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Decision 25/2014/QĐ-TTg:

Strengthening environmental state management and law enforcement nationwide

Ensure important natural ecosystems to be conserved and developed sustainably

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GREEN DEVELOPMENT

NATURE & ENVIRONMENT OF VIET NAM

DECISION NO. 25/2014/QD-TTG ON FUNCTIONS, TASKS, RIGHTS AND ORGANIZATIONAL STRUCTURE OF VIETNAM ENVIRONMENT ADMINISTRATION:

Strengthening State environmental management and law enforcement nationwide

Ass.Prof. Dr. BÙI CÁCH TUYẾN

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On 25/3/2014, the Prime Minister issued Decision No. 25/2014/QD-TTg on functions, tasks, rights and organizational structure of Vietnam Environment Administration (VEA) under Ministry of Natural Resources and Environment (MONRE) (herein after referred to as Decision 25). The Decision took its effect on 15/5/2014 and replaced Prime Minister's Decision No. 132/2008/QD-TTg dated 30/9/2008 on functions, tasks, rights and organizational structure of VEA (Decision 132).

An issuance of Decision 25 marked an important and breaking through step to effectively implement Political Bureau's Resolution No. 41-NQ/TW dated 15/11/2014 on environmental protection in the period of boosting industrialization and modernization and Resolution No. 35/NQ-CP dated 18/3/2013 on some pressing environmental protection issues. Compared with Decision 132, Decision 25 has some new items, focusing on the following points:

For positions and functions: Decision 25 maintains VEA's positions and functions as regulated in Decision 132 and adds the function of "Organizing environmental enforcement nationwide" in point 1, Article 1 to ensure the compliance with regulations in Decree No. 36/2012/NĐ-CP dated 18/4/2012 on functions, tasks, rights and organizational structure of ministries and ministerial level agencies, and Decree No. 21/2013/NĐ-CP dated 4/3/2013 on functions, tasks, rights and organizational structure of MONRE (Decree 21).

FOR TASKS AND RIGHTS

Decision 25 complements and clarifies the task "activities, disposal of and treatment of residual chemicals, waste and chemical containing materials" to comply with point 2, Article 25 and point 1, Article 64 of Law on Chemical in 2007. It also complements the task "Review, systemize and check environmental and biodiversity law enforcement; disseminate education and environmental and biodiversity regulations" to comply with point 1, Article 93 of Law on Issuing Regulations 2008.

The tasks related to pollution control have not changed much, except a rearrangement and an addition of "a warning task" and "detect an extent and a scope of environmental pollution, determine pollution causes and propose suitable control and treatment measures" to comply with Decree 21.

The task of waste management and environmental quality improvement, environmental protection in river basins and coastal areas has been complemented with the following tasks: "Determine environmental damage and responsibilities for damage compensations", "provide guidance on investigation and determination of environmental damage, determination of compensation and responsibilities of compensation for pollution and degradation nationwide and organize the implementation in compliance with existing regulations", "organize appraisal and synthesis of projects on treatment, recovery and rehabilitation of plant protection chemical contaminated sites and unsanitary landfills in compliance with existing regulations"; and "prepare and submit to competent agencies for approval a list of hazardous waste".

Based on Law on Biodiversity 2008 and its implementation guidance regulations, Decree 21, Decision 25 has restructured and clarified biodiversity conservation tasks, adding the tasks of conservation site planning, invasive species control, and management of data on genetically modified organisms, and conservation and wise use of biodiversity resources.

Decision 25 has modified and added some tasks on appraising environmental rehabilitation and recovery of mining projects; managing strategic environmental assessment appraisals; managing operations of environmental impact assessment services; and reviewing environmental components of planning, strategies, master plans and investment projects as directed to comply with Decree 21 and Decision No. 18/2013/QD-TTg dated 29/3/2013 (Decision 18) on environmental rehabilitation and recovery and deposit of mining activities.

In addition, Decision 25 has modified and complemented some points on developing and managing environmental monitoring systems; guiding, checking and organizing the implementation of comprehensive planning for environmental monitoring and programs; developing and consistently managing monitoring and biodiversity database; preparing and issuing national reports on environmental statistics, biodiversity and environmental health in compliance with Decree 21 in the direction of consistently managing environmental monitoring nationwide.

Notably, Decision 25 has divided and clarified science and technology activities with activities by Ministry of Science and Technology in developing and implementing policies on promoting environmental technologies, environmentally friendly technologies and environmental services. It has added contents on: Appraising, inspecting, evaluating works, equipment and environmental treatment technologies; Implementing programs and pilot programs on sustainable production and consumption, cleaner production, clean energy and renewable energy use; research and development on environmental protection, promoting environmental technologies; And a list of biological products used in pollution prevention and mitigation and waste treatment.

Environmental health is a new concept which has not been mentioned in most environmental regulations of MONRE and Ministry of Health. Environmental health addresses inter-sector issues of natural resources and environment and human health. Inclusion of environmental health is advancement of Decision 25 compared with Decision 132.

FOR ORGANIZATIONAL STRUCTURE

A notable point of Decision 25 is a change in organizational structure of VEA with an increase in the number of its affiliations.

According to Decision 132, VEA has 12 affiliating organizations: six general and advising departments, four operational agencies and two public service bodies. These are General Office, Department of Organizational Structure and Personnel, Department of Planning and Finance, Department of Policy and Legislation, Department of International Cooperation and Science Technology, Inspectorate, Department of Pollution Control, Department of Waste Management and Environmental Promotion, Biodiversity Conservation Agency, Department of Appraisal and Environmental Impact Assessment, Institute of Science for Environmental Management, and Environmental Monitoring Centre. Minister of MONRE issued the establishment of four other public service organizations which are financially self sustained under VEA: Centre for Environmental Consultancy and Technology, Centre for Environmental Training and Communication, Centre for Environmental Information and Data and Environmental Magazine. There-

fore, VEA has 16 affiliating units.

Decision 25 regulates that VEA has 18 units, of which five are general and advising departments, seven operational departments, and six public service centers. They are General Office, Department of Organizational Structure and Personnel, Department of Planning and Finance, Department of Policy and Legislation, Department of International Cooperation and Science Technology, Department of Pollution Control, Department of Waste Management and Environmental Promotion (which has sub - departments of environmental protection for Cau river basin, Nhue - Day river basin), Biodiversity Conservation Agency, Department of Appraisal and Environmental Impact Assessment, Department of Environmental Protection Control, Department of Environment for Central Region and Central Highland, Department of Environment for Southern Region, Institute of Science for Environmental Management, and Environmental Monitoring, Centre for Environmental Information and Data, Centre for Environmental Training and Communication and Environmental Science Institute.

Decision 25 maintains structures and titles of General Office, Department of Organizational Structure and Personnel, Department of Planning and Finance, Department of Policy and Legislation, Department of International Cooperation and Science Technology, Department of Pollution Control, Department of Waste Management and Environmental Promotion, Biodiversity Conservation Agency, Department of Appraisal and Environmental Impact Assessment, Environmental Monitoring, Centre for Environmental Information and Data, Centre for Environmental Training and Communication and Environment Magazine. The Institute of Science for Environmental Management is renamed to Institute for Environmental Science.

According to Decision 25, VEA has three new departments. Department of Environmental Protection Control has functions of assisting the VEA's leaders in inspecting and managing environmental public services. Department of Environment for Central Region and Central Highland is assigned tasks to assist the leaders managing and implementing tasks in the provinces of Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, Quang Ngai, Binh Dinh, Phu Yen, Khanh Hoa, Kontum, Gia Lai, Dac Lak, Dac Nong, Lam Dong, and Da Nang. Department of Environment for Southern Region is in charge of assisting VEA leaders implementing management tasks in Ho Chi Minh city, Ninh Thuan, Binh Thuan, Dong Nai, Ba Ria-Vung Tau, Binh Duong, Binh Phuoc, Tay Ninh, Long An, Dong Thap, An Giang, Tien Giang, Vinh Long, Ben Tre, Kien Giang, Hau Giang, Tra Vinh, Soc Trang, Bac Lieu, Ca Mau and Can Tho.

Decision 25 has inherited and further developed Decision 132. Organizational structures of the above mentioned 18 units ensure the continuance, conciseness, effectiveness, consistent and integrated. Clear functions and tasks ensure timely direction and coordination among VEA and enhance connections among the agencies. The management system has been extended to regional to increase its efficiency and effectiveness, increase democracy and legal enforcement of MONRE operations as well as meeting with requirements of administrative reforms. The new structure of VEA addresses the comprehensiveness of environmental management, ensuring the principle that one unit can have multiple functions but one task should not be subject to multiple responsibilities. For the tasks that require participation of many agencies, one agency will take a leading role and others will collaborate. The agencies having recently been upgraded and the agencies having relatively independent and stable operations are not required to restructure. They will only need to review their functions to improve their functions, tasks and structures. Sectors subject to multiple administration procedures or having inappropriate organizational structure will need review and modification so that overlaps and gaps in operations are minimized. Emerging issues will be addressed by appropriate agencies.

Decision 25 has systemized and specified mechanisms and policies on payment for environmental services, environmental compensation, environment and biodiversity offset environmental recovery deposit, tax, fees and preferential mechanisms, emission quota management, and environmental public services. Decision 25 has inherited and further developed Decision 132, modified outdated points and added necessary contents to facilitate implementation of assigned tasks. Functions, tasks and rights of VEA are regulated in a direction of integrating common tasks and rights with typical specialized tasks and rights, extending management to regions and clarifying tasks to minimized overlaps and gaps within MONRE and between MONRE and other ministries■

Some main amendments of Law on Environmental Protection (amended)

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Head of Taskforce on amending Law on Environmental Protection

▲ *Minister of Natural Resources and Environment Nguyen Minh Quang gives directions in a meeting with Vietnam Environment Administration on LEP (amended)*

Based on an assessment of the implementation of Law on Environmental Protection (LEP) 2005 and a literature review of environmental law of some countries, the Drafting Agency has developed a version of LEP (amended). The version has been discussed and amended after numerous workshops, seminars and consultative meetings with participation of ministries and academia.

In August 2013, the Government submitted to National Assembly's Standing Committee the version 5.0 with 19 chapters and 160 articles (LEP 2005 has 15 chapters and 136 articles). The version was discussed among working groups of National Assembly deputies and then in a plenary session of the National Assembly in November 2013.

Taking into account comments by the National Assembly's Standing Committee and deputies, the Drafting Agency has continued amending the draft and produced the version 5.2 with 20 chapters and 186 articles. This version will be submitted again to the National Assembly's Standing Committee, the deputies and then the plenary session in May 2014.

Compared with LEP 2005, the version 5.2 of the LEP (amended) has the following main amendments.

AN ADDITION OF REGULATIONS ON ENVIRONMENTAL PROTECTION PLANNING

Environmental Protection Planning (EPP) is defined as a process of analyzing and evaluating the State of the environment and proposing environmental protection measures to link socio - economic development with environmental protection and climate change responses.

EPP has two tiers: national and provincial. A Planning period is 10 years. The LEP (amended) regulates contents, responsibilities, consultations, reviews, approvals and revisions of environmental planning.

However, some issues have not reached consensus. These include the title and contents of Planning (environmental planning or EPP); relationships between EPP and other planning, including biodiversity planning, environmental monitoring planning and waste treatment planning. Some people think that it is not necessary to include EPP because Strategic Environmental Assessment (SEA) has been regulated or EPP should be one component of socio-economic development planning. These issues will need to be clarified in secondary regulations on EPP.

TWO TIER ENVIRONMENTAL IMPACT ASSESSMENT

To prevent the situation in which after receiving investment approvals, projects have started environmental impact assessment (EIA) but then due to some unforeseen circumstances, projects do not proceed anymore that leads to wasteful resources of investors and society, in particular for big hydro power and mining projects, the Draft-

ing Agency proposes that EIA of projects under the scrutiny of National Assembly, National Assembly's Standing Committee, Government and Prime Minister shall be implemented in two tiers: initial EIA and EIA. To ensure EIA quality, the initial EIA shall be reviewed by Ministry of Natural Resources and Environment (MONRE). In the meantime, the bill regulates conditions for EIA making organizations to ensure quality of EIA reports.

ENVIRONMENTAL PROTECTION COMMITMENTS

The bill inherits contents on environmental protection commitments (EPC) of LEP 2005 and regulates in more detail subjects, contents, timing, responsibilities of owners of manufacturing, trade and service entities as well as responsibilities of management agencies for EPC.

To assist owners of manufacturing, trade and service entities who are subject to EIA and ECP, the bill regulates environmental protection plans. According to Article 69 of the bill, investment projects, manufacturing, trade and service generating waste that have negative impact on the environment shall have to make EPP. EPP shall be made following specific guidance of management agencies and are legal bases for discharge permit issuance, inspection and check activities. The bill also provides regulations on timing, contents and implementation of EPP. EPP shall replace environmental protection program for the existing facilities which have not yet had EIA or EPC.

RESPONDING TO CLIMATE CHANGE

At requests of some members of National Assembly's Standing Committee and National Assembly deputies, the Drafting Agency has developed a separate chapter on climate change based on the articles on climate change in the version 5.0, some contents of Party's resolutions and National Target Program on Climate Change Responses.

The chapter on climate change responses has 10 articles on general provisions on responding to climate change, requirements for integrating climate change responses in socio-economic development strategies and planning; green house gas emission management, ozone depletion substance management; renewable energy development; sustainable production and consumption; waste reuse, recycle and energy recovery; community's rights and responsibilities; science and technology research and development and international cooperation in climate change.

However, some people believe that there should not be a separate chapter on climate and that the articles on climate change should be integrated in other chapters. However, the Drafting Agency has a view that climate change responses have a broad spectrum which goes beyond a scope of the bill and have been specified in many other regulations. The integration of climate change contents into this LEP (amended) is impossible in the current legal system. On the other hand, having a separate chapter on climate change responses in LEP (amended) shall provide synergies between contents of climate change and environmental protection and legalize environmentally related climate change contents.

ENVIRONMENTAL PROTECTION IN RIVER BASINS

The bill regulates that river water environment protection shall be water resources protection and contents of all river water planning and water use planning. All discharge sources into river basins shall be controlled, prevented and suitable with carrying capacity of river basins. River water quality and sediments shall be controlled and assessed.

According to the bill, MONRE shall be responsible to organize assessment of water quality and sediments in trans-boundary and inter provincial river basins, to survey and assess carrying capacity of inter-provincial river basins. Provincial people's committees shall be responsible for provincial river basins.

AIR AND SOIL ENVIRONMENT PROTECTION

The bill has developed sections on soil environment and air environment to provide a legal basis for developing more specific regulations on air and soil environment which are premises of developing different environmental acts in the future.

The bill regulates that organizations and individuals who have been assigned land use rights shall be responsible for soil environment protection. Those who pollute soil shall be responsible for remediation, rehabilitation and recovery. Soil environment quality shall be investigated, assessed and publicized. Discharge into soil shall not exceed permissible levels. Degraded soil shall be confined, monitored and recovered.

Air environment is also regulated so that emission sources shall be assessed and controlled. Approval of projects having emissions shall be based on carrying capacity of air environment. Major emission sources having negative impact on humanity and the environment shall be subject to scrutiny and permits.

ENVIRONMENTAL PROTECTION IN BY-PRODUCT IMPORT

Concepts of by-products have been reviewed and modified to avoid confusion with waste. Regulations on by-products import have been developed toward the direction of limiting its import through provisions of clear evidence of sources, scale and characteristics of by-products. The by-prod-

ucts shall have to meet environmental standards. By-products import is a conditional trade type. The bill assigns MONRE the tasks of coordinating regulations of prohibited by-products import.

TRADITIONAL CRAFT VILLAGES AND CRAFT VILLAGES

The bill regulates specific responsibilities of owners of facilities, households and individuals in traditional craft villages and craft villages, responsibilities of traditional craft villages and craft villages, responsibilities of commune, district and provincial people's committees having traditional craft villages and craft villages. The bill assigns MONRE a task of developing specific regulations on environmental protection in traditional craft villages and craft villages.

ENVIRONMENTAL MONITORING

Environmental monitoring is regulated in a separate chapter with an objective of establishing a united, comprehensive and effective monitoring system. This chapter has articles on environmental monitoring activities, environmental components and wastes that need to be monitored; environmental monitoring programs; monitoring systems; detail of environmental monitoring; monitoring responsibilities; monitoring conditions and data management. The bill regulates that the Government shall provide specific regulations on conditions for operating environmental monitoring to socialize environmental monitoring and ensure monitoring at the same time.

RESPONSIBILITY DIVISION AMONG STATE MANAGEMENT AGENCIES

The bill clearly regulates contents of state management of environmental protection and differentiates unified state management of environmental protection with environmental protection management. According to the bill, the Government shall be in charge of unified state management of environmental protection and Minister of Natural Resources and Environment shall be responsible for assisting the Government of unified state management of environmental protection. Ministries and sectors shall be responsible for managing environmental protection within their ministries and sectors. MONRE shall lead and coordinate with other relevant ministries and sectors to develop issue and submit for issuance policies and regulations (Government decrees, Prime Minister's decisions) on environmental protection. The ministries shall lead and coordinate with MONRE to develop and issue circulars providing guidance on environmental protection in their areas.

FOR RIGHTS AND RESPONSIBILITIES OF SOCIAL POLITICAL ORGANIZATIONS, SOCIAL PROFESSIONAL ORGANIZATIONS AND COMMUNITIES

The bill has a separate chapter on rights and responsibilities of Vietnam Fatherland Front, political organizations, social professional organizations and communities. According to this chapter, these organizations have rights to receive information; rights to ask for information provision, rights for participate in environmental protection supervision; rights to have conversations with owners of production, trade and service facilities on environmental protection and rights to participate in environmental protection. The bill also regulates that state management authorities at different levels shall facilitate these organizations and communities to exercise their rights and responsibilities.

RESOURCES FOR ENVIRONMENTAL PROTECTION

According to Budget Law, Law on Environmental Taxes and other related laws, the bill cannot have a different regulation on funding sources for environmental protection and environmental taxes. Therefore, the bill only regulates environmental protection activities that are eligible for receiving funding from an environmental budget line and other state budget sources to ensure priorities and avoidance of abuse in environmental expenditure.

RESPONSIBILITIES OF HEADS OF ENVIRONMENTAL PROTECTION RELATED ORGANIZATIONS

The bill has a separate article on responsibilities of heads of polluting entities, responsibilities of heads of environmental management agencies and heads of agencies involved in polluting entities. This article provides clear responsibilities of concerned individuals.

EFFECTIVE PERIODS FOR SUING ENVIRONMENTAL VIOLATIONS

As some environmental violations may have long term consequences and may not be detected until some decades later, different from effective periods regulated in Civil Law, the bill regulates that effective periods for suing environmental violations shall start from when affected people detect their damage by others' environmental violations. According to this regulation, effective period for suing environmental violation has become unconfined. In addition to these above mentioned key points, some other amendments have been made to ensure comprehensiveness, specifics and feasibility of LEP. Nevertheless, the bill remains some inevitable shortcoming due to overall legal framework as well as capacity of the Drafting Agency. Hopefully in the future, Environmental Code will be issued, comprising environmental component acts■

The Constitution 2013 - Fundamental Principles for Environmental Protection in Vietnam

LÊ THỊ ANH XUÂN
Vietnam Lawyers' Association

▲ *President Truong Tan Sang signs the order to promulgate the Constitution 2013*

The Constitution of the Socialist Republic of Vietnam (Constitution 2013) was approved by the National Assembly, 13th Legislature, at 6th Session on December 28, 2013 with a view to meeting the requirements of national construction, defense and development and international integration.

As compared to the Constitution in 1992, Constitution 2013 has got a lot of new points in content and constitutional techniques: It reflects in a clearer and fuller manner the nature of democracy and progress of the State and the system in the transitional period to advance towards socialism; stipulates in the clear, full and correct manner the political, economic, cultural, educational, scientific, technological and environmental system; human rights, the fundamental rights and obligations of citizens, the defense of the Vietnamese Fatherland Front (VFF); organizes the State apparatus, the efficiency and process of the Constitution amendment. These stipulations have expressed the viewpoints and line of the Party and the State and aspiration of the people about the comprehensive renovation, the more intensive and extensive international integration and sustainable development on three main pillars: Economy - Society - Environment. This is the basis of the constitutional stipulations, ensuring the political and legal aspect for the country's economic and social development in the new stage.

The Constitution 2013 comprises 11 chapters, 120 articles, in which there is a number of stipulations relating to the natural resources and environment fields. For the first time, the Constitution takes note of human rights toward environment: "Every body is entitled to enjoy the right to live in the healthy environment and is tasked to protect environment" (Article 43). At the same time, the Constitution has also added the responsibility of the State, organizations and individuals in environmental protection and management of natural resources: "The State has the policy on environmental protection; effective and sustainable management and use of natural resources; conservation of nature, biodiversity and proactiveness in anti-natural disasters prevention and in response to climate change; the State encourages all activities of environmental protection, develops and uses new energy and renewable energy" (Clauses 1,2; Article 63 amended on the basis of Article 29 and Article 112 of the Constitution 1992).

In Clause 3, Article 63 of the Constitution 2013, there is a principle that the person harms to environment shall have to overcome consequences and compensate damages: "Organizations, individuals who cause environmental pollution, exhaust natural resources and deplete biodiversity shall have to be seriously treated and held responsible for overcoming and compensating the damages".

The Constitution affirms that assorted natural resources are the public assets, belonging to the ownership of the entire people and the State is the representative of the owner: "Land, resources of water,

minerals, marine and air resources and other natural resources and the assets invested and managed by the State, are the public assets owned by the entire people with the State being the representative of the owner and the uniform manager" (Article 50, amended and added on the basis of Article 15 and Article 43 of the Constitution 1992).

It can be seen clearly that environmental protection has been paid attention to on a par with other fields, specifically, in Article 50, environmental protection has been recognized as the prioritized task, even before the national industrialization and modernization: "Vietnam built on the economy of independence and self-support, promoting internal strength, integration, international cooperation, closely associated with cultural development, practicing social progress and equality, environmental protection, implementing national industrialization and modernization" (Article 50, amended and added on the basis of Article 15 and Article 43 of the Constitution 1992).

The Constitution 2013 stipulates that the Government has uniform management of environment: "The Government is tasked with unifying the economic, cultural, social, educational, health, scientific and technological, environment, information, communications, foreign relations, national defense, security, social order and safety management; Implementing the order on mobilization, the order on declaration of the State of emergency and other necessary measures to defend the VFF, guarantee the people's lives and property" (Article 96, amended and added on the basis of Articles 24, 26, 30, 36, 39, 41, 109 and 112, the Constitution1992).

The Constitution 2013 reflects the will and aspiration of the majority of the people of all strata; demonstrates in a clearer and fuller manner the nature of democracy and progress of the State and the system of Vietnam in the transitional period to advance towards socialism; stipulates in a clear, correct and full manner the political, economic, cultural, educational, scientific, technological and environmental system, human rights, the fundamental rights and obligations of the citizens. The stipulations on human rights and responsibility and obligations of the State agencies, organizations and individuals provided in the Constitution are the foundations for environmental protection in the direction of sustainable development, creating conditions for Vietnam to become a country of the prosperous people, a powerful country, a democratic, equal and civilized society■

MONRE CONDUCTED ONLINE EXCHANGES WITH PEOPLE AND BUSINESSES

The Ministry of Natural Resources and Environment (MONRE) and Departments of Natural Resources and Environment (DONRE) of 63 provinces and cities conducted online exchanges with people and businesses through internet on April, 2014. More than 1,200 questions related to state management of natural resources and environment and specific problems are resolved at this online exchanges.

Minister of MONRE Nguyen Minh Quang and Deputy Ministers: Nguyen Manh Hien, Chu Pham Ngoc Hien, Bui Cach Tuyen, Tran Hong Ha, Nguyen Thai Lai co-chaired the exchanges .

Addressing the opening of the meeting, the Minister Nguyen Minh Quang emphasized that online exchanges helped solve the difficulties and problems of people and businesses. At the same time, it becomes an important and effective channel of information to propagate and disseminate policies and legislation in the field of natural resources and environment to all classes of people and businesses. Through questions in the online exchange, the Ministry and the DONREs have gradually received and understood the difficulties, problems and shortcomings in the process of developing and implementing policies and laws. Problems and problems of people and businesses are solved directly by the Ministry and the Departments.

