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MANAGING LEGAL AND OPERATIONAL RISKS IN OIL AND GAS PROJECTS: AN INSIGHT INTO THE CONTRACTUAL APPROACH.

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Types of Risks in Oil and Gas Projects

market risks	• changes to the oil price • interest rates; exchange rates
credit risks	• default
operational risks	• equipment failure and manpower • CAPEX/OPEX overrun
geological risks	• dry wells
environmental risks	• pollution
political risks	• change of government; • war/terrorism, expropriation and change of regulatory regime
legal risk	• contractual, tort and statutory duties, consequential loss • exclusion of negligence, liability and indemnities

Risks in Oil and Gas Projects

- Oil and gas projects are risky undertakings.
  - Costly
  - Volatile hydrocarbon

- Operational risk (Krajewski, Ritzman, and Malhotra, Operations Management):
  - A measure of the probability and consequence of not reaching a defined project goal which involves the notion of uncertainty as it relates to project timing and costs

According to Aleka Mandaraka-Sheppard (legal risk):

- **'risk' generally means the taking of chances in the hope that everything** will turn out to be both safe and profitable, depending on the circumstances of the risk taking.
- Risk also carries an additional connotation of a hazard that needs to be covered by insurance.
- It is understood as the possibility of harm or loss associated with an activity or the likelihood of an accident happening that may result in danger to life, property or the environment or may lead to commercial disputes and litigation.

Managing Legal Risks in Oil and Gas Projects – A Contractual Approach

- Since most of the oil and gas activities engage with volatile hydrocarbon, the efficiency of the projects are exposed to considerable risks and liabilities.
- For example:
- Deepwater Horizon Litigation a.k.a. Macondo case


