

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

City Report

(Draft)

< Kozhikode, Kerala, India >

This city report was prepared by Kozhikode, Kerala, India as an input for the Eighth Regional 3R Forum in Asia and the Pacific. The views expressed herein do not necessarily reflect the views of the United Nations.

EIGHTH REGIONAL 3R FORUM IN ASIA AND THE PACIFIC
9-12 April 2018, Indore, Madhya Pradesh, India

CITY REPORT: [City Name: _____]

Guideline for City Reporting on Major Initiatives/Achievements in 3R areas

The main objective of the City Reporting is to share among international community the progress, achievements and best practices, including various challenges faced, in the areas of **3R (Reduce, Reuse, Recycle)** and sustainable waste management. This would help development agencies, donors, including development banks, in assessing the needs and challenges of cities to better plan their existing and future capacity building programmes and operations in the field of 3Rs and sustainable waste management.

It would be appreciated if a consolidated city report could kindly be prepared by answering the following questions and submit to the **Secretariat of the Regional 3R Forum in Asia and the Pacific** by email to 3R@uncrd.or.jp

Timeline for submission: **10 February 2018**

Secretariat of the Regional 3R Forum in Asia and the Pacific
 United Nations Centre for Regional Development

CITY REPORT: [City Name: <u>Kozhikode, Kerala, India</u>]	
Q 1	<p>What are the roles of local government stipulated in the 3R-related policies, acts, laws, or regulations?</p> <p>Local self governments have the primary responsibility to perform the following roles as stipulated in the 3 R related policies, acts and laws-</p> <p>1) To assess the waste generated in the Area of the local self government institution. This assessment should be based on the various types of wastes generated. The assessment report should have the following-</p> <ul style="list-style-type: none"> • Types of the wastes generated • Quantity of wastes generated in each type • Quantity of waste generated ward wise, house wise and shop wise • Per Capita waste generation • Waste generated by residents and Waste generated by the floating population • Quality of waste Generated <p align="right">As most of the local bodies do not have any assessment on waste generated,</p>

EIGHTH REGIONAL 3R FORUM IN ASIA AND THE PACIFIC
9-12 April 2018, Indore, Madhya Pradesh, India

CITY REPORT: [City Name: _____]

	<p>it is difficult to plan a suitable waste management strategy. A report on assessment will help to frame policies on waste management including 3R related policies. Information on future quantities and characterization of waste is essential as this determines the appropriateness of different waste management and treatment options.</p> <p>2) Keeping records</p> <p>Keep records of the quantity and quality of wastes generated before and after implementation of any waste management activity helps in deriving policies, framing acts and rules, and forming regulations accordingly.</p> <p>3) Coordination of resources</p> <p>The Local body by itself cannot find out all the resources for Waste management. However, it's the ULBs responsibility to find out resources from various sources to effectively manage the waste generated. Even resources from private players can be made use of. Since the waste management is the prime duty of a local self government institution, coordination of all the available resources is highly essential.</p> <p>4) Encourage partnership</p> <p>Waste management strategy will be successful only if the participation of all the stakeholders ensured. The stake holders include people, peoples representatives, business organisations, industrial organisations, residential committees, government and non government agencies, etc.</p> <p>5) To form strategies, rules and regulations</p> <p>It is the prime duty of local government institutions to manage wastes generated in its area. The local government must develop adequate strategies for waste management.</p> <p>6) To act as an Implementing Agency</p> <p>The local government institution is the prime agency to implement waste management policies of the government. It should ensure that the waste management is done as per the policy of the government, as per the rules and regulations put forward by the governments time to time.</p>
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EIGHTH REGIONAL 3R FORUM IN ASIA AND THE PACIFIC
9-12 April 2018, Indore, Madhya Pradesh, India

CITY REPORT: [City Name: _____]

