International trade of recyclable materials: Lost or Opportunity

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International trade of Recyclable Materials: Facts and Figures

- The consumption of natural resources is rapidly increase that brings human to face with the limit of growth.
- At the current exploitation and use rate of natural resources, many important materials, especially the rare metals and fossil fuel would come to deplete in very near future.
- Besides, the development of the society increases the waste generated that needed to be treated.

Global resource extraction, by major material groups and regions, 1980-2020

- Annual resource extraction will increase to 80 billion tonnes in 2020 (~100 billion tonnes in 2030), up 48% from 2002.
- This growth will be uneven between different areas and categories; overall growth rates will be highest in BRIICS.

What is happen to the human development?

The Limit to Growth
(Donella et.al., 1972)
The Limit to Growth

- The limitations of natural resources (as an input of the economy, under the overwhelming exploitation).
- The limitation of the sinks (as the receiving capacity of environment to the wastes).
- The limitation of food securities (under the increase of human population while reduce of crop land and production capacity).

(Source: Donella et.al. 1972)
Recycling then is being the key factor for not only the moving towards of society but also the sustainable development of human

In the past, recycling was an service rather than a production trend

At the present, recycling is the multi-objectives approach that changed the global traditional flow of material as well as the structure of production in particular and the economy in common
Before:
- Recycling for the waste reduction
- Recycling for reduce the volume of waste needed to treat
- Recycling for secondary resource
- Recycling for reduce the cost of production

Natural resources

- Lost of resources
- Energy consumption
- Lost of land
- Reduce the value
- Etc,

Under the new perspective:
- Waste is resources => no waste

Create dual consequence on environment and economy
Utilization of natural resources
Create the new chance for the environmental industry
“International Trade of recyclables materials”?

Why?
- Globalization
- Regulation
- Ability of the production system
- Ability of the recycling system

What else?
- Work assignment
- Demand and supply
- Benefit assignment

Trend to increase the international trade of recyclable materials
Recyclables trade increased over decades (1990 = 1)

Common Recycling Rates for Waste in Some OEDC Countries

Source: UN Comtrade, quoted by Etsuyo Michida

Source: UNEP/GRID-Arendal
Asia as a center of recyclables import

<table>
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<th></th>
<th>Waste paper</th>
<th>Waste plastic</th>
<th>Iron and steel scrap</th>
<th>Glass cullet</th>
<th>Copper scrap</th>
<th>Precious Metal Scrap</th>
<th>Aluminum scrap</th>
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<td>567*</td>
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Source: Calculation from UN Comtrade, World Trade Atlas (Taiwan), quoted by Etsuyo Michida (2011)

“International Trade of recyclables materials”?

The clean flow
- Protected
- Under official agreement
- Co-benefit
- Promote 3R society

The dark flow
- Banned
- Uncovered
- Coexistence
- Win-lost conditions

Developed countries? Developing countries?
Vietnam: some figures

- Vietnam needs to import the recyclable materials for the demand of production
- Vietnam is the advantage destination of the illegal scrap materials
- Vietnam is suitable entre-pot port in the East Asia for the waste flow ended mainly at China
- Vietnam has ratified the BASEL convention
- There is not any agreement between Vietnam and other countries for the controlling of recyclable material flows

Vietnam: some figures

**Yearly, Vietnam needs:**

- 4.5 millions ton of iron/steel scrap (the imported scrap makes up 50 % of the total scrap demand, equals to about 2-2.5 mil ton.)
- 1.1 millions ton of paper scrap (the imported scrap makes 50 % of the total), that meets 66 % demand of paper production.
- More than 1.5 millions ton of plastic scrap (the imported one takes 80 % of the scrap demand)
- Tens of thousands ton of the other metals such as lead, copper, aluminum, zinc, etc.

And the demand for the recyclable materials is increased yearly by 10-20 %
The imported scraps are mainly waste plastic, waste paper, waste glass and other metal scraps such as iron and steel, copper, aluminum, and some precious metals (which is allowed to import under Decision 12/2006/QD-BTNMT).

It was estimated that, in 2008, 1.4 million ton of waste scraps were imported via 60 national borders ports and 49 sea ports of Vietnam. The number in 2009 was 2 million ton and reached 4 million ton in 2010.

