

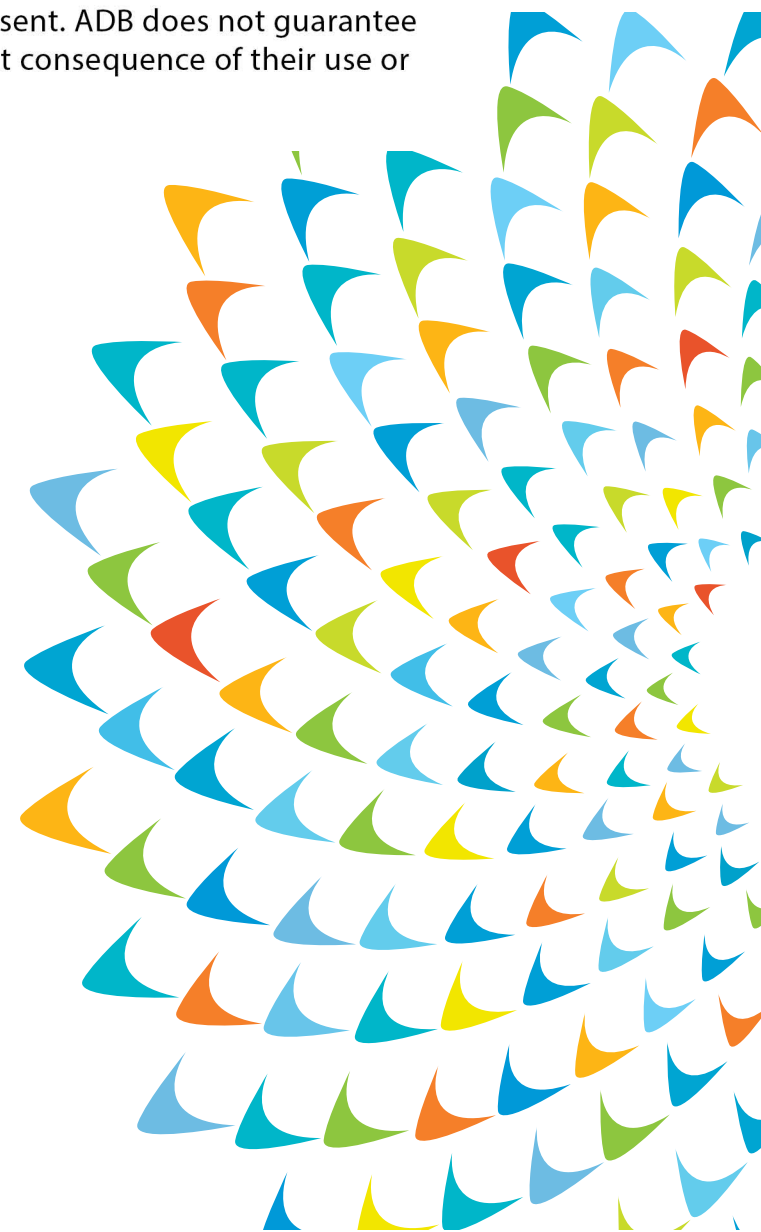
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# Health & Safety at the Construction Sites

## Experience from ADB's BRT Project in Dhaka

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# Health and Safety: Learning from bitter truth

## Tragic BRT Accident

THE BUSINESS STANDARD

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MONDAY, OCTOBER 10, 2022

TBS Report  
15 August, 2022, 05:05 pm  
Last modified: 16 August, 2022, 12:48 pm



Photo: TBS

At least five people including two children were crushed to death after a girder, part of the Bus Rapid Transit (BRT) project, fell on a car in Uttara.