Q 2	Are 3R policies integrated in your city development strategy or master plan? (Please attach photo(s) of your city’s waste management facility if available.)							
	<input type="checkbox"/> Yes <p>Yes, the 3R policies have been integrated in the Master Plan for Kozhikode City Development. The goals of the city development plan include sustainable green urban development along with conserving the resources for future generations. This goal involves-</p> <ul style="list-style-type: none"> • Conservation of existing greens and promoting new greens • Preparation of a comprehensive solid waste and liquid waste • Improve urban aesthetics • Promote bio diversity conservation • Promote homestead agriculture, green manures and organic farming <p>The waste management concept centered on 3 R Principle with decentralized waste management and a futuristic proposal for producing electricity and manure from waste are the highlights of City Development Plan for Kozhikode City.</p>							
Q 3	<p>What are the major challenges and constraints faced by your city in implementing 3R policies and programmes? (Please answer only if your answer to Q2 is “Yes”)</p> <table border="1"> <tr> <td>Financial constraints:</td> <td>Implementation of 3R policies requires infra structure investments. Proper segregation, collection, transportation, storage and processing of such materials require huge investments. It is difficult for the local body alone to bear the cost of such infrastructure.</td> </tr> <tr> <td>Institutional/governance challenges:</td> <td>The implementation of ‘Reduce’ module needs strong policies, acts, rules, regulation, implementation strategy, guide lines etc. a guide line or implementation frame work which cannot be introduced in one Local Government. The policies and acts should be formed at State level.</td> </tr> <tr> <td>Policy gaps:</td> <td>There are many contradictions in industrial policy and waste management policy. The industrial policy addresses only on the pollution due to the operation of industry. It does not cover the pollution due to the product. There should be a policy that the product which damages our environment should not be produced. Secondly, there are certain flaws in Extended Producer Responsibility because of which the implementation of the same is found difficult.</td> </tr> </table>		Financial constraints:	Implementation of 3R policies requires infra structure investments. Proper segregation, collection, transportation, storage and processing of such materials require huge investments. It is difficult for the local body alone to bear the cost of such infrastructure.	Institutional/governance challenges:	The implementation of ‘Reduce’ module needs strong policies, acts, rules, regulation, implementation strategy, guide lines etc. a guide line or implementation frame work which cannot be introduced in one Local Government. The policies and acts should be formed at State level.	Policy gaps:	There are many contradictions in industrial policy and waste management policy. The industrial policy addresses only on the pollution due to the operation of industry. It does not cover the pollution due to the product. There should be a policy that the product which damages our environment should not be produced. Secondly, there are certain flaws in Extended Producer Responsibility because of which the implementation of the same is found difficult.
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EIGHTH REGIONAL 3R FORUM IN ASIA AND THE PACIFIC
9-12 April 2018, Indore, Madhya Pradesh, India

CITY REPORT: [City Name: _____]

	Other challenges such as technical capacity, human resources etc.:	In Kerala, the local self government institutions do not have experts in its crew to tackle waste management problems. Also, the reluctance of general public to have a waste segregation centre in their locality acts as a hurdle for effective implementation of 3 R. Awareness and creation of a sense of responsibility among the general public as to self management of waste is also a long drawn process.
Q 4	What programme is in place in your city in support of NGOs activities towards promotion of 3Rs?	
<p>In Kozhikode Corporation, Kudumbasree, a community based organization plays a big role in waste management. There are 70 Kudumbasree self help groups engaged in house to house collection of waste. They have been collecting bio degradable wastes from houses and commercial establishments.</p> <p>Kudumbasree has played a big role in promoting and establishing decentralised waste processing plants such as biogas plants and household composting plants. They have played a great role in creating awareness among the people about the importance of reducing wastes. There are enterprising groups who started rental shops which reduce usage of paper cups and glasses in various functions and gatherings. (Reduce). More than 50% of Residents Associations have realized the hazardous role of using disposable plates and glasses in functions gatherings. They began to use washable and reusable plates and glasses made up of steel or glass. They began to avoid flex boards, decorative made up of plastic and other non bio degradable materials. The merchants associations, Industrial organizations etc are also aware of the menaces of waste accumulation and hence they are ready to take useful steps in reducing the amount of waste generated. Many of them have stopped free distribution of plastic carry bags.</p> <p>Kudumbasree was also engaged in running swap shops. Swap shops are based on a concept that the used articles which is unfit for the owner will fit for somebody else. The owner will be ready to sell the used article for a lesser price or even free and the person who found it useful will be ready to buy it for a lesser price or even free (Reuse).</p> <p>Niravu, an NGO in Kozhikode Corporation is successfully running a plastic recycling plant in the city. The plant was established by the Corporation and running contract is awarded to Niravu. (Recycle). This plant processes plastic of about 2tons per day.</p> <p>There are many other groups including private players which help the Corporation in promoting 3R. There are more than 100 scrap dealers in the city who deal with old scraps and dry recyclable materials. There are more than 600 rag pickers who assist the Corporation in maintaining the streets clean and intact. (Recycle) Corporation is planning to rehabilitate these rag pickers by organizing them into self help groups.</p>		