It is the 14th online exchanges, however from now on, the MONRE will hold exchanges twice a year .

The online meeting received 1,247 questions of which MONRE has received 518 questions, the DONREs of provinces and cities received 729 questions from citizens and businesses. 558 responses have been published online. The responses accounted for 45 % of the total number of questions. The DONREs and the Ministry continue to respond to unanswered people's and business questions.

Online exchanges have become channels of information, an important bridge among the Ministry and people and businesses. The previous online exchanges of the MONRE have received a lot of attention from people and businesses.

From December 2005 to now, the MONRE has successfully organized 13 online exchanges. The MONRE alone has received 11,500 questions from citizens and businesses. The Ministry and the DONRE have answered these questions. **DB**

National Action Plan on Green Growth in the 2014 - 2020 stage

NGUYỄN TUẤN ANH
Deputy Director of Science, Education, Resource and Environment
Ministry of Planning and Investment

▲ *Launching workshop on the National Action Plan for Green Growth in Hanoi on April 18th, 2014*

Implementing the National Green Growth Strategy (the Strategy), the Ministry of Planning and Investment submitted the National Action Plan on Green Growth (PGG) for the 2014 - 2020 stage to the Prime Minister for approval in accordance with Decision No. 403/QD-TTg on March 20th, 2014.

The PGG comprises 4 main subjects: Build the institution and PGG in localities; Minimize the intensity of greenhouse emission and boost the use of clean energy and renewable energy; Carry out the greening in production; And to implement the greening in life style and sustainable consumption. It is divided into 12 groups with 66 activities.

BUILDING INSTITUTION AND IMPLEMENTING THE PGG IN LOCALITIES

Building the institution comprises: Organize the Coordination Board to Deploy the Strategy; Perfect the institution frame in order to boost the process of the economic restructure in conformity with the Strategy; Form the Financial Policy Frame; Raise the awareness and mobilize the Participation of the entire people in implementing the Strategy; participate in international activities, promote and share experience in carrying out Green Growth.

The PGG in localities comprises: Deploy the building of the PGG in a number of provinces and cities; Organize the trial implementation in a number of models that carry out the Green Growth; Deploy the implementation of a number of models in Green Growth in the border areas, coastal areas and islands.

REDUCING THE INTENSITY OF GREEN HOUSE EMISSION AND BOOST THE USE OF CLEAN ENERGY, RENEWABLE ENERGY

Using energy in a saving and effective way and reduce the intensity of greenhouse emission in industries that use a lot of energy; Review and adjust the National Energy Strategy and Planning; to Orientate the Green Growth; Perfect the legal framework on the

use of energy in a saving and effective way; Raise the awareness of the entire people on the use of energy in a saving and effective way.

Using energy in a saving and effective way and reducing the intensity of green house emission in transport and communication: Change the structure so as to use energy in a saving and effective way; Renovate technology to use energy in a saving and effective way in transport and communication and develop the public traffic in the greening direction.

To renovate the farming techniques and perfecting the management so as to reduce the intensity of green house emission in agriculture, forestry and fisheries: To apply the farming techniques in organic agriculture and raise the management level so as to reduce the green house emission; to re-use and recycle side products and waste in agriculture; to study and use the nutritious food in animal husbandry so as to increase the absorption, reduce the green house emission, increase the quality of clean breeding products and raise the economic efficiency; to plant forests, raise the forest quality and manage the sustainable forest resource.

Developing the sources of clean energy, renewable energy: To build and carry out the priority policy on developing the clean energy sources; to support the research and development of the new energy sources (wind energy, solar energy, sea tides, geothermal energy, biomass, biodiesel and so on); to perfect the institution on clean air; to inventory and supervise the greenhouse emission and manage the activities to reduce the green house emission.

CARRYING OUT GREENING IN PRODUCTION

To review and propose the adjustment of strategies, plans and planning of developing and building the economic restructure in the direction of Green Growth; to review and propose the adjustment of the plans on the economic and social development and the development of agriculture, forestry and fisheries, transport and communication, construction and resource and environment, from the viewpoint of sustainable development and building the Plan on the economic restructure in the direction of the Green Growth for the 2014 - 2020 stage; to support and encourage the research, to deploy and invest in application of green technology; to perfect the institution and enhance the capacity of financial-credit operation of the commercial banks in service of the Green Growth and to support the training of human resource in the greening area.

Effective and sustainable use of the natural resources and develop the green economic areas: To combat against soil degeneration, effective and sustainable use of land resource; effective and sustainable use of water resource and minerals; to encourage and support fast development of the braches that produce eco products.

To develop sustainable infrastructure: To improve and develop infrastructure of communication, energy and irrigation in the sustainable direction.

To boost the movement "Enterprises with sustainable development" and raise capacity and service market, technical support and management of the service of Green Growth: To deploy the movement in a widespread way "Enterprises meet high standards of sustainable development"; to build capacity of technical consultancy and management of Green Growth; to boost the consulting activities, support enterprises to deploy the cleaner production and the green enterprises; to raise the awareness of enterprises and share domestic and international experience in Green Growth.

TO CARRY OUT THE GREENING OF LIFE STYLE AND SUSTAINABLE CONSUMPTION

To develop green and sustainable urban areas: To review and adjust the plan and make the plan to reform the urban areas to the sustainable urban standard; to improve infrastructure in the sustainable direction in a number of selected urban areas; to renovate the building technology and techniques in the direction of going greening; to encourage the development of building material industry and greening construction.

To boost the green life style: To deploy the movement to carry out "the green life style" and the model of "Saving energy in each household"; to build the new rural areas with the life style in harmony with the natural environment; public spending by the green standard and so on.

On the budget to make the policies in the Action Plan, the Prime Minister has tasked ministries, sectors and localities to be proactive in integration in their own annual plan on the economic and social development. Up to now, a number of sponsors have paid attention and worked with the ministries to support a number of prioritized activities such as: The UNDP, the World Bank, JICA, Asian Development Bank, USAID and so on. It is hoped that the support and cooperation of these sponsors will make practical contributions to the process of making the policy on deployment of the PGG■

Ensure important natural ecosystems to be conserved and developed sustainably

PHẠM ANH CƯỜNG
Director of Biodiversity Conservation Agency, Ministry Natural Resource and Environment

This is one of important objectives set in the National Biodiversity Conservation Planning by 2020, vision to 2030 (NBCP). The Planning was developed and approved at Decision No. 45/QD-TTg dated 8th January 2014 by the Prime Minister. The promulgation of this document plays a very important role in biodiversity conservation in Vietnam.

THE NECESSITY OF THE NBCP

Vietnam is assessed to be one of biodiversity centres in the world with diverse natural ecosystems. Forest, wetland, marine, limestone, hill, coastal sand ecosystems… with typical tropical peninsula characteristics are the habitat of many typical and valuable wildlife, of which some species could not be found elsewhere in the world. Vietnam is known to have high value genetic resources, particularly medicinal plants, tropical flowers and plants… According to the statistics, Vietnam has about 20,000 plant species, more than 10,500 terrestrial animal species, 2,000 invertebrates and freshwater fishes, more than 11,000 marine species and about 7,500 microorganisms *(State of Biodiversity Report, Ministry of Natural Resources and Environment (MONRE), 2011).*

To conserve valuable biodiversity values, Vietnam established special use forests protected area system; developed the planning of marine protected area system and terrestrial inland protected area system. Ex-situ conservation methods such as animal resource centre, plant garden, zoo, medicinal plant garden and gene preservation centre/gene bank are being promoted. Some biodiversity corridors are being studied and piloted in order to connect fragmented habitats.

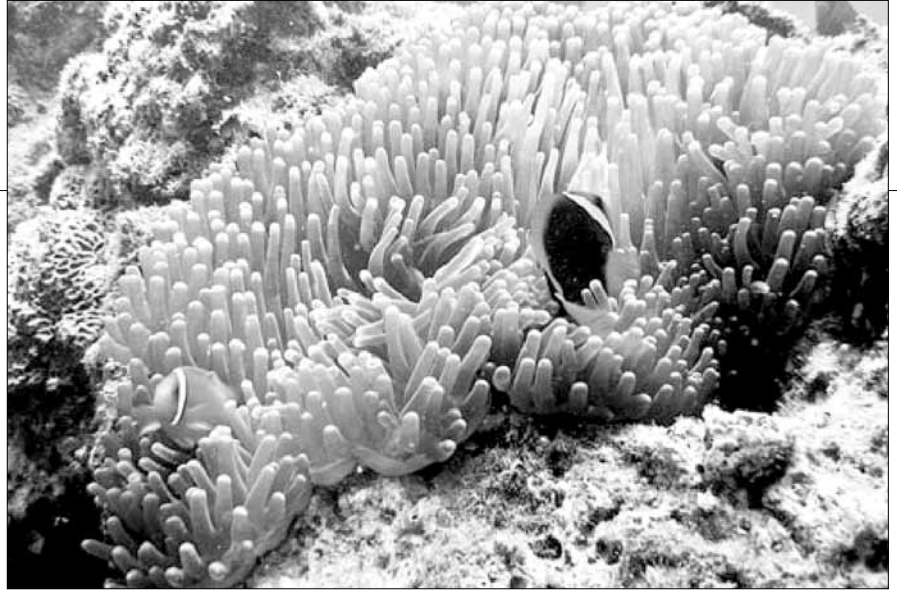
However, in recent years, rapid economic growth brings many socio-economic benefits but also cause many pressures on biodiversity. Rapid growth and dense population (90 million in 2013) has created a big demand on natural resources consumption as well as land uses. In addition, adverse impacts from climate change, sea level rise are apparent and tend to be more serious. Abnormal climate incidents such as storms, tropical depression, tornados, whirlwind, floods have caused severe consequences and in some circumstances, biodiversity, terrestrial and aquatic natural ecosystems can not be restored. Therefore, the promulgation of the NBCP is very necessary and urgent.

SOME CONTENTS OF THE NBCP

The objective of the NBCP to 2020 is to ensure important natural ecosystems, rare and endangered species and genetic resources to be conserved and developed sustainably; maintain and develop ecosystem services to respond to climate change to promote the national sustainable development. By 2030, continue to protect international and national important natural ecosystems; coral reef ecosystems, sea-grass, natural mangroves, coastal lagoons and limestone ecosystems; continue to establish and put into operation of protected areas, biodiversity conservation facilities and proposed biodiversity corridors.

The NBCP will implement in eight geographic areas nationwide by four objectives including: Natural ecosystems, protected areas, biodiversity conservation facilities and biodiversity corridors:

Northeast region: Protect natural forest ecosystems in Red river, Lo river and Gam river basins, limestone ecosystems in Tuyen Quang, Ha Giang, Lang Son, Bac Kan, Cao Bang and Quang Ninh and wetland ecosystems in Dam Ha and Yen Hung (Quang Ninh). Conduct transition of 36 existing protected areas, totalling 265,800 ha, to the protected area system according to the Law on Biodiversity in 2008 (LB). Upgrade and establish three biodiversity conservation facilities, including: One animal rescue centre, one botanical garden and one medicinal plant garden. Establish and put into operation



▲ *Protection of coral reefs and sea-grass beds in Cu Lao Cham is one of contents of the NBCP*

a biodiversity corridor, of approximately 506 ha, connecting habitats between Na Hang Nature Reserve and Ba Be National Park.

Northwest region: Protect natural forest ecosystems in Da river and Ma river basins; forests above 1,500m high in Lao Cai, Son La; Conduct transition of 15 existing protected areas, total 261,500 ha, to the protected area system according to the LB; Upgrade and establish two biodiversity conservation facilities, including: One animal rescue centre and one medicinal plant garden.

Red River Delta region: Protect natural mangrove ecosystems in Hai Phong and Thai Binh; important wetland ecosystems in Ninh Binh and Nam Dinh. Conduct transition of 11 existing protected areas, totalling approximately 88,000 ha, to the protected area system according to the LB. Upgrade/establish eight biodiversity conservation facilities, including: Two animal rescue centres, one botanical garden, one zoo, one medicinal plant garden and three genetic banks.

North Central Coast region: Protect primitive forest ecosystems in Nghe An and Ha Tinh; natural forests in Ma river, Ca river and Giang River Delta regions; coastal mangroves in Nghe An, Ha Tinh and Thanh Hoa; limestone ecosystems in Thanh Hoa and Quang Binh; Tam Giang - Cau Hai lagoon ecosystems in Thua Thien Hue. Conduct transition of 21 existing protected areas, approximately 630,000 ha, to the protected area system according to the LB. Upgrade and establish three biodiversity conservation facilities, including: Two animal rescue centres and one medicinal plant garden.

South Central Coast region: Protect natural forest ecosystems in Cai River Delta region (Phu Yen, Ninh Thuan, Khanh Hoa provinces), Con river, Da Rang river, Ba river, Tra Khuc river and Thu Bon river; dipterocarp forest ecosystems in Ninh Son (Ninh Thuan) and Hoan Giao (Khanh Hoa); coral reefs, sea-grass beds in Cu Lao Cham, Ninh Hai, Vinh Hy bay, Cam Ranh bay, Thuy Trieu lagoon and Van Phong bay; wetland ecosystems in the lagoon regions in Thi Nai, Tra O, Cu Mong, O Loan and Nha Phu. Conduct transition of 22 existing protected areas, approximately 347,000 ha, to the protected area system according to the LB. Establish and put into operation three biodiversity corridors, approximately 118,700 ha, connecting protected areas in the South Central Coast region.

Central Highlands region: Protect primitive forest ecosystems including: Medium mountainous forests (Ngoc Linh, Chu Yang Sin), semi-deciduous forests (myrtle forests), deciduous dipterocarp forests (Khop forest); Natural forests in Se San river, Ba river and Dong Nai river basins. Conduct transition of 16 existing protected areas, total 461,000 ha, to the protected area system according to LB. Upgrade/establish three animal rescue centres.

Southeast region: Protect primitive forest ecosystems; coral reefs, sea-grass bed ecosystems in Ca Na, Con Dao; wetland ecosystems in Thi Nai lagoon and Can Gia mangrove forest. Conduct transition of 11 existing protected areas, total 212,200 ha. Upgrade/establish six biodiversity conservation facilities, including: Two animal rescue centres, two botanical gardens, one medicinal plant garden and one zoo.

Mekong River Delta region: Protect and sustainably develop 30,000 ha natural mangrove forest ecosystems; coral reefs, sea-grass bed ecosystems in Phu Quoc; mangrove forest ecosystems and Indigo forest ecosystems in Tram Chim, U Minh and Tra Su. Conduct transition of 21existing protected area, total 106,500 ha. Upgrade/establish one animal rescue centre.

IMPLEMENTATION SOLUTIONS

Complete legal documents on management of protected areas, biodiversity conservation facilities and biodiversity corridors; criteria for grouping and classification of protected areas according to ecosystems; establish protected areas, biodiversity conservation facilities and biodiversity corridors; develop economic-technical norms for establishment and revision of the NBCP.

To prevent national biodiversity loss, the Government set the target to achieve some important indicators to 2020 such as: National forest cover to 45%, total area of natural protected areas to more than 3 million ha, primitive forest areas maintained at 0.57 million ha, restoration of 15% of degraded important natural ecosystems. To achieve this target, the NBCP is one of important tools to gradually conserve and sustainably develop biodiversity nationwide.

Enhance effectiveness of state management agencies on biodiversity towards clearly identifying state management mandates, focusing on NBCP. Address Law enforcement, sanctions and strictly address violations in the NBCP.

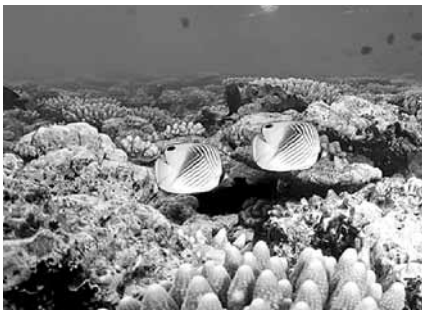
Investigate ecological zoning criteria nationwide; identify natural ecosystems that are important, sensitive, vulnerable and degraded in order to develop protection and rehabilitation plans. Focus on regions with potential to provide ecosystem services. Investigate and assess appropriateness and practical demands on land areas for biodiversity conservation.

Enhance propagation and dissemination of information about the benefits to and responsibilities of communities in implementation of NBCP - particularly residential communities living in and surrounding protected areas and biodiversity corridors.

Enhance international cooperation to attract financial and technical support for scientific surveys and studies and staff training; expand scientific exchange and cooperation with other countries, particularly with border-sharing countries to exchange and study experiences in management and protection of protected areas, biodiversity conservation facilities and biodiversity corridors.

Identify budgets for implementation of programmes and projects of the master plan according to specific decisions of authorised state agencies pursuant to current financial regulations of the State; at the same time promote and utilise participation of communities and financial investment enterprises; develop mechanisms to diversify investment sources for NBCP■

STRATEGY FOR SUSTAINABLE EXPLOITATION AND USE OF NATURAL RESOURCES AND PROTECTION OF THE MARINE ENVIRONMENT BY 2020, VISION TO 2030



A strategy for sustainable exploitation and use of natural resources and protection of the marine environment by 2020, vision to 2030 was officially announced at a ceremony in Hanoi, recently.

Speaking at the event, Deputy Minister of Natural Resources and Environment Tran Hong Ha said that the Plan, approved by Prime Minister Nguyen Tan Dung last year, will act as an important foundation for Vietnam to effectively utilize its rich marine resources and environment.

Deputy Minister Tran Hong Ha also called on ministries and international organisations to contribute opinions to help reach targets set in the Strategy, so as to turn Vietnam into a country with a strong sea-based economy while preserving the environment.

From now to 2020, Vietnam strives to provide more timely and trusted predictions about disasters and climate change, minimize the degradation of natural resources and contain the increase of environmental pollution in coastal areas.

The Strategy also aims to increase the capacity of adaptation to climate change in marine eco-systems, and strengthen the management of natural resources exploitation activities. **NH**

PUBLIC PROJECTS MUST APPLY THE GREEN STANDARD

According to Decision No.1393/QĐ-TTg of the Prime Minister approving the National Strategy for Green Growth, public projects should apply green economy standards.

The Prime Minister directed that from 2015 all projects, investment projects must apply the green economy standards according to industry structure, energy and materials use standards suitable for ecological conditions and the effects of climate change.

In addition, 2017 onward, all vehicles which will have purchased by public funds must meet gas emission standards. Synchronous solutions on management of fuel quality, emission standards, vehicle maintenance will be implemented. Market tools to promote structural change and improve energy efficiency, promote the use of cleaner fuels, support the development of renewable energy will be applied.

The Decision specifies three specific tasks to improve the quality of growth, environmental and ecological protection. They are reducing the intensity of greenhouse gas emissions and promoting the use of clean energy, renewable energy, promoting green production, green lifestyle and sustainable consumption.

PD

Prime Minister receives praise for wildlife stance

▲ *Rhino is prone to extinction due to the stealing of horns. A record 1,004 rhinos were killed for their horns in South Africa in 2013*

A leader of a Campaign to stop global trade in ivory from elephants and rhinoceros has praised Prime Minister Nguyen Tan Dung, for speaking out on the issue. Elisabeth Mc. Lellan, Co-Director of the World Wildlife Fund International's Global Wildlife Trade Campaign, described the commitment as a turning point in the fight.

She said, "the Prime Minister is sending a clear signal to Vietnam Government and citizens that the illegal wildlife trade in elephant ivory, rhino horn and other products will not be tolerated".

The Prime Minister issued a directive that the fight against the trade be made at all levels and across all ministries. He was directing his words particularly at those trading wildlife products across regional and world borders. Deputy Minister of Agriculture and Rural Development, Ha Cong Tuan said "Viet Nam had expressed its willingness to co-operate with all Convention".

Conservation and animal protection organizations working in Viet Nam have asked the public to say "no" to wildlife products, in particular to support efforts to tackle the escalating demand for rhino horn.

Earlier, at a high-level conference in London, Viet Nam and 45 other countries and 10 inter-governmental organizations agreed to tackle the illegal wildlife trade that is killing thousands of elephants, rhinos and other endangered species each year.

LAUNCH THE CAMPAIGN TO STOP THE USE OF RHINO HORNS

The Ministry of Information and Communications and WildAid, African Wildlife Foundation have launched a campaign to stop the use of rhino horns. With the message "No consumers - No killers", the Program aims to enhance the awareness on rhino horn hunting and call upon Vietnamese not to consume rhino horn related products.

In the past few years, the illegal trading of wildlife has reduced economic benefits and seriously affected social and environment security. The trading of wildlife has contributed to create illegal revenues, cause natural defense instability and create the danger of appearance and transmission of new infectious diseases. Behaviors killing rare and endangered animal species that consist of specimens of foreign species such as rhino horns have caused negative impact on the image of Vietnam in the implementation of international conventions.

According to the statistics in 1970, the population of rhinos in the world was about 75,000 in 1970, only 28,000 in 2012. In 2013, the hunting of rhinos horns increased at a cord with 1,004 rhinos killed (only in South Africa). In 2014, to 20th February, 145 rhinos were illegally hunted in South Africa.

PL

Some fundamental contents of the Decree No. 179/2013/NĐ-CP on handling administrative violations of environmental protection

MSc. LƯƠNG DUY HANH
Vietnam Environment Administration

Implementation of Decree No. 117/2009/NĐ-CP (Decree 117) on administrative environmental violation has revealed obstacles and shortcomings. On 14th November 2013, the Prime Minister issued Decree No. 179/2013/NĐ-CP (Decree 179) to replace Decree 117. The new Decree has 5 chapters and 77 articles. It has one additional chapter and 13 articles compared to Decree 117. It has a separate chapter on handling environmental serious polluters and publicizing administrative violations. The new Decree specifies some violations which are not addressed in Decree 117. These include violations by the production, trade and service facilities which are subject to the requirement of registering for commitment to environmental standards, the facilities not having commitment to environmental standards or environmental impact assessment (EIA), and violations of importing and producing biological agents in waste treatment. With detailed and feasible articles, the new Decree is expected to provide an effective management tool for handling environmental violations that result in improving environmental protection.

JUSTIFICATION TO DEVELOP DECREE 179

The implementation of Decree 117 by the Government on handling administrative violations of environmental protection, in reality, has revealed difficulties and some provisions do not comply with the Law on Handling Administrative Violation and new regulations on environmental protection and biodiversity conservation such as: No difference in penalty levels between organizations and individuals for one violation leading to inappropriate fines; Unclear definition of some terminologies so some provisions are not feasible; Lack of provisions on changing behaviors of entities having the EIA approved; Lack of mechanism against entities missing environmental protection commitment, EIA; Some provisions on violations are general and non-deterrent to organizations and individuals having serious violation behaviors and inappropriate for organizations and individuals having less serious violation behaviors; Many provisions are qualitative, the division of waste volumes is big, the number of times surpassing the allowed technical regulations for pollution behaviors is not scientific and unrealistic, not ensuring the "polluter-pay-principle"... Therefore, the development of a new decree to replace Decree 117 is necessary, ensuring the enforcement and compliance of legal documents on environmental protection and creating a deterrent to organizations and individuals having administrative violation behaviors in this sector.

SOME FUNDAMENTAL CONTENTS OF THE DECREE 179

Decree 179 consists of 5 chapters and 77 articles, additional 1 chapter and 13 chapters compared to Decree 117, concurrently has a separate chapter regulating measures against serious environmental polluters and administrative violation information publication. The Decree 179 is a scientific and effective inheritance of strengths of Decree 117 and regulates other violations according to the current regulations.

Administrative violation behaviors in environmental protection, penalties and rehabilitation measures

According to the Decree 179, administrative violations of prepa-

▲ *The Decree 179 stipulates the penalty level is from warning to fines of up to 1 billion VND for behaviors of disposal and landfill of hazardous wastes causing serious environmental pollution*

ration, implementation of environmental protection commitment; preparation, appraisal and approval of EIA; preparation and implementation of environmental protection plans are regulated at articles 9 to 13 of the Decree 179. These provisions identify violation behaviors, classify them in terms of characteristics and danger levels; provide penalty levels ranging from warning to fines up to 250 million VND (25% of the maximum penalty level); apply the additional penalty that suspends the operation of serious environmental polluters and request them to overcome violation damages as regulated.