### Work of BRT project halted

Authorities say it won't resume until safety ensured; probe finds contractor solely to blame



**Tuhin Shubhra Adhikary**

Wed Aug 17, 2022 08:00 AM Last update on: Wed Aug 17, 2022 08:27 AM



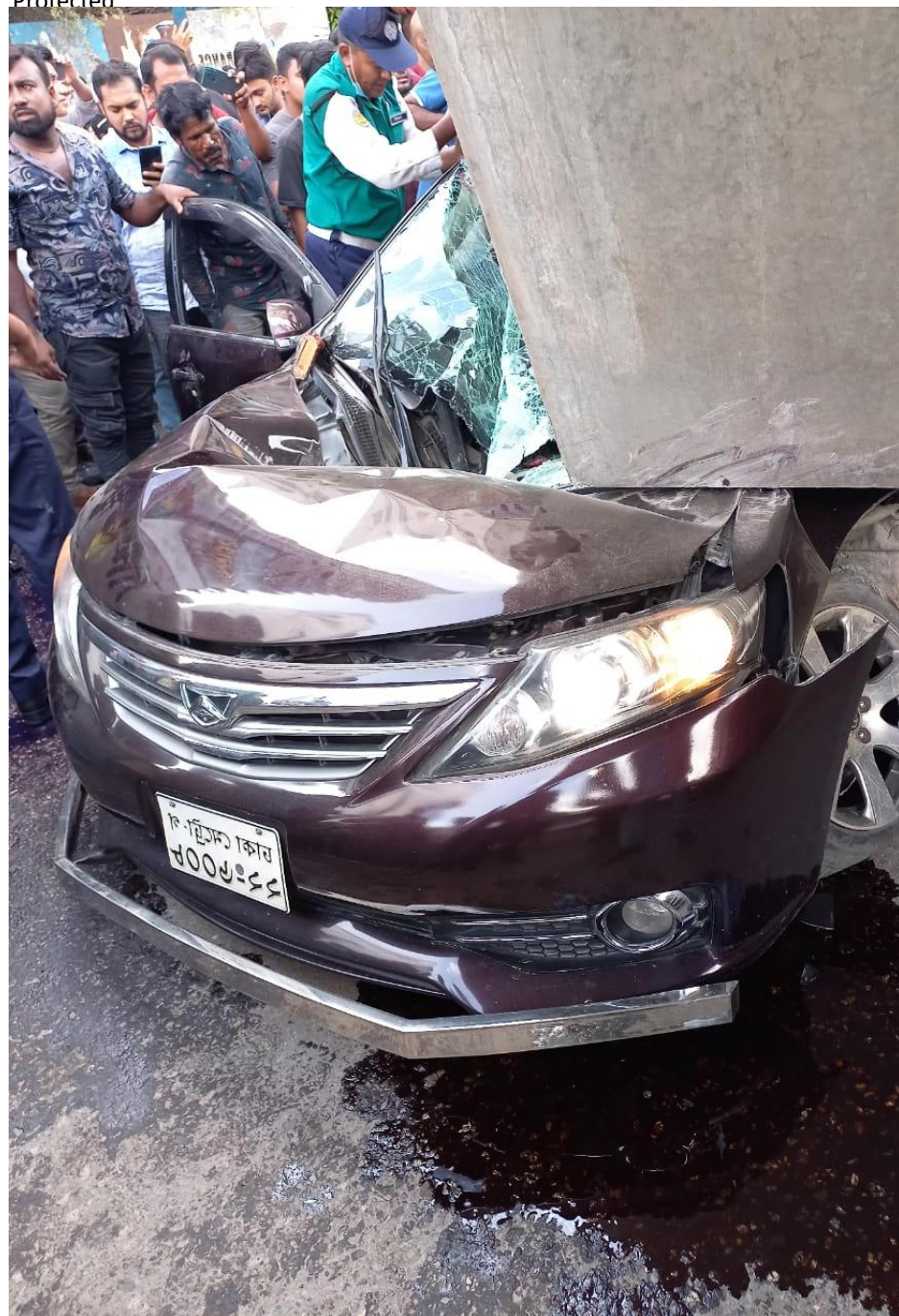
Photo: Rashed Shumon

Physical work of the entire Bus Rapid Transit (BRT) Line-3 project will remain suspended until foolproof safety measures are in place, the authorities decided yesterday.  
Top project officials met Asian Development Bank (ADB) officials at the latter's office in the capital and made the decision in the afternoon.