EIGHTH REGIONAL 3R FORUM IN ASIA AND THE PACIFIC
9-12 April 2018, Indore, Madhya Pradesh, India

CITY REPORT: [City Name: _____]

Q 5	Is there any collaborative 3R activities/projects/partnerships involving cities (e.g., city-to-city cooperation) and organizations at international level?			
	<input type="checkbox"/> Yes <p>A project on solid waste management was successfully implemented with the assistance of ADB in Kozhikode during 2008-2012. Through this Project, Corporation could purchase about 72 vehicles for waste collection.</p>			
Q 6	What major future prospects or opportunities does your city have in 3R areas?			
	<p>Raising awareness and educating citizens for proper waste disposal is a continuous process. Corporation is constantly in the process for conducting awareness camps for the same.</p> <p>The concept of Waste to Wealth is Corporations motto. To pursue the same, Corporation is devising varied models to enable revenue generation through rejects and waste.</p> <p>Corporation is now planning to establish MRF (Material Recovery Facilities) where all kind of recyclable materials can be stored separately. There are more than 100 Scrap Dealers in the Corporation. There are about 600 rag pickers in the Corporation who find their livelihood by scrap and dry waste collection. They are to be encouraged giving some incentives since they help the corporation in reducing its expenses in handling such wastes.</p>			
Q 7	What type of 3R infrastructure and facilities your city is equipped with? Please tick the appropriate.			
	Type of 3R infrastructure and facilities	Adequate/ Significant	If adequate, how many treatment facilities (in number)	Not-adequate / Non-significant
	✓ waste collection facility	✓	3	
	✓ waste segregation facility		1	✓
	✓ waste storage facility	✓	1	
	✓ waste processing & treatment facility	✓	1	<input type="checkbox"/>
	✓ resource recovery facility		1	✓
	✓ waste recycling facility	✓	1, 3 proposed	

EIGHTH REGIONAL 3R FORUM IN ASIA AND THE PACIFIC
9-12 April 2018, Indore, Madhya Pradesh, India

CITY REPORT: [City Name: _____]

	<input type="checkbox"/> waste to energy facility	<input type="checkbox"/>	Proposed	✓
	<input type="checkbox"/> eco-industrial zones	<input type="checkbox"/>		<input type="checkbox"/>
	<input type="checkbox"/> science parks/theme parks relevant to 3R	<input type="checkbox"/>		<input type="checkbox"/>
	<input type="checkbox"/> others (please specify: _____)	<input type="checkbox"/>		<input type="checkbox"/>
Q 8	Kindly provide the important 3R policies/programmes/projects/master plans that your City Government plans to undertake within next five years (2017-2022).			
	<ol style="list-style-type: none"> 1. Deployment of Haritha Sena- (Recycle) This is a wing of kudumbshree (SHG) who will be incharge of door to door collection of non biodegradable waste and reaching it to MRFs (Material Recovery Facilities). They will act as green technicians and help the households to run biogas and composting plants in their localities. 2. Ward wise wet waste management through ring compost and biogas with the help of Residents Associations. 3. Plastic Shredding and Bailing Unit – (Recycle) One Plastic shredding Unit is functional and three more are proposed implying that about 8tons of Plastic would be shredded and bailed per day. 4. Permanent Swap Shops- (Reuse) Swap shops are places where people can give up their old belongings which would be in turn sold at a nominal rate to the needy. These shops would be run by Kudumbshree. 5. IEC programmes (Reduce)- Constant awareness and educational programs are conducted by Corporation Health wing for the citizens educating them regarding the importance of 3Rs. 6. Strict Enforcement of law- Kerala Municipal Act has clear provisions as to the punishments for improper waste disposal by individuals and institutions. To strictly implement those, the Corporation health wing is very active in conducting 24*7 inspections and imposing fines and punishments to the perpetrators. Night squads are also operational in all wards of the city to check improper waste disposal happening during late hours. 			
Q 9	In response to the 2030 Agenda for Sustainable Development, in particular <i>SDG 6 (Water and Sanitation)</i>, <i>SDG 11 (Make cities and human settlements inclusive, safe, resilient and sustainable)</i> and <i>SDG 12 (Ensure sustainable consumption and production patterns)</i>, how your City is planning to advance 3R and resource efficiency related measures?			