Regarding behaviors discharging wastes beyond environmental technical regulations causing environmental pollution, the Decree 179 identifies in details violation behaviors, pollution levels in relation to hazardous and non-hazardous environmental parameters, divisions in terms of waste flows and volumes, to ensure fair and scientific foundation and take into consideration of large-scale waste sources (wastewater over 10,000 m^3/day, night, air emission over 100,000 m^3/hour); regulates penalty frame for noise and vibration pollution in relation to the newly promulgated environmental technical regulations. The penalty ranges from warning to fines of up to 1 billion VND for large-scale waste sources or wastes consisting hazardous pollutants causing serious environmental pollution or radioactive materials; the additional penalty allows the suspension of operation of serious environmental polluters and requests them to overcome violation damages and pay for expenses of testing environmental samples according to the Law of Inspection and current regulations on violations of wastes.

Behaviors violating waste management are regulated at articles 21 - 25, of which the penalty level is from warning to fines of up to 1 billion VND for behaviors of disposal and landfill of hazardous wastes causing serious environmental pollution; the additional penalty allows the withdrawal of the license on hazardous waste management operation or suspension of the operation of serious environmental polluters, requests them to overcome violation damages and pay for expenses of testing samples according to current regulations.

Moreover, at articles 26/41, the Decree regulates the penalties of environmental protection in import of equipment, facilities, vehicles, materials, fuels, refuges, biological agents; environmental protection in tourism and exploitation and suitable use of natural resources; prevention, control and overcoming of environmental pollution, degradation and incidents, environmentally friendly products, environmental monitoring. These provisions identify in details violation behaviors; the penalties are from warning to fines of up to 1 billion VND for behaviors causing large-scale oil spills, discharging of hazardous wastes that causes marine pollution; provide additional penalty that withdraws the license of operation or suspends pollution causing activities and requests to overcome violation damages, compensate damages and pay for expenses of testing samples as regulated.

Particularly, regarding violation behaviors on conservation and sustainable development of natural ecosystems, genetic organisms and natural resources; obstacles on state management of environmental protection, the Decree 179 proposes the penalty levels from warning to fines of up to 1 billion VND for behaviors of illegal exploitation of plants and microorganisms regulated in the list of rare, endangered, threatened and protection priority species, invasive alien species; provides the addition-

al penalty that withdraws the license of operation or suspends the operation of serious violations.

Authority and procedures for handling administrative violations

To avoid the overlapping in the handling of penalties but not to allow gaps in untimely addressing violations when they are discovered, complying with Law on Handling of Administrative Violations, the Decree regulates the authority for handling administrative violations and clearly assigns the authority roles of different forces (Articles 51-54), this creates favorable conditions for relevant parties to apply penalties, to ensure the appropriateness with the penalty levels for each violation behavior in practice, to avoid the overlapping; hence, designated staff can conduct penalties in compliance with mandates, authority and tasks.

In addition, Clause 2, Article 54 regulates that the designated staff that have the authority to conduct penalties of administrative violations of environmental protection at particular articles and provisions of this Decree 179 are only allowed to implement supervision, inspection measures in the scope of these articles and provisions; in case of discovering organizations and individuals that have violation behaviors but beyond ones' authority, they must inform and collaborate with agencies and personnel that have the mandates in handling administrative violations of environmental protection for those behaviors to supervise and inspect as regulated.

In addition, Article 55 of this Decree 179 regulates the procedures for withdrawal of environment license in a particular period or operation suspension in a particular period and for supervision and inspection of implementing measures against administrative violation damages.

NEW CONTENTS OF DECREE 179

In the Decree 179, the framework and penalties are detailed. Some administrative violation behaviors that were not addressed previously due to lack of penalty mechanisms are specified in the Decree such as: administrative violation behaviors of manufacturing, trade and service entities that must register environmental standard requirements; of manufacturing, trade and service entities that do not have environmental protection commitment or EIA; environmental protection behaviors in import and production of biological agents in waste treatment; behaviors on environmentally friendly nylon bags; behaviors in transportation of hazardous goods and prevention, response and rehabilitation of environmental incidents; behaviors in violation of regulations on environmental monitoring services. According to the Decree, the maximum fine is 1 billion VND for individuals and 2 billion VND for organizations; for central-level cities, the city people's council can endorse the penalty that doubles the regulated level. Concurrently, the Decree 179 identifies in details the calculation of the number of surpassing National Technical Regulation (QCVN) and the highest number of surpassing will be used for penalties, in case there are many parameters that surpass, depending on the surpassing level, the penalty will increase from 1 - 4% but not higher than the total penalty for that behavior. In case there are many disposal points, the penalty will be applied for each point. In addition, the Decree provides the additional penalty that allows the suspension of operation of entities or activities that cause serious environmental pollution, of entities or industrial zones that miss or not implement environmental protection commitments as regulated; and ignore EIA or not implement approved EIA.

In particular, to strictly implement the Law on Biodiversity, the Decree 179 regulates administrative violation behaviors of biodiversity (articles 41 - 48): Violation of regulations on conservation and sustainable development of natural ecosystems; Violation of regulations on wild flora, plant seedlings, algae, microorganism or specimens, products of wildlife, animal specimens of the list of rare, endangered, threatened and protection priority species; Violation of regulations on protection of wildlife in strict protection zone of protected areas; Violation of regulations on management of biodiversity conservation facilities; Violation of regulations on control of invasive alien species; Violation of regulations on management, access to genetic resources and benefit sharing; Violation of regulation on scientific research, technology development on genetic modified organisms, products of genetic modified organizations, genetic modified organism testing; Violation of regulations on manufacturing, trading, import, storage and transportation of genetic modified organisms and products of genetic modified organisms.

Concurrently, the Decree 179 regulates on discharges causing environmental pollution that are quantified in details to ensure the fairness in penalties against violation; the incremental penalty of second parameter in a supervised sample will be more subjective to avoid the incidence that polluters that discharge wastes surpassing environmental regulations with different volumes and an environmental parameter surpassing the regulation or many environmental parameters surpassing the allowed regulations but a same penalty applies. Due to the

dangerous impact of hazardous environmental parameters in wastewater, air and dust on the environment, the Decree 179 provides one article to ensure the appropriate handling of impact levels of behaviors violating the environment.

CONCLUSION

The Regulation in details of administrative violation behaviors, appropriate with practical conditions, creates favorable conditions for the implementation of the inspection, supervision and penalties of administrative violations that is unified, effective, and deterrent. This will drive entities to change behaviors towards environmentally friendly and investing in environment treatment.

With detailed and practical regulations, the Decree 179 is an effective tool for state management agencies on environment to handle administrative violation behaviors in environmental protection, to leverage environmental protection to a higher level.

State management on environmental protection has changed positively; contributed importantly to the general success of the sector, as well as sustainable development of the country in the industrialization and modernization. Of which, the mechanism for handling administrative violations is one of important tools to force organizations and individuals to change behaviors towards environmental friendly, as a result to enhance the efficiency and effectiveness of environmental protection■

Earth Hour Vietnam 2014: **Saves 431,000 kWh of electricity**

Vietnam saved 431,000 kWh of electricity, equivalent to around 650 million VND (30,550 USD) thanks to citizens turning off unnecessary lights and electrical equipment from 8.30 - 9.30 pm on 29th March, for the 2014 Earth Hour Campaign.

Addressing at a Ceremony in Hanoi, Deputy Minister of Industry and Trade Cao Quoc Hung said the Campaign not only helps reduce electricity consumption for one day, but also has a spill over effect across the whole year.

The event contributed to raising public awareness of using energy in an economical and effective manner, promoting sustainable socio-economic development and coping with climate change, Mr. Cao Quoc Hung added.

Danish Ambassador John Nielsen, who is also Ambassador of the 2014 Earth Hour Campaign, said that protecting the Earth, which is the responsibility of everyone, should start from daily changes in life to build a sustainable future.

The Campaign has also seen 3,000 volunteers join a "Riding for the Environment" Programme along streets in Hanoi and central Da Nang city. As many as 5,000 restaurants and coffee shops pledged to donate to the Campaign and give discounts for the riders.

All 63 provinces and cities nationwide have played their part. Last year's campaign, the country saved a total of 401,000 kWh of electricity, including 219,000 kWh sourced from Hanoi.

Hundreds of young people in northern Hai Phong city and central Ha Tinh province also organised the "Riding for the Environment" Programme to respond to the Campaign. Hai Phong saved a combined volume of nearly 60,000 kWh of electricity in such events from 2011 to 2013.

In Da Nang, lighting at 900 places was turned off for Earth Hour.

Meanwhile, the Central Highland province of Kon Tum has organised activities calling upon local people to economise on electricity, setting a target of saving 40,000 kWh of electricity during the campaign and 3 million kWh for the dry season.

This year, Vietnam strives to save more than 2 billion kWh of electricity. At least 925 million kWh will be saved by Hanoi and the northern and central regions, while Ho Chi Minh city and southern region will aim to save 1.26 trillion kWh. **BH**

Pollution Management Project in industrial zones of the Dong Nai, Nhue - Day river basins

TRẦN DUY ĐÔNG
Deputy Head of the Economic Zones Management Department
Deputy Director of Project Management Board
Ministry of Planning and Investment

▲ *Workshop on the Pollution Management Project in IZ of the Dong Nai, Nhue - Day river basin Project, April 2013*

The Pollution Management Project in industrial zones (IZ) of the Dong Nai, Nhue - Day river basins funded by the World Bank (WB) with the total capital of USD 58.85 million, in which USD 50 million is ODA capital and the rest of USD 8.85 million is the counterpart fund. The Project has been implemented in 5 years, starting from April 2013.

The target of the Project is to make a contribution to minimizing the environmental pollution, boosting industrial development in the sustainable direction through the perfection of the system of legal documents, enhancing the institutional and technical capacities and mobilizing the active participation of the community in supervision and observance of the Law on Environmental Protection in the Dong Nai, Nhue - Day river basins.

The Project is under the general management of the Ministry of Planning and Investment (MPI) and is divided into three components: Enhancing the institution and implementation undertaken by the Vietnam Environment Administration, the Ministry of Natural Resources and Environment (MONRE); Experimental loaning for investment in building the waste water treatment stations in the IZ implemented by the Vietnam Environmental Protection Fund (VEPF); Enhancing the capacity of officials in management of pollution of industrial waste water, technical support and project management undertaken by the Economic Zones Management Department, the MPI.

The Project has been deployed on trial basis in Ha Nam, Nam Dinh provinces (the Nhue-Day river basins), Dong Nai and Ba Ria-Vung Tau provinces (the Dong Nai river basin). The goals and operation of the Project have been designed in three specific areas:

Enhancing capacity and institution, raising efficiency of observance of the legal documents on environment: It is to review, amend and add the system of legal documents on control of industrial pollution, environmental protection in the river basins areas and sustainable development in IZ; to perfect the legal framework for pollution management in IZ, the Project is deploying the activities to support the building of sub-law documents within the framework of amending Law on Environmental Protection 2005 (LEP 2005), with a view to enhancing management and control of industrial pollution for water quality released into the river basins; to concentrate on enhance the capacity of inspection, examination and supervision of the compliance of the current stipulations on the waste water treatment of the enterprises doing infrastructure business in IZ. An automated system of monitoring water quality and giving warning to the Pollution Degree is set up in the Dong Nai, Nhue - Day river basins where the Project is being implemented.

At the same time, it is to deploy the sharing activities in the report on information/data of water environment monitoring and on supervision of the implementation of the current stipulations on environmental protection of the relevant enterprises. Besides, the Project also aims to institutionalize the propaganda, popularization and openness of information on environment and mobilize the participation of community in the activities of management and environmental protection in the river basin.

As far as this component is concerned, after the Project is completed, there will be 7 legal documents relating to pollution management of industrial water and IZ being promulgated and implemented by the authorized agency; 17 automated monitoring stations in the Dong Nai, Nhue - Day river basins will be built.

Minimizing the water environmental pollution in the Dong Nai, Nhue - Day river basins through the trial activity concerning preferential loan for a number of IZ that make investments in building and operating on a trial basis the concentrated waste water treatment system to the national standards:

This is the activity to create mechanism and source of preferential finance of the Project to support enterprises that do business in infrastructure in IZ with a view to encourage to building and operating effectively the concentrated waste water treatment systems in IZ.

The VEPF is the agency to implement the trial loaning for 8 IZ in the Dong Nai, Nhue - Day river basins to build their concentrated waste water treatment systems. Until the end of 2013, the VEPF had disbursed for 3 IZ of the Dong Nai river basin (Nhon Trach 3 and An Phuoc IZ, Dong Nai province), the Nhue-Day river basins (Bao Minh IZ, Nam Dinh province). Now, the Fund has been receiving the files for borrowing loans of Hoa Mac IZ (Nam Dinh povince); Phu My 3 IZ and Dat Do IZ (Ba Ria-Vung Tau province), and it is expected to sign the loaning contracts and disbursement in Quarters 1 and 2 of 2014.

Enhancing the capacity of the contingent of officials in the management agencies, the supervisory force and the environmental officials in enterprises of the 4 provinces which have taken part in the Project through the training, survey and conferences and workshops where the researches and sharing of information on the management of environmental protection in general and the supervision of industrial pollution as well as water environmental protection in particular:

The Project will carry out 4 modules with 22 training courses on environment management, monitoring and information. It is expected that after the Project is finished, there will be about 2,500 turns of officials from the Central level to the local level taking part in the qualification training courses. Apart from the courses organized at home, the Project will also send the technical officials to join the intensive training courses abroad or will organize the study tours for the Central and local officials.

To support the goals of sustainable development of IZ and supervision of the result of waste water from IZ to the two basins of the Dong Nai, Nhue - Day river basins. The Project has also deployed the researches on building the policy, the models of sustainable development, the control of pollution, building the technical guidances in order to support the management of industrial pollution in Vietnam■

Proposing some greenhouse gas reduction measures in waste management sector in Vietnam

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In the context of increasingly complex climate change, applications of greenhouse gas (GHG) emission reduction are important. This article reviews and proposes some GHG emission reduction measures in Viet Nam.

WASTE MANAGEMENT MEASURES TOWARD GHG EMISSION REDUCTION

Over the past period, environmental law and policy, in particular waste management law and policy have gradually been improved. Numerous legal documents have been issued such as Law on Environmental Protection 2005 (LEP 2005), Law on Environmental Protection Taxes, Strategy on Sustainable Development in 2011 - 2020, National Strategy on Green Growth, National Strategy on Environmental Protection by 2020, vision to 2030, National Strategy on Integrated Solid Waste Management by 2025, vision to 2050, and National Strategy on Cleaner Production for Industrial Sector to 2020. By enforcing these legal documents, waste management in general and GHG emission reduction measures in particular have produced encouraging results.

Solid waste collection has improved remarkably, especially in urban areas: A solid waste collection rate in urban areas increased from 72% in 2004 to 81 - 82% in 2010. In some areas, this rate is even higher. For example in Ha Noi, Ho Chi Minh city, Quang Ninh, Hai Phong, Hai Duong, the collection rate is as high as 80 - 95% (Ministry of Construction in 2010). An industrial solid waste collection rate in industrial zones and export processing zones is 90%.

Implementing National Strategy on Cleaner Production in Industrial Sector: According to surveys in 2011, among surveyed 9,000 facilities, about more than 1,000 facilities have applied cleaner production (equivalent to 11%). Of which, 309 facilities (about 3%) have reduced energy consumption by 5 - 8%. So far, 12 Departments of Industry and Trade have had sufficient capacity to provide guidelines on cleaner production, 50 Departments of Industry and Trade have had staff members specializing in cleaner production dissemination and training.

Strategy on Clean Technology by 2020, vision to 2030: Focusing on renovation and applications of clean technology in some major energy consuming and emitting industries. Once implemented, this Strategy will contribute to reducing production waste:

With a relatively high organic content of 50 - 60%, composting municipal waste has been implemented in many localities. As of early 2013, there have been 41 composting factories, of which 28 are in operation, 10 in construction and 3 have ceased operation. According to the total designed capacity, 6,400 tons of waste are composted a day. With a collection rate in 2010 of about 12,766 - 22,290 tons per day, about 29% of collected waste is composted.

Promoting low GHG waste treatment technology: Developing favorable policy for recycling activities as regulated in LEP 2005 and Decree No. 04/2009/NĐ-CP dated 14/1/2009. Some waste treatment technology towards recycling has been researched and developed. So far, some waste has been recycled. Some activities have been promoted for a project Nam Son Waste to Energy with a total investment of more than 600 billion VND and a similar project in Ho Chi Minh city.

However, the implementation of GHG emission reduction waste management measures has revealed shortcomings. In particular, collection of solid waste in rural areas remains limited with a collection rate of about 40- 55%. Fees based on waste volume and progressive wastewater fees have not been introduced. Waste prevention and minimization in consumption have not received due attention. Implementation of extended producers' responsibility remains limited. Other shortcomings include outdated technology and limited applications of cleaner production,

Environment management system ISO 14000 and waste audit.

In addition, composting has not widely and effectively implemented. Composting factories have faced difficulties in their operations.

Recycling activities remain at a small scale, in a spontaneous manner and are mainly conducted by facilities in handcraft villages with old, backward and polluting technology. Applications of modern technology in waste treatment remains limited. The main solid waste method is unsanitary landfilling. Of 98 operating landfills, only 16 are sanitary landfills (MONRE 2010). Incineration is only applied in medical waste treatment and at an initial stage for municipal solid waste. Investment in wastewate treatment remains slow with 90% of wastewater discharged into the environment without treatment. Methane collection has been applied only in some clean development mechanism projects.

Main causes are limited awareness and responsibilities on environmental protection and waste management to reduce GHG of management levels, sectors and business. Investment in infrastructure for waste management and GHG emission reduction is limited. Waste managment regulation enforcement is insufficient. Industrial state are low with lots of outdated and backward technology.

▲ *Biogas for animal waste treatment and GHG emission reduction*

PROPOSING GHG REDUCTION WASTE MANAGEMENT MEASURES

Promoting waste minimization: Increasing capacity for increased solid waste collection rate, in particular for rural areas; Implementing fees based on waste volumes and progressive wastewater fees, piloting and scalling up source seggregation nationwide; Developing guidelines for implementing Decision No. 50/2013/QD-TTg on extended producers' responsibilities on collection and disposal of expired or discarded products from 2015; Encouraging sustainable consumption and environmentally friendly green lifestyles; Strictly controlling import of byproducts; Boosting cleaner production measures, waste audit and ISO 14000 in industrial facilities; Implementing Strategy on Clean Technology; And developing low carbon industrial facilities and industrial zones.

R*educing organic and carbon contents in waste*: Continuing boosting biological solidwaste treatment methods, in particular composting and biogas for animal waste treatment; developing policy banning organic waste landfilling.

Promoting low GHG waste treatment methods: Developing and implementing Law on Waste Recycling and promoting recycling industry; Developing and implementing policy on taxes based on volumes of landfilled waste, promoting reuse and recycle.

Investing in construction of solid waste treatment facilities in major economic zones following approved plans; investing in waste to energy projects, starting with big cities such as Ha Noi, Ho Chi Minh city and Da Nang; in the meantime, investing in constructing centralized wastewater treatment in urban areas, aiming for the objective that by 2020, 100% industrial zones and big industrial facilities having wastewater treatment in operation meeting with environmental standards.

Promoting GHG collection methods: Improving existing landfills; Mobilizing investment for converting more than 80% unsanitary landfills to sanitary landfills with methane collection for power generation.

In addition to these four groups of measures, it is necessary to implement comprehensive measures, in particular to draft a roadmap for investment in waste treatment and recycling facilities with modern technology to reduce landfilling■

Professor Vo Quy - Hero of the environment

TIME Magazine awarded Prof. Vo Quy to be Hero of the Environment. He is the first Vietnamese and also the second Asian that has been awarded the Blue Planet Prize by the ASAHI Foundation, Japan in 2003, which is described as the Nobel Prize for the environmental sciences. 9 years later, in 2012, he is one of three scientists that received the MIDORI Prize for biodiversity.

A SPECIES OF PHEASANT NAMED VOQUY

Born in Yen Ho commune (Duc Tho district, Ha Tinh province), Prof. Vo Quy developed a deep interest in birds from childhood. Later, when he was a lecturer at the Biology Faculty of the Vietnam National University (Hanoi) which is now called University of Natural Sciences, he became an ornithologist.

Among the birds that Prof. Vo Quy researches, there is a special species of bird named after him, VoQuy pheasant. He discovered this rare-feathered species of pheasant in the area of Ke Go, Ha Tinh province. Witnessing by his own eyes, he identified that this species has not ever been listed in the books he researched. In 1964, he studied at Moscow University (Russia) for doctorate degree continuing his study on the rare pheasant species. In his graduation thesis, he presented about the new pheasant species called Lophura HaTinhensis or HaTinh pheasant in Vietnamese name. Many foreign scholars currently consider this species as VoQuy's pheasant.

Among his achievements in ornithology, the most outstanding one is his book "Birds of Vietnam" written during the war. The book which is thousands of pages in thickness describes 774 species and over 1000 sub-species of birds of Vietnam. The book he presented at an international conference on birds in India in 1985 received warm welcome and high appreciation. His colleagues and friends call him Vietnam Ornithologist thanks to his significant contribution.

DEVOTION TO CHARITY FOR ENVIRONMENT

Not only known in ornithology, Prof. Vo Quy is also known for his research of Agent Orange in early 70s. He is the first person to publish hundreds of film footage on forests of died precious trees and barren land caused by Agent Orange.

In 1983, at the 1st international scientific conference on toxic chemicals in Ho Chi Minh city, many American and British scientists said that those destroyed forests would regenerate after 40 to 50 years. However, Prof. Vo Quy argued that it would take several hundred years for those forests' recovery.

Accordingly, he initiated many efficient measures to recover two hectares of destroyed forest caused by Napalm bomb and Agent Orange. As a result, he achieved quite a few international environmental awards.

To date, Prof. Vo Quy has received nine international environmental awards. One of his noteworthy achievements is the Blue Planet Prize -the biggest award in the world for environment equivalent to the Nobel Prize for environment sciences given by ASAHI Foundation, Japan. He was also selected as one of 35 Heroes of the Environment by TIME Magazine.

It is noteworthy that he spent most of money he earned from prizes on charity programs. He decided to grant a prize worth 50 million JYP (equivalent to 6 billion VND) to a program training Vietnamese environmental cadres.

He donated 150,000 USD of the PEW Scholars Award of University of Michigan and 100,000 USD of the MIDORI Prize for Biodiversity to the annual scholarship program for Faculty of Biology at University of Natural Sciences of Vietnam National University, Hanoi. He said that Vietnam is in need of excellent environmental cadres for future environment protection. **CL**

Trang An Scenic Landscape Complex recognized as Viet Nam's eighth World Heritage Site

Situated on the southern shore of the Red River delta, Trang An is a spectacular landscape of limestone karst peaks permeated with valleys, some of which are submerged, and surrounded by steep, almost vertical cliffs. The Trang An Scenic Landscape Complex is the 8th UNESCO-recognized World Heritage Site in Viet Nam and the first that falls into the category of having both natural and cultural importance.

"The inscription of Trang An on UNESCO's World Heritage List is a special event for Viet Nam. It makes us all feel proud and happy, but also gives us greater responsibility for the preservation of the site's Universal Outstanding Values for our future generations," Deputy Minister of

Culture, Sports and Tourism Dang Thi Bich Lien stated emotionally after the meeting.

On June 23rd 2014, Viet Nam's Trang An Scenic Landscape Complex was inscribed on UNESCO's World Heritage List at the 38th meeting of the UNESCO Heritage Committee in Doha, Qatar. The site was nominated based on its outstanding cultural value, exceptional natural beauty and significant geomorphic or physiographic features.

Exploration of some of the highest altitude caves that are dotted across the landscape has revealed archaeological traces of human activity dating back almost 30,000 years. They illustrate the occupation of these mountains by hunter-gatherers and how they adapted to climatic and environmental changes.

