in the park have seen results in creating advanced technology for agriculture and environmental protection, including technology to turn waste into organic fertiliser, and energy-saving lighting for gardens■

**Nam Việt**

# Japan continues to strongly support Việt Nam on environmental protection and responding to climate change

This is one of the important issues highlighted in the Joint Declaration of the Vietnam-Japan strategic partnership. This statement was given on the occasion of visit of Prime Minister of the Socialist Republic of Vietnam Nguyễn Xuân Phúc to Japan from 4 - 8 June 2017.

Accordingly, comprehending important role of Vietnam's economic development with the region, Japanese Prime Minister Shinzo Abe expressed his desire to support Vietnam in sustainable economic development through cooperation for high-standard infrastructure development, energy, climate change adaptation and human resources training. The two sides expressed their glad and signed the ODA memorandum of understanding worth about 100.3 billion Yenin 2016 for 4 projects in Vietnam, including: Marine security and safety, Bến Tre water management, Drainage and wastewater treatment system in Biên Hòa City (Phase 1), Hòa Lạc Hi-tech infrastructure development (Phase 2); 3 non-refundable aid projects related to natural disaster prevention and human resources training; and ODA loan agreement for Hòa Lạc Hi-tech infrastructure development.

The two leaders also expressed their glad on the signing of a Memorandum of Understanding on the common credit mechanism on low carbon for 2016 - 2020 period; shared their intention to continue to cooperate closely on environment, responding to climate change, hydro-meteorology; researched and monitored marine resources, environment and marine biodiversity. The two sides also agreed to facilitate for waste management, including: waste to energy, development of legislation and regulations on waste management. Besides, Japan committed to support Vietnam in responding to climate change, droughts and saline intrusion, as well as in studying to determine basic and long-term solutions and use the ODA funding in this issue.

▲ *Prime Minister Nguyễn Xuân Phúc met Prime Minister Shinzo Abe (VNA source)*

The two sides agreed to strengthen the comprehensive cooperation on urban construction and development, especially ecological and smart urban areas, urban areas in association with high speed transportation (TOD) according to the model of Japan; investment cooperation in the field of urban upgrading and development; technology transfer on water treatment, wastewater and solid waste.

The two leaders express happiness to see many achievements obtained in partnership and cooperation between Japan and the countries in the Mekong region on many fields such as politics, economics, cooperation, contributing to the peace, stability and prosperity of the region. The two leaders pledged to further promote the Mekong-Japan cooperation in the sectors of high-quality infrastructure, human resource development, response to climate change, and water resources management. The two leaders agreed to accelerate the implementation of the Japan-Mekong Connectivity Initiative and the Mekong Industrial Development Vision to promote the effective connectivity in the region. The two leaders reaffirmed the importance of sustainable management and development of the Mekong River, highlighting the need for cooperation between the Mekong-Japan mechanism and regional and international organizations, especially the Mekong River Commission (MRC).

The two leaders also emphasized the important role of the sustainable use of marine living resources, including marine mammals. Vietnam is considering and facilitating the necessary procedures for early entry into the International Whaling Commission (IWC)■

**Phạm Tuyên**

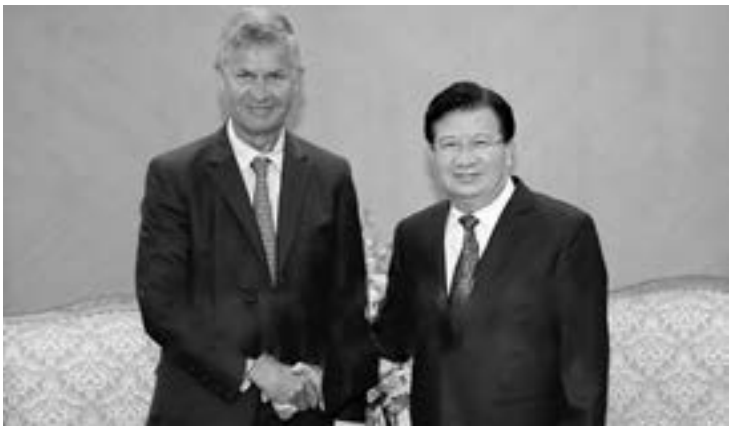
# Việt Nam hopes for more support from UN Environment

Deputy Prime Minister Trịnh Đình Dũng met Director of the UN Environment Programme Erik Solheim in Hà Nội on August 8, during which he proposed that the UN Environment continue supporting Việt Nam in reviewing, revising and completing laws and policies related to environment.

Việt Nam hopes to receive assistance in conducting national action programmes on responding to climate change, green house emission, and forest protection, said Deputy PM Dũng. He also suggested that the UN Environment sent experts to Việt Nam, and share experience in environmental protection and related issues, while helping the country in personnel training. He affirmed that the Vietnamese Government is always determined to protect the environment and not to exchange the environment for economic development.

At the meeting, Deputy PM Dũng lauded the cooperation and support that the UN Environment has given to Việt Nam over the past years, especially in technique, experience, policy-making, and personnel training, which has significantly contributed to protecting the environment in Việt Nam.

He clarified the Government's management and direction in designing socio-economic policies as well as legal administration is crucial in preserving the environment, along with the development of renewable energy and science and technology, the improvement of human resources and community's awareness in the field.



▲ *Deputy Prime Minister Trịnh Đình Dũng (R) welcomes Director of the UN Environment Programme Erik Solheim (Photo: VNA)*

Currently, Việt Nam is going forwards green and environmentally-friendly growth with science and technology playing the core role, and the private sector acting as pioneer in ensuring waste treatment and minimizing green house emission.

For his part, Erik Solheim congratulated Việt Nam on socio-economic development, especially in agriculture and education expressing hope that Việt Nam will continue gaining success in the area of environment.

Sharing Dũng's opinion, Solheim said that the UN Environment will continue walking hands in hands with countries, including Việt Nam in promoting cooperation and support in the environment.

During his visit to Việt Nam, Solheim and his delegation also visited the Cúc Phương National Park and recognized Vietnam's efforts in preserving rare animals■

**Thanh Huyền**
*(VNA source)*

# World Bank helps hospitals recycle waste water

A number of hospitals in Việt Nam have successfully treated and reused their waste water with support from the World Bank. The USD 150m Vietnam - Hospital Waste Management Support Project is financed by the World Bank for the 2011 - 2017 period. It aims to reduce environmental degradation and the potential risks for human health through the improved management of healthcare waste.

Five years after the project was started, over 200 hospitals in Việt Nam successfully implemented new a financial mechanism and had positive results. The hospital must prove that their waste treatment system meets various criteria in national standards such as the treated wastewater can be used to water plants.

Many hospitals including Gia Rai General Hospital in Bạc Liêu Province and Nghệ An Friendship General Hospital take this as an opportunity to improve their environments with more flower beds, ponds and gardens maintained by the treated water. Other hospitals with less land grow a garden right in the waste treatment area such as the National Institute of Burns.

The National Institute of

Burns is also the first hospital to be funded to install the monitoring and control system with Japanese technology which has been highly praised by the project management board. The waste water is approved by the Institute of Occupational Health and the Environment and the Institute of Natural Products Chemistry. Prime Minister Nguyễn Xuân Phúc has signed on a decision to extend the project to two more years to August 30, 2019, so that more hospitals can implement the model■

**An Bình**

# JICA helps build circulars on water environment management

Experts from the Japan International Cooperation Agency (JICA) have assisted the Vietnam Environment Administration (VEA) in building circulars on water environment management in river basins. JICA and VEA co-organized a technical consultation workshop in Hà Nội on June 29 to discuss the building of circulars defining the rivers' loading capacity and waste discharge quota.

Director of the Department of Waste Management and Environment Promotion, Nguyễn Mạnh Hùng said socio-economic development activities in key economic regions and urban areas in the lower parts of big river basins or coastal estuaries have resulted in pollution and degradation of the water environment. He cited the serious environmental contamination on rivers flowing through urban and industrial areas and craft villages in the basins of Cầu, Nhuệ, Đáy and Đồng Nai rivers. To implement the Law on Environmental Protection and the Government's Resolution No. 38/2015/ND-CP dated on April 24, 2015 on waste management, the VEA has conducted studies to evaluate the loading capacity of river basins, which will help improve the management of water quality at central and local levels.

JICA will help the VEA build circulars defining the loading capacity of rivers and waste discharge quota, and stipulating the inspection of waste water sources within the framework of the project "Strengthening the capacity of water environment management in river basins", he added. During the workshop, participants discussed the building of database on waste water to implement effectively the Law on Environmental Protection and Law on Water Resources Management.

