Eighth Regional 3R Forum in Asia and the Pacific
"Achieving Clean Water, Clean Land and Clean Air through 3R and Resource Efficiency- A 21st Century Vision for Asia-pacific Communities"
Indore, Madhya Pradesh, India, 9-12 April 2018

Country Report

(Draft)

< Lao PDR.>

Country 3R Progress Report	**Name of the Country: Lao PDR** **Mr. Phomma VEORAVANH, Director General** **Ministry of Public Works and Transport** Email: pveoravanh@yahoo.com Tel/Fax: 856-21: 451826

<u>*Progress and achievements towards implementation of the Ha Noi 3R Declaration*</u>

<u>*-Sustainable 3R Goals for Asia and the Pacific (2013-2023)-*</u>

With the objective of demonstrating renewed interests and commitments of Asia-Pacific countries towards realizing a resource efficient society, the Fourth Regional 3R Forum in Asia-Pacific in 2013 adopted the good-will and legally non-binding "***Ha Noi 3R Declaration – Sustainable 3R Goals for Asia and the Pacific 2013-23.***" The objective of the Country Reporting is to share among international community with various initiatives launched and efforts made (such as new policy instruments, legislations, regulations, institutional arrangements, investments or financing, technological innovation or intervention, partnership mechanisms, such as PPPs, etc.) by the member countries of the Forum in addressing each of the underlined goals of the Ha Noi 3R Declaration. This would help the member countries to share various best practices in 3R and resource efficiency areas across the region. In addition, it would also help bi-lateral and multi-lateral development agencies, donors, development banks in assessing the sustainable needs and challenges of those countries to better plan their existing as well as future capacity building programmes and technical assistance in the areas of 3Rs and sustainable waste management.

With the cooperation of other related ministries, organization and agencies, we request you to kindly fill in the below table as much as possible with relevant data/information. If additional spaces are required, separate sheets could be attached.

Thank you very much for your kind cooperation.

Secretariat of the Regional 3R Forum in Asia and the Pacific
United Nations Centre for Regional Development (UNCRD)
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I. 3R Goals in Urban/Industrial Areas (3Rs in municipal solid waste)

Goal 1	Significant **reduction** in the quantity of **municipal solid waste** generated, by instituting policies, programmes, and projects at national and local levels, encouraging both producers and consumers to reduce the waste through greening production, greening lifestyle, and sustainable consumption.

Q-1 What specific 3R policies, programmes and projects, are implemented to reduce the quantity of municipal solid waste?

- To ensure that proper initiatives are taken for prioritizing, planning, financing and implementation of appropriate (technology levels) waste handling, treatment and management systems;

- To provide waste and sanitation services at various levels (e.g. investors and operators); and

- To regulate on national, provincial and district levels on technical and economic issues related to Waste.

Q-2 What is the level of participation of households in "source" segregation of municipal waste streams? (Please check the appropriate box)

☐ Very High (> 90%)

☒ High (>70%)

☐ Average (50-~70%)

☐ Low or not satisfactory (< 50%)

☐ Does not exist

Q-3 Total annual government expenditure per capita (US$ per capita) in municipal solid waste management in 2014-2015

- Approximately 2 billion KIP or equivalents 240,963 US Dollar.

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Inadequate legal framework and unclear institutional responsibilities. Institutions envisaged to be established in accordance with law, are sometimes not established, nor given the proper mandate in accordance with the law neither given a budget to enable them to function in accordance to the law.

Financing mechanisms are not examined and financial sustainability is at risk. There are no mechanisms to ensure return on capital in terms of collecting service fees from the households. Development of a legal basis/economic regulation regarding user fees for wastewater services in accordance with the "polluter shall pay" principle.

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Vientiane Capital is belonging to AIESC among 23 participating ASEAN cities. Lao Pilot Program for Narrowing the Development Gap toward ASEAN Integration Environmental Component (LPPE) by JICA since August 2011.

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

From 2018-2021 all household will have to make contact 100 % and waste water collection will have to cover 9 districts and match with slogan green grow city with following activities.

❖ Indicators for clean road: without waste and wastewater along the road.

I. 3R Goals in Urban/Industrial Areas   (3Rs in municipal solid waste)

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From 2016-2021 all household will have to make contact 100 % and waste water collection will have to cover 9 districts and match with slogan green grow city with following activities

- Indicator for clean housing : apartments, houses, fence and building control

- Indicator for clean vehicle: all types of vehicle have to be standard without modifies

- Indicator for clean Public facilities: Clean public park

- Indicator for clean   consumption: population have food without chemical and nutrition

- Indicator for clean water: along the road, street, cannel, without flooding, pond   have to be clean with bad smell and water animal can live.

- Indicator clean air: the air without smoke, pollution, air temperature in standard range.

At the State organization Level

Enforcement of regulations is not strict, lack of technical and research staff, insufficient budget and discontinuous public awareness campaign

At the local government

    Authorities and local government are lacked of ownership; some families do not cooperate well with the waste collection crew, some people bring their wastes to the temporary waste collection points before the designated days, people want to pay less for more waste and lack of temporary waste collection points

Entrepreneur

    Unstandardized collection vehicle that is subjected to break down easily, it is difficult to find out collection workers, the collection service cannot be provided on designated days.

