



Promoting JCM projects in Bangladesh: sourcing out examples, opportunities and challenges

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Bangladesh at a glance



Bangladesh at a glance

Location

- Northeastern part of South east Asia
- Surrounded by India, Myanmar & Bay of Bengal

Area & Terrain

- Area: 147,570 square km
- Low flat land consisting of alluvial soil

Climatic Condition

- Hot summer with high humidity (March-June)
- Monsoon (July-October)
- Dry winter (November-February)

Bangladesh: Demographic Info

Total Population: 166.3 Million

**0-14
years
34.3%**

**15-64
years
61.1%**

**65 years
and
over
4.6%**

Economy of Bangladesh



- The country is classified as next eleven emerging market



- Potential member of frontier five



- Entering into golden era as more than 60% of population is in workable condition (age 15-65)



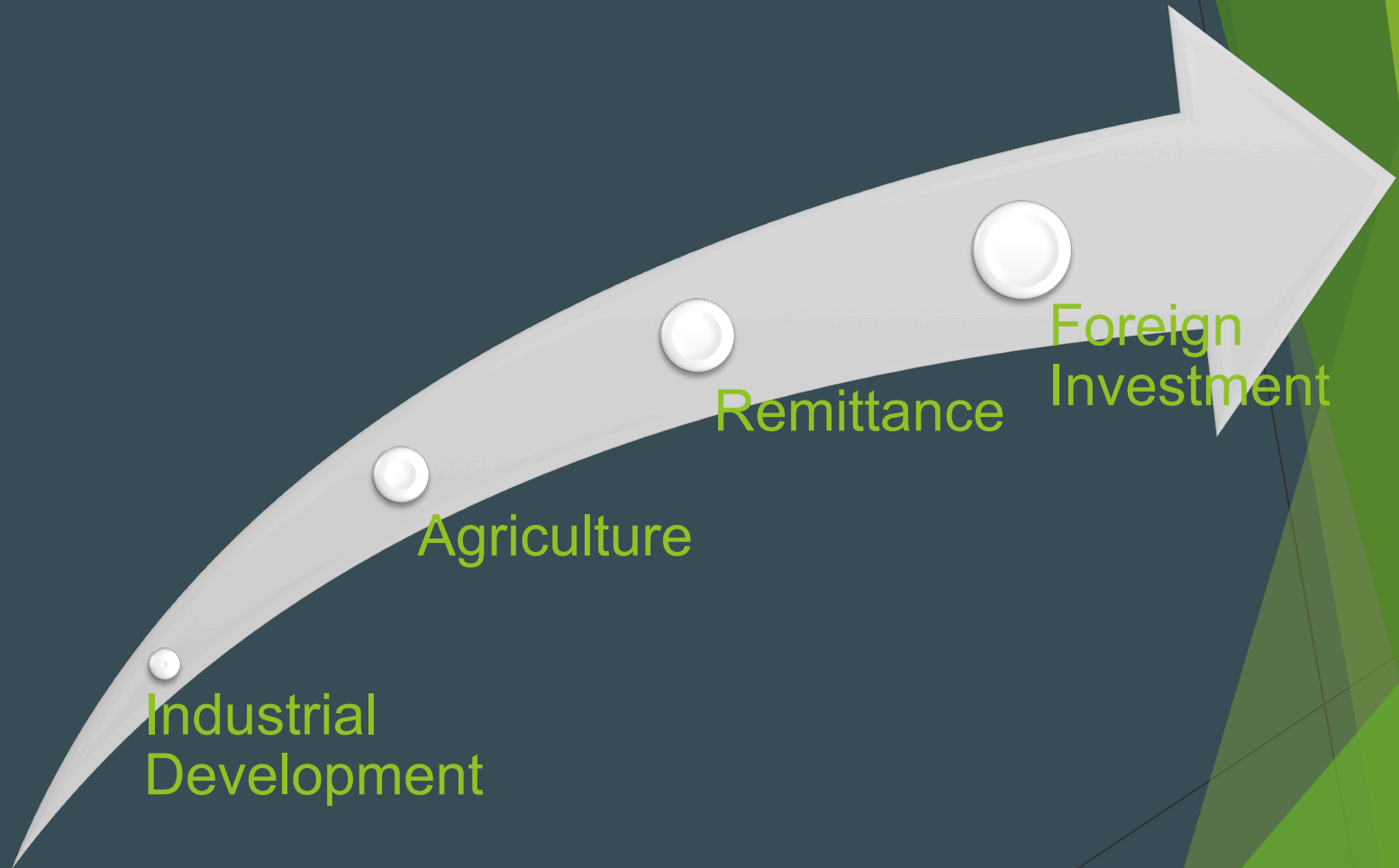
- Constant GDP growth of more than 6% has been observed throughout last 10 years

Economy: Parameters in a nutshell

Indicators	FY11		FY12		FY13		FY14		FY15
	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan
Real GDP Growth (%)	6.7	6.7	7.0	6.2	7.2	6.0	7.6	6.5	8.0
							7.2*	(6.1)	7.3*
Gross Domestic Investment (% of GDP)	24.7	25.2	26.8	26.5	29.6	26.8	31.0	26.5	32.5
								(28.7)	
Private Investment (% of GDP)	19.5	19.5	22.2	20.0	22.7	19.0	23.8	18.9	25.0
								(21.4)	
Public Investment (% of GDP)	5.3	5.6	6.6	6.5	6.9	7.9	7.2	7.6	7.5
								(7.3)	
National Savings (% of GDP)	28.4	28.8	26.7	29.2	29.4	29.5	30.7	27.8	32.1
								(30.5)	

