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**TIME FOR NATURE AS WORLD ENVIRONMENT DAY
SHINES A SPOTLIGHT ON BIODIVERSITY**





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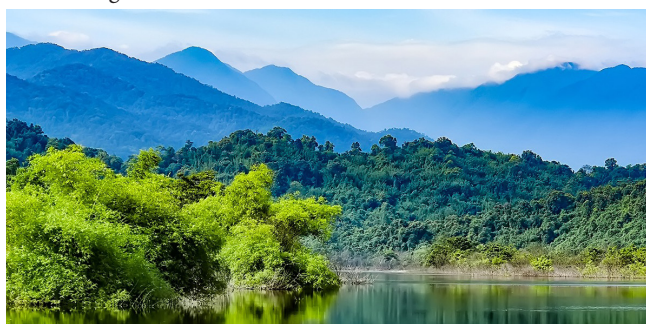
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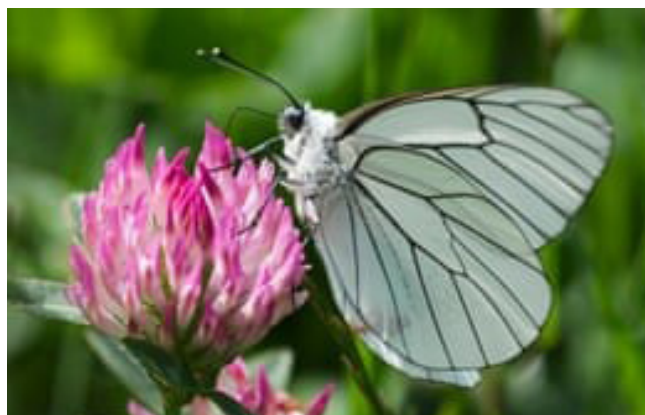
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National Assembly discusses the Draft Law on Environmental Protection (amended)

Continuing the 9th Session of the 14th National Assembly (NA), the NA held the plenary discussion at the NA hall (on 18th June, 2020) and group discussion (on 11th June 2020) on the amended Law on Environmental Protection (LEP).

At discussion sessions, comments from 152 NA delegates were recorded, including 132 delegates speaking at group discussions and 20 delegates speaking in the hall. The delegates basically agreed on the need to enact the Law and highly appreciated the efforts and determination of the Government, the Drafting Board in submitting to the NA the Draft LEP (amended) including 16 chapters, 186 articles. In particular, the delegates said that the Draft LEP has completely amended and supplemented the provisions on rights, obligations and responsibilities of agencies, organizations, households and individuals in environmental protection activities; State management responsibilities on environmental protection... in the direction of strongly renewing management mechanisms, measures and tools in environmental protection activities in accordance with national and international practices, improving the effectiveness of state management of environmental protection. The Draft LEP also comprehensively systematized subjects, fields and aspects of environmental protection. Many provisions in the Draft LEP have legalized policies and solutions to remove current shortcomings and obstacles; to simplify administrative procedures in current environmental management processes.

Besides, the delegates also highly appreciated the Drafting Board for taking a new approach, bringing more new categories to meet the requirements of management and sustainable development goals such as economic instruments for environmental protection, environmental auditing, circular economy, green economy, economics-environment, environment industry and climate change responses... Environmental regulations and standards are focused on as a set of tools to support



▲ The NA holds a plenary discussion in the hall about the Draft Law on Environmental Protection (amended) on 18 June 2020

environmental management. The role of stakeholders, including the system of Fatherland Front, socio-political organizations, social organizations and communities in environmental protection, has also been further emphasized and clarified. Some contents such as: Environmental impact assessment; inspection and investigation in environmental protection; water environmental protection; biodiversity and natural landscape protection, climate change responses; increasing investment and funding for environmental content to ensure 3 pillars of economy - society - environment were discussed by the delegates.

Speaking at the discussion sessions, Minister of Natural Resources and Environment Trần Hồng Hà emphasized that, with the enthusiastic comments of the delegates, the Drafting Board will continue to update, supplement and complete the Draft LEP so that when the Law is enacted, it will come to life with feasibility and ensure consistency between this Law and other laws. With the issues that the NA delegates are concerned about transboundary and transnational environmental pollution such as air, water, security related to biosafety, the Drafting Board will study and present more clearly based on specific calculations, forecasts. Minister Trần Hồng Hà hoped that this Law would change the current environmental pollution, degradation and meet the aspirations of social strata, ensuring the sustainable development of the country.

In the coming time, the NA Standing Committee will hold a specialized NA meeting to discuss and ask for additional comments from the NA delegates on this content.



Some comments of delegates on the content of the Draft LEP (amended)



DELEGATE NGUYỄN THỊ YẾN (DELEGATION OF BÀ RỊA - VŨNG TÀU PROVINCE): *NEED 3 - 5% OF GDP FOR ENVIRONMENTAL PROTECTION PILLAR*

The LEP 2014 has achieved important results in environmental security, environmental protection, people's health and ecosystems. However, during the implementation process, the Law also has some existing problems such as not updating the new trend, management decentralization is not clear and not tight, the implementation of environmental protection in accordance with international law is not guaranteed. Therefore, it is necessary to comprehensively amend the LEP to meet the current practical situation, forecast for the coming time on climate change, industrialization of the country. However, the environmental protection expenditure should be from 3 - 5% of annual GDP to focus on the pillar of environmental protection.



DELEGATE ĐẶNG QUỐC KHÁNH (DELEGATION OF HÀ GIANG PROVINCE): *INCREASE INVESTMENT IN AUTOMATIC ENVIRONMENTAL MONITORING*

From the Formosa lesson in Hà Tĩnh, there are many things that need to be addressed when developing the LEP (amended). Especially, the State needs to invest, especially in the budget for environmental protection. The proposed Law of 2% budget for environment is not enough; it must be higher because it also covers investment in environmental management. Therefore, the State needs to increase funding to invest in automatic monitoring, connecting the monitoring points to the environmental monitoring units at departments of natural resources and environment (DONREs) and Ministry of Natural Resources and Environment (MONRE). Also, businesses are required to have this monitoring system to monitor and supervise.



DELEGATE NGUYỄN THỊ LAN (DELEGATION OF HÀ NỘI CITY): *PROMOTE COMMUNICATION AND EDUCATION TO RAISE PUBLIC AWARENESS ABOUT ENVIRONMENTAL PROTECTION*

The NA and the Government's research, development and completion of the Law are one of the important foundations for sustainable socio-economic development. In order for the Law to come to life and to be highly feasible, it is necessary to fully apply the principles of pollution and benefit from the environment, pay a reasonable fee and at the same time have an effective policy to mobilize the whole society to engage in environmental protection and have specific provisions for treatment and recycling. With toxic and hazardous wastes, there must be specific provisions to control them and avoid negative impacts on the environment. In particular, it is necessary to promote communication and education to raise public awareness, so that environmental protection becomes a matter of self for each person, thereby mobilizing the whole community to participate in environmental protection.



DELEGATE LÊ QUANG TRÍ (DELEGATION OF TIỀN GIANG PROVINCE): *NEED TO SUPPLEMENT PROVISIONS ON BANNING THE SPREAD OF MICROORGANISMS TO THE ENVIRONMENT*

Currently, with the development of biotechnology, scientists have been creating new strains for production, healthcare and for the people. However, this also creates organisms that are dangerous to the environment and human health. Therefore, the Draft Law needs to supplement provisions on banning the release of microorganisms into the environment. Also, it is prohibited to import and use outdated technologies and equipment that consume a lot of energy and pollute the environment. If preventing from the beginning, businesses do not need to spend a lot of money to dispose wastes, reduce production costs, increase competition, facilitate state management agencies in inspection, investigation and monitoring.

HỒNG NHUNG



Minister Trần Hồng Hà presented the Presidential Friendship Medal to Mr. Jung Gun-Young - Chief Representative of KEITI

On July 10, in Hà Nội, at the Ministry of Natural Resources and Environment's Preliminary Meeting regarding the review of the first half year of 2020, authorized by the President Nguyễn Phú Trọng of the Socialist Republic of Việt Nam, Minister Trần Hồng Hà awarded the Presidential Friendship Medal to Mr. Jung Gun-Young-former Chief Representative of Korea Environment Corporation (KECO), Director of Vietnam - Korea Environmental Industry Cooperation Center (which is established by the Korea Ministry of Environment) and Chief Representative of Korea Environmental Industry and Technology Institute (KEITI) – in recognition of his contributions in building cooperations and friendship between Việt Nam and Korea, as well as promoting institutional framework, technical capacity and human resources for environmental protection and sustainable development in Việt Nam.

Mr. Jung Gun-Young has more than 14 years of working experiences in Việt Nam (from 2006 to present) and has held many important positions responsible for promoting environmental cooperation activities between the two Governments of Việt Nam and Korea. He actively participated in many technical and financial support projects from the Korean Government in Việt Nam, strengthening not only the wave of investment from Korea into Việt Nam, but also the diplomatic relations between two countries in the field of environment and sustainable development. At the same time, his continuous and enormous efforts in supporting the set-up of joint ventures of environmental



▲ Minister Trần Hồng Hà was authorized by the President Nguyễn Phú Trọng to award the Presidential Friendship Medal to Mr. Jung Gun-Young

businesses, training activities for Vietnamese Government officers and experts, promoting the construction of technical infrastructure projects for environmental protection, climate change and sustainable development.

Moreover, Mr. Jung Gun - Young is also well - known for his advices on policy formulation and technology transfer in the environmental field and his efforts of coordinating the Korean Government's funds to support trade promotion, technology transfer and investment in environmental infrastructure.

In order to share his knowledge and lessons with the Vietnamese community of scientists and managers, he has been also heavily involved in research activities and has studied at Hà Nội National Economics University (Master Degree in Public management and Economics) and Việt Nam National Academy of Public Administration (Doctoral Degree in Public Administration).

With all the positive contributions mentioned above, Mr. Jung Gun-Young has received many noble awards from both countries since 2006, namely: Minister Awards from Vietnam Ministry of Natural Resources and Environment (MONRE) and Việt Nam Ministry of Construction; a Memorial Friendship Medal from (MONRE), and Minister Awards from Korea Ministry of Environment.

PHẠM TUYỀN



Time for Nature as World Environment Day shines a spotlight on biodiversity

As nations of the world strive to contain the COVID-19 pandemic, World Environment Day (WED) 2020 brings into sharp focus the importance of fundamentally shifting humanity's relationship with nature to preserve our societies and prevent future pandemics.

This year - despite the ongoing pandemic that has devastated the global community - Colombia and Germany co-hosted the main WED celebrations, streamed live online from Bogotá.

With our ever-increasing demands, humans have pushed nature beyond its limits. In the last 50 years, the human population has doubled; the global economy and trade have grown nearly fourfold and tenfold, respectively. The emergence of COVID-19 has underscored the fact that, when we destroy biodiversity, we destroy the very system that supports human life. By upsetting the delicate balance of nature, we have created conditions for pathogens—including coronaviruses—to spread.

In spite of logistical limitations as a result of the pandemic, Governments, the private sector, civil society and individuals across the globe today joined in WED events, announcements and calls to acknowledge the importance of nature to our health, our economies and our societies.

In Canada, Minister of Environment and Climate Change Jonathan Wilkinson announced over 60 conservation projects under development. Funded through the Canada Nature Fund's Target 1 Challenge initiative, these projects aim to conserve biodiversity, protect species at risk and enhance the ecological integrity, connectivity and size of Canada's protected areas. The projects move Canada closer to its goal of protecting 25 percent of its lands and 25 percent of its oceans by 2025.

In Perú, the President Martin Vizcarra traveled to the Tambopata National Reserve in the Amazon, to supervise the progress of the production of 741.238 seedlings for reforestation and to enhance support to local communities hard hit by the COVID-19 pandemic.

In Kenya, a ban on all single-use plastics in the country's national parks, beaches, forests and other protected areas took effect



today. Ethiopian Prime Minister launched a push for five billion new trees as part of the country's Green Legacy initiative.

In Southeast Asia, Thailand's Deputy Prime Minister Prawit Wongsuwon and Minister of Natural Resources and the Environment Varawut Silpa-archa launched a national plastic recycling campaign. Vietnam's Ministry of Natural Resources and Environment launched their Action Month for the Environment under the "Time for Nature" theme, while the Wild For Life campaign was launched in Bahasa Indonesia.

In India, the Ministry of Environment, Forests and Climate Change and UNEP's India Office announced an urban forest program in 200 cities, while UNEP and TED-Ed's "Earth School" was incorporated into the Ministry of Human Resources' digital platform for teachers, DIKSHA.

British Prime Minister Boris Johnson announced £10.9 million to protect rare wildlife and habitats, including turtles in the British Virgin Islands, penguins in South Georgia and the South Sandwich Islands, the coral reefs in the Comoros, and chimpanzees in Uganda...

A number of world leaders, as part of what is called The High Ambition Coalition for Nature and People, endorsed a statement for the day, calling "on all Governments around the world to retain our precious intact ecosystems and wilderness, to preserve and effectively manage at least 30% of our planet's lands and oceans by 2030 and to restore and conserve biodiversity, as a crucial step to help prevent future pandemics and public health emergencies and lay the foundations for a sustainable global economy through job creation and human well-being".

Expressing solidarity with countries working to contain the pandemic, UNEP's Executive Director Inger Andersen noted that environmental protection is integral to building back better, adding that the world needs multilateral solutions to environmental challenges that transcend communities, boundaries and countries. "The world is too big and interconnected for anybody to go it alone in the face of the environmental problems challenging our species" ■

VŨ NHUNG (UNEP source)

Việt Nam celebrates World Environment Day 2020



▲ MONRE Deputy Minister Võ Tuấn Nhân speaks at the meeting

On June 3rd, 2020, in Hà Nội, the Vietnam Environment Administration (VEA) under the Ministry of Natural Resources and Environment (MONRE) held a meeting to celebrate World Environment Day (WED) 2020, which is themed “Time for Nature”.

ACTIVITIES RESPONDING TO WED 2020 AND THE ACTION MONTH FOR ENVIRONMENT

Speaking at the event, MONRE Deputy Minister Võ Tuấn Nhân extended his warm congratulations to officials, civil servants, public employees and workers in the environmental industry on the occasion, wishing them good health to make continued devotion to the natural resources and environment sector, thereby contributing to promoting the country’s sustainable socio-economic development. He stated that WED (June 3) is a meaningful annual event for the natural resources and environment industry and a festival for environmental workers. It was also chosen as the moment to kickstart the Action Month for the Environment.

In recent times, with the support of the Party, Government, Central agencies, localities and international organizations, environmental protection work has received remarkable attention from the whole society, with a wide range of activities for a sustainable envi-



▲ Delegates symbolically sign for commitment to protecting the nature and biodiversity

ronment having been simultaneously implemented in a substantive and effective manner.

In response to WED, Việt Nam has come up with an array of slogans such as “Harmony with nature - conservation of biopersistency”, “The Earth needs us! Stay united against climate change”, “Use utensils from recycled materials” and “Fishing the wrong way is destroying the biological balance”. Other phrases include “Using green materials contributes to environmental protection”, “Rational use of biopersistency resources”, “Biopersistency - Journey to maintain life”, “Biopersistency - True awareness” and “Action for nature - Our responsibility”.

As part of the program, leaders of MONRE, its affiliates and the VEA symbolically signed their commitment to preserving nature and biodiversity. Delegates also joined in a bicycle parade with relevant banners and slogans in order to raise awareness of using zero-emission and eco-friendly vehicles and spread a message of environmental protection in the community.



▲ MONRE Deputy Minister Võ Tuấn Nhân, VEA General Director Nguyễn Văn Tài and delegates join in a bicycle parade to spread the message of environmental protection

On the occasion, the VEA launched a photo contest on biodiversity conservation and organized a seminar featuring young people and their work on preserving nature and biodiversity.

Particularly, MONRE coordinated with the Thừa Thiên - Huế Provincial People's Committee, the Thái Bình Provincial People's Committee and relevant units to announce the establishment two wetland conservation areas: Thái Thụy in Thái Bình Province and Tam Giang - Cầu Hai Lagoon situated in Thừa Thiên - Huế Province.

VIỆT NAM MUST AFFIRM ITS BIOPERSITY COMMITMENTS TO THE WORLD

Việt Nam has been recognized as one of 16 highly diverse countries in the world. There are 173 protected areas across the country covering more than 2.500 hectares, including 33 national parks, 66 natural reserves, 18 species and habitat conservation areas and 56 landscape protection areas. Việt Nam now has 9 Ramsar sites with a total area of over 120.000 hectares, in addition to 10 marine conservation areas on 188.000 hectares and nine areas recognised as World Biosphere Reserves covering more than 4,2 million hectares. In 2019, four more protected areas in Việt Nam were recognised as ASEAN Heritage Parks by the ASEAN Secretariat, bringing the total number of ASEAN Heritage Parks in the country to 10.

Deputy Minister Võ Tuấn Nhân stated that recent years has seen the biodiversity

conservation draw the participation of many Ministries, sectors and localities, along with both domestic and international conservation organisations, ultimately serving to achieve remarkable results. Conservation of natural ecosystems and endangered wild species, along with the strengthening of Law enforcement on the protection of wild species has strengthened in recent years as a means of preventing the trading and consumption of endangered species, contributing to the protection of biopersity of Việt Nam and the world.

Throughout 2019 and since the start of the year, 40 decisions were issued which permit the transfer of genetic resources abroad as a means of serving non-commercial studies and research of eligible organisations and individuals. The nation has been thorough in carrying out a strategic environmental assessment and environmental impact assessment in an effort to control the impacts of socio-economic development activities on biopersity.

In addition, plans and projects which could affect ecosystems, species and nature reserves are all focused on assessing the overall impact on biopersity in order to devise preventive measures aimed at reducing the negative impact on the environment and biopersity as a whole.

Before entering the "ecosystem restoration decade", Deputy Minister Võ Tuấn Nhân put forward the notion that the nation must be proactive in affirming its contributions in order to achieve common global goals. This can be achieved by adopting new policies, implementing strategies, plans and schemes to add to the conservation and sustainable use of biopersity, restoration of degraded forest, sea and wetland ecosystems and effective conservation of species and genetic resources.

It is necessary to carry out synchronised tasks, solutions and to prioritise the implementation of key tasks, particularly in the process of amending the Law on Environmental Protection, paying attention to regulations on the protection of natural landscapes and biopersity, reducing the impact from socio-economic development activities to biopersity as a solution to ensure sustainable development", the Deputy Minister noted■

PHƯƠNG LINH (Vietnamplus source)

Access to genetic resources and sharing of benefit raising from their utilization: Policies and practices implemented in Việt Nam

HOÀNG THỊ THANH NHÀN, TRẦN TRỌNG ANH TUẤN
NGUYỄN BÁ TỬ

Nature and Biodiversity Conservation Agency (VEA)

Located in Indochinese peninsula, Việt Nam is known for its species richness and ranked 16th in the world for genetic diversity. To date, Việt Nam has identified more than 51.400 species, including 7.500 species/strains of microorganisms; 20.000 plant species; 10.900 terrestrial animals; 2.000 species of invertebrates and freshwater fish; over 11.000 species of marine organism. The genetic resource (GR) plays an important role in the country's socio-economic development. The conservation and sustainable use of GRs will contribute to the development of many economic sectors, especially agriculture, forestry and fisheries, pharmaceuticals, environmental protection and sustainable development of the country. However, in recent years, in context of globalization, population growth and requirements of economic development, Vietnamese GRs are being gradually lost. Recognizing the importance of biodiversity in general and the great value of GRs in particular, over the past time, Việt Nam has joined international treaties and issued legal framework on conservation and sustainable use of GRs.

THE NAGOYA PROTOCOL ON ACCESS TO GRS AND THE FAIR AND EQUITABLE SHARING OF BENEFITS ARISING FROM THEIR UTILIZATION TO THE CONVENTION ON BIOLOGICAL DIVERSITY

The Nagoya Protocol on Access to GRs and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity (CBD) was adopted at the 10th Conference of the Parties to the CBD (CBD COP10) on October 29, 2010 in Nagoya, Japan. The adoption of the Protocol is considered a success of CBD COP10, which is one of the international legal instruments that contribute to preventing the illegal use and infringement of national biological resources.

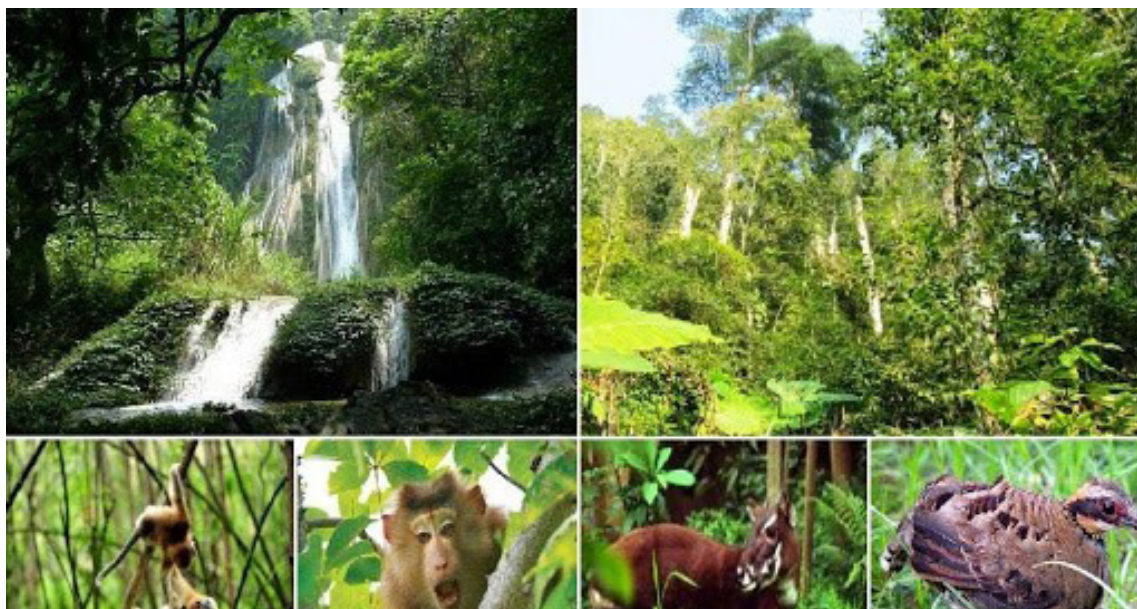
The Nagoya Protocol for the first time regulates some basic issues to ensure the implementation of access to GR and the benefit sharing from their utilization (ABS) such as: definitions of goals and terms, scope and relationship with other international instruments, key principles and requirements on fair and equitable benefit sharing in accessing to GR, traditional knowledge, mechanisms for implementation including multilateral benefit-sharing mechanism and an ABS information exchange mechanism, awareness raising, capacity building and technology transfer on ABS.

