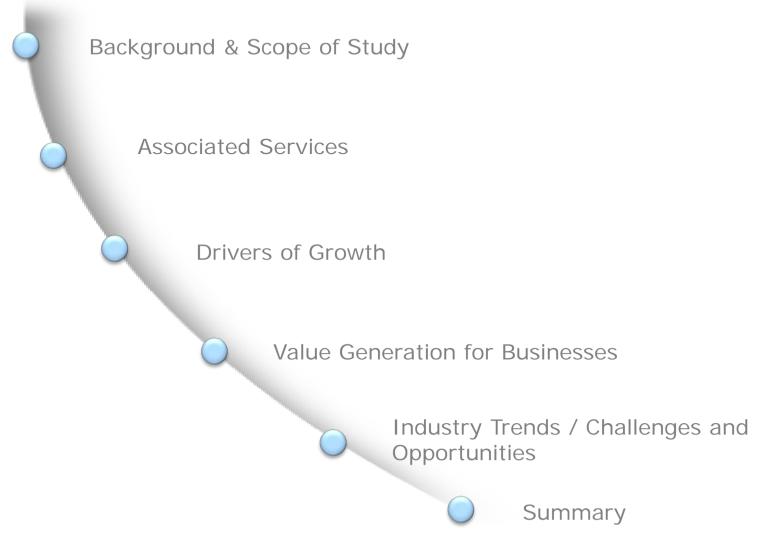


# ENVIRONMENTAL DAMAGE REMEDIATION SERVICES APEC SECTOR STUDY

APEC WORKSHOP ON ENVIRONMENTAL SERVICES HANOI, VIET NAM
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RAMBOLL ENVIRON

# PRESENTATION OVERVIEW





# **BACKGROUND**

### **REMEDIATION SERVICES**

- Treatment, removal and disposal of contaminated material, typically soil, water and groundwater.
- Building decommissioning and demolition works.
- Decontamination of workplaces, buildings, vessels or other internal occupied spaces.

## STUDY SCOPE

# **Sector Study (Presentation Focus)**

- Sector characteristics and trends
- Drivers for growth
- Types of services and major players
- Opportunities and challenges

# **Business Models Study**

- Specific services delivery, revenue size of the business, expected growth rates
- Challenges faced by businesses with respect to government regulations (domestic economy and different jurisdictions)



# **DEVELOPMENT - POLLUTION NEXUS**

- Population growth increased waste generation
- Industralization chemical and other toxic materials
- Environmental incidents and man-made disasters releases to the environment and impacts to health

Typically, the need for remediation works is less immediate in *developing* economies where higher priority needs such as economic advancement and other public basic needs are more likely to take precedence

# DRIVERS OF GROWTH IN REMEDIATION SERVICES

# **Regulation Driven**

Government regulation, enforcement and spending

### **Market Driven**

- Corporate objectives/ reputational risk
- Mitigation of business risk contaminated land liability
- Public interest / public well-being
- Occurrence of natural or man-made disasters

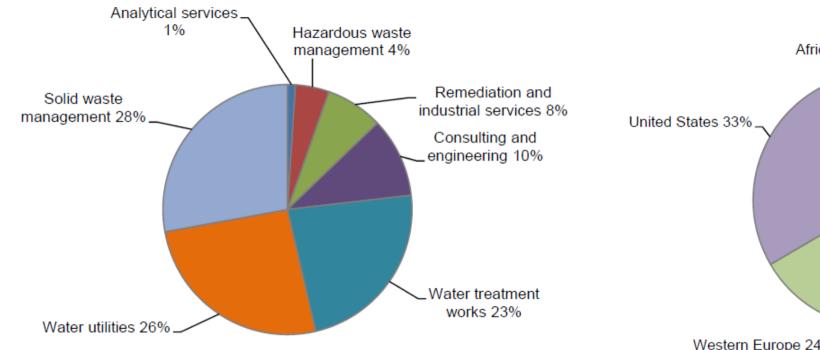




# **VALUE GENERATION**

### Remediation & Industrial Services

- 8% of Global Environmental Service Market (i.e. about \$37.7 billion) in 2010
- US and Western Europe had largest share of global revenues



Africa 1%

Australia and New Zealand 3%

Canada 4%

Asia 5%

Middle East 11%

Western Europe 24%

Eastern Europe 2%

Total = \$505.5 billion

### Global Environmental Services Revenue

Total = \$37.7 billion

Remediation & Industrial Services

Source: Environmental Business International, "The Global Environmental Market: Regions & Segments Matrix in 2010." Environmental Business Journal 25, no. 6–7 (June/July 2012): 26.

# **VALUE GENERATION – REMEDIATION SERVICES DELIVERY**

Technical and Scientific Consulting



Construction and Engineering



Equipment, Device, Chemical Manufacture



Institutional Research and Development



Other Services

- Front end investigation, assessment and studies through to planning and design of remedial action plan
- Overseeing remediation and post remediation monitoring and validation

 Install, operate and conduct site remediation works

- monitoring, including personal protective equipment Supply of remediation chemicals and

products

Supply of

sampling,

testing,

equipment for

- Technology and innovation development for commercialisation of new remediation approaches and products
  - Pilot testing
  - Test bedding

- Treatment and management of contaminated / remediated materials
- Analytical / Laboratory services
- Litigation and contractual support
- Insurance protection

Services associated with Remediation Services Delivery corresponding to the Key Steps of Remediation Work (Source: Ramboll Environ)

# **BENEFITS OF REMEDIATION**

- Improve land values and usability
- Improve living environment
- Socio-economic benefits











# **TRENDS**

- Industrial and population growth will boost need for intervention (preventive and corrective remediation)
- More regulatory focus on land contamination issues
- Increasing public awareness of environmental matters
- Industrialised vs industrialising countries
  - Legacy vs increasing land contamination issues
  - Adequacy of environmental management and/or waste management practices
  - Availability of technical expertise
  - Land scarcity and land values

# **CHALLENGES AND OPPORTUNITIES**

# Challenges

- Nature of the remediation sector is inherently complex- high cost of entry, financial and operational risks, specialized expertise and technologies required
- Lack of / inconsistent enforcement of regulations (where they exist)
- Onerous licensing and certification requirements
- Need for establishment of commercial presence and ownership

# **Opportunities**

- Industrial development will drive demand for remediation services
- General increase in focus on environmental protection

# **SUMMARY**

- Market potential to develop a domestic remediation sector and/or increase trade in such services
- Industrial development creating demand for remediation services

# **Key Drivers**

- Regulations and enforcement
- Government spending





# **THANK YOU**

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