Constant GDP Growth 6%

Driving Force of Economy



Contribution to Export Earning

Export Volume (July-December 2014)



Opportunity for Investment



- Government policy encourages foreign investors



- Infrastructural development is ongoing to create more scope



- Less ForEx risk acts as a driving factor for foreign currency financing



- Higher rate of interest from local Banks discourages sponsors

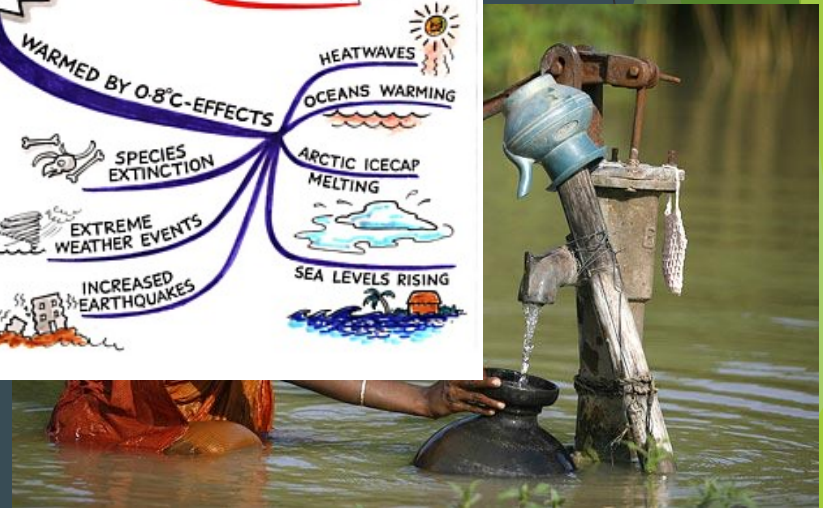
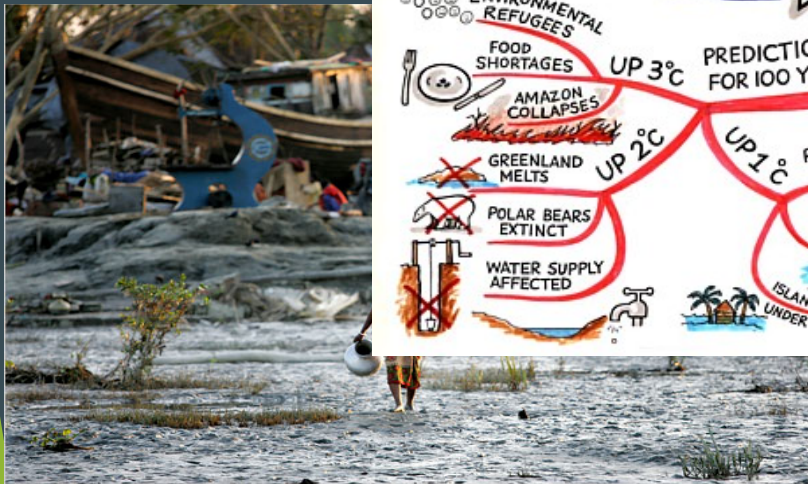
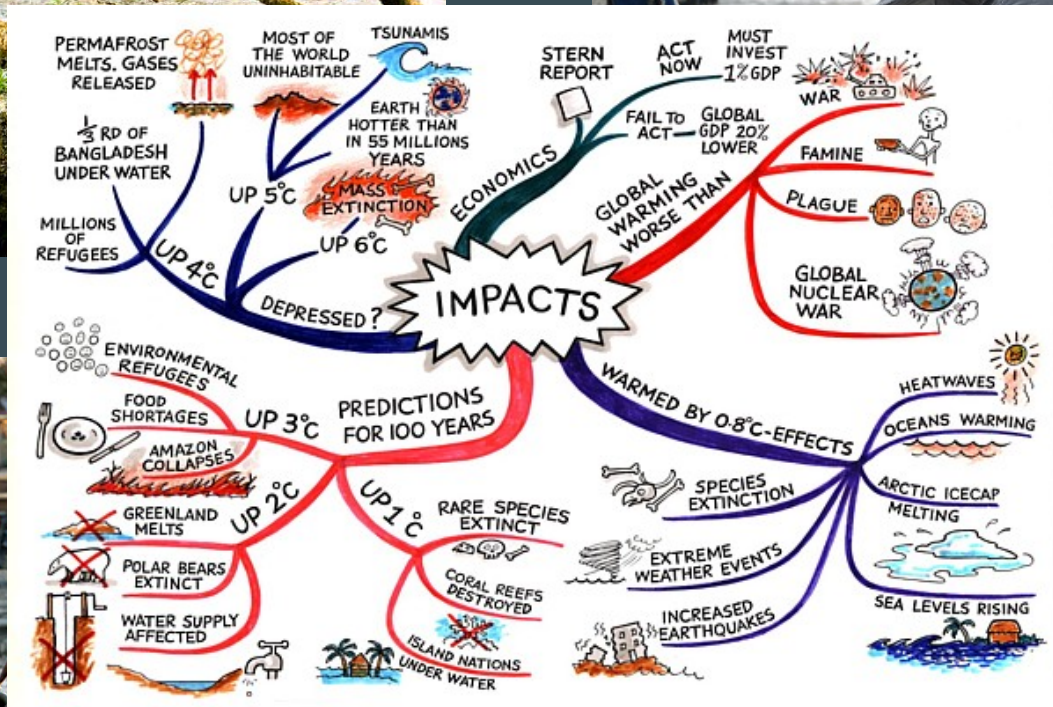
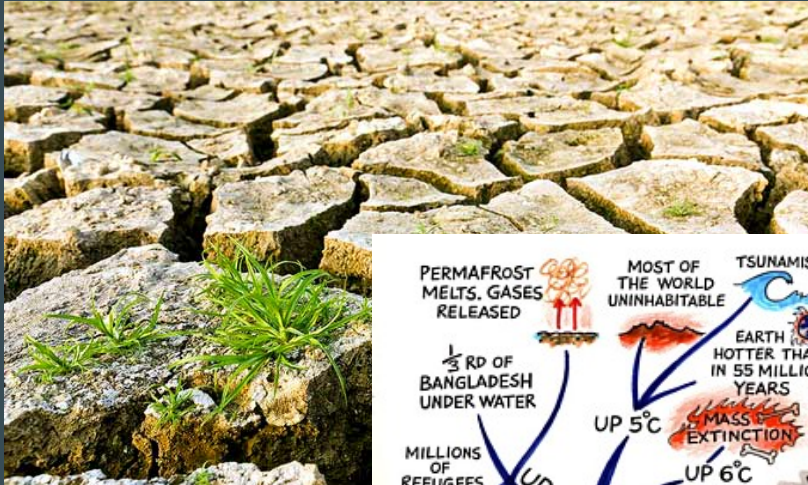
Environmental Degradation