As of March 2020, more than 120 countries have signed the Nagoya Protocol. Việt Nam ratified the Protocol in 2014 and is the 31st Party of the Protocol. Participation in the Nagoya Protocol shows the determination of the Việt Nam's Government in the conservation and sustainable use of biodiversity resources. In addition, joining the Nagoya Protocol creates favorable conditions for Việt Nam in a number of activities such as creating a solid legal basis for protecting the rights and fair benefit of GRs' and TK's Provider; contribute to fulfilling international obligations to which Việt Nam is a member, especially the CBD and the Rio Declaration on Sustainable Development; create opportunities for Việt Nam to approach international donors in supporting capacity building on this issue; raise awareness on GR management, promote the sustainable utilization of GR, traditional knowledge associated to GR, contribute to improving the livelihood of the community and biodiversity conservation.

POLICIES AND LEGAL FRAMEWORK ON ACCESSING TO GRS AND BENEFIT SHARING IN VIỆT NAM

The contents of ABS were first defined in the Law on Biodiversity (LB) 2008 from Article 55 to Article 61. At that time, the Nagoya Protocol was not approved, therefore these regulations were built in the spirit of the CBD to which Việt Nam has been a member since 1994. Basing on that, accessors are obligated to share benefits to the State, providers and other relevant stakeholders as prescribed. However, the provisions on ABS in the LB are only basic framework regulations, requiring detailed guidance to be practically implemented.

In order to guide the contents of ABS in the LB and fulfill Vietnamese obligations as a member country of the Nagoya Protocol, the Ministry of Natural Resources and Environment (MONRE) has presided over and coordinated with the relevant Ministries in elaborating and submitting to the Government for promulgation the Decree No. 59/2017/ND-CP dated May 12, 2017 on management of GR and access and benefit shar-



▲ *The benefit sharing mechanism from the use of GRs will contribute to the conservation and sustainable use of biodiversity*

ing from their utilization. The Decree has taken effect from July 1, 2017 and replaced the Provisions of Article 18, Article 19 and Article 20 on ABS in Decree No. 65/2010/ND-CP of June 11, 2010 of the Government on detailing and guiding the implementation of a number of articles of the LB. The Decree No. 59/2017/ND-CP includes following main provisions:

- *Organizations and individuals who are required to register and apply for a License to access GR, including:* Vietnamese organizations and individuals wishing to access GRs for research for commercial purposes and development of commercial products; foreign organizations and individuals wishing to access GR on Vietnamese territory for any purpose; Vietnamese organizations and individuals wishing to bring GR abroad, except for cases of bringing GRs abroad for study or research purposes for non-commercial purposes.

- *Procedure of registration and application for a License to access GR includes 5 steps:* Register to access GR with national competent authority; Negotiate and sign the Contract with the Provider; Request the communal People's Committee to certify the contract; Submit application for a License to access GR to a national competent authority; Provide additional information and documents; Complete application when required. Processing time varies from applications for commercial to non-commercial purposes are, respectively, 90 days and 30 days.

The Decree also stipulates a simplified procedure for granting permit to transfer GR abroad for non-commercial study and research which applied for Vietnamese students, graduate students, scientific and technological organizations. Accordingly, the processing time for the application is 15 days. This Provision aims to create favorable conditions for promoting domestic scientific studying on GR and complies with the content of Article 8 of the Nagoya Protocol.

- *Benefit sharing from GR's utilization, the Decree stipulates sharing benefits from using GR in both monetary and non-monetary forms.* Monetary benefits include: Fee for sampling of GR; royalties; franchise fee; Lump sum or milestone payments as agreed; Other monetary benefits arising during utilization of GR. Non-monetary benefits include: Sharing of research results; Rights to be involved in collaboration on the research, development and production of commercial products; Rights to have access to scientific and technical information related to the GRs; Technology transfer to Providers of GRs; Training and capacity building for Providers in research and development of GRs; Joint intellectual property rights corresponding to the percentage of contributions to innovative results based on access to GRs; Other non-monetary benefits.

The benefit-sharing mechanism will help stakeholders promote research to develop and apply results from utilization of GR, thereby helping to conserve and sustainably use of biodiversity.

- *Informing and reporting:* the Decree stipulates the mechanism of writing report on the results of the implementation of accessing to GR and benefit sharing to the national competent authority who has granted the License every 2 years, as required by the License and an unscheduled report upon request by national competent authority. At least 3 months after the end of a program of study or research, a student, a graduate student, or a Vietnamese science and technology organization shall report on the result of the study or research to the national competent authority who has allowed the transfer of GR overseas.

The issuance of Decree No. 59/2017/ND-CP marks Việt Nam as one of the first Parties of the Nagoya Protocol in the region to establish a relatively adequate legal framework for ABS. This is an important document to regulate practical activities on access to GR in Việt Nam. In order to support the evaluation and issuance of a License to access GR, on September 11, 2019, the MONRE issued Circular No. 15/2019/TT-BTNMT regulating the organization and operation of the Appraisal Committee of Application for licenses to access GR for commercial research and development of commercial products.

In parallel with the process of developing and promulgating Decree No. 59/2017/ND-CP, the MONRE also submitted to the Prime Minister to issue Decision No. 1141/QĐ-TTg on June 27, 2016, approving the Scheme of strengthening capacity on management of access to GR and equitable and fair sharing of benefits arising from utilization of GR in 2016-2025. The scheme identified specific tasks and solutions to strengthen the capacity of relevant agencies, ensuring that by 2025, the organizational system, management and technical tools on access to GR and benefit sharing from utilization of GR, traditional knowledge associated with GR are completed and operated effectively.

IMPLEMENTATION OF ACCESS AND BENEFIT SHARING ON UTILIZATION OF GR IN VIỆT NAM

Establishment of ABS authorities

Decree No. 59/2017/ND-CP stipulates the national focal point to implement the Nagoya Protocol and national competent authorities to grant, extend and withdraw licenses to access GR:

- National focal point for the implementation of the Nagoya Protocol: The MONRE is assigned by the Government in accordance with Article 5 of Decree No. 59/2017/ND-CP as the national focal point with following responsibilities: Implementing unified management and monitoring of activities on the granting, renewal and withdrawal of licenses for access to GRs; Acting as a focal point for liaising, providing information and coordinating information exchange with the Secretariat of the CBD via the Access and Benefit-sharing Clearing-House in accor-

dance with the Nagoya Protocol; leading the development of a national report on the implementation of the Nagoya Protocol in Việt Nam; proposing and implementing decisions of the Conference of the Parties to the Nagoya Protocol in accordance with Government's assignment; coordinating and organizing the implementation of national obligations to the Nagoya Protocol; Coordinating with other countries in implementing measures to comply with the Nagoya Protocol applied to the use of Vietnamese GRs in foreign countries; Organizing the implementation of bilateral and multilateral international cooperation for access to GRs and benefit sharing.

- National competent authorities to grant, extend and withdraw licenses to access GR: The MONRE and the Ministry of Agriculture and Rural Development (MARD) are assigned these task by the Government in accordance with Article 6 of Decree No. 59/2017/ND-CP. In which, the MARD grants, extends and withdraws licenses to access GR for plant varieties, livestock breeds, aquatic breeds and forestry varieties; The MONRE issues, extends and revokes the License to access GR for the remaining cases.

Carry out capacity building activities, raising awareness on ABS

As the national focal point for the implementation of the Nagoya Protocol and the implementation of the Prime Minister's Decision No. 1141/QĐ-TTg, over the past time, the MONRE has coordinated with Ministries, sectors and national and international organizations to carrying out capacity building and awareness raising activities on GR conservation and ABS in Việt Nam:

- Develop and disseminate documents guiding the implementation of Vietnam's regulations on ABS such as: Document guiding the implementation of Decree No. 59/2017/ND-CP, document "FAQ on ABS", materials on ABS models, leaflets on ABS for different target groups.

- Organize training courses and workshops to strengthen the capacity for access and benefit sharing management, raising awareness on the importance of the conservation and sustainable use of GRs.

- Conduct surveys and work with conservation facilities (research institutes, universities), management boards of protected areas on access and collect GR at the facilities and instructs them to apply relevant existing legal provisions in the area of access and benefit sharing.

- Providing guidance on activities to access GR and benefit sharing in Việt Nam: as a national focal point, MONRE has received requesting documents from domestic and foreign units and organizations on guiding the implementation of regulations on access and benefit sharing in Việt Nam. The majority of requesting for guiding to access GR which are research cooperation activities between universities, domestic research institutions and foreign partners. Purpose of access includes both commercial and non-commercial purpose with clear benefit-sharing terms. The MONRE has guided the organizations to comply with Vietnam's regulations on this issue, as well as in accordance with the provisions of the Nagoya Protocol.



Evaluation and issuance of licensing decisions related to GR access

After the Decree No. 59/2017/ND-CP takes effect, the MONRE and the MARD (national competent authorities grant, extend and revoke licenses to access GR) have received and appraised dossiers of application for licenses to access GR and register to transfer GR abroad, specifically:

- MONRE has received, appraised and issued one License to access GR for non-commercial research and more than 40 Decisions to allow transfer GR abroad for study and research for non-commercial purposes. Currently, MONRE is continuing to appraise 3 applications for licenses to access GR for commercial research and development of commercial products.

- The MARD has received and appraised 3 applications for licenses to access to GR for commercial research, development of commercial products and 3 applications for transfer GR abroad for study and research for non-commercial purposes.

Piloting public-private model on accessing GR and sharing benefits from utilization of GRs

Within the framework of the project "Capacity building for the ratification and implementation of the Nagoya Protocol on GR access and benefit sharing in Việt Nam" funded by the Global Environment Fund (GEF) through the United Nations Development Program (UNDP), the Nature and Biodiversity Conservation Agency in collaboration with the Department of Natural Resources and Environment of Lào Cai Province, the Department of Agriculture and Rural Development of Lào Cai Province, the Provincial People's Committee of Tả Phìn Commune (Sa Pa Town, Lào Cai Province) have implemented the integrated model public-private partnership on GR access and benefit sharing from utilization of GR. This model aims to create a mechanism to support local community to participate with relevant partners who are the private sector and scientists in the process of conservation GR and at the same time getting benefit from the agreement to access GR in the area.

Since being the member of the Nagoya Protocol, Việt Nam has fulfilled its obligations as a Party of the Protocol, urgently developed and issued policies and regulations on managing access to GR and benefit sharing as well as putting ABS policy into practice. However, ABS is a relatively new issue for Central as well as local agencies and GR Providers (Management Boards of Protected Areas, research units and private enterprises and communities), therefore, ABS management still faces many difficulties and challenges to put legal regulations into practice. So, there is need of active participation of the authorities and the community's cooperation in implementing regulations on conservation of GR and sustainable use of biodiversity. The good implementation of the ABS mechanism will promote economic development, support poverty reduction, improve the living standards of the community, make an important contribution to the conservation of biodiversity in general and genetic resources in particular■

According to the UNESCO definition, the Biosphere Reserve (BR) are coastal and terrestrial ecosystems that promote solutions reconciling the conservation of biodiversity with its sustainable use". The objective of the world BR is to ensure harmony between people and nature through the implementation of three main functions: conservation, development and support. Management approach to BR is made in an open, interdisciplinary and multi-field direction.

Based on the set goals, the BR has three functional areas: The core zone for long-term conservation of species diversity, landscapes and ecosystems; The buffer zone is surrounded or adjacent to the core zone where economic, research, educational and recreational activities can be carried out without affecting the core zone; The transition zone is at the outermost where economic activities remain normal on the basis of sustainable development of natural resources provided by the BR.

BR is not subject to international conventions or treaties, but is governed by a "soft law". The framework principle for BR was adopted by UNESCO General Assembly and all countries pledged to comply. The management of the BR depends on the policy of each country. The UNESCO Secretariat does not have a "supervisory function" but is responsible for each country through the MAB National Committee.

According to the Lima Action Plan for World BR 2016 - 2025, the BR is "national and regional demonstration models for sustainable development". The BR criteria are a set of ecosystems that represent large areas of biogeography, including areas of human impact at different levels; of important for biodiversity conservation; Creating opportunities to explore and demonstrate sustainable development practices at regional scale; Having an appropriate area to meet the 3 functions of the BR; There are sufficient appropriate zones to perform the above 3 functions of the BR.

BR IN VIỆT NAM

In Việt Nam, the National Committee for Man and the Biosphere Program (MAB Việt Nam) is a national focal point of UNESCO in Việt Nam, established since 1985, with the purpose of constructing and proposing BR for international recognition, supporting the management and maintenance of national and international connections in this field.

Việt Nam has joined the international activities in Man and the Biosphere Program with the contribution of 9 BRs into the World

Current Việt Nam brand orientations for management and conservation

Phd. NGUYỄN XUÂN DŨNG - *Deputy Director
Nature and Biodiversity Conservation Agency (VEA)*

BR network including: Cần Giờ; Đồng Nai; Cát Bà Archipelago; Red River Delta; Kiên Giang; Western Nghệ An; Cù Lao Chàm - Hoi An; Mũi Cà Mau; Langbiang. These BR are within a province or an inter-provincial area. The BR's Management Board or administration is of a part-time nature, varying from province to province such as management board at core zone also management board of protected areas or an independent unit in combination of management board of protected areas. Normally, the Head of the BR's Management Board is the leader of the Provincial People's Committee. At present, there are no guidelines and regulations for management of BR as well as funds for operation of BR.

Over the past time, it's the fact that management and operation of BRs have got advantage and achieved certain results, namely: Awareness at all levels and sectors about the role and functions of the BRs gradually raised; BRs have received the attention of many international organizations, international projects, scientists in the field of natural resources management; Many initiatives, models of nature conservation and biodiversity, improving livelihoods, com-

munity-based ecotourism model in BRs have been successfully implemented, contributing to the promotion of economic development and conservation of biodiversity and nature.

However, BRs management is still facing many difficulties and challenges. Due to BRs management is new approach integrating multiple sectors in sustainable management of natural resources at BRs, while regulations on organizational structure and management technical guidelines are not clear, even lack of creativity, so there is lack of closely coordination between staffs at all levels and sectors. The management of the BRs is related to many branches and sectors, most of the members of the Management Board are part-time staffs who hardly provide timely and adequate advises to Provincial People's Committee to make informed-decision on management of BRs; financial and technical resources for management and conservation in BRs are also limited.

From the perspective of state management, only national parks and protected areas have state management structure at all levels from local to central level, while BRs are only belong to network of MAP/UNESCO which is not under management of any Ministry. On the other hand, with large area, BRs have complicated natural and social conditions, be under a lot of pressure due to many socio-economic development activities that directly impact on management as well as the current status of natural resources in the area. The development of organization structure for BRs is much more difficult while many BRs located in inter-provincial area, in which each province has its own approach for development and conservation.



▲ *The Red River Delta BR has a total area of over 105.558 ha*



PROPOSING ORIENTATIONS FOR MANAGEMENT OF BRS IN VIỆT NAM

Strengthen the management of BRs, including institutionalizing the functions, tasks and organizational structure of management. In short term, priority should be given to address the management of the BR in the amended Law on Environmental Protection in 2014. And in long term, it needs to elaborate in Decrees and Circulars on management, as well as clearly define the functions and assign tasks of managing BRs for relevant Ministries and localities.

Developing a coordination mechanism among stakeholders, including the Ministry of Foreign Affairs, the Ministry of Science and Technology; building a management structure on BRs from Central to local levels.

Developing a BR Development Strategy to submit to the authorities for promulgation to direct the management approach of BR in Việt Nam.

Developing technical and management guidelines for BRs; guidance for developing management plan of BRs; guidance for developing resource management models, models of community livelihood improvement... For potential BR, it is necessary to guide the procedure and content of nomination to become a BR.

Focusing on capacity building, communication and awareness raising, raising awareness on the value of BRs and engaging stakeholders' involvement in management of BRs.

Promoting the development of a database for BRs integrating in the national biodiversity database system.

Continuing to mobilize resources and participation of international organizations to support for BRs.

The Man and the Biosphere Program (MAB) of the United Nations Educational, Scientific and Cultural Organization (UNESCO) was established in 1970. The concept of the BR and the first BR was established in 1974, World BR network was established in 1976. To date, the network has 669 BRs in 120 countries, of which Việt Nam has 9 BRs.

VEM: *Could you tell us about violations in illegally trading and consuming wildlife throughout the country in recent time?*

Mr. Nguyễn Quốc Hiệu: Recently, illegally trading wildlife in Việt Nam has become complicated, offenders are becoming more and more sophisticated, using many tricks to deal with the functional forces. According to statistics, in recent years, the national forest protection force has discovered and dealt with 466 cases of violation of management, protection of endangered, rare wildlife (239 cases in 2018 and 227 cases in 2019).

From the beginning of 2020 until now, the situation of acute respiratory infections caused by new strain of Corona virus has greatly affected extracting, trading and consuming wildlife in the whole country, so it has reduced the number of violations, both in terms of scale and severity of violations. Control of illegally transporting wildlife into Việt Nam has been strengthened by the functional forces on all 3 road, sea and air routes; Violating hot spots, wholesale markets often selling, slaughtering wildlife have basically been propagated, prevented and dealt with by local authorities. Besides, people's awareness about COVID-19 disease prevention and control has gradually changed the habit of consuming and using wildlife, thereby reducing illegally extracting, trading and transporting wildlife. As a result, in the first 4 months of 2020, the national forest protection force has discovered and dealt with 45 cases of violation of management, protection of endangered, rare wildlife; Compared to the same period in 2019, reduced 8 cases (equivalent to 16,6%); violations are basically small and less serious.

However, violations of illegally trading wildlife also take place with sophisticated tricks such as mixing illegally naturally-derived wildlife with legally breeding wildlife, or in other goods for transport, consumption... Especially, the offenders use the internet to conduct transactions on illegally trading wildlife, making it difficult for the functional forces to discover, investigate and deal with violations.



▲ *Forest protection officials checking the weight of pangolin individuals seized in a case of legal violation on trading and transporting wildlife*

Strengthen control and management of hunting, catching, trading and transporting wildlife



▲ Mr. Nguyễn Quốc Hiệu
- Deputy Director of Forest
Protection Department (Vietnam
Administration of Forestry, MARD)

Recently, illegally hunting, catching, trading, using and consuming wildlife, especially endangered, rare wildlife, has been complicated in many places. Some markets in the up-lands or in the Mekong Delta are still openly trading wildlife with species such as varan, pheasant, phasianidae, jungle fowl and other species of birds, leading to the extinction of many endangered wildlife species.

In order to understand the state of management of wildlife in recent time and propose solutions to enhance the effectiveness in control, management and protection of wildlife, the Vietnam Environment Administration Magazine (VEM) had an interview with Mr. Nguyễn Quốc Hiệu - Deputy Director of Forest Protection Department (Vietnam Administration of Forestry, Ministry of Agriculture and Rural Development (MARD)) on this issue.

Facing this situation, the Forest Protection Department has advised the Vietnam Administration of Forestry with many solutions to manage and seriously implement commitments in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); directed the local forest protection force to well perform the task of advising and strengthening the fight to prevent illegally trading, processing and consuming wildlife.

VEM: *Are current sanctions deterrent enough for violations of legal provisions on illegally hunting, catching, trading and transporting wildlife?*

Mr. Nguyễn Quốc Hiệu: For many years, the Government has mobilized significant resources for the biodiversity conservation, preventing and dealing with illegally hunting, trading and consuming wildlife; developed and improved the system of legal documents related to the management of wildlife species, control of extracting, breeding, processing and trading wildlife in accordance with international treaties. In particular, the Law on Biodiversity of 2008, the Law on Investment of 2014, the Criminal Code of 2015, amended in 2017 and the Law on Forestry of 2017, which clearly stipulate prohibited acts such as “Illegally hunting, shooting, catching, caging, slaughtering, storing, transporting or trading in forest animals, illegally col-

lecting specimens of forest plants or animal species”. Accordingly, the Criminal Code of 2015 (amended and supplemented in 2017) clearly stipulates two crimes about wildlife, including: Offences against regulations on management and protection of wild animals (Article 234); Offences against regulations on protection of endangered, rare wild animals (Article 244) which shall face a penalty to 15 years' imprisonment; be liable to a fine to VND 2 billion for individuals and VND 15 billion for legal entities.

In addition, the Prime Minister also issued Directive No. 03/CT-TTg of 20 February 2014 on strengthening the direction and implementation of solutions to control and conserve endangered, rare wildlife species and Directive No. 28/CT-TTg of 17 September 2016 on a number of urgent solutions to prevent and fight illegal acts against wildlife species.

Recently, management of wildlife continued to be strengthened through the Government's Decree No. 06/2019/ND-CP of 22 January 2019 on management of endangered, rare forest plants and animals and implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora; Government's Decree No. 64/2019/ND-CP of 16 July 2019 on amending Article 7 of Government's Decree No. 160/2013/ND-CP of 12 November 2013 on criteria for identifying species and managing species on the List of endangered, rare species prioritized for protection. In particular, on 25 April 2019, the Government issued Decree No. 35/2019/ND-CP stipulating the sanctions against administrative violations in the forestry sector in which illegally hunting, catching, caging, slaughtering (Article 21), transporting (Article 22), storing, trading and processing (Article 23) forest animals, products of forest animals, or parts which are inseparable from the life of forest animals will be fined up to VND 400 million for individuals and 800 million for organizations.



With the increase in penalties, it is important in the effort to protect wildlife because the practice shows that the application of strict criminal sanctions will increase general deterrence, prevention and contribute to reducing hunting, trading and consuming wildlife.

VEM: *Although management of wildlife has been increasingly strengthened, illegally hunting, trading, transporting and consuming endangered and rare wildlife and animals still occur complicated, so what is the cause?*

Mr. Nguyễn Quốc Hiệu: Illegally extracting, trading, transporting and consuming wildlife species is still complicated in some places, resulting from the following reasons: High profit from illegally trading wildlife (to be ranked behind, or nearly equal to smuggling weapons, drugs and trafficking humans), leading to a complex situation of illegally trading wildlife; Offenders use many sophisticated tricks to bypass the functional forces. In addition, with its geographical location adjacent to Laos, Cambodia and China with many border gates and seaports, Việt Nam is easily becoming a transnational transshipment point for wildlife. Meanwhile, a part of people are not fully aware, there is still a habit of using wildlife products, especially endangered, rare species.

Although the system of legal documents on illegally hunting, trading and transporting wildlife species has been completed, there are still many overlaps and inadequacies, making it difficult for Law enforcement forces in process of dealing with violations. Besides, there are also legal loopholes for offenders violating wildlife to take advantage. Also, the inspection and supervision in the process of farming wildlife in some localities still faces many difficulties, leading to some people taking advantage of the farming records to legalize wild-caught species. At present, Việt Nam has not had adequate studies on the growth and reproduction of some wildlife species in captive environment, making it difficult for management and supervision. In particular, the involvement of grassroots authorities in some places has not been really strong, leading to illegally trading, transporting and consuming wildlife still occurred.

VEM: *Facing the danger of epidemics due to the transmission of viruses from wildlife to humans such as the COVID-19 pandemic, what do you think should be done to strengthen the management and control of trading, transporting and storing wildlife?*

Mr. Nguyễn Quốc Hiệu: It can be said that illegally trading, transporting and consuming wildlife has the potential to spread diseases to humans such as SARS, H5N1 virus and recently SARS-CoV-2, threatening public health and the country's economic development. In order to strengthen the enforcement of laws on the management, control of trading and consuming wildlife in the new situation, MARD has submitted to the Prime Minister a Draft Directive on a number of urgent solutions for management of wildlife and the Directive requires MARD, Ministry of Natural Resources and Environment, Ministry of Public Security, Ministry of Health, Ministry of Finance, Ministry of Industry and Trade, Ministry of Education and Training, Ministry of Information and Communications, Ministry of Defense and Provincial People's Committees to synchronously implement solutions to prevent illegally trading and consuming wildlife.