The property also includes Hoa Lu, the old capital of Viet Nam in the 10th and 11th centuries, as well as temples, pagodas, paddy-field landscapes, along with villages and sacred sites.

NH

Conservation and sustainable use of wildlife resources

The Department of Biodiversity Conservation (Vietnam Environment Administration) lately hosted a round-table discussion on how to improve conservation and sustainable use of wildlife resources in Vietnam.

Speaking at the Seminar, Deputy Minister of Natural Resources and Environment Bui Cach Tuyen said conservation and sustainable use of wild animals in the territory of a country depends not only on its policy, but are also governed by international regulations and affected by the policies of other countries.

Therefore, conservation of biodiversity in general and conservation of wild animals in particular need international cooperation as well as efforts at the national level.

Issues tabled for discussion covered the appropriate model in the context of Vietnam; Vietnam can apply what wildlife management models from other nations; Vietnam should prohibit all forms of commercial breeding and priority species for protection.

Some participants also said that wild animal breeding farms for commercial purposes is growing drastically in terms of volume. So whether this will support conservation or increase the pressure on wild animals remains to be seen.

They also proposed preventing farms from raising protected species and globally threatened animals named in the Red Book, duly punishing farm owners who violate regulations on wildlife protection.

Farms must be responsible for the documents proving the origin of the breed rather than the law enforcement agencies, they added.

Earlier, the International Union for Conservation of Nature (IUCN) collaborated with the Vietnam Forest Ranger Department to conduct a survey on 78 breeding farms with a view to promoting conservation of natural populations.

Results showed that 22 species are currently bred at farms, including 12 nationally threatened species, 6 globally threatened, 4 nationally protected and 5 named on the Red list of globally endangered animals.

CV

Building Orientation for Developing Green Economy -Solution in Response to Climate Change

Prof. Dr. LÊ VĂN KHOA
Institute of Consultancy for Development

IMPACT OF CLIMATE CHANGE

Climate change not only affects environment but also threatens comprehensively the policies on great development of the country. According to the scenario of climate change of the Ministry of Natural Resources and Environment (MONRE), 42 provinces and cities in the Cuu Long River Delta, Ho Chi Minh city, the Central coastal area, the Red River Delta and Quang Ninh are in danger of being affected by land erosion and rising sea.

All big cities of Vietnam will be hit with no small impact from natural disasters, climate change, rising sea as well as the consequences of the process of expanding urban areas in accordance with the unsuitable plans and poor management of land use. All these will land the urban areas in the State of being submerged in an ever increasingly serious manner. Only in Hanoi, a medium intensity of rainstorm can cause 60 local flooded areas (2011) and if rain is heavier, a lot of large areas in the centre of the City will be inundated. In Ho Chi Minh city, rain along with an ever higher tidal wave has expanded the flooded area. The phenomenon of flash flood and land erosion has happened ever more constantly, causing great losses to a lot of mountainous areas such as Ha Giang, Lai Chau and Son La. A lot of deltas and coastal areas have witnessed the ever more complicatedly happening erosion of river banks and coastal areas.

Apart from the flood causing rising sea, the danger of sea encroachment will also affect agricultural production and people's life. The research of the Southern Water Resource Science Institute in 2013 showed that in Soc Trang and Ben Tre provinces, sea encroachment has engulfed inland for 40 meters to 45 meters; Hau Giang has been saline with salinity of 5% to 7%. So, climate change has been making great impact on the country's economy, demanding all of us to take effective responsive measures. One of the measures is building the development orientation of the green economy (GE).

THE ROLE OF GE AND MEASURES IN RESPONSE TO CLIMATE CHANGE

In the current situation, building the development orientation for the GE is the way to achieve the goals of growth and develop the sustainable economy. Environmental protection, preservation of biodiversity, effective exploitation and use of natural resources and response to climate change are the goals to be aimed at by not only the world's economy, but also by Vietnam's economy. Of late, when dealing with the growth, a concept of green growth lies within the concept of GE.

Green growth is the new direction of accessing the world in the economic growth; it not only brings about the economic benefits, but also aims to restore and preserve the natural eco system, minimize the affect of climate change. This is also synonymous with investment in environment so as to boost the economic growth. That is why, green growth is assesses as the shortest path for the sustainable economic development.

In the GE, the increase of income and creation of jobs through the "green investment" of the State and individuals will help create products, minimize the carbon emission, reduce pollution, use effectively energy and resources and prevent the decline of biodiversity. So, the GE should be directed to maintain and improve the natural resources of capital for recovery, because this is the important economic asset and the common benefits, especially for the poor, because their livelihood and security depend a lot on nature.

The concept of the GE does not substitute the sustainable concept, but it has become ever more recognized as the suitable model as the foundation for the sustainable development. Sustainability is a long-term important goal, but greening the economy is the means to take us quickly to reach the finish. So, the GE is a strategy of economic development so as to obtain the goals of sustainable development. Such the countries with developed industry as the US, Germany, South Korea have invested hundreds of billion of US dollars for the policy on GE development, considering it as the best investment for sustainable development of their countries and boost the stable economic growth, making a contribution to protecting natural resources and environment, creating

▲ *Industrial wastewater recycling plant in Singapore*

jobs and stabilizing life. In fact, there is number of countries advancing as pioneers to develop the GE with the measures to encourage the application of new technologies and reduce pollution, such as:

In Sweden, in the process of carrying out the GE, great attention has been paid to assessing pollution and then encouraging enterprises to look for the improved measures and use the technologies friendly to environment. For example, when applying taxes on the green house emission, the ratio of enterprises to apply the technologies friendly to environment has increased considerably from 7% in 2012 to 62% in the following year.

Singapore is the leading country in the use of the quality assessing tool when settling the problems of waste and waste water. For example, from the position it has to buy water from Malaysia and Indonesia, now Singapore has applied the technology of recycling waste water into drinking water, a new advance in the recycling industry.

Since 2008, South Korea has reserved 80% in its economic stimulus package with about USD 38.1 billion to be used for shifting from the "brown economy" to the "GE". Of late, at the Barcelona Fair, Samsung introduced a sample of mobile phone, the first of its kind in the world, which uses solar energy, signaling that green technology is applied in electronic products. The South Korea Government has also invested USD 40 billion in the next 4 years to develop the green technology and build the system of "green transport", including the railway system of less emission of carbon and 3,000 km of bicycle road around 4 rivers; build about 2 million green houses and office buildings that use less energy and electricity.

Experience from other countries has shown that they are carrying out the GE development and this helps Vietnam to think about the solutions for development such as human resources, technology, awareness and capital and this is the barrier to create large gap Vietnam has to overcome. It is necessary to raise the people's awareness in the process of building the GE for the local economic development.

From the awareness, localities should have the breakthrough; renew their thinking so as to be able to carry out in an effective way the right goals of the mapped-out policies and strategies. Correct and profound thinking; fast and timely renovation, restructure and shifting are the elements to create the successful competition; the basis to create the fast or slow development speed for each urban area and each locality.

At the same time, administration in localities should do well the communications work, because the correct awareness can breed correct action, while awareness is the whole process, so it needs being popularized and educated so that each people, each enterprise can better understand and see clearly their responsibilities in developing the GE.

BUILDING PRIORITIES IN DEVELOPING THE GREEN GROWTH-ORIENTED ECONOMY

In the competitive economy, it demands all the sectors to build their own brands; each area, each locality should have one or many brands and maintain their brands in a sustainable way. So, it is necessary to invest technology so that products of high quality and safety will help increase further the value chain of the products. Each area, each locality has got the brands in the farm produce processing area and in services and tourism.

In today's development tendency, each locality and each area cannot develop in a single way; it is necessary for them to have the linkage to support each other to together promote the strength and overcome the limitations and difficulties. The regional linkage is the sum of all the internal and inter-regional relations in all aspects. This is the objective, necessary demand, particularly when Vietnam is in the process of having intensive and extensive integration in the world's economy. There are certain issues which cannot be resolved within the locality or area. To overcome this difficulty, it is necessary to set up the linkage of the value chain so as to bring about a lot more benefits to the people, enterprises, localities, regions and countries, instead of doing it single-handedly in each lo-

cality as it is doing now. As judged by the World Bank (2009), in producing coffee in the Highlands, the peasants have to bear great losses. They could be able to enjoy only 10% of the interest out of the total added value of the end-product.

So, if the regional linkage is to be performed well, the areas will help one another and complement one another; this area is specialized in production, that area is specialized in processing and the other area is in charge of export, resulting in having a highly increased value chain of the products, thus the producers' benefits will be guaranteed.

In the orientation of developing the GE, the role of private small-and-medium-sized enterprises is very important. These enterprises are creating a huge quantity of work as well as making a lot of contributions to increasing the jobs and stabilizing social life. However, these enterprises should gat access to the new technology so as to raise production capabilities. And the people in capacity as "the green consumers" need to avoid consuming the products harmful to health and environment. Consumers are entitled to demand the suppliers to create and supply products and services that will not affect badly environment. For example, buying and consuming safe assorted vegetables and food, selecting the car with less fuel consumption and exhaust of less fume into environment; selecting the electricity and water saving household appliances; refusing to buy products made of rare and precious wild animal hides or responding to the bicycle riding movement and other public transport means. When awareness and habit have changed, the green consumers are entitled to change the suppliers. The close coordination between the local administration and the people and enterprises are the key elements to build the GE.

GREENING IN THE URBAN PLANNING

Apart from increasing the rate of green trees in urban areas, in the areas with the characteristic terrain and natural conditions, in which there is the system of crisis-crossing rivers and channels and large mangrove forest land such as in the Cuu Long River Delta, it is possible to build the "water urban area" and this is already planned in the international cooperation between Vietnam and Belgium with a view to responding to natural disaster and climate change (2011). To be able to develop the water urban areas, first of all, it is necessary to be proactive in the planning work by reserving the areas for water, or in other words, instead of leaving water encroaching space as of now, it is necessary to have specific planning with the spaces being reserved for water. This way of access has been carried out by many countries, particularly the Netherlands with its access to adapt itself with water in its urban planning and design with the Program called "Seizing space for water". Instead of building the technical barrier to combat the flood, the planning solutions should create a lot of spaces for water so that water can penetrate into the urban areas in a way that it is possible to control it and through this, it helps improve climate, landscape, water quality and minimize the costs to build the anti-flood and drainage works. This meaning can be understood that in the water cities, Vietnam has rivers flowing through and the reservoirs which can be served as the eco views, thus improving the climatic conditions and at the same time serving it as a place for water to "reside" when the flood comes■

INDUSTRIAL CLUSTERS RECEIVE SUPPORT FOR UPGRADING ENVIRONMENTAL TREATMENT SYSTEM

Starting from April 2014, industrial clusters receive maximum 30 percent financial support for repairing and upgrading environmental treatment system with no less than 1,500 million VND per industrial cluster.

The above-mentioned regulation is part of Joint Circular No. 226/2014/TTLT-BTC-BCT of the Ministry of Finance and the Ministry of Industry and Trade on guiding the management and use of national and local promotion funds.

Projects of repairing and upgrading environmental treatment pollution at rural industrial clusters are given a maximum financial support of 30 percent with no less than 300 million VND per cluster.

In addition, construction projects of industrial clusters' infrastructure (site leveling, internal roads building, installed water supply and sewage) will enjoy no less than 300 million VND per cluster.

Subjects of application consist of individuals and organizations investing in and producing handicrafts, especially those adopting clean production approach at communes, districts and wards of second, third and sometimes first level cities.

GH

Non-waste agriculture model in Vietnam

PHẠM NHƯ TRANG
Sustainable Product Innovation Project

Vietnam is an agriculture country and a leading export country on rice, pepper, cashew and fishery. However, price of agriculture products is not high due to uneven quality and low sanitation. In terms of domestic food market, this is not an exception and is a pressing issue. Farmers pursue productivity and profits by using stimulants and chemicals in production which not only affect health of consumers but also health of producers, sellers and the environment.

As a result, demand on "clean" food projects has been formed and developed. Currently, pioneer models and facilities in producing and supplying clean food projects are Tam Dat, Bac Tom, Ecomart... in Vietnam. However, the readiness in inputs by farmers is not high. Since 2011, the Sustainable Product Innovation Project (SPIN) has implemented the non-waste organic farm model in Quoc Oai district (Ha Noi). The model has brought economic benefits to farmers concurrently protect and improve the environment.

This is an integrated cropping and animal husbandry model consisting of many chains; the output of this process is the input of the other process; all wastes in the previous agriculture production such as faeces, urines, straws... leaves have become values resources. To do that the Project has developed 25 technologies of 7 packages applied in farming activities. Seven technologies consist of:

Renewable and biomass energy: This technology package consists of chopping machine; gas cooker; solar energy drying machine. Agriculture sub-products such as straws, branches… are brought to the chopping machine then dried by the solar energy drying machine and finally to the gas cooker for creating thermal energy for cooking or making semi-active coal; this coal is used for water purification or as plant fertilizer. To operate the gas cooker, other agriculture sub-products such as coffee shell, rice husk, and corncob… all can be used as burning materials. Therefore, this technology package can treat effectively tones of agriculture sub-products - which used to be environmental pollutants to become cheap burning sources for production activities and daily domestic activities of farmers.

▲ *Crop rotation and mixture is the sustainable cultivation method in agriculture*

Animal husbandry waste treatment and food processing: The usage of trun que (earthworm) and larvae of black soldier fly (ruồi lính đen) for processing of biological waste (manure, dumped vegetables...) helps to eliminate wastes concurrently produce animal food and fertilizer to provide supplementary for soil. Trun que develop and degrade wastes, then are used as food for chickens; Trun que's faeces are used for fertilisers.

On-site organic fertiliser: In addition to the usage of black soldier fly, trun que, organic wastes are treated by using high thermal compost with toptext. Toptex is a non-woven fabric increasing the temperature inside the compost up to 60°C - 70°C but still allowing air circulation inside and outside the compost. This creates favourable conditions for aerobic microorganisms to perform to degrade organic wastes, and prevents the activity of anaerobic microorganisms - microorganisms that produce CH_4. Therefore, this technology contributes significantly to reduce greenhouse gases.

Plant protection by natural methods: Pesticides and plant protection chemicals for pest control that cause negative impacts on the environment and human health will not be used for sustainable farms. SPIN uses natural methods to protect plants such as crop rotation and mixture to increase the resilience from pests, diseases and concurrently protect the fertility of soils. Marigold trees (cúc vạn thọ) or legumes planted with vegetable crops will contribute to reduce pests and weeds. SPIN is testing some natural pesticides to prevent insects, bugs and attract good insects. This pesticide is made from materials which could be found in farms such as chilli, rustic tobacco and neem leaves.

CROP ROTATION AND MIXTURE IS THE SUSTAINABLE CULTIVATION METHOD IN AGRICULTURE

Organic animal husbandry and disease prevention: Animal husbandry does not use industrial food sources that containing antibiotics and growth stimulants but is depends mostly from farm-source food. The prevention of diseases is based on enhancing the resistance of animals and creating healthy environment for animals. The biological layer technology treating on-site faeces and urines does not pol-

lute the living environment of animals and helps animals to move regularly to increase their resistance. In addition, this technology will reduce up to 50% of labour for farmers and 80% of water. Food is fermented contributing to reduce cooking time by farmers, reduce greenhouse gas and increase the absorption of animals. In addition, garlic and ginger are used as effective antibiotics to prevent and cure some diseases. In practice, there are no animals died because of diseases in the pilot farm. The quality of products is good: taste is good and delicious, less processing waste. Although the growth of animal is slow but the selling price is high and the production cost is low therefore farmers still have high economic benefits.

Processing, packaging and storage: SPIN is studying and developing some technologies for preservation of food from farms to cities without using any artificial preservatives. Particularly is the MAP wrapping technology (modified atmosphere packaging). MAP wrap helps to maintain the stability of amount of carbon dioxide to allow good preservation of fruits and vegetables. In addition, SPIN has developed some other processing techniques such as on jam, fermented or drying. Products of organic farms do not only follow strict production conditions but also follow natural preservation methods.

Household agriculture mechanization: Small farms and limited financial capacity are great challenges to the agriculture mechanization. However, labour productivity can increase significantly if technology solutions are applied innovatively: farm planning, irrigation system design, chopping machine usage…

It could be seen that non-waste agriculture model has following benefits: Maintaining the natural cycle balancing (carbon, nitro, phosphor cycles); reduce the use of non-renewable resources; reduce agriculture production costs; enhance environment quality (soil, water, air); create sustainable products of high values and quality (natural products, organic fertilizers…); apply different scales (households, household farms, commercial farms…); easy to operate technology and techniques; make use of labour sources during non-peak farming season.

Ba Vi farm has an important role in developing typical household agriculture models. In this farm, SPIN is piloting developed technology packages. Fossil fuels and oil-originated products will be exhausted. Therefore, a sustainable agriculture will dominate the traditional agriculture for not using artificial inputs. The objective of the Project not only supplies organic products to the market but also creates a change towards sustainable agriculture in Vietnam■

Hanoi striving to improve waste management

Hanoi is intensifying its waste management efforts, particularly in the rural areas, said Mr. Phạm Văn Khánh, Deputy Director of the Hanoi Department of Natural Resources and Environment.

✶Hanoi has done quite well with waste treatment in the inner City, but in the outlying districts some problems still exist. In your opinion, what are the bottlenecks there?

Mr. Phạm Văn Khánh: Proper waste treatment is a very important factor in environmental protection.

We have paid special attention to garbage collection and treatment to make the City green, clean, and beautiful. Since 2010, the City authority has adopted a policy to support each commune in the outlying district with 200 million VND (10,000 USD) to build a waste collection point.

By now, several districts, including Dong Anh, Chuong My and Phuc Tho, have implemented the programme well. Some districts have even used their own capital resources to build more waste collection points. Our target is to have more than 87 percent of the waste collected per day. However, the My Duc district has surpassed the target and is able to collect 94 percent of its waste generated every day.

We have divided the waste collection and transportation process into two routes. In Route 1, the waste is collected from households and then transported to the collection points. All activities in this route are directly managed by the communal People's Committees.

In Highway 2, the waste is then taken from the collection points and transported to waste treatment plants, which are operated by hygienic environmental units, who work on a contractual basis with the district People's Committees.

If in 2011, the percentage of waste collected and treated in all outlying districts was 77.48 percent, the figure has now increased to 85 percent.

✶Does Hanoi have any measures to cope with the rapid increase in the volume of waste generated in the City?

▲ *Workers collect garbage on Ha Noi's Street*

Mr. Phạm Văn Khánh: In January 2014, the Hanoi Provincial People's Committee issued an instruction clearly stating that the district People's Committees have to shoulder the responsibility of treating the waste generated in their localities with financial assistance from the municipal People's Committee.

However, the document also elucidates that the waste treatment technique must ensure absolute hygiene and should be in line with the Law on Environment Protection.

More recently, our Department has supported some districts in designing proper landfills.

We also take a firm stand toward those landfills, which are already full or fail to meet the hygiene requirements, and force them to close down.

The City has ordered industrial parks to adopt a road map for waste dumping with stringent control and they should adhere to the hygiene and technological requirements.

Currently, Hanoi has several waste incinerators that are developed by Vietnamese engineers. One of them is the Xuan Son project, in Son Tay town (some 40 kilometres west of the City's centre). The project has four incinerators, and each has a capacity of 200 - 250 tonnes.

In December 2013, Hanoi launched the "solid waste treatment cum energy generation" project with funding from Japan. The plant has a capacity of 75 tonnes per day. As of now, 95 percent of the equipment has been imported.

The plant is expected to be commissioned by April, 2015.

✶***Waste treatment technology is always expensive and requires a lot of investment. Has Hanoi thought about any measures?***

Mr. Phạm Văn Khánh: To ensure safety in waste treatment, the Hanoi Provincial People's Committee has overhauled its efforts to complete and commission the 2nd phase on the expansion of the Nam Son landfill in Soc Son district (74 hectares) and Xuan Son in Son Tay town (5.6 hectares).

In addition, we have completed the technical infrastructure construction of a solid waste treatment complex at the city level, in Dong Ke village, Tran Phu commune, Chuong My district.We are now seeking different stakeholders to invest and then operate the complex.

The City authority has adopted the policy of private-public partnership in investing to build waste treatment plants or landfills. The authorities have also requested each district to reserve between 1.5 to 3 hectares of land to build a landfill in their district.

In this way, all the waste can be treated in their localities instead of transporting it to somewhere else. An example of such a case is the ongoing construction of the household waste treatment plant at the Nam Son Complex by the AIC Joint Stock Company (in the 2nd phase).

The plant is designed to have a capacity of 2,000 tonnes of household waste per day.

I am confident that from 2015 to 2020, about 50 percent of the City's waste will be treated with advanced technology.

ĐH

THE PRIME MINISTER HAS APPROVED OF VND 11 TRILLION (NEARLY USD 500 MILLION) FOR HA NOI CITY TO TREAT SOLID WASTE BY 2050

This is part of a newly-approved scheme on solid waste treatment in Ha Noi city by 2030, vision to 2050.

By 2020, the City will spend VND 3.5 trillion (USD 157 million) on the task.

The Scheme aims to collect, classify and properly treat solid waste with a view to reducing environmental pollution in Hanoi.

Under the new plan, daily discharge of domestic solid waste in the City will be collected with around 85 - 100% in urban areas and 70 - 80% in rural areas.

Ha Noi will have three regions on solid waste treatment and build other nine solid waste treatment zones.

In Ha Noi, around 5,000 tons of solid waste is discharged every day. There are three solid waste incinerators in the City with a capacity of destroying 120-200 kilos per hour.

DB

Enhancing Vietnam - the US cooperation in environmental protection

Ms. Gina McCarthy - Director of the US Environmental Protection Agency (EPA) recently made a working visit to Vietnam at the invitation of Minister of Natural Resources and Environment Nguyen Minh Quang.

▲ *Deputy Prime Minister Nguyen Xuan Phuc received Ms. Gina McCarthy at the Government's Head Office*

DEPUTY PRIME MINISTER NGUYEN XUAN PHUC RECEIVED MS. GINA MCCARTHY

During the reception, Deputy Prime Minister Nguyen Xuan Phuc took note of the results in cooperation between the two countries in recent time, especially the cooperation in environmental protection through the research program to overcome the aftermath of agent orange/dioxin; to evaluate the forest in Vietnam and enhance the management capacity and conduct national inventory of sustainable green house emission. The Deputy Prime Minister proposed that in the time to come, the agencies of environmental protection of the two countries should boost cooperation in such areas as bio technology to reduce the heavy metal pollution, control pollution and protect environment in the river basin, study and overcome consequences of agent orange/dioxin in Vietnam, cooperate in management of environment and climate change.

Ms. Gina McCarthy highly valued Vietnam's efforts in environmental protection towards sustainable development. Ms. Gina McCarthy affirmed that EPA will enhance cooperation together with Vietnam to supply and share experience in environmental protection.

HANDING OVER MERCURY CONTAMINATION MONITORING EQUIPMENT TO VIETNAM

Minister of Natural Resources and Environment Nguyen Minh Quang on the same day of April 15th, 2014 had a diplomatic reception of Ms. Gina McCarthy. Minister Nguyen Minh Quang said that in recent years, the Ministry of Natural Resources and Environment (MONRE) of Vietnam has expanded its bilateral and multilateral international cooperation activities in the climate change area, environment, water resource, hydrometeorology and land management. MONRE has been cooperating with the US to approve the scientific research programs and projects. In the time to come, MONRE will coordinate with the EPA to organize a number of international scientific workshops on control of mercury contamination in the air and the management of electronic waste.

Speaking at the reception, Ms. Gina McCarthy affirmed that Vietnam is an active and important member in a lot of initiatives concerning the regional environment. She proposed that Vietnam should consider joining the Alliance of Climate and Clean Air Cooperation (CCAC) initiated by the US together with the United Nations

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The Ministry of Natural Resources and Environment held an annual meeting with international partners

▲ *The Minister of Natural Resources and Environment Nguyen Minh Quang speaking at the meeting*

Recently, the Ministry of Natural Resources and Environment (MONRE) held a meeting among Ministry's leaders and key officials of international partners. Meeting with international partners is an annual activity in order to enhance mutual understanding and promote collaboration between the Ministry and international partners.