**Giáng Hương**
*(VNA source)*

# ECC-HCM City, NEDO examine green hospital model


The Energy Conservation Centre in Hồ Chí Minh City (ECC-HCMC) and the Japanese New Energy and Industrial Technology Development Organisation (NEDO) reviewed outcomes of a pilot project on green hospitals in Việt Nam at a workshop in Hồ Chí Minh City on June 20.

The project, conducted by the ECC-HCMC with support from several Japanese partners, aimed to contribute to low-carbon growth through boosting energy efficiency and environmental protection in Vietnam.

It was piloted at 115 People's Hospital in Hồ Chí Minh City and Hanoi's Vietnam-Germany Hospital from 2014 - 2016. Under the project, the 115 People's Hospital, with newly-equipped environmentally-friendly facilities, saved 500,000kWh of electricity, equivalent to 740 million VND (32,560 USD) and reduced carbon dioxide emission by 310 tonnes/year.

As for Vietnam-Germany Hospital, the figures were 830,000 kWh of electricity, equal to 1.2 billion VND (52,800 USD) and carbon dioxide emission reduction of 518 tonnes a year. It also helped process thoroughly discharged substances and toxics which could cause global warming and climate change.

It is likely that the model is expanded in Hồ Chí Minh City, said Huỳnh Kim Tước, Director of ECC-HCMC, adding that the centre and the local health department will study further to implement the project in all hospitals in the city■

**Quỳnh Như**
*(VNA source)*

VIETNAMESE SUSTAINABLE BUSINESS RANKING PROGRAMME 2017

# Opportunity to draw investment and cooperation

***Following the successful Vietnamese Sustainable Business Ranking Programme 2016, the 2017 programme award will be held in December. The annual programme is organized to honour enterprises that take the lead and make achievements in the field of environmental protection. On this occasion, the Vietnam Environment Administration Magazine (VEM) has talked to Mr. Nguyễn Quang Vinh, Deputy Secretary-General of the Vietnam Chamber of Commerce and Industry (VCCI) and the Vice Chairman and Secretary-General of the Vietnam Business Council for Sustainable Development (VBCSD), about new features in the programme this year.***


▲ *Mr. Nguyễn Quang Vinh*
*Deputy Secretary General of VCCI, Vice Chairman and Secretary General of VBCSD*

✶***VEM: After the first Vietnamese Sustainable Business Ranking Programme held in 2016, what has VCCI done to assess corporate performances and efforts in environmental protection?***

***Mr. Nguyễn Quang Vinh:*** At the moment, environmental protection is one of the major concerns for businesses, and it has been included in the business governance and development strategies. Lots of companies such as Bảo Việt Holdings, Vingroup, Heineken Việt Nam and Unilever Việt Nam have had long-term plans, foreseen and seized the opportunities from future development trends, and made great efforts to carry out environmental protection activities.

As one of the businesses that have been working actively on environmental protection issues, Bảo Việt Holdings was the first to develop the Sustainable Development Report on the request of the Global Reporting Initiative (GRI). The group developed the Vietnamese version of GRI, which is more practical and friendly for firms. Besides such efforts, the company has made some achievements, for example, it posted a record revenue growth rate of 27.5% in the first quarter of 2017, was listed among Vietnam's top 50 profitable firms and topped the insurance-finance sector for 5 consecutive years. These achievements have shown the company's success when it combined environmental protection activities with its business operation.

✶***VEM: What are the new features of the 2017 programme?***

***Mr. Nguyễn Quang Vinh:*** It can be said the first programme in 2016 was a success, which drew the attention and support of the Government, the National Council for Sustainable Development and Competitiveness Improvement, ministries, sectors, domestic and foreign institutions, and the Vietnamese community. About 400 firms in the production and trade sectors participated in the programme, and 100 of them were recognized and honoured.

It was the foundation that helped us promote the programme into an annual and reliable activity for local businesses. The 2017 programme includes some new features such as the Corporate Sustainability Index (CSI) 2017, which is easy to understand for local companies, and more small- and medium-sized enterprises are expected to participate in this year's programme, as 98% of the Vietnamese firms are categorized in this segment. CSI criteria not only are understandable and familiar for local companies but also enable them to carry out self-evaluation and help experts assess accurately the firms' accomplishment of sustainable development, by updating domestic and international regulations, and adding some extra criteria on circular economy, children rights and decision-making decentralization in the regulations of local businesses.

Compared with the 2016 programme when local companies were only able to submit their print


▲ *The award ceremony of the Vietnamese Sustainable Business Ranking Progamme 2016*

applications, the organizer board in 2017 has developed an online application software to reduce procedures and expenses for companies. In addition to this, an online application is considered a tool for a company to keep track of its operational progress and changes year by year.

✶***VEM: How can companies take part in the programme, and how are they supported after the programme finishes?***

***Mr. Nguyễn Quang Vinh***: All legal, profitable and voluntary companies and businesses in the country can participate in the programme. Following the programme launching ceremony held in April, the VBCSD will cooperate with Deloitte Việt Nam Limited Liability Company to organize training courses for companies in July, so that they can better understand the importance of corporate governance and the CSI to their sustainable development, and help them carry out more precise evaluations on their sustainable development business activities.

A required programme application contains an application letter, the business-assessed CSI, and related materials, records, information and photos. As mentioned earlier, companies can choose to submit either print or online applications to the organizer before September 30, 2017. After the programme, companies will be able to connect with each other, seek new investment and cooperation opportunities. They will also receive advice and support from the programme consultants.

✶***VEM: Some said that very few State-owned enterprises took part in the first programme in 2016. What have you done to encourage all types of business to join the programme this year?***

***Mr. Nguyễn Quang Vinh***: In the context of globalization, sustainable development is no longer a term, it has become a development trend for all economies. When Việt Nam makes deeper integration into the global economy and signs more regional and international trade agreements, it is essential for the country to improve the quality of corporate governance and competitiveness for local companies, so that they can seize rising opportunities and catch up with the trend of sustainable development around the world.

Local businesses are not obliged to take part in the programme to develop sustainably; however, they will receive a lot of benefits by participating in the programme. At the moment, the number of companies that are aware of sustainable development is still limited. Most of them are big corporations, groups and multinational corporations. By participating in the programme, small- and medium-sized businesses may use the CSI-based evaluation to review their current conditions, address potential risks and seize new opportunities. If they are honoured by the programme and recognised by the Government, their names will rise in the eyes of investors and stakeholders, and they will be able to attract more investment and receive more cooperation opportunities.

✶***VEM: How different is the CSI developed by VCCI from the CSI developed by other countries? What did you learn from other countries while developing Vietnam's CSI?***

***Mr. Nguyễn Quang Vinh***: CSI is the first index developed and designed for Vietnamese companies. It means the criteria were developed keeping in mind both international practices and Vietnam's particular socio-economic conditions.

There are now two CSI that are used by many organizations and companies in the world, which are the Global Reporting Initiative Standards (GRI) used to develop sustainable development reports, and the International Integrated Reporting Council (IIRC) used to develop integrative reports.

✶***VEM: What supportive policies Việt Nam should have to encourage and push local businesses to achieve sustainable development?***

***Mr. Nguyễn Quang Vinh:*** Developing a sustainable business community should be the chief concern of both

Government and local businesses. On the one hand, Government agencies and VCCI are working hard to implement the Government's resolutions 19/2016/NQ-CP and 35/NQ-CP to create a fair, favourable business environment for local companies. Besides this, the VCCI and VBCSD often organize activities to train and educate local companies, and raise their awareness on sustainable development and good international practices on the matter, as well as new business models, such as circular economy and low-cost business.

On the other hand, local companies should study and improve the quality of corporate governance, change their business ideologies that focus on profits and take environment, human and society for granted. Those companies should understand that sustainable development is not an unrealistic term but an instrument to bring them long-term prestige, opportunities and profits. Statistics of the Business and Sustainable Development Commission show that if companies include the issue of sustainable development in their core strategies, the accomplishment of 17 Sustainable Development Goals will offer $12 trillion worth of market for the four sectors, which are food and agriculture, urban area development, energy and materials, and healthcare and medical services. In terms of all sectors, the economic potential offered by sustainable development will exceed the number of $12 trillion.

If a company chooses to make its business sustainable, putting ahead long-term benefits in the economy, environment and society over short-term benefits that could harm the future, it is placing a firm foundation for its future development and reaching beyond the local market to the region and the world■

***✶VEM: Thank you!***

**Phạm Đình**

*(Implemented)*

# APEC trade policy on environmental services deliberated

As part of the second APEC Senior Officials Meeting (SOM 2) and related meeting, the Committee on Trade and Investment (CTI) hosted a Trade Policy Dialogue (TPD) on Environmental Services in Hà Nội on May 11. The dialogue was designed to provide information about the classification of environmental services, study the combination of environmental products and services and discuss ways for APEC member economies to support each other in speeding up negotiations on environmental services.