In addition, it is necessary to carry out the following tasks: Continue strictly implementing the Direction of the Prime Minister (Directive No. 03/CT-TTg of 20 February 2014; Directive No. 28/CT-TTg and recently Directive No. 05/CT-TTg of 28 January 2020 on the prevention and control of acute respiratory infections caused by new strain of coronavirus); Advise the Government to propose Ministries and sectors to review current legal documents to strictly manage trading and consuming wildlife in accordance with the new situation, especially contents related to consuming wildlife which are currently not stipulated in the legal documents. Agencies, committees, authorities and social sectors from Central to local levels need to strengthen coordination to fight, prevent, resolutely and strictly deal with acts of illegally extracting, caging, storing, processing, trading, importing and exporting wildlife, including subjects advertising, buying and selling wildlife on the internet; strictly control e-commerce activities related to wildlife.

Also promote the propagation and dissemination of laws on protection of wildlife to the community, changing the habits of consuming and using wildlife and wildlife products; research and promote products to replace endangered, rare wildlife products; publicize information on offenders on the mass media, or adjudicate cases of wildlife at the places of violation to increase deterrence, prevention of violations and crimes; strengthen close inspection and supervision of domestic farms, as well as border gates, not allow illegally importing wildlife to Việt Nam, or taking advantage of farming records to legalize wildlife.

VEM: *Sincerely thank you!*

GIÁNG HƯƠNG (Implemented)



Protection of natural landscape - a new approach in the Draft Law on Environmental Protection (amended)

PHẠM ANH CƯỜNG, TRẦN NGỌC CƯỜNG

PHẠM HẠNH NGUYỄN

Nature and Biodiversity Conservation Agency (VEA)

Natural landscape means a landscape made up of natural components including geology, topography, climate, hydrology, pedology and biology. These are components of the natural environment, so natural landscape is considered part of the natural environment. Compared with the previous approach, it is a new approach to protect and maintain important morphology, components, structure and functions of natural landscape - an area formed by the interaction of natural elements over time. This is not only protection of the individual environmental components but also the result of the combination and interaction between natural environment components over time.

Currently, many countries in the world have issued policies on management and protection of landscape, especially natural landscape. Some countries have issued separate laws on management and protection of landscape such as Germany, Japan and South Korea, while others have issued provisions on management and protection of landscape in related laws like Russia, England. In addition, the contents of protection of natural landscape are mentioned in the conventions and guidelines such as the European Landscape Convention, the guidelines of the International Union for Conservation of Nature (IUCN)...

POLICIES RELATED TO LANDSCAPE IN VIỆT NAM

Legal provisions on protection of landscape in Việt Nam have been mentioned in a number of laws and sub-law documents, such as: Law on Biodiversity of 2008, Law on Urban Planning of 2009, Law on Minerals of 2010, Law on Cultural Heritage of 2013, Law on Environmental Protection of 2014, Law on Forestry of 2017, Law on Planning of 2017. However, the landscape is being under-

stood in various aspects, there is no concept (terminology) of the landscape that can fully comprehend the landscape contents in accordance with science and practice.

The Law on Biodiversity of 2008 provides for landscape conservation areas including national-level landscape conservation areas and provincial-level landscape conservation areas. National-level landscape conservation areas must meet the following major criteria: Having a unique ecosystem; Having landscape and unique natural beauty; Having scientific, educational, ecotourism and recreational values. Provincial-level landscape conservation areas are areas under biodiversity conservation planning of provinces or centrally run cities for the purpose of protecting landscape in their localities but do not meet the criteria for establishing national-level landscape conservation areas.

The Law on Urban Planning of 2009 provides requirements on urban planning which include environmental protection, landscape improvement and rational use of natural resources.

The Law on Minerals of 2010 provides the principles of mineral activities that must be associated with protection of environment, natural landscape, historical and cultural relics, scenic spots and other natural resources.

The Law on Environmental Protection (LEP) of 2014 stipulates that environmental protection activities are encouraged including protection of natural landscape and biodiversity. However, the contents of the Law do not have detailed provisions on protection of natural landscape.

The Law on Cultural Heritage of 2013 stipulates that the "Natural landscape" is included in the concept of "Scenic spots" and is one of the important criteria for identifying and classifying scenic spots.

The Law on Forestry of 2017 stipulates that the landscape conservation areas include forests that conserve historical - cultural relics and scenic spots; belief forests; environmental protection forests for urban areas, industrial zones, export processing zones, economic zones and hi-tech parks. The Law prohibits illegal activities that change the natural landscape structure of forest ecosystem.

The Law on Planning of 2017 with the contents of national sectorial planning clearly stipulates: The national biodiversity conservation planning covers high biodiversity areas and important ecological landscape. These are the most concerned objects in environmental protection and biodiversity planning because they are outside the nature conservation areas and do not overlap with the existing nature conservation area system (special-use forest system).



PRACTICAL NEEDS OF INCORPORATING PROVISIONS ON THE PROTECTION AND MANAGEMENT OF NATURAL LANDSCAPE INTO ENVIRONMENTAL PROTECTION POLICIES

In the world, in the region and in Việt Nam, many development investment activities destroy the whole landscape or one of their components, despite achieving economic and maybe social benefits in the short term, but it has caused long-term consequences.

The “greatest” case is that 1960 the irrigation projects built during the development of the former Soviet Union that lead to the loss of water supply for the Aral Sea (next to the Caspian Sea), making the Aral Sea narrow, creating conditions for the formation of the Aralkum desert which is used to be the seabed area of the old Aral Sea in 2010 (after 50 years of irrigation), this is considered a great lesson of the contemporary world when not protecting landscape.

Việt Nam is famous for many beautiful natural landscape areas, environmental impact management tools such as strategic

environmental assessment for planning and environmental impact assessment for development investment activities have a history of more than 20 years of existence, making an important contribution to the protection of natural environment for people. However, there are still many cases, the natural landscape has been changed negatively and irreversibly.

In many localities, the socio-economic development planning destroyed natural landscape areas, historical and cultural relics; Little attention has been paid to the landscape of environmental and ecological importance such as: important wetlands, high biodiversity areas and biodiversity corridors (outside the nature conservation areas as prescribed in the legal provisions on forestry and biodiversity), important parks, large green areas, green belts, forests, rivers, streams and flows in urban and rural areas; Little attention has been paid to the integrity and correlation of landscape components.

In the period of industrialization and modernization over the past 20 years, the coastal area from Thanh Hóa to Ninh Thuận have been exploited for titanium ore for a long time. This has led to the destruction of the landscape of coastal sand dunes, which caused tremendous environmental and ecological consequences. Resort projects in some nature conservation areas using special-use forests in many provinces from the North to the Central; construction investment activities along the coast of Hạ Long Bay; projects in Hà Giang Province such as Lũng Cú spiritual project in Lũng Cú Commune, Đồng Văn District or smaller such as the observation spot at Mã Pì Lèng in Pài Lũng and Pả Vi Communes, Mèo



▲ The natural landscape of Hạ Long Bay - one of the world natural heritage sites



Vạc District... are projects that have ruined the beautiful and important natural landscapes of the country.

So what causes the aforementioned adverse consequences? There is a lack of legal provisions, technical guidelines on impact assessment of natural landscape in the strategic environmental assessment of planning, including provincial socio-economic development planning; Lack of legal provisions as well as technical guidelines on the assessment of adverse impacts on the morphology, structure and functions of important landscape areas in environmental impact assessment, site selection as well as design of the investment projects.

PROPOSED PROVISIONS ON PROTECTION AND MANAGEMENT OF NATURAL LANDSCAPE IN THE DRAFT LEP (AMENDED)

Provisions on identifying important natural landscape areas

Natural landscape means a landscape made up of natural components, without or with very little human impact. Important natural landscape areas are those with levels of sensitivity, nature conservation and biodiversity requirements, divided into groups:

Group 1: Nature conservation areas in accordance with the legal provisions on biodiversity; marine conservation areas in accordance with the legal provisions on fisheries; special-use forests as national parks, natural reserves and species-habitat conservation areas in accordance with the legal provisions on forestry; natural landscape areas recognized as special national relics, national relics in accordance with the legal provisions on cultural heritage and areas recognized as world Ramsar sites, world natural heritage areas, ASEAN heritage parks, world biosphere reserves and global geoparks;

Group 2: Aquatic resource protection areas in accordance with the legal provisions on fisheries; forests used for preserving historical-cultural relics and places of scenic beauty; belief forests; forests protecting environment of urban areas, industrial parks, export-processing zones, economic zones and high-tech zones in accordance with the legal provisions on forestry; provincial relics in accordance with the legal provisions on cultural heritage;

Group 3: Important wetlands; high biodiversity areas and biodiversity corridors (outside the areas of groups 1 and 2); buffer zones of nature conservation areas in accordance with the legal provisions on biodiversity; buffer zones of special-use forests in accordance with the legal provisions on forestry; buffer zones of the world biosphere reserves in accordance with the legal provisions on biodiversity, fisheries and forestry or specified by the world for each title; important parks, green spaces, flows (not overlapping with other important natural landscape areas prescribed) in urban and rural areas.

Accordingly, important natural landscape areas are prescribed in accordance with the legal provisions on biodiversity, fisheries, forestry, cultural heritage, environmental protection, other relevant legal provisions and international treaties to which Việt Nam is a Party. The Government regulates criteria to prescribe important natural landscape areas as important green areas, flows in urban and rural areas.

Provisions on protection of important natural landscape areas

Protection of natural landscape is the conservation and maintenance of important morphology, components, structure and functions of natural landscape. In particular, conservation and maintenance of the morphology of natural landscape are activities of conservation and maintenance of the landscape, beauty, particular morphology and harmony in landscape's space. Conservation and maintenance of the components of natural landscape are activities of conservation and maintenance of the natural elements that make up the landscape (geology, topography, climate, hydrology, pedology and biology). Conservation and maintenance of the structure of natural landscape are the activities of conservation and maintenance of the vertical, horizontal and temporal structure of the landscape. Conservation and maintenance of landscape functions are the conservation and maintenance of the functions of the natural ecosystem that make up the landscape.

Accordingly, specific provisions on protection of natural landscape are as follows: Important natural landscape areas must be assessed, ranked and defined boundaries in the field; develop plans and options to maintain and protect the morphology, components, structure, functions and other values in accordance with the relevant legal provisions. The Provincial People's Committee is responsible for identifying and promulgating a list of important provincial natural landscape areas such as important parks, green spaces and flows in urban and rural areas. Important natural landscape areas are protected and managed in accordance with the legal provisions on biodiversity, fisheries, forestry, cultural heritage, tourism, environmental protection of Việt Nam and the provisions of international treaties to which Việt Nam is a Party. Important natural landscape areas are part of national environmental planning, relevant national sectoral planning and environmental protection contents in regional and provincial planning. The exploitation and use of components of important natural landscape areas must ensure



the maintenance of the morphology, structure, functions and biodiversity of natural landscape. According to the above provisions, the Government promulgates specific provisions on protection of natural landscape.

Assessment of the impacts on important natural landscape areas

Assessment of impacts on important natural landscape areas in environmental impact assessment is the process of analyzing, assessing and forecasting the impacts of investment projects on important natural landscape areas in order to propose measures to achieve the goals of maintaining beauty, protecting the integrity, long-term use of components and the whole of the important natural landscape areas, distributing fairly and reasonably the benefits from the use of landscape.

The main contents of the assessment of impacts on important natural landscape areas are as follows: Assess the detailed impacts on the morphology, structure, functions and biodiversity of the landscape. Also, assess the fulfillment of the following principles: Protecting the morphology, structure, function and integrity of the landscape; protecting living environment; prioritizing the protection of precious and rare and endangered species; preventing loss of real values; preventing from risks; mobilizing indigenous knowledge and the participation of stakeholders and community.

Projects which are reviewed and licensed for investment in accordance with the legal provisions on biodiversity, forestry, fisheries, cultural heritage and other relevant legal provisions but have adverse impacts on important natural landscape areas of Group 1 must conduct and prepare a thematic report on assessment of detailed impacts on the morphology, components, structure, functions and biodiversity of the landscape attached to the environmental impact assessment report.



▲ *The 7-story Panorama building without license built on Mã Pì Lèng Pass (Hà Giang Province) ruins the beauty of the natural landscape*

Projects which are reviewed and licensed for investment in accordance with the legal provisions on biodiversity, forestry, fisheries, cultural heritage and other relevant legal provisions but have adverse impacts on important natural landscape areas of Group 2 and 3 must conduct and include an assessment of detailed impacts on the morphology, structure, functions and biodiversity of the landscape in the environmental impact assessment report.

Assessment of impacts on natural landscape is a part of the environmental impact assessment report.

According to the above provisions, the Government details the contents of the assessment of impacts on important natural landscape areas in the environmental impact assessment process.

Thus, the proposed contents of management and protection of natural landscape in the Draft LEP identify important natural landscape areas as those with levels of sensitivity, natural conservation requirements and biodiversity established in accordance with the legal provisions on biodiversity, fisheries, forestry, cultural heritage, environmental protection, other relevant legal provisions and international treaties to which Việt Nam is Party; divided into 3 groups with focus on managing and assessing impacts on natural landscape through environmental impact assessment to protect the landscape and minimize adverse impacts of investment projects on important natural landscape areas. Protection of natural landscape is a new approach in the amended LEP that will contribute to increasing the effectiveness of environmental protection and socio-economic development through the maintenance, conservation and sustainable use of functions and values of natural landscape■



Draft of Law on Environmental Protection (amended): Comprehensive viewpoint on the right of people to live in a healthy environment



▲ Prof. PhD. Đặng Huy Huỳnh - Vice President of Vietnam Association for Conservation of Nature and Environment

VEM: Professor, as far as you may know, MONRE is completing the Draft LEP (amended) to submit to the 9th session, the 14th National Assembly, so from a scientist perspective, would you please tell your opinion on this Law's amendment?

Prof. PhD. Đặng Huy Huỳnh: MONRE has been assigned by the Government and the Prime Minister to preside over and coordinate with Ministries, branches and localities to develop the Draft LEP (amended). This is a very important and necessary issue, bearing in mind full of natural and social sciences in order to meet the requirements of socio-economic development and international integration's context. This Draft LEP (amended) represents a comprehensive, interdisciplinary and people-centered approach.

After nearly 5 years of implementation, the LEP 2014 has achieved many encouraging and recognized achievements domestically and internationally. However, in the implementation process, there are still many shortcomings and challenges that need to be amended and supplemented to suit the current situation. The Draft LEP (amended) has overcome gaps and shortcomings in recent years. The content of the Draft LEP has followed up and fully reflected the Party's guidelines and the State's policies and guidelines and in accordance with international practices.

The Ministry of Natural Resources and Environment (MONRE) is assigned by the Government to develop a Law on Environmental Protection (LEP) (amended) to comprehensively amend the LEP in 2014. The Draft LEP (amended) is being submitted to be commented by line Ministries, sectors and people nationwide. Expectedly, The MONRE will complete and submit the Draft in the 9th Session, the 14th National Assembly. On this occasion, Vietnam Environment Administration Magazine (VEM) had an interview with Prof. PhD. Đặng Huy Huỳnh - Vice President of Vietnam Association for Conservation of Nature and Environment on this issue, with emphasis on the content of natural landscapes and biodiversity.

The Draft LEP (amended) has shown MONRE's high sense of responsibility, the spirit of looking forward to broadening the vision and hearing toward other Ministries', sectors', localities' and community's comments. I expect that the Draft LEP (amended) will soon be approved by the National Assembly, meeting the people's aspirations for environmental protection in the period of industrialization - modernization of the country, especially in the period of industry 4.0. On the other hand, the Draft LEP (amended) emphasizes the role of the community in contributing to and participating in environmental protection and is responsible for the implementation, as well as monitoring of environmental protection.

By studying the contents of the Draft LEP (amended), I found that this Draft LEP has comprehensively demonstrated the rights of people to live in a healthy environment, according to the Constitution of the Socialist Republic of Việt Nam (2013). The Constitution stated: "Everyone has the right to live in a healthy environment".

VEM: This Draft LEP (amended) contains a chapter on the protection of natural landscapes and biodiversity. Compared to the LEP 2014, could you please tell us the new points mentioned in the Draft LEP (amended) on this issue?

Prof. PhD. Đặng Huy Huỳnh: LEP 2014, Chapter 3 refers to the content of environmental protection in the exploitation and use of natural resources, including 4 articles: Environmental protection concerns during the inspection, assessment and preparation of the planning for utilization of natural resources and biodiversity (Article 35); Protection and sustainable development of forest resources (Article 36); Protection and sustainable development of forest resources (Article 37); Environmental protection concerns during the basic survey, exploration, extraction and utilization of natural resources (Article 38). It can be seen that this approach is to control the



impact on the specific components of natural resources, but has not addressed overall of environmental protection and rational use of natural resources.

The overall goal of the Draft LEP (amended) is to address, prevent the risk of unbalance, exceed the ecological threshold, diminish the value of natural landscapes, and specifically aim to fill the gaps in regulations of the current Law on the management of negative impacts of socio-economic development on natural landscapes and biodiversity, the Draft LEP (amended) has added new regulations on landscape protection, important natural resources, biodiversity offsets, payment of ecosystem services to protect natural resources and biodiversity. Specifically, supplementing regulations on important natural landscapes stipulates that important natural landscapes are natural landscapes with high sensitivity and requirements for nature conservation and biodiversity, dividing into 3 groups to manage appropriately. These important natural landscapes must be assessed, ranked and identified boundary in the field; must have plans to maintain and protect; must have regulations on biodiversity impact assessment in environmental impact assessment for important natural landscapes. Supplement regulations on biodiversity survey and inventory are to identify and understand information about ecosystem components, species, genes, values of biodiversity and biodiversity services; agents and activities which causing biodiversity decline. Basing result of biodiversity survey and inventory to propose solutions for conservation and sustainable use of biodiversity components. Amending and supplementing regulations on biodiversity monitoring is to serve for conservation and sustainable use of biodiversity.

In fact, in the context of climate change, the reduction of ecosystems (forests, wetlands, sea) and epidemics, especially the COVID-19 epidemic is taking place more and more complicated, causing serious impacts affecting the development of the economy and

the health of the community. Therefore, environmental protection and natural landscapes play an important role in sustainable development. This Draft LEP (amended) has brought the content of natural landscape protection to a new and integrated perspective, serving the orientation of rational use of natural resources and environmental protection. In my opinion, the protected natural landscape will bring a harmonious relationship between nature and people, between humans and biosphere. Therefore, the planning of natural landscapes scientifically and rationally will be the synergy in protecting natural resources, biodiversity conservation in particular and environmental protection in general. It is about creating a space that contains ecological niches and providing sustainable natural resources for living things (that is, creating habitats for plants, animals, fungi and microorganisms) and humans. Therefore, when planning natural landscapes, it is necessary to ensure its inherent natural functions such as climate control; water regulation, supply water; protection and soil formation; regulating nutrients, treating wastes, pollinating...

VEM: *Professor, in the Draft Law, the assessment of natural landscape impact assessment is one part of the environmental impact assessment report. What does this mean for the country's biodiversity conservation and socio-economic development?*

Prof. PhD. Đặng Huy Huỳnh: This is a completely new content mentioned in this Draft Law. I strongly agree and highly appreciate this content to prevent the risk of imbalance, exceed ecological thresholds, diminish the value of natural landscapes and fill gaps in current legal regulations to manage negative impacts of socio-economic development on natural landscapes and biodiversity. It also shows the forecast and trend of natural resources such as soil, water, plants, animals... basing on that to have solutions to prevent and contribute to environmental protection in territory of Việt Nam. This is also a mandatory regulation mentioned in this version of Draft LEP (amended). I fully believe and expect that when planning, so-



▲ Tràng An Landscape Complex (Ninh Binh Province) is natural landscape with high sensitivity levels and requirements for nature conservation and biodiversity



cio-economic development projects that affect natural resources, ecosystems and the livelihood of the community, it is necessary to seriously implement the provisions stated in Draft LEP (amended).

VEM: *Professor, could you please tell us some solutions that need to be implemented after the Draft LEP is passed and come into effect to protect the natural landscape and biodiversity?*

Prof. PhD. Đặng Huy Huỳnh: I have great expectations and have confidence that the 14th National Assembly will approve the Law so that it will soon come into practice, contributing to environmental protection in service of sustainable socio-economic development. After the Law is passed, it must organize a public introduction of the provisions of the Law to raise public awareness about the obligations and interests in protecting the natural landscape in particular and the environment in general. State management agencies (Nature and Biodiversity Conservation Agency - Vietnam Environment Administration; Forest Protection Department - General Department of Forestry) and other departments and localities should coordinate closely in the investigation, developing a database, monitor biodiversity, manage and supervise Law enforcement related to the natural landscape and biodiversity.

It is necessary to strictly enforce the provisions of the LEP, take measures to handle violations of the Law on Protection of natural landscapes and encourage good models on environmental protection in the community to replicate in the whole society.

The State should pay more attention to the investment and capacity building for state management agencies from the Central to local levels in the protection of natural landscapes, biodiversity in particular and environmental protection in general.

Scientific research agencies and universities interested in researching, discovering and assessing the current state of natural resources in natural landscapes as a basis for formulating policies on use and rational exploitation of natural resources.

Promoting the potential and synergy of the community and businesses sectors (including small and medium-sized enterprises) nationwide to improve the responsibility in protecting the rational exploitation and use of natural resources, protecting sustainable natural landscapes.

VEM: *Sincerely thank you!*

NGUYỄN HẰNG (Implemented)

BACKGROUND OF AMENDMENTS TO PROVISIONS ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

In recent years, Việt Nam has a high economic growth rate, in some periods, industry, transportation, construction... are in hot development causing pressure on the environment. The amount of wastes discharged into the environment is increasing and there is no proper method of management and use which leads to waste of natural resources and environmental pollution. Pollution, degradation of land, water and air still occur in many places, damaging the economy as well as the whole society. Many projects and production establishments that are likely to pollute the environment have not been strictly controlled, there is still a situation where industrial zones and industrial clusters do not have centralized wastewater collection and treatment infrastructure and craft villages pollute the environment. Việt Nam is also one of the countries heavily affected by climate change. Climate change and sea level rise have occurred faster than forecast, causing many extreme weather events, affecting people's livelihood and life.

Facing environmental and climate change challenges, the need to ensure economic development in parallel with environmental protection, responding to climate change becomes even more urgent. In the current context, the State should have mechanisms to deal with shortcomings and limitations in the state management of environmental protection and climate change response in general EIA in particular and provide appropriate solutions to forecast Việt Nam's future development trend.