MARK WAHLBERG
WHEN FACED WITH OUR DARKEST HOUR,
HOPE IS NOT A TACTIC
DEEPWATER HORIZON
BASED ON A TRUE STORY OF REAL LIFE HEROES
EXPERIENCE IT IN IMAX
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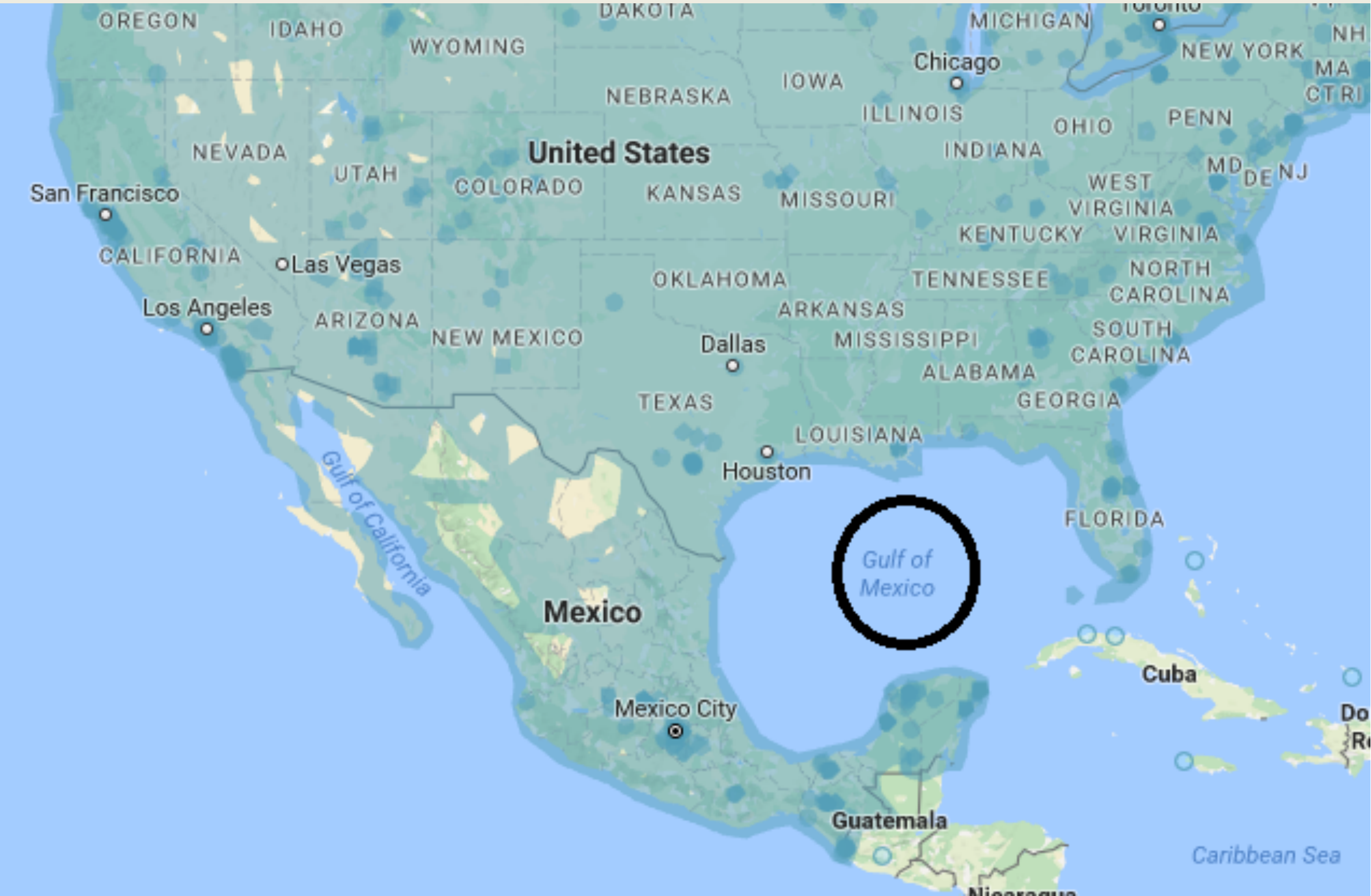