According to the Minister of Natural Resources and Environment Nguyen Minh Quang, at present, the MONRE is implementing 56 programs and projects supported by foreign partners with a total amount of nearly USD 456 million. The Strategic partnership between Vietnam and other countries in the field of natural resources and environment has been establishing, particularly in response to climate change and water resources management.

The strong and effective support of the international organizations in Vietnam such as the Uinted Nations (UN) organizations, the World Bank, the Asian Development Bank has played an important role in the mobilization of multilateral funding for the Ministry's activities.

The Minister Nguyen Minh Quang emphasized that in the context of the world's economy and the region is facing many difficulties, however the relationship of international cooperation on natural resources and environment among Vietnam and other countries around the world has been continuing and growing. These achievements over the recent years are results of active support of the ambassadors of many countries and heads of international organizations in Vietnam.

On behalf of the MONRE, the Minister Nguyen Minh Quang sincerely thanked foreign countries and international organizations which have paid special attention for this sector in particular and Vietnam in general. Representatives of international organizations said they would continue to work closely with the Ministry to implement these projects effectively. **VN**

>>> Environment Programme (UNEP) and a number of other countries. She handed over the mercury contamination monitoring equipment to the MONRE. The equipment is supplied by the US National Atmospheric Monitoring Program to support Vietnam in tracking mercury in rain.

AN EXCHANGE WITH STUDENTS OF HANOI NATURAL RESOURCES AND ENVIRONMENT UNIVERSITY (HUNRE)

Within the framework of her working visit to Vietnam, Ms. Gina McCarthy met and had an exchange with students of HUNRE on April 16th, 2014.

At the exchange, a lot of student put questions as well as sharing worries over climate change and environmental pollution now. Ms. Gina McCarthy shared with the students that Vietnam is facing with a lot of problems in climate change and rising sea. If the sea rises to 1 meters more in later 21st Century, about 40% of land area in the Cuu Long River Delta and 11% of land area in the Red River Delta will be submerged in sea water. This will greatly affect the life of millions of people. At present, Vietnam and the US have deployed the cooperation project between the US Agency of International Development (USAID) and the MONRE in minimizing the damage of climate change in this region.

As for students, Ms. Gina McCarthy thought that as the future environmentalists, students of HUNRE should grasp the specialist knowledge they are equipped with at school. At the same time, students are also the bridge connecting effectively to carry out propaganda and mobilization of the community to raise their awareness of environmental protection. **NH**

Vietnam - Japan cooperation on environment

On May 5th, 2014, Deputy Minister of Natural Resources and Environment Bui Cach Tuyen received Japan's Parliamentary Vice Environment Minister Tomoko Ukishima. The two sides discussed various issues related to natural resources and the environment and will continue to deploy contents of the memorandum of cooperation on environment, which has been signed since December 2013.

Expressing his pleasure of her visit, Deputy Minister Bui Cach Tuyen said that Vietnam Government has determined the strategic cooperative relationship with Japan in all fields, including natural resources and environment. As a result , the Ministry of Natural Resources and Environment of Viet Nam always appreciates the help of the Japanese Government in general and the Japan's Ministry of Environment in particular.

Over time, with the active support of Japan, many projects on natural resources, environment, climate change have been implemented and brought out practical effects to Vietnam. Management and environmental protection in Japan are good example for Vietnam to study and move towards sustainable development.

On implementing environmental projects in Vietnam, Ms. Ukishima Tomoko said that at the moment, Japan is actively conducting feasibility studies of four projects to help Vietnam. During her visit, she visited a factory where is carrying out one of these projects. Witnessing the enthusiasm of Vietnamese workers, understanding the wish to improve the environmental situation of sincere and warm people, she said Japan would try their best to help Vietnam improve environment effectively.

Also, she worked with six Japanese businesses operating in Viet Nam. Their representatives said that Vietnam's regulations on the environment are quite tight, making them difficult to meet these criteria. Therefore, Japanese firms proposed that Vietnam's environmental regulations and should be feasible and facilitate business investment and development. Receiving this opinion, Deputy Minister Bui Cach Tuyen said that the MONRE is planning to adjust environmental criteria appropriately and overcome the current shortcomings.

Exchanged with the Deputy Minister on management of national parks, Japanese partner suggested Vietnam to participate and share experience with other countries in the second World Conference on National Parks in Nov, 2014. Receiving the invitation to join the conference, Vietnam always expresses its willingness to protect and make the earth green for long life and happiness in the future with the world community, said Tuyen. **PL**

JAPAN HELPS VIETNAM WITH POLLUTION TREATMENT AT XUAN HUONG LAKE

Lam Dong Provincial People's Committee allows People's Committee of Da Lat city to receive Jet Streamer System from Japan-based Pacific Corporation to tackle pollution at Xuan Huong lake.

Several-year-long pollution at Xuan Huong lake is due to discharged residential and agricultural waste in an area of 2,800 ha. Although City authorities have held some conferences and taken some measures such as lake dredging, waste-collecting net, algae cleanup, release of Java barb, there are no visible improvements. **CL**

The MONRE and Hanns-Seidel Foundation signed the Cooperation Agreement for the period 2014 - 2016

▲ *Mr. Nguyen Van Tai - Director of Institute of Strategy and Policy on Natural Resources and Environment and Mr. Peter Witterauf - CEO of Hanns-Seidel Foundation signed a cooperation agreement for the period 2014-2016.*

Deputy Minister of Natural Resources and Environment Tran Hong Ha has lately met Mr. Peter Witterauf - CEO of Hanns-Seidel Foundation (HSF - Germany). Attendants of the meeting and signing Ceremony were the representatives of units under the Ministry of Natural Resources and Environment (MONRE) of Vietnam: Institute of Strategy and Policy on Natural Resources and Environment, Department of International Cooperation, Department of Meteorology, Hydrology and Climate Change, Vietnam Environment Administration (VEA) and the representatives of HSF Office in Vietnam.

At the meeting, Deputy Minister Tran Hong Ha expressed his delight to met and work with Mr. Peter Witterauf and his colleagues of Hanns - Seidel Foundation. Deputy Minister Tran Hong Ha provided an overview of our natural resources, environment that is quite complicated.

The Deputy Minister said that the MONRE was the multi-sectoral, multi-disciplinary agency, including land resources, water resources, minerals, hydrometeorology, climate change, sea - islands, remote sensing...

The system of legal documents on natural resources and environment was completed and continually updated to ensure the management of the State associated with the actual situation. Issues of land management are dissonance between land resource mobilization for infrastructure development and People's land ownership. This is the cause of many complaints related to land acquisition, compensation, valuation...

Besides, the environment remains a major challenge of Vietnam on sustainable development journey. Currently, MONRE is amending the Law on Environmental Protection 2005. In fact, the environment in Vietnam is facing with pollution of water, soil, air. Meanwhile, State planning, disposal of solid waste at the localities is not well; the technology is still poor. Moreover, Vietnam is also a place with high biodiversity in the world. However, the rates of forests, ecosystems, plants and animals are declining sharply. This situation requires the participation of society and the support of organizations inside and outside the country.

The "hot" issue of Vietnam currently is climate change (CC). Deputy Minister Tran Hong Ha said Vietnam was one of five countries vulnerable to the effects of climate change seriously. The temperature rise at the end of the 21st Century will bring great threats to the Mekong River Delta. In addition, storms will increase in amount and intensity, causing damage from 1 - 3% of GDP.

As estimated, if there is no timely response measure, the damage will increase up to 10% of GDP/year. Therefore, in order to combat CC, the focused and priority task of Vietnam currently is to mobilize resources for the construction of coping works such as sea dykes, river dykes, water reservoirs, restoration of mangroves, reforestation for watershed protection and flood prevention...

Marine economy accounts for 30 - 40% of GDP so that sea and island areas should be managed well in the future. Currently, Vietnam has Law of the Sea, Law of Resources and Environment of the Sea and Island, which are still in the process of building. Dispute between the countries in the East Sea is an issue yet to be resolved.

Regarding the management of water resources, the Deputy Minister announced that this was a vital issue in Vietnam. 60% of water in Vietnam came from overseas, so it posed many risks to the security of water resources. Currently, water resources are exploited extensively to build hydroelectric plant. Nevertheless, this has created conflicts of water uses between upstream and downstream, between the interests of hydropower and the needs of people's lives…

On the other hand, Vietnam's economic paradigm is shifting from an economy based on resource extraction and inefficient, saving use of natural resources to a green economy to ensure sustainable development.

According to the status of natural resource and environment sector, the Deputy Minister proposed collaboration of Hanns-Seidel Foundation, based on mutual benefit. "Germany is a country with strong environmental, nuclear power, renewable energy sectors. Therefore, Vietnam and Germany can cooperate effectively in these fields", said the Deputy Minister. **GH**

PANASONIC VIETNAM:

Commit to reduce environmental pollution impacts

Panasonic Group based in Osaka (Japan) manufactures and trades electronic and refrigeration products. The strategic objective of the Group is to become a leading "green innovation technology firm" in electrical industry. In Viet Nam, Panasonic is one of enterprises that pay special attention to social activities in education and environment for the sustainable development. In 2008, Viet Nam Panasonic Limited Company has implemented many environmental protection activities in order to keep green, clean and beautiful environment. The Environment Magazine interviewed Mr. Eiji Fukumori - General Director of Panasonic Limited Company in Vietnam on environmental protection activities of the Company.

▲ *Mr. Eiji Fukumori - General Director of Vietnam Panasonic Ltd. Company*

✶***Can you share with us how Panasonic has implemented environmental protection activities recently?***

Mr. Eiji Fukumori: Right from its establishment, the fundamental aim of the Group is to contribute to the social development through global environment activities. From this point of view, "Ecological Idea" and ecological activities are considered as core issues in all activities of the Company. In Viet Nam, Panasonic Company has implemented ecological activities such as: Tree planting at Nguyen Cong Tru Secondary School (in 2008); "Ecological Day" at International Primary School Ha Noi (2009); Co-ordinated with Alpha Books to publish "Green Book" (in 2010) and organized the "Youth day with environment" in Hai Phong; participated in "Hanoi - no-nylon Sunday" Program (in 2011); tree planting at Ba Vi National Park (in 2012); and Thai Binh province in Tree planting Tet Program (in 2014). The budget for Tree planting Tet Program comes from the "We love Vietnam" Campaign of Panasonic implemented in 2013, whenever customers buy a Panasonic television, fridge and washing machine they contribute 10,000 VND to the Tree planting Fund.

In addition, the Company pays attention to awareness raising activities on environmental protection for the youth through programs: Global environment education; Green Diary; Kids lenses; Global environment education and world culture heritage protection (UNESCO)... Three consecutive years (2004 - 2006) Panasonic was awarded the Golden Dragon Award by the Ministry of Planning and Investment. In 2010, two films of the "Kids lenses" were sponsored by Panasonic Viet Nam and were awarded with a high level prize in the fourth National Environment Film Festival organized by the Ministry of Natural Resources and Environment (MONRE).

✶Currently, the electrical industry cause serious environment pollution. Does the Company have any solutions to address this issue?

Mr. Eiji Fukumori: Since its first operation, Panasonic applied the management model towards the Environment Quality Management System (ISO 14001). All factories of Panasonic in Viet Nam are constructed and invested towards the criteria "Green Factory" to minimize energy, 100% factories was awarded ISO 14001 Certificate and established an environment group for implementing environmental protection plan.

Factories of Panasonic Viet Nam applied environmentally friendly and energy efficiency procedures. With the implementation of the energy management model according to the energy efficiency management and usage strategy, in 2010, the Company reduced 2.43 tonnes of CO_2 from gas uses and 47.58 tonnes of CO_2 from electricity usage activities… and was awarded the first prize for energy efficiency industrial enterprise in the Competition "Energy management in industry and buildings 2012".

At the same time, through promoting recycling activities in factories, in 2012, the Company reused 302 tonnes of plastic wastes/ year. In addition, the Company strictly follows ROHS regulations - regulations on allowed concentration of some pollutants in electric and electrical products that take effective from 1/12/2012 for all products of Panasonic. Information on standards compliance by the Company is published on the website: Panasonic.com.vn. The strict compliance of these regulations contributes to minimise environmental pollution from electrical industry in Vietnam.

✶Can you present the environmental protection policy of the Company in the upcoming time for environmental protection towards sustainable development in Viet Nam?

Mr. Eiji Fukumori: With the target to become the leading "green innovation technology company" in the electrical sector in 2018, Panasonic Viet Nam will link environment with each commercial activities, commit to reduce environmental impacts, follow regulations on environmental protection, at the same time to actively implement environmental improvement activities for the communities. To implement this objective, this year, Panasonic Vietnam Company planned to make the Factory at Thang Long Industrial Zone to become a "Green Factory" and implement activities to improve manufacturing and management process to ensure environmentally friendly business. At the same time, Panasonic continues to launch campaigns to enhance awareness on environmental protection of communities and staff of the Company. The "Panasonic joins hands with environment" Program and "Green Factory" Launch are outstanding activities of Panasonic in Viet Nam in 2014.

In addition, the Company proposed some environmental protection tasks such as: Effective usage of natural resources (electricity, paper, gas) to mitigate impacts on the environment; Applying measures in management and treatment of wastes, awareness enhancing on environmental protection of communities and staff working in the Company; Commiting to follow environmental protection regulations towards sustainable development of Viet Nam.

✶Thank you very much!

CHÂU LOAN *(Implemented)*

▲ *Global environment education program of the Company enhanced awareness on environmental protection for the youth*

MEDAL OF ENVIRONMENT AWARD FOR WOO JUN SOHN

Deputy Minister of Natural Resources and Environment Nguyen Manh Hien lately awarded the Medal for Environment to Mr. Woo Jun Sohn, Counselor of the Republic of Korean's (RoK's) Embassy in Vietnam for his contributions to achievement and development of natural resources and environment sector.

Speaking at the Ceremony, the Deputy Minister Nguyen Manh Hien appreciated his contributions Jun Woo Sohn in particular and RoK's Government in general in supporting Vietnam in the field. Especially in the field of land management, the bilateral relations between Vietnam and RoK has been established and developed through a number of activities such as the signing of the Memorandum of Understanding, official visits, expert exchange, staff training and project proposals.

The Deputy Minister Nguyen Manh Hien hoped that in the future, Mr. Woo Jun Sohn would continue to contribute to and support for Vietnam in this field.

Being honored to be received the Medal for the cause of natural resources and environment,

▲ *Deputy Minister of Natural Resources and Environment Nguyen Manh Hien awarded the Medal to Mr. Woo Jun Sohn*

Mr. Woo Jun Sohn expressed his thank and promised to continue his contributions to Vietnam in the coming time. **NH**

SWEDISH-FUNDED ENVIRONMENTAL PROJECTS SUCCEED IN VIETNAM

Recently in Hanoi, Deputy Minister of MONRE Bui Cach Tuyen held a working session with Swedish Deputy Ambassador to Vietnam Maria Selin to review the results of two projects funded by Swedish International Development Cooperation Agency (SIDA).

Mainstreaming an ecosystem based approach to climate change into biodiversity conservation planning in Vietnam (EBA) and building models of payment for environmental services of the coastal wetlands contributing to poverty reduction in Mui Ca Mau National Park (PES) are two successful projects funded by the Swedish Government in Vietnam in the sustainable use and conservation of natural resources and ecosystem services.

Speaking at the meeting, Deputy Minister Bui Cach Tuyen said that with the support of Swedish Government, the two projects have been finished on time and appreciated by local governments and created practical effects to the people.

Reporting about the results of the project, Ms. Huynh Thi Mai, Deputy Director of the Biodiversity Conservation Agency (Vietnam Environment Administration) said: the two EBA and PES projects have been implemented in a short period of time (from 2012 to 2013) but they helped Vietnam better its policy framework on biodiversity preservation and improve the management of natural resources in the context of climate change.

Specifically, the EBA project has created the important products, such as technical guidance integrating EBA of climate change adaptation into the planning of biodiversity conservation. In addition, maps of ecosystems and ecosystem services and maps of high biodiversity areas and easy vulnerable areas to climate change have been first built in Vietnam.

In Ben Tre, the project have been integrated EBA into socio-economic planning and draft plan of biodiversity conservation in the province. Accordingly, major ecosystem services have been evaluated, areas of high biodiversity in the most vulnerable provinces havee been identified and environmental assessment report for strategic biodiversity conservation planning of Ben Tre has been built.

About PES projects, models of payments for environmental services in coastal wetlands contribute to reducing poverty for community in Mui Ca Mau National Park. That has brought out practical results for 20 households.

According to Ms. Maria Selin, two projects have gained lots of successes. The managers and the community should continue to replicate the achieved results. "Sweden will continue to support Vietnam to protect the environment and respond to climate change," Ms Maria Selin affirmed.

VN

WORLD BANK PLEDGES TO SUPPORT DA NANG'S SUSTAINABLE DEVELOPMENT

The World Bank (WB) and People's Committee of Da Nang city has jointly held a Conference on sharing knowledge to promote green growth. The event is a part of the Sustainable Urban Energy and Emissions Planning (SUEEP) Program which initiated by WB and implemented since 2008 in an attempt to help cities in the world with sustainable and efficient energy use. Da Nang is one of three cities chosen for the implementation of the pilot program.

Accordingly, after data collection, the Program assesses municipal energy consumption, analyzes and offers strategic detailed measures in an effort to help the City to manage demand for energy use and all energy using sectors especially in high-rise buildings, transport, public lighting, waste treatment facilities and agriculture to maximize energy efficiency outcomes.

At the Conference, WB experts reported the progress of Phase 1 and 2 of the Program in Da Nang city. They evaluated and selected potential energy efficiency projects eligible for loans. WB also develops plans and objectives for next phases of the Program which aim to improve institutional and energy management capacities to attract green infrastructure investment in Da Nang.

WB's projects operated in Da Nang are aimed at promoting the City's sustainable development, said Director of Sustainable Energy Department at WB. WB is committed to assist Da Nang with conducting feasibility study on capital investment and establishing contacts with investors to facilitate green projects.

DA

THE HA LONG BAY ALLIANCE INITIATIVE ANNOUNCED

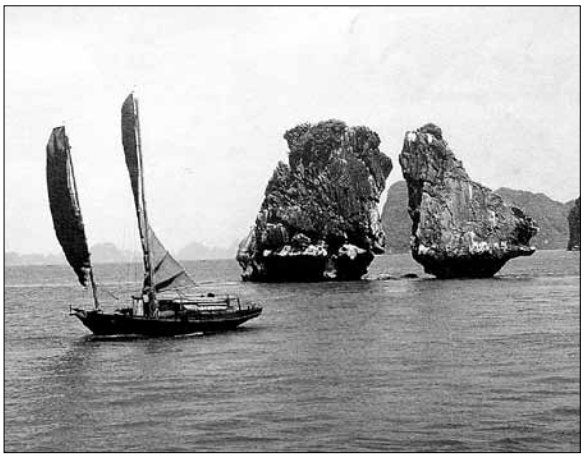
In Hanoi, the United State (US) of Embassy in Vietnam in collaboration with Quang Ninh Provincial People's Committee held a Ceremony to announce the Ha Long bay Alliance Initiative (HLAI). The HLAI is to mobilize greater resources for the preservation of Ha Long bay. Also, it aims to enhance awareness and capacity of State agencies and domestic non-governmental organizations in order to manage natural resources in Ha Long bay efficiently.

Delegates confirmed the importance of Ha Long bay. The US Director of Environmental Protection Agency, Ms. Gina McCarthy expressed that Ha Long bay of Vietnam plays important role similar to the US Pacific Bay - a home of over 6,000 marine species, with more than 17 million people are living and working there.

The State agencies in Vietnam including the Ministry of Natural Resources and Environment supported the HLAI and thanked to the US Embassy and the international organization joining hands with Vietnam to preserve the World's Natural Heritage. Vietnam is committed to creating the best conditions for the conservation and protection of the Ha Long bay.

To support for the Initiative, the US Agency for the International Development (USAID) planned to provide a grant for the International Union for Conservation of Nature (IUCN) and Centre for Marinelife Conservation and Community Development to help protect and restore the environment in Ha Long bay.

VC



HANOI OUTLINES PLANS TO DEVELOP GREEN METROPOLIS

A comprehensive plan to improve green spaces, parks and gardens in the Capital has been announced by the Hanoi Provincial People's Committee.

According to the Plan, 18 new parks and gardens will be built and 42 existing areas will be upgraded around the City.

Those areas includes the districts of Ba Dinh, Hoan Kiem, Dong Da, Hai Ba Trung and a part of Tay Ho.

Authorities Plan to build new green parks and upgrade existing ones, including Dong Da park, Bach Thao park and Hanoi zoo. The Plan also aims to increase the green tree rate in old apartment complexes up to at least one square metre per person, a rate which the City has been struggling to achieve since the introduction of the Vietnam Construction Standard in 2008.

At the same time, 7 park zones are planned in the extended urban core area, which runs from the Red river to the 4th Ring Road.

Me Linh district's Quang Minh - Chi Dong zone is expected to be transformed into an area of industrial ecological parks, helping local people to continue making a living from the land.

Constructions of sport parks for professionals as well as public use will get underway in the Van Khe - Me Linh and Xuan Canh - Dong Hoi zones, including stadiums, indoor and outdoor games complexes and a multi-functional cultural centre that may be used for the Asiad Games in 2019. In the Van Tri - Son Du and Co Loa -Viet Hung zones, the City will build entertainment parks in an effort to promote tourism, while the Yen Thuong - Ninh Hiep and Trau Quy - Da Ton zones will plant trees for research and conservation purposes.

DB

HAIPHONG ASPIRES TO BE MODEL GREEN PORT CITY

The Provincial People's Committee of Haiphong city and the International Union for Conservation of Nature (IUCN) lately held a national seminar on green growth and green port city.

The event, within the framework of the Mangroves for the Future (MFF), is an opportunity for participants to exchange opinions on green growth and green port city models, share international experience and lessons learnt in the country as well as the city.

Delegates are scheduled to make policy recommendations and devise an action plan to implement the National Green Growth Strategy (NGGS) for the period 2011-2020, vision to 2050 in Vietnam and Haiphong in particular.

Haiphong is the third largest city in Vietnam and is one of the most important waterway hubs. By implementing the 2011 - 2020 NGGS, Haiphong is striving to become a green port city by 2020.

Green growth is the essence of sustainable development, contributing to reducing pressure on the environment caused by rapid economic growth, meeting the economic development orientation of the country, and ensuring people's lives.

In 2012, the Prime Minister approved "the NGGS for the period 2011-2020, vision to 2050".

"Although Haiphong's economic growth rate has doubled in the past two decades, we still have considerable work to be accomplished to solve serious challenges including soil, water and air pollution", said Dr. Nguyen Van Thanh, Secretary of the Haiphong Party Committee.

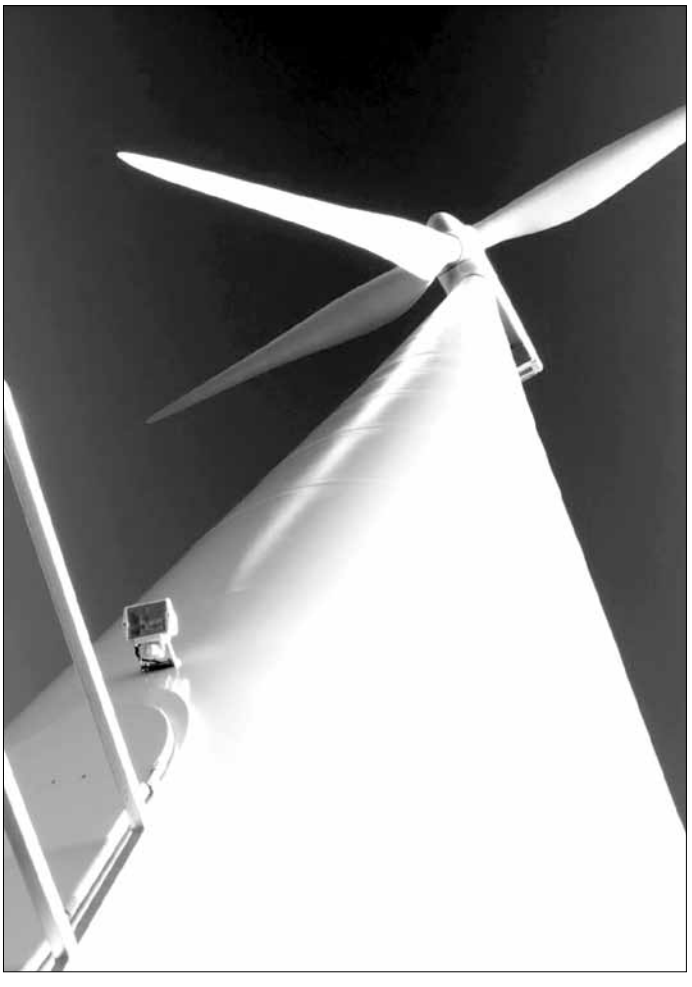
He said that to transform into a green port city, Haiphong needs to establish a comprehensive and detailed implementation plan, focusing on promoting people's awareness, building mechanisms and policies, and restructuring the innovation growth model.