NEW PROVISIONS EXPECTED TO BE SUPPLEMENTED, AMENDED

Environmental screening and Preliminary EIA

According to the Law on Public Investment, public investment projects, when considering investment policy decisions, must conduct a preliminary EIA. The Law on Investment also stipulates that in the pre-feasibility study reports, for investment projects subject to investment policy decisions by the National Assembly and the Prime Minister, when applying for approval of investment policies, there must be the content "Preliminary EIA and environmental protection solutions". However, the 2014 Law on Environmental Protection (LEP) does not provide for preliminary EIA, while prescribing EIA to be implemented during project preparation.

The addition of provisions on preliminary EIA to the amended Draft LEP (Draft) is to ensure the consistency in the legal provisions related to preliminary EIA in legal provisions on investment, public investment and environmental protection. However, the Draft LEP (amended) stipulates that preliminary EIA only applies to the following types of projects:

- Public investment projects (including important national projects, Group A projects, Group B projects, Group C projects) with construction components of in-



New provisions on environmental impact assessment in the Draft Law on Environmental Protection (amended): Proposed objectives and some issues that need further discussions

Dr. LÊ HOÀNG LAN

Vietnam Association for Conservation of Nature and Environment

dustrial type that are likely to pollute the environment, except for urgent public investment projects, projects belonging to national target programs and component projects of projects that have investment policies decided by competent authorities;

- Construction investment projects in the form of public-private partnership;

- Construction investment projects other than those specified at Item a of this Clause having investment policies approved by the National Assembly or the Prime Minister or construction investment projects subject to EIA of the Chairman of the Provincial People's Committee to approve investment policies in accordance with legal provisions on investment.

Also, the project screening is conducted based on the national, regional and provincial environmental protection planning, in which there must be orientations and plans to delineate, identify areas in need of conservation, protection and remediation of the environment and ecology.

Legal provisions on environmental screening/preliminary EIA control the environmental impact risks of investment projects in order to guide development activities in accordance with their functions, levels of sensitivity, environmental load-bearing capacity. On the basis of delineation, identify areas in need of conservation, protection and remediation of the environment and ecology nationwide, the production, business and service activities are arranged appropriately in the respective environmental areas, ensuring to make the most of the advantages of using natural resources, helping improve the waste circulation and disposal in reciprocal and inter-related projects. Development activities based on the results of delineation, identification of areas in need of conservation, protection and remediation of the environment and ecology nationwide will avoid environmental conflicts in the exploitation, use of natural resources

and waste treatment of production, business and service establishments in the delineated areas.

Implementation of preliminary EIA is a part of the investment policy approval process, not forming a separate administrative procedure for enterprises. The project screening criteria are based on factors affecting the environment on the impacts of projects, instead of just paying attention to the size of investment capital, ensuring that the environmental protection planning provisions are implemented in practice in the direction of science and in line with international practices. The project screening process is conducted based on delineation and identification of areas in need of conservation, protection and remediation of the environment and ecology that helps enterprises save time and effort to locate projects.

Investment projects subject to investment policy approval according to the legal provisions on investment and public investment are determined according to the size of capital sources and the importance of environmental, economic and social issues. However, only construction investment projects or projects having construction components have the potential to cause environmental impacts. Therefore, it will be a waste of resources when requiring projects without construction components (such as cultural, educational development, sport, information technology development projects...) to implement preliminary EIA.

EIA

Legal provisions on EIA have been in place for nearly 30 years (since 1993), however, during the inspection and investigation, violations of not complying with approved EIA are quite common, accounting for about 10% of types of violations in sanctioning administrative violations on environmental protection. One of the reasons is that EIA is only a forecasting tool, so it is difficult for an EIA report to be as detailed as possible to quantify and specify solutions to minimize all impacts, risks, environmental and social incidents that can occur throughout the life of a project. Meanwhile, legal provisions on environmental protection are considering approved EIA reports as basis for inspection and investigation and project owners organize the implementation of environmental protection measures during project implementation.

Requirements assuring EIA preparation capacity of EIA consultants are still problems, leading to the fact that many businesses hire consultants with no professional experience to prepare EIA reports, resulting in insufficient and poor data to make EIA reports not of good quality, not close to actual risks of being sanctioned for businesses when they come into operation.



The process of public consultation during EIA implementation has not been fully conducted, which can lead to indigenous ideas and knowledge of the public not being collected. This may affect the lives of people in the project areas, potentially causing conflicts of environmental benefits when projects are implemented and put into operation.

New legal provisions on EIA are supplemented in the amended Draft LEP to address the above mentioned shortcomings.

In particular, the Draft stipulates that the decision to approve the EIA report appraisal results is the basis for the competent authorities to carry out the works related to the investment, construction and licensing procedures of the project and also the EIA tool has a role in the project implementation phase; When project and facility management is in operation, it shall be replaced by other tools such as environmental license and certification of registration of the environmental protection plan.

These new legal provisions have ensured the position, role, promoting the efficiency and effectiveness of EIA tool in environmental management; ensured that EIA tool is a part of investment project screening; contributed to improving the quality of EIA reports and raising awareness and responsibility of environmental protection of businesses.

Environmental licenses

Currently, after implementing EIA, production, business and service establishments are having to carry out many types of licenses and certificates with the same nature as permits to fulfil their environmental protection obligations. An establishment subject to EIA usually has to carry out the following types of license documents:

- + Confirmation of completion of environmental protection works or certificate of eligibility for environmental protection in importing scrap as raw production materials, license for hazardous waste treatment;

- + License for discharge of wastewater into water sources or license for discharge of wastewater into irrigation works;

- + Register book of hazardous waste generator;

These licenses may be issued by different licensing agencies (MONRE, Provincial People's Committees, Departments of Natural Resources and Environment, or Ministry of Agriculture and Rural Development, Departments of Agriculture and Rural Development) and sometimes there are inconsistent requirements for legal liabilities and obligations among licenses which make it difficult for establishments to comply with and also difficult for inspection and investigation by State management agencies.

In order to limit the overlap and duplication of licenses on environmental protection to create favourable conditions for enterprises to well fulfill their obligations on environmental protection and also help State agencies in consistent management of environmental protection, legal provisions on environmental licenses have been added to the Draft.

Environmental licenses are documents issued by competent State management agencies permitting organizations, individuals engaged in production, business, service activities for discharge of wastes into the environment, waste management, import of scrap as production materials together with requirements and conditions on environmental protection in accordance with legal provisions. For those with simpler environmental impacts (corresponding to the EIA appraisal decentralization), registration of environmental protection plan will be carried out.

Environmental licenses are issued based on the dossier of application for environmental licenses, environmental zoning, environmental protection planning, environmental load-bearing capacity (if any), technical regulations and standards on environment and relevant legal provisions on environmental protection.



▲ Cúc Phương National Park (Ninh Binh Province)



An investment project must have environmental licenses before proposing the competent State management agencies to appraise basic designs or appraise construction drawing designs. From the effective date an environmental license, the following documents including decision approving the results of appraisal of EIA reports, licenses, certificates, certifications on environmental appraisal of the project are no longer valid.

The consolidation of environmental protection licenses will help environmental protection agencies decide once and for all the environmental issues of production and business establishments (pre-check). This helps make decisions that are comprehensive, more thorough and more quality. These decisions will indirectly improve environmental quality. In addition, the State will have clearer and more accurate decisions in the inspection and investigation activities because the implementation of a single license will not give rise to situations where granted licenses have inconsistent legal requirements, obligations and liabilities.

For businesses, having to comply with only one license helps businesses be more proactive in complying with legal provisions, avoiding the legal risks of administrative sanctions for failing to comply with legal provisions in granted licenses in cases where licenses are granted with inconsistent legal requirements.

SOME ISSUES THAT NEED FURTHER DISCUSSIONS

About preliminary EIA

According to the provisions of the Draft LEP (amended), preliminary EIA is carried out during the phase of pre-feasibility study or investment policy proposal of the project; preliminary EIA results are expressed as part of the pre-feasibility study report or investment policy proposal report. In fact now, all investment projects, when proposing investment policies, have investment reports, including contents of environmental impacts (an item or a chapter of the investment report, depending on the size and nature of the project). International practices also stipulate that every project must conduct preliminary EIA (or initial EIA) to provide the basis for investors to self-screen projects and authorities to classify and manage projects when making decisions.

At present, the Draft LEP also stipulates the classification of investment projects for management according to EIA tool and environment licenses, specifically: Investment projects must only implement EIA in the project preparation phase and must not have an environmental license; Investment projects must implement EIA in the project preparation phase and must have an environmental license before the trial operation of the project's waste treatment facility (project implementation phase); Investment projects must not implement EIA but must have an environmental license in the project preparation phase; The project must not comply with the provisions of Clauses 1, 2 and 3 above. However, there is no clear provision on which agency to classify, when and on what basis to classify such investment projects.

Therefore, should the consideration of the requirement that projects subject to preliminary EIA be all investment projects, so that the authorities when considering the documents on which investment decisions are based, including project classification, carry out environmental procedures in the next phase?

Biodiversity impact assessment and offsets in EIA

Viet Nam is recognized as one of the 16 countries with high biodiversity in the world, with many types of ecosystems and species. The beautiful natural landscapes of Viet Nam have been attracting many tourists from around the world. However, Viet Nam is facing the risk of biodiversity degradation and strong ecological imbalance and many incidents of destruction/disruption of all or part of the landscapes have occurred at the same time. The cause of this situation is due to population growth pressure which leads to overexploitation of biological resources, which is not guaranteed for regeneration. These activities may have immediate economic and social benefits, but have been leaving or leading to negative consequences in the long run.

Most of the planning, plans, followed by investment projects are only concerned about socio-economic goals but have not paid adequate attention to nature conservation and bio-diversity. Production and business projects have been causing biodiversity losses due to land encroachment and habitat loss of species. International experiences show that, when implementing a development investment project that causes biodiversity loss, it is necessary to take measures to offset, renovate and restore the biodiversity in that area or elsewhere to ensure the maintenance of lost biomass value. In biodiversity impact assessment (as a part of EIA), the decentralized system to minimize negative impacts on biodiversity is considered a best practice approach to managing biodiversity risks.

Under the mitigation hierarchy, firstly, efforts should be made to prevent or avoid negative impacts on biodiversity; after that, implement new mitigation measures; then restore to the original state of the environment (including biodiversity and often difficult to achieve 100%); according to the calculation after completion of mitigation, if there are any significant impacts - degradation that should be solved through biodiversity offsets (compensation) to achieve "No net Loss in Biodiversity" by enhancing, creating and/or protecting



local biodiversity (habitat) or another location with similar ecological characteristics. The ultimate goal of biodiversity offsets is to create an ecological balance during human development so that existing biodiversity is not lost, not degraded and in some cases can be enriched (Net Gain) for sustainable development goals.

In addition, in some cases, lack of appropriate assessments of the project's impacts on natural resource use leads to allowing the implementation of projects with potential impacts beyond the load threshold of ecosystems, the exploitation threshold of biological resources, making ecosystems and biological resources unable to recover, regenerate, and lose important functions. Currently, the EIA content also has provisions to forecast and assess the impacts of biodiversity degradation, however, there is no specific provision on the impacts on biodiversity, as well as no specific provision on the implementation of biodiversity offsets as a mitigation measure to be proposed in the EIA.

Assessment of climate change risks in EIA

Viet Nam is one of the countries that are and will be seriously affected by the impacts of climate change: saline water intrusion, inundation, land loss, biodiversity loss, degradation of water resources, soil and environmental quality, negatively affecting socio-economic development.

The project level is particularly important for considering climate impacts and risks to incorporate appropriate adaptation measures. If we neglect to consider the risk impacts of climate change on urban, industrial and infrastructure development projects, it may affect the vulnerability of natural systems and humans, leading to damaging the development process of the country and the project itself.

In fact, the environmental impacts of a project are consequences not only of the nature of the project (capacity, design, technology, raw materials, fuel, management...) but also on ambient environmental conditions (eg, topography, altitude, rainfall, temperature, storm, flood...). Therefore, never ignore the risk assessment due to climate change

during the EIA process for a project, which must contain sufficient information about the natural and ecological characteristics of the project area. An assessment of the impacts of climate change on the project is only accurate when accurate information on background environmental conditions is obtained.

Project appraisal decision makers must also consider the impacts of climate change on the project itself and assess whether these impacts are integrated with other impacts, exacerbating environmental consequences or creating new risks.

At present, the EIA approach in Viet Nam is the research to identify and forecast the environmental impacts of investment projects and to offer solutions and measures to minimize negative impacts, with regard to the impacts of the projects on the environment, little (almost no) concern is about the opposite impact - from the environment to the projects. Even the content of risk assessment of environmental incidents will only specify the identification and forecast of negative impacts of the projects that may cause environmental risks and incidents. Climate change risk assessment is the identification of hazards and the degree of impacts of climate change and on climate change, determining the corresponding consequences. This means that when assessing climate change risks in EIA, consideration should be given to two-dimensional impacts: from projects to climate change and impacts from climate change to projects.

Many countries and international organizations have recognized that due to the lack of detailed requirements on the integration of climate change considerations into EIA, EIA cannot serve as a sufficient tool to consider and assess the impacts and adaptive capacity of the projects with impacts caused by climate change and with the project's impacts on global climate change.

Social impact assessment in EIA

The amended Draft LEP mentions identification of the direct impacts of the projects on socio-economic activities, social issues and human health in the scope of potentially affected space by the projects. However, there are many complex social factors such as relocation of households for land clearance, livelihoods, customs, religious beliefs, community separation, that need for other methodology to assess the impacts corresponding to EIA methodology. The use of EIA method in social impact assessment may lead to limitations that increase social risks during project implementation, that do not guarantee the sustainability during project implementation with risks of social insecurity.

The introduction of provisions on social impact assessment needs to have clear criteria in order to apply appropriate impact assessment methods, contributing to the consensus of the people in the project areas, so that businesses can avoid the risks of complaints, grievances and compensation for environmental damages due to not taking into account the social factors for the affected communities when implementing EIA■



Need to re-plan fishing areas to "pave the way" for sea turtles



▲ Mr. Nguyễn Văn Vũ - Deputy Director of Cù Lao Chàm MPA Management Board

After 3 years implementing the scientific research project "Conservation and restoration of sea turtle populations in Cù Lao Chàm Marine Protected Area (Chàm Island MPA)" piloting the relocation of sea turtle eggs from Côn Đảo National Park to Cù Lao Chàm for hatching from 2017 - 2019 with nearly 2,000 eggs, so far it can be confirmed that the environmental conditions and the quality of beaches in Cù Lao Chàm are completely suitable for sea turtles as well as resilience of sea turtle populations... This relocation of sea turtle eggs has created an important premise for the addition of the initial turtle breeding source and raising the awareness of stakeholders on protection and contribution to the restoration of sea turtle populations - endangered animal species in Cù Lao Chàm World Biosphere Reserve. On the World Environment Day (5 June, 2020), Vietnam Environment Administration Magazine (VEM) had an interview with Mr. Nguyễn Văn Vũ - Deputy Director of Cù Lao Chàm MPA Management Board about the results of the implementation of this project in the recent time.

VEM: Could you tell us the reason for Cù Lao Chàm MPA to implement the restoration and conservation of sea turtle populations in the recent time?

Mr. Nguyễn Văn Vũ: Sea turtles are very special creatures. They are symbols of longevity and knowledge that science has not yet deciphered all the great mysterious possibilities in their lifecycle.

Recently, when people understand the multifaceted values of sea turtles, especially their role for ecosystems, marine economy and culture for humans, particularly coastal fishing communities, all sea turtles in the ocean are at risk of extinction.

In Cù Lao Chàm MPA, through interacting with people, we discovered that in the past, this area had all 9 sand beaches that often had mother turtles to lay eggs and there have been many sea turtles living. At that time, people did not know about great values of sea turtles, so they often took eggs for food and harmed sea turtles. In recent years, people of Cù Lao Chàm are eager to restore this rare group of sea turtles to the island. From these concerns, we are determined to explore and research to restore the sea turtle populations here.

VEM: Could you tell us the results after 3 years implementing the project to date?

Mr. Nguyễn Văn Vũ: In order to achieve the objectives of the Action Plan for restoration and conservation of sea turtles in Cù Lao Chàm for the period 2016 - 2025 with a vision to 2040, we determined that we need to understand some technical issues such as: Conditions for sea turtles to lay eggs; Food sources for sea turtles in Cù Lao Chàm; The ability of sea turtle eggs to hatch or not when transported with a distance of over 1,000 km (from Côn Đảo to Cù Lao Chàm)... Fortunately, recent studies have shown that natural and environmental conditions in Cù Lao Chàm are still good for restoration of sea turtles.

Since 2017, with the support of the Côn Đảo National Park Management Board, we have successfully transported, hatched



▲ Organize communication activities when releasing baby turtles into the sea



▲ Officials of the Cù Lao Chàm MPA Management Board transferring turtle eggs

and released into the sea of Cù Lao Chàm nearly 2,000 baby turtles. This is not only meaningful in terms of communication to raise awareness, but also helps us assess the scientific factors for the restoration of sea turtle populations. The high rate (over 90%) proved the feasibility of conservation and relocation of sea turtles at long distance.

Also with the attention and support of the people as well as the authorities from the Central to local levels, it is a premise for the Sea Turtle Conservation Program to be implemented more effectively in the future.

VEM: As the project manager for the past 3 years, what advantages and disadvantages have you experienced in implementing this task?

Mr. Nguyễn Văn Vũ: Despite the great support from the leaders of Quảng Nam and Bà Rịa - Vũng Tàu provinces, especially the colleagues of Côn Đảo National Park, but as it is the first relocation of sea turtle eggs implemented and they are endangered species, so we must comply with very strict legal provisions (complete documents, procedures for giving - receiving eggs and transport permits).

Weather conditions are also big challenges for us. There were times when we came to Côn Đảo but could not get the eggs, so the plan had to be adjusted many times. When we returned to Cù Lao Chàm, MPA Management Board and volunteers must take turns to protect the eggs 24 hours a day, preventing the access of strangers as well as other animals. There were times when the sea was rough (low pressure, monsoon), sea water flooded into the hatching eggs..., we had to mobilize personnel to move eggs to higher places at the midnight so that eggs were safe.

Although it was difficult and hard, when seeing the baby turtles protruding from their nests and crawling toward the sea, suffering disappeared. As the baby turtles swam away, they also brought so much hope for conservationists and people on Cù Lao Chàm Island.

VEM: Could you tell us the plan for conservation of sea turtles in the near future so that Cù Lao Chàm will become a breeding ground for turtles like 20 years ago?

Mr. Nguyễn Văn Vũ: After 3 years of implementation, to date the initial results are encouraging! However, the implementation is still long and very arduous, we are working hard to overcome.

Now, although Cù Lao Chàm's people do not catch or kill sea turtles but the use of fishing nets, especially 3-layer nets, is really a big barrier for the return of sea turtles. In the past few years, we recorded about 10 individuals of turtles caught in the nets of local fishermen, most of who died before being rescued in time. Therefore, advocacy and finding solutions to replace the use of 3-layer nets should be the attention for quick action by the concerned agencies and sectors in the coming time.

Also, need to "pave the way" for sea turtles to lay eggs. Currently, there are still many local fishermen operating in Cù Lao Chàm MPA, especially in the water areas in front of the sand beach. Therefore, we are submitting to the People's Committee of Quảng Nam Province to adjust the Cù Lao Chàm MPA management zoning, including re-planning the fishing areas to "pave the way" for sea turtles to breed.

Sea turtles are afraid of light and noise, while beaches - formerly the breeding ground for sea turtles - are in the tourist business. Therefore, in order to harmonize tourist development with conservation, stakeholders need to find solutions to protect the environment, biodiversity as well as restore sea turtles from the impacts of tourism.

Currently, we are campaigning to establish a Wildlife Rescue Station in Cù Lao Chàm, in the immediate future to rescue and provide medical treatment to sea turtles, dolphins in distress as well as other creatures, also continue to restore important marine ecosystems, especially coral reefs, sea grass beds... as these are the preferred habitat for sea turtles.

VEM: On the occasion of the World Environment Day 2020, what suggestions do you have for the authorities?

Mr. Nguyễn Văn Vũ: Many researches in the world have shown that our Mother Earth may be at the limit of suffering because of the terrible destruction of humans. Therefore, we cannot hesitate any more, we must act now. In particular, special priority should be given to resources to protect the sea and forests and above all we need an integrated model of natural resource management for sustainable economic development and a healthy living environment for everyone.

VEM: Sincerely thank you!

PHẠM ĐÌNH TUYÊN (Implemented)



Biodiversity: Our solutions are in nature

Every year, the United Nations marks 22 May as the International Day for Biological Diversity, to increase understanding and awareness of biodiversity issues. For 2020, the theme for the event is “Our solutions are in nature”. The theme shows that people are part of nature rather than separate from nature.

Biodiversity, or biological diversity, is the multitude of living things that make up life on Earth. It encompasses the 8 million or so species on the planet - from plants and animals to fungi and bacteria - and the ecosystems that house them such as oceans, forests, mountain environments and coral reefs.

But, nature is in crisis. We are losing species at a rate 1.000 times greater than at any other time in recorded human history and one million species face extinction. Nature-based solutions offer ways to promote human well-being, tackle climate change and protect our living planet.

WHY IS BIODIVERSITY IMPORTANT FOR PEOPLE ?

Despite all our technological advances we are completely dependent on healthy and vibrant ecosystems for our water, food, medicines, clothes, fuel, shelter and energy.

Biodiversity ensures that we have fertile soil, as well as a variety of foods, including fruits and vegetables to eat. It is the foundation of most of our industries and livelihoods and helps regulate climate through carbon storage and regulating rainfall. It also filters our air and water and mitigates the impact of natural disasters such as landslides and coastal storms.

On land, the most important ecosystems and biodiversity refuges are forests, which are home to most of Earth's terrestrial biodiversity: 80% of amphibian species; 75% of bird species and 68% of mammal species, according to The State of the World's Forests.



▲ Nature is in crisis



▲ Elephants need extensive land areas to survive and meet their ecological needs, which includes food, water and space

WHY IS BIODIVERSITY IMPORTANT FOR OUR HEALTH ?

“Healthy ecosystems can protect against the spread of disease: Where native biodiversity is high, the infection rate for some zoonotic diseases can be lowered”, says UNEP biodiversity expert Doreen Robinson.

On average, one new infectious disease emerges in humans every four months with 75 percent of these infections come from animals. These zoonotic diseases can spill over to humans when we destroy animal habitats or trade illegally in wildlife, as our exposure to pathogens increases.

Nature is also an essential source of many drugs used in modern medicine. Plants, animals and microbes enable medical researchers to understand human physiology and treat diseases. Four billion people rely primarily on natural medicines and about 70 percent of cancer drugs are either natural products or synthetic ones inspired by nature. In the United States, at least 118 of the top 150 prescription drugs are based on natural sources.

HOW IS BIODIVERSITY CONNECTED TO THE ECONOMY ?

Biodiversity underpins economic prosperity. Roughly US\$ 44 trillion of economic value generation - which represents more than half of global GDP - is moderately or highly dependent on nature and its services. Construction, agriculture and food and beverages are the three largest industries that are most dependent on nature. Such industries require either the direct extraction of resources from forests and oceans or rely on ecosystem services such as healthy soils, clean water, pollination and a stable climate.

