Priority of 3R Policy Indicator,
Summary of the Initial Work by the Working Group Member

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Purpose of exercise

• To provide experts’ advice to the secretariat of the Regional 3R Forum on the draft Hanoi 3R declaration
• To prepare background paper on 3R and resource productivity performance indicator for 4th Regional 3R Forum in Asia to be held in March 18-20 in Hanoi
• To prepare factsheets on selected 3R indicators
• To plan a special session on 3R and resource productivity performance indicator for the 4th Regional 3R Forum in Asia
Overview of exercise

As ked expert to

• Prioritize **top 8 among the Sustainable 3R Goals** (Goal 1-24) in the attached zero draft of Hanoi 3R Declaration based on the significance to their countries, to developing Asia, as well as for linkage between waste management and sustainability issues.

• Explain **what indicators are appropriate for the related prioritized Sustainable 3R Goals** which would be useful for policy makers in developing Asia to plan and implement 3R policies.

Participated Experts: 14 experts (6 IGES, 8 non IGES) (6 non-Japanese, 8 Japanese)

Supporting Factsheets Exercise for Selected Goals of Ha Noi 3R Declaration

1. Significant reduction in MSW generation; Total MSW Generation and MSW generation/capita
3. Significant increase in recycling rate of recyclables; Recycling rate
4. Informal sector (ILO and UNCRD); indicator on informal sector and social inclusion; registration of waste pickers, waste pickers association given certain official position, ratio of women and children engaging in waste picking activities
6. Encourage private sector to implement measures to increase resource efficiency and industrial symbiosis; CP-related indicator and waste exchange programme
10 Develop proper classification and inventory of hazardous waste; classification/standard of haz. waste
12 Full scale use of agricultural biomass waste;
14. Ensure environmentally-sound management of e-waste
16. Progressive implementation of EPR;
19. Raise public awareness on the 3Rs, SCP, resource efficiency...
22. Promote green procurement
Tentative priority goals for discussion

**More than 7 points**
1. Significant reduction in MSW generation; Total MSW Generation and MSW generation/capita
3. Significant increase in recycling rate of recyclables; Recycling rate
19. Raise public awareness on the 3Rs, SCP, resource efficiency...

**4.5-6 points**
2. Full scale utilization of organic component of MSW
6. Encourage private sector to implement measures to increase resource efficiency
14. Ensure environmentally-sound management of e-waste
21. Integrate the 3R concept in relevant policies and programme of related ministries (inter-ministerial collaboration)
22. Promote green procurement

**4 points**
5. Build sustainable cities by encouraging zero waste
16. Progressive implementation of EPR
18. Enhance national and local knowledge base and research network
24. Elimination of open burning and dumping

**3 points**
9. Build local capacity of both and future practitioners to enable private sector obtain the necessary knowledge and technical skills to foster green industry
15. Establish effective mechanism to prevent illegal trade of e-waste and hazardous wastes
23. Phase out harmful subsidies
Factsheets on 3R Indicators (Total 2 pages)

- Outline/background of indicator
- Policy goals/target to be monitored by this indicator
- Definition and scope
- Merit of indicator/practices
- Similar indicators and supporting indicators
- Methodology of data collection and calculation
- Challenges and cautions related to data collection and calculation of the indicator
- Stakeholders need to be involved for proper data management
- Direct and indirect impacts implied by change of indicators
- Related best practices which embodies policy targets (for example, zero landfill factory for reduction of amount of final landfill).
- Reference document/existing guidelines

Total Waste Generation Per Capita

Outline/background of indicator
- Waste quantity has become a big problem.
- Local authorities in all the developing countries have faced a lot of problems due to the handling of a massive amount daily generated waste.
- Source Reduction is the foundation if any sustainable waste management plans.
- Either promoting recycling or composting, first effort should be given to the reduction. Otherwise, it is inefficient.
- To tackle the problem, the root cause has to be dealt with.
- Therefore, local authorities would be the main beneficiary of waste reduction, and then they could focus on providing more municipal services to the community.
- Additionally, waste reduction is a “possible” option which has significant impacts on reducing environmental damages and cost-efficiency.