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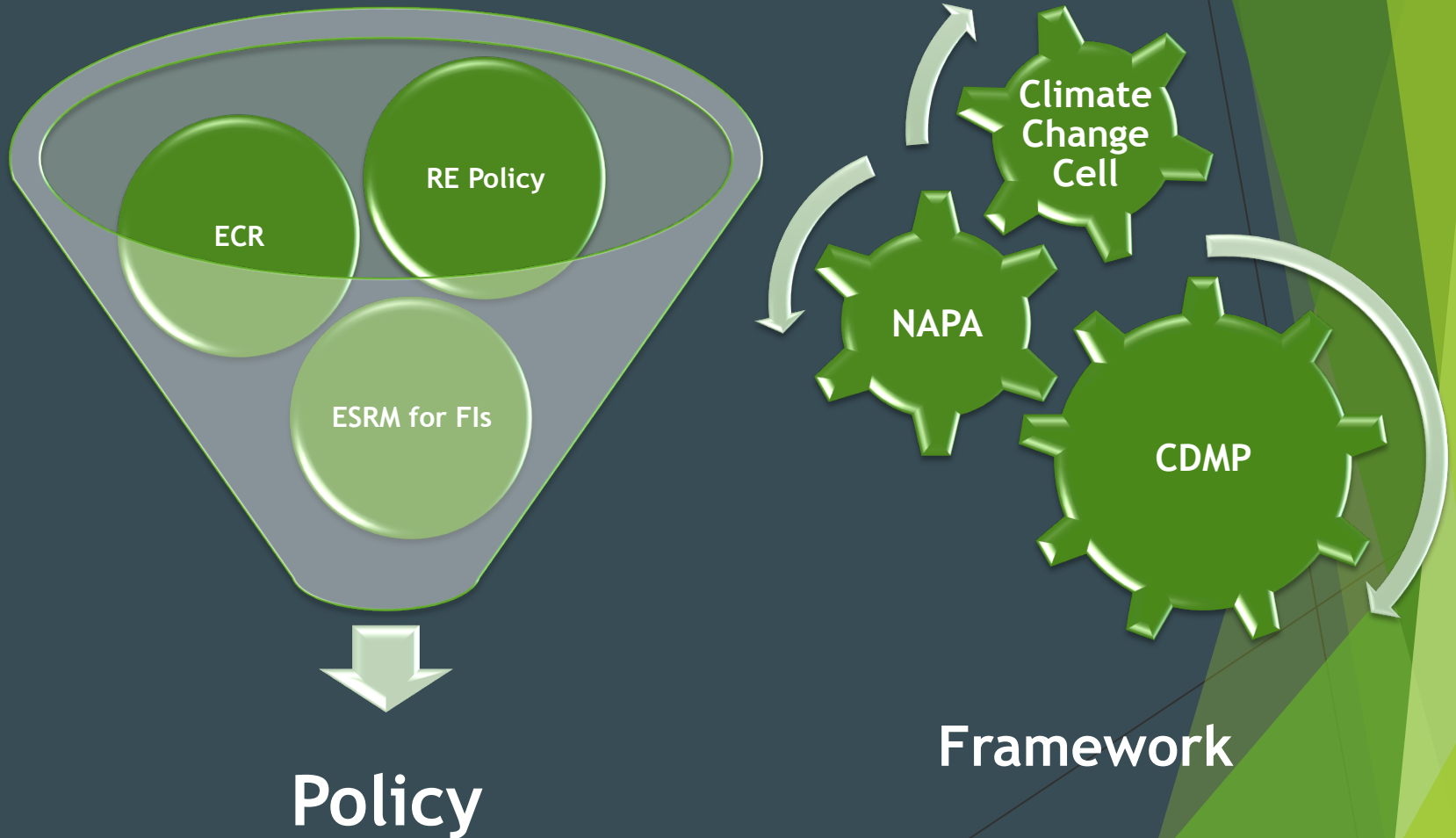