Is this Goal relevant for your country?   ☒ Highly   ☐ Partially   ☐ Not at all

I. 3R Goals in Urban/Industrial Areas   (3Rs in municipal solid waste)

Goal 2	Full-scale utilization of the organic component of municipal waste, including food waste, as a valuable resource, thereby achieving multiple benefits such as the reduction of waste flows to final disposal sites, reduction of GHG emission, improvement in resource efficiency, energy recovery, and employment creation.

Q-1 Does the central government have policies or support to utilize or reduce the organic waste such as composting, energy recovery and improving efficiency in food processing?
- Recently, a mixed company is allowed to be created jointly by domestic and foreign party
- With fifty one percent of shares from domestic side; And forty nine percent of shares from foreign party

Q-2 What is happening to country's organic waste? (Please check the appropriate box)
☒ mostly landfilled

☐ mostly incinerated

☐ both landfilled and incinerated

☒   mostly open dumped or open burned

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

I. 3R Goals in Urban/Industrial Areas   (3Rs in municipal solid waste)

Goal 2	Full-scale utilization of the organic component of municipal waste, including food waste, as a valuable resource, thereby achieving multiple benefits such as the reduction of waste flows to final disposal sites, reduction of GHG emission, improvement in resource efficiency, energy recovery, and employment creation.

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

- Community Solid Waste Management Project in Vientiane Capital, Luangphabang and Xayabouly in 2015. Recyclables are mainly plastics, papers, cardboards, metals and glasses

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Vientiane Capital issued a policy for keeping city clean, green, beautiful and livable by launching its six so's(in Lao language) slogans namely: peaceful, clean, bright, green, civilized and charming,VUDAA issued a Regulation on the establishment and management of solid waste transport service businesses in Vientiane Capital City

- Decision on the management of solid waste disposal sites of the Ministry of Public Works and Transport
- Financing Mechanism used is as follows: user charges (waste collection fee, tipping fee); penalty and fines; environmental fund; private sector participation

Key Stakeholders:

Department of Housing and Urban Planning, Ministry of Public Works and Transport; Department of Water Supply, Vientiane Urban Development and Administration Authority, Vientiane Capital; Department of Hygiene and Health Promotion, Ministry of Public Health; Department of Industry, Ministry of Industry and Commerce; Department of Mine, Ministry of Mine and Energy; Department of Agriculture, Ministry of Agriculture and Forestry; Department of Pollution Control, Ministry of Natural Resources and Environment; Private Sector; Representatives of waste generators.

Is this Goal relevant for your country?   ☒ Highly   ☐ Partially   ☐ Not at all

I. 3R Goals in Urban/Industrial Areas   (3Rs in municipal solid waste)

Goal 3	Achieve significant **increase in recycling rate** of recyclables (e.g., plastic, paper, metal, etc.), by introducing policies and measures, and by setting up financial mechanisms and institutional frameworks involving relevant stakeholders (e.g., producers, consumers, recycling industry, users of recycled materials, etc.) and development of modern recycling industry.

Q-1 What is the recycling rate of various recyclables? (Please check the appropriate cell & add more waste streams as relevant for the country)

Rate / Type	Very High (>90%)	High (>70%)	Average (50-~60%)	Poor (<50%)	Recycling does not exist	Definition of recycling rate*
Paper						
Plastic						
Metal						
Construction waste						
e-waste						
others						

Note: Please specify in the cell which of the following definitions(ie., 1 or 2 or 3) is followed for recycling rate
Definition 1: (collected recyclable waste)/(estimated generation of waste)
Definition 2: (volume of utilized recyclable waste)/(volume of raw material)
Definition 3: (volume of utilized recyclable waste)/(volume of collected waste for recycling)

In Lao PDR Case

Physical composition in Vientiane Capital Composite	Resident %	Shop %	Market %	Office %	Hospital %	Sweep %
Garbage(organic)	**16.9**	43.3	61.7	5.9	47.1	0.0
Paper	2.8	**20**	**7.3**	**32.2**	**13.3**	**3.7**
Textile	1.6	**0.3**	**0.5**	**0.0**	6.2	**0.0**
Plastic	6.1	**7.9**	4.3	4.3	9.4	8.3
Wood	38.2	8.8	13.2	13.2	36	55.9
Leather	**1.1**	0.3	0.3	0.3	1.2	0
Metal	**3.7**	5.9	5.9	1.9	2.6	0.8
Glass	**9.3**	6.7	6.7	1.9	5	0
Other	**20.3**	7.2	7.2	9.1	7.9	31.5

Q-2 What specific policies are introduced at local and national level for prevention or reduction of waste streams – paper, plastic, metal, construction waste, e-waste?

Q-3 What is the rate of resource recovery from various waste streams?

(No Detail Information Available for separate types of wastes)

Rate / Type	Very High (>90%)	High (>70%)	Average (50-~60%)	Poor (<50%)	Recycling does not exist
Paper					
Plastic					
Metal					
Construction waste					

	e-waste					

(Please check the appropriate cell & add more waste streams as relevant for the country)

Q-4 What is the level of existence of resource recovery facilities/ infrastructures in cities?