Policy target to be monitored by this indicator

Definition
- Similar indicators
- Methodology of data collection and calculation
- Scope
- Challenges and cautions

Direct and indirect impacts implied by change of indicators
- Related best practices which embodies policy targets (for example, zero landfill factory for reduction of amount of final landfill).
Comments on goals

• **Polluter’s responsibility/waste emitter’s responsibility is lacking (fundamental for industrial waste management)**
• Goals should be linked with who does what?
• How these goals are set?
• Are these goals common among Asian countries or anything specific to specific situations?
• Lack of goals on cleaning and sanitation which would be a priority
• Lack of goals on repair and reuse

GOALS
1. Significant reduction in MSW generation

• **Waste quantity** has become a big problem.
• **Local authorities** in all the developing countries have faced a lot of problems due to the handling of a **massive amount daily generated waste**.
• Source Reduction is the foundation if any sustainable waste management plans.
• Either promoting recycling or composting, **first effort should be given to the reduction**. Otherwise, it is inefficient.
• To tackle the problem, **the root cause has to be dealt with**.
• Therefore, **local authorities would be the main beneficiary of waste reduction**, and then they could focus on providing more municipal services to the community.
• Additionally, waste reduction is a **“possible” option** which has significant impacts on reducing environmental damages and cost-efficiency.

3. Significant increase in recycling rate of recyclables

• This goal is important if we see from multiple facets- **waste management**, **economic opportunities from waste**, **employment to people through green jobs**, **resource circulation in the ecosystem** etc.
• Obviously this **save energy and resources** which are depleting.
• Improving “recycling rate” via appropriate policies and measures would strive **“towards zero landfill”** in a nation. In addition, improvement of the recycling rate and recovery of a maximum amount of materials would help to produce a significant amount of recycled materials which would **use as the raw materials** to produce various products and meet the demand.
• Increasing in recycling rate would be a key driver to initiate **“resource efficient society”**.
• Recycling should be more **formalized**.
19. Raise public awareness on the 3Rs, SCP, resource efficiency

- **Awareness raising would be very important** for improving the behavioral change of the citizen. **General public is the main stakeholder** in the process of sustainable development, and their effective contribution would be the key driving force towards sustainability.
- **Cooperation of consumer/public citizens** is crucial to promote recycle, especially of MSW.
- Without nation-wide effort, **recycling would become just a fantasy and very costly option**. Thus, citizens collaboration is a key.

2. Full scale utilization of organic component of MSW

- Most of developing Asian countries have **nearly 50% of MSW as Organic waste**—tackling this large volume of organic waste is a priority.
- **Full scale utilization of organic component** of municipal waste is very important for developing sustainable waste management.
- Degradation of organic waste in **uncontrolled landfills** in developing Asia has caused **significant climate impacts**.
- In addition, reducing the volume of organic waste flow at the landfill site would bring financial benefits **since 75-80% of municipal budget in developing countries spend for waste collection**.
- Improving resource efficiency and energy efficiency by utilizing organic waste would **avoid an equivalent amount of material and energy production** from conventional processes and thereby reduce resource utilization for virgin production chain and emissions from those processes.
6. Encourage private sector to implement measures to increase resource efficiency

- Role of private sector and SMEs in waste management and 3R cannot be denied.
- Enhancement of 3Rs in industrial sector is an urgent issue for sustainable waste management. At present, inappropriate waste management practices (e.g. poor recycling technologies) which lead by SMEs have caused serious environmental and health problems.
- Therefore, improvement of resource efficiency and productivity in private sector is an urgent issue and that would enhance overall socio-economic and environmental benefits from waste management.
- Resource and energy efficiency can be promoted as economic motivation (saving of energy and raw material costs) to these private businesses, and in turn promote 3R policies.
- Reducing resource input is the first step to reduce waste generation

14. Ensure environmentally-sound management of e-waste

- The electrical and electronic waste is one of the fastest growing waste streams in the world.
- Inappropriate disposal of e-waste at the landfills has caused severe health problems due to contamination of dangerous chemicals and heavy metals in the environment.
- Collection, storage, transportation, recovery, treatment and disposal of e-waste should be done in an appropriate way in order to avoid the health hazards as well as to minimize energy and material usage and emissions from the entire life cycle of e-waste management.
- At the end, appropriate recycling techniques should practice for recovery of materials, including rare metals and then to minimize virgin resource utilization.
- Recycling activities (not only in e-waste sector) are generally performed without considering labor safety and their impacts on their living environment, such as melting process in plastics recovery.
21. Integrate the 3R concept in relevant policies and programme of related ministries (inter-ministerial collaboration)

- **Integrated approach** will promote 3Rs at every level
- Based on **national 3R strategy**, **local government** need to develop their own plan for solid waste management.
- **Need to coordinate opinions of different ministries**: Better to simplify the interests and intentions behind the 3R policy. Integrate the responsible authority to promote 3R policies
- I agree that 3Rs activity needs relevant policy from several ministries-agencies. Although waste recycling approach in Indonesia is a priority, **the cross-sectorale coordination** is still one of a weakness, especially among the parties that hold the responsibilities to regulate the uses and trading of these materials.

