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**FOURTH REGIONAL 3R FORUM IN ASIA
18-20 MARCH 2013, HA NOI, VIET NAM**

**TOWARDS RESOURCE EFFICIENT AND ZERO WASTE SOCIETY:
3R TOOLS FOR GREEN INDUSTRY**

(Background Paper for Plenary Session 3 of the Provisional Programme)

Final Draft

This background paper has been prepared by the Environmental Management Branch of the United Nations Industrial Development Organization (UNIDO) for the Fourth Regional 3R Forum in Asia. The views expressed herein are those of the authors only and do not necessarily reflect the views of the United Nations.

Acknowledgement

The United Nations Industrial Development Organization (UNIDO) is honoured to be part of the Fourth Regional 3R Forum in Asia. It is an exciting opportunity to work again with such a diverse panel of delegates and organizations from different countries, all aiming as one to implement 3Rs policy. This Forum is a strategic platform for sharing experiences and disseminating best practices, policy, instruments, tools and technologies among Asian countries in order to achieve low carbon and sound material cycle societies in Asia and set in motion a regional mechanism to address 3R issues, needs and priorities in Asian countries.

Under the overall theme of “3Rs in the context of the Rio+20 Outcome – The Future we want”, the Fourth Regional 3R Forum in Asia, hosted by the government of Viet Nam, is expected to address new and emerging waste issues in terms of policy, institutional, and technological considerations; 3R infrastructures towards resource efficient and zero waste society; performance indicators in 3Rs and resource efficiency; 3Rs in SMEs and industry sector; 3Rs for sustainable and resilient cities; 3Rs as the basis for sustainable waste management in small island developing States, and multi-stakeholder partnerships in advancing 3Rs and resource efficiency.

Under the UNIDO programme “Green industry for a low Carbon future”, Asian countries have adopted the “Manila Declaration on Green Industry in Asia (2009)” expressing their commitment to implement policies and institutional frameworks conducive to making industries more resource efficient and less carbon intensive, but also to intensify regional and international cooperation in the adoption of strategies for green growth, the development of cleaner production and the promotion of related research and development programmes.

UNIDO, as a supporting organization and a partner of this forum, is pleased to share its experience and technical expertise in the implementation of Resource Efficiency programs around the world and in Asia in particular. To support the discussion of **the Plenary Session 3 entitled: Towards Resource Efficient and Zero Waste Society: 3R Tools for Green Industry**, UNIDO developed the following paper on the Green Industry Initiative and Platform as a mechanism for a resource efficient and zero waste society, in order to bring into the light some key factors that will allow to improve the implementation of policies aiming at supporting sustainable industrial development.

The Green Industry Initiative and Platform as a mechanism towards resource efficient and zero waste society