Impact Visualized




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Policy Framework-Low Carbon Society




Policy Framework-Low Carbon Society

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- Policy on RE and EE is already in place

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- Targeted contribution of RE is 5% of total power generation by 2015

- 
- By 2020, Government is planning to enhance it to 10%

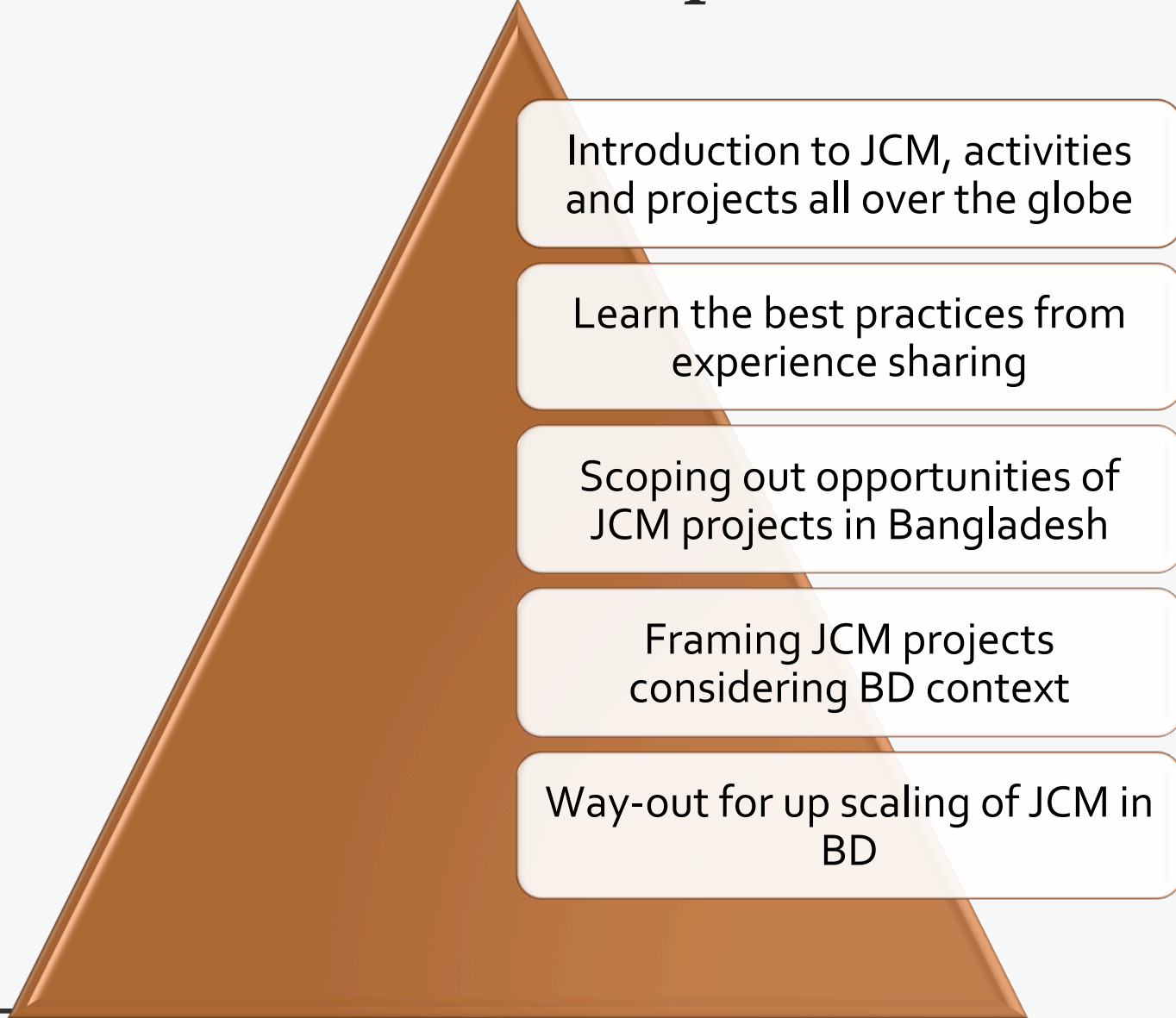
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- 6th Five year plan creates opportunity to save 10% of energy through EE

But Bottlenecks are still dominating

JCM Workshop at Thailand

- ❑ Title of the Program:
 - ❑ Workshop on 3E Nexus and Development of Joint Crediting Mechanism (JCM) Projects towards a sustainable low carbon society in Bangladesh
- ❑ Date: 20th December, 2015
- ❑ Venue: AIT Conference Centre, AIT, Thailand
- ❑ Time: 9 AM to 3 PM