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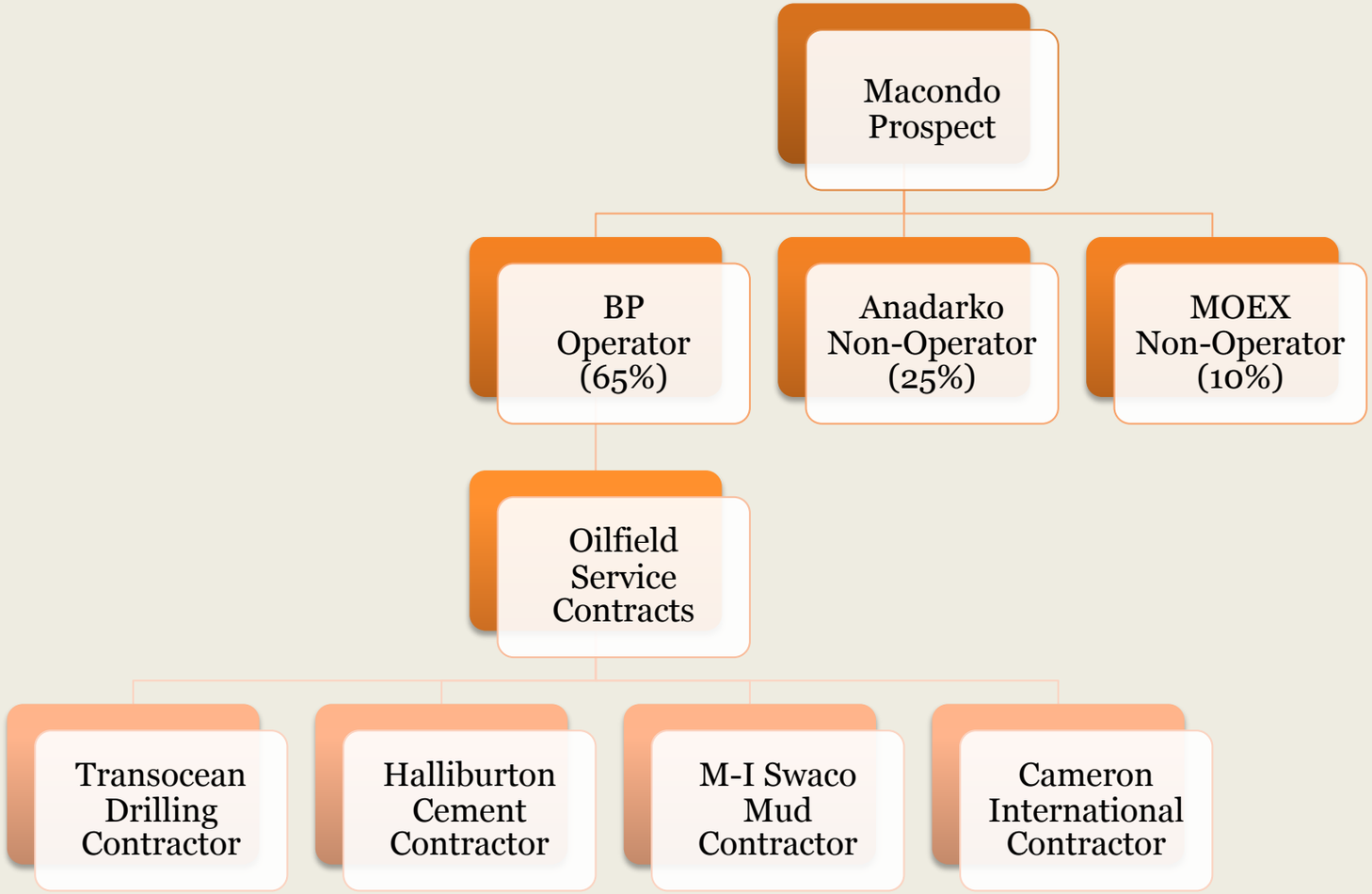
GEORGIA
LOUISIANA
Houston
Gulf of California
FLORIDA
Gulf of Mexico
Mexico
Cuba
Mexico City
Guatemala
Caribbean Sea