The IUCN is currently coordinating with Haiphong to work out nature-based solutions and enhance the resilience of coastal areas to address environmental challenges due to the impact of climate change.

VN

PARTNERSHIP FOR ACTION ON GREEN ECONOMY:

Assist countries in transitions to a green economy



The Partnership for Action on Green Economy (PAGE), is a direct response to the call made in paragraph 66 of the Rio+20 Outcome document for cooperation within the UN system to assist countries in their transitions to a green economy. It is an inter-agency initiative founded by the United Nations Environment Programme (UNEP), the International Labour Organization (ILO), the United Nations Industrial Development Organization (UNIDO) and the United Nations Institute for Training and Research (UNITAR).

By taking a country by country approach, PAGE will catalyze up to 30 national economies between now to 2020, and thus contribute to the global transition to a sustainable future for all. The Partnership has the potential to help countries improve human well-being and social equity, while significantly reducing environmental risks and ecological scarcities in line with their own national development priorities.

In this context, it would like to salute the efforts of the donor community - Finland, Norway, the Republic of Korea, Sweden and Switzerland - who collectively managed to raise well over USD 11 million in support of PAGE activities at the national level.

Today, many countries are set to boost their economies through a shift of investment and policies towards a new generation of assets that include clean technologies and resource efficient infrastructure, green skilled labour, well-functioning ecosystems, and good governance. Such a transformation will pay significant dividends in social, environmental and economic terms.

In the wake of the global financial crisis, it has become increasingly evident that generating growth and prosperity can and must be achieved within the ecological boundaries of a resource-constrained world.

Lifting the world's 1.2 billion poorest to a life of dignity will require financing, innovation, technology transfer and capacity building, along with effective governance and mutually beneficial partnerships at all levels.

UNEP research suggests that an investment scenario of allocating 2 per cent of global GDP to greening economic sectors will produce a higher global GDP within 10 years, compared to a business-as-usual scenario.

A package of green investments - coupled with policy reforms that are aimed at making growth socially inclusive - offers economically viable options to reduce poverty and hunger, and address challenges of climate change and degradation of natural resources, while simultaneously providing new and

sustainable pathways to economic development and prosperity.

The share of the poor in global GDP is marginal and is reduced with the erosion of natural capital. The share of the bottom 40 percent of the population in global wealth remains less than 5 percent. It is this segment of humanity which overwhelmingly lives on small farms, coastal areas and around forests, and depends on natural capital for their livelihoods, nutrition, health, employment, income, wealth creation opportunities as well as a safety net.

Degradation of natural resources creates a poverty trap, which leads to a reinforcing loop of further degradation and worsening poverty. Natural capital is essential for sustainable economic development and accounts for a quarter of wealth created in low income countries.

Any reduction in natural capital stocks negatively affects the well-being of the poor disproportionately and leads to growing inequalities. The dominant consumption pattern of affluent societies is a major stress on natural resources. According to a report by the International Resource Panel, total resource use grew eight-fold, from 6 billion tonnes in 1900 to 49 billion tonnes in 2000. By 2050, humanity could devour an estimated 140 billion tonnes of minerals, ores, fossil fuels and biomass per year - three times its current appetite - unless economic growth is "decoupled" from natural resources consumption.

FINANCING THE GREEN ECONOMY

The World Economic Forum estimates that an investment in infrastructure of approximately USD 6 trillion annually is needed over the next 16 years to deliver a low-carbon economy. Of this, nearly USD 1 trillion is over and above the business-as-usual trajectory.

Weeks ago, UNEP launched an Inquiry into policy options for guiding the global financial system to invest in the transition to a green economy.

The inquiry aims to engage, inform and guide policy makers, financial market actors and other stakeholders concerned with the health of the financial system and its potential for shaping the future economy. Ultimately, it will lay out a series of options for advancing a sustainable financial system.

While much of the world's private capital is locked up in carbon-intensive investment across the developed world, developing country investment in a low carbon future is on the rise. Clean energy investment originating from non-OECD (the Organization for Economic Co-operation and Development) countries soared from USD 4.9 billion in 2004 to USD 72.6 billion last year, peaking at USD 257 billion in 2011.

FISCAL POLICIES

Fiscal policies are of particular importance in a green economy transition and governments have a variety of fiscal instruments at their disposal: taxing fossil fuel use or emissions in different sectors, reforming energy subsidies that promote wasteful and environmentally harmful economic activity, and supporting clean technology and sustainable production with the help of fiscal incentives.

Constructive fiscal measures can reflect environmental externalities through full cost pricing of energy and transportation services. They can also provide a significant source of new revenue:

In the United States, for instance, it is estimated that a levy of USD 25 per ton of CO_2 could bring in about one percent of the Country's GDP, or more than USD 1trillion over a decade.

In 2010, Vietnam passed its first law on environmental taxation and it is expected to generate between USD 757 million and USD 3 billion.

Confronted by a fiscally constrained world, fiscal policy reforms might appear to be a daunting challenge to a green economy transition. Yet, it has been observed in the past that external crises - be they fiscal, economic or environmental - may speed up policy reform.

But in order to promote green and more inclusive growth, the design of fiscal policies should consider potential social impact on low income households. Strengthening social safety nets when applying fiscal policy reforms would not only increase social and political acceptability of fiscal reforms but could also contribute to an equitable and fair transition to a green economy.

ENERGY SUBSIDIES

Globally, the cost of energy subsidization is high and accounts for a significant part of GDP annually. Petroleum subsidies alone, for instance, amounted to USD 200 billion in 2011.

It is estimated that removing USD 500 billion of fossil fuel subsidies could boost the global economy by around 0.3 percent. In addition to the potential fiscal benefits, the removal of fossil fuel subsidies in developing and emerging economies could reduce global GHG emissions by 6 percent in 2050.

When considering that out of the USD 409 billion spent on fossil-fuel consumption subsidies in 2010, only USD 35 billion, or 8 percent, reached the poorest income quintile (the bottom 20 percent), energy subsidies appear to perform poorly as a means of supporting the incomes of poor social groups.

ENVIRONMENTAL TAXES

Environmental taxes are an effective and, if appropriately designed, efficient tool for environmental policy. They can also be leveraged to generate private financing. Evidence shows that fiscal instruments have helped increase green investment. Carbon taxes could direct investment towards cleaner technologies and encourage energy efficiency.

GREEN TRADE

The Rio+20 Conference identified international trade as an engine for development, sustained economic growth and the transition to a greener economy.

Many developing countries are well positioned to gain from mainstreaming sustainability considerations in their trade-driven growth strategies, including through the export of certified commodities in the fisheries, forests or agriculture sectors, increased investments in sustainable production and supply chains, or the expansion of ecotourism.

For example, the Bio-trade sector in Peru has grown by 20 per cent in the last five years - generating significant revenue and promoting sustainable development, while simultaneously supporting pro-poor development. The green economy transition opens up new opportunities for regional and global trade. For example, the global market in low-carbon and energy efficient technologies is projected to nearly triple to USD 2.2 trillion by 2020.

UNEP is working with partners to provide demand-driven policy advice, technical assistance and capacity-building to countries who wish to use international trade as an engine for a green economy transition.

OPPORTUNITIES ACROSS DEVELOPING ECONOMIES

South-South Cooperation can deliver environmental capacity building and technology support to developing countries and regions in the South that wish to make a transition to a green economy.

Drawing on shared economic, environmental and social aspirations, South-South Cooperation helps identify solutions to today's sustainable development challenges, as well as deliver new ideas and resources to advance the global transformation to an inclusive green economy.

In 2012, the African Development Bank raised USD 2.2 billion to address climate change, a 50 percent increase to the previous year. More than 90 percent of the approved projects were green. The Bank's inaugural "green bond" raised USD 550 million in global investment within 24 hours.

In 2008, British Columbia adopted a carbon tax covering all fossil fuels (including gasoline, diesel, propane, natural gas and coal. Since the tax was introduced, fossil fuel consumption per capita declined by 17.4% between the 2007 - 2008 base year and 2011/2012 and British Columbia now has the lowest per capita fuel use of any province in Canada. Moreover, the carbon tax was designed to be revenue neutral - revenue generated from the tax has been used to reduce income taxes and to offer tax credits to the poor. In fact, the government of British Columbia was able to provide USD 500 million more in income tax cuts than it collected in carbon tax to date.

Around the world, we are seeing a multiplicity of approaches and pathways to design and build greener economies.

To support such efforts, we need to remove barriers and to enable poor and vulnerable groups to participate in, contribute to and benefit from the transition.

For a credible and systematic transformation to take place, supportive policies, institutional and governance reforms and targeted investment at the local, national and global levels need to be put in place and scaled up as part of national development planning, based on national priorities■

ĐỖ HOÀNG *(UNEP)*

>>> GREEN ECONOMY: Success Stories >>>

WASTE MANAGEMENT IN REPUBLIC OF KOREA

The Korean Government's "Extended Producer Responsibility" (EPR) system requires manufacturers and importers to recycle a certain amount of their products. The financial benefit of recycling 6.067 million tons of waste in the five years since the implementation of EPR in 2003 is estimated to be over USD 1.6 billion. In 2008, a total of 69,213 tons of plastic products were recycled, yielding an economic benefit of approximately USD 69 million. Furthermore, in a period of four years (2003 -2006) the EPR system created 3,200 new jobs.

The environmental benefits of EPR are equally remarkable. By recycling the items subject to the EPR policy instead of land filling or incinerating, CO_2 emissions have been reduced annually by an average of 412,000 tons. Moreover, it is estimated that as a result of these efforts, approximately 23,532 tons of greenhouse gas emissions from plastic landfill or incineration were prevented.

Although the country's waste volume has gradually risen since 2000, the percentage of total waste volume recycled has also significantly increased. For example, in 1995, 72.3 percent of municipal solid wastes were land filled and 23.7 percent were recycled, whereas in 2007, 57.8 percent were recycled and 23.6 percent were land filled. Furthermore, in 2007, 81.1 per cent of the total waste was recycled.

This reduction in waste land filling has opened the door for new businesses. Korea's Landfill Gas Recovery Project is a major Clean Development Mechanism Project, with a capacity of 50 MWh and a production of 363,259 MWh in 2009. This Metropolitan Landfill Power Plant already reduced CO_2 emission by 0.4 million tons between April and November 2007. It is expected to further reduce a total of 7 million tons of CO_2 between April 2007 - April 2017. During the same ten-year period, the Plant is also expected to save Korea $ 126 million. The Plant also allowed Korea to reduce its oil imports by 530.000 barrels in 2009.

ORGANIC AGRICULTURE IN CUBA

The Cuban Government responded to a food crisis in September 1993 by eliminating the majority of state farms and turning them into basic units of cooperative production. Much of the 80 percent of all farmland that was once held by the State was turned over to the workers and re-established as worker-owned enterprises. Although peasants did not own the land, they were allowed to rent the land indefinitely and free of charge as long as they continued to meet production quotas for their key crops.

Food crops produced in excess of these quotas could be freely sold at farmers markets, thereby providing a price incentive for farmers to effectively use new organic technologies such as biofertilisers, earthworms, compost and the integration of grazing animals. Farmers also revived traditional techniques such as intercropping and manuring in order to increase production yields.1

Public policies also supported urban organic agriculture through the National Programme of Urban Agriculture in 1994, which was designed to encourage urban farmers to produce diversified, healthy

RENEWABLE ENERGY IN CHINA

Passed in 2005, China's Renewable Energy Law serves as the principal framework for development of the sector. The Law offers a variety of financial incentives, such as a national fund to foster renewable energy development, discounted lending and tax preferences for renewable energy projects, and a requirement that power grid operators purchase resources from registered renewable energy producers. The combination of investments and policy incentives has encouraged major advances in the development of both wind power and solar power.

and fresh products. Havanans transformed their vacant lots and backyards into small farms and grazing areas for animals. This resulted in 350,000 new well-paying jobs (out of a total workforce of 5 million), 4 million tons of fruits and vegetables produced annually in Havana (up tenfold in a decade) and a city of 2.2 million agriculturally self-sufficient inhabitants.

While ensuring national food security under a trade embargo, Cuba's transition to organic agriculture has also had a positive impact on people's livelihoods by guaranteeing a steady income for a significant proportion of the population. Moreover, the lack of pesticides for agricultural production is likely to have a positive long-term impact on Cubans' well-being since such chemicals are often associated with various negative health implications such as certain forms of cancer.

Wind Power

The additional generating capacity from wind power has exhibited an annual growth rate of more than 100 percent from 2005 to 2009. With new installations of 13.8 GW coming on line in 2009, China led the world in added capacity, and is second in terms of installed capacity, after the US. To reflect increasing ambition in the industry, the Government has indicated its intention to increase its previous target of 30 GW of installed capacity by 2020 to 100 GW.

To directly encourage local wind turbine manufacturing, China has implemented policies to encourage joint-ventures and technology transfers in large wind turbine technology and mandated the use of locally made wind turbines. The Ministry of Science and Technology has subsidized wind energy research and development (R&D) expenditures at varied levels over time, beginning most notably in 1996 with the establishment of a renewable energy fund. Domestic wind turbine makers, such as Sinovel Wind, Goldwind Science and Technology, and Dongfang Electric, have contributed an increasing share of total new installations. Together they accounted for at least half of a market dominated by foreign firms until 2008.

China's National Development and Reform Commission issued the Interim Management Measures for Renewable Power Tariff and Cost Allocation in 2006, and the Interim Measures on Renewable Power Surcharge Collection and Allocation in 2007. Together with the Law on Renewable Energy, the regulations aim to encourage a reduction in the price of wind power by stipulating that a competitive pricing bidding model be used for the majority of wind power development in China.

Solar Power

Being the largest Solar PV Manufacturer in the world, China produced 45% of global solar PV in 2009. The domestic solar market has started developing more recently, with about 160 MW Solar PV installed and connected to grid in 2009. But with more than 12GW of large projects in the pipeline, it could rapidly become a major market in Asia and the world. For Solar PV, the Government has also indicated that

the target for installed capacity in 2020 could be increased from 1.8 GW to 20 GW.

China is now the world's largest market for solar hot water, with nearly two-thirds of global capacity. More than 10 percent of Chinese households rely on the sun to heat their water with more than 160 million square metres as total collector area. The rapid development of the solar water heater sector is due to its basic profitability for both business manufacturing the units and households that install them. There are also considerable health and sanitation benefits afforded by the improved availability of hot water, made more feasible and economic with solar water heater systems. Within the context of the Eleventh Five-Year Plan for New and Renewable Energy, an Implementation Plan on Promoting Solar Thermal Utilization in China was adopted in 2007. Under this national policy, the installation of SWH systems is given priority for major hot water consumers, such as hospitals, schools, restaurants and swimming pools.

Job Creation

The energy sector as a whole generates output worth USD17 billion and employed an estimated 1.5 million at the end of 2009, of which 600,000 were in the solar thermal industry, 266,000 in biomass generation, 55,000 in solar photovoltaics and 22,200 in wind power. In 2009 alone, an estimated 300,000 jobs were created. China's experience provides an example of policy-led growth in renewable energy that has created jobs, income and revenue streams for nascent low carbon industries.

SUSTAINABLE URBAN PLANNING IN BRAZIL

One of the key elements of urban planning was a choice for growth in a "radial linear-branching pattern", which served to protect both density and green areas. This pattern encouraged - through a combination of land-use zoning and provision of public transport infrastructure - a diversion of traffic from the city centre and the development of housing, services and industrial locations along the radial axes.

Economic and environmental benefits

Cities offer considerable opportunities to reduce CO_2 emissions when applying coordinated approaches to emission reductions in transport and buildings, which are the two of largest sources. As a result of integrated urban planning, Curitiba has the highest rate of public transport use in Brazil (45 percent of journeys), and one of the Country's lowest rates of urban air pollution.

The economic and resource efficiency benefits of such initiatives are considerable. Curitiba's fuel usage is 30 per cent lower than in Brazil's other major cities. Excessive fuel use due to severe traffic congestion - estimated at a value of USD 1 million for Curitiba in 2002 - was about 13 times and 4 times less in per capita terms than those in Sao Paulo and Rio de Janeiro, respectively. The per capita loss due to time spent in severe congestion in Curitiba is approximately 11 and 7 times less than in those two cities, respectively.

Policy and city planning for ecological infrastructure and industrial activity

By turning areas vulnerable to flooding into parks planted with many trees, and creating artificial lakes to hold floodwaters, Curitiba has managed to address its potentially costly flooding problem, in terms of flood control and drainage. The cost of this strategy, including the relocation costs of slum dwellers, is estimated to be five times less than building concrete canals. Also, as a result, the property values of neighbouring areas appreciated, and tax revenues increased.

The local Government established the Curitiba Industrial City (CIC) on the city's west side, taking into account wind direction to avoid polluting the central city. The CIC has strict environmental regulations and "polluting" industries are not allowed. After three decades, the CIC today accommodates more than 700 companies, including an automaker producing BRT (bus rapid transit) and information technology companies. The CIC has already created about 50,000 direct jobs and 150,000 indirect jobs, and about 20 percent of the State's exports are from the CIC.

Curitiba has also promoted waste management infrastructure and public awareness on waste separation and recycling. With 70 percent of the city's residents actively recycling, 13 percent of solid waste is recycled in Curitiba, as compared to only 1 percent in Sao Paulo. All in all, Curitiba presents a case study of how smart urban planning can avoid significant costs in the future and improve efficiency, productivity and quality of life for its inhabitants■ **ĐH** *(UNEP)*

Trillions of dollars of public spending to be directed towards Greening Global Markets

About the 10-Year Framework of Programs on Sustainable Consumption and Production (10YFP)
The 10YFP is a global framework for action that enhances international cooperation to develop, replicate and scale up Sustainable Consumption and Production (SCP) and resource efficiency initiatives around the world. It was established after Heads of State at Rio+20 agreed that SCP is a cornerstone of sustainable development, and an important contributor to poverty alleviation and the transition to low-carbon and green economies. The SPP Program is the first of an initial suite of programmes to be launched under the 10YFP. Other programs on consumer information, sustainable lifestyles and education, sustainable buildings and construction, and sustainable tourism are expected to be launched in 2014.

The Sustainable Public Procurement (SPP) Program - A new global program, launched on in New York (US), the first action to get underway as part of the 10-Year Framework of Programs on Sustainable Consumption and Production (10YFP) - will assist governments to redirect public spending into goods and services that bring significant environmental and social benefits.

"The Organization of Economic Co-operation and Development countries spent an average 13 percent of Gross Domestic Product on public procurement in 2011, while in some developing countries can hit 20 percent. This adds up to trillions of dollars globally, demonstrating the scale of the opportunity ahead. Governments can use this potential to lead markets onto a sustainable path by demanding goods and services that conserve natural resources, create decent green jobs, and improve livelihoods around the globe", said Mr. Achim Steiner, UNEP Executive Director and Under-Secretary-General of the United Nations.

The SPP Program - co-led by the UN Environment Program (UNEP), ICLEI - Local Governments for Sustainability, and the Korea Environmental Industry and Technology Institute (KEITI) - will enable this shift by improving knowledge of sustainable procurement's benefits and supporting implementation through access to experts and tools.

Existing initiatives from around the globe prove that sustainable procurement transforms markets, boosts eco-industries, saves money, conserves natural resources and fosters job creation. For example:

Indian Railways replaced more than one million incandescent light bulbs with energy-efficient fluorescent lamps in 400,000 employees' homes, saving more than 100,000 MWh of energy and reducing carbon dioxide emissions by 90,000 tonnes each year.

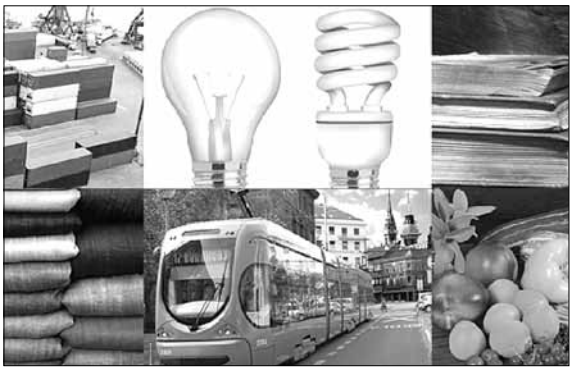
In Brazil, the Foundation for Education Development saved 8,800 cubic metres of water and 1,750 tonnes of waste by using notebooks made from recycled paper in Sao Paulo schools.

In France, a contract for the purchase of toner cartridges was awarded to an organization that, between 2009 and 2011, recovered 11,500 kilogrammes of waste, saved the government 30 per cent in costs and created nine full-time jobs for disabled people.

Many other nations, including the Republic of Korea, have created sustainable public procurement policies that will bring further such benefits in the near future.

In the US - where the Federal Government procures more than USD 500 billion a year in goods and services - the Federal Government has incorporated sustainability requirements into purchasing regulations. Additionally, an Executive Order stipulates that 95 percent of all new contracts use products and services that are energy- and water-efficient, environmentally preferable, non-ozone depleting, and contain recycled content.

Chile's Public Procurement and Contracting Bureau set a target of 15 per cent of procurement orders meeting sustainability targets by



2012. This goal was fulfilled a year ahead of schedule: 17.2 percent of orders included sustainability criteria by the end of 2011. The bureau oversees USD 8 billion in transactions, accounting for more than 3.2 percent of GDP.

In Japan - where a 2010 study found that Government spent USD 672 billion (17.6 percent of GDP) - green purchasing laws now require ministries, provisional governments and an increasing number of cities to make 95 per cent of their purchases from designated "green product" categories.

The Program, by working to ensure such purchasing decisions are the norm rather than the exception, aims to play a vital role in transitioning the globe to an inclusive Green Economy.

The launch comes just a few months ahead of the first UN Environment Assembly, when the world's environment ministers will meet to discuss the post-2015 Sustainable Development Agenda, with a special focus on sustainable consumption and production.

"A rapid transformation, which will support the post-2015 Sustainable Development Agenda, is eminently possible", said Mr. Achim Steiner. "Governments from across the globe signed up to the UNEP-led Sustainable Public Procurement Initiative at Rio+20, and are backing this commitment with action. This demonstrates that the political will is already in place".

The Program is also supported by the European Commission, the Swiss Federal Office for the Environment, the China Ministry of Environmental Protection, the Republic of Korea, ISEAL Alliance, the Organization for Economic Co-operation and Development, the Swedish Ministry of the Environment, and the US Environmental Protection Agency.

HOÀNG DƯƠNG
(UNEP source)

7 Million Deaths Annually Linked to Air Pollution

The World Health Organization (WHO) estimated indoor air pollution was linked to 4.3 million deaths in 2012 in households cooking over coal, wood and biomass stoves.

In new estimates released on March 2014, WHO reported that in 2012 around 7 million people died - one in eight of total global deaths as a result of air pollution exposure. This finding more than doubles previous estimates and confirms that air pollution is now the world's largest single environmental health risk. Reducing air pollution could save millions of lives.

In particular, the new data reveal a stronger link between both indoor and outdoor air pollution exposure and cardiovascular diseases, such as strokes and ischaemic heart disease, as well as between air pollution and cancer. This is in addition to air pollution's role in the development of respiratory diseases, including acute respiratory infections and chronic obstructive pulmonary diseases.