At the dialogue, Jehan Sauvage, a Trade Policy Analyst in the Trade and Agriculture Directorate of the Organization for Economic Cooperation and Development (OECD), shared his expertise about environmental services. According to him, there are three basic types of environmental services: key environmental services (wastewater treatment, underground water management); environment-related services (consultant and technical services) and other services directly related to the environment (legal and auditing services). Water resources business was also a topic that gained attention from delegates at the dialogue where they mentioned factors considered as a momentum to enhance creativity and efficiency as well as challenges in this field. Regarding the limited use of recycled items and disposable products, participants emphasized the importance of circular economic model and ways to reduce the re-use and recycling of items in the daily life. The disposal, treatment and management of waste not only bring benefits to society but also the environment, they noted. Overcoming the environmental damage was also a type of service debated by the delegates. This sector has faced a number of challenges due to different standards and regulations on the environment in different economies and political institutions.

During the course of the final session, the panels deliberated ways to effectively boost renewable energy business, noting that the sense of efficiency in thinking and action could improve the quality of business and enhance competitiveness in the market. Legal challenges are likely to hinder development of the renewable energy sector and they should be removed as soon as possible, they said■

**Phạm Đình**

*(VNA source)*

# ASEAN and EU launch 40th anniversary of partnership Commit to new programmes on environment

▲ *Join hands to protect the environment*

In the framework of the annual review of European Union and ASEAN cooperation, known as the Joint Co-operation Committee (JCC), the EU and ASEAN marked the beginning of a year dedicated to the 40th anniversary of their dialogue relations with the start of new co-operation programmes and a youth photo exhibition. The event highlighted the recent signature of two new EU-ASEAN programmes on sustainable use of peatlands and haze mitigation, as well as biodiversity conservation in ASEAN. At the same occasion, an award was handed over to the Indonesian winner of an EU-ASEAN Youth Photo Competition.

The two new programmes on sustainable use of peatlands and biodiversity conservation further signify and strengthen the long-standing relationship between ASEAN and EU. They reflect the shared goals and commitment of ASEAN and EU in environmental protection and sustainable development, said Secretary-General Minh.

Ambassador Fontan said: It is a pleasure for me to launch the 40th anniversary of the EU-ASEAN partnership, which has promoted strong political, economic and social cooperation. Throughout this year, numerous events and activities will mark our anniversary. Today, I am glad to highlight some important aspects of our joint successful work: we are starting two new ambitious programmes aimed at protecting the environment and supporting the fight against climate change in ASEAN.

With a budget of EUR 20 million, the Sustainable Use of Peatland and Haze Mitigation in ASEAN (SUPA|2016-2019) programme aims to promote the sustainable management of peatlands in the ASEAN region and fight against transboundary haze pollution through collective actions, and sustain local livelihoods, and reduce the risk of fire and associated haze, which all contribute to global environmental management. It also contributes to the mitigation of carbon emissions from carbon-rich peatland areas, in addition to conservation of the unique peatland ecosystems biodiversity, which hosts highly endangered flora and fauna.

The second programme, Biodiversity Conservation and Management of Protected Areas in ASEAN (BCAMP|2016-2021), with EUR 10 million EU budget contribution, aims to enhance the conservation of biodiversity and effective management of protected areas in the ASEAN region. It will target the network of existing and potential ASEAN Heritage Parks to reduce biodiversity loss. The programme will be implemented in close coordination with the EU Delegation in Manila and the ASEAN Centre for Biodiversity (ACB) in Los Banos, the Philippines■

**Mai Hương**

*(asean.org source)*

# Partnership for green global goals discussed in Hà Nội

A workshop was held in Hà Nội on May 4 by the Ministry of Natural Resources and Environment (MONRE) and the Danish Embassy as part of efforts to shape the new initiative "Partnering for the Green Global Goals 2030".

The event gathered policy makers, scientists, businesses and representatives of the public and private sectors in Việt Nam and other countries. Danish Minister for Development Cooperation Ulla Tornaes also attended.

MONRE Minister Trần Hồng Hà said the Global Green Growth Forum (3GF), launched in 2011, aims to gather government agencies, enterprises, investors and organisations around the world to act for green and sustainable growth. Based on this foundation, a new initiative will be launched in September this year, focusing on realising green growth goals through public-private partnerships.

As the latest 3GF member, Việt Nam is attempting to contribute to the forum and global development. The country will work with other 3GF members to promote the forum's activities for global sustainable development, he noted.

Action plans are underway in the country to realise the 2030 Agenda, the Sustainable Development Goals, and the Paris Agreement on climate change. Việt Nam believes that cooperation between all partners concerned will help countries adapt to global trends and resolve common challenges such as pollution, exhaustion of natural resources and climate change.

International cooperation frameworks, including 3GF, play a critical role in stepping up connectivity, seeking partners and promoting cooperation opportunities to address those challenges, Ha said, adding that 3GF needs to reform, diversify and improve its activities to help settle pressing environmental and climate change issues.

At the workshop, participants reviewed cooperation within the 3GF framework and discussed member countries' experience. They outlined 3GF's cooperation priorities which match global trends, the 2030 Agenda and the Paris Agreement on climate change.

The function also looked into measures to increase 3GF members' engagement and connect 3GF with its partners to narrow development gaps and boost the capacity of developing member countries■

**Trần Tân**
*(VNA source)*

# 315 million USD to help improve the coastal environment in the Central

The World Bank has approved a credit of 315 million USD to improve the northern waterway transport system and transport and sanitation facilities in a number of coastal cities in the Central of Việt Nam. In this amount, 236 million USD will be allocated for the sustainable environment in Vietnam's coastal cities project, including 190 million USD from the International Development Association (IDA) and 46 million USD from the International Bank for Reconstruction and Development (IBRD).

The project will focus on flood prevention; improvement of drainage and wastewater collection systems; building and upgrading toilets in public places and schools; solid waste management in coastal cities such as Đồng Hới, Quy Nhơn, Nha Trang and Phan Rang-Tháp Chàm with a total beneficiaries of about 1.1 million people.

The remaining of 78.74 million USD was provided by IDA for the northern delta transport system development project. It will build a new canal to connect the Đáy river with the Ninh Cơ river. The new canal is expected to boost economic activities, reduce logistics cost, and mitigate the risk of climate change due to reduction of greenhouse gas emissions from shipping. The 3,000 ton-ships can also travel through this new route■

**Giáng Hương**

# USAID facilitates green growth in building sector

A US-funded programme is providing significant help in implementing an action plan for green growth in the building sector by laying the ground for substantial energy and Green House Gas (GHG) reductions. It has imparted, through training courses, relevant technical knowledge and skills to thousands of professionals and other stakeholders.

Details of the programme have been highlighted and discussed a at a workshop jointly held by the Ministry of Construction and the US Agency for International Development (USAID) in Hà Nội. Speaking at the event, Lê Trung Thành, Director of the Department of Science Technology and Environment under the Construction Ministry, stressed the side-effects of economic development: pollution, resource exhaustion, and energy crisis.

He noted that Việt Nam was among countries suffering the most from climate change impacts like rising sea levels, drought and floods. This had prompted the government to prepare a national action plan for green growth from 2014 - 2020.

With support from the USAID's "Việt Nam Clean Energy Programme: Energy Efficiency Promotion", the ministry has formulated the action plan for the building sector by 2020 with a vision to 2030.

"The programme offers building owners free technical support to provide building energy simulations that can help them achieve substantial energy and Green House Gas (GHG) reductions for their newly-designed and retrofitted building demonstration projects," the USAID said.

▲ *Apartment buildings in the Mỹ Đình 2 urban area in Hanoi's Nam Từ Liêm District*

It also offers training in integrated design, building energy simulation and incorporation of energy code requirements into construction processes. Furthermore, it provides urban managers and leaders with expertise from American green building and sustainable urban energy development experts.

USAID Việt Nam Director Michael Greene said Việt Nam was among countries with the fastest rate of urbanisation, which leads to significant increases in GHG. Energy consumption may triple between 2010 and 2020. He underlined the necessity to integrate the Việt Nam Energy Efficiency Building Code (VEEBC) into the building sector's action plan for green growth.

So far, some 3,000 architects, engineers, project managers, government officials and practitioners from 40 provinces have benefited from the programme's training courses, receiving technical knowledge and skills to effectively enforce and implement the VEEBC. The programme has also surveyed 280 buildings to develop a national database on building energy performance■

**Bình Minh**
*(VNS source)*

# New project promotes biodiversity conservation

▲ *Việt Nam has a large resource of natural ingredients (Helvetas Vietnam source)*

A Switzerland-funded project to conserve biodiversity through sustainable trade of natural ingredients following the BioTrade principles in Việt Nam, Laos and Myanmar has been launched in Hà Nội. The project, financed by the State Secretariat for Economic Affairs (SECO), a Swiss Government Agency, will be implemented by HELVETAS Vietnam, a Swiss-based International non-government organisation, from 2017 through 2020.