JOURNALISM WITHOUT FEAR OR FAVOUR

The Daily Star





# Tragic Accident

15 August 2022



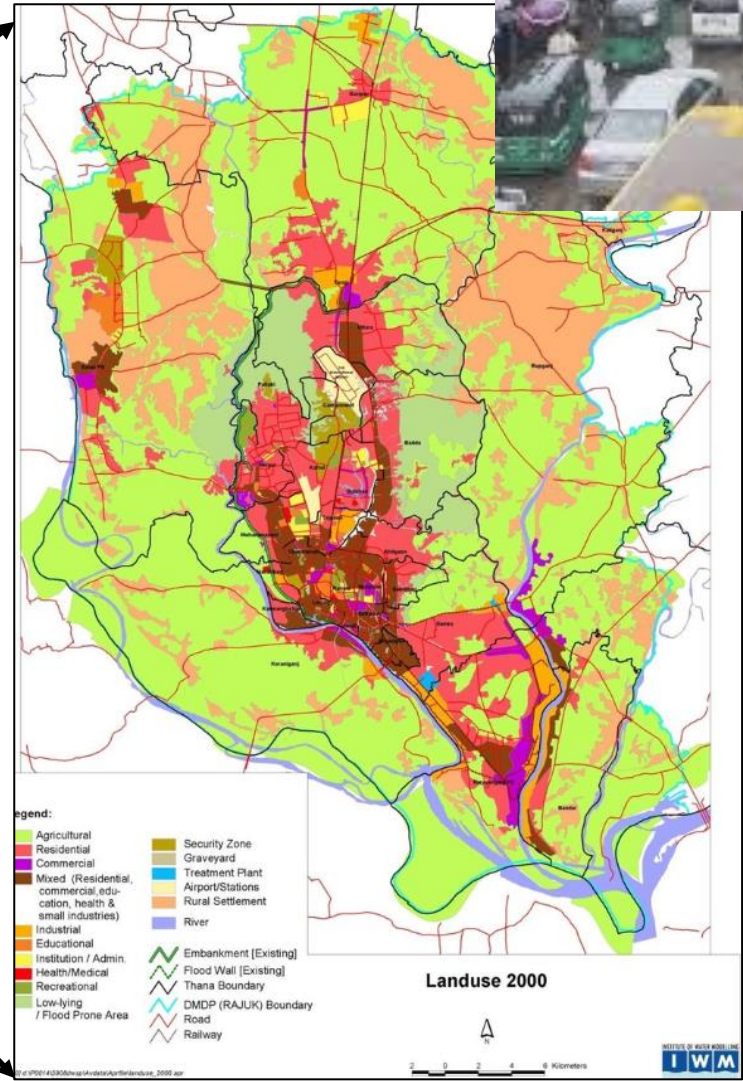
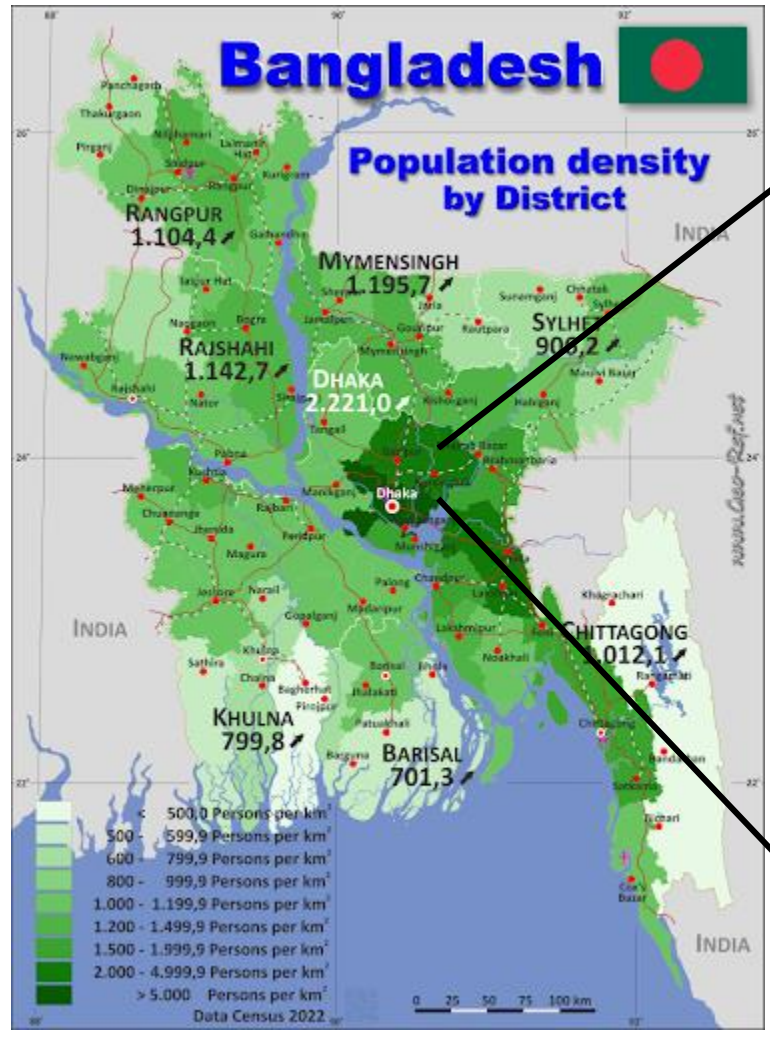