The new estimates are not only based on more knowledge about the diseases caused by air pollution, but also upon better assessment of human exposure to air pollutants through the use of improved measurements and technology. This has enabled scientists to make a more detailed analysis of health risks from a wider demographic spread that now includes rural as well as urban areas. Regionally, low- and middle-income countries in the WHO South-East Asia and Western Pacific Regions had the largest air pollution-related burden in 2012, with a total of 3.3 million deaths linked to indoor air pollution and 2.6 million deaths related to outdoor air pollution.

"Cleaning up the air we breathe prevents noncommunicable diseases as well as reduces disease risks among women and vulnerable groups, including children and the elderly," says Dr. Flavia Bustreo, WHO Assistant Director General Family, Women and Children's Health. "Poor women and children pay a heavy price from indoor air pollution since they spend more time at home breathing in smoke and soot from leaky coal and wood cook stoves". Included in the assessment is a breakdown of deaths attributed to specific diseases, underlining that the vast majority of air pollution deaths are due to cardiovascular diseases as follows:

Outdoor air pollution caused deaths breakdown by disease: 40% - ischaemic heart disease; 40% - stroke; 11% - chronic obstructive pulmonary disease (COPD); 6% - lung cancer; 3% - acute lower respiratory infections in children.

Indoor air pollution caused deaths breakdown by disease: 34% - stroke; 26% - ischaemic heart disease; 22% - COPD; 12% - acute lower respiratory infections in children; 6% - lung cancer.

The new estimates based on the latest WHO mortality data from 2012 as well as evidence of health risks from air pollution exposures. Estimates of people's exposure to outdoor air pollution in different parts of the world were formulated through a new global data mapping. This incorporated satellite data, ground-level monitoring measurements and data on pollution emissions from key sources, as well as modelling of how pollution drifts in the air.

"The risks from air pollution are now far greater than previously thought or understood, particularly for heart disease and strokes. Few risks have a greater impact on global health today than air pollution; the evidence signals the need for concerted action to clean up the air we all breathe", said Dr. Maria Neira, Director of WHO's Department for Public Health, Environmental and Social Determinants of Health.

After analysing the risk factors and taking into account revisions in methodology, WHO estimates indoor air pollution was linked to 4.3 million deaths in 2012 in households cooking over coal, wood and biomass stoves. The new estimate is explained by better information about pollution exposures among the estimated 2.9 billion people living in homes using wood, coal or dung as their primary cooking fuel, as well as evidence about air pollution's role in the development of cardiovascular and respiratory diseases, and cancers.

In the case of outdoor air pollution, WHO estimates there were 3.7 million deaths in 2012 from urban and rural sources worldwide. Many people are exposed to both indoor and outdoor air pollution. Due to this overlap, mortality attributed to the two sources cannot simply be added together, hence the total estimate of around 7 million deaths in 2012.

"Excessive air pollution is often a by-product of unsustainable policies in sectors such as transport, energy, waste management and industry. In most cases, healthier strategies will also be more economical in the long term due to health-care cost savings as well as climate gains," says Dr Carlos Dora, WHO Coordinator for Public Health, Environmental and Social Determinants of Health. "WHO and health sectors have a unique role in translating scientific evidence on air pollution into policies that can deliver impact and improvements that will save lives".

The release of report is a significant step in advancing a WHO roadmap for preventing diseases related to air pollution. This involves the development of a WHO-hosted global platform on air quality and health to generate better data on air pollution-related diseases and strengthened support to countries and cities through guidance, information and evidence about health gains from key interventions.

Later in 2014, WHO will release indoor air quality guidelines on household fuel combustion, as well as country data on outdoor and indoor air pollution exposures and related mortality, plus an update of air quality measurements in 1600 cities from all regions of the world.

ĐỖ HOÀNG *(UNEP Source)*

WORLD WILDLIFE DAY
3 MARCH

On 20th December, 2013 the United Nations General Assembly proclaimed 3rd March - the day of the adoption of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), as World Wildlife Day (WWD).

WWD gives the international community a day to celebrate wildlife, to reflect on the relationship between humans and wild plants and animals, and to find pathways for a sustainable future where people and wildlife can coexist in harmony.

People around the world go wild for wildlife!

People around the world have celebrated WWD for the first time ever. Overwhelming support for WWD come from countries across all regions and organizations dealing with agriculture, development, nature conservation and maritime matters to customs, justice and police as well as the economy, finance, trade and tourism. Civil society groups and many committed individuals have also expressed their enthusiastic support for wildlife as has the private sector.

Social media networks have been mobilized world-wide under the hash tag WWD and the slogan: "Let's go wild for wildlife". "While the threats to wildlife are great, we can reduce them through our collective efforts. I urge all sectors of society to end illegal wildlife trafficking and commit to trading and using wild plants and animals sustainably and equitably", United Nations (UN) Secretary-General Ban Ki-Moon said in declaring the inaugural WWD.

"While Governments have a key role to play, we as citizens of countries across the globe have a vital role to play in shutting down the markets that sustain this illegal trade which threatens the survival of iconic species such as elephants and rhinos, but also of other threatened animal and plant species", said UN Under-Secretary-General and UN Environment Programme (UNEP) Executive

ELEPHANTS IN THE DUST

According to a recent study by UNEP and partners, entitled Elephants in the Dust, the number of elephants killed illegally in Africa has doubled, while the ivory trade has tripled, over the past decade.

Increasing poaching levels, as well as loss of habitat, are threatening the survival of African elephant populations in Central Africa as well as previously secure populations in West, Southern and Eastern Africa.

Demand for illegal ivory remains highest in the rapidly growing economies of Asia, particularly China. Large-scale seizures of ivory destined for Asia doubled between 2009 and 2013. Weak governance in source, transit and destination countries is also contributing to the problem.

Data from the Convention on International Trade in Endangered Species (CITES) Monitoring Programme - "Monitoring the Illegal Killing of Elephants" (MIKE) showed that 17,000 elephants were illegally killed in 2011. MIKE covers areas home to around 40 percent of African elephants, meaning that the true findings may well be even higher. The number of African elephants illegally killed in 2012 is estimated at 22,000, and preliminary indications show that the number may be even higher for 2013.

Besides illegal killings, elephants are also threatened by the increasing loss of habitat in around 29 per cent of their range areas - primarily as a result of human population growth and agricultural expansion.

According to Elephants in the Dust, this figure could rise to 63 per cent by 2050, posing a major threat to the long-term survival of the species.

RHINOS FACING EXTINCTION

CITES estimates that the number of rhinoceroses poached in South Africa rose from 13 in 2007 to 448 in 2011, with a demand that continues to grow. Such demand comes principally from Asia, with the major destination appearing to be Viet Nam. According to CITES, increasing levels of demand have been fueled by rumours of rhino horn being a cure for cancer.

The horn is also used as a recreational drug in the form of "rhino wine", which is rumoured to improve male sexual performance, and to clean the body of toxins. None of these uses of rhino horn are recognized in traditional medicine.

There are five specifies of rhino. The Java, Sumatran and Indian rhinos are found in Asia; the first two are

Director Achim Steiner. Among other things, the intrinsic value of wildlife and its many contributions to human well-being and sustainable development, including ecological, genetic, social, economic, scientific, educational and cultural.

Estimated by the World Wildlife Fund (WWF) with USD 19 billion, the illicit trade in wildlife denies humanity of these essential services, and contributes to the rapid decrease in the numbers of thousands of species worldwide. It is estimated that current trends of species extinctions are between 100 and 1,000 times higher than the naturally expected levels.

"Wildlife is cherished in its own right and for the contribution it makes to our personal well-being - from food to medicine - from culture to recreation", said CITES Secretary- General John Scanlon. "Our wildlife is suffering from illegal trade. Let's do all we can, as citizens and consumers, to bring illegal wildlife trade to an end. In doing so we will secure the future for wild plants and animals, as well as for ourselves", he said.

In addition to the illegal trade, climate change - which is linked with the burning of fossil fuels - is also impacting many animals and plants and in myriads of ways.

Polar bears in the Arctic are threatened by thinning ice, baleen whales must make longer journeys between their feeding grounds, and many migratory birds that rely on wetlands and lakes for food are increasingly facing water shortages.

These changes could spell decline and even extinction for some species without an urgent transition of our economies and our lifestyles towards a low carbon economy.

Meanwhile, wildlife crime continues to threaten the lives of rangers in their fight to stem the illegal tide. It is also often linked with the exploitation of disadvantaged communities, human rights abuses and other challenges to inclusive, sustainable development - including by jeopardizing livelihoods around the world.

Such theft of natural resources is rapidly emerging as a new challenge to poverty eradication, sustainable development and a transition towards an inclusive green economy.

The illegal trade in wildlife - considered the fourth largest in the world after narcotics, counterfeiting and human trafficking - also has ma-

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considered critically endangered and Indian rhinos are considered vulnerable by the IUCN's Red List.

The Java subspecies of rhino in Viet Nam was declared extinct by the WWF in October 2011.

In Africa as of 2012, the number of black rhinos in the wild is estimated at 5,000 individuals and that of white rhinos at 20,000. The western black rhino was also declared extinct in November 2011.

STOLEN APES

A UNEP study showed that almost 3,000 live great apes are being taken from the forests of Africa and Southeast Asia each year, with main markets including the tourist entertainment industry, disreputable zoos, and individuals who wish to buy great apes as exotic pets.

According to the report Stolen Apes: The Illicit Trade in Chimpanzees, Gorillas, Bonobos and Orangutans - which was produced by UNEP through the Great Apes Survival Partnership (GRASP) - a minimum of 22,218 great apes have been lost from the wild since 2005, either sold, killed during the hunt, or dying in captivity. Chimpanzees comprise about 64 percent of that number.

The report also estimates that, over the past seven years, a minimum of 643 chimpanzees, 48 bonobos, 98 gorillas and 1,019 orangutans are documented to have been captured from the wild for illegal trade.

These figures are just the tip of the iceberg, and extrapolating from this research estimates that at least 2,972 great apes are lost from the wild each year.

ILLEGAL LOGGING

Research by UNEP and INTERPOL estimates that between 50 and 90 per cent of logging in key tropical countries of the Amazon basin, Central Africa and South East Africa is being carried out through organized crime, threatening efforts to combat climate change, deforestation, conserve wildlife and eradicate poverty.

Globally, illegal logging - worth between USD 30-USD 100 billion annually - accounts for between 15 and 30 percent of the overall global trade, according to a recent report released by UNEP and INTERPOL.

The transnational nature of illegal logging raises difficulties for law enforcement and regulators, who are often limited in their ability to work outside of their jurisdiction■

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jor implications for international peace and security. Wildlife is now trafficked internationally much like drugs or weapons, with criminals operating largely with impunity and little fear of prosecution.

A recent INTERPOL report reveals that large-scale ivory seizures - which reached an all-time global high in 2013, with 18 seizures accounting for some 41.6 tones of ivory - typically indicate the participation of organized crime, with trafficking syndicates operating in multiple countries simultaneously. In recent years, international action to combat the illegal trafficking in wildlife has accelerated rapidly.

In 2010, the CITES Secretariat, INTERPOL, the UN Office on Drugs and Crime, the World Bank and the World Customs Organization joined forces to create the International Consortium on Combating Wildlife Crime (ICCWC), which works to ensure that perpetrators of serious wildlife crimes face a formidable and coordinated response.

In 2012, Project Leaf (Law Enforcement Assistance for Forests) - a consortium of forest and climate initiatives that aims to combat illegal logging and organized forest crime - was established, led by the INTERPOL Environmental Crime Programmed and Ump's Collaborative Centre in Norway (GRID-Arundel).

During the 16th Conference of Parties to CITES in Bangkok (Thailand) in March 2013, for example, some 170 countries backed moves to afford increased protection status to hundreds of timber species, certain tortoises and turtles, and other plant and animal species.

In January 2014, the European Parliament approved a motion on a Resolution on Wildlife Crime - which called for measures that would place it on the same level as human and drug trafficking - and which called for the establishment of an EU plan of action against illegal wildlife trade.

In February 2014, the United States Government (US) took a decision to work to "protect iconic species like elephants and rhinos by prohibiting the import, export, or resale within the US of elephant ivory" as part of a National Strategy for Combating Wildlife Trafficking.

Also in February 2014, at the London Conference on Illegal Wildlife Trade, 46 countries agreed on a declaration containing a series of commitments, including addressing corruption, adopting legislation for tougher penalties against poachers, and recruiting more law enforcement officers.

These moves have been echoed around the world as countries from France to Chad, to China have destroyed national ivory stockpiles in a symbolic show of solidarity with the anti-poaching movement.

However, it is widely acknowledged that more action is urgently needed. Such measures must include strengthening law enforcement, building adequate human and financial capacity, raising public awareness, and fighting collusive corruption, as well as supporting national legislation and curbing demand for wildlife products that are illegally sourced or unsustainably harvested. In addition, longer-term considerations need to be given to natural resource management and sustainable economic development, based on sovereign priorities and choices■

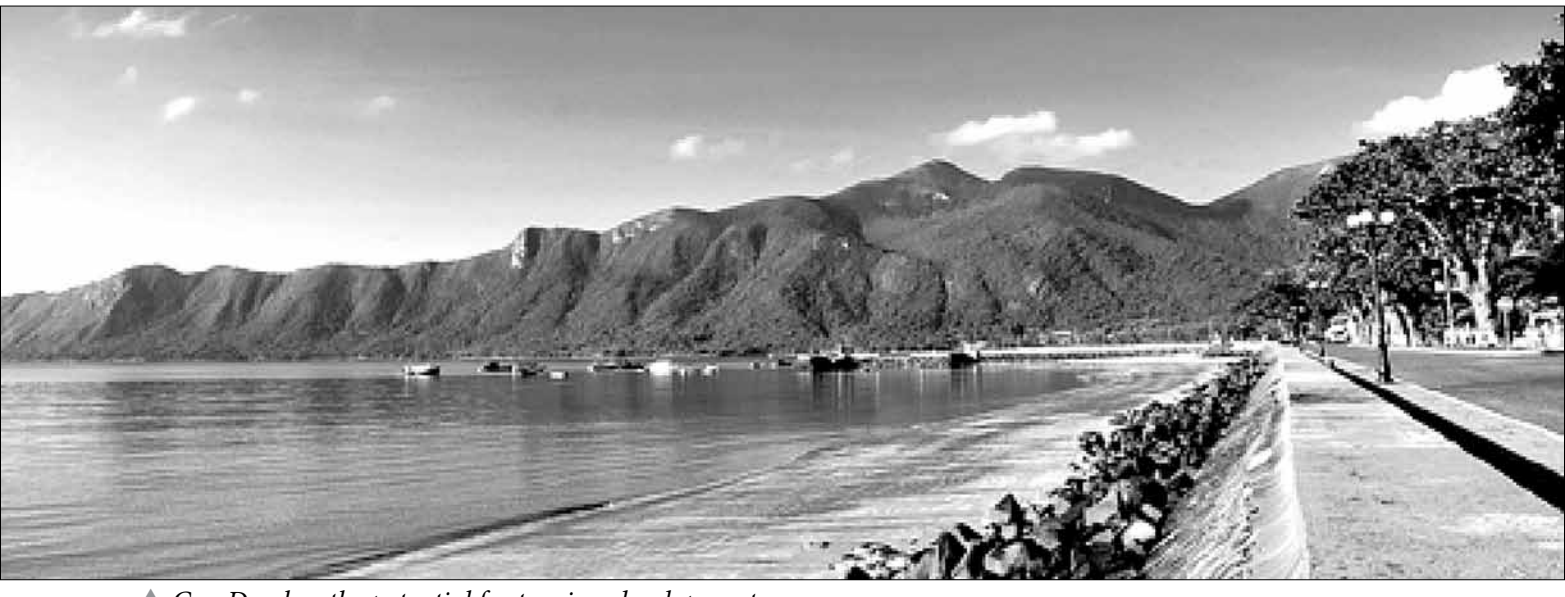
Con Dao is not only a famous historical relic but also a diverse and typical biodiversity center in the Southeast of Vietnam. In 1993, the Prime Minister promulgated Decision No.135/QD-TTg to establish the Con Dao National Park (NP) from the Con Dao forbidden forest. Con Dao NP has an area of 20,000 ha, of which the forest conservation area is approximate 6,000 ha (accounting for 80% of the total terrestrial natural area of the island district), the marine conservation area is 14,000 ha; in addition, the marine buffer zone area is 20,500 ha.

The objective and task of Con Dao NP is to conserve and restore forest ecosystems, marine ecosystems, biodiversity and native and rare flora and fauna, and typical natural landscapes; to protect the integrity and increase the forest area to increase the watershed forest cover, soil protection, contributing to maintain lives in the island, supplying fresh water for domestic use and economic development; to use appropriately biodiversity resources and forest environmental service for ecotourism development.

In the last few years, some projects have been implemented at Con Dao NP to support to restore rare, threatened and prone to extinction genetic resources in the globe. Con Dao is the first area in Viet Nam to successfully implement the marine turtle conservation project. Annually, there are 400 mother turtles coming to beaches for laying eggs and wearing cards for management and monitoring and more than 100,00 baby turtles return to the ocean annually. In addition, the Con Dao marine and coastal biodiversity conservation and sustainable use project has rehabilitated marine species resources, enhanced awareness, and built capacity for local communities. The ecotourism program has developed gradually, which results in sustainable

Conservation and sustainable use of biodiversity for eco-tourism development in Con Dao

BÙI HÒA BÌNH
Biodiversity Conservation Agency



▲ *Con Dao has the potential for tourism development*

use of biodiversity resources and increase in income for local communities, contributing to increase the economic growth of the island district.

BIODIVERSITY VALUES

Con Dao biodiversity is a potential and a strength for sustainable development in Con Dao. According the flora investigation results in Con Dao in 2000, there are 1,077 flora species in 640 genus in 160 vascular plant families in 6 flora phyla: Lycophyta, Filicophyta, Cycadophyta, Gnetophyta, Pinophyta, Magnoliophyta (dicots and monocots). Flora species distribute into two major vegetation types including tropical moist evergreen rain forest and tropical moist semi-deciduous rain forest. In addition, there are rare plant species in Con Dao such as Chukrasia velutina (lát hoa), Manilkara hexandra (găng néo), Alangium salviifolium (quăng long)… In particular, out of 1,077 vascular species, only 44 species were found first in Con Dao including 14 perennial trees, 6 climbing trees, 10 small perennial trees, 13 grass species and 1 vascular species.

Regarding terrestrial vertebrates, there are 160 wild animal species in 64 families, 32 orders and 4 classes in Con Dao, including 29 mammals, 85 avian, 38 reptiles and 8 amphibians. Of 160 species, 31 are rare species (making up 19.38% of the total number of discovered species) including 11 mammals, 8 avian and 12 reptiles. In particular, only species are discovered at Con Dao such as Finlayson squirrel, Con Dao black squirrel, Nicobar pigeon, Pied Imperial Pigeon, brown bobby.

Marine ecosystem has three major ecosystems: Coral ecosystem develops strongly in marine areas surrounding islands, many coral reefs have high primitive values, with 360 species, 64 genus, 17 families; Marine sea-grass ecosystem has 11 species accounting for 84.61% of the total discovered species in Vietnam (13 species); Mangrove forest ecosystem is intact and is not disturbed by human and a typical mangrove forest on dead coral reef, sand and gravels. The number of mangrove plants in Con Dao that were inventoried and named is 46 species, including 28 mangrove trees with 5 species that play important and dominating roles such as Aegiceras floridum (sú

đỏ), Bruguiera gymnorrhiza (vẹt dù), Ceriops tagal (dà vôi), Rhizophora mucronata (đưng) and Rhizophora apiculata (đước đôi).

There are 1,735 inventoried marine species, of which there are 46 mangrove plant species, 133 marine seaweed species, 11 sea-grass species, 226 phytoplankton species, 143 zooplankton species, 360 coral species, 187 mollusk species, 215 coral reef fish species, 116 crustacean species, 115 Echinordermata species, 130 polyda species, 9 marine reptile species, 37 marine bird species, 7 marine mammal species. Of these marine species, 50 animal species are listed in Vietnam Red Book and the World Red Book. Of 43 newly discovered marine seaweed species in Con Dao, there are 14 species having rare economic values, out of nine sea-grass species, four are new species of Con Dao. Con Dao is the only place having marine mammals: black whale, Irrawaddy whale and dugong.

▲ *Diving for watching coral reefs*

ECOTOURISM DEVELOPMENT POTENTIAL

Con Dao has great potential for cultural - historical tourism development, with beautiful landscapes and beaches and famous revolutionary historical relics such as: Con Dao prison, Pier 914, Hang Nghia martyrs cemetery… linked with the powerful revolutionary history with the Vietnamese people through two resistance against France and America. Con Dao has the possibility to develop eco-tourism for having such conditions: primitive forest with diverse flora and fauna system, particularly coastal flora and fauna; beautiful beaches and clean environment.

According to the statistics of Management Boards of Con Dao tourism sites, the number of tourists coming to Con Dao increases significantly in the last 10 years: from 10,000 tourists in 2002 to more than 40,000 in 2010 and 72,000 in 2012 with 13,500 foreign tourists. The revenue from tourism in 2012 was 252.4 billion VND. It is estimated that by 2020, Con Dao will have around 500,000 to 700,000 tourists annually. To promote this, the Government is planned to invest from now to 2020 around 5,000 billion VND to construct the infrastructure, creating basic and fundamental conditions for the socio-economic comprehensive development in Con Dao.

Currently, Con Dao has some typical and effectively mobilized ecotourism products such as watching turtle laying eggs, coral reef diving, trekking in the forest, wildlife watching in the forest to discover typical organisms in the region. Only in the first six months of 2011, 5,000 visitors came to Con Dao NP for trekking, scuba diving or watching turtle laying eggs at small islands surrounding the large island.

However for sustainability, Con Dao needs to respect conservation principles. The infrastructure development in Con Dao needs to pay attention to avoid landscape destruction, and affect biodiversity values. In addition, it is necessary to promote communities to participate in tourism development to create more jobs, income and reduce pressures on ecological values. At the same time, it is necessary to have specific mechanisms to return revenues from tourism development to conservation activities.

Con Dao is not abundant of fresh water. There are only two fresh water islands of 16 islands. Industry sectors request large-volume fresh water sources such as fishery processing, ship fixing mechanics, transportation vehicles, and construction equipment… should be balanced with water sources and material sources, particularly materials transported from the island or has the possibility to pollute the environment.

The status of tourism development in Con Dao has not met its potential and expectations from the tourism sector. More importantly, the number of tourists to be increased ten folds in the next 10 years will lead to environmental issues such as large volume of wastes, polluted wastewater, exhausted marine species due to pollution. Many experts on tourism and environment think that if Con Dao does not receive proper investment in terms of finance, human and equipment to implement environmental protection measures, the rapid increase in the number of tourists will fasten the exhaustion and destruction process of one of the primitive natural resources of Vietnam■

Forest protection thanks to Payment for Forest Environmental Services Policy

▲ *Local people at Tra Linh commune, Nam Tra My district Quang Nam province are trained on ginseng planting*

Implementing Decree No. 99/2010/NĐ-CP dated 24th September, 2010 by the Government on payment for forest environmental services (PFES), Quang Nam province signed contracts with local people for forest protection. Although it was implemented for nearly two years, the management and protection of forest has brought positive impacts.

In the last few years, the Province piloted at Ma Cooi commune, Dong Giang district and the achieved outputs were strictly protected forests and increase in income of forest owners. Consequently, Quang Nam has replicated the policy on PFES to other areas in the Province, through seven watershed forest protection schemes developed by the Quang Nam Forest Protection and Development Fund (FPDF).