Among the hundreds of millions of people living in poverty, more than 70 percent depend on natural resources to earn their livelihoods, whether through farming, fishing, forestry, or other nature-based activities■

HOÀNG ĐÀN (UNEP source)



Stronger efforts needed for conservation of Central Highlands

NGUYỄN THU HẰNG, ĐỖ MINH PHƯƠNG

People and Nature Reconciliation

The Central Highlands, located by the five provinces of Đắk Lắk, Đắk Nông, Gia Lai, Kon Tum and Lâm Đồng, is home to most of wild elephants in the Việt Nam. Elephant, through generations, is very close to the people of the Central Highlands and also symbolizes the region. The total number of Central Highlands elephants has decreased sharply in recent years as their living environment contracts due to people's expansion of living activities. Unless better measures are conducted, the Central Highlands elephants will be extinct very soon.

The total quantity of elephants inhabiting in Việt Nam in general and the Central Highlands in particular has steeply declined year after year. In 1990s, there were about 1.500 - 2.000 wild elephants in Việt Nam but now the number has fallen to 124 - 148 individuals and they are mostly seen in the provinces of Sơn La, Nghệ An, Hà Tĩnh, Quảng Nam, Đắk Lắk, Đắk Nông, Đồng Nai and Bình Phước. In those provinces, only three habitats are home to at least 10 elephants, which are the Pù Mát National Park and its adjacency in Nghệ An Province (13 - 15 individuals); the Cát Tiên National Park, the Đồng Nai Natural and Cultural Reserve and La Ngà - Đồng Nai Forestry Co Ltd (14 individuals); the Yok Đôn National Park in Đắk Lắk Province (80 - 100 individuals).

According to the Ministry of Agriculture and Rural Development (MARD), there were 91 raised elephants in 2018 in 11 cities and provinces of the country, down from 165 individuals in 2000. Đắk Lắk, known as "the capital of raised elephants", also saw a steep decline in the number of the species. In 1979 - 1980, there were 502 tamed elephants in Đắk Lắk; the number fell by total 364 individuals in 20 years to 299 individuals in 1990, 169 individuals in 1997 and 138 individuals in 2000. In 2018, the number of raised elephants in Đắk Lắk Province was only 45.

CHALLENGES

Habitat run-out for wild elephants

According to experts, the key, vital matter in the preservation of wild elephants is to sustain their habitats. But we have seen primary forests - the fundamental habitat for elephants - are largely explored, exploited and invaded by people and they are contracting in both size and quality. Statistics by MARD's Administration of Forestry, the total area of natural forest in the Central Highlands plunged 358.700 hectares in seven years from 2008 to 2014, equal to an average loss of 51.200 hectares per year. Of the total figure, 94.814 hectares of the forest or 26,4 percent of the total area was lost to the plantation of rubber, industrial plants and fruit trees; 33.706 hectares or 9,39 percent of the total area was lost to the construction of hydro power plants, transportation infrastructure and public facilities; 88.603 hectares or 24,6 percent of the total area was lost to expansion activities in which people explore the land for farming.

As the habitat and food for elephants scale down, there have been dangerous encounters between elephants and people. As they prefer long-distance move, elephants cross by plantation areas and destroy vegetables and facilities, causing damages to people's business and living conditions. In recent years, there have been incidents in which wild elephants travel from the forest to farming areas for food and threaten the lives and assets of local residents. In 2013, a herd of 17 individual wild elephants marched towards the centre of Ea Sup District and they were only 5 km away from the District centre. Prior to 2012, wild elephants often came and destroyed vegetables in Ea H'Le Commune of Ea H'leo District as people had explored the forest and demolished their habitat.

Overused, unproductive raised elephants

The use of raised elephants for tourism and production is also a threat to the species. A study of the Asia Animal Foundation revealed that raised elephants at Buôn Đôn and Lắk Lake tourism sites have to work 6 - 8 hours a day to carry 2 - 3 visitors a trip to cross the Sêrêpôk River or visit the Yok Đôn National Park. During holidays and festivals, more visitors come and elephants don't have a break. The fare for each elephant ride is between VND 400.000 and VND 600.000 and revenue is shared between the company and the elephant owner. As the elephants prove highly profitable, they become vulnerable to the overuse done by the companies and the owners.

In addition, it is difficult for reproduction because most of raised elephants are old (more than 35 years) and they have no room for mating. Under the Đắk Lắk elephant conservation project, the owners will get paid when their elephants give birth to calves. But in the past 30 years, raised elephants in Đắk Lắk have barely given birth to any calves because they are kept apart by owners, so mating are almost impossible.



Efforts were made to make three females pregnant but the three calves died at birth because the mothers were too old for the first time pregnancy.

Increased demand of elephant products

Illegal elephant poaching has rocketed in the last few decades as demand of ivory and tail hair for jewelry production rises. International organizations have warned the trading of elephant products, including ivory, is the biggest, most dangerous threat to bring the species to extinction. A 2016 study by the Save Elephant Foundation said 1.965 items put up for sale in 24 of 49 studied stores in Buôn Ma Thuột were ivory and other elephant products. A study in Buôn Đôn also showed that 16 of 23 traditional furniture stores offered 703 souvenirs made from ivory and other parts of the elephant with prices ranging from VND 200.000 to VND 8 million each item.

Despite strong efforts by the Government agencies, illegal elephant poaching is not tackled and trading of ivory and elephant products remains public and common. According to the wild animal conservation organization WildAct, nearly 21,000 elephant products - including ivory and tail hair - were put up for sale on the social media in six months from mid-2015 to early 2016. Ivory-made jewelry was the most popular product, accounting for 69 percent of all items advertised on Facebook, while sellers of ivory products also offered tail hair for sale.

EMERGENCY PLAN ON ELEPHANT CONSERVATION NEEDED

Việt Nam has executed some plans, programs and projects on elephant conservation quite soon, however, the Government's efforts are not enough to stop the decline of the species. In the 1990s, under MARD's Decision No. 1204/NN-LN-QD dated July 16, 1996, the Vietnam Elephant Conservation Action Plan 1996 - 1998 was implemented to protect the species in Đắk Lắk. Under the plan, the forest management plan was reviewed, the natural reserve was rebuilt, technical assistance was provided to guarantee the habitats for elephants, regulations were updated and developed to stop illegal poaching and trading of wild animals, local authorities were asked to solve the incidents between the human and elephants and the local media had to popularize the conservation activities to the people.



▲ *The habitats for Central Highlands elephants are downsizing*

After that, under the Prime Minister's Decision No. 733/QĐ-TTg dated May 16, 2006, the elephant conservation action plan to 2010 was initiated. After five years of implementation, there were some positive results, including the completion of the elephant conservation project for Đắk Lắk, Đồng Nai and Nghệ An where a majority of elephants were inhabiting and the establishment of the Đắk Lắk Elephant Conservation Centre to take care of the species.

In 2012, the Prime Minister issued Decision No. 940/QĐ-TTg on July 29 approving the Emergency elephant conservation action plan to 2020. In May 2013, the Prime Minister approved total funding of VND 278 billion for the Việt Nam elephant conservation master plan for 2013 - 2020 under Decision No. 763/QĐ-TTg with sponsorship of the State budget and foreign individuals and organizations. According to MARD, the project by 2018 had seen illegal poaching decline, the number of elephants had increased, and encounters between human and elephants were limited.

At local level, the Đắk Lắk People's Committee in 2010 approved the elephant conservation project for 2010 - 2015 with total investment of VND 61 billion. The project aimed at sustainable management of wild elephants, increasing the number of raised elephants, preservation of local tradition and culture and education for people on the environmental protection. In 2013, the Provincial People's Committee approved the "Đắk Lắk elephant conservation emergency plan until 2020" with total funding of nearly VND 85 billion to replace the previous project.

To protect and develop the Central Highlands elephants, we recommend the prioritization of the following solutions:

Test the sample of turd to address the location and calculate the number of elephants as well as their gender and age structures. In addition, the habitats must be evaluated and the ability of on-site conservation for the elephants. We suggest the elephants are tracked with electronic device.



The Yok Đôn National Park in Đắk Lắk Province's Buôn Đôn District will receive US\$ 65,000 from Animals Asia in a five-year period between 2018 and 2023 to change from elephant riding to other elephant-friendly tourism activities. The localities are encouraged to take visitors to the forest to study the life of elephants, watch them do daily activities and even walk with them in the forest. Traditional activities such as riding will be prohibited to avoid negative effects on the elephants.

Study the possibility of creating a corridor to connect small herds together and consider moving those small herds from other areas to the Yok Đôn National Park.

Study seasonal moves and destinations; assess the quality of the habitats regarding the environment and the reserves of food, water and minerals. Elephant prefers to move from one place to another, so an agreement on cross-border conservation between Việt Nam and Cambodia should be signed to manage the species' movement.

Evaluate the level and cause of human-elephant encounters to develop solutions to prevent similar cases from happening. We suggest local authorities build trench and electric fence to stop elephants from crossing into the farming areas. Local residents are encouraged to grow the plants that are not favored by elephants and improve their awareness to avoid confronting and better protect the animal.

Preserve the habitat to develop the number of wild elephants in Đắk Lắk Province, especially; we have to save a 173,000-hectare land area for them to live, move and feed.

Stop illegal poaching by enhancing the law enforcement and strictly punish hunters and traders to prevent trading of elephant products. Local people of Đắk Lắk and Buôn Đôn districts are advised to improve the habitat and better take care of raised elephants as these two places are the only in the Province that have raised elephants.

Improve the healthcare services for the species, especially support for birth delivery ■

With 17 Sustainable Development Goals (SDGs), the 2030 Agenda for Sustainable Development seeks to balance the three dimensions of economics, society and environment based on the three basic principles of human right, gender quality and sustainability. The prerequisites of the sustainable development include peace, security and intangible cultural heritage.

The three dimensions of economics, society and environment are inseparably connected to peace and security. To achieve such relation, comprehensive policy making and full co-ordination in all fields are required as intangible cultural heritage may help resolve sustainable development issues. Therefore, the protection of the heritage and surrounding environment is needed to bring everyone a better future. Thus, the article presents the relationship between intangible cultural heritage and environmental sustainability.

The environmental sustainability is in need of a stable environment, sustainable resource management and biodiversity protection. These issues can be solved with scientific knowledge about climate change, potential natural disasters, surrounding environment and the limit of natural resources, which should be shared among stakeholders. Local residents should also be assisted to improve their adaptability as they are vulnerable to climate change and natural disasters, thus, that is an urgent issue to minimize the casualty and socio-economic losses.

For thousands of years, the knowledge, traditional values and practices, as parts of intangible cultural heritage, have been accumulated and passed from generation to one another to guide the human to connect with the surrounding environment. Today, the impact of intangible cultural heritage on environment sustainability is seen in the fields of biodiversity preservation, sustainable management of natural resources and responses to climate change and natural disasters.

Like a living legacy passing on from generations to generations, the knowledge, values and practices of environment-related intangible cultural heritage help local community develop their capability and adaptability to use natural resources in a more sustainable way, thus, allowing them to respond better to natural disasters and climate change.

Intangible cultural heritage may help preserve the biodiversity. Local communities are the core to preserving and sustaining the biodiversity. In Kenya, the Kikuyu women are responsible for propagating and preserving the seeds. They traditionally plant different kinds of bean on the same field and operate various storehouses to prepare for unexpected developments of weather and disease. Today, these storehouses become a valuable base of knowledge about local herbs, which is essential as the quality of agricultural genetics has downgraded after decades of single-seasonal plantation. Among those holding local knowledge, farmers, breeders and doctors are widely recognized as the key to biodiversity protection.

Intangible cultural heritage helps communities achieve sustainable environmental protection. As the consumption of natural resources has been increasing and become unsustainable worldwide, many local communities have had a



Intangible cultural heritage key to sustainable development

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close relationship with the nature and environment around them. For instance, the Samoan mat - le toga - is used in cultural and spiritual activities. Chronologically, local people develop their weaving knowledge and skills, in which pineapple trees are planted to provide raw materials. The weaving knowledge and skills help Samoans protect their environment because they are aware pineapple trees have great impact on their physical conditions. As being made of plants, weaved products naturally decompose and the product life cycle is shorter than plastics, which are used worldwide and very damaging to the environment.

Natural knowledge and practices among local residents may contribute to environmental sustainability studies. Traditional fishermen are the key to resolving issues related to marine biodiversity as they know the ecosystem, the behavior, the movement and the living environment of the fish and appropriate seasonal fishing methods. Their diversified, specific, useful knowledge may



▲ *The weaving knowledge and skills help Samoans protect environment because they are aware pineapple trees have great impact on their physical conditions*

The knowledge and practices achieved in the history help develop the sustainable natural exploration and restrict the impact of climate change. Therefore, intangible cultural heritage may assist communities to protect the biodiversity and develop sustainably. Many local communities have attached their life to the nature based on their intangible cultural heritage practices.

help scientists study the preservation and restoration of the marine biodiversity. Meanwhile, international co-operation between local communities and specialists as well as practice sharing may lead to environmental sustainability and preservation for the forestry and agricultural sectors and natural resources management.

The knowledge and responsive strategies create an important community-based foundation to deal with natural disasters and climate change. The local communities residing in harsh-condition areas are always the most vulnerable to climate change and natural disasters. Their knowledge and practices of the nature and climate – which are the understandings of the ecosystem, the skills and principles for the protection of the environment and biodiversity, the natural resources management and weather forecast – create a great, full-of-strategy reserve to response to natural threats. The knowledge and skills, being accumulated and adjusted for adaptability, are the tools that can help local communities minimize the damage of natural disasters, rebuild their life and adapt to the climate change.

In summary, the human have kept their development going on and they have adjusted intangible cultural heritage, including natural and social knowledge and practices, to adapt to the environment, meet basic living standards and resolve social issues chronologically. Thus, intangible cultural heritage is vital as it propels the culture to change and guarantees the society is sustainably developed. ■



Waste management projects line up to help address pollution issues

A community-based waste management project aiming to scale up classification and foster green investment was launched on June 8, 2020 in the Northern coastal Province of Quảng Ninh. The project called “Scaling up a Socialised Model of Domestic Waste and Plastic Management in 5 Cities” (DWP5C), will be implemented in Quảng Ninh, Đà Nẵng, Bình Định, Bình Thuận and Bình Dương in a joint effort by UNDP Vietnam, the Norwegian Ministry of Foreign Affairs and Vietnam Administration of Seas and Islands (Ministry of Natural Resources and Environment). Local organizations, including the Farmer’s Union and Women’s Union, will work closely with people and waste workers to promote green habits of waste segregation, collection and recycling as well as expand markets for secondary materials.

According to the Vietnam Administration of Seas and Islands, poor management, limited waste treatment capacity and low public

awareness on environmental problems were responsible for worsening plastic pollution in Việt Nam. UNDP Vietnam Resident Representative Caitlin Wiesen emphasised the significance of environmental incentives to help the country efficiently tackle white pollution and embrace opportunities to move its recycling industry forward. In line with the circular economy approach Việt Nam is advancing, there is a tremendous opportunity for Việt Nam to become a leader in the recycling and recovery market. New technologies and innovations offer a promising avenue to “close the loop” by recovering materials and thereby reducing our need to extract more resources.

The project’s practicality lays on the close collaboration between local authorities and people. Each locality will have their own approach and adaptation in conducting the project. In Quảng Ninh Province solely, the project has cost nearly 287.500 USD with 109.000 USD sponsored by Global Environment Facility (GEF) and UNDP and the rest allocated from the local budget.

In 2019, Prime Minister Nguyễn Xuân Phúc took a bold step to adopt a national action plan, committing to reduce marine plastic litter by 50 percent in 2025 and 75 percent in 2030.

“Plastic waste does not know borders. It travels across our seas, rivers and deltas, impacting all societies and economies. We also need to further enhance harmonised policy packages across ASEAN countries.

This includes aligning on materials and packaging types by promulgating and enforcing pan-ASEAN standards and sharing and financing research and development in alternative materials and recycling technologies”, said Mr. Caitlin Wiesen.

On the same day, “Ending Plastic Pollution Innovation Challenge” (EPPIC) was launched to find new technology solutions for plastic pollution in coastal areas of Việt Nam, Thailand, Indonesia and the Philippines. The project’s first phase in 2020 will take place in Vietnam’s Hạ Long Bay and Thailand’s Koh Samui■

NGUYỆT MINH



▲ The project’s practicality lays on the close collaboration between local authorities and people



Experimental research on supplementing probiotics to improve the efficiency of dry anaerobic digestion for biodegradable municipal solid waste

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Solid waste generation is an inevitable consequence of human activities and has been rapidly increasing in recent years. Remarkably, biodegradable municipal solid waste (BMSW) was often reported to account 50 - 60% total municipal solid waste (MSW), which has been landfilling for many years. That has caused various issues that threaten the environment and public health. Therefore, researchers have been urged to search for highly feasible methods to deal with BMSW. The method of dry anaerobic digesting (AD) is suitable for Việt Nam conditions because of an organic content of MSW. Also, Việt Nam has high humidity which is suitable for biological composting process. It not only reduces environmental pollution caused by BMSW disposal, but also helps create valuable products such as biogas and compost for agriculture.

1. INTRODUCTION

Anaerobic digesting consists of 4 successive main stages: hydrolysis, acidogenesis, acetogenesis and methanogenesis. Thanks to the action of typical groups of microorganisms in the absence of oxygen, the initial organic matter is continuously broken down into substances of smaller molecular weight, eventually creating biogas products and organic humus.

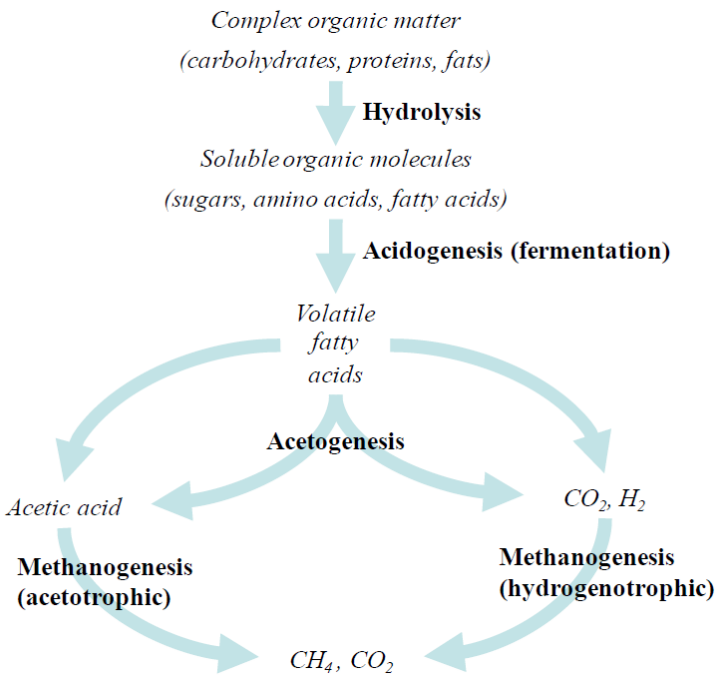


Figure 1: Anaerobic digestion biochemical conversion pathways

It is possible to divide anaerobic treatment technologies into 2 groups according to the total solid content (TS): wet anaerobic digesting - WAD ($TS \leq 15\%$) and dry anaerobic digesting - DAD ($TS > 15\%$) [4]. BMSW with high TS should not be treated with WAD system because it requires a large amount of water to dilute the waste stream, which not only involves higher water and energy consumption costs but also requires bigger reactors. Moreover, waste dilution can lead to a reduction in biogas productivity and create more waste water. Therefore,

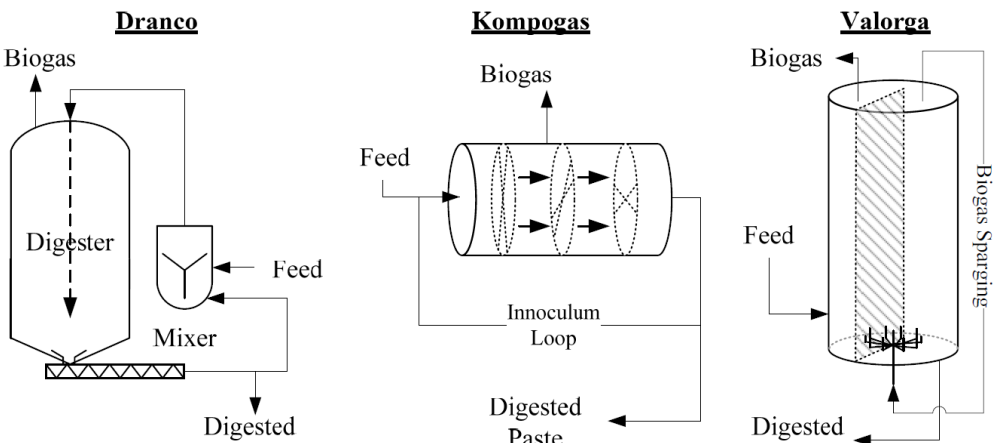


Figure 2. Dry anaerobic single-stage digester designs: Dranco, Kompogas and Valorga

BMSW treatment should be done by DAD. Some of the DAD technologies currently applied in the world are: Dranco, Kompogas and Valorga.

The speed of digesting depends directly on the number and types of microorganisms present in the compost block. To promote this process, before incubation, it is common to add microorganisms to the BMSW. These bioproducts must be licensed by the Vietnam Environment Administration and comply with Decree No. 60/2016/ND-CP. Currently, on the market, there are many types of probiotics to treat organic waste, some of which are commonly used but still not licensed.

2. MATERIALS AND METHOD

2.1. Selecting probiotics

After nalyzing the microorganisms contained in the licensed probiotics, the author chose to test with three types of probiotics: two licensed ones, Emuniv and Sagi Bio, and one EM which was commonly used but included in the list.