The total project funding for the three countries is US$4.9 million, of which $2.7 million will be allocated for Việt Nam. BioTrade refers to the collection, production, transformation and commercialisation of goods and services derived from the native biodiversity, using the criteria of environmental, social and economic sustainability.

Natural ingredients are products processed from plants, animals and microorganisms that are collected and cultivated in the wild or domesticated and produced in an ecological way, without the use of petrochemicals. They are used in many ways in the pharmaceutical, cosmetic or food industries for commercial purposes.

Southeast Asia is one of the world's largest biodiversity hotspots and Việt Nam, Laos and Myanmar are amongst the most biologically diverse countries on earth. According to Miroslav Delaporte, Head of Co-operation at the Embassy of Switzerland in Việt Nam, the

project is aimed at conserving biodiversity through the sustainable trade of natural ingredients, which will focus on increasing the competitiveness of local exporters and producers, and developing livelihoods for rural population, while taking into account BioTrade principles.

The project will focus on collaboration with companies in Việt Nam to establish export-oriented value chains, following ethnical BioTrade Principles, with service providers to eliminate or reduce service-related bottlenecks that slow the growth of the natural ingredient sector, and with Government institutions and stakeholders to establish a conducive enabling environment for the BioTrade sector.

Vietnam's abundant natural ingredients could serve as a source of raw materials for the pharmaceutical, cosmetic and food industries. However, the domestic supply has been dwindling due to overexploitation and lack of conservation. Manufacturers, as a consequence, have to import large quantities of raw materials of questionable quality from other countries. The national pharmaceutical sector, therefore, becomes vulnerable to foreign competition even in its own market, let alone enabling it to penetrate international markets.

Việt Nam has more than 4,000 species which can be used as raw material; some 95% of traditional Vietnamese remedies, including over 1,760 medicinal products, rely on this natural resource base, according to Helvetas. The country produces up to 40,000 tonnes of raw medicinal material annually. In addition to this, significant quantities are imported from foreign countries, even though many of those plants species are available in Việt Nam■

**Thu Hà**
*(VNS source)*

# Việt Nam and Saudi Arabia firms partner to develop renewable energy

FECON Corporation and ACWA Power, a Saudi Arabian company, signed on July 3 a memorandum of understanding (MoU) on cooperation to develop renewable energy projects in Việt Nam. A FECON representative said Vietnam is the first Southeast Asian nation that ACWA Power chooses to invest in renewable energy projects.

Under this MoU, the two sides will study and evaluate opportunities in and potential for renewable energy investment, especially wind and solar power projects, in some southern central provinces such as Bình Thuận and Ninh Thuan. After that, they will set up a joint venture to make investment. The partnership with ACWA Power is part of the Vietnamese firm's road map to become a leading infrastructure business by 2020, according to the FECON representative. ACWA Power is a developer, investor, operator and co-owner of electricity plants in 12 countries in the Middle East, North Africa, South Africa and Southeast Asia.

In Việt Nam, it formed a joint venture with the Republic of Korea's Taekwang Group to invest 2.3 billion USD in a thermal power factory in Nam Định province. According to Vietnam's national electricity development plan and renewable energy development strategy, the country aims to raise the rate of electricity produced by renewable energy sources, excluding big and medium hydropower and pumped storage hydropower, to 7% by 2020 and over 10% by 2030, with a focus on wind and solar power. The country is also offering a number of incentives for investors in this field■

**Vũ Hồng**
*(VNA source)*

# United Nations Declares War on Ocean Plastic

United Nations Environment launched on Feb 23, 2017 an unprecedented global campaign to eliminate major sources of marine litter: microplastics in cosmetics and the excessive, wasteful usage of single-use plastic by the year 2022. Launched at the Economist World Ocean Summit in Bali, the "CleanSeas" campaign is urging governments to pass plastic reduction policies; targeting industry to minimize plastic packaging and redesign products; and calling on consumers to change their throwaway habits - before irreversible damage is done to our seas.

Throughout the year, the campaign will be announcing ambitious measures by countries and businesses to eliminate microplastics from personal care products, ban or tax single-use bags, and dramatically reduce other disposable plastic items.

Ten countries have already joined the campaign with far-reaching pledges to turn the plastic tide. Indonesia has committed to slash its marine litter by a massive 70% by 2025; Uruguay will tax single-use plastic bags later this year and Costa Rica will take measures to dramatically reduce single-use plastic through better waste management and education.

Each year, more than 8 million tonnes of plastic ends up in the oceans, wreaking havoc on marine wildlife, fisheries and tourism, and costing at least $8 billion in damage to marine ecosystems. Up to 80% of all litter in our oceans is made of plastic.

▲ *The world's largest beach clean-up in history on Versova beach in Mumbai, India*

According to some estimates, at the rate we are dumping items such as plastic bottles, bags and cups after a single use, by 2050 oceans will carry more plastic than fish and an estimated 99% of seabirds will have ingested plastic.


Besides some personalities support the campaign, globally recognized brands are also joining the fight. DELL Computers unveiled today a commercial-scale supply chain using plastic which has been fished out of the sea near Haiti. The computer giant will use the recovered ocean plastic in its product packaging. According to Dell's Vice President for Global Operations Piyush Bhargava, DELL is committed to putting technology and expertise to work for a plastic-free ocean. Their new supply chain brings them one step closer to UN Environment's vision of Clean Seas by proving that recycled ocean plastic can be commercially re used.

All these actions will be crucial to stemming the tide of marine litter. Today, we are producing twenty times more plastic than in the 1960s. Around one third of all plastic is used for packaging. By 2050 our plastic production will have to grow three to four times to satisfy our demand. A large portion will end up in oceans where it will remain for centuries■

**Phạm Đình**
*(unep.org source)*

# Models of green growth city and sustainable development index

**Nguyễn Thanh Hằng**
**Tạ Thị Thanh Hương**

Within the high level officials meeting of the Asia - Pacific Economic Cooperation (APEC) 2017, which was recently organized in Hà Nội, Vice Minister of Foreign Affairs Bùi Thanh Sơn and Vice Minister of Construction Phan Thị Mỹ Linh co-chaired the APEC 2017 Dialogue on sustainable urbanization. The forum focused on discussing important issues of the sustainable urbanization in order to propose policy recommendations on "cities become safer, firmer and more sustainable".

The dialogue was attended by the Chairman of the second Senior Officials Meeting APEC 2017 (SOM2), representatives of APEC economies, senior officials of the Government, urban areas in APEC, international organisations, non-governmental organizations, enterprises and representatives of ministries, sectors, localities, associations, universities and research institutes in Việt Nam...

APEC is the leading economic cooperation in the region, with the objective to promote sustainable economic growth and prosperity in Asia - Pacific. As an important economy in the South-East Asia and Asia, the urban sustainable development in Việt Nam is a key task of new, nice and modern urban areas, at the same time to meet the increasingly demands of local people. During the urban development process, the Government of Việt Nam is aware that the sustainable development of urban areas requests comprehensive planning and implementation by leaders, provincial/city authority, policy makers, investors…

The dialogue had been paid attention by experts, academia, representatives of APEC members as well as domestic and international development partners with more than 20 presentations on the status of urban areas in Việt Nam, Việt Nam new urban area development strategy, 2035 Việt Nam report - management of urbanization to enhance economic efficiency… Particularly, during the meeting, the national representative of the Global Green Growth Institute (GGGI) - Ms. Lê Thị Mỹ Hạnh had a presentation on green growth city model with indicators on sustainable development which were formulated by GGGI based on international experience linked with the national strategy on green growth and the Việt Nam green growth action plan.


▲ *Group picture at the Việt Nam APEC Dialogue 2017*

GGGI is an intergovernmental organization which was established to support and promote the new economic growth models - "green growth" focusing on key targets of economic development such as poverty reduction, job creation, social integration and sustainable environment. Currently GGGI has 27 member countries; Việt Nam is a founding member and ratified the agreement since 2012. GGGI currently cooperates with many countries in the world, supports capacity building and collaborates on green growth policies which influence millions of people. The organization also cooperates with countries, multilateral institutions, governmental agencies and the private sector in order to support economies to growth faster, to use natural resources more effective and sustainable, to use less carbon and to better respond to climate change.

Currently, challenges in green urban development as well as infrastructure in renewable energy, transportation, wastewater treatment are still not addressed, which consists of high possibility of energy emission and lack of monitoring and evaluation. Despite challenges, green urban development will bring many opportunities such as green jobs, sustainable economic development and enhanced preparedness of the Government of Việt Nam, from central level to local levels in accessing financial resources to cope with climate change.

