

# **INTEGRATED SOLID WASTE MANAGEMENT TOWARDS GREEN ECONOMY IN VIETNAM**

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# Vietnam's orientation for rapid and sustainable development

- Located in Southeast Asia, one of the most dynamic development regions in the world, Vietnam has a land area of more than 33,000 square kilometers consisting of a high mountainous region in the North, Central Highlands and the Red River and Mekong river deltas. Vietnam has a youthful population of approximately 90 million people.
- Achieving successively high economic growth during last two decades, GDP increased approximately fourfold within 20 years (1990-2009); joining the group of middle-income countries in 2010; achieving great success in the implementation of the Millennium Development Goals as well as the maintenance of political and social stability; significantly expanded trade relations, and a number of positive factors converged for long-run development.
- Orientation for rapid and sustainable development towards a modernized industrial country in 2020, GDP increases twofold compared with the figure in 2010, the service industry's proportion accounts for 85%, and urbanization rate reaches over 45%.

# Competitive advances for green economy

- Being a center of biodiversity with diverse natural ecosystems, Vietnam has an abundance of flora and fauna, a number of valuable and rare gene sources and forest coverage has reached nearly 40% of land area;
- Vietnam has a dense system of rivers, lakes with over 2,600 rivers in all sizes, high hydropower potential, over 80 million cubic meter of surface water, and abundant groundwater distributed nation-wide.
- With a coastline length of 3,260 km, and over 1 million square kilometers of marine territory with approximately 4,000 islands, Vietnam has diverse and abundant coastal

# Competitive advances for green economy

- Solar energy sources have been estimated to be approximately 1,300 – 2,200; wind energy has been estimated about 2,700 – 4,500 in offshore islands and 1,700 – 4,200 in inshore areas, 400 – 1,000 in coastal areas and 2,000 – 3,000 in areas which have orographic winds (calculated in kwh/m<sup>2</sup>/year); in addition to hydropower potential allowing the construction of over 600 stations with capacity of over 1,300 MW; high potential for biomass development produced from woods, agricultural by-products...which can be used in thermal or electric forms reaching 15 millions TOE.
- High possibility for agricultural economic sectors development based on ecosystem advances such as tea plant development in Northern West, industrial plants in the Central Highland, rice plants in the Red River or Mekong River, and ecological aquaculture in coastal areas.
- Natural landscapes, and various and diverse environmental services create large opportunities for eco-tourism development.

# Challenges for a green economy

- *Economic growth is still dependent on natural resources exploitation* with high intensity, low economic efficiency and unreasonable benefit allocation.
- *'Brown' economic sectors causing environmental pollution are occupying a large proportion of the economy:* mining sector, construction materials production, dyeing sector, knitting & dyeing sector, paper production, chemical industries, ship construction and repair sector.
- *Obsolete technology with slow renewal* leading to wasteful energy consumption, low efficiency, low product quality and resulting in high emission and a number of pollutants, wastes discharged into the environment causing the environmental degradation and pollution.
- *Using energy originated from fossil fuel, especially coal,* leading to high green house gas emissions and diffusion of toxic substances to the environment.

# Challenges for a green economy

- *The clean energy production sector has not been developed yet*, for instance: nuclear power, wind power, solar power, biomass and biofuel are still missing.
- *The lack of a supporting economic sector for solving environmental issues* such as environmental technology transfer and development, development of an environmental services sector, environmental products and equipment manufacturing, recycling industry, and energy generation from waste.
- *Environmentally friendly economic sectors exist, but face difficulties* in terms of capital, unstable output of products, competitive advantages and low profits.
- *The rapid loss of biodiversity, depletion of natural ecosystems, unsustainable use of natural resources*, depletion of non-renewable resources and over-exploitation of fishing resources, especially in the inshore areas.