2.2. Design experimental model

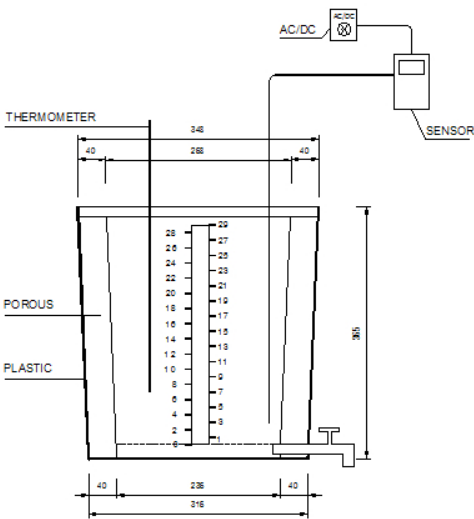


Figure 3. Diagram of dry anaerobic digesting experimental model

Table 1: Strains of microorganisms in the licensed probiotics to treat BMSW

Name of probiotics	Strains of microorganisms	Registration Number
AT-YTB	- Bacillus subtitles - Bacillus licheniformis	No. 07/LH-CPSHMT, 23/10/2012
Weviro	- Arthrobactor - Lactobacillus sp	No. 21/LH-CPSHMT, 17/5/2013
Sagi Bio	- Streptomyces sp - Bacillus subtitles	No. 28/LH-CPSHMT, 08/8/2013
Emuniv in powder form	- Bacillus subtilis - Bacillus megaterium - Lactobacillus acidophilus - Lactobacillus platarum - Streptomyces sp - Saccharomyces cerevisiae	No. 50/LH-CPSHMT, 12/11/2013
Gem	- Lactobacillus sp - Rhodopseudomonas sp	No. 101/LH-CPSHMT, 8/12/2014
BioADB	- Streptomyces owasiensis - Bacillus polyfermenticus - Sacchoromyces cerevisiae	No. 108/LH-CPSHMT, 18/12/2014



▲ a, Inside the model ▲ b, Model in operation

Figure 4. Photos of anaerobic dry digesting experiment model

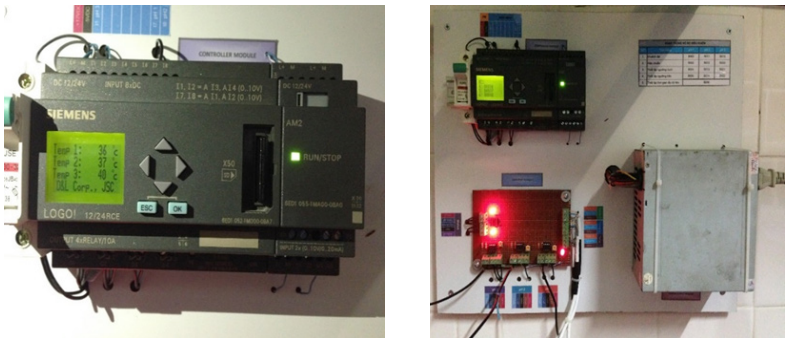


Figure 5. Image sensor of the experimental model

2.3. Experimental procedures

MSW was collected at a garbage collection truck in Chùa Nhĩ Hamlet, Thanh Liệt Commune, Thanh Trì District, Hà Nội. After sorting, we took BMSW into a plastic bag and brought it to the laboratory of the Institute of Environmental Science and Technology - University of Civil Engineering to conduct the experiment. Then BMSW was chopped to about 2 - 3 cm in size and divided into 4 evenly spaced pile



a, Hash, chop BMSW



b, Put BMSW in test bins

Figure 6. Preparation of laboratory samples

Preparing 3 types of probiotics: EM, Sagi-Bio (Sagi Construction and Environment Technology Co. Ltd., Registration Number 28/LH-CPHMT), and Emuniv (Applied Microorganism Joint Stock Company, Registration Number 50/LH-CPHMT).

BMSW after being chopped, was mixed with probiotics:

- Experiment bin 0: Contain fresh garbage without mixing probiotics
 - Experiment bin1: Mix EM
 - Experiment bin 2: Mix Emuniv
 - Experiment bin 3: Mix Sagi Bio
- The experimental model was carried



a, Emuniv packaging



c, Sagi Bio packaging



b, After mixing probiotics with water

Figure 7. Pictures of preparation of probiotics to combine with BMSW

out under laboratory conditions with a temperature of 30°C. Analysis of BMSW composition of experimental inputs included TS, VS, temperature, humidity, pH, specific gravity, TKN, TP and TOC. The parameters were daily included temperature, humidity, pH, slump level, amount of leachate by automatic measuring sensor and manual inspection. After 40 days of incubation, the model was dismantled and the criteria: TS, VS, moisture, pH, density, TKN, TP and TOC were analyzed.

Table 2. Analysis results of indicators of BMSW input experiments

(%mass)	VS (% TS)	TP (mg/ gTS)	TOC (mg/ gTS)	TKN (mg/ gTS)	Ratio C/N	Specific weight (kg/m ³)
48,2	88,45	2,04	435,01	9,5	45,79	281,59



3. RESULTS AND DISCUSSION

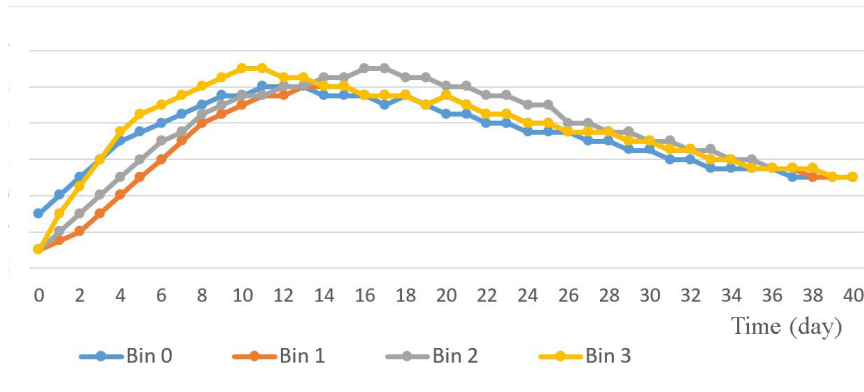


Figure 8. Graph of changes in temperature of experimental bins.

3.1. The change in temperature in the experimental bin

As shown in Figure 8, the temperature in the reactors ranges from 26 - 36°C in the mesophilic temperature. Temperature of experimental bin 3 increased fastest, reaching the maximum of 35 - 36°C from the 9th to the 12th day. However, the temperature then decreased faster than other experimental bins. The temperature of experimental bin 0 increased at the slowest, reaching 35°C on 11th - 13th day, then decreased rapidly. The experimental bin 1 and 2 did not show temperature changes...

3.2. The change in pH at the experimental bin

The pH in the experimental bins decreased during the first 9 - 12 days, then increased gradually. This is because hydrolysis and acidogenesis occurred strongly during the first 10 days, after which the predation of acetogenesis and methanogenesis dominated and increased pH.

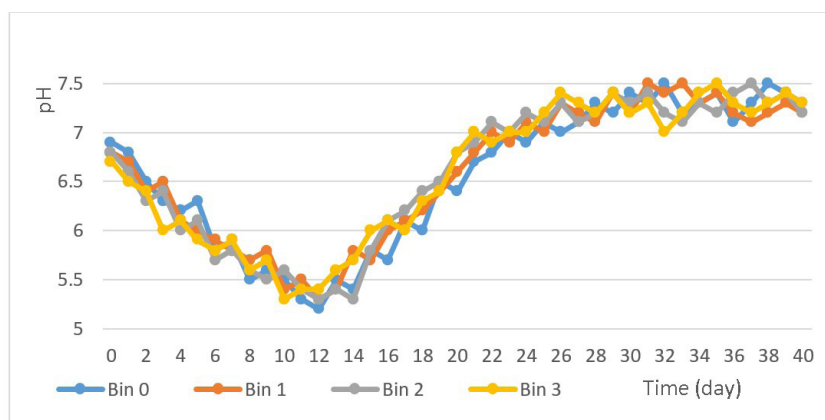


Figure 9. Graph of changes in pH of experimental bins

3.3. The slump level at the experimental bins

The slump level of all 4 experimental bins were high in about the first 7 days, then gradually decreased. The highest drop was in experimental bin 3. This is because the hydrolysis process of decomposing organic solid waste that occurs in Sagi Bio bin is strongest, followed by Emuniv and finally EM. However, when mixed with inoculants it increases the ability to decompose BMSW.

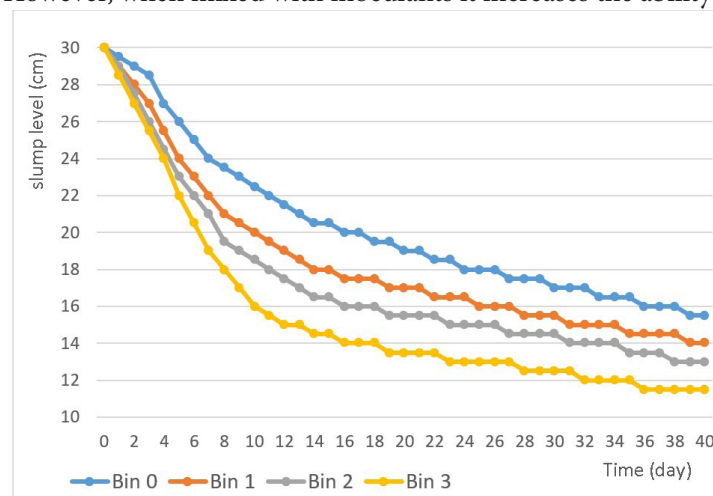


Figure 10. Graph of slump level of experimental bins



Table 3. VS metabolic performance of probiotics at the experimental bins

Experimental bins	Volume BMSW of input, kg	Volume VS of input, kg	Volume BMSW of output, kg	Volume VS of humid, kg	VS metabolic performance, %
Bin 0	5,8	2,47	2,2	0,88	64,44
Bin 1	5,8	2,24	2,0	0,66	70,65
Bin 2	5,8	2,33	1,9	0,67	71,07
Bin 3	5,8	2,28	2,1	0,61	73,04

3.4. VS metabolic performance of probiotics

To determine the VS conversion efficiency, it is necessary to determine the amount of VS in the input material and the amount of VS in the humus after treatment. The conversion efficiency of VS after 40 days at the experimental bins is shown in Table 3.

Thus, the combination of BMSW and probiotics has helped increase the efficiency of eliminating VS. After 40 days, bin 1, 2, 3 have the same composition and have higher VS reduction performance than bin 0, of which the bin 3 is the highest. This also suggests that Sagi Bio in combination with BMSW gives the highest treatment efficiency.

From the results of the experiment, we can conclude: anaerobic digestion in all 3 experimental bins with microbial inoculants (bin 1, 2, 3) is better than in uncoated bin without microbial inoculants (bin 0). Bin 3 when mixed with Sagi Bio inoculants shows the highest efficiency, followed by Emuniv and finally EM. It suggests that mixing probiotics will greatly increase the efficiency of treatment. Of the three selected probiotics, Sagi Bio is the most suitable for BMSW treatment.

4. CONCLUSION

- Dry anaerobic incubation is suitable for BMSW treatment.
- In order to improve the treatment efficiency, it is necessary to add probiotics in accordance with BMSW.
- Further studies are needed to develop dry anaerobic digestion technologies for treatment of BMSW.

REFERENCES

- Aslanzadeh, S., Rajendran, K., & Taherzadeh, M. J. (2014). A comparative study between single- and two-stage anaerobic digestion processes: Effects of organic loading rate and hydraulic retention time. *Int. Biodeterior. Biodegradation*, 95, 181-188.
- J.Rapport, et al. (2008), "Current Anaerobic Digestion Technologies Used for Treatment of Municipal Organic Solid Waste", California Integrated Waste Management Board, Publication IWMB-2008-011.
- Krishna, D., & Kalamdhad, A. S. (2014). Pre-treatment and anaerobic digestion of food waste for high rate methane production-A review. *J. Environ. Chem. Eng.*, 2(3), 1821-1830.
- Mao, C., Feng, Y., Wang, X., & Ren, G. (2015). Review on research achievements of biogas from anaerobic digestion. *Renewable Sustainable Energy Rev.*, 45, 540-555.
- Phạm Văn Định., (2019). Developing a High-Rate Two-Stage Anaerobic Digestion Model to Deal with Biodegradable e Municipal Solid Waste., PhD Okayama University.

BÌNH DƯƠNG: THE WASTE-TO-FERTILIZER PLANT WAS PUT INTO OPERATION

A plant processing daily waste into bio-fertilizer was put into operation in the Southern Province of Bình Dương on May 14, 2020.

The plant, with a capacity of 840 tons per day, was the third of the kind operated by the Bình Dương Supply Sewerage Environment Company (Biwase). The three plants have a combined capacity of 1.680 tons per day.

Biwase has become the biggest manufacturer of bio-fertilizer in Việt Nam. Its fertilizer branded Con Voi Bình Dương has been



used widely by rice and fruit farmers in the Mekong Delta, the Southeastern and South - Central regions.

CHÂU LOAN (VNA source)



ENVIRONMENTALLY-FRIENDLY PRODUCTION AND CONSUMPTION TO ENHANCED

The production and use of environmentally-friendly and recycled products will be encouraged in economic development plans for the 2021 - 2030 period. The objective is part of the National Action Program on Sustainable Production and Consumption in the ten years which was recently approved by Prime Minister Nguyễn Xuân Phúc.

In 2021 - 2025, laws and policies on sustainable production and consumption will be employed, including regulations, technical standards of sustainable production, ecological designs, designs for reusing and recycling for production sectors, regulations on eco-tourism and standards on raw materials, eco- and recycled products. At least 10 technical documents on sustainable production and consumption will be developed, as well as policies to promote production, distribution and consumption

of environmentally - friendly packaging products that replace non-biodegradable and disposable plastic products and regulations on green public procurement. Laws and policies on sustainable production and consumption will be completed and realised by 2030. The Program aims that 80 percent of cities and provinces and 70 percent of industrial zones and traditional craft villages will have their awareness raised about sustainable production and consumption in 2021 - 2025.

To realise the goals, the Program set tasks for completing the legal system on sustainable production and consumption; managing and exploiting natural resources, fuel and developing reusable and recycled materials; promoting green and clean production; developing a sustainable distribution and import-export system; enhancing labelling and certifying eco-labels and setting up a sustainable market and providing information for consumers. In terms of sustainable consumption, the Program eyes enhancing education and practice of a sustainable and green lifestyle; promoting information on sustainable production and consumption; setting up a database on sustainable production and consumption; supporting access to green finance and accelerating international co-operation on sustainable production and consumption■

BÍCH HỒNG (VNS source)

NESTLE COMPANY TO INVEST 2 BILLIO SWISS FRANCS IN RECYCLED PLASTICS

The Global Food and beverage Group 'Nestle' said it would invest 2 billion Swiss francs (1,8 billion Euros, 2,1 billion US\$) over five years to cut its use of virgin plastics in favor of food-grade recycled plastics. The Company, whose brands include Nespresso coffee, Vittel water and Smarties chocolates, also plans to invest in new types of sustainable packaging to meet its target of making all its packaging recyclable or reusable by 2025.

Nestle Company also said in a statement it would reduce its use of virgin plastics by one third over the next five years and would set up a venture fund with 250 million Swiss francs to invest in start-up companies working in the recycling sector in the world.

To create a market for recycled plastics, it said it would source up to 2 million metric tons of food-grade recycled plastics and allocated more than 1,5 billion Swiss francs to pay a premium for the material between now and 2025.

"No plastic should end up in landfill or as litter. Making recycled plastics safe for food is an enormous challenge for our industry. That is why in addition to minimizing plastics use and collecting waste, we want to close the loop and make more plastics infinitely recyclable", Nestle Chief Executive Mark Schneider said in the statement.

Major corporations, often criticized by campaigners for putting profit before the environment, are trying to respond to growing pressure from consumers for more responsible practices. Food and cosmetics giant Unilever announced last September that it will cut its use of new plastic in packaging by half by 2025, acknowledging that the move was partly aimed at young, more environmentally conscious customers■

CHÍ VIỄN (AFP source)



Việt Nam together with the ASEAN community connecting to take action for environmental sustainability and biodiversity

Prof. Phd. ĐẶNG HUY HUỠNH

Vietnam Association for Conservation of Nature and Environment

In ASEAN community, there are about 623 million people living together and surviving under the protection of Mother Nature with more than thousands years of history. There are coincident mountains and forests, wide sea, long rivers a land of spiritual masterpieces, a vast territory connecting people with people, people with nature in coexistence and development. Nature is not only a shelter to protect the peoples of the ASEAN community, but also a place for formation and development of natural resources, including biodiversity. Nature also creates unique cultures of each nation, including a unique traditional knowledge system that relies on nature to survive and develop. Therefore, the ASEAN community should be deeply aware that the well-being, prosperity and happiness of each member in particular and elsewhere on the planet in general depend on the health of the nature.

BIODIVERSITY IS AN INVALUABLE ASSET

The ASEAN region has been recognized and assessed by the international community as a highly biodiversity territory thanks to its diversity and richness on natural landscapes, terrestrial ecosystems, wetlands and islands which are the foundation to harbor habitats for animals, plants, fungi and microorganisms. The natural land area of ASEAN accounts for only 3% of the global natural area, but is the home of more than 18% of plants, animals, mushrooms... This is also a region with vast area of mangroves forest, accounting for 35% of the world's mangroves and with 30% of coral reefs. In particular, there are many valuable and endemic plants and animals in the area such as: the Koupey (*Bos sauveli*), the Gaur (*Bos gaurus*), Tragulus versicolor, Javan rhino (*Rhinoceros sondaicus*), Sao la (*Pseudoryx nghetinhensis*), Eld's deer (*Rucervus eldii*), Australopithecus, Snub-nosed monkeys (*Trachypithecus poliocephalus*), Black-shanked douc (*Pygathrix nigripes*), Dela-

cour's Langur (*Trachypithecus delacouri*), Dugon... Besides, there are thousands species of domestic animals and plants for food, medicine and other value.

This is valuable natural resource play an important role not only for the lives of the peoples in ASEAN community, but also for the present and future generations of mankind. According to Nature's Global Assessment of Ecosystem Services by World Wide Fund (WWF), an estimated of 4 billion people who use medicine of natural origin for health care and up to 70 % of medicines or product of natural origin that can cure cancer...

The great value of biodiversity is not only meaningful regionally to the ASEAN community, but also globally. Therefore, biodiversity is an invaluable asset of mankind in both health and life. The existence and the peaceful life of every people all mankind depend greatly on the biodiversity on the Earth. If this priceless asset is reduced, or lost, it will cause unpredictable consequences, not only for the living environment, but also for human health, crop production, livestock and water resources. According to the United Nations, when natural ecosystems are destroyed, people no longer enjoy free services such as water, fresh air and protection from extreme weather events.

However, the current environmental pollution is alarming. The decline and depletion of ecosystems in the forest and the sea, along with the problem of hunting, illegal trafficking of wildlife leads to the risk of extinction of many wildlife species. According to international organizations, over the last 40 years, 60% of the wildlife population has been seriously declined (IUCN) and it is estimated that there are about 1 million plant and animal species are facing extinction (UNEP). In addition, climate change and unsustainable use of natural resource have caused ecological and economic crises and affecting human health. That will have serious consequences for the life today and tomorrow.

Therefore, the connection of artificial intelligence and modern technology in the ASEAN community with other nations in the world will form a synergy, promoting common understanding in discovering the mysteries of the nature in the cycle of ecological balance, to integrate it into the process of socio-economic development and environmental protection, biodiversity conservation.

ASEAN COMMUNITY WORKS TOGETHER TO CONSERVE BIODIVERSITY

Recognizing the role of nature, for more than half a century, ASEAN member countries have always shown their sense of responsibility in biodiversity conservation. The countries in the region have connected and built up an increasingly stable, strong socio-economic and national security community, in-



cluding environmental protection and biodiversity conservation through constructing a system of national parks and protected areas on land, sea, islands and wetlands. So far, thousands of protected areas have been established with the purpose of protecting the standard samples of nature with scientific value, economic value, endemic species, valuable natural heritages cultural and historical values. There are typical national parks such as: Ta Ses Merimbum (Brunei); Kinabulu, Mulu, Taman Nabara (Malaysia); Iglit Baco, MT-APO (Philippines), Cúc Phương (Việt Nam)...

In addition, countries in the region also improve the legal system to achieve effective management of natural resources. As early as the 1960s, Thailand had a Wildlife Protection Law and by 1961 a National Park Law. So far, Thailand has had 77 national parks and protected areas with an area of 3.937.673 ha, accounting for 7,61% of Thailand's natural area and is expected to increase the number of national parks and protected areas to 127 in the future with 6,488,062 ha and proposes to build a trans boundary protected area with Myanmar, Laos, Cambodia and Malaysia are respectively 12, 5, 6 and 5 areas. Thailand is also the first country in Southeast Asia to ban logging from natural forests since 1989 and only allow the exploitation of timber in bare forest. In Indonesia - the

country with the most islands (13.667) in Southeast Asia - the Government has established 320 protected areas with a total area of 17.300.000 ha. If including the Marine Protected Areas, the area for biodiversity conservation in Indonesia is up to 21.250.000 ha, accounting for 11,1% of the territory.

VIỆT NAM CONSERVER BIODIVERSITY AND CONTRIBUTES TO ENRICHING THE BIODIVERSITY IN ASEAN

Right from the early 50s of the twentieth century, the Communist Party and the Government of Việt Nam, headed by President Hồ Chí Minh, had set out a policy on environmental protection and biodiversity conservation. Although during the years of war, it was full of hardships, the Government of Việt Nam and the people of Việt Nam had tried to overcome all difficulties, to fulfill the call of Uncle Hồ to respectfully protect natural resources, Forest protection, wildlife protection. In the early spring of 1959, President Hồ Chí Minh launched the "Planting New Year" movement and personally planted some trees along Ba Vi mountain forest. Until now, it has experienced 61 spring seasons, the movement of planting trees, planting forests and protecting trees has become a sacred cultural action of the whole Vietnamese community, from the plains to the mountains and to the remote islands such as Hạ Long, Côn Đảo, Phú Quốc, Hoàng Sa and Trường Sa, contributing to the richness of biodiversity in the regions.

Not only planting and protecting trees, the Government of Việt Nam has also issued decisions banning the hunting of elephants, tigers, rare animals and birds in forests and in cities. In June 1962, President Hồ Chí Minh signed a Decision to establish Cúc Phương forbidden forest, Ninh Bình Province, with an area of 22.000 ha. This is a humid tropical primary for-



▲ Vũ Quang National Park (Hà Tĩnh Province)



est with high biodiversity with 2.234 species of plants, 669 species of vertebrates, 2.000 species of insects and thousands of species of crustaceans and molluscs. In particular, Delacour's Langur has been discovered-a primate species endemic to the Red River Delta of Việt Nam and many rare and precious animal and plant species. Since then, Việt Nam has built a system of 167 protected areas, including 34 national parks, 58 natural reserves, 14 species/habitat reserves, 45 landscape protection areas, 16 marine protected areas... with a total of 2.198.774 ha, accounting for about 7% of the country's natural area and is expected to increase the area of the protected area system to around 2.940.000 ha after 2020. In addition, Việt Nam has built 4 biodiversity corridor in the Northeast and South Central regions with a total area of about 120.000 ha...

With the great effort and responsibility of the Nature and Biodiversity Conservation Agency - Vietnam Environment Administration - Ministry of Natural Resources and Environment (MONRE), Forest Protection Department - Vietnam Administration of Forestry - Ministry of Agriculture and Rural Development (MARD), with the support of international organizations, especially ASEAN countries - ASEAN Biodiversity Center, some protected areas in Việt Nam have been internationally and regionally recognized, these are 2 World Natural Heritage Sites, 8 Ramsar Sites, 9 Biosphere Reserves and 10 ASEAN Heritage Parks. Việt Nam is also an active member in implementing international treaties on biodiversity such as Convention on Biodiversity (CBD), Ramsar Convention, International Convention on Trade in Endangered Species of Wild Fauna and Flora (CITES) which are international legal basis for conservation. Việt Nam has also issued many legal documents related to biodiversity, including the Law on Environmental Protection (2014), the Law on Fisheries, the Law on Forestry (2017), the Law on the Sea (2014) and the Law on Biodiversity (2008).

The adoption of the Law Biodiversity by the National Assembly of Việt Nam has greatly contributed to the process of managing and conserving of biodiversity in Việt Nam. It can be affirmed that so far, Việt Nam is only country among ASEAN and one of the 10 countries in the world to enact the Law on Biodiversity. It is responsible effort of the MONRE, the Agency assigned

by the Prime Minister to act as the state management of environment and biodiversity.