(No Detail Information Available for separate types of wastes)

Level / Type	Every Major City	Few Major Cities only	Does not exist	Supportive policy or programmes exists	No supportive policy or programmes
Paper					
Plastic					
Metal					
Construction waste					
e-waste					

Remark:

There is no biological treatment or formal recycling yet; the rate of recycling is estimated at 10% of solid waste generated, type of materials reused are glass bottles which were used many times for soft drinks and beer, plastic bottles (20 liters) used for pure drinking water; type of materials recycled are plastic, glass, paper, rubber, cardboard, metals, etc.

I. 3R Goals in Urban/Industrial Areas   (3Rs in municipal solid waste)

Goal 3	Achieve significant **increase in recycling rate** of recyclables (e.g., plastic, paper, metal, etc.), by introducing policies and measures, and by setting up financial mechanisms and institutional frameworks involving relevant stakeholders (e.g., producers, consumers, recycling industry, users of recycled materials, etc.) and development of modern recycling industry.

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

❖**State Organization:**

- The enforcement of regulations is not strict

- Lack of technical and research staffs

- Insufficient budget

- Discontinuous public awareness campaign

❖**Local Government:**

- Authorities and local government are lacked of ownership

- Some families do not cooperate well with the waste collection crew

- People want to pay less for more waste

- Unsegregated solid waste collection

- Unstandardized waste recipients

- Lack of temporary waste collection points

❖**Entrepreneur:**

- Unstandardized collection vehicle that is subjected to break down easily

- It is difficult to find out collection workers

- The collection service cannot be provided on designated days

- Some workers are still sitting on the vehicle hood while it is running

- The loading of wastes is over the determined sizes

- Lack of technical staff (due to a family company)

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

- Vision for an Environmentally Sustainable Vientiane Capital (Safe, lighted, clean, green, civilized and charming Vientiane; it is the sustainable city) by LPPE JICA project.

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

To develop city action plan based on priorities identified:

- Capacity building the state worker to collect the necessary data/information on waste Characteristics.
- Implementation of policy, plan to enhance segregation, collection, and disposal.
- Strategic plan to enforce the legislation Public awareness raising for all stakeholders.
- Technical assistance including economic analysis to identify best available and appropriate applications
- Investment assistance to improve open dumping to sanitary landfill.
- City exchange visit to draw lessons learnt from other ASEAN cities experience of good practices and achievement in the municipal solid waste management.
- Pilot project demonstration in order for the upscaling to the other cities and the country level

Is this Goal relevant for your country？　　☒ Highly　　　☐ Partially　　　☐ Not at all

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I. 3R Goals in Urban/Industrial Areas　　(3Rs in municipal solid waste)

| **Goal 4** | Build **sustainable cities /green cities** by encouraging "**zero waste**" through sound policies, strategies, institutional mechanisms, and multi‐stakeholder partnerships (giving specific importance to private sector involvement) with a primary goal of **waste minimization** |

Q-1 What specific waste management policies and programmes are introduced to encourage private sector participation in municipal waste management?

Mekong Region Waste Refinery-International Partnership towards Achieving Zero Waste, Zero Landfill and Reduce Greenhouse Gas Emission Project which supported by ASIAN Institute of Technology Thailand

Overall Objective is to improve knowledge on Technology and Technological know-how to reduce solid waste origin greenhouse gas emission in the Mekong region and motivated to transfer of technology in the region.

•**Project Purposes** is to improve understanding on the importance of zero waste, zero landfill and reduction of waste origin greenhouse gas emission and leading role in its implementation.

VUDAA, Lao PDR:

•Nominate Mayor/senior officials to attend study visit in Boars City, Sweden.

•Nominate staff to attend one month technical training at the University of Boras, Sweden S

•Support in conducting feasibility study in dumpsite managed by VIUDAA.

•Nominate staff to attend regional training and arrange local training.

•Implement biogas plant installation demonstration project in an urban poor community in Vientiane Capital and supply of biogas to poor families for cooking.

•Prepare project progress report and final report and send to AIT

•Submit progress and final financial report to AIT with necessary receipts as per financial

I. 3R Goals in Urban/Industrial Areas   (3Rs in municipal solid waste)

Goal 4	Build **sustainable cities /green cities** by encouraging "**zero waste**" through sound policies, strategies, institutional mechanisms, and multi‑stakeholder partnerships (giving specific importance to private sector involvement) with a primary goal of **waste minimization**

guidelines. Organize launching and dissemination meeting and distribute dissemination materials/report with results and lessons learned.

Q-2 What are the major waste management areas that have strong involvement of private and business sector? (Please check appropriate boxes and add other areas if not listed below)
☐ waste collection
☐ resource recovery
☒ waste recycling
☒ waste to energy, composting, etc.
☒ PPP projects in waste sector

Challenges (policy/ institutional/ technological/ financial) faced in implementation:
❖**At the State organization Level**

Enforcement of regulations is not strict, lack of technical and research staff, insufficient budget and discontinuous public awareness campaign.

❖**At the local government**

Authorities and local government are lacked of ownership; some families do not cooperate well with the waste collection crew, some people bring their wastes to the temporary waste collection points before the designated days, people want to pay less for more waste and lack of temporary waste collection points.

❖**Entrepreneur**

Unstandardized collection vehicle that is subjected to break down easily, it is difficult to find out collection workers, the collection service cannot be provided on designated days.