# Situation Analysis: BRT Worksite Accident

## Non-compliance with the contract specifications for heavy lifting operation

- Inexperienced operator for shifting a box girder (40 MT) by Crawler Crane
- Did not follow approved traffic management plan
- No safety barrier, flag man for traffic management
- Pedestrian movement within crawler crane working perimeter
- Worked without an approved RFI/Method Statement for heavy lifting operation
- No Mechanical Engineer to inspect the movement of heavy equipment
- Worked at daytime on a holiday –national mourning day
- Community people was not informed
- Safety Manager (lacking adequate knowledge and experience)
- No arrangements for emergency response

# Some Salient Features



- City with 24 million people
- Extremely busy road
- No alternate route
- Land acquisition was difficult
- Designed by Urban sector experts and implemented by Transport sector experts
- Approved in 2012, slow moving project



# BRT Project: At a Glance

BRT corridor: 20.5 km

CO-1: 16 km at grade; CO-2: 4.5 km elevated section

Executing Agency

The Roads, Transport and Highways Division of the  
Ministry of Road Transport and Bridges

Implementing Agencies:

1. Roads and Highways Department (RHD),
2. Bangladesh Bridge Authority (BBA),
3. Local Government Engineering Department (LGED), and
4. Dhaka Bus Rapid Transit Company Limited (DBRTCL)

**Project  
Approval  
2012**



# BRT Project: At a Glance

BRT corridor: 20.5 km

CO-1: 16 km at grade; CO-2: 4.5 km elevated section

EPCM  
2013

Contract: \$19.4 mil

Personnel:

1 Env expert  
(intermittent).

No OHS expert

CO-1  
(CGGC)  
2016

Contract: \$108.72  
million

EMP-BOQ:

**0.1 % of total cost**

Personnel:

1 Env expert, 1 OHS  
expert

CO-2  
(JTEG)  
2017

Contract: \$119.28  
million

EMP- BOQ:

**0.05% of total cost**

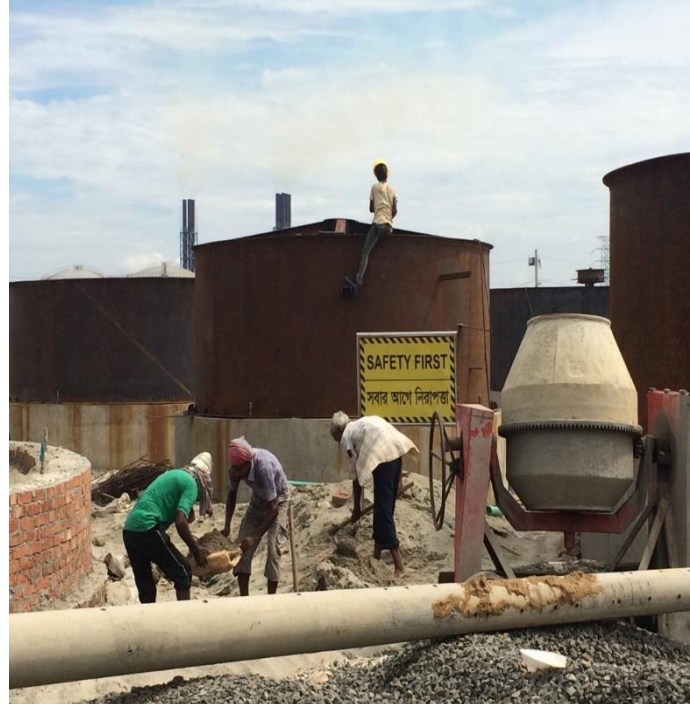
Personnel:

1 Env expert, 1 OHS  
expert

Project  
Approval  
2012

# Studies/Plans & Cost for Safe and Healthy Working Conditions

1. Initial Environmental Examination (IEE)/ Environmental Management Plan (EMP)
- 2. Occupational Health and Safety (OHS) Plan**
3. Traffic Management Plan
4. Hazardous Materials Management Plan (HMMP)
5. Construction Environmental Management Plan (CEMP)/Site-specific Environmental Management Plan (SEMP)
- 6. Bill of Quantity (BOQ) for managing risks**



## Worksite Hazard Analysis

1. Excavation work
2. Work at height
3. Crane & lifting safety
4. Heavy equipment operation
5. Fire safety
6. Traffic safety

**Extremely Low Bid**

Additional Financing \$100 mi in 2023



# Irresponsible Behavior for Poor OHS Practices



# BRT Accident: Measures Taken

ADB

- After first incident in March 2021
- Advised EA to conduct a due diligence and prepare corrective action plan
- Conducted training and workshop on the Occupational and COVID-19 HS management (2021)
- Contractors prepared Safeguard Enhancement Plan, COVID-19 HS plan
- Ensured full-time environment specialist in EPCM
- Flagged HS issues in mission AMs and discussed with EA and contractors
  
- After 15 Aug 2022 accident
- Recruited an International HS Expert in November 2022
- Organized Occupational and Community HS training for EA and Contractor
- Supporting PMU in preparing HS checklist for site investigations and reporting



# BRT Accident: Measures Taken

## EA

- Suspended all civil works
- RHD formed a Safety Monitoring Team and inspected the project site
- Notice to comply with all safety requirements under Sub-Clause 4.8 of the Contract; Notice to Correct (NTC) under GCC SC 15.1
- Instructed to ensure all safety related issue by 12 September 2022
- Allowed to resume 2 worksites on 25 September where safety measures adequate