22. Promote green procurement

- Goal's potential to super-stream waste management issues into the national sustainable development agenda.
- Promote market for recycled products
1. Significant reduction in MSW generation (possible candidate)

1. Total generation of MSW per capita
   Comments:
   • Need to define the scope of MSW in a targeted country
   • Time series data is necessary to see the progress of reduction.

2. Total amount of MSW going to landfill
   Comments:
   • Data collection is difficult
1. Significant reduction in MSW generation (be cautious?)

Annual government expenditure per capita on consumer awareness raising

= Difficult to have data, too ambiguous and too wide, less meaningful as an indicator

3. Significant increase in recycling rate of recyclables

1. Recycling rate of different types of recyclables
   • Definition of recycling rate should clearly stated.
   • Targeted recyclables may depend on national policy.

2. Additional indicators?
   - Overall national recycling rate (%)
   - Recycling rate (%) of metals
   - Financing/funding mechanism of key recycling facilities (is it through FDI, ODA or private investment or PPP)
3. Significant increase in recycling rate of recyclables (be cautious?)

- **Recycling rate of plastics**
  Definition of plastics (instead packaging?)

- **New policy/programme/system/measure introduced, or existing policy/programme/measure/system strengthened.**

- **Market size of recyclables**
  Not clear, too broad for indicator and also very difficult for data collection

- **Employment in recycling industries**
  Does this include the number of workers for transportation of waste/recyclables? Collection mechanism would be quite important and probably labor-intensive...

- **Number of cities that have introduced successful source separation programmes.**
  meaning of "successful" needs to be defined but it may be difficult to apply a single criterion for various types of cities.

19. Raise public awareness on the 3Rs, SCP, resource efficiency

- **Existence of national association of waste management and recycling professionals**
  (is this indicator binary? that is, is it 0 (does not exist) or 1 (does exist)? What we should measure would be the influential power of the association and/or the professional as a whole. # of membership may be better.)

- **Annual government expenditure in public extension programmes**
  too amiguos. not appropriate as an indicator
  How about Number of participants in public extension programmes?
2. Full scale utilization of organic component of MSW

1. **Organic waste landfilled per capita, or per amount landfilled**
   - the record of actual amount of organic waste landfilled per capita or amount or organic waste landfilled will be challenging.

2. **Additional indicators**
   - Not only the amount of organic waste composted and/or anaerobically digested, the NUMBER of such composting units and AD plants/facilities will be important too.
   - specific policies and mechanisms that led to promote the organic waste reduction, reuse and recycling

6. Encourage private sector to implement measures to increase resource efficiency

1. **Number of SMEs receiving expert advice, training, and other support from the Centre of Excellence for resource efficiency (e.g., Cleaner Production Centre).**
14. Ensure environmentally-sound management of e-waste

1. Formal standards, certification system and licensing procedures established and enforced.

2. Comments:
Presence of health insurance programme for informal sector workers.
(this would be quite effective and important but less feasibility, not appropriate as an indicator. How to measure the "presence"?)

21. Integrate the 3R concept in relevant policies and programme of related ministries (inter-ministerial collaboration)

• Existence of a national 3R task force

22. Promote green procurement

• Number of goods and services specified by the green procurement policies?
• Share of government procurement being green based on some agreed criteria?
General comments

- The indicators depend on priorities of different countries.
- Policy makers should play a larger role on priorities rather than experts.
- Local government need to do data management on waste generation, treatment and recycling for appropriate waste management planning and implementation.
  - Waste amount / person / day [kg/pax/day]
  - Waste disposal at the landfill [t/day]
  - Waste diversion (recycling) rate [% = t / t-total waste]
- Indicator related to cost would be useful
  - Waste management cost (collection, transportation, treatment, disposal) [USD /t-waste]
- Some indicators to follow political will such as number of cities that have set waste reduction targets etc.
- Too much resources are needed for data collection? Best practices then public awareness raising approach would be more appropriate?

General comments

- The indicators proposed in the zero draft are useful for different purposes: some of them can be used to track progress of an individual country over time but are unsuitable for international comparisons (e.g. number of cities that have adopted zero waste strategies).
- Other indicators, especially the ones of a yes/no character can be used in regional comparisons but are less meaningful as progress indicators for individual countries. Such differences need to be pointed out and, in general, it needs to be further clarified what these indicators are mainly expected to be used for.