EIGHTH REGIONAL 3R FORUM IN ASIA AND THE PACIFIC
9-12 April 2018, Indore, Madhya Pradesh, India

CITY REPORT: [City Name: _____]

	<p>SDG 6 - Ensure availability and sustainable management of water and sanitation for all.</p> <ol style="list-style-type: none"> 1) State government has successfully implemented JAICA Project (Japan aided Program) to provide adequate safe drinking water to all the citizens in the city till 2030. 2) As a part of AMRUT, almost 7 decentralized sewerage and Septage treatment plants are underway which are expected to be functional in a year or so. 3) An inclusive storm water drainage networking system is under implementation through AMRUT of over 70kms. <p>SDG 11 - Make cities and human settlements inclusive, safe, resilient and sustainable</p> <p>With assistance from Centre through AMRUT and Swatch Bharat Mission and from State government through Suchitwa Mission, Haritha Keralam Project, Corporation is moving towards the goal of safe, resilient and sustainable city. Through Coporation fund, Project for ABC (Animal Birth Control) is being implemented to deal with the menace of stray dogs. Improvement of existing toilet facilities and construction of new toilets is also being undertaken.</p> <p>SDG 12- Ensure sustainable consumption and production patterns</p> <p>Achieving economic growth and sustainable development requires changes in the way we produce and consume goods and resources. The efficient management of our shared natural resources and the way we dispose of toxic wastes and pollutants are important targets to achieve this goal. Encouraging industries, business firms and consumers to reduce, reuse and recycle is equally important. Awareness and educational classes are being conducted by Corporation for the same. A large share of the world population is still consuming far too little to meet their basic needs. Per capita global food waste at the retailer and consumer levels is also important for creating more efficient production and distribution systems. The Corporation with district administration is running a program for Hunger free Kozhikode called Operation Sulaimani.</p>				
Q 10	<p>What are the main challenges in your city concerning clean water, clean land and clean air? (Please answer the below points)</p> <table border="1"> <tr> <td></td> <td>Yes</td> <td>If yes, kindly write frequency of analyzing (number per month)</td> <td>No</td> </tr> </table>		Yes	If yes, kindly write frequency of analyzing (number per month)	No
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EIGHTH REGIONAL 3R FORUM IN ASIA AND THE PACIFIC
9-12 April 2018, Indore, Madhya Pradesh, India

CITY REPORT: [City Name: _____]