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)
❖Indicators for clean road: without waste and wastewater along the road.

❖Indicator for clean housing : apartments, houses, fence and building control

❖Indicator for clean vehicle: all types of vehicle have to be standard without modifies

❖Indicator for clean Public facilities: Clean public park

❖Indicator for clean   consumption: population have food without chemical and nutrition

❖Indicator for clean water: along the road, street, cannel, without flooding, pond   have to be Clean with bad smell and water animal can live.

❖Indicator clean air: the air without smoke, pollution, air temperature in standard range.

Is this Goal relevant for your country?   ☒Highly   ☐ Partially   ☐ Not at all

I. 3R Goals in Urban/Industrial Areas (3Rs in Industrial waste)	
Goal 5	Encourage the **private sector**, including small-and medium-sized enterprises (SMEs) to implement measures to increase **resource efficiency and productivity**, creation of decent work and to improve environmentally-friendly practices through applying environmental standards, clean technologies, and cleaner production.

Q-1 What are the major clean technology related policies aiming to increase energy and resource efficiency of SMEs?

Types of ownership and management are publically owned and operated, apart from that there are 8 private companies dealing mainly with waste collection; the landfill is operated by a public unit under the Vientiane Urban Development and Administration Authority (VUDAA); there are no composting plant and energy recovery yet; recycling is done by private companies and the types of recyclable wastes which are collected to be exported for treatment or further recycling abroad are plastics, broken glasses, papers, cardboards, and metals.

Currently, there are 8 companies and one public enterprise have transported solid waste from cities to the KM32 dumping site which including 8 Districts except Sangthong District (VUDAA, 2014). Formal waste of ownership and management e.g. publically owned and operated, PPP to dumping site KM32

Q-2 What are the capacity building programmes currently in place to build the technical capacity of SMEs in 3R areas?
- Implementation of policy, plan to enhance segregation, collection, and disposal
- Strategic plan to enforce the legislation
- Public awareness raising for all stakeholders
- Pilot project demonstration for the upscaling to the other cities and the country level

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Areas of work to be carried out to overcome waste management challenges are legislation, capacity building, awareness raising and pilot projects. Due to lack of human resource and financial resource, rules, and management, these government-run companies could not provide good solution for sustainable SWM. At this time, there are currently difficult challenges of the solid waste management sector as below:

1. Inadequate legal framework and unclear institutional responsibilities.
2. Institutions envisaged to be established in accordance with law, are sometimes not established, not given the proper mandate in accordance with the law(if established), neither given a budget to enable them to function in accordance to the law. New legislation is often drafted without proper reference to other legislations.
3. A considerable amount of waste is illegally dumped into the drainage channels and rivers.
4. Collection vehicle fleet is old and subject to frequent break down.
5. The institutional and administrative structure is not well established
6. Public education system and participation programs are not established.

Examples of pilot projects, master plans and/or policies developed or under development –

I. 3R Goals in Urban/Industrial Areas (3Rs in Industrial waste)

Goal 5	Encourage the **private sector**, including small-and medium-sized enterprises (SMEs) to implement measures to increase **resource efficiency and productivity**, creation of decent work and to improve environmentally-friendly practices through applying environmental standards, clean technologies, and cleaner production.

include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021) (NA)

Short-term targets	**Medium-term targets**	**Long-term targets** (2016-2020)
1. Institutional and legal reforms. Sector database. 2. Decision making models. 3.Technical and Management Guidelines for construction and O&M.	1. Institutional and legal reforms. 2. Sector database. 3. Decision making models. 4. Technical and Management Guidelines for construction and O&M.	1. Increased access among urban poor. 2. Improved standards in selected urban areas, explore opportunities for communal and centralized treatment.

Is this Goal relevant for your country? ☒ Highly ☐ Partially ☐ Not at all

I. 3R Goals in Urban/Industrial Areas (3Rs in Industrial waste)

Goal 6	Promote the **greening of the value chain** by encouraging industries and associated suppliers and vendors in socially responsible and inclusive ways.

Q-1 What percent of companies and industries have introduced green accounting and voluntary environmental performance evaluation (Ref: ISO 14000)? (NA)
(No information Available)
☐ Very High (> 90%)
☐ High (>70%)
☒ Average (50-~70%)
☐ Low or not satisfactory (< 50%)
☐ None

Q-2 What percent of companies and industries have introduced social accounting (Ref: SA 8000) in consultation with their workers? (NA)
☐ Very High (> 90%)
☐ High (>70%)
☐ Average (50-~70%)
☐ Low or not satisfactory (< 50%)
☐ None

Q 3 Does government have a programme for promoting greening of the value chain? What specific policies, programmes and incentives are introduced to promote greening of value chain?

Some of the project could be plan for implementations are:

• Increase the number of landfill to cover all provinces

I. 3R Goals in Urban/Industrial Areas   (3Rs in Industrial waste)

Goal 6	Promote the **greening of the value chain** by encouraging industries and associated suppliers and vendors in socially responsible and inclusive ways.

• Improvement of disposal sites to be sanitary in order to prevent the contamination to ground water, air quality, and public health of people on site

• Improve fee charges system for waste collection and disposal, the payment for households should be depending on level of service and amount of waste collected/ disposed

• promotion of 3Rs public awareness program

• investment in mechanical equipment at disposal facilities including landfill, incinerator

• Cutting down the amount of waste by encouraging both waste reduction, segregation at source and micro-enterprises waste trading to use resources from the waste stream.