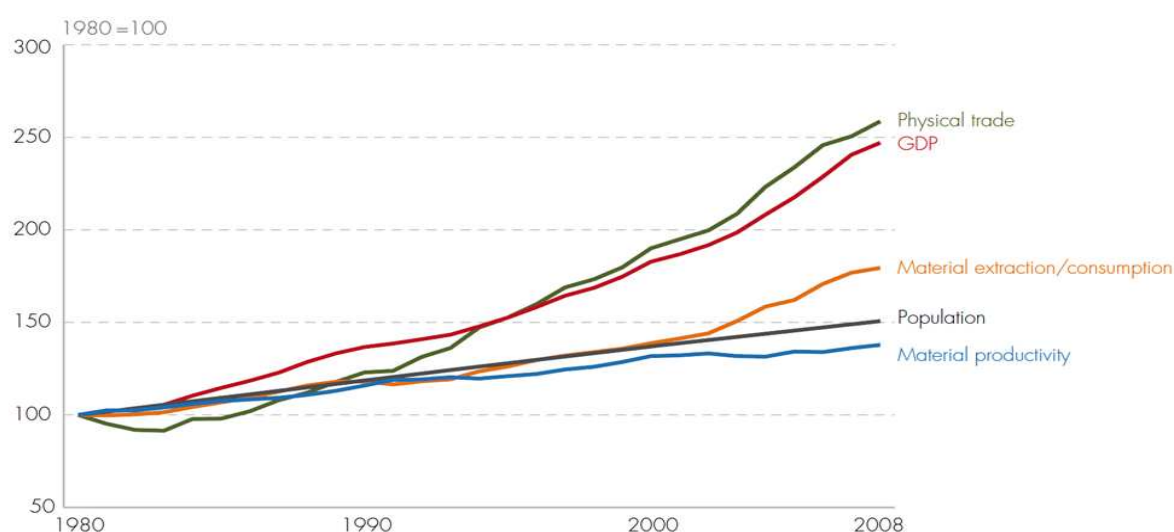
Key Points

- The Green Industry Initiative is one of the most comprehensive, practical and effective sector-based strategies launched at the international level to reduce the negative environmental impact of manufacturing, while increasing its social and economic benefits, especially for developing economies.
- The Green Industry Platform offers the most coordinated voluntary public/private partnership framework in which this transformation can be mainstreamed and scaled up.

1. Background

According to the UN's medium growth scenario, 9 billion people are expected to inhabit the Earth by the year 2050¹. By that point, global industrial production will have increased by a factor of four². This amplification of global production and consumption patterns threatens to render the current model of economic growth unsustainable³. The Green Industry Initiative was launched by UNIDO to alleviate the unprecedented strain placed on the environment through the large-scale increase in global manufacturing activities and its negative effects. When taken together with volatile energy, raw material and food prices, documented increases in climate variability, water scarcity, and a global decline in the health of ecosystems, the interrelated issues of energy, productivity, and resource security have been pushed to the forefront of the international political agenda.

Global trends in GDP, population and material use 1980–2008



Source: Dittrich, M. et al., *Green Economies Around the World* Sustainable Europe Research Institute (SERI), Vienna, 2012

¹ Halonen, T., Zuma, J. et al., *Resilient People, Resilient Planet: A Future Worth Choosing* - United Nations Secretary-General's High-Level Panel on Global Sustainability - Overview, United Nations, New York, 2012

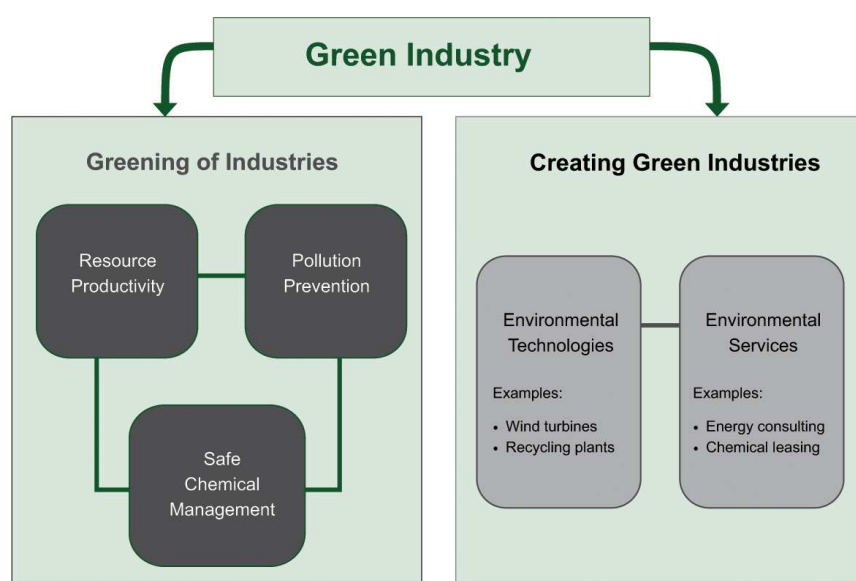
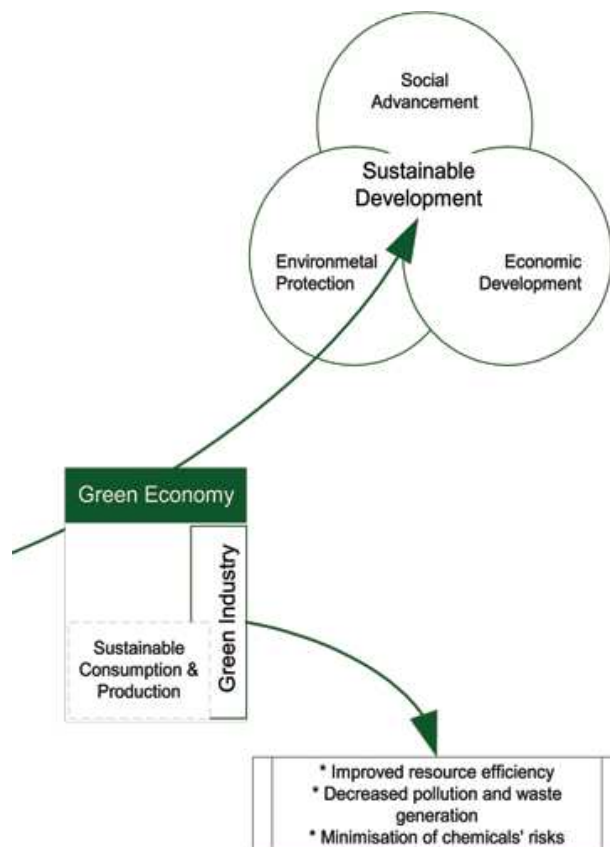
² Dittrich, M. et al., *Green Economies Around the World*, Sustainable Europe Research Institute (SERI), Vienna, 2012