Consequently, GGGI proposed green growth city model based on green urban development guideline, including green growth urban indicators which support the Government as well as cities/provinces to measure and manage the progress of

GGGI commits to bring forward green economy, creating social integration, poverty reduction and sustainable environment. GGGI cooperates closely with the governments of developing countries to ensure that growth not only protects but also promotes environmental protection, which is focusing on policies and initiatives that support clean energy, wastewater management and financial mobilization for green growth projects.

Countries that GGGI cooperates are those that are vulnerable to impacts of climate change, facing with natural disasters, affected by sea level rise. In addition, the rapid growth will make these countries to increase greenhouse gas emissions.

GGGI has a cooperation programme with the Government of Việt Nam since 2011, through the Ministry of Planning and Investment, Ministry of Construction, that focus on finance, urban, energy and water in order to promote green growth initiatives.

GGGI has been cooperating with the Ministry of Planning and Investment in preparing the investment guideline for green growth, training the guideline for more than 100 staff of 7 ministries and 31 provinces/cities nationwide; enhancing the coordination in the implementation of the Việt Nam Green growth strategy and proposing recommendations on policies to integrate green growth in loans of the small and medium size enterprise development Fund. GGGI together with the Ministry of Planning and Investment has formulated the five year cooperation plan to 2020.

At the same time, GGGI has been cooperating with the Ministry of Construction and localities in implementing the Green growth strategy, of which including Đà Nẵng City; developing green growth urban indicator set to monitor green growth projects in cities, enhancing staff capacity on green growth city. GGGI is also cooperating with the Ministry of Construction to formulate the National strategy on green urban development linked with objectives of the National Determined Contributions (NDC) and the Việt Nam Green Growth Strategy (VGGS) and creating conditions for green growth projects to attract investments.

GGGI is cooperating with the Ministry of Industry and Trade, localities and GIZ to formulate the Provincial action plan on biomass energy; financial access support for projects that can mobilise budget on biomass energy and development of pre-feasibility report for biomass energy projects in the sugarcane industry.

GGGI has cooperated with the Việt Nam Mekong River Committee to publish "Green growth in the Mekong Delta" aiming to introduce green growth to vulnerable strategic economic delta as well as recommendations on wastewater treatment in the Mekong delta.

▲ *National representative of GGGI presenting green growth urban model, Ms. Lê Thị Mỹ Hạnh*

integration of green concepts, actions and initiatives in spatial management and planning for urban areas and cities in the urban classification system of Việt Nam. Four key thematic groups are specified in subgroups and indicators: environmental sustainability, economic development, social integration, institutional compliance. "The difference of the green growth urban indicator set is because it is developed based on international experience but is always considered to be appropriate with the urban development context of Việt Nam, and it is comprehensive, focusing the sustainability of many aspects: environment, economics, social integration and institutional possibility", Ms. Hạnh said.

Green growth urban indicator is developed based on the context of green growth strategy and the vision and objectives of the strategy, at the same time the appropriateness of these indicators is reviewed in the specific context of Việt Nam. The green urban indicator is also developed based on international and regional experience, including: green urban programme indicator by OECD; green urban indicator by Economist Intelligence Unit (EIU); European sustainable city reference framework: Global urban indicator framework and global sustainable city development developed by the Urban issue committee of the White House.

Within the dialogue, Leaders of the Ministry of Construction together with representatives from domestic and international development organisations exchanged information and experience in urban planning, urban development management and establishment of linkage and cooperating network. Accordingly, almost all leaders and participants stressed the importance of experience sharing in sustainable urbanization among cities, experts in APEC and enhancing the cooperation network among APEC economies regards to economic and environmental sustainability for a joint future■

# ESSEN - European Green Capital 2017

In 2017, Essen takes centre stage in the promotion of environmentally friendly urban living in Europe. The European Green Capital Award honours its remarkable success in dealing with the environmental legacy of an economy once dominated by coal and steel, and its transition to a green city 'fit for life'.

The jury for the 2017 European Green Capital Award. The jury emphasised the city's impressive environmental performance across 12 indicators covering aspects as varied as energy performance, biodiversity, green urban areas, waste production and management, and adaptation or mitigation measures linked to climate change.

Located at the heart of the Ruhr area in North Rhine-Westphalia, Germany, Essen was a mining city, an industrial powerhouse. Today, the services and finance sector employs around 80% of the workforce, and around 140,000 commuters come to the city each day. Investment in the city's green transition is helping to create more new, green jobs. Essen has set itself the objective of creating 20,000 jobs in the environmental sector by 2035.

## CITIES FOR CITIZENS

Essen's vision is that of a prosperous, economically sustainable city which is resilient to climate change and provides a healthy environment. Green and open spaces - created in part through brownfield regeneration - make up more than half the city's territory.

Water plays a key role in Essen's and the Ruhr area's sustainable development path. In its well-designed, innovative water-management system, green areas help to absorb rain, prevent flooding and recharge groundwater supplies. Plans to limit the volume of rainwater entering the combined sewer system rank prominently in the upgrades envisaged.

Another example is the conversion of the River Emscher that crosses the northern part of the city's territory. It was long used as an open waste-water canal and considered biologically dead. The river has been brought back to life due to major investment in its infrastructure, involving the construction of hundreds of kilometres of closed, underground sewers. Work to reclaim its banks for nature and the community is also under way. Water quality has now improved dramatically and fish have returned to the river.

▲ *Essen has embraced transformation from a heavy industrial past to become a cleaner greener city*

During its year as European Green Capital 2017, Essen plans to initiate a raft of initiatives to improve the city's quality of life and put sustainability at the heart of its development programmes. The city's programme for 2017 is also seen as a celebration, marking the progress achieved in its green transition, along with the launch of new projects to add to the momentum. Many of these projects were suggested by the residents in response to two calls for proposals. They are grouped into five thematic areas: transport, consumption, green spaces, training and employment, and life between the city's rivers.

## WINNING WAYS TO A GREEN DECADE

The Award is first and foremost an accolade for the citizens of Essen, said Mayor Thomas Kufen as he presented Essen's Green Capital programme.

*Mr Kufen, what does the award mean to the city of Essen?*

With this title, we can show that there have been sustainable projects in our city for years. But we don't want to rest on these laurels. We would like to continue with the citizens of Essen, sponsors, ambassadors and other players in our society towards a viable city. In 2017, the 'green decade' begins for the city. In 2018, the last coal mine will be shut down in our region. In 2020, the reconstruction and restoration of the Emscher will be completed, and in 2027 we will apply for the International Horticultural Exhibition.

*How have the residents been involved in the city's transformation?*

Today, Essen is the greenest city in North Rhine-Westphalia, because many citizens have made an effort to foster and cultivate green areas in

our city and have been very involved over the past decades. That is why it was particularly important to involve them in this special year. Nearly 200 citizens' projects are being financed which comply with certain criteria. In addition, there is cooperation among different interest groups in the city: voluntary activities, small gardeners, community gardeners, landscape gardeners, the farmers' association and many more.

*Which aspects of your city's approach are particularly innovative?*

Essen has successfully mastered structural change to become the third-greenest city in Germany. In the early 20th century, urban planners were already promoting the city's green development. Together with many stakeholders, urban development measures are being promoted and implemented that have a positive impact on Essen as a liveable city. The award also means that environmental objectives are linked and must be reached, which is our aim.

*How is Essen convincing other cities to promote eco-friendly urban living?*

Part of the programme will include lectures and expert congresses on a national and international basis. We are working closely with the EU, the federal and state governments and local organisations and associations to promote sustainability across the region, Germany and Europe. In this way, we hope to start conversations and stimulate green innovation and ideas as well as eco-friendly urban living.

**FOSTERING CHANGE**

The European Green Capital Award is presented to a city at the forefront of environmentally friendly urban living. As well as providing inspiration, the winner's improved profile enhances its reputation, making it an attractive place to visit, work and live in.

However, the award applicants have something else in common: they have all coordinated their approach to urban planning across different departments, uniting them in a shared vision and thereby improving their city's urban planning process. Nine cities have been awarded the title since its inception in 2010. The 2016 winner, Ljubljana, Slovenia will now pass the title to Essen■

**Nguyên Hằng**
*(europa.eu source)*

# Green growth: **Not as expensive as you think**

*"A green economy does not mean a major trade-off between growth and sustainability"*

▲ *Tomaso Andreatta*
*Chairman of EuroCham Green Growth Sector Committee*

***✶Reporter: There has been a lot of talk of late about green economy and green growth. What does a green economy look like and why should Việt Nam move towards it?***

***Mr. Tomaso:*** A green economy is "sustainable". It uses less energy and other resources than a conventional one, sparing air, water and land, minimising pollution, while contributing to preserving the environment and preventing climate change. A green economy is guided by the principles of livability for human beings, respecting the individual and society as a whole as well as protecting the fragile ecological balance.