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant (NA)

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country?   ☐ Highly   ☐ Partially   ☐ Not at all

I. 3R Goals in Urban/Industrial Areas   (3Rs in Industrial waste)

Goal 7	Promote **industrial symbiosis** (i.e., recycling of waste from one industry as a resource for another), by providing relevant incentives and support.

Q-1 Does your government have policies and programmes promoting industrial symbiosis in industrial parks or zones? What specific policies, programmes and incentives are introduced to promote industrial symbiosis?(No information Available)

Q-2 How many eco-industrial parks or zones or the like, which is supported by the government, are there in the country?

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country?   ☐ Highly   ☐ Partially   ☐ Not at all

I. 3R Goals in Urban/Industrial Areas   (3Rs in Industrial waste)

Goal 8	Build **local capacity** of both current and future practitioners, to enable the private sector (including SMEs) to obtain the necessary knowledge and technical skills to foster green industry and create decent, productive work.

Q-1 How many dedicated training facilities or centers are there to cater the needs of SMEs and practitioners in the areas of cleaner production, resource efficiency and environment-friendly technologies, etc.? (No information Available)

Q-2 Please provide an indicative figure on annual government (US $) expenditure on building technical capacity of SMEs and practitioners in the areas of cleaner production, resource efficiency and environment-friendly technologies, etc.?

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly   ☐ Partially   ☐ Not at all

I. 3R Goals in Urban/Industrial Areas   (3Rs in Industrial waste)

Goal 9	Develop proper **classification and inventory of hazardous waste** as a prerequisite towards sound management of such waste. (No information Available)

Q-1 Is there a systematic classification of hazardous waste? If so, please attach.

☐ Yes   ☐ No

Q-2 What specific rules and regulations are introduced to separate, store, treat, transportation and disposal of hazardous waste?

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country?   ☐ Highly   ☐ Partially   ☐ Not at all

II. 3R Goals in Rural Areas	
Goal 10	**Reduce losses in the overall food supply chain** (production, post harvesting and storage, processing and packaging, distribution), leading to reduction of waste while increasing the quantity and improving the quality of products reaching consumers.

Q-1 What specific policies, rules and regulations, including awareness programmes, are introduced to minimize food or crop waste? (No information Available)

Q-2 Is there any continuing education services or awareness programmes for the farmers or agricultural marketing associations on reduction of crop wastes for increased food security?

Q-3 What is the average wastage of crops or agricultural produce between farms to consumers, if there is a study in your country?
☐ Very High (> 20~ 30%)
☐ High (10~20%)
☐ Medium (5~10%)
☐ Low (< 5%)
☐ Negligible (<1%)

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly   ☐ Partially   ☐ Not at all

II. 3R Goals in Rural Areas	
Goal 11	Promote full scale **use of agricultural biomass waste and livestock waste** through reuse and/or recycle measures as appropriate, to achieve a number of co‑benefits including GHG emission reduction, energy security, sustainable livelihoods in rural areas and poverty reduction, among others.

Q-1 How much amount of – (a) agricultural biomass waste and (b) livestock waste are grossly generated per annum? (No information Available)

Q-2 How are most of the agricultural biomass wastes utilized or treated? (Please <u>check all appropriate boxes</u>)

☐ as secondary raw material input (for paper, bioplastic, furniture, etc.)

☐ biogas/electricity generation

☐ composts/fertilizers

☐ mostly left unutilized or open dumped

☐ mostly open burned

Q-3 What specific policies, guidelines, and technologies are introduced for efficient utilization of agricultural biomass waste and livestock waste as a secondary material inputs towards full scale economic benefits? Relevant websites could be shared for additional information.

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country?   ☐ Highly   ☐ Partially   ☐ Not at all

III. 3R Goals for New and Emerging Wastes

Goal 12	Strengthen regional, national, and local efforts to address the issue of **waste, in particular plastics** in the marine and coastal environment.

Q-1 What specific policies and regulations are in place to address the issue of plastic wastes in coastal and marine environment? (No information Available)

Q-2 What extent issue of plastic waste is considered in integrated coastal zone management (ICZM)? (*Please check the appropriate box*)

☐ Very much ☐ Somehow ☐ Not at all

Q-3 Please provide a list of centre of excellences or dedicated scientific and research programmes established to address the impacts of micro-plastic participles (<5 mm) on coastal and marine species? If yes, please provide relevant websites.

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly ☐ Partially ☐ Not at all

III. 3R Goals for New and Emerging Wastes

Goal 13	Ensure **environmentally-sound management of e-waste** at all stages, including collection, storage, transportation, recovery, recycling, treatment, and disposal with appropriate consideration for working conditions, including **health and safety aspects** of those involved.