Macondo Case

- Macondo well - owned by Transocean - leased to British Petroleum (BP).

- BP employed numbers of service contractors e.g. Transocean, Halliburton, Schlumberger, MI-Swaco Mud and Cameron International - to develop the Mississippi Canyon Block 252 (Macondo Prospect).


Macondo Prospect
BP Operator (65%)
Anadarko Non-Operator (25%)
MOEX Non-Operator (10%)
Oilfield Service Contracts
Transocean Drilling Contractor
Halliburton Cement Contractor
M-I Swaco Mud Contractor
Cameron International Contractor

- On 20 April 2010
- Mobile offshore drilling unit a.k.a Deepwater Horizon blow out during E&P project
- At the Macondo in the Gulf of Mexico on the US Outer Continental Shelf.
- This disaster resulted explosions, fire, the loss of 11 lives, the eventual sinking and total loss of the Deepwater Horizon and the continuous release of hydrocarbons into the Gulf of Mexico.

- As a result of the disaster, US government, individuals and corporations have filed hundreds of lawsuits towards the contracting parties.

U.S. Coastal Waters Affected by the Gulf Oil Spill

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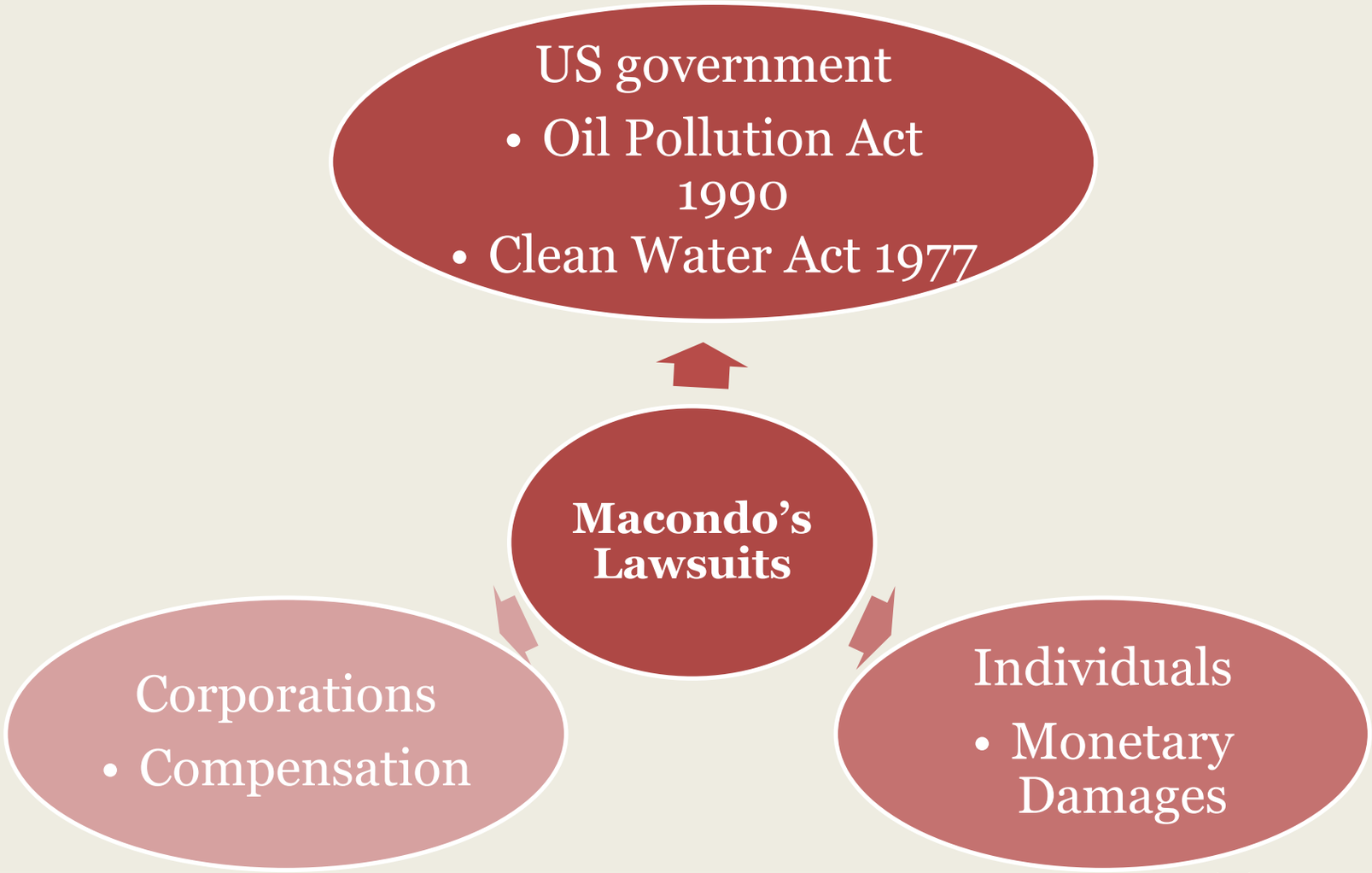
- As a result of the disaster, US government, individuals and corporations have filed hundreds of lawsuits towards the contracting parties.

- These lawsuits raise a various legal claims, from tort law (e.g., personal injury) to environmental law (e.g., water pollution).


US government
• Oil Pollution Act 1990
• Clean Water Act 1977
Macondo's Lawsuits
Corporations
• Compensation
Individuals
• Monetary Damages

Caledonia North Sea Ltd v London Bridge Engineering Ltd [2002] UKHL 4, [2002] 1 Lloyd's Rep 553

- UK case
- In this case, a leakage in a faulty condensate pump caught fire at the North Sea oil platform known as Piper Alpha, exploded and killed one hundred and sixty-five people and injured sixty-one.
- Investigations revealed that the initial explosion was caused by the negligence of two people, i.e. an employee of a specialist valve contractor and an employee of the operator.
- Numbers of litigations relating to personnel, property and environment (pollution) have been brought by multiple-parties for numerous causes of action.

PRESS STATEMENT

YET AGAIN, ANOTHER ENGINEERING ACCIDENT!

THE fire at the PETRONAS Carigali's Tu
offshore Miri on Monday, 11 June 2012 highl
accident at an oil and gas facility. The al
of accidents that have occurred deserve atte
the industry and authorities. There could b
underlying issues pertaining to safety proc
enforcement in the industry.

Whilst technical reasons are often cite

ONE MORE LESSON IN SAFETY

to mitigate risks. Awareness programmes on engineering safety must therefore be accorded top priority to maintain the understanding of and commitment to safety by everyone in an organisation.