³ Lee, B., Preston, F. et al., *Resources Futures*, Chatham House, London, 2012

The Green Industry Initiative is therefore designed to help counter these trends and achieve equitable economic growth that does not harm the environment. By creating conditions that allow industries to reduce pollution and resource use significantly, while continuing to provide goods and decent employment, the Green Industry Initiative aids both the competitiveness and the environmental performance of industry⁴.

2. How the Green Industry Initiative Works

As with the notion of a Green Economy, the Green Industry Initiative provides a practical pathway towards achieving sustainable development. While the aim of the Green Economy is achieving improved human well-being and social equity while simultaneously diminishing environmental risks and reducing ecological scarcities, Green Industry transforms the manufacturing and allied sectors by introducing more efficient, productive and responsible use of raw materials so as to contribute more effectively to sustainable industrial development. The core notion is **to do more, and better, with less**. Green Industry is thereby a sectoral strategy for the realization of Green Economy, and ultimately, sustainable development.



The Green Industry Initiative follows a two-pronged approach involving (i) the greening of existing industries and (ii) the creation of new green industries. This is achieved by working closely with national governments and other key stakeholders to mainstream Green Industry into public policy and institutions and apply governance mechanisms

⁴ UNIDO Green Industry Initiative for Sustainable Industrial Development, UNIDO, Vienna, 2011

to businesses, markets, consumers and communities. It also involves the promotion of technology development and transfer, demonstration projects, capacity building and training, the establishment of support institutions and improving access to financing mechanisms.

2.1. Greening existing industry

The greening of existing industry entails the support of all industries - regardless of their sector, size or location - in integrating environmental, climate and social considerations into their operations, processes and products. The key components of a drive towards greening existing industries are the:

- Efficient use of materials, energy and water
- Reduction of wastes and emissions
- Safe and responsible management of chemicals
- Phasing out of toxic substances
- Substituting of fossil fuels with renewable energy sources
- Redesign of products and processes

TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGIES (TEST) IN CAMBODIA

Enterprises in Cambodia are facing numerous challenges in their effort to maintain or increase their competitiveness on the local and international markets with quality products, comply with environmental standards and reduce their operational costs. The Hot-Spot and TEST project is designed to assist enterprises in dealing with these challenges and in building a long-term sustainable business strategy contributing thus to the greening of SMEs and industries in Cambodia.

To initiate a cycle of continuous optimization of production processes, the TEST methodology focuses on the different levels of a company and combines:

- Resource Efficient and Cleaner Production assessment (production level);
- Environmental Management Accounting (financial aspects);
- Environmental Management System (quality and compliance); and,
- Corporate Social Responsibility (strategy, supply chain and social dimension).



2.2. Creating new green industries

The Green Industry Initiative aims to assist countries take advantage of the opportunities associated with more sustainable industrial development and the growing global demand for green solutions. As such, the Green Industry Initiative also seeks to establish and expand new green industries that deliver environmental goods and services. Green industry is a rapidly expanding and diverse sector

that covers all types of services and technologies that help to reduce negative environmental impacts and resource consumption. Goods and services provided in this sector involve:

- Reduce, reuse and recycle (3R) industries
- Pollution control technology and equipment
- Renewable and energy-efficient technologies
- Waste management and resource recovery
- Environmental advisory and analytical services

Furthermore, the inclusive development of green industries leads to the promotion of productive activities, the creation of new jobs through targeted training, capacity building, cluster development, the development of new green business concepts and improved access to resources including financing and technologies. Assistance in business development projects is particularly targeted towards vulnerable groups such as women, youth, and people in post-conflict areas.