This number is not taken into account the e-waste and paper scrap.

This number is smaller than the actual demand as pointed out above.
The Light side:

- At the present time, the imported steel scrap is taken about 50% of material demand.
- In paper and pulp industry, 70% of material is scrap and half of that is imported scrap.
- In the plastic industry, about 80% of input material are imported.

=> The imported scrap hold a very important role for the industry
The Light side:

- **What is the scrap bring to:**
  - Reduce the waste needed to treat
  - Reduce material and production cost.
  - Promote 3R activities
  - Increase of the productivities
  - Increase of the competition capacity due to the using of recycled materials (what is important not only for the domestic but also for the exported products to developed countries)
  - Extend the market and financial flows
The Light side:

- **What is the imported scrap bring to:**
  - To satisfy the material demand, especially in the steel, plastic and paper industry, where the domestic scrap is not meet the demand
  - In many cases, imported scrap source is stable and the cost is cheaper than the domestic one.
  - Reduce the cost for the imported materials instead of raw material
  - Promote the international cooperation and the trend of international economic integration

The Dark side

- Vietnam does not have an effective control system for the import of recyclable materials.
- The illegal flow of the polluted recyclable materials is mostly used in the craft village or small recycling enterprise, or re-exported after clean.
- The amount of illegal import flow can not be estimated, but it can be imaged by the number of prosecuted cases, that is far to the true number.
- Only 200 cases were prosecuted for illegal import in over 10 years
- Only 20,000 ton of wastes were officially re-exported or demolished at the same period
The Dark side

Characteristics:

- Polluted materials
- Banned materials
- Disposed equipments that are not yet defined in the banned list
- Non declaration or declare under different types or fake records
- Non registered owner
- Hard to verify the quality

Sources: INEST and Internet
The Dark side

- The waste flow runs through Vietnam under the temporary import for re-export way
- The major final destination is mainly China
- The major wastes are:
  - Lead battery
  - Discarded computer
  - PCB
  - Polluted metal scrap
  - Paper scrap
  - Polluted plastic and rubber scrap

The Dark side

- Hai Phong and Mong Cai City are the major port for the temporary import for re-export flow of waste
- It is estimated that about 300 – 10,000 tons of waste scraps are exported via Mong Cai City daily, depending on the border control from both sides
- It is might be switched flow between domestic scraps and the imported scrap
The Dark side:

- The quality of imported scrap can not be control:
  - The environmental impact due to the low quality of waste scrap during the transportation and store
  - Environmental impact and cost for treat/demolish for the waste can not be re-export (no registered owner)
  - Many impurities and contaminants will be left behind the production of scrap materials
- The production line would cause environmental impact due to the backward technology
- The advanced technology would not be promoted
Sources: VEPA and Internet

Sources: VEPA
What is the environmental loss

- Hazardous waste attached with the scrap
- Microorganism attached with the scrap
- Air Pollution (transportation, production)
- Water Pollution (store, production, dump)
- Solid wastes (production, dump)

What is the economic loss

- Space for storing at the import port
- Treatment cost for non-owner container
- Indirect treatment cost for the production
- Cost for the quality control of scrap
- Others?? Time? Human resources?
- Can we pay for international polluter???
International trade: Opportunity or lost

How do we do with the international recyclables

• We can not ban the import of recyclables
• We can not allow the import of recyclables without quality control
• We just have National technical regulation on environment for imported steel, plastic and paper scrap - *QCVN 31, 32, 33:2010/BTNMT*
• We do not have ability to control the imported recyclables
• We do not have proper technology for the safe production
• We do not have to solve the pollution issues from the countries that exported scrap

How can we get win-win situation in this case

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International trade: Opportunity or lost

How can we get win-win situation in this case

• We get benefit from the imported scraps

Production (industry, craft village, importer/exporter, etc.)
Recycling related to international stakeholder responsibility

That must be promoted

• We polluted our environment and harm our health
• We produce more waste to be treated

That must be abandon
Defining the problem

- The most problem is that Vietnam does not have an effective management system for the control of international trade of waste and recyclable materials.
- That problem makes the opportunity becomes lost in case of recyclable materials trade:
  - Import of the polluted scrap, can very difficult to verify the quality
  - Cost for the treatment of polluted residues, or the low quality of the product that made of imported materials
  - Promote the existing of small and medium informal enterprise
  - Increase the unfair competition between the informal and formal enterprise
  - The export of valuable materials

Vietnam does have legislation:
- The Environmental Protection Law 2005 (Term 42, 43)
- Decree 59/2006/ND-CP.
- Decree No. 12/2006/ND-CP.
- Decision No. 12/2006/QD-BTNMT.
- QCVN 31, 32, 33:2010/BTNMT

Does it enough????