Accordingly, 7 PFES schemes were approved by the Provincial People's Committee at hydropower basins of: Phu Ninh; Song Con 2; An Diem I - An Diem 2; Song Tranh 2 - Tra Linh 3 - Ta Vi; Dac Mi 4; A Vuong - Za Hung; Khe Dien. The total natural area of 7 basins is 316,000 ha, of which the forest area is 181,172 ha (including hydropower basins of Phu Ninh: 6,047 ha; Song Con 2: 12,285.68 ha; An Diem I - An Diem 2: 14,512.77 ha; Song Tranh 2 - Tra Linh 3 - Ta Vi: 55,107.29 ha; Dac Mi 4: 47,219.10 ha; A Vuong - Za Hung: 40,274 ha; Khe Dien: 5,726.68 ha) are under PFES and contracted to 19,000 households and household groups. In addition, at Song Bung basin (scheme is not available), the Asian Development Bank (ADB) has supported to identify the forest areas for PFES of 25,588 ha.

In 2013, the identified total forest area under PFES in the Province was 206,760.58 ha. All these areas are under the payment arrangement by Forest Management Boards of: A Vuong, Song Tranh, Phu Ninh, Dac Mi, Song Kon; Song Tranh Protected Area; Sao Lao Species Conservation Area; Bach Ma National Park and Forest Protection Sub-Departments: Nong Son, Dai Loc, Nam Tra My and Nam Giang.

In particular, the policy on PFES contributes to conserve biodiversity of forest ecosystems; support local people to get benefits from forests but not causing harm to the forests; re-invest to forests to minimize impacts of climate change such as soil protection, erosion limitation and lake, river, stream sedimentation; regulate and maintain water sources for production and domestic activities of local people; absorb and preserve carbon of the forests; reduce green house gases causing global warming through prevention measures of forest degradation and sustainable forest management.

To achieve the above results, the Quang Nam Forest Protection and Development Fund organized the Conference on implementing PFES in 9 districts: Nui Thanh, Phu Ninh, Nam Tra My, Bac Tra My, Phuoc Son, Nong Son, Dai Loc, Dong Giang and Tay Giang; coordinated with protection forest management boards of A Vuong, Song Tranh, Dac Mi to construct 30 propaganda boards on forest protection and management, prevention of forest logging, promote local people to well implement the PFES policy. At the same time, the Fund distributed 56,200 leaflets, 2,115 posters and 1,000 notebooks for communes, villages and households in the hydropower basins in order to propagate PFES policy and forest protection; collaborated with Quang Nam Television and newspapers, Vietnam' FPDF to deliver monthly periodicals on PFES policy implementation activities. In order to prevent the intention of forest contracts for logs, Quang Nam' FPDF has "bonded" the responsibility by requesting them to sign the commitment before signing the contract. After one year, the working group of the Fund will evaluate the performance of the forest management household group. If the forest is well protected, the payment will be processed; otherwise, if the forest is lost, the forest owner will suffer payment reduction or be subject to legal enforcement.

However, during the implementation of PFES, Quang Nam has faced with many difficulties and challenges such as: PFES is slow due to the filing of forest contracts according to regulations as the basis for payment; Average PFES payment unit among basins in the Province is very different (in 2013, at A Vuong - Za Hung hydropower basin, the payment unit was 312,000 VND/ha; at Song Bung hydropower basin it was only 60,000 VND/ha), this affects the forest protection management and governance; the weather of early months in 2013 was dry, hence the water was not enough for hydropower operation affecting the financial plan and performance activity.

To have effective forest protection, in the upcoming time, Quang Nam will continue to propagate PFES policy; develop PFES proposal and financial plan at Song Bung and small hydropower basins: Tra My 1, 2; Song Cung and Dai Dong. Particularly, the Fund is studying areas that have appropriate soils for non-timber forest products such as rattan, bamboo for livelihoods improvement.

ĐỨC ANH

VIETNAM, SOUTH AFRICA WORK TO PROTECT BIODIVERSITY

Vietnam treasures the multi-faceted cooperation with South Africa, especially in biodiversity protection, as both countries boast some of the most diversified ecosystems in the world.

Deputy Minister of Natural Resources and Environment Bui Cach Tuyen, who led a Vietnamese delegation to South Africa from 21-29 March, 2014 confirmed this while working with Deputy Minister of Water and Environmental Affairs Rejoice Mabidfhasi.

Deputy Minister Bui Cach Tuyen said the Vietnamese Government hopes to enhance work together with nations and international orgainsations in the field. Vietnam has approved a national strategy and enforced a legal framework to conserve biodiversity, he noted.

Deputy Minister specified that Vietnam has ratified a number of international agreements such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora, the Convention of Biological Diversity (CBD), and the Convention on Wetlands of International Importance (RAMSAR).

Deputy Minister Mabudafhasi hailed the visit as a joint effort by the two Governments and people to deepen their bilateral partnership. She also shared her positive impression on Vietnam. Responding to reporters from the Vietnam News Agency, Mabudafhasi underlined the significance of the visit, which is seen as a next step in realising the content of the bilateral Memorandum of understanding signed in December 2012 in Hanoi, and an action plan inked in May 2013 in Pretoria.

PD

Discovery of the supposedly extinct deer after 84 years in Thanh Hoa

Mr. Nguyen Dinh Hai, Director of Xuan Lien Nature Reserve (NR) in Thanh Hoa province confirmed that a muntjac species also known as Muntiacus rooseveltorum which was believed extinct 84 years ago has now appeared in the reserve. The rediscovery of Muntiacus rooseveltorum is of the significance to science, preservation practices of Xuan Lien NR in particular and to Thanh Hoa province in general.

He added that Muntiacus rooseveltorum belonging to the Cervidae family was reported to be discovered in Houaphanh province of Laos and considered extinct since 1929. The species' skull sample is stored at American Museum of Natural History.

During the period of 2012 - 2014, the Center for Natural Resources and Environment Studies (CRES) of Vietnam National University, Hanoi collaborating with the NR's staff has implemented the Project "Investigating and conserving muntjac species in Xuan Lien NR". During the research, the expert team captured the picture of this muntjac species and found its fence samples at the NR.

In addition, its horn and skin samples were also found at local poachers' house. The Institute of Ecology and Biological Resources (under Vietnam Academy of Science and Technology) examined DNA of the species via its fence and skin samples. After the comparison with the DNA sample of the species kept at American Museum of Natural History, both DNA sample were perfectly matched, which confirms that the Muntiacus rooseveltorum species reappears after 84 years of supposed extinction.

VN

FIRST NATIONAL WILDLIFE PARK TO BE BUILT IN NINH BINH

Under the Park Construction Plan, announced by the Ninh Binh Provincial People's Committee lately, the Park, the first of its kind in Vietnam, will cover 1,154 hectares in Ky Phu and Phu Long communes of Nho Quan district.

With an estimated cost of 7.3 trillion VND (347.6 million USD), the Park will include an area for wildlife, service and entertainment centres, a resettlement area and a forest zone.

Once put into operation in 2015, it will house about 3,000 wild animals from 250 species, serve about 5 million visitors and create jobs for 2,500 locals.

Ninh Binh boasts Cuc Phuong National Park, which is home to 2,000 species of plants, 110 species of reptiles and amphibians, 125 mammals, and 308 bird species. **GH**

GAUR DISCOVERED IN QUANG NAM PROVINCE

An adult male gaur (Bos gaurus) has been discovered wandering around the Sao La Nature Reserve buffer zone, and scientists plan to return him to the Nam Cat Tien Nature Reserve.

Video footage captured by local forest rangers in Quang Nam province show the male gaur, weighing more than 1 tonnes, damaged subsidiary crops of people in Jo Ngay village, Dong Giang district.

Mr. Phan Tuan, Head of the Quang Nam Provincial Forest Rangers Department said, the extant bovine might get lost in the buffer zone as this species has not been seen living in Quang Nam for years. Local forest rangers were dispatched to Jo Ngay village to protect the bull and encourage villagers not to kill this endangered species, said Mr. Phan Tuan.

He proposed the Vietnam Forest Rangers release the gaur into the Nam Cat Tien Nature Reserve where several gaur individuals are living, making it easier for conservation.

Bos gaurus is the largest extant bovine and lives mostly South Asia and Southeast Asia.

There are approximately 300 gaurs in Vietnam that are on the brink of extinction due to loss of habitat and poaching of wild animals.

DB

BACH MA NATIONAL PARK - "White Horse" in Truong Son Peak

NGUYỄN THU HÀ
Vietnam Administration of Forestry

Bach Ma mountain is 50 km south of Hue city behind Truong Son Moutain Range and looks like a "white horse" stretching legs towards the gigantic ocean, head and two front legs rising heroic high. At the foot of the mountain are narrow and long valleys with clear springs, creating a special beauty to attract tourists, concurrently to formulate a diverse flora and fauna system in the region.

With the highest average temperature in summer is 26°C, Bach Ma is one of regions having the most moderate mountain climate in the Indochina Peninsula. In the 30s of the 20th Century, French landed in this area and discovered Bach Ma that has a diverse biodiversity treasure, with many rare and endangered species. French planned and constructed this area to be a resort and ecotourism area. The infrastructure was established with 139 luxurious villas and many public works such as: bank, post office, swimming pool, soccer field and restaurants. Through the ups and downs of the history and the war, Bach Ma was severely destroyed and the shape of the tourism site is just reminiscent.

Bach Ma National Park (NP) was formally established in 1991 with the total area of 22,031 ha, located in the administrative area of Phu Loc and Nam Dong districts of Thua - Thien Hue province. In 2008, Bach Ma NP expanded the core zone area to 37.487 ha, with strict conservation planning.

▲ *Rare and endangered flora diversely found in Bach Ma NP*

Despite late establishment compared to other NPs, Bach Ma NP still maintain the integrity of diverse vegetation and magnificent primitive forests. The forest cover accounts more than 90% of the total area of the NP.

This area has diverse topography and wild nature beauty. There are two main forest types in Bach Ma NP: tropical evergreen close rainforest with the altitude of less than 900 m and sub-tropical evergreen close rainforest with the altitude of more than 900 m. Forest above 900 m height has diverse biodiversity. There are 2,373 algae and flora species including 332 mushrooms, 87 mosses, 183 ferns, 22 gymnosperms 1,749 angiosperms. Of which, 73 rare plant species are listed in the Vietnam's Red Book and 204 species need priority protection; More than 500 species are used for high value medicine such as Bảy lá một hoa (Paris polyphilla); Hoàng Đàn (Cupressus torulosa); Thích Bắc Bộ (Acer tonkinensis); Thạch Tùng (Lycopodiophyta); Hoàng Tinh Hoa Trắng (Disporopsis longifolia Craib), wild ginger, black saffron, ginseng… having curing effects. Some common plants, grew mostly on the mountain peak belonging to Podocarpaceae (such as Tùng Bạch Mã (Dacrydium elatatum)); some high-value large leaf species belonging to Dipterocarpaceae, Lauracae, Timber plants such as: Cẩm Lai (Dalbergia oliveri); Trắc (Dalbergia cochinchinensis); Trầm hương (Aquilaria malaccensis); Sến (Madhuca pasquier); Đinh (Syzygium aromaticum); Lim (Erythrophleum fordii); Thông Đà Lạt (Pinus dalatensis); Pơ-mu (Fokienia and coconuts, ferns, orchids…

In addition, the NP has discovered new species such as Chìa vôi (Motacillidae), mây (Calamus bachmaensis), bọt ếch bạch mã (Glochidion bachmaensis)… Bach Ma is diverse not only of vegetation but also of animal species with typical and rare species such as black-shanked

douc, white-cheeked gibbon, saola, Asian black bear, clouded leopard, red-faced monkey, giant muntjac… Now scientists have acknowledged in Bach Ma NP of 1,715 animal species, including 132 mammals, 143 amphibians and reptiles, 57 fish and 1,029 insects. 69 species are listed in Vietnam's Red Book and 15 typical species requires priority protection solutions. Particularly, Bach Ma NP is considered as "birding calling area" with 363 bird species, making up a third of bird species in Viet Nam, of which there are 15 typical endemic species such as họa mi (babblers), khướu bạc má (Garrulax chinensis), chích chòe lửa (Copsychus malabaricus), gà lôi trắng (silver pheasant), Edward's pheasant, trĩ sao (Rheinardia ocellata)…

However, in recent years, the number of flora and fauna species reduces significantly. Some species were extinct. The main reason is that 60,000 people live in the buffer zone of the NP from four groups: Kinh, Katu, Van Kieu, Mong who depend on rice cultivation and animal husbandry, and have harsh living conditions; therefore they have to log and hunt wildlife illegally in the NP. Wildlife and precious timber have high economic values; demand from other cities and countries are high; awareness of local people on regulations of forest management and protection and protection of wildlife is limited. Currently, the Management Board of Bach Ma NP together with the local authority is trying to propagate and enhance awareness on forest protection of local people. Concurrently, the Management Board proposed models to encourage local people to develop ecotourism to reduce the pressures on forest resources.

Facing challenges of environmental pollution, ecosystem degradation, over-exploitation of human and climate change, the Management Board proposed some solutions for forest protection such as:

Training staff that work in conservation for better monitoring of biodiversity in general and endangered species in particular. Prioritising investment resources to improve the flora collection garden to have enough population of endangered or prone to extinction species to conserve and store genetic resources, concurrently to create tourism landscapes contributing to enhance awareness on conservation of species for communities.

Collaborating with localities to develop regulations on buffer zone management, ome forest garden models, household scattered plantations towards farm conservation of some high value endangered tree species.

Conserving scientific values of typical fauna and flora system such as Edward's pheasant, trĩ sao (Rheinardia ocellata), black-shanked douc, sao la, giant muntjac, Asian golden cat… and rare and endangered flora species such as trầm hương (Aquilaria malaccensis), trắc (Dalbergia cochinchinensis), gụ (Sindora tonkinensis), cẩm lai (Dalbergia oliveri)...

Maintaining the watershed protection function of Truoi, Ta Trach (Houng river upstream), Cu De, Con river basins... contributing to stabilise agriculture production and industry in the region.

Constructing and developing infrastructure of the NP, creating conditions for studies on conservation of typical fauna and flora ecosystems of the NP. Concurrently creating favourable conditions to promote internal and external scientific studies, meeting the demand of training and exchange according to forest regulations.

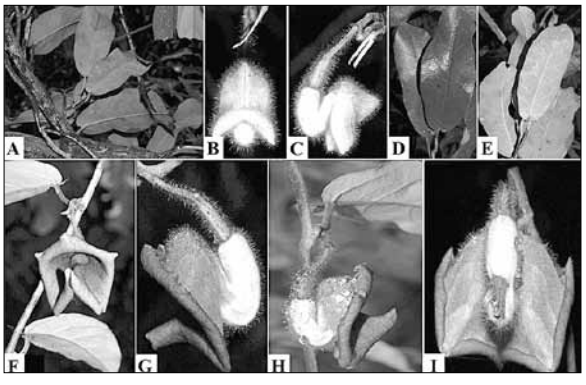
Exploiting strengths of the natural landscape to promote eco-tourism, guiding local people, creating jobs, improving the livelihoods of communities, contributing to the socio-economic development of the locality and protection of ecological environment■

▲ *Beo lửa (Asian golden cat) was found in the NP*

New flora species found in Quang Binh province

Scientists have discovered a new plant species in the buffer zone of the Phong Nha - Ke Bang National Park (NP) in central Quang Binh province.

The scientists from Germany's Institute of Botany in Dresden, the Vietnam National Museum of Nature, and Department of Botany under the Hanoi Pharmacology University found the plant in the shadows of an evergreen forest zone in the Minh Hoa district.



The plant, which the scientists have named Aristolochia quangbinhensis Do, is said to belong to the Aristolochia branch of the Aristolochiaceae family. The distinguishing characteristics of the new species, said to be similar to some found in the southern part of China, are that it has "a petiole 1.5 - 2.5cm long, lamina elliptic to oblong-elliptic and peduncle 1.5 - 2cm long covered with yellow-brown trichomes".

The scientists have suggested that the new find be listed as a vulnerable species under criteria established by the International Union for Conservation of Nature (IUCN), because its habitat is in the area with burning and cultivation activities where efforts to do away with slash-and-burn agriculture have not totally successful.

Established in 2001, the Phong Nha - Ke Bang NP is home to a large number of faunal and floral species. It is also among the 238 most important ecological zones in the world, and was recognised by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as a World Natural Heritage site on geological and geomorphologic criteria in 2003. **CV**

A NEW SPECIES OF ULTRA-VENOMOUS SNAKE DISCOVERED IN VIETNAM

Three scientists from the Vietnam Museum of Nature and Animals Institute of Saint Petersburg (Russia) have recently announced their discovery of a new species of poisonous snakes in Vietnam. This new snake species was named after Russian zoologist Vladimir Kharin: Azemiops kharini, in honor of his great contributions in the study of reptiles and fishes in Asia.

Found in Cao Bang, Lang Son and Vinh Phuc, at the height of 800 - 1800 meters, Azemiops kharini (green pit vipers with their silver-colored head) are with the following identifiable features: white head with two black stripes, body length about 759 - 980 mm, with 17 rows of fine scales on the body, short tail, abdomen 183 - 199 rows of scales, 186 - 201 body vertebras and 46 - 51 caudal vertebraes.

This is the second species of silver-head green pit viper snakes of the Azemiops genus, and ranks 60th among the total 210 species of poisonous snakes recorded in Vietnam up until now. **NH**

A NEW BAT SPECIES IN VIETNAM DISCOVERED

During the analyzing process of bat specimens kept at the Hungarian Natural History Museum and the Institute of Ecology and Biological Resources, Vietnames and Hungarian scientists have discovered a new bat species. New bat species belongs to Myotis, Vespertilionidae faminly and has been given the scientific name Myotis indochinensis Son et al., 2013.

The new species, Myotis indochinensis, is characterized by a relatively long forearm, moderately long ears, flat cranial profile and wide anteorbital bridge. It shows the characteristics of both "Myotis" and "Selysius" ecomorphs, hence our morphological investigations support the recent phylogenetic analyses showing that former "subgenera" of Myotis are in fact paraphyletic groups, even within Southeast Asia.

New specie's distribution was recorded in northern and central Vietnam. The discovery of a new species of bat is very important for the assessment and preservation of bat species in Vietnam. **ĐH**

Fascinating Cu Lao Cham

The World Biosphere Reserve

Cu Lao Cham islands, a World Biosphere Reserve in Quang Nam province is famous not only for its wild beauty but also for being an area which has drawn the special attention of scientists because it possesses species of corals first found in Viet Nam.

IMPRESSION OF THE GREEN ISLANDS

Although situated less than 20 miles from Hoi An Ancient Town, a World Heritage site, in the past Cu Lao Cham was fairly wild. In 2009, it was recognized as a World Biosphere Reserve by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and soon became a famous tourism destination in central Vietnam and attracted the scientists' interest.

In the summer of 2010, as we followed a group of Japanese tourists who participated in a competition to swim across the sea from Cu Lao Cham to Cua Dai, we had an opportunity to learn about the impressive beauty of these pristine islands. At that time, Mr. Le Vinh Thuan, Head of the Communications Department of Cu Lao Cham Marine Protected Area (MPA) said Hoi An and MPA had devised a plan to build Cu Lao Cham into an ideal marine tourism destination in the renowned tourist triangle of Quang area, My Son Sanctuary and Hoi An Ancient Town. Therefore, the local authorities opened training courses on tourist professional skills, such as cooking, accommodation services, transporting tourists by boat and guiding tourists for snorkeling for nearly 3,000 people living on the islands to earn their living instead of doing the work of marine resource exploitation.

In early 2014, we returned to Cu Lao Cham and met Mr. Le Vinh Thuan again. He cheerfully said that Cu Lao Cham had successfully built the green island into a fascinating tourism destination with various forms, such as snorkeling to contemplate the coral, swimming, enjoying the local food and discovering the wild beauty of the natural beaches.

Mr. Huynh Duc, an MPA cadre, led us to visit the Island. He was once a fisherman specializing in diving to catch lobster and abalone and collecting coral to make lime for construction. He said: "On the initial days of the establishment of the marine protected area the islanders were very anxious because the management board zoned a protected area and prohibited fishing in the coral reefs. For years, we were only accustomed to using small boats to catch sea creatures in the coral reefs along the Island, could we survive by working in tourist services instead of fishing?"

Now, there is an answer for Mr. Huynh Duc's anxiety because Cu Lao Cham is famous for visitors far and near and has become a well-known marine tourism destination in Central Viet Nam. In summer, there are days that over 3,500 foreign tourists go to Cu Lao Cham a day to swim and snorkel. According to Mr. Huynh Duc's simple calculation, each islander serves more than one tourist, which brings him/her a much higher income compared with fishing.

Many foreign tourists were very excited because it was the first time they tried fishing like the fishermen on the Island. Mr. Nguyen Quang said: "Formerly these nets were tools for fishing offshore. Now they are used for tourist purposes. Foreign visitors are very interested in rowing the basket boats, angling and catching fish with us".

Mr. Huynh Duc took us on a boat equipped with professional diving devices to Mui Da Trang, which is dubbed the "undersea paradise" on Cu Lao Cham, to see the magnificent beauty of the coral reefs. The coral reefs here over about 30 ha and are the most ideal attraction for snorkeling in Cu Lao Cham. At the depth of about five meters, through their diving

Cham island - The World Biosphere Reserve

masks tourists can see a colorful world of marine plants and animals in the clear, blue water, which looks like a mysterious aquarium.

After the snorkeling tour, Mr. Huynh Duc took us to see the beaches with pristine beauty such as Bai Lang, Bai Chong and Bai Huong. These beaches are always crowded with boats transporting the visitors to see the coral.

While sitting on the boat and looking at the coral in the clear blue sea water, Mr. Huynh Duc said: "Leaving the job of exploiting coral to make lime and shifting to marine conservation I seem to have paid the debt to the sea of my homeland. In the marine protected area we have revived the beautiful coral reefs and helped to make Cu Lao Cham become the most attractive place for snorkeling in Viet Nam."

CONSERVATION AND DEVELOPMENT

Mrs. Tran Thi Hong Thuy, Director of Cu Lao Cham Marine Protected Area said that in 1996 scientists conducted a survey in this area and found 135 species of coral with 35 varieties, including six new species first found in the waters of Viet Nam. Results of the survey also showed that there were also 202 species of aquatic creatures and four species of lobster. The coral reefs in Cu Lao Cham were concentrated mainly in the west and southwest of Hon Lao island and around small islands, with a total area of about 165 ha of water surface, but they were damaged because they were exploited to make lime. In this situation the MPA collaborated with the experts of Nha Trang Institute of Oceanography to implement the Project on cultivation and restoration of coral reefs to serve tourist activities and preserve the rare and precious genetic resources in the water areas.

However, the cultivation of the coral in the sea bed in Cu Lao Cham had untold difficulties. In 2006, when starting the Project on planting the coral, the cadres of Cu Lao Cham Marine Protected Are suffered many failures. At that time, Huynh Duc, Tran Gion and Vo Huu Sinh were diving into the sea to take the coral samples and replanted them in the areas where the coral had been exploited, but after a period of time these species of coral died or were swept away by the sea. Not discouraged, they continued replanting the coral many times, but their efforts were in vain due to big waves. Then, Mr. Huynh Duc thought that growing the coral in the sea was like growing the trees on the mainland, so healthy seedlings had to be developed before they were cultivated on a large scale.

He received the approval of the MPA leaders for an experimental cultivation. He and his colleagues chose the water areas in Ran Me, Bai Tra and Bai Man where the sea is calm and is shielded from the wind, which is favorable for making a nursery. With the support of the experts from Nha Trang Institute of Oceanography, they designed the coral cultivation farms to grow more coral. The result was surprising. The seedlings grew very well.

By the end of 2013, the MPA developed 30 coral cultivation farms and successfully restored 165 ha of damaged coral reefs. From the successful restoration of the coral reefs, the cadres and scientists of the MPA successfully planted 146 hectares of coral in Cu Lao Cham, increasing the total area of coral reefs here to 311 ha of water surface.

Mrs. Tran Thi Hong Thuy said that the restoration and development of the coral reefs, created a favorable environment for many aquatic species, including rare and precious species like abalone and green lobster to grow and develop.

This is a great success for Viet Nam in marine conservation. From these results the scientists will apply the model in other marine protected areas in Viet Nam such as Nha Trang, Kien Giang, Bai Tu Long National Park (Quang Ninh province) and Nui Chua National Park (Ninh Thuan province).

NGUYỄN HẰNG