JCM Workshop at Thailand



Introduction to JCM, activities and projects all over the globe

Learn the best practices from experience sharing

Scoping out opportunities of JCM projects in Bangladesh

Framing JCM projects considering BD context

Way-out for up scaling of JCM in BD

Objective of the workshop

JCM Workshop at Thailand

Bangladesh Counterpart



- Dr. Mafizur Rahman
- Md. Mehbuboor Rahman
- Md. Shahariar Kamal
- Dr. Riad Mahmud
- Shaymal Barman
- Tanvir A Siqqiqui
- Shafiqul Alam

JCM, 3E Nexus Representatives



- Prof. C. Visvanathan
- Dr. Geeta Mohan
- Dr. Junichi Fujino
- Yuki Hashimoto

Participants of the workshop

JCM Workshop at Thailand



Participants of the workshop

JCM Workshop at Thailand



Networking Tea Break

JCM Workshop at Thailand



Group Photo

JCM Workshop at Thailand

- ❑ **Opening Remarks:** Prof. C. Visvanathan, SERD, AIT delivered opening remarks to the participants
- ❑ **3E Nexus:** Dr. Geeta Mohan introduced 3E Nexus and illustrated the deliverables and objective of JCM program
- ❑ **NIES, Japan:** Dr. Junichi Fujino focused on few advices to form JCM crediting proposal and real life example of JCM projects that has already been implemented
- ❑ **Professor Dr. Mafizur Rahman:** Explained country perspective and illustrated the opportunities and challenges associated with such intervention

Presentation Agenda

JCM Workshop at Thailand

- ❑ **Md. Mehbuboor Rahman:** Scoped out few sectors and eligible interventions applicable to Bangladesh to reduce carbon emission
- ❑ **Shafiqul Alam:** Explained one case study of garment factory which is going to adopt industrial energy efficiency alternatives.
- ❑ **Closing Remarks:** Dr. Mafizur Rahman delivered closing remarks after open discussion session.