NEW STRAITS TIMES

IEM offers technical expertise to probe gas plant explosion

KUALA LUMPUR: The Institution of Engineers Malaysia (IEM)

Serious issues concerning safety procedures

PRESS STATEMENT

STANDING COMMITTEE ON CORPORATE AFFAIRS, IEM

ENGINEERING ACCIDENTS ARE PREVENTABLE

15th May 2012

THE explosion at the Petronas Gas Processing Plant in Kerteh on Thursday, 10 May, highlights the safety and risk factors inherent in engineering work and the need for adherence to the highest safety standards to prevent the occurrence of accidents. Otherwise, needless injuries and loss of lives as well as damage to properties and assets will result.

In view of this incident, the Institution of Engineers, Malaysia (IEM) considers it pertinent and timely to highlight

Besides the human factors, technical reasons are often overlooked usually by economic and financial analysts. One particular risk would be related to operating and maintaining a plant, which is at the end stage of its designed life. The potential for equipment in such a plant to be sub-optimal is very high. In order to mitigate the potentially higher risks of such plants, continuous and tighter surveillance of personnel and the work environment should be in place. A plant should be refurbished

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In Our Backyard: MISC (2012)

- MV Bunga Alpinia 3, Ship carrying Ammonia in filling operations at Petronas Methanol, Labuan
- 26th July 2012, Early morning Explosion
- Source of ignition: suspect lightning strike during thunderstorm, 2.30 am.
- 29 crews, 5 dead (1 immediately found, 2 found dead the next day, 5th body found dead 30/7.)

Risk Allocation in Oil and Gas Contracts

- The industry players usually undertake various measures and practices to manage the risks in order to minimize the exposure.
- Risk allocation in the industry may be achieved by setting out in the contracts clauses
  - **declare which party will be liable for (or exempted from) a given risk to what extent and enables the risk to be allocated between the parties in advance.**
  - **Exclusion Clauses**
  - **Limitation Clauses**
  - **Exclusion Clauses**
  - **Indemnity Clauses**

- Contractual provision such as an indemnity and mutual hold harmless clause is used as a tool in allocating the risks.

- A.K.A.

Knock-for-Knock Indemnities.

Knock-for-knock Indemnity

- It is a special feature of contract in the oil and gas industry.

- Under a knock-for-knock indemnity, both **parties are only required to insure** against the **death of**, or **personal injury to**, **its own employees** and **loss of or damage to**, and **pollution emanating from**, **its own property**.

Problem

- There is a tendency that the oil companies will pass a greater share of the risks on to contractors. (Macondo case)
- This problem could lead to financial impairment and unfairness to the contractors.
- An empirical study was conducted to investigate the issues and problems with regard to risk allocation provisions and indemnity and hold harmless clauses of oilfield service contracts in Malaysia.

Analysis on the Indemnity and Hold Harmless Clauses

- Indemnity clauses in three samples of oilfield service contracts in Malaysia which were drafted by three different operators i.e. Operator A, Operator B and Operator C were obtained and each analysed in four different contexts.
- i. Liability with regard to personal injury or death of employees and loss of property of the parties.
- ii. Third party claims.
- iii. Liability with regard to pollution.
- iv. Insurance coverage.

- These indemnity clauses are compared with two model form contracts which are produced by LOGIC and FIDIC.
- LOGIC is a not-for-profit subsidiary of Oil & Gas UK.
- Under the LOGIC Construction Contract Ed, 2 Oct 2003, the reciprocal indemnities or knock-for-knock indemnities are used to allocate risk between the operators and contractors.
- Based on the analysis, under the indemnity clause in the oilfield service contracts drafted by Operators A, B and C, the contractor is required to indemnify and hold harmless the operator for most of the liabilities irrespective of whether such loss was caused by the act or omission of the operator.

Observation

- The fact that there is no law to regulate the current imbalance of risk allocation and unfair indemnity clauses in oilfield service contracts should be perceived as a serious problem.
- It is observed that these alarming problems deserve attention from the authorities.
- It is crucial that the authorities act because this problem could potentially threaten the commercial development of the oil and gas industry in Malaysia.

- Even though insurance provisions are sometimes provided in the contract, there are no guidelines available for the parties.
- Moreover, the insurance requirements have not been made mandatory to the parties.
- This could cause the contractor to assume uninsured risks, which could lead to detrimental financial exposure in the event of a catastrophic incident.
- In order to solve this problem, it is argued that a specific legal mechanism should be adopted in Malaysia to protect and limit the liability of the contractors under the oilfield service contracts.