For Việt Nam, this also means implementing measures to reduce the impact of climate change, which is already increasing the cost of doing business across all industries, from farming and aquaculture to banking and insurance.

***✶Reporter: What are the costs and benefits of this transition for an underdeveloped economy like Việt Nam?***

***Mr. Tomaso:*** The trade-off between growth and sustainability is much smaller than most people think. Smart designs and modern equipment reduce energy usage significantly. More efficient and clean technologies are now available at the lowest costs ever recorded.

In many cases, a good 20% of energy can be saved at no extra cost by engaging a good architect to design the building according to well-tested green building standards. In most cases, it is a question of making an effort to get the information and making the right choices early in the design process, rather than facing higher costs in the long-run.

The most important example can be the comparison of renewable energy versus coal-fired plants. The latter are considered to be cheaper, but if one considers the to-

tal cost of negative externalities such as the disruption of the logistics of moving huge quantities of coal; the damage to agriculture and tourism assets due to a polluted environment and destroyed landscapes the bill for coal energy soars very high. Conversely, the more renewable energy solutions are implemented, the cheaper they get, with less risk factored in for the cost of capital, better know-how and local production of the components.

Việt Nam is at a turning point and leaders have the opportunity now to shape the energy market as an essential part of the economy for future generations, rather than running the full cycle of the past, focusing on the old industrial approach. A sustainable, future-oriented energy plan requires less direct State intervention and more monitoring so that markets work under increased scrutiny, including more advanced intellectual property right (IPR) enforcement.

***✶Reporter: If adopting the green growth model increases production costs, will Vietnamese businesses become less competitive in the international trade?***

***Mr. Tomaso:*** While I do not agree with this generalization, implementing green solutions will require investment in new technologies and building up know-how, awareness and training. In fact, such an approach may be healthier for the economy than channeling most of the investment into a new real estate bubble.

In this regard, Việt Nam should embrace the EU-Việt Nam FTA not only as its most important trade agreement but also the one that can best support the ambitious sustainable development plan promulgated by Prime Minster's best. For Việt Nam to reap the full benefits of better access to European markets, manufacturers of agricultural, commercial and industrial products need to follow green and sustainable processes that are the basis of European standards.

In Europe, Vietnamese products are often perceived to be subject to "pollution dumping", where the cost of resources and labour are not truly factored into the price of the products. There are examples where this has been transformed, such as in Germany and even in China, where modern, clean and forward-oriented agricultural and industrial sectors have been developed. Such a transformation can be a trigger for massive job- and skill-growth for the economy, and a wholesale re-vamping of the business landscape, with modern companies blossoming e.g. in the solar sector. Another extension would be the development of sustainable or smart cities, starting with improved energy efficiency and recycling.

***✶Reporter: What are top priorities for local companies when moving towards green growth?***

***Mr. Tomaso:*** Energy efficiency and recycling are important elements that reduce the cost of products, thus counterbalancing the effects that you implied in the previous question. Acknowledging this requires a fundamental shift in mind-set amongst Vietnamese enterprises.

Việt Nam has many environmental regulations that are, in practice, not applied. Companies should start to improve their record before law enforcers get their act together and start punishing infringements with fines and forced closings.

For enterprises, pushing for the ability to sign Direct Power Purchase agreements between renewable energy producers and heavy energy consumers would provide a quick start for solar rooftop photovoltaic production without heavy, costly or long procedural government interventions.

***✶Reporter: What can the Vietnamese Government do to support the adoption of the green growth strategy?***

***Mr. Tomaso***: It can spread the culture of environmental responsibility from schools onwards, launch campaigns for specific industries, monitor implementation of existing rules and punish those who do not follow them. We suggest a centralised inspection authority to push forward towards the goals.

***✶Reporter: How can the EU support Việt Nam in transitioning towards the green economy?***

***Mr. Tomaso****:* There is a lot of know-how in Europe about green technologies, and many companies would be willing to bring it to Việt Nam in key fields: from sustainable energy production to new materials and safe products.

European banks can also finance such investment, given the improved bankability. The Vietnamese Government can do a lot to open the market to these investments and new technologies, allowing private companies from Europe to take the lead in energy production. European buyers and importers will choose to increase imports from Việt Nam if local products comply better with the European regulation and quality standards■

**Mai Hương/VNS**
*(Implemented)*

# 3 Ways to Help Countries Transition to Sustainable Development

▲ *Yvo de Boer*
*Director-General of the Global Green Growth Institute*

The 2015 Paris climate change conference was a momentous political outcome as more than 190 nations have committed to take action on climate change by reducing greenhouse gas emissions and becoming more resilient to climate impacts.

Two other notable scenes on the environment and development front in 2015 were the International Conference on Financing for Development in Addis Ababa and the Sustainable Development Summit in New York. These meetings delivered above expectations and overlap with each other as financial resources, technology development and transfer and capacity building and the role of partnerships are acknowledged as critical.

If Paris was all about setting the goals and drawing the boundaries of the pitch, 2016 is a crucial year to translate these commitments into concrete actions and plans and ultimately take bolder steps towards achieving the long-term goal.

First, we must mobilize finance to achieve growth in developing and emerging countries. Mobilizing the needed finance for a low-carbon transition is a question of turning Nationally Determined Contributions (NDCs) into long-term climate investment plans which are compatible with emissions reductions trajectories.

According to a report by Bloomberg New Energy Finance, $12.1 trillion investment is needed over the next 25 years to keep the world below the 2 degrees Celsius threshold. Mobilizing such large amounts of capital may seem daunting, but it is by no means impossible.

In principle, sufficient financial resources from the public and private sectors are available to support developing nations. However, not enough attention has been paid to enhancing the capacity of the system to absorb the capital in ways that are beneficial to the poor in developing countries and acceptable to those that bring the capital.

Second, transitioning away from fossil fuels to renewable energy will bring health and financial benefits as well as enhance employment opportunities. Asia is claiming to be going green, but according to the International Energy Outlook 2016, China and India are projected to be the top two coal-consuming countries together with the United States, accounting for more than 70% of world coal use. For instance, in 2012, China accounted for 50% of world coal consumption and its coal use is expected to grow through 2025. Coal is expected to continue to play a prominent role in Asia's energy consumption due to the abundant regional endowment of coal and low extraction costs.

On a brighter note, energy demand is projected to almost double in the Asia

and Pacific region by 2030. This rapid rise in demand is a reflection of the dramatic economic growth in countries such as China and India. Countries in Southeast Asia have also been enjoying remarkable economic progress in recent years while solidifying their position as a major driver of global growth in energy demand.

Growth in developing countries will continue, yet this growth needs to be green and inclusive. Investments in renewables have now overtaken investments in fossil fuel and renewable investments in developing countries have significantly overtaken those in industrialized countries - all of which is positive. But the reality remains that making more money available and decreasing costs of technology is not enough to address the challenges of climate change.

Third, greater emphasis needs to be placed on creating better lives and livelihoods for poor people in society by using green growth policies. Billions of people have been lifted out of poverty, but the gap between the rich and poor is increasing. 90% of urban population growth this century will occur in developing countries, predominantly in Africa and Asia and a significant proportion of that growth will be in cities that don't exist yet.

Although the world has made significant progress in reducing poverty in the last decade, inequality still persists, with large portions of humanity, particularly in developing countries, lacking basic sanitation, access to electricity, and clean drinking water. Growth in developing countries will continue, yet this growth needs to be green and inclusive.

Global momentum is building towards a sustainable economy. A growing number of countries are determined to transition to an inclusive green economy as they recognize the fact that economic growth and sustainable development are complementary objectives.

In order to help countries make the transition to sustainable development, broad coalitions of actors need to work together for transformational systemic change, beyond individual projects, sectors or policies which by themselves will not generate the needed impact at scale■

**Nam Việt**

*(Eco-Bussiness source)*

# China to protect areas of high ecological importance identified by researchers

***Scientists have determined ecologically valuable areas within China. The country plans to protect these areas as part of an ecological initiative.***

China leads the world in greenhouse gas emissions. Its biggest cities are shrouded in smog. And the country's population is 1.4 billion people and growing. At least to the rest of the world, China isn't known as a leader in environmental mindfulness.

Research from Gretchen Daily, professor of biology at Stanford University, is helping to change that.

Daily's research, recently published in Proceedings of the National Academy of Sciences, used eco-mapping software to identify places of high ecological importance for the country. Chinese leaders are using Daily's analytics to establish a series of protected areas, the first of their kind, as a part of their 21st-century ecological initiative.