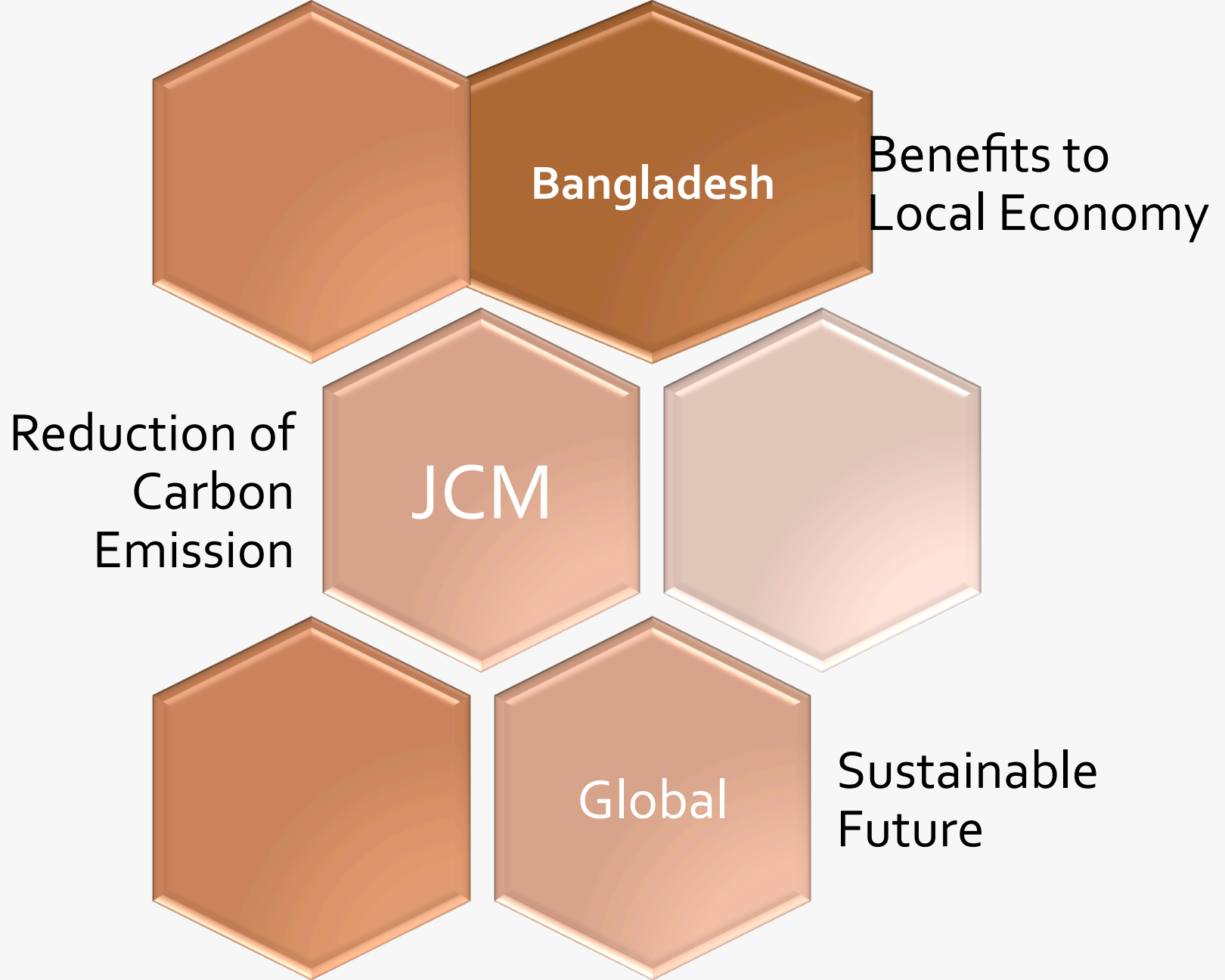
Presentation Agenda

Recommendation from Workshop

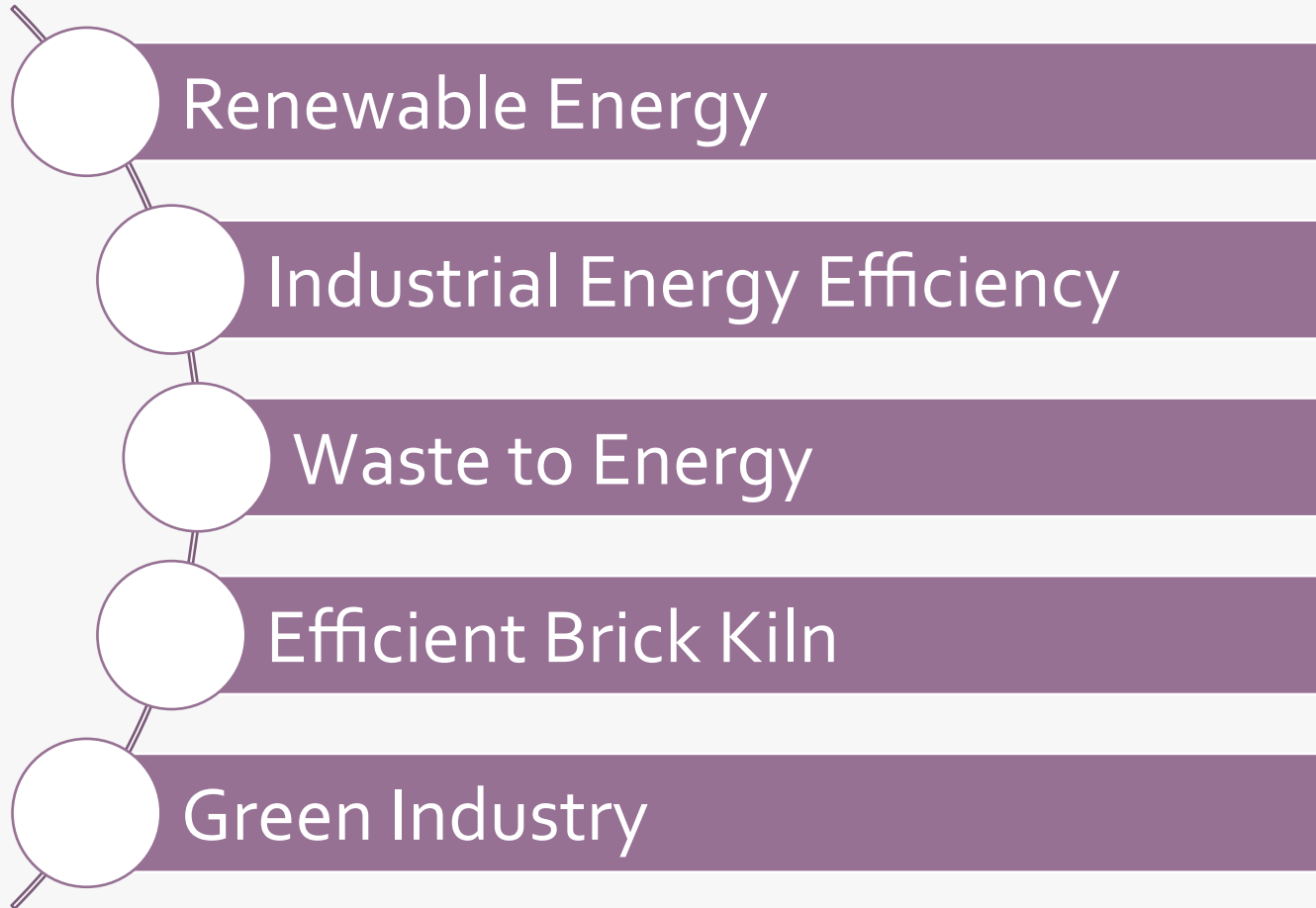
- ❑ Business matchmaking session in Dhaka with sponsors of different industry and technology providers from Japan.
- ❑ Selection of few suitable sectors of Bangladesh where Bangladesh count part can focus with enhanced attention
- ❑ Piloting of few (at least ONE) JCM project in Bangladesh to establish an example.
- ❑ Information to Embassy of Japan in Bangladesh to make them aware of such interventions.
- ❑ Inclusion of local government representatives and private sector sponsors in the JCM Bangladesh part.

Recommendation from Workshop

- ❑ Establishment of a forum in Bangladesh to provide technical support.
- ❑ Scoping out the role and development of local consultants.
- ❑ Equip JCM BD part as one stop solution provider to provide feasibility, technical guidance and implementation guideline – University
- ❑ Hosting of awareness event in Bangladesh with sponsors of different industry owners.