Managing Operational Risks in Oil and Gas Projects – A Contractual Approach

- Operational risks in the oil and gas industry include
- (i) **cost risk** (the risk of costs to procure services, rigs, and other equipment being higher than anticipated or budgeted),
- (ii) **delay risk** (the risk that rigs, services, and other equipment may not be available at all), and
- (iii) **cycle time risk** (the chance that a more extended than expected period will elapse between capital expenditure on any particular well and first production from that well

Common area of uncertainty is the size of project parameters

- time,
- cost, and
- quality concerning the expectations of the project
- unable to estimate precisely how much time and

strength that was needed to complete a particular work.

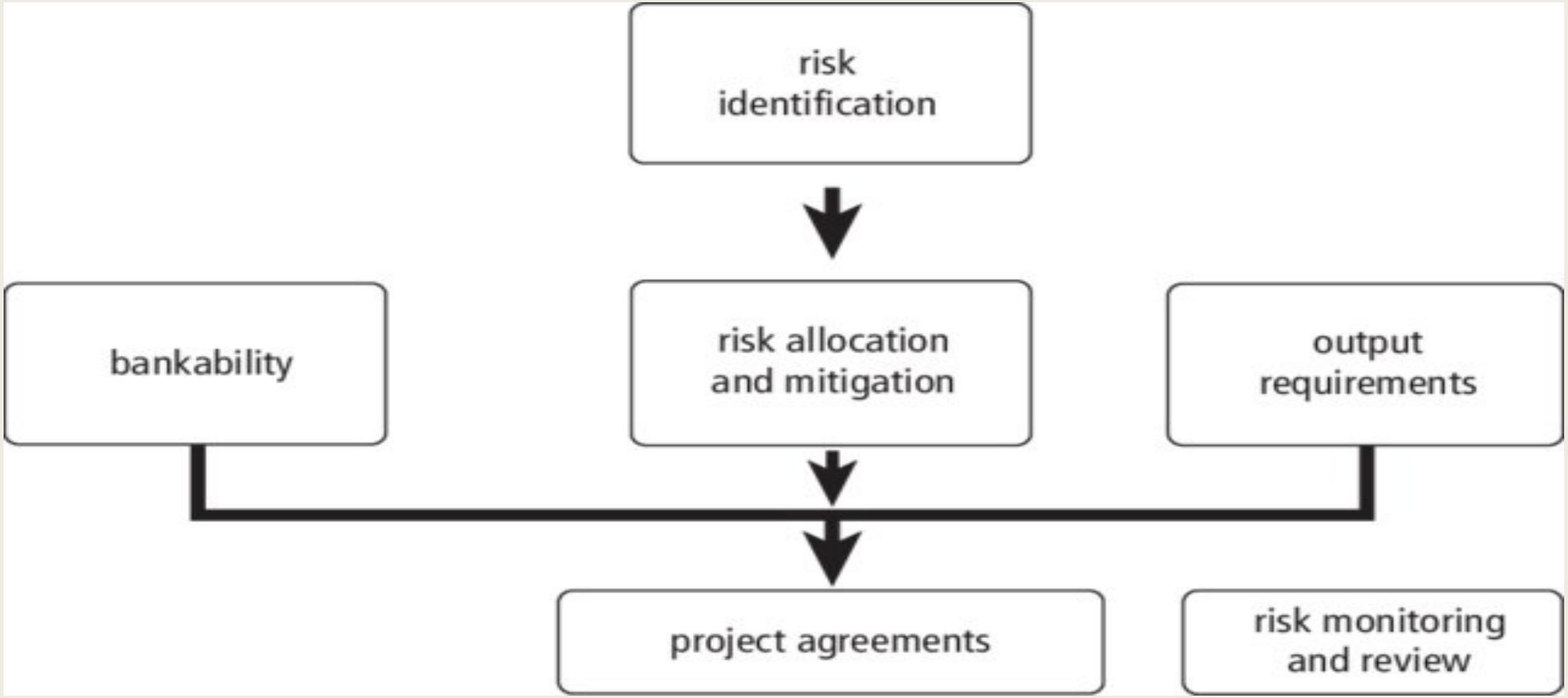
Issues!