This also shows that biodiversity conservation activities in recent years in Việt Nam have contributed to the joint actions of Southeast Asian countries in nature protection and biodiversity conservation. This is not merely a scientific reflection of an overall picture of the achievement of biodiversity conservation for sustainable development in the region, but also showing the sense of responsibility of ASEAN Governments for countries and people around the world, for a healthy nature to conserve biodiversity, serving the peace and happiness of human beings.

PROPOSING SOME SOLUTIONS TO BIODIVERSITY CONSERVATION IN VIỆT NAM AND IN THE REGION

One of the current priority issues is to strengthen the close and regular coordination in the exchange of information, data, biodiversity status and trends and experiences in biodiversity management in order to prevent and address the risk of natural ecosystem depletion, reduction or loss of species, especially rare and endemic flora and fauna in ASEAN.

Collaborate in researching and developing planning of protected areas and transnational green corridors which creating a safe movement for wildlife species.

Strengthen the control and management of the exploitation, trade and transport of endangered, precious and rare wild animals and plants in each member country of ASEAN region.

Strengthen cooperation in training human resources with high theoretical and technological qualifications to manage biodiversity conservation in sustainable development way.

The ASEAN Center for Biodiversity should periodically organize seminars for the exchange of experiences in management of national parks and protected areas, as well as for the agencies in charge of nature protection and biodiversity conservation in the region.

Appropriate policies are needed to attract investment from private enterprises involved in the management of national parks and ecotourism development.

Over the past 50 years, Southeast Asian countries have not only connected with each other, but also have been working closely with countries around the world to protect nature, conserve biodiversity for peace and happiness of human. With the efforts of member Governments, the participation of the community of ethnic groups in the ASEAN family, with the help and cooperation of international organizations, the task of protecting nature and biodiversity in the ASEAN region is constantly developing, demonstrating a system of National Parks, Protected Areas, Natural Heritage, natural landscapes with the nuance of a beautiful tropical nature, as an input of a green economy, circulating economy in sustainable development. However, Governments and people in the ASEAN community need to make greater efforts in management to be a physical and spiritual support for the peoples of the region, contributing to the abundance and enrichment of green capital worldwide■

The Education for Nature - Vietnam calls for end to commercial farming of endangered wildlife

The Education for Nature - Vietnam (ENV) has appealed for an end to commercial farming of endangered wildlife, in an attempt to conserve biodiversity on the occasion of the World Environment Day 2020 (June 5).

The ENV has appealed for an end to commercial farming of endangered wildlife, in an attempt to conserve biodiversity on the occasion of the World Environment Day 2020. The ENV said on June 4 that this year's World Environment Day theme of "Time for Nature" is highly meaningful as the world is facing serious and rapid degradation of biodiversity and wildlife populations. It's time for countries to prioritise actions and policies for conserving the nature, biodiversity and wild animals and ensuring the balance with economic development.

ENV Deputy Director Bùi Thị Hà said, there are various choices to develop economy and eliminate poverty, but there is only one opportunity to protect biodiversity and some species from extinction in the country.

Given this, the ENV has released a short film urging the eradication of commercial breeding and farming of endangered wild animals for the sake of biodiversity, which serves as a message calling on policymakers to perfect relevant policies and legal regulations.

Many people believe the commercial breeding and farming of threatened species can both generate profit for breeders and help ease pressure on wild animals, arguing that supplies from farming facilities will lead to a sharp fall in poaching and can also be used for research or reintroduction into the nature.

However, the ENV, most of conservation organizations and scientists do not support the breeding, farming and trading of endangered wild animals for commercial purposes.

Experts said if the commercial breeding and farming are given the go-ahead, it will be difficult for authorities to identify the legality and monitor the trading,

hunting and transport of wildlife individuals and their products sold in the market, a loophole that traffickers may take advantage of.

Demand for prohibited products may also increase after they are allowed in the market while there are not enough supplies from farming facilities. It will also be hard for captive-born animals to live in the nature if they are released as they lost their survival instinct, experts noted.

NAM HUNG
(VNA source)



▲ A great hornbill (a rare bird species) is released into the Bạch Mã National Park in Thừa Thiên - Huế Province on May 21, 2020



GEF CEO: We need to protect our one common home



▲ GEF CEO and Chairperson Naoko Ishii

Dr. Naoko Ishii is CEO and Chairperson of the Global Environment Facility (GEF), a multilateral trust fund whose US\$ 1 billion annual work program helps developing countries address the drivers of environmental damage and degradation. In an interview of a reporter from The GEF website, she reflected on the root causes of the coronavirus outbreak and the message the pandemic is sending us about the way we live.

Reporter: What does the coronavirus outbreak mean for international action on the environment?

Dr. Naoko Ishii: The COVID-19 virus has affected the whole world, in ways I would not have imagined just a few months ago. The virus' fast spread across borders and indiscriminate infection of people from all walks of life has shown how small our planet is, and really drives home how connected we all are.

The crisis has also revealed just how vulnerable we are. It is now clear that we cannot take our current way of life for granted and that we need to find better ways to work together to solve the global challenges we have delayed confronting. Confronted with COVID-19, there's a stronger collective sense of what we stand to lose - now more than ever, we must look after one another and our common home.

For the sake of our planet, we need to address the causes of the coronavirus outbreak, which at their deep roots are the same as the drivers of climate change, environmental damage and biodiversity loss. Our modern economic development has been so powerful and driven human systems too close to the natural ones, which has made it easier for pathogens to travel from wildlife to humans, then spread around the world through a global network of trade and travel. We are living beyond the carrying capacity of our planet, putting human systems and natural systems on a collision course: COVID-19 is a manifestation of this fact. The fundamental cure and prevention for this will be to change how we live.

As we pull together to combat today's medical crisis, we must strive for systems-level changes (a smooth energy transition, sustainable food system, resilient cities and circular economy) that will also safeguard the Global Commons - a stable climate, clean air and water, healthy forests, oceans, biodiversity and other natural resources we all share and rely on for life. I hope that we will emerge from this crisis with more awareness than ever about the need to fundamentally address the stressors on our planet, equipped with new models of cooperation and governance for issues of global concern.

Reporter: A short time ago, we expected 2020 to be a "super year" for nature. Has that changed?

Dr. Naoko Ishii: Yes and no. We began 2020 with high expectations, as we felt that nature had finally captured the political imagination as well as the public's attention. I was among those who were feeling upbeat about the potential to translate this new urgency into ambitious international agreements about biodiversity, climate change, oceans and more. Unfortunately, the coronavirus outbreak has caused a postponement of the key negotiating conferences needed to reach those deals.

But the added time may help us, in a way. With several key conferences rescheduled for 2021, we have additional available time to accelerate our work and ensure that next steps on the environment incorporate the insights we have learned from COVID-19 and support a more sustainable model for the whole of the economy. We also need to act with urgency in the near term to support a coronavirus recovery plan that is informed by this knowledge. We should not rebuild our economy as in the same way as it was abruptly suspended. We need to work around the clock to help make sure that both economic recovery plans and new environmental agreements are well-designed to bring human systems and natural systems in harmony.

Reporter: Is the COVID-19 crisis affecting developing countries differently, in terms of the environment?

Dr. Naoko Ishii: I am very concerned about how the pandemic will impact the developing countries and small island states where the GEF funds environmental programs and projects. Small holder farmers, subsistence fishers and miners, slum



▲ *Have to protect wildlife and prevent wildlife trafficking*

dwellers, and other vulnerable people risk being very exposed in this crisis - to the virus and also to the risks of lost livelihoods, poverty, hunger, lack of education and more. The entire global supply chain has been affected by this and the biggest burden will be felt by the weakest link of the value chain. This is a major concern and it will impact our approach to building up the environmental resilience of developing countries.

We need to take great care in this time of crisis to support the guardians of nature - the park rangers, community leaders and others on the frontline working to protect wildlife and nature in rainforests, wetlands, drylands and coastal communities. We will ensure that relevant GEF-funded projects will continue to enable those heroic individuals to do their important jobs and that the original purposes of environmental projects will not be undermined. Those working to safely manage waste and reduce exposure to dangerous chemicals also need our ongoing support. We will work together to mitigate the pandemic's knock-on impacts "downstream" in waterways, protected areas and other vital areas.

Reporter: *What kind of partnerships do we need to succeed in this effort?*

Dr. Naoko Ishii: COVID-19 strengthens our case for transformative systems change; to make sure human systems are in harmony with natural ones. Towards this goal, multi-stakeholder coalitions among governments, both national and sub-national, businesses, civil society and academia are essential. On our side, the GEF has been promoting those partnerships around cities, oceans, and commodity supply chains, as well as the community in the Global Commons Alliance for a larger collective impact across our project portfolio.

It is also critically important that we break down silos between disciplines. While scientists had been warning for years about rising risks of zoonotic diseases, the world was largely unprepared for the COVID-19 outbreak. We can and must learn from this. Building on this, we are looking to bring together a new taskforce of scientific experts from across the health and environment disciplines to focus specifically on new steps we can take to prevent infectious diseases and fortify human health as we work to support necessary environmental action. Introducing a stronger public health voice to the table will help us emerge from today's crisis and avert those ahead.■

ĐỖ HOÀNG (*Theo GEF source*)

EU "GREEN" RECOVERY TO TARGET BUILDINGS, CLEAN POWER, HYDROGEN

European Union (EU) plans for an environmentally-friendly economic recovery from the coronavirus pandemic will target building renovation, renewable energy and clean hydrogen fuel, according to a Draft document which published on May 27, 2020.

The Draft lays out how the European Commission plans to use low-carbon investments to battle the bloc's virus-induced economic downturn. The Commission declined to comment on the draft, which may change before publication. It must also be approved by EU Governments and European Parliament.

The Draft climate measures in the Commission recovery plan - which will be funded by the bloc's long-term budget and a fresh EU



▲ *Members of the European Parliament are seen during a plenary session on a new proposal for the EU's joint 2021 - 2027 budget in Brussels, Belgium on May 27, 2020*



recovery fund - aim to transform Europe's building stock to curb energy use, cut consumers' bills and quickly create jobs in construction. The Commission will earmark 91 billion Euros each year in grants and loan guarantees for renovations like rooftop solar panels, insulation and renewable heating systems.

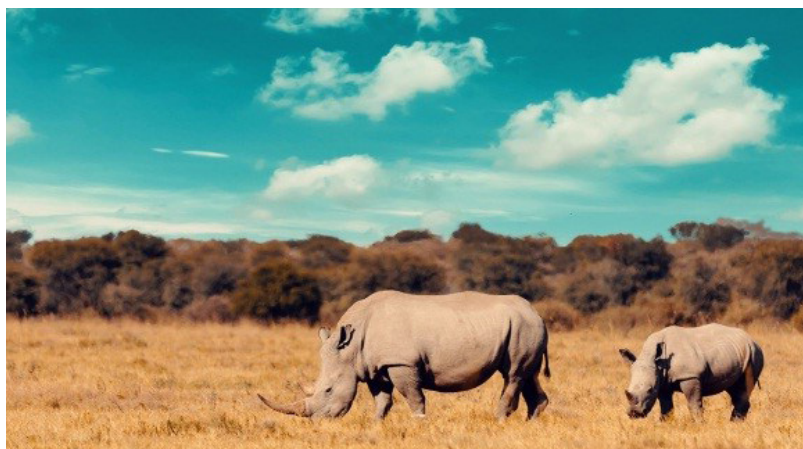
Under the Commission proposal, the EU will tender 15 GW of renewable energy capacity in the next two years, with expected investments of 25 billion Euros. A 10 billion Euro fund, administered by the European Investment Bank, will also offer loans to projects for renewable energy and clean hydrogen - a zero-carbon fuel produced using renewable power.

Green hydrogen is seen as crucial to deliver the Commission's target to decarbonise the EU economy by 2050, by replacing fossil fuels in polluting industrial processes. The Commission plans to expand clean transport through a 20 billion Euro scheme of grants and guarantees to boost sales of "clean" vehicles over the next two years. Greenpeace said that any public funding for carmakers should be tied to commitments from firms to end diesel and petrol car sales by 2028.

The EU will also aim to install 2 million electric and hydrogen vehicle charging stations by 2025■

DUY BACH
(EUNews source)

NEW PARTNERSHIP AIMS TO HELP PUT A STOP TO ILLEGAL WILDLIFE TRADE



▲ Rhinos are protected under the Convention on International Trade in Endangered Species of Wild Fauna and Flora

The illegal trade in wildlife is a massive, multibillion-dollar market driven by international criminal networks and exacerbated by a nexus of poverty and corruption. Wildlife trade is a crime that, when combined with other threats like habitat loss and climate change, can drive thousands of species to the brink of extinction, lead to ecosystem breakdown and spread invasive species.

In response to the global wildlife trafficking crisis, the UNEP Wild for Life Campaign works with the United Nations Development Programme, United Nations Office on Drugs and Crime and the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Among other activities, the Campaign works through high-profile social media influencers that bring the urgency, scale and relevance of wildlife trafficking to a global audience. This community of champions has reached nearly 1 billion followers with nearly 10 million social media interactions. Through the campaign, several species have received greater protection from the Convention, including, elephants, rhinos, pangolins, helmeted hornbills, rosewood and mako sharks.

For the 2020 Super Year on Biodiversity, UNEP and the China Green Foundation signed an agreement to expand efforts to raise awareness and inspire action for both work to end illegal trade of wildlife and, more broadly, the value of healthy biodiversity to human well-being.

Contributions from the China Green Foundation, a non-governmental organization, will be used to profile country-level efforts and best practice and to support the campaign's topic areas and activations. The communication efforts will help in delivering Sustainable Development Goals 14 (Life below water) and 15 (Life on land) with their relevant targets of "urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity, and protect and prevent the extinction of threatened species by 2020". It will also help further work to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products■

NHẬT MINH (UNEP source)

Countries lead the transition to sustainable energy

The current state of the sector is described in the World Economic Forum's Energy Transition Index 2020. It benchmarks the energy systems of 115 economies, highlighting the leading players in the race to net-zero emissions, as well as those with work to do.

What does COVID-19 mean for the energy transition? While lockdowns have caused a temporary fall in CO₂ emissions, the pandemic risks derailing recent progress in addressing the world's energy challenges. With pressure to get idle economies back to "normal", the short-term shift to a more sustainable energy sector could be in doubt. But the current crisis also presents an opportunity to rethink how our energy needs are met and consider the long-term impact on the planet.

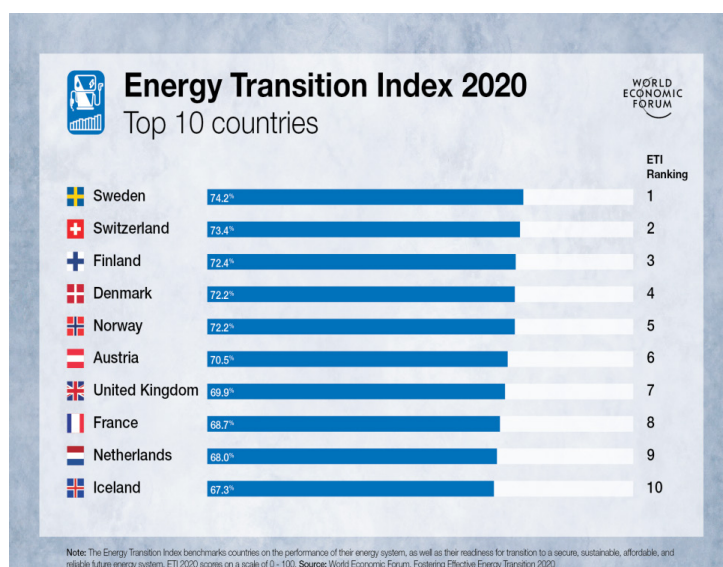
UNPRECEDENTED CHANGE

The past decade has seen rapid transformations as countries move towards clean energy generation, supply and consumption. Coal-fired power plants have been retired, as reliance on natural gas and emissions-free renewable energy sources increases. Incremental gains have been made from carbon pricing initiatives

Since 2015, 94 of 115 countries have improved their combined score on the



▲ Renewables energy such as onshore wind play a key role in the energy transition



▲ The 10 countries most prepared for the energy transition

Energy Translation Index (ETI), which analyzes each country's readiness to adopt clean energy using three criteria: energy access and security; environmental sustainability and economic development and growth. But the degree of change and the timetable for reaching net-zero emissions differ greatly between countries and taken as a whole, today's advances are insufficient to meet the climate targets set by the Paris Agreement.

Sweden tops the overall ETI ranking for the third consecutive year as the country most ready to transition to clean energy, followed by Switzerland and Finland.

There has been little change in the top 10 since the last report, which demonstrates the energy stability of these developed nations, although the gap with the lowest-ranked countries is closing. Top-ranked countries share a reduced reliance on imported energy, lower energy subsidies and a strong political commitment to transforming their energy sector to meet climate targets. However, the UK and France are the only two G20 economies in the top 10, which is otherwise made up of smaller nations.

POWERFUL SHOCKS

Outside the top 10, progress has been modest in Germany. Ranked 20th, the country has committed to phasing out coal-fired power plants and moving industrial output to cleaner fuels such as hydrogen, but making energy services affordable remains a struggle.

China, ranked 78th, has made strong advances in controlling CO₂ emissions by switching to electric vehicles and investing heavily in solar and wind energy - it currently has the world's largest solar PV and onshore wind capacity. Alongside China, countries including Argentina, India and Italy have shown consistent strong improvements every year. Gains over time have also been recorded by Ban-



gladesh, Bulgaria, Kenya and Oman, among others. But high energy-consuming countries including the US, Canada and Brazil show little, if any, progress towards an energy transition.

In the US (ranked 32nd), moves to establish a more sustainable energy sector have been hampered by policy decisions. Neighboring Canada grapples with the conflicting demands of a growing economy and the need to decarbonize the energy sector.

The COVID-19 pandemic serves as a reminder of the impact of external shocks on the global economy. As climate change increases the likelihood of weather extremes such as floods, droughts and violent storms, the need for more sustainable energy practices is intensified. Policy-makers need to develop a robust framework for energy transition at local, national and international levels, capable of guarding against such shocks.



▲ China currently has the world's largest solar PV capacity

“The Coronavirus pandemic offers an opportunity to consider unorthodox intervention in the energy markets, and global collaboration to support a recovery that accelerates the energy transition once the acute crisis subsides. This giant reset grants us the option to launch aggressive, forward-thinking and long-term strategies leading to a diversified, secure and reliable energy system that will ultimately support the future growth of the world economy in a sustainable and equitable way”, said Mr. Roberto Bocca Head of Energy and Materials at the World Economic Forum■

PHƯƠNG LINH

(The World Economic Forum source)

GOVERNMENTS, INDUSTRY, CIVIL SOCIETY AND UN JOIN FORCES TO BEAT PLASTIC WASTE POLLUTION



With an estimated 100 million tons of plastic waste in the oceans, 80-90% of which comes from land-based sources, a new Plastic Waste Partnership, established by the Basel Convention, has met for the first time to discuss ways to prevent, minimize and soundly manage, plastic waste from across the world.

The meeting, convened by the Secretariat of the Basel, Rotterdam and Stockholm Conventions (BRS) and hosted by the Seychelles Ministry of Environment, Energy and Climate Change, gathered more than 100 representatives from members of the Partnership, in Seychelles in March 2020.

At the opening of the meeting, Norwegian Minister of Climate and Environment Mr. Sveinung Rotevatn called the Partnership “a unique opportunity to kick-start the efforts to better deal with the environmental challenges of plastic waste.”

The BRS Executive Secretary Mr. Rolph Payet announced a new project on plastic waste funded by the Norwegian Development Agency to help build capacities for managing plastic waste in developing countries and countries with economies in transition. He described how this 6,9 million USD project will help operationalize the Plastic Waste Amendment adopted in May 2019 by 187 Parties to better incorporate plastic wastes of most concern into the legally-binding framework of the Basel Convention. The new project supports many activities of Convention’s work programme, for instance a Small Grants Programme which will channel funds to the grassroots level in priority regions.

The meeting outcomes included agreement on the activities the Partnership working group will tackle as a first step. This includes activities on prevention and minimization of plastic waste, facilitating its proper collection and recycling, preparations for entry into force of the Plastic Waste Amendment and plans for outreach and awareness raising activities. The Working Group will develop and implement these activities along with supporting pilot projects and will provide a first report back on its progress at the twelfth meeting of the Open-ended Working Group of the Basel Convention (Geneva, 22 - 25 June, 2020).

The meeting was made possible using funding generously provided by the Governments of Canada, Japan, Norway, Seychelles and Switzerland■

AN BÌNH (UN News source)



Foremost Green tourism - ecotourism in 2020

In tandem with rising trends worldwide, Vietnamese tourism is spearheading emerging tourist trends such as business based vacations at luxurious and gaudy hotels; off the beaten track to nature, or detox vacations mixed with yoga and meditation.

GREEN TOURISM - ECOTOURISM

Green tourism and ecotourism are expected to call the shots in the industry this time. Deputy Minister of Culture, Sports and Tourism Lê Quang Tùng claimed that the development of green tourism is emerging to be a principle and general rule agreed upon by many countries, including Việt Nam. The development of green tourism as based on due respect for natural elements and local culture is also the country's orientation in sustainable tourism combined with preservation.

This type of tourism is lauded for its various benefits and exciting experiences for visitors such as more insightful knowledge of culture and local ecosystem by bringing visitors closer to nature, rejuvenate themselves, extract energy from a fresher living environment and tranquility and reduce all worldly burdens as well as stress in our ordinary life.

There are in Việt Nam also numerous green tourism focused travel agencies, ranging from green accommodation products of Flaminco Group and models of the Viet Community Tourism Association (VCTC) to green tourist homestay associated with agrarian tourism in Quảng

Nam. In the Northern highlands, some homestay units such as Mr. Linh Homestay (Bắc Kạn), Lâm Bình Homestay (Tuyên Quang), A Chu Homestay (Sơn La)... have also been highly appreciated and favored by tourists for their principles of green tourism that engender exceptional experiences and serenity in nature's embrace.

WELL RESTED AT LUXURIOUS AND WORLD-CLASS HOTELS

Visitors are shifting to a higher gear in purchasing power for accommodation. The Association of British Travel Agents (ABTA) realized that 71% of tourists spent more on their vacations in 2018. Many visitors are now fixated no more on money value in vacations. Instead, they shift their attention to experiences on the way and pay less attention to well-trodden roads to seek for less known and thus more authentic experiences in less heard-of destinations.

Hotels in Việt Nam are catering well to these rising demands of visitors, who are slowly and steadily changing. Apart from minimal facilities required for a bedroom, visitors expect more and prove more willing to pay more for their private requirements, such as fine space, exclusive kid zone, private pool or customized services. These days, hi-end hotels and resorts in Việt Nam such as those of MGallery by Sofitel in Quảng Ninh and Sapa or chains operated by Vingroup or Mường Thành... are just ideal options for these target customers.