Low carbon technologies in BD



Scope 1: Energy Efficiency

- ❑ Interventions based on energy audit to reduce energy consumption

 - ❑ Potential Sectors:
 - ❑ Textile and Ready Made Garments
 - ❑ Steel and Rerolling
 - ❑ Cement
 - ❑ Pharmaceuticals
 - ❑ Power Generation

 - ❑ Government's goal to reduce energy consumption, additional charge for power, potential savings opportunity are driving factor
-

S1: EE- Improvement Options

Replacement of old boiler with thermo-oil or similar type

Replacement with efficient LED lighting system

Improvement in HVAC system

Use of variable Frequency Drive (VFD) in motor

Process improvement and automation

Improvement of Chiller, Compressor and other appliances

Few Projects: Energy Efficiency



Scope 2: Renewable Energy

- ❑ Bangladesh share on RE is growing due to power scarcity and price hike

- ❑ Types of RE:
 - ❑ Solar Energy
 - ❑ Biogas
 - ❑ Wind Energy
 - ❑ Hydroelectricity

- ❑ RE has strengthened its foot step in both on grid and off-grid area of rural Bangladesh

S2: RE- Applicability

SI No	Type	Area	Industry
1	Solar Energy	All over Bangladesh specially off-grid areas	Household level, Clean Energy Generation, Grid connected network
2	Biogas	All over Bangladesh	Household level, Poultry and dairy, Agricultural waste
3	Hydroelectricity	Hilly Region of Chittagong and Sylhet	Grid connected network
4	Wind Energy	Coastal Belt	Grid connected network

S2: RE- Few Examples

- ❑ IDCOL has installed more than 3 Million Solar Home System all over the country
- ❑ Two 30 MW capacity Wind Energy is going to be installed in coastal areas of Cox's Bazar
- ❑ Kaptai dam established in 1960s still has got the potential of generating more than 230 MW of hydroelectricity
- ❑ It is expected that large size clean energy projects will share its contribution in national grid

Few Projects: Solar



Scope 3: Waste to Energy

- ❑ The concept of Waste to Energy is to generate electricity or to produce fertilizer from different sorts of waste
- ❑ Conversion of waste to energy preserves environment and emerged as good business opportunity
- ❑ Proposed Waste to Energy project at sanitary landfill near Dhaka, Composting facility from municipal waste is drawing investor's attention.

S3: Waste to Energy- Few Options

ETP and reduction of Liquor ration in fabric dyeing

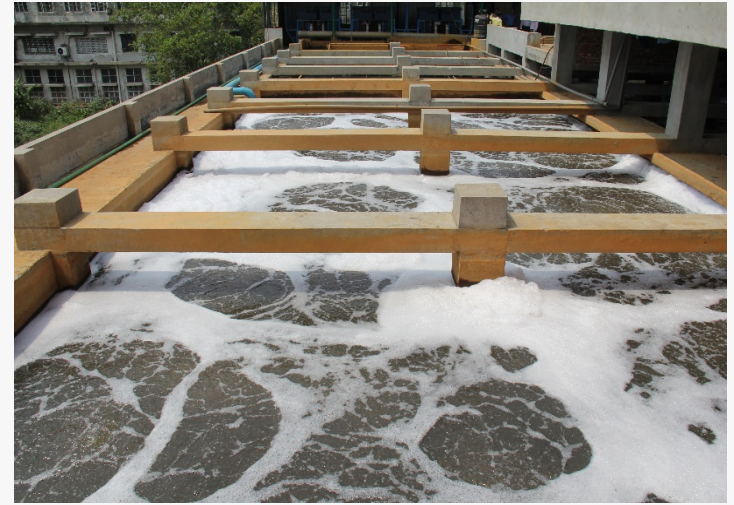
Composting and preparation of fertilizer from municipal waste