Does Vietnam have capacity to enforce the legislation?
- Human resources
- Equipments for quality control
At the legislation side, import of polluted scraps, low quality scraps is banned

However:
- Only 200 cases were prosecuted for illegal import in over 10 years
- Only 20,000 ton of wastes were officially re-exported or demolished
- Where is the others?
  - Go to the recycler??
  - Re-export??

Lost to become Opportunity

It is needed to consider that Lost and Opportunity of waste trade are just 2 aspects of an existing fact. Depending on the way to control the trade flow, the Lost and the Opportunity can be switched

How can we switch between the Lost and the Opportunities?

**Imported scraps**

**STOP?NONSTOP?**

**Illegal scraps**

**Clean scraps**

(The legislation)

**Informal Recycler**

**Formal Recycler/Producer**

**Disadvantages:**
- Small capacity
- Low quality product
- Environmental impact

**Advantages:**
- To serve low income people
- Material utilize

**Disadvantages:**
- Large capacity
- Good quality product
- Less environmental impact

**Advantages:**
- Input materials
- Higher cost and price
- Economy
Where is Vietnam???

Vietnam should applied 3R approach, and considered wastes as resources

Informal Technology

Level of Technology
Level of Legislation
Finance
Social Awareness
Human resources

Green Technology

Some ideas

- The disadvantages of the informal recycler are not solved until it changes its form
- The disadvantages of the formal recycler can be change by the proper legislation system, not by the technology or human source
- The export of recyclable materials under waste form and the import of recyclable materials are persistent demands
- Thus, the illegal waste can be changed/must be changed to the legal one to make lost becomes opportunity

But HOW??
Some ideas

- Control the quality of the export and import good among the countries (both ANNEX VII and non ANNEX VII countries), but not the good itself as in the BASEL BAN AMENDMENT? Is that opposed to the BASEL BAN AMENDMENT?
- Bilateral or multilateral or regional agreement as in Article 11 of BASEL CONVENTION?
- Clarify the final destination of the waste flow to against the illegal import?
- Issue the multilateral standards or regulations to control the export/import goods and recycling products?

What we should do?

- Strengthen the management system in term of legislation, technical tool and human resource, in order to control the international trade flow
- Finding the agreement among the countries to unify not only the recycling standard but the import/export standard and the corporation to control the trade flow
- Promote and upgrade the waste recycling technology
- Develop the waste market
- Construct an information exchange mechanism among the related countries
Conclusion Remarks

- International trade of recyclable materials should not be banned as in the Basel Conventional Amendment
- Then, “officialize” the specific recyclable flows among the related countries based on the legislation, financial and technology support
- The corporation among the related countries plays an important role, to built a mechanism for the running of international trade.
- The unify of recycling (product) standard and import/export standard might help the trade of recyclable materials to be come opportunity
- The statistical index for recycling is necessary to apply, but it might takes a longway to end

Conclusion Remarks

- **Vietnam and the other countries in the region:**
  - Make proper use of the imported scraps (polluted or not)
  - Improve the legislation to fit with the demand and supply of the other countries in the region and the ability to control international trade of recyclables
  - Issue the technical national/international standard/regulation on recycling product and recyclables quality
  - Prepare the infrastructure and ability for the extension of imported scrap list
Conclusion Remarks

- Construct an information exchange mechanism among the related countries, in which, consider the common statistic index for the assessment of recycling efficiency
- Unify the international trade related to the recyclables in each country together with new barrier for the international flows of recyclable
- Construct the bilateral and multilateral agreement on international trade of recyclables based on the technology level
- Establish the international recycling center and prepare the international agreement for the operation of this center