## EPCM

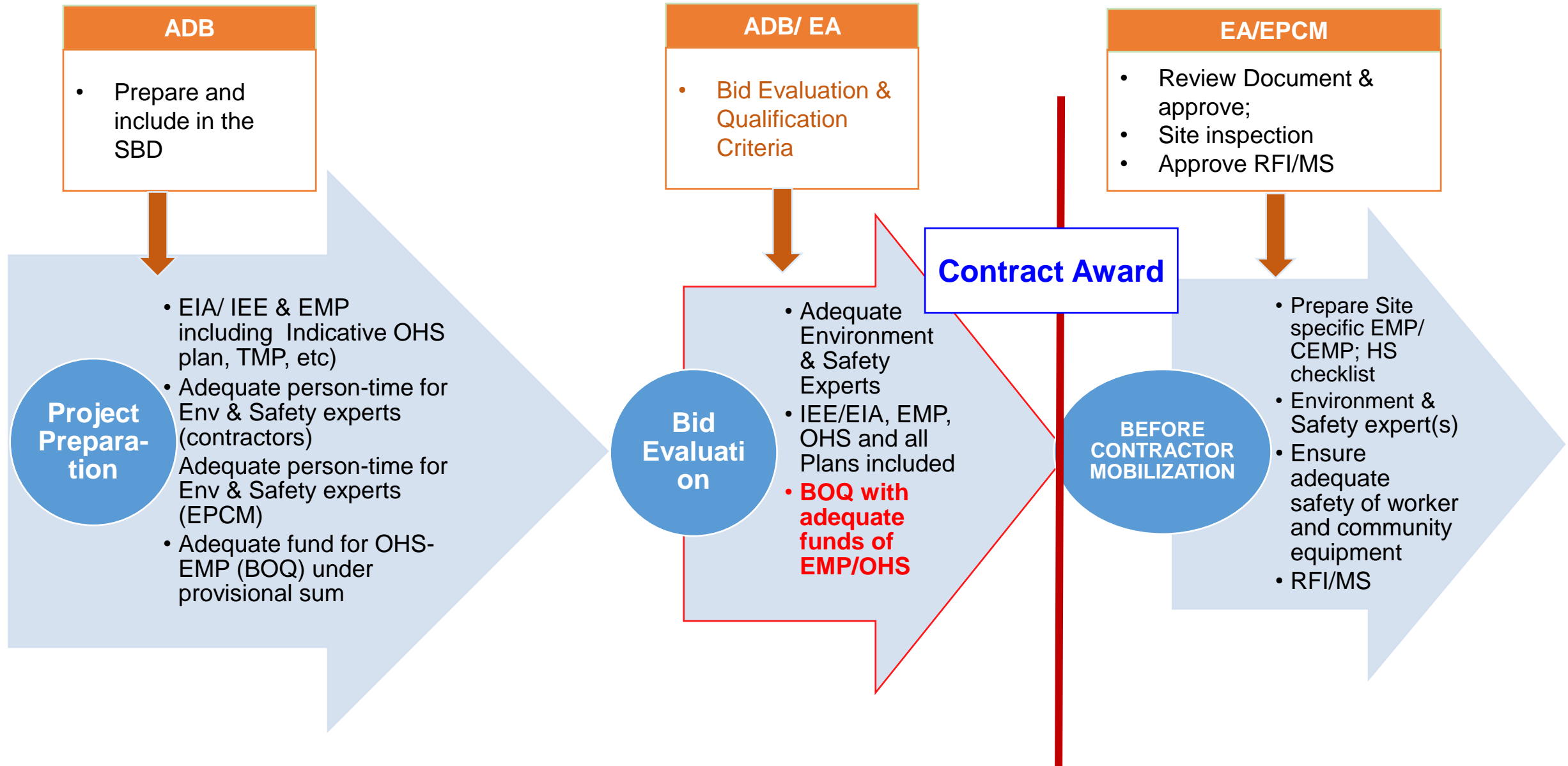
- Engaged 3 Safety experts (2 international, 1 national)
- contractors have resubmitted their safety plans to EPCM
- RFI & MS will be not approved until the site is visited by EPCM's safety officer

## Contractor

CO-1

- Arranged additional fund to ensure international safety standard
- Engaged 11 additional safety staff
- Prepared comprehensive safety management workplan
- Engaged a third-party safety audit firm to evaluate the standard of safety measure

# Right Contract Management: Measures for Good OHS





# Right Contract Management: Measures for Good OHS



EA/EPCM
<ul style="list-style-type: none"><li>• Approve RFI,</li><li>• Approve cost for EMP/OHS</li><li>• Penalty/Reward</li><li>• Training/awareness</li></ul>

ADB
<ul style="list-style-type: none"><li>• Periodic review mission &amp; performance evaluation.</li><li>• Document review &amp; disclosure</li><li>• Training &amp; awareness</li></ul>

**CIVIL WORKS**

- ✓ Implementation of plans (EMP, OHS, TMP, etc)
- ✓ Toolbox meeting
- ✓ Training & awareness





# Work Safely Go Home Safely



# THANK YOU