E-WASTE MANAGEMENT IN CAMBODIA

Electrical and electronic waste (e-waste) is the fastest growing waste stream in the world, with an estimated 20-50 million tons being generated annually. Most developing countries lack the infrastructure, know-how and regulatory frameworks for sound reuse and recycling of hazardous waste. E-waste recycling can positively contribute to the conservation of natural resources. In addition, e-waste recycling offers the potential for job creation.

In Cambodia, most people involved in repairing electronic products have low technological capacity and their operations are considered to be a threat to the environment and general public's health.

In close collaboration with the Ministry of Labor and Vocational Training and the Ministry of Environment, UNIDO is creating employment and business opportunities in the electronic industry as well as improving e-waste management skills, knowledge and practices with a special focus on young people. KOICA and Samsung financially support the project, with Samsung also providing e-waste recycling trainers to create opportunities to promote new skills and acquire knowledge for the target beneficiaries



3. Key Benefits of the Green Industry Initiative

At enterprise, national and global public policy levels, Green Industry offers a practical pathway to long-term economic growth and sustainable development. In broad terms, Green Industry protects the environment by promoting more efficient resource use and reducing wastes and pollution. On the social level, more and better employment is generated, resulting in the empowerment of previously marginalized groups. Economically, Green Industry offers increased resilience and competitiveness, while spurring on innovation and growth. Specific benefits include the following:

Environmental

- **Reduce environmental pollution**
- Counteract resource depletion
- **Prevent degradation of ecosystems**
- Mitigate climate change
- Combat water scarcity

STOCKHOLM CONVENTION

UNIDO is supporting more than 50 countries to update their National Implementation Plans to reflect the 10 new substances added to the Stockholm Convention.

Social

- Create new jobs and improve job security
- Reduce poverty
- Develop new skills and capacity
- **Improve occupational health and safety**
- **Safeguard health and safety of communities**
- Lower risks to consumers

ARTISANAL SMALL SCALE GOLD MINING

UNIDO is currently helping small gold mining communities to reduce mercury use and eliminate mercury emissions in 10 countries covering 3 continents

Economic

- **Increase resource productivity**
- **Bring down production costs**
- Heighten security of supply
- Foster technology development and innovation
- **Improve competitiveness**
- Open up new markets
- Develop new businesses

RECP NETWORK

In 50 countries, RECPnet contributes to the effective and wide-spread application of Resource Efficient and Cleaner Production (RECP) in developing and transition countries by bringing together the providers of RECP services.

4. The Green Industry Platform

The Green Industry Platform, jointly launched by UNIDO and UNEP at the United Nations Conference on Sustainable Development (Rio+20), provides the means by which the Green Industry Initiative can be scaled up and mainstreamed throughout the manufacturing industry worldwide. The Platform brings together business, government and civil society to commit - at the highest levels - to undertake concrete and measurable actions in pursuit of Green Industry objectives.

LAUNCH OF THE GREEN INDUSTRY PLATFORM AT THE RIO+20 SUMMIT

UNIDO and UNEP launched the Green Industry Platform in the context of the United Nations Conference on Sustainable Development (Rio+20) in Rio de Janeiro, Brazil.

The Platform's launch event attracted around 200 attendees and included several high-profile speakers such as the Director-General of UNIDO, Kandeh K. Yumkella, the Executive Director of UNEP, Achim Steiner, the European Commissioner for the Environment, Janez Potočnik and the Chief Executive Officer of the Global Environment Facility, Monique Barbut. High-level representatives from businesses such as Broad Group (China), Microsoft (USA) and Novozymes (Denmark) all took part in the launch event, as well as ministers from partner governments of the initiative such as Poland, Sierra Leone and Sweden.



4.1. Mobilizing International Action

The Green Industry Platform, through its multi-stakeholder model, also provides a very clear example of how the United Nations can create transformative partnerships in the context of a single theme. The Platform's aims are furthermore fully consistent with long-accepted international sustainability objectives and in line with Rio+20 support for enhanced partnership-based approaches involving the private sector and voluntary efforts to advance the Green Economy.

