



# Country Breakout Group 4



## 3R in Pakistan

Achievements/initiatives, challenges and major plans



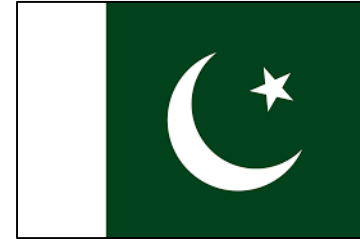
National Productivity Organization

# Outline

- **Country Profile**
- **Major achievements/new initiatives in 3R areas**
- **Critical challenges**
- **Major plans, including mega-projects and master plans, in pipeline for future action**

# Pakistan's Country Profile

Population (Million)	188.92
Population Density (People Per Sq. KM)	245
GDP, Per Capita (US\$)	1,430
GDP Per Capita PPP (US\$)	5,040
GDP (Billion US\$)	270
CO2 emissions (metric tones per capita), 2013	0.85
Fossil fuel energy consumption (% of total), IEA Stats 2014	60.08
Renewable energy consumption (% of total final energy consumption) , IEA Stats 2013	45.49



# National Policies addressing 3R

## Policies directly and indirectly addressing 3R:

- The Pakistan Environmental Protection Act 1997
- National Environment Policy 2005
- National Sanitation Policy 2006
- National Climate Change Policy 2012
- National Development Strategy 2012
- Hospital Waste Management Rules 2005 & 2014
- Punjab Environmental Policy 2015
- Draft Hazardous Waste And Hazardous Substances Rules, 2016
- Draft Pakistan Environmental Protection Motor Vehicle Regulations 2016

# 3R Stakeholders

- The concept of 3Rs is managed through combination of formal (public and private) and informal sector.
- Key Ministries/Institution working on 3R related areas:
  - Ministry of Climate Change,
  - Ministry of Industries & Production,
  - Ministry of Water & Power,
  - Pakistan Environmental Protection Agency (Pak-EPA),
  - Pakistan Council Of Renewable Energy Technologies (PCRET),
  - Alternate Energy Development Board (AEDB),
  - National Productivity Organization (NPO),
  - National Energy Conservation Centre (ENERCON),
  - Others

# Major Achievements / Initiatives

## Public Sector

### Establishment of Lahore Waste Management Company (LWMC) in cooperation with Turkey.

- Responsible for Solid Waste Collection, Transportation and Disposal etc.
- Modern corporate practices
- New era of modern integrated Solid Waste Management (SWM)



## **Major Achievements / Initiatives Public Sector (...contd)**

Establishment of following companies by Government of Punjab in collaboration with different stakeholders

- Multan Waste Management Company
- Rawalpindi Waste Management Company
- Sialkot Waste Management Company
- Bahawalpur Waste Management Company
- Gujranwala Waste Management Company
- Faisalabad Waste Management Company

# Major Achievements / Initiatives

## Public Sector (...contd)

### Solid Waste Management Strategy for Tehsil Municipal Administration (TMA) Barikot, Khyber Pakhtunkhwa (KPK)

- Project implemented in 2014 by GIZ (German Cooperation) at Barikot, KPK.
- To transform Solid Waste into a viable and competitive industry relying upon a locally generated resource base. The strategy was developed to be implemented for five years and targeted 50% waste efficiency.
- The Barikot SWM strategy is based upon following four-pronged approach:
  - Strengthening the institutional capacity of the Tehsil Municipal Administration (TMA) Barikot to better manage their solid waste problem
  - Engaging major local stakeholders in the implementation of the strategy
  - Utilisation of appropriate technical options to reduce, reuse & recycle waste
  - The promotion of good governance and utilization of available legal frameworks



# Major Achievements / Initiatives

## Public Sector (...contd)

### Resource Efficiency / Clean Technology Projects

- Energy Standards and Labeling Scheme
- National Energy Efficiency and Conservation Awards 2015-16
- A study on Sustaining Growth: Cleaner Production in Pakistan
- Energy Efficiency Project for Textile Sector
- Energy Efficiency Project for Steel Sector
- Energy Efficiency in Buildings
- Cleaner Technology Program for Korangi Tanneries
- Environmental Technology Program for Industry
- Introduction of Cleaner technologies in Punjab Tanneries

# Major Achievements / Initiatives

## Public Sector (...contd)

### Energy Generation Projects...

- FFC Energy, 50 MW Wind project, Jhampir, District Thatta.
- ZorluEnerji, 56.4 MW Wind Project, Jhampir, District Thatta.
- Three Gorges Pakistan 50 MW Wind Project, Jhampir, District Thatta.
- Foundation Wind Energy–I & II Pvt. Ltd, 100 MW, Gharo Sindh.
- Sapphire Wind Power (Pvt) Limited, 49.5 MW, Sindh
- Quaid-e-Azam Solar Power (Pvt.) Limited, 100 MW, Bahawalpur.
- Pakistan Parliament, 80 MW, Islamabad

# Major Achievements / Initiatives

## Public Sector (...contd)

### Energy Generation Projects

- 2x660 MW Coal Fired Power Project, Sahiwal
- Coal Fired Power Project, Muzaffargarh
- Coal Fired Power Project, Rahim Yar Khan
- Solar PV Power Plant at Punjab
- Marala (Lucky HPP)(Chenab) District Sialkot

# Major Achievements / Initiatives

## Contribution of Private Sector

### Establishment of Lahore Compost (Pvt.) Ltd.

- A public private project; utilizes organic content of Municipal Solid Waste of Lahore City, mainly consisting of household kitchen waste, to convert it into compost (organic soil supplement), commonly known as Compost Fertilizer, through a process of 60 to 90 days of aerobic composting.
  - Saving in waste handling cost (USD 6,500 per day)
  - Environmentally safe waste disposal