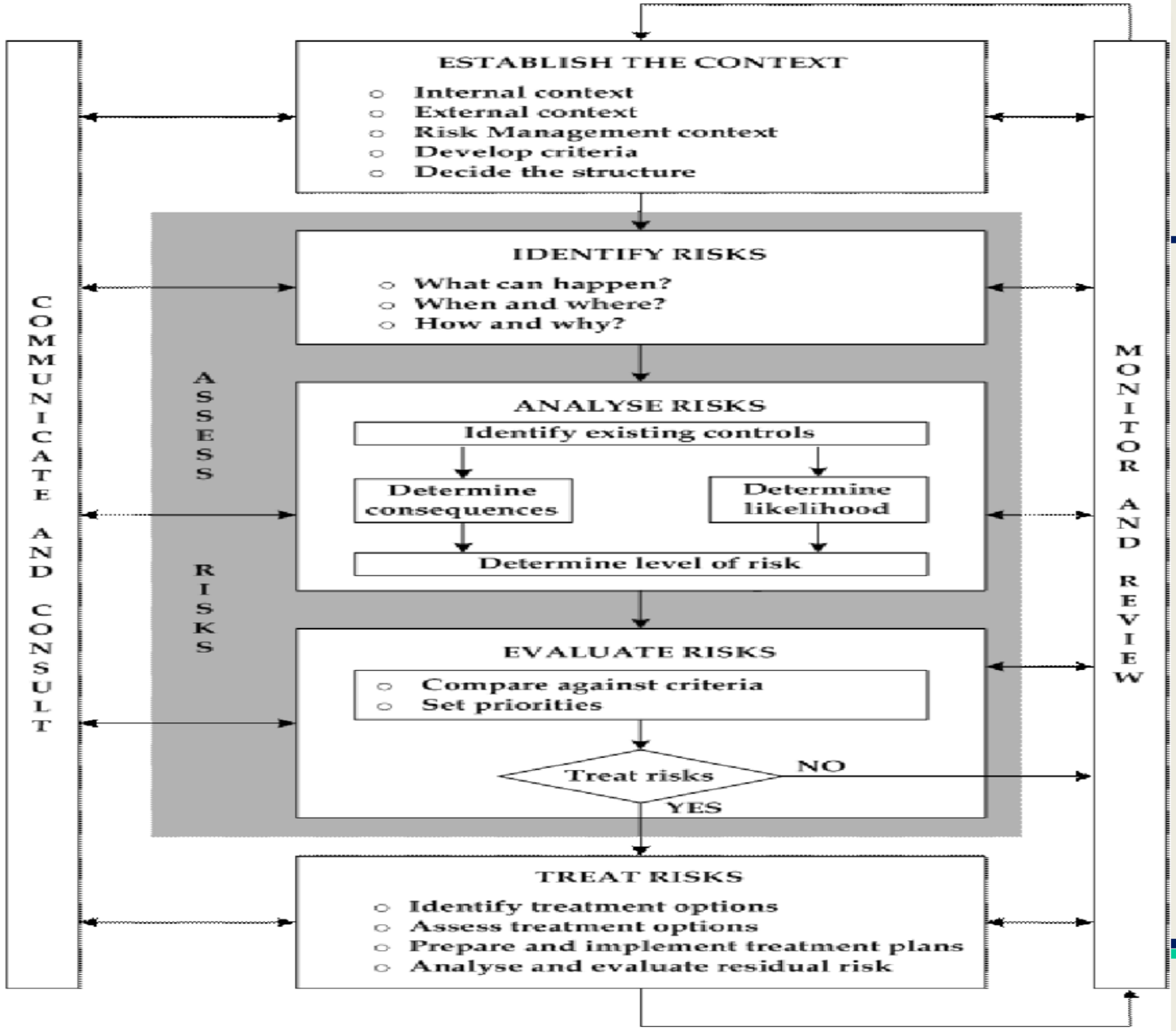
- (i) **cause higher than expected well costs,** typically due to operational inefficiencies, unplanned non-productive time, and difficulty procuring the rigs, equipment, and services necessary for development at an acceptable price, or at all (cost risk);
- (ii) **cause a lower than anticipated rate of completing new producing wells** due to supply chain limitations, permitting, operational inefficiencies, and intentionally slowing down project plans to avoid extended