Only a few months after the launch of the Green Industry Platform, already 25 national governments have signed the Platform's "Statement of Support" document and are full members of the initiative. Companies, both multinational and national, and leading business associations have also signed the Statement of Support. Discussions with other governments and companies are currently ongoing. To date, 136 signatories of the "Statement of Support" have committed to advance the objectives of the Green Industry Initiative and actively promote the following policies and practices:

- Improve Resource Efficiency
- Strengthen Waste Management
- Reduce and Eliminate Toxic Materials
- Increase Energy Efficiency and Use Renewable Energy
- Adopt a Lifetime Approach to Product Manufacture
- Make Finance Available to Green Industry
- Promote Technology Transfer and Share Best Practice
- Green Global Value Chains
- Support Green Industry Research and Innovation
- Encourage Green Industries and Jobs
- Set Green Industry Targets

4.2. Functions of the Platform

As the funding and membership of the Green Industry Platform increase, so will the tasks it will be in a position to manage. Currently the core functions of the Green Industry Platform include:

Awareness Raising	<ul style="list-style-type: none"> ▪ Profiles Green Industry objectives through events, engagement, actions at the enterprise, national and regional level
Convening	<ul style="list-style-type: none"> ▪ Brings together members to discuss specific themes, approaches and issues ▪ Connects members to third parties on areas of mutual interest
Networking and Information Sharing	<ul style="list-style-type: none"> ▪ Shares contact information between signatories ▪ Provides a web portal to exchange information amongst signatories ▪ Provides one-stop advisory services for signatories seeking specific information ▪ Provides an introductory and mediating role
Partnering	<ul style="list-style-type: none"> ▪ Provides a framework for members to explore possible partnerships between different sectors and stakeholder groups ▪ Identifies and encourages synergies and partnerships between members ▪ Identifies possible partnerships with non-members such as in the supply chain context
Researching	<ul style="list-style-type: none"> ▪ Identifies strengths and weaknesses of current Green Industry approaches and commissions research on relevant topics
Promotional	<ul style="list-style-type: none"> ▪ Provides a framework in which members' actions in pursuance of Green Industrial policies and practices can be made public and promoted

4.3. Benefits of Platform participation

There are multiple benefits stemming from membership of the Green Industry Platform. These include:

- increased opportunities to help create new jobs, grow sustainable economic development, encourage the rapid transition to a resource-efficient and green economy and alleviate poverty;
- reduced waste and increased efficiency of manufacturing activities, and accompanying improvements in organizational/national competitiveness;
- improved information and awareness about the benefits of Green Industry and on relevant policies and practices worldwide;
- expanded networking and partnering opportunities on Green Industry policies and projects at all levels;

- increased opportunities to help shape national/organizational road maps towards Green Industry and to co-develop specific projects;
- enhanced attention of capital market investors seeking to reduce exposure to commodity price fluctuations and related risks;
- greater opportunities to inspire and engage employees in innovation of manufacturing technologies, management and policy approaches; and
- higher recognition of leadership in the expanding Green Industry space.

4.4. Operations

The first meetings of the Platform's administrative bodies (Advisory Board and Technical Expert Committee) will take place in March and April 2013. These meetings will serve to determine the strategic direction of the Platform's operations and guide the development of the Platform's first member-driven joint activities. In addition, a new outreach campaign will target top performing companies in the field of sustainability, as well as academic and research institutions, business associations and philanthropic foundations with a view towards further increasing the global uptake of green industrial policies and practices.

15 YEARS OF THE VIET NAM NATIONAL CLEANER PRODUCTION CENTER

The Vietnam National Cleaner Production Centre (VNCPC) was established on 22 April 1998 by the Ministry of Education and Training (MOET) and the United Nations Industrial Development Organization (UNIDO). Funding for the centre's activities was provided by the Swiss Government through the State Secretariat for Economic Affairs (SECO).

The center is offering its services in (i) Cleaner Production Assessment, (ii) in-plant demonstration and (iii) capacity development.



CELEBRATION

A workshop entitled "Towards sustainable consumption and production through resource efficient and cleaner production implementation" is organized to take place on 18 April 2013 at The Hanoi University of Science and Technology, by the VNCPC, to celebrate its 15th Anniversary.



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