"It's a historic moment in the evolution of Chinese civilization. It's marked by a recognition that the singular focus on mainstream economic growth over the last century has come at a tremendous cost," said Daily, who is also Bing Professor in Environmental Science.

**GUIDANCE, NOT A PRICE TAG**

The software used in this study was created by researchers at the Natural Capital Project. Co-founded by Daily, the project is a joint effort among Stanford University, the University of Minnesota, The Nature Conservancy, and the World Wildlife Fund. The project's mission is to identify and conserve areas of high ecological value across the globe.

By using a series of ecological models, the software rates areas based on their ability to sustain human life. For example, a forest provides water purification, flood control, and climate stabilization -- all services that support human life.

"Our partners started asking, 'Where does biodiversity matter for how ecosystems function within China?' Essentially, we wanted to better understand which lands would be most valuable, if set aside for biodiversity conservation and ecosystem services," said Steve Polasky, co-author of the paper, co-founder of the Natural Capital Project and professor of ecological and environmental economics at the University of Minnesota.

▲ *Jiuzhaigou National Park, a natural beauty in Sichuan Province, China*

In this case, the team identified five different vital life support services in China: flood control, sandstorm control, provision of abundant water (for drinking, irrigation and hydropower), stabilization of soil, and biodiversity. Then, the team mapped which areas of China were most valuable, ecologically speaking, to its people.

The goal isn't to "put a price tag on nature," said Daily, but to provide a practical approach for guiding land use, infrastructure investment and siting, urban planning, investment in water supplies, and other realms of decision-making.

"Today, nature is too often ignored. It's sometimes held up as infinitely valuable, and more typically we say it's not valuable at all, and give it a score of zero in cost-benefit analysis," Daily said. "Neither position is helpful. We need to shine a light on the many ways in which prosperity and well-being depend on nature, systematically and for setting priorities."

**CHINA'S INVESTMENT IN CONSERVATION**

The national park system, expected to be formally proposed to Chinese leadership this summer, is only a part of China's 21st-century environmental goals. In the past 10 years, China invested over $100 billion in conservation efforts. Currently, the country is paying 200 million people to protect or restore ecosystems as part of its eco-compensation program -- the biggest eco-payment system in the world. The country is now developing and testing a new metric to measure the contribution of nature to human well-being, called Gross Ecosystem Product (GEP).

"China is going further than any other place in so many ways. They are really trying to harmonize local well-being with long-term societal security and prosperity," Daily said.

The team identified priority areas including the lower streams of the Yangtze River, the Min-Zhe-Gan and Wuyi mountains, Nanling, and west and south Yunnan in the southern region. These areas were, for the most part, not a part of China's existing nature preserves and captured only 10-13 percent of the country's most ecologically valuable sites.

**ECOLOGICALLY INFORMED DECISIONS**

While the Natural Capital Project's software is already being used in 80 countries, Daily said she hopes that other countries will follow China's example and adopt ecologically informed decision-making processes.

"There are many countries pursuing green growth. What we've developed could be readily adapted and mainstreamed across all countries," said Daily. "If that were to happen, I mean, that's the ultimate dream here."

There is a growing fear among researchers in environmental science that crucial ecological systems, like the climate system that warms Earth, are going to collapse. Valuing the services that nature provides isn't just beneficial for the economies of countries, argues Daily, but is essential to humanity's survival■

**Vũ Nhung**

*(Story Source- Stanford University)*

# Red River Ecological Tourism Development Potential

**Vương Tiến Mạnh** - *Deputy Director*
*Viet Nam CITES*

The Red River, the section running through Hà Nội with a length of 100 km, through many years of sediment accretion, creates mudflats and dunes. Of which, mudflats (Phúc Tân, Phúc Xá wards); middle islands (Liên Hồng, Liên Hà communes, Long Biên bridge foot and rocky dunes (Nhật Tân). By now, sand dunes and mudflats are the habitats of agriculture residents, creating semi-natural agriculture ecosystems.

Currently, the mudflats, middle islands and rocky dunes of the Red River attract a large volume of visitors, particularly in the weekends and holidays. This region has become one of ideal tourism sites for the young of the city with flower gardens, photo shooting, cycling, ecological jogging, craft village along the Red River; wild bird watching…

At here, visitors will see green maize field, river curving along reeds, small fishing boats anchoring riverside. At sunset, tourists will see the golden sun in the late afternoon which will make this place to be more attractive.

Particularly, at the rocky area of the Red River, there are many flowers such as gomphrena (bách nhật), yellow canola (cải vàng), hồng leo, daisy, gerbera (đồng tiền), cockscomb (mào gà), kumquat, peach flower… creating a colourful garden. This landscape is linked with wooden bridge, crossing the water lake, under the reeds swinging in the wind which creates a romantic atmosphere. To attract tourists, local people have invested in construction of tents, stone bench, and swings for tourists to take pictures and entertain.

Although the Red River middle islands, mudflats and rocky dunes meet ecological tourism criteria, these tourism activities have not been well managed and mostly self-organised by households. Due to self-development, these activities are not controlled in terms of environmental issues such as the carrying capacity of the ecosystem, and the weak waste management that cause environmental pollution. In addition, sand exploration activities, operation of boats, agriculture cultivation can affect ecosystems of middle islands and mudflats of the Red River.

▲ *Visitors at a flower garden at the rocky area, Nhật Tân*

Therefore, to promote ecotourism of middle islands, mudflats and rocky dunes in the Red River, to meet the criteria of an ecological tourism site of Hà Nội, the local authority also needs to plan and manage this ecological tourism activity, develop entertainment maps, form sub-sectors providing services and tour route with local cultural products, implement fundamental research and investigations on natural resources, ecosystems of the Red River, from which to develop a planning… and has a plan to train professional staff on tourism...

In addition, the controlling of sand extraction activities prevents current changes and erosions of sand dunes and mudflats of the Red river. On the other hand, it is necessary to promulgate an ecotourism management mechanism, of which regulating on the maximum number of tourists and forbidding activities within tourism sites. It is necessary to formulate regulations to assign forest rangers to manage bird and wildlife hunting. In addition, it is necessary to support clean agriculture development to meet VietGAP standards, minimization of pesticides that cause environmental pollution and adverse impacts on natural ecosystems in the region. At the same time, it is necessary to promote the development of different tourism types such as: nature experience tourism (bird watching, wild insects, natural grass); agriculture experience tourism (participating in agriculture production with local people); flower watching, artificial and natural sightseeing tourism■

# ASEAN welcomes Bái Tử Long National Park, Việt Nam as 38th ASEAN Heritage Park

Endowed with unique ecosystems of marine and terrestrial mountain lands, limestone mountains, islets and diverse fauna and flora, the Bái Tử Long National Park (BTLNP) joined the network of Asean Heritage Parks (AHPs) - the best of the best protected areas that preserve a complete spectrum of representative ecosystems in the Southeast Asian region.

The ceremonial AHP launch, held recently in City Convention Center, Hạ Long, Quảng Ninh province, was attended by around 500 guests, was graced by the presence of Roberto V. Oliva, executive director of the Asean Centre for Biodiversity (ACB); Corina Warfield, deputy director of Environment and Social Development Office, United States Agency for International Development; Hiroki Miyazono, chief technical adviser, Japan International Cooperation Agency; Nguyễn Song Hà, Food and Agriculture Organization Vietnam; Dr. Hoàng Thị Thanh Nhàn, deputy director, Biodiversity Conservation Agency (BCA); Harald Leummens, deputy director, United Nations Development Programme Vietnam; Lê Thanh Bình, Vietnam Association for Conservation of Nature and Environment; and heads of BCA.

Bái Tử Long is the sixth AHP in Việt Nam, which include Ba Bể National Park, Chư Mom Ray National Park, Hoàng Liên Sa Pa National Park, Kon Ka Kinh National Park and U Minh Thượng National Park. Considered as a natural gem, BTLNP is a treasure trove of wonders from ridge to reef. It consists of numerous flora and fauna dotted with karst limestone mountains and islets comparative to its neighboring Hạ Long Bay. The park has a total area of 15,783 hectares, total marine area of 9,658 hectares and the remaining 6,125 hectares is composed of islands. Tropical evergreen forests on the limestone island include broadleaf evergreen forests on soil islands, mangrove forests, seagrass cover, coral reefs and valleys between limestone mountains of which the presence of "Tung ang" ecosystem mark its unique features. The whole park area was designated to be in-situ conservation. The director of Biodiversity Conservation Agency, Dr. Phạm Anh Cường, said the biodiversity of Quảng Ninh, in particular, is at risk because of some economic activities.