Q-1 How do people usually recycle their e-waste (waste electrical and electronic equipment)?
(Please check the appropriate box in order of priority by filling in numbers like 1, 2, 3, 4,….etc., for example 1 => Highest priority)

Check if applicable	Number in priority order	
	3	Take to recycling center / resource recovery facilities
	4	Take to landfill
	1	Take to the retailer
	4	Take to local charity for re-use
	3	Take to second-hand shop for re-use
	4	Ship back to the manufacturer
	3	Recycle in another country
	3	Do not know how people dispose

Q-2 What specific policies and regulations are in place to ensure health and safety aspects of those involved in e-waste management (handling/sorting/resource recovery/recycling)?

Q-3 How much amount of e-waste is generated and recycled per year?
(No information Available)

Type of e-waste	Estimated total volume generated (ton/year)	% of collected by permitted recycler	% of volume recycled in collected
Television			
Computer			
Mobile phone			
Refrigerators			
Washing machines			
Air conditioners			
Others…			

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly   ☐ Partially   ☐ Not at all

III. 3R Goals for New and Emerging Wastes	
Goal 14	Effective enforcement of established mechanisms for preventing illegal and inappropriate export and import of waste, including transit trade, especially of hazardous waste and e-waste.

Q-1 What specific policies and regulations are introduced to prevent illegal import and export of e-waste?(No information Available)

Q-2 Do you have required number of well-trained custom or other officials (for airport. sea-port, land border control, etc.) to track illegal export and import of e-waste?
☐ Yes ☐ No
(No information Available)

Challenges (policy/ institutional/ technological/ financial) faced in implementation:
(No information Available)

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant
(No information Available)

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)
(No information Available)

Is this Goal relevant for your country? ☐ Highly ☐ Partially ☐ Not at all

III. 3R Goals for New and Emerging Wastes	
Goal 15	Progressive implementation of "**extended producer responsibility (EPR)**" by encouraging producers, importers, and retailers and other relevant stakeholders to fulfill their responsibilities for collecting, recycling, and disposal of new and emerging waste streams, in particular e-waste.

Q-1 What specific Extended Product Responsibility (EPR) policies are enacted or introduced? (If there is none, then skip Q-2 below) (No information Available)
Q-2 Please provide a list of products and product groups targeted by EPR nationally? (No information Available)
Challenges (policy/ institutional/ technological/ financial) faced in implementation: (No information Available)
Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant
Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)
Is this Goal relevant for your country?   ☐ Highly   ☐ Partially   ☐ Not at all

III. 3R Goals for New and Emerging Wastes	
Goal 16	**Promote the 3R concept** in health-care waste management. (No information Available)

Q-1 What specific policies and regulations are in place for healthcare waste management?

Q-2 What is the total annual government expenditure towards healthcare waste management (US$ per year)?

Q-3 List the agencies or authorities responsible for healthcare waste management.

Q-4 What is the common practice for disposal of healthcare wastes?

(Please check the appropriate box and add if any other practice followed)

☐ open dumping (untreated)

☐ open burning (untreated)

☐ ordinary landfilling (untreated)

☐ sanitary landfilling (treated)

☐ Low cost small scale incineration (do not meet air emission standards)

☐ Highly controlled air incineration (dedicated/modern medical waste incinerators)

☐ Other methods (please specify names:)

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country?   ☐ Highly   ☐ Partially   ☐ Not at all

IV. 3R Goals for Cross-cutting Issues
Goal 17 Improve **resource efficiency and resource productivity** by greening jobs nation‐wide in all economic and development sectors.
Q-1 What specific policies and guidelines are introduced for product standard (towards quality/durability, environment/eco-friendliness, labour standard)?   (No information Available)
Q-2 What specific energy efficiency schemes are introduced for production, manufacturing and service sector?
Q-3 What specific policies are introduced to create green jobs in product and waste sector?
Challenges (policy/ institutional/ technological/ financial) faced in implementation:
Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant
Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)
Is this Goal relevant for your country? ☐ Highly   ☐ Partially   ☐ Not at all

IV. 3R Goals for Cross-cutting Issues
Goal 18 Maximize co-benefits from waste management technologies for local air, water, oceans, and soil pollution and global climate change.
Q-1 Please share how climate mitigation is addressed in waste management policies and programmes for co-benefits? (No information Available)
Challenges (policy/ institutional/ technological/ financial) faced in implementation:
Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant
Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)
Is this Goal relevant for your country? ☐ Highly ☐ Partially ☐ Not at all

IV. 3R Goals for Cross−cutting Issues

Goal 19	Enhance **national and local knowledge base and research network on the 3Rs and resource efficiency**, through facilitating effective and dynamic linkages among all stakeholders, including governments, municipalities, the private sector, and scientific communities. (No information Available)

Q-1 What specific policies are introduced to encourage triangular cooperation between government, scientific & research institutions and private/business sector in 3R areas?

Q-2 Please share the number and list of dedicated scientific institution, or coordinating centers in the areas of 3Rs (e.g., waste minimization technologies, eco-products, cleaner production, recycling technologies, industrial symbiosis, resource efficiency, etc.)?

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly   ☐ Partially   ☐ Not at all

IV. 3R Goals for Cross−cutting Issues	
Goal 20	Strengthen multi-stakeholder partnerships among governments, civil society, and the private sector in raising public awareness and advancing the 3Rs, sustainable consumption and production, and resource efficiency, leading to the behavioural change of the citizens and change in production patterns.