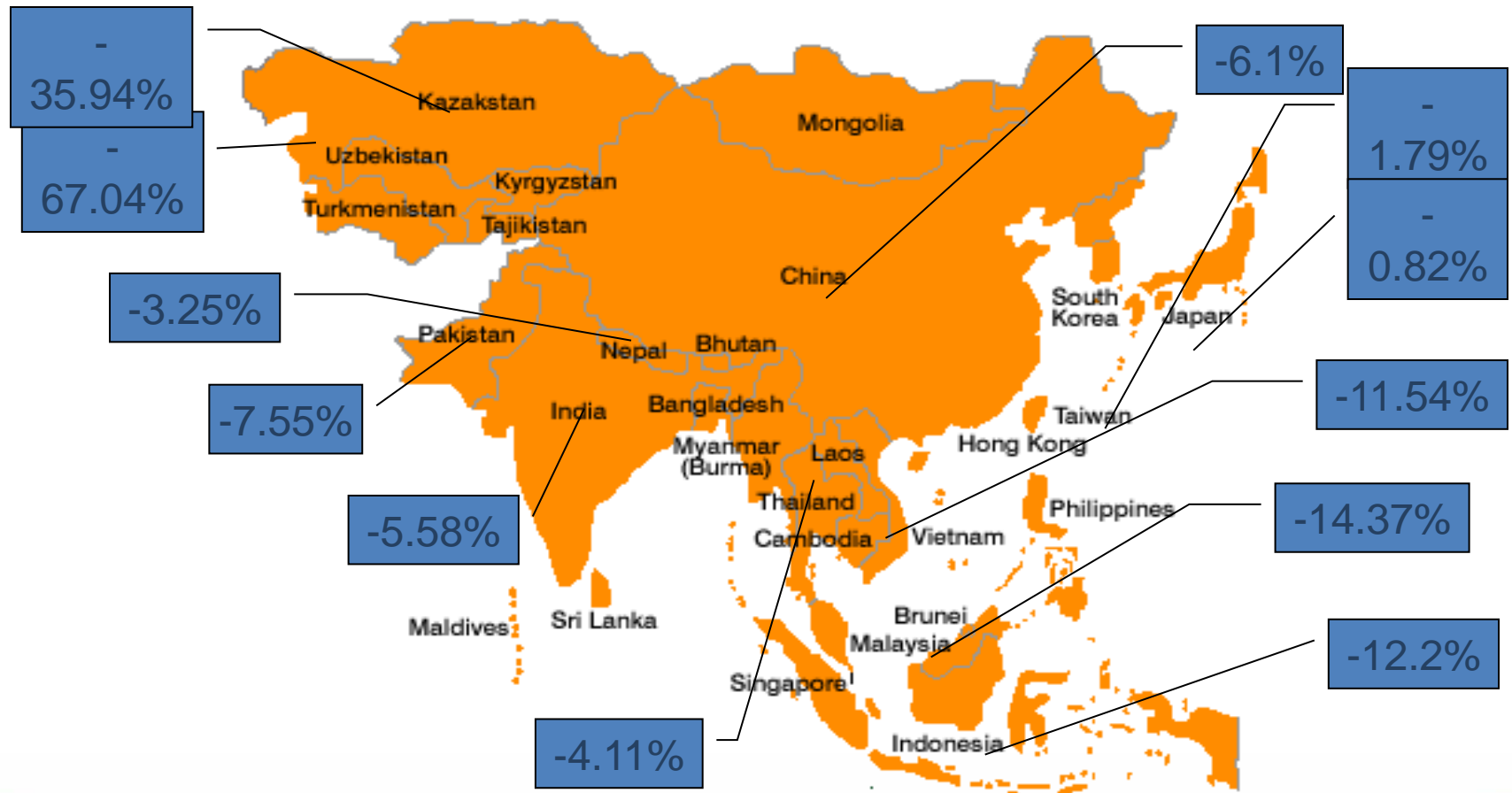
## Efficiency of Natural Resources Usage

Country	Annual fresh water withdrawals			Water productivity GDP/ water use \$ 2000/ m <sup>3</sup>	
	billion m <sup>3</sup>	% for agriculture	% for industry		% for domestic
Vietnam	71.4	68	24	8	0.4
China	630.3	68	26	7	1.9
Indonesia	82.8	91	1	8	2.0
Thailand	87.1	85	2	2	1.4
Japan	88.4	62	18	20	52.8
United State	479.3	41	46	13	20.4
Low income country	357.3	88	6	5	1.2
Middle income country	2,518.2	77	14	9	2.9
High income country		43	42	15	27.9

Source: WDI 2010



# Damages caused by environmental degradation and pollution...



Source: WB - WDI 2006

# Three points for greening Vietnam's economy

- To accelerate ecosystem-based economic development so as to bring the comparative advances into full play, and simultaneously, maintain and develop the natural capitals of Vietnam such as: foodstuff/food production in the Red River and Mekong River delta, development of industrial plants in the Central Highlands and north-western regions, ecological aquaculture cultivation in the inshore areas, and the development of an ecological economic model and ecotourism...
- To invest and renew low carbon, environmentally friendly technologies so as to mitigate environmental pollution and efficiently use resources and energy, contributing to a limit of brown sectors in the economy.
- To develop the environmental services sector and recycling industry to solve environmental consequences caused by brown economy sectors, and contribute to economic growth as well as job creation.

# Strategic Framework on greening economy

- National Strategy for Green Growth
- National Strategy on Sustainable Development 2011-2020
- National Strategy on Environmental Protection to 2020, vision to 2030
- National Strategy on Climate Change
- National Strategy of Integrated Solid Waste Management to 2025 vision to 2050 (NSISWM)

Source: National Strategy on Integrated Solid Waste Management up to 2025 and vision to 2050

# 3Rs in NSISWM toward green economy - strategic orientations

## 1. Prevention and reduction of solid waste generation

- a) Implementing integrated management of solid waste in conformity with market mechanisms, and collecting fees based upon the volume of solid waste generated
- b) Enhancing reduction of domestic solid waste
- c) Enhancing the minimization of solid waste in production
- d) Enhancing solid waste minimization in trading and service
- e) Controlling strictly scrap import

# 3Rs in NSISWM toward green economy - strategic orientations

## 2. At-source waste sorting promotion:

- a) Promoting community participation in at-source waste sorting
- b) Infrastructure development for the sorting, collection and treatment of specific wastes following their sorting

## 3. Accelerating solid waste reuse and recycling

- a) Accelerating solid waste reuse
- b) Waste market development – a waste economy
- c) Development of recycling industry
- d) Encouraging the procurement of recycled products
- e) Formulation and application of incentive policies for recycling activities
- f) Establishing recycling funds



*Thank you for your attention!*

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