Electricity generation from sanitary landfill

Waste Water Treatment/ Sewage Treatment Plant

Methane Recovery

Few Projects: Waste Management



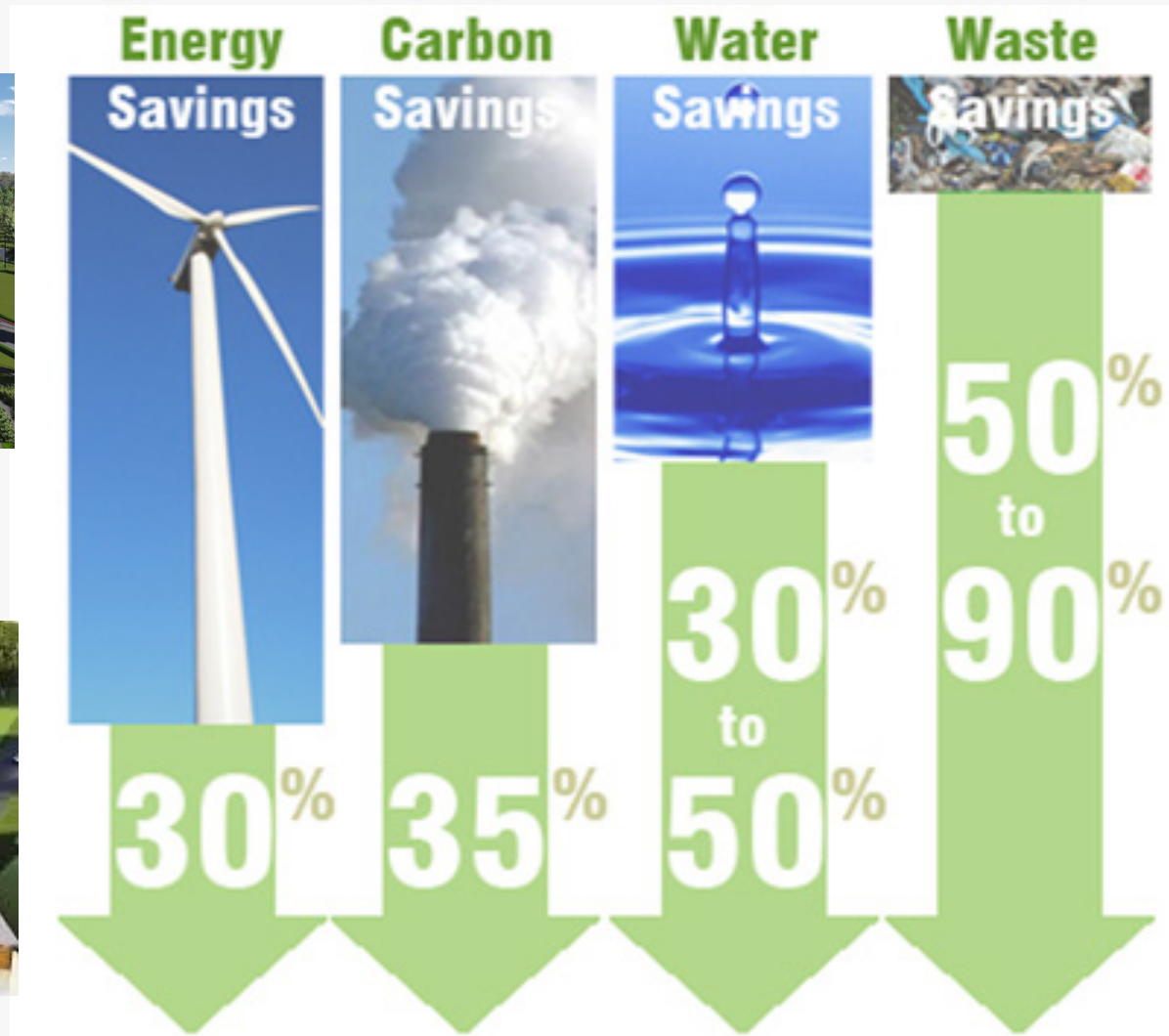
Scope 4: Green Industry

- ❑ In order to meet compliance issue, enhance brand value and to secure additional premium in pricing sponsors of Textile and RMG sectors are constructing green buildings
- ❑ United State Green Building Council (USGBC) certified LEED Green Buildings are raising their head in the country
- ❑ Due to high initial investment, sponsors are facing bottlenecks
- ❑ Presently 64 numbers of buildings have been registered as Green with USGBC

Scope 4: Green Industry

- ❑ Key Issues of Green Building:
 - ❑ Sustainable site
 - ❑ Air efficiency and circulation'
 - ❑ Water efficiency
 - ❑ Energy efficiency
- ❑ Significant amount of carbon credit generated from these projects are rather unutilized or not yet discovered.

Why Green Industry



Scope 4: Green Industry-Opportunity

- ❑ Factory owners are becoming more interested to have a green industry for following reasons:
 - ❑ Availability of low cost funds
 - ❑ Compliance management
 - ❑ Reputation enhancement
 - ❑ To charge additional premium
 - ❑ Removes entry barrier
- ❑ BKMEA as set target of having 50 new green industry by 2018

Why Green Industry

Sector	Co-Benefits	Tangible Benefits	Intangible Benefits
Property Value	Increased rents and property values	5% to 15%	Brand Image
Sales	Increased retail sales	5% to 12%	Popularity
Energy savings	Power consumption Low Optimum Use of Investment and Resources	10% to 35%	LOW CO ₂ foot Print
Water Saving/ Reduced water bills	Wate Efficiency Design and Maintenance	20% to 60%	LOW Water foot Print
WASA Bill	Stormwater fee credits and other financial incentives	15% to 50%	Low Discharge
Capital Cost	Reduced infrastructure costs	5% to 12%	Saving Resources
Other Utility Cost	Reduced costs associated with flooding	5% to 8%	Saving Resources
Occupant Satisfaction	Increased mental health and worker productivity for office employees		Socially Bonded and United
Working Environment	Reduced crime		Socially Bonded and United

Few Projects: Green Industry



Few Examples





WASHING AND GARMENTS UNIT FOR DENIM FACTORY
At Boraipara, Gajipur
Mahmud Fashion Ltd.



ON GOING





GREEN BUILDING
Interior
Landscape
Green Building
Rainwater Harvesting



**Policy and CODE
Research**

Industrial Building

Factory Buildings
At Safipur, Gazipur
Client:

Dong Bang Dyeing and Finishig Ltd.





GREEN BUILDING
Interior
Landscape
Green Building
Rainwater Harvesting

Policy and CODE
Research

Industrial Building

Factory Buildings
At Hemayetpur, Saver
Client:

Babylon Casualwear Ltd.



100% ABIDE BY RAJUK LAW
DAY LIGHT HARVESTING
NATURAL VENTILATION
LOW WATER CONSUMPTION
RWH SYSTEM

GREEN BUILDING
Interior
Landscape
Green Building
Rainwater Harvesting



PROPOSED

Commercial Building
13 Storied DWASA Mode ZONAL Office
At Baridhara, Dhaka
Dhaka WASA



Research