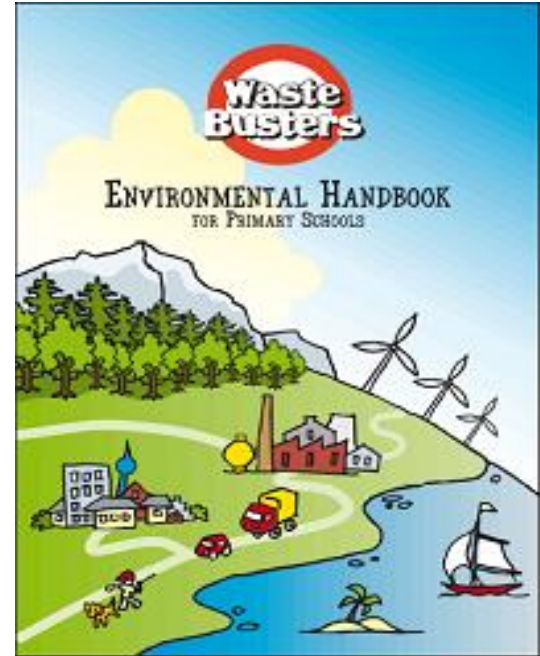


# Major Achievements / Initiatives

## Contribution of Private Sector (...contd)

### Establishment of Waste Busters

- Waste Busters is an independent private sector waste Management Company
- Offices located at Lahore, Karachi, Islamabad, Faisalabad, Gujrat, Peshawar, Quetta
- Segregate and recycle all the collected waste into various product streams such as Refuse Derived Fuel, organic fertilizers as well as recycled plastic and tetrapak products.



# Major Achievements / Initiatives

## Contribution of Private Sector (...contd)

### Sale of Waste Contract (Refused Derived Fuel)

- LWMC signed an agreement with the M/s DG Khan cement in August 2011 for sale of waste.
- M/s D G Khan cement has built a Refuse Derived Fuel (RDF) plant for processing of 1000 tons of municipal waste. RDF is largely combustible components of municipal waste such as plastics and biodegradable waste. DG Khan Cement uses RDF in its cement plants as an additive fuel with coal.



# Major Achievements / Initiatives

## International Agencies

- The Global Cleantech Innovation Programme (GCIP)
  - Aims at developing a sustainable entrepreneurship ecosystem while supporting clean technology innovations in SMEs and startup entrepreneurs.
  - Funded by the Global Environment Facility (GEF) and implemented by the United Nations Industrial Development Organization (UNIDO) with the support of local and international partners.
- Green Jobs promotion program for construction, tourism and energy sectors by International Labour Organization (ILO)
- WWF- Pakistan Green Office Initiative aims to greening office and business practices including green and socially responsible procurement. Some of petrochemical plants are already on Green Office.

# Critical Challenges

- Lack of awareness of policies
- Development of Policies
- Implementation mechanisms
- Massive population growth
- Industrial Development
- A lack of technical know-how
- Waste Agriculture Biomass (WAB) management capacities need to be built primarily within the agricultural sector.
- Awareness and understanding of the use of WAB is very poor, given that many farmers are illiterate and environmental education is non-existent
- Illegal e-waste trafficking



## Critical Challenges (...contd)

- The development of a functional SWM system requires a major investment and it may be difficult to give it priority over other resource demands such as energy. Funding from donor agencies to take lead in Waste Management can bring in a replicable moment by municipalities.
- Development of Strategy/Policy and Facilitation for establishing recycling plants including financial and institutional mechanisms needs to be focused;
- Promotion of Public Private Partnerships (PPP) and various incentives (providing land at low cost, Tax rebate, easy delivery of waste to recycling facility, etc.) needs to be realized to attract private investments.
- Source separation, Extended Producers Responsibility (EPR), awareness of people and capacity of government and private sector need to be improved.
- Already developed huge informal recycling sector should be brought under formal setting with necessary support of the government
- Lack of modern Waste Electrical and Electronic Equipment (WEEE) management facilities and mechanism

# Major Plans

- Pakistan Vision 2025
- 11th Five Year Plan 2013-18
  - Projects for promotion of generation of energy from waste
  - Urban waste water treatment plants for its reuse will be encouraged through the public-private partnership.
  - Provincial Cleaner Production Centers will be established to promote waste minimization, recycling and waste exchange.
  - To treat and recycle industrial effluents, a Wastewater Treatment Programme will be initiated in the country in collaboration with the provincial governments.
  - Installation of composting plants and scientific landfill sites
  - Bio-remedial measures will be adopted for the waste water treatment.
  - Sustainable monitoring and implementation of hospital (hazardous) waste management

# Major Plans (...contd)

- Government aims to develop more waste to energy (wte) projects such as Khairpur wte, LWMC wte projects
- Plans of Lahore Waste Management Company (LWMC)
  - Establishment of a Construction & Demolition (C&D) Waste recycling facility
  - PET recycling (collect and crush plastic (PET) bottles transforming in “PET flakes”, which is a raw material for a range of products)
  - To identify the informal waste pickers and engage them to raise their living standard, which will be achieved through cooperative (coop) model.
  - A project on slaughtered animal waste disposal and thus generating biogas from the organic waste
  - Exploring into the potential of generation of biogas from cattle’s dung. A plant has been set up at DunyaPur, Chak 342 and Ichogil. The aim is to generate biogas and provide it to the residents of the respective villages.
- Government aims to replicate the model of LWMC to other parts of the country

**Thank you**