Q-1 Does central government have official dialogue with multi-stakeholders in the process to formulate 3R-related policies and regulations? Which stakeholders are involved in the dialogue?(Please check all applicable)

☐ NGOs   ☐ Industrial Association

☒ Local Government   ☐ Academic Institution

☐ Others, please add/specify (   )

Q-2 What is the level of NGOs' involvement in 3R, sustainable production and consumption, resource efficiency related promotional activities? (Please check the appropriate box)

☐ Very high   ☐ Moderate   ☒ Low   ☐ Almost Negligible

Q-3 What is the level of citizens' awareness on beneficial aspects of 3R, sustainable production and consumption and resource efficiency. (Please check the appropriate box)

☐ Very high   ☒ Moderate   ☐ Low   ☐ Almost Negligible

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

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Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country?   ☐ Highly   ☐ Partially   ☐ Not at all

IV. 3R Goals for Cross−cutting Issues

Goal 21	**Integrate the 3Rs** in formal education at primary, secondary, and tertiary levels as well as non-formal education such as community learning and development, in accordance with Education for Sustainable Development.

Q-1 Provide a list of formal programmes that addresses areas of 3R and resource efficiency as part of the academic curriculum.

- Department of Natural resource and environment Vientiane capital and Vientiane Urban Development Administration Authority

Q-2 Please provide an overview of the Government policies and programmes to promote community learning and development (non-formal education) on 3R and sustainable waste management.

Q-3 Please provide a list of academic and research institutions offering PhD programmes in the areas of 3Rs and resource efficiency?

Q-4 Please provide a list of management institutions (offering BBA / MBA courses) which have integrated resource efficiency and life cycle assessment (LCA) as part of their curriculum or course development?

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly ☐ Partially ☐ Not at all

IV. 3R Goals for Cross-cutting Issues

Goal 22	**Integrate the 3R concept** in relevant policies and programmes, of key ministries and agencies such as Ministry of Environment, Ministry of Agriculture, Forestry and Fisheries, Ministry of Industry, Ministry of Trade and Commerce, Ministry of Energy, Ministry of Water Resources, Ministry of Transport, Ministry of Health, Ministry of Construction, Ministry of Finance, Ministry of Labour, Ministry of Land and Urban Development, Ministry of Education, and other relevant ministries towards transitioning to a resource-efficient and zero waste society.

Q-1 Please list the name of the Ministries and major Government Agencies which are promoting 3R and resource efficiency as part of their policy, planning and developmental activities at local and national level.

- Ministry of Public Works and Transport (MPWT)
- Ministry of Natural Resource and Environment.
- Ministry of Planning and Investments (MPI)
- Ministry of Finance (MOF)
- Ministry of Health (MOH)
- Ministry of Industry and Commerce (MIC)
- Ministry of Energy and Mining (MEM)
- Ministry of Agriculture and Forestry (MOA)

Q-2 What type of coordination mechanism are there among ministries and agencies for a resource efficient economic development?

☒ Official regular coordination meeting among ministries and agencies

☐ Official ad-hoc coordination meeting among ministries and agencies

☒ Informal meeting among ministries and agencies

☐ Other coordination mechanisms (please add/specify)

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country?   ☐ Highly   ☐ Partially   ☐ Not at all

IV. 3R Goals for Cross−cutting Issues	
Goal 23	Promote **green and socially responsible procurement** at all levels, thereby creating and expanding 3R industries and markets for environmentally-friendly goods and products.

Q-1 What specific policies are introduced to promote green and social responsible procurement? (No information Available)

Q-2 Please provide details of eco-labelling schemes of your country.

Q-3 Please provide a list of criteria for eco-labeled products and services in your country.

Q-4 Please provide the list of Ministries and major Government Agencies which have adopted green procurement policy.

Q-5 What % of municipalities have adopted the green procurement policy?

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly   ☐ Partially   ☐ Not at all

IV. 3R Goals for Cross-cutting Issues	
Goal 24	**Phase out harmful subsidies that favour unsustainable use of resources (raw materials and water) and energy**, and channel the freed funds in support of implementing the 3Rs and efforts to improve resource/energy efficiency.

Q-1 Are there any government subsidy programmes that directly or indirectly favour unsustainable use of resources (raw materials, water, and energy)? If so, please provide a list of such programmes along with the responsible Ministry or Agency administering and implementing it.

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly ☐ Partially ☐ Not at all

IV. 3R Goals for Cross−cutting Issues	
Goal 25	**Protect public health and ecosystems, including freshwater and marine resources by eliminating illegal** activities of open dumping, including dumping in the oceans, and controlling open burning in both urban and rural areas.

Q-1 Is waste management a public health priority in your country?
(No information Available)

Q-2 What are the rules and regulations to prevent open dumping and open burning of waste?

Q-3 Rank the five most important rivers in terms of water quality (BOD values) passing through major cities and urban areas?

Q-4 What are the specific laws, rules and regulations in place to prevent littering in river and water bodies?

Q-5 What are the specific laws, rules and regulations in place to prevent marine littering?

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly   ☐ Partially   ☐ Not at all

IV. 3R Goals for Cross−cutting Issues	
Goal 26	Facilitate the international circulation of re-usable and recyclable resources as well as remanufactured products as mutually agreed by countries and in accordance with international and national laws, especially the Basel Convention, which contributes to the reduction of negative environmental impacts and the effective management of resources.

Q-1 What are major recycling industries in your country?
(No information Available)

Q-2 Please specify the regulation on transboundary movement of hazardous waste.

Q-3 If your government has restriction on import of non-hazardous waste or quality control of non-hazardous waste, please list it up.

Q-4 Does your government restrict import of remanufactured goods?

Q-5 Does your government regard remanufactured goods as secondhand goods, and regulate it as secondhand goods?

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly ☐ Partially ☐ Not at all

IV. 3R Goals for Cross−cutting Issues

Goal 27	Promote data collection, compilation and sharing, public announcement and application of statistics on wastes and the 3Rs, to understand the state of waste management and resource efficiency.

Q-1 Please give an overview on availability of various data and information on material flow and waste management by checking (X or ✓) the appropriate boxes. (Please respond on both "Data Availability" and Monitoring Base")

Data Type	Data Availability			Monitoring Base	
	Good	Very limited	No data exist	Good	Not good
Waste generation	✓				
Material flow		✓			
Cyclical use		✓			
Amount of final disposal		X			
Disposal to land	X				
Direct disposal to water		X			
Import of waste		X			
Export of waste	✓				
Total landfilled waste	✓				
Import of recyclables	X				
Export of recyclables	X				
Hazardous waste generation (solid, liquid, sludge, etc.)	✓				
e-waste generation		✓			

(Please add any other date type relevant to your country)

Q-2 What are the current and planned government policies and programmes to strengthen data and information availability in waste sector?

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly   ☐ Partially   ☐ Not at all

IV. 3R Goals for Cross−cutting Issues
Goal 28 Promote heat recovery (waste-to-energy), in case wastes are not re-usable or recyclable and proper and sustainable management is secured.
Q-1 What are the government policies and programmes, including incentives, for waste-to-energy programmes? (No information Available)
Challenges (policy/ institutional/ technological/ financial) faced in implementation:
Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant
Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)
Is this Goal relevant for your country? ☐ Highly   ☐ Partially   ☐ Not at all

IV. 3R Goals for Cross−cutting Issues	
Goal 29	Promote overall regional cooperation and multi-stakeholder partnerships based on different levels of linkages such as government-to-government, municipality-to-municipality, industry-to-industry, (research) institute-to-institute, and NGO-to-NGO. Encourage technology transfer and technical and financial supports for 3Rs from developed countries to less developed countries.

Q-1 Please provide a list of on-going bilateral/multi-lateral technical cooperation in 3R areas? (No information Available)

Q-2 What actions are being taken to promote inter-municipal or regional cooperation in areas of waste exchanges, resource recovery, recycling, waste-to-energy and trade of recyclables?

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly ☐ Partially ☐ Not at all

IV. 3R Goals for Cross−cutting Issues	
Goal 30	Pay special attention to issues and challenges faced by developing countries including SIDS in achieving sustainable development.

Q-1 Please describe any past and on-going cooperation with SIDS (Small Island Developing States) countries in 3R areas. (No information Available)

Q-2 Please list 3R related projects linked to climate change, biodiversity, disaster management and sustainable tourism. (This is <u>to be reported by SIDS countries only</u>)

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly   ☐ Partially   ☐ Not at all

IV. 3R Goals for Cross-cutting Issues	
Goal 31	Promote 3R + "Return" concept which stands for Reduce, Reuse, Recycle and "Return" where recycling is difficult due to the absence of available recycling industries and limited scale of markets in SIDS, especially in the Pacific Region.

Q-1 What specific policies, programme, including pilot projects, are implemented to promote 3R+ "Return" concept? (This is to be reported by SIDS countries only)

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly ☐ Partially ☐ Not at all

IV. 3R Goals for Cross−cutting Issues

Goal 32	Complete elimination of illegal engagement of children in the **informal waste sector** and gradually **improve** the working conditions and livelihood security, including **mandatory provision of health insurance**, for all workers. (NA)

Q-1 What is the approximate market size (in US$) of the informal waste sector?

Q-2 Number of annual labor inspections in waste sector?

Q-3 Is health insurance a mandatory to all informal workers in waste sector by law?

Q-4 What specific policies and enforcement mechanisms are in place to prevent illegal engagement of children in waste sector?

Q-5 Number of landfill sites accessible to register waste pickers?

Q-6 Average life span of informal waste workers?

Q-7 Any government vaccination programmes for informal waste workers?

Q-8 Any public awareness programmes for informal waste workers on health and safety measures?

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programs/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly   ☐ Partially   ☐ Not at all

IV. 3R Goals for Cross−cutting Issues	
Goal 33	Promote 3Rs taking into account gender considerations.(No information Available)

Q-1 Please give a brief assessment on how the national, provincial and municipal governments incorporate gender considerations in waste reduction, reuse and recycle.

Challenges (policy/ institutional/ technological/ financial) faced in implementation:

Examples of pilot projects, master plans and/or policies developed or under development – include websites where relevant

Important policies/programmes/projects/master plans the government plans to undertake within next five years (2016~2021)

Is this Goal relevant for your country? ☐ Highly   ☐ Partially   ☐ Not at all

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Q- Please provide a brief comprehensive summary of important 3R and resource efficiency policies /programmes/ projects/ master plans of your country.