WELLNESS TOURISM

According to The Global Wellness Institute, the wellness (physically and mentally) tourism will be one of the more outstanding tourist trends in bucket lists in 2019. As estimated, this brand-new model will continue to grow at an average annual rate of 7,5% and reach 919 billion dollars by 2022, making up 18% of total market share worldwide.

Previously, luxury facilities such as spa and gym are just side products to barely meet "standards" of a hi-end luxury resorts. These days, guests are more demanding and discerning of these services. Grasping through this shift in demands, there are now in Việt Nam various travel agents and resorts exclusively tailored for wellness tourist products, meditation tourism, spa, beauty salon or hot spring bath... This 2019 summer, you may treat themselves a bit better in some indulgent moments in a secluded hideaway to relax, regain energies and take care of yourselves with meditation courses...

According to travel website Wego and TrustYou, Hà Nội and Hội An (Quảng Nam) are two highly appreciated destinations for their high suitability operate wellness and tourism of visitors, thrusting them in the top 10 best tourist cities to offer these services in Asia■

MAI THỊ TÌNH



▲ Lâm Bình Homestay (Tuyên Quang Province)



EU's New Biodiversity Strategy

The European Commission (EC) has committed to protecting 30% of the EU's land and oceans by 2030 as part of the European Green Deal, in a plan tentatively welcomed by environment groups who warned far-reaching ambitions must not only exist "on paper". The 10-year plan, newly published, includes commitments to reduce the use of chemical pesticides by 50%, plant 3 billion trees by 2030 and reverse the decline in pollinators. Within the 30% protected areas, a third of land and sea will be under "strict protection", meaning there should be no human intervention besides minimal management to keep the area in good condition for wildlife.

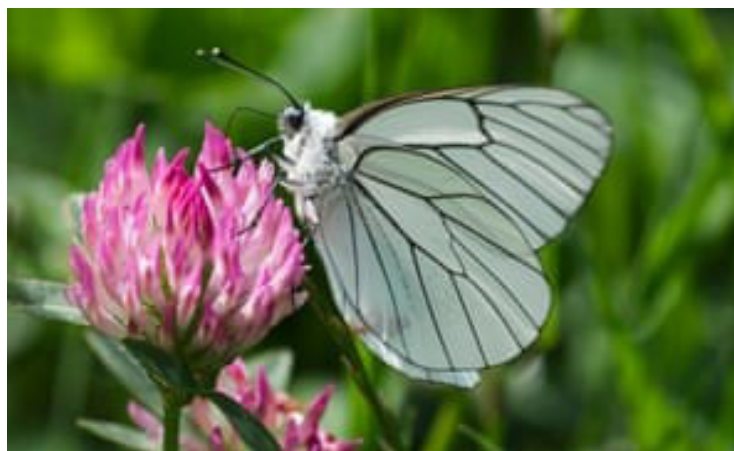
Strictly protected areas will include carbon-rich habitats such as primary and old-growth forests, peatlands, wetlands and grasslands. Currently only 3% of land and 1% of marine areas are under strict protection. The EC aims to raise at least € 20 billion (£ 18 billion) per year to fund the the plan. The money will come from private and public funding at EU and national level. A significant proportion of the EU's climate budget will also be invested in biodiversity, the report said.

The 10-year plan to tackle the global biodiversity crisis is also putting pressure on reworking the common agricultural policy (CAP), which has been accused of driving biodiversity decline through its € 60 billion per year subsidy system that primarily rewards farmers for the amount of land they have, rather than for making environmental improvements.

The report says 10% of agricultural areas will be transformed into "high-diversity landscapes" with the creation of features such as buffer strips, hedges, ponds and fallow land. A quarter of agricultural land will be managed organically by 2030.

The EU's new Strategy comes after decades of catastrophic loss of biodiversity, with wildlife populations falling on average by 60% in the past 40 years as a result of human activities. The COVID-19 pandemic has further highlighted the link between environmental and human health, making the case for ambitious action clearer than ever, the report says

The new Strategy is expected to be brought to the table at the United Nations Convention on Biodiversity, COP15, in Kunming in 2021. Delegates from 190 countries will thrash out global biodiversity targets for the next decade and the EU is likely to put pressure on other countries to follow its lead.



▲ The EC is promising legally binding targets to restore nature reserves, such as meadows, wetlands, peatlands, bogs, marshes, grasslands and forests

The aims of the new Biodiversity Strategy

The EC's 27-page 2020 Biodiversity Strategy pledges to: Legally protect at least 30% of the EU's land and sea with ecological corridors linking reserves. Currently 26% of land and 11% of seas are protected; Enforce "strict protection" on a third of protected areas, including carbon-rich peatlands, wetlands and all primary and old-growth forests. Strict protection means there will be no human intervention other than management required to maintain the area for wildlife. Currently 3% of the land and 1% of marine areas are under strict protection; Outline legally binding targets in 2021 to restore degraded and carbon-rich ecosystems such as meadows, wetlands, peatlands, bogs, marshes, grasslands and forests; Ensure habitats and species protected by the Habitats and Birds Directives show no deterioration. At least 30% of those not currently in favourable status will need to reach that status, or at least show improvement; Restore 25.000 km of river to free-flowing status by removing barriers and reinstating floodplains; Compel European cities with at least 20.000 inhabitants have Urban Greening Plans in place by the end of 2021, which should include creating urban forests and farms, green roofs and walls and tree-lined streets. Use of pesticides in urban green spaces should be eliminated and harmful practices such as leaf blowers and excessive mowing will be limited; Plant at least 3 billion trees by 2030, "in full respect of ecological principles", while 10% of agricultural land will be transformed into "high-diversity" landscapes with the creation of features such as buffer strips, hedges, ponds and fallow land; Ensure 25% of agricultural land is managed organically by 2030, which would mean tripling the annual conversion rate of organic farming. Pesticide use will be reduced by 50%; Spend at least €20bn on the 10-year plan.

It follows a text drafted by the UN Convention on Biological Diversity in January, 2020 that called for a global commitment to protect at least 30% of the planet in the next decade■

SON TÙNG (AFP source)



RÚ CHÁ MANGROVE FOREST

Amid the large Tam Giang Lagoon area of Thừa Thiên - Huế Province, the forest of Rú Chá is shown to be unique and impressive by its very own natural colors. Rú Chá is located in Thuận Hóa Village, Hương Phong Commune, Hương Trà Town, Thừa Thiên - Huế Province, about 15 km from the City center.

Rú Chá is explained quite simply with chá here as a tree, a species of brackish water. Forests are also called indigenous people by the locals, so the name Rú Chá comes from here.

Coming to Rú Chá in the end of this autumn, it was astonishing to see the rows of poles that stretched as high as the blue clouds, tailing each other to form endless circles, sucking eyes. With that enchanting setting, Rú Chá becomes a way for visitors to explore and enjoy virtual living.

And right in the center of the forest, visitors can check in the types with fresh light streams, take a picture of the dawn in the sea from the tall concrete tower or view the panorama of the pristine Tam Giang Lagoon, large front. Tourists discover Rú Chá according to route 1 including Huế-



▲ Rú Chá is a destination for people to enjoy and take photos to memorize

Rú Chá - Thái Dương Village-Mỹ Khánh Champa Tower - An Bằng Cemetery; Line 2 includes Huế-Rú Chá - Thái Dương Village; Line 3 includes Huế - Mỹ Khánh Champa Tower - An Bằng Cemetery.

With a beautiful space, especially different from the natural landscape is quite unspoiled, around Rú Chá also gathers many species of natural specialty aquatic species such as eel, grouper... and add a very favorable point. Rú Chá is only less than 15 km from the City center, so it is easy to connect destinations in the tour program. Rú Chá is a destination for young people to enjoy, take wedding photos, take photos to memorize ■

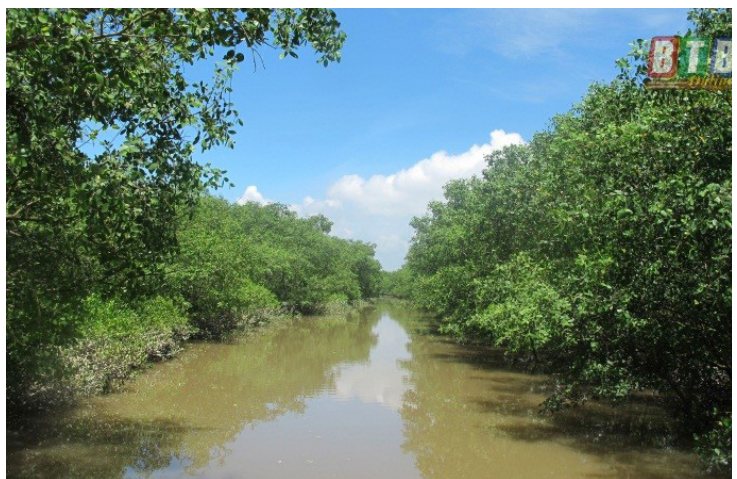
ANH THU

VIỆT NAM ESTABLISHES THÁI THỤY WETLAND AS A NATURE RESERVE

The Ministry of Natural Resources and the Environment (MONRE) has designated the coastal wetland in Thái Thụy District in the Northern Province of Thái Bình as a nature reserve. The establishment was announced by the Ministry and the Provincial on June 24, 2020.

The Thái Thụy Nature Reserve covers a total of 6.560 hectares, of which 1.500 hectares are strictly protected, another 4.800 hectares are dedicated to ecological recovery and the rest is for administrative services. It is bordered by the Thái Bình River to the North, the Diêm Hộ River to the South, the East Sea to the East and a dyke to the West.

Thái Thụy is one of 68 wetlands in Việt Nam and home to many species of migratory birds which are threatened globally. It also has the potential to provide various ecosystem services, including fishery resources, coastline protection, climate regulation and environmental cleaning.



▲ The Thái Thụy Nature Reserve in Thái Bình Province

The establishment of the Thái Thụy Nature Reserve aims to protect local biodiversity, especially threatened bird species and to encourage community engagement in the sensible management and use of wetland ecosystem services■

PHƯƠNG TÂM (Tienphong source)



FIVE NEW ROTIFER SPECIES FOUND IN VIỆT NAM

A group of biological scientists and researchers from the Central City's Science and Education College together with two professors from Belgium and Thailand have found 5 new rotifer species after research conducted in Việt Nam from 2013.

A scientific report on the five new rotifer species: *Lecane Langsenensis*; *Lecane Phapi*; *Lecane Dorysimillis*; *Trichocerca bauthiemensis* and *Ploesoma asiaticum* - was released in the scientific magazine *Zootaxa* a peer-reviewed scientific mega journal for animal taxonomists, in 2019 and the *Journal of Limnology* published in 2013.

The five species rotifer were found in the Hương and Như Ý rivers in Thừa Thiên - Huế Province and Láng Sen Nature Reserve in the Southern Long An Province following research from 2013 - 2019.

Dr. Trịnh Đăng Mậu, who researched the five rotifer species said the *Lecane Langsenensis* was found in joint research with two colleges (Mr. Võ Văn Minh and Mr. Phan Doãn Đăng), in Láng Sen Reserve in 2015 and the Hương River in 2019.

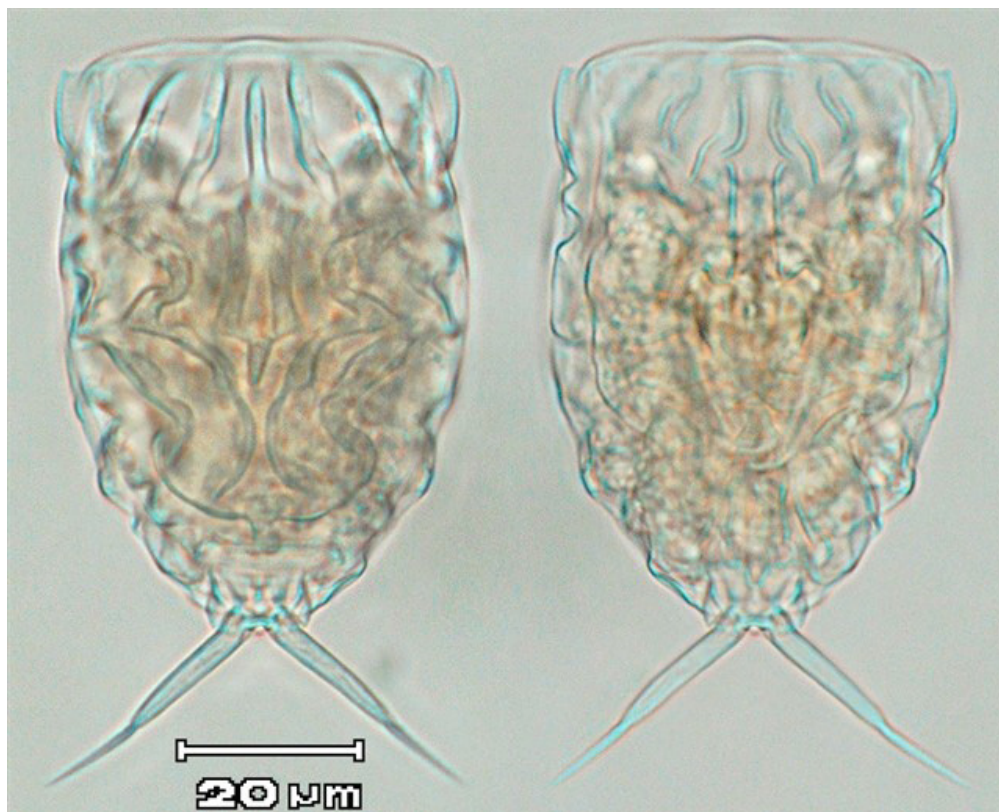
The other four rotifer species - *Lecane Phapi*; *Lecane Dorysimillis*; *Trichocerca bauthiemensis* and *Ploesoma asiaticum* were included in the research with two professors, Hendrik Sergers from the Royal Belgium Institute of Natural Sciences and La-orsri Sanonmuang from Khon Kaen University of Thailand, at Bàu Thiêm Lake, Thủy Tiên Lake and Như Ý River in Thừa Thiên-Huế Province in 2011 - 2015. The scientific reports on the four species were published in the *Journal of Limnology* in 2013 and *Zootaxa* in 2015.

According to the reports, 72 rotifer species were first recorded in freshwater and saline water zones in Việt Nam in 1966 and 52 more species found in northern Việt Nam in 1980. A few studies then found 65 species in the Central region and 49 species in the Southern region in 2011 and 2012.

Recent studies from 2013 - 2019 documented 100 new records to Việt Nam's rotifer fauna and the five new species to science. These results indicated a high potential of rotifer diversity in Việt Nam. Dr. Trịnh Đăng Mậu - who is head of the lab for algae research and bioactive natural products at the Đà Nẵng College for Science and Education said rotifer plays a crucial role in the energy flow because they are responsible for transforming carbon from picogram and nanoplankton to macrozooplankton, acting as links between microbial loops and larger aquatic food. Rotifers are considered effective indicators for environmental conditions, and they can be used as live feed for fish larvae in aquaculture, he added.

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PHẠM VĂN NGỌC
(VNS source)



▲ Image of a new rotifer species - *Lecane Dorysimillis* - found by biologists in Central Việt Nam



Flamingo Đại Lải - Green tourism

Flamingo Đại Lải Resort is located in the North of Đại Lải Lake (Vĩnh Phúc Province), over 1,23 million m² with cool and fresh climate all year and rich terrain and ecosystem is always an attractive destination for tourists.

The Resort consists of nearly 20 types of high-class resort villas with entertainment and entertainment services such as luxury restaurants, golf courses, tennis courts, yacht clubs, swimming pools, gyms, spas, conference center, large grass...

Flamingo Đại Lải Resort pioneered the trend of "green tourism". In particular, "green architecture blends with nature" is the sharpest mark here, with two elements wood and water creating typical architectural language. If the outside is a large natural landscape, then inside each villa would have trees and flowers in small corners, simple and extremely delicate. Green architecture brings

unique experiences, it helps people to encounter nature everywhere and just with one touch and "Energy-saving green technology" is 1 of 8 green values Flamingo's core is attached to the sustainability factor. At Flamingo, the latest technologies are applied such as green roof, green wall, high hanging garden... creating harmonious beauty, at the same time reducing the temperature at each villa, saving energy effectively. Because of that, the Resort had received 5 EDGE's Green certificates that can save 45% of energy; 22,3% of the water source; 37,4% material saving solutions.

In addition to green materials, Flamingo Group uses "sustainable green materials", which is environmentally-friendly palm wood, compressed soil, block stone... architectural solutions such as skylights, sun protection, cashew wind direction, large veranda, large glass system... ensure the villa is always flooded with natural light, cool and airy, day without lights and summer without cooling equipment. Besides, green materials are also shown in providing safe and fresh food sources, creating a foundation for a healthy life.



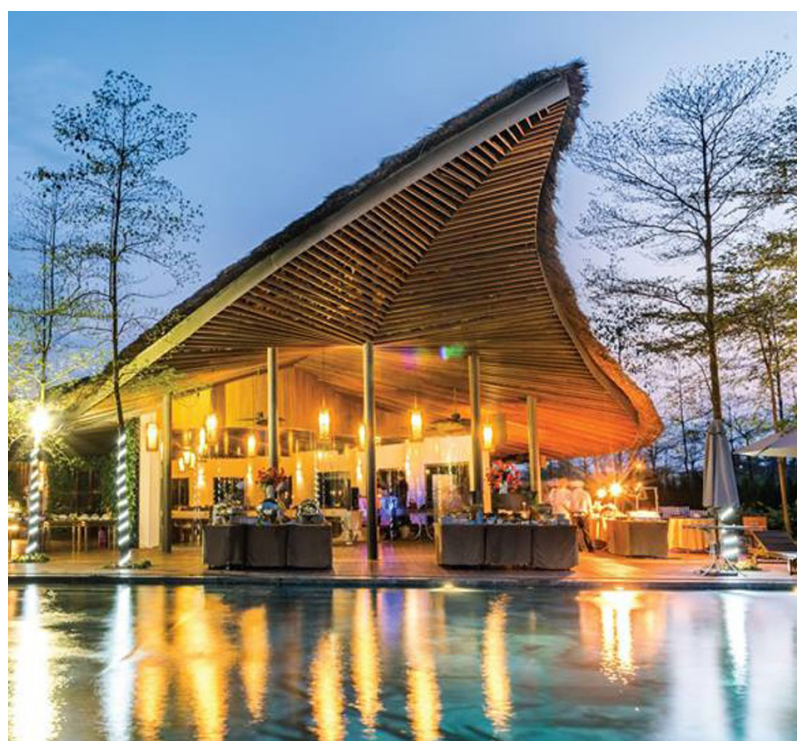
▲ Flamingo's effort in creating "green environment for healthy " to honor and preserve the values of nature



▲ *Flamingo focuses on "green space for long life"*

Another factor that Flamingo focuses on is "green space for long life", with a liberal natural landscape, low construction density and retaining the beauty of nature, blended by natural landscape and wide water surface, encircling and weaving every corner of the project creates a mild climate all the year. Accompanying that is Flamingo's effort in creating "Green environment for healthy" to honor and preserve the values of nature. To do that, Flamingo's experts have been very careful in selecting plants and types of grass to suit the weather and soil characteristics to minimize the use of chemical products and works which can make bad impact on the environment.

Also, at Flamingo Đại Lải Resort, among the green pine is the largest scale with the lakeside art space in Việt Nam, where sculptures and paintings have their own life between immense nature, artists are satisfied creativity, create the ele-



▲ *The Resort had received 5 EDGE's Green certificates*

ment "Art of green living for feelings of sublimation". With the criterion of "luxury living between nature", Flamingo spends a lot of resources investing hundreds of "green utilities for a complete vacation" with food, health care, entertainment... services 5-star standard, helping customers enjoy the essence and freshness of clear nature but still in harmony with the modernity and comfort of upstream life. ■

NHÂM HIỀN



Attractive green tourist spots in Hà Nội

With a fresh and cool climate, beautiful scenery, many locations in Hà Nội have become the ideal cool green destinations for nature lovers or avoid the heat during sunny summer days.

BA VÌ NATIONAL PARK

Ba Vì National Park has majestic beauty of the mountains, abundant natural landscapes and attractive flora, located in Tân Lĩnh Commune, Ba Vì District, 50 km from Hà Nội center to the West. Coming to Ba Vì, visitors can enjoy the picturesque scenery, the poetic roads shaded with the sun shining through the leaves... with cool year-round climate.

Around Ba Vì National Park, there are many interesting entertainment areas such as Khoang Xanh, Suối Tiên, Ao Vua, Thác Nga, Suối Ngoc... with many resorts and diversified services. If you are interested in learning, the historical and cultural relics such as Thượng Temple, Trung Temple, Hạ Temple, Uncle Hồ Church, or Bảo Thiên Tower, Ngọc Hoa Cave... will be the destination you should try to discover at least once.



▲ Ba Vì National Park

HƯƠNG PAGODA

Hương Pagoda in Hương Sơn Commune, Mỹ Đức District is not only attractive because it is a famous spiritual tourist destination but also by charming scenery. Every year, every spring, apricot flowers bloom white all over Hương Sơn forest, tens of thousands of Buddhists and tourists come and pay attention to the Hương Pagoda festival and immerse themselves in cultural



▲ Yến stream



activities such as boat racing, Chèo singing songs, Văn singing... The journey to discover Hương Pagoda will take a boat along the Yến stream and set foot to Trình Temple, Thiên Trù Pagoda and Hương Tích Cave with the beauty of lively stalactites. Visitors can climb a mountain or choose a cable car to move to Hương Tích Cave more quickly.

As for those who love to explore nature, October and November are the best time when waterlily blooms on the poetic Yến stream and water lilies flowers blooming throughout the extremely poetic fields.



▲ *Quan Sơn Lake*



▲ *Đồng Mô Lake*

QUAN SƠN LAKE

Located about 50 m from the center of Hà Nội, Quan Sơn lake is 850 ha in Mỹ Đức District, where the cool climate is year-round and the natural landscape is suitable for sightseeing, camping... Quan Sơn Lake is beautiful and romantic. On the side, it is like a Hạ Long shallow area in Hà Nội. Traveling by boat, you will visit beautiful limestone mountains, floating on the lake...

ĐỒNG MÔ LAKE

Đồng Mô Tourist Area and Vietnam National Villages for Ethnic Culture and Tourism is surrounded by the clear blue water of Đồng Mô Lake and the dense forests of Sơn Tinh Island (Ba Vì District, Hà Nội City). This place is not only an attractive picnic destination for families, the ideal place for young people who love outdoor activities such as camping, campfire, climbing, cycling, teambuilding...; but also, to bring the unique cultural experiences of 54 Vietnamese ethnic groups at Vietnam National Villages for Ethnic Culture and Tourism■

LƯU THỦY

JKS RECREATES THE VITAL RESOURCE FOR LIFE

Our planet is being gradually destroyed by soil, air, noise pollution...

Freshwater resource – the major component of the living environment is now facing the challenge of pollution and depletion.

The human must have measures to protect and use reasonably the water resource.

The nations in the world also should make great efforts together in protecting earth's environment and creating the freshwater source for the future.

JKS-XP – EFFECTIVE SOLUTION TO THE ABOVE-MENTIONED TARGETS



JKS - Waste water treatment at source

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