Challenges in conservation of environment exist, as pollution is still prevalent because of consumptive use of biological resources. With this, Dr. Cường commended the People's Committee of Quảng Ninh in taking action, such as the establishment, of policies and strategies for environment protection.

Bái Tử Long National Park Director Nguyễn Thanh Phương said biodiversity and sustainable tourism is the main battle cry of the Peoples' Committee of Quảng Ninh in making resources sustainable by infusing biodiversity conservation in plans and programs.

ACB Executive Director Roberto V. Oliva acknowledged the passionate effort of Vietnam in biodiversity conservation. He said Việt Nam has proven its leadership in developing concrete platforms to implore its call for environmental protection and conservation. Bái Tử Long National Park is now a part of the AHP family, where the doors for many opportunities along institutional and capacity development are ready for access. The ACB serves as the secretariat of the AHP Programme. Protected areas benefit from being declared as an AHP through capacity-building activities for park managers and stakeholders in the form of various learning events, such as trainings and workshops.

AHPs also receive technical assistance from the AHP secretariat, through ACB in-house experts and network of partners. Being an AHP also increases its visibility as a prime ecotourism destination and model for effective protected area management through the Communication, Education and Public Awareness program of ACB.

Participation of and collaboration among AHP stakeholders in the implementation of research and development programs and projects are also maximized and strengthened when a protected area is declared as an AHP. The AHP Programme also provides a regional platform for information sharing among AHPs by way of AHP Committee Meetings and AHP Conferences. Parks declared as AHPs are first in line for available funding through ACB programs and projects.

**Việt Nam pioneers ABS decree among ASEAN Member States**

Việt Nam became the first ASEAN Member State (AMS) to pass a law in support of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharinng of Benefít, through its Decree No.59/2017/ND-CP.

Through the joint efforts of the Ministry of Natural Resources and Environment, the Ministry of Agriculture and Rural Development, and other concerned parties, the Government of Việt Nam approved the law, entitled "Decree on The Management of Access genetic Resources and the Sharing of Benefits Arising from Their Utilization". The decree was approved last 12 May 2017 as Viet Nam's stride in integrating the Nagoya Protocol into its law.

The decree had been outlined since 2014 to provide a transparent, legal framework for Access and Benefit Sharing (ABS) of genetic resources, and went through public consultation and discussions among cabinet members, ministries, and representatives from different institutions. In addition to being Viet Nam's step in achieving a concrete legal framework for ABS, the Decree was also the next foot forward for Viet Nam's Law on Biodiversity, which was enacted in 2008.

Ms. Nguyễn Đặng Thu Cúc, Head of the Genetic Resources and Biosafety Management under the Ministry of Natural Resources and Environment stated that the decree would make the process of acquiring license to access to genetic resources and its benefit sharing easier and more functional. "We hope that this decree will be operational in the process of acquiring a license." Mrs. Cúc said. The Decree covers several provisions, including the parties that are involved, the Competent National Authority that would grant the license, the contract between the Provider and the Accessor, and the procedures, all subject to a set of clear and specific requirements in order to gain a license for ABS. The renewal of license might be achieved only if a permission would be submitted months prior to the expiration of the license. However, any violation to the terms stated in the decree would mean revoking of license.

Moreover, Ms. Cúc thanked the experts and organizations, including the ASEAN Centre for Biodiversity, for helping Việt Nam achieve this step in promoting ABS in the country■

**Thu Hằng**

# 53 pangolins released to the wild

Save Vietnam's Wildlife (SVW) and Cúc Phương National Park have successfully released 53 Java pangolins (Manis javanica) to the wild. The animals were released on May 6, bringing the number of pangolins returned to their natural habit within a week to 93 - the largest pangolin release in Việt Nam, stated by SVW.

Earlier, late in April, 40 pangolins were set free. The lucky mammals were among 113 pangolins that the environment police in Hòa Bình Province seized from illegal wildlife traders in April. The animals recovered after a month of being taken care of by conservationists at SVW.

Pangolins are facing the threat of becoming extinct in Việt Nam. Although trade of the animal is banned worldwide, pangolins are still being caught as their meat is considered by some as a delicacy, while there are others who believe their scales can be used in treatment.

Nguyễn Văn Thái, director of SVW, said pangolins were among the animals most difficult to rescue on this planet. They were considered special and only ate ants and termites. More than 400 pangolins have been rescued from traffickers over the past eight months. Of these, 303 pangolins have been successfully released to the wild.

Save Vietnam's Wildlife (SVW) is a national non-profit organization founded to provide more effective solutions to secure a future for Vietnamese wildlife■

**Phương Hạnh**

*(VNS source)*

# New plant species found in Sơn Trà Nature Reserve

The Southern Institute of Ecology has discovered 3 new plant species unknown to the world in the Sơn Trà Nature Reserve during a 3-year research and revaluation of its biodiversity, Dr Lưu Hồng Trường told a recent scientific conference in Đà Nẵng.

"These may be the newest plants found in the world as we have yet to hear any reports of these plants, and they (plants) have not been given an official name," Trường told *Việt Nam News*. "We found these plants in 2016. We plan to send our scientific research on these plants to the Global Science Journals as an official report and recognition of the world newest-found plant species," Trường said.

He said the research project had updated the rich biodiversity of the Sơn Trà Reserve, listing 370 animal species and 1,010 plant species, compared to 287 animal species and 985 plant species previously recorded. Trường said the reserve, 600 metres above sea level, is rare given its rich population of fauna and flora spreading from jungle to ocean over a relatively small area. He said the 4,439 ha reserve will be a draw for biologists, conservationists and scientists worldwide.

According to the latest report about the reserve, the reserve, 10km away from Đà Nẵng City's downtown, has 43 plant species listed as endangered in Việt Nam's Red Book and the International Union for Conservation of Nature (IUCN). The report said 5 wild species, including the endangered red-shanked douc langurs (*Pygathrix nemaeus*); Pygmy slow loris (*Nycticebus pygmaeus*); pangolin (*Manis Javanica*); lesser short-nosed fruit bat (*Cynopterus brachyotis*); the Indian muntjac or red muntjac (*Muntiacus vaginalis*) were found living in the reserve.

▲ *More than 1,300 endangered red-shanked douc langurs (Pygathrix nemaeus) can be easily found in the Sơn Trà Nature Reserve (GreenViet source)*

Two species - the red-shanked douc langurs and pangolin - are listed as endangered species by the IUCN. In 2016, IUCN agreed to promote the red-shanked douc langur as a Critically Endangered (CR) species, granting it termless protection status in the world. The endangered species living in the Sơn Trà Nature Reserve were also declared as deserving special protection by Vietnamese law, including Government Decree No.32 issued in 2006 and Government Decree No.160 of 2013 on management of endangered, precious and rare forest plants and animals.

According to the latest report from GreenViet - the centre for biodiversity research and conservation, more than 237 herds of red-shanked douc langurs, comprising over 1,300 individuals, are living in the Sơn Trà Nature Reserve.

Biologists and scientists warn that the development of concrete buildings around the reserve, mostly holiday beach resorts, would soon push the endangered primates into extinction.

Last year, Huỳnh Đức Thơ, chairman of the Đà Nẵng People's Committee, dismissed rumours that a cable car system will be built in the reserve and a vast area of the reserve, including sea areas and forest, will be developed into an entertainment park. He said that was just an idea proposed by a property developer■

**Nguyệt Minh**
*(VNS source)*

# 40 black shanked douc langurs found

Some 40 black shanked douc langurs (Pygathrix nigripes), divided into 3 herds, have been found living on Chứa Chan Mountain in southern Đồng Nai Province's Xuân Lộc District. This is the highest number of black shanked douc langurs found in the area. The black shanked douc langur belongs to group 1B - the group of endangered species that needs priority protection under Vietnamese regulations.

The discovery was made when the local forest management and relevant agencies conducted searches on the mountain after they were informed by locals about the appearance of black shanked douc langurs in the area.

Deputy Head of the district's Forest Management Department Tôn Hà Quốc Dũng, said 2 herds were discovered living at a height of 300m, while the third herd was living at a height of 600m. Forest rangers found many baby and pregnant black shanked douc langurs in the three herds, he said. The department has taken measures to protect the black shanked douc langurs, he added. Locals were told to be friendly if they saw a black shanked douc langur. Hunting of the species was totally banned, he added■

**Huy Hoàng**
*(VNS source)*

CÔNG TY CỔ PHẦN PHÂN BÓN BÌNH ĐIỀN

# BỘ SẢN PHẨM CHO CHƯƠNG TRÌNH

# CANH TÁC LÚA THÔNG MINH THÍCH ỨNG VỚI BIẾN ĐỔI KHÍ HẬU 13 TỈNH ĐBSCL


Bón lót trước khi xuống giống

Bón thúc cây tăng trưởng và đón đòng