	Do you regularly analyze the air pollution in laboratories (NOx, air particles and other pollutants)?	Yes		<input type="checkbox"/>
	Do you regularly analyze the water contamination through chemically and biologically test (DO, heavy metal and microbial water quality)?	Yes		
	Do you regularly analyze the soil pollution (disposal of hazardous and chemical waste)?	Yes		<input type="checkbox"/>
Q 11	In response to the New Urban Agenda, in particular <i>Sustainable and inclusive urban prosperity and opportunities for all</i> and <i>Environmentally sustainable and resilient urban development</i>, how your City is planning to contribute to safe, inclusive and resilient city building related to 3R and sustainable waste management areas?			
	<p>Kozhikode is the first city in the state of Kerala to implement door to door collection of waste based on Solid Waste Management rules 2000. It has deployed women 70 Self Help Groups consisting of 700 women to collect segregated waste from houses and commercial establishments by imposing user charges. The city Corporation has provided all sorts of infrastructure for waste collection and segregation in the form of three Super MRFs (Material Recovery Facilities) where waste amounting to almost 25-50 metric tons of non biodegradable waste is segregated. It is the only Municipal Corporation in Kerala with a successfully running Windrow Composting Plant which converts almost 60-80metric tons of organic waste which transported by Corporation into manure which is marketed. It is earning Corporation revenue of Rs. 50,000 per month. It's a unique plant based on Carbon credits model which earns Corporation around Rs. 11 lakhs per annum.</p> <p>Corporation has also established biogas plants in public places as well as in public institutions like schools and households.</p> <p>The usage of plastic carry bags less than 50 Microns has strictly been banned (Reduce). A special squad was formed in order to control the usage of Plastic carry Bags.</p> <p>Corporation has successfully created awareness about implementation of Green Protocol. By virtue of the same, use of disposables in all public and private functions is discouraged. More than 50% of Residents Associations have realised the hazardous role of using disposable plates and glasses in functions gatherings. They began to use washable and reusable plates and glasses made up of steel or glass. They began to avoid flex boards, decorative made up of plastic and other non bio degradable materials. The merchants associations, Industrial organisations etc are also aware of the menaces of waste accumulation and hence they are ready to take useful steps in reducing the amount of waste generated. Many of them have stopped free distribution</p>			

EIGHTH REGIONAL 3R FORUM IN ASIA AND THE PACIFIC
9-12 April 2018, Indore, Madhya Pradesh, India

CITY REPORT: [City Name: _____]

	<p>of plastic carry bags.</p> <p>Kudumbasree has played a big role in promoting and establishing decentralised waste processing plants such as biogas plants and household composting plants. They have played a great role in creating awareness among the people about the importance of reducing wastes. There are enterprising groups who started rental shops which reduce usage of paper cups and glasses in various functions and gatherings.</p> <p>Kudumbasree has been also engaging in running swap shops. Swap shops are based on a concept that the used articles which is unfit for the owner will fit for somebody else. The owner will be ready to sell the used article for a lesser price or even free and the person who found it useful will be ready to buy it for a lesser price or even free. Such swap shops are planned at various locations in the city.</p> <p>Kozhikode Corporation generates about 25tons of chicken slaughter waste per day. To treat the same, Corporation has come up with a unique venture through PPP mode with a private company. The rendering plant which would be functional within 3months period would convert all the chicken slaughter waste into value added products like chicken oil, pet food, etc. Corporation would earn revenue of about 1lakh rupees per month in the first year through this. It would also solve the problem of improper disposal of slaughter waste and the dog menace arising thereof.</p> <p>In line with the Central government’s direction, a fully modern and automated Slaughter House is proposed in the Corporation which would have the capacity of processing about 150 big animals and 75 small animals per day. This slaughter house would be equipped with a rendering plant and an ETP which would manage all the solid and liquid waste generated in the slaughter house.</p> <p>Corporation is successfully conducting the campaign of State Government emphasizing on individual responsibility for individual waste.</p>
Q 12	<p>[For Indian cities only], how is your city linking 3R (Reduce, Reuse and Recycle) to the Swachh Bharat Mission (Clean India Mission)? Do you think circular economic utilization of all waste streams in India would accelerate faster achievement of Swachh Bharat Mission? If so, is your city equipped with required 3R policies, programmes and infrastructures towards circular economic utilization of the waste streams?</p>
	<p>Yes. All the projects initiated and implemented by Kozhikode Corporation are in line with Swachh Bharat Mission.</p>

EIGHTH REGIONAL 3R FORUM IN ASIA AND THE PACIFIC
9-12 April 2018, Indore, Madhya Pradesh, India

CITY REPORT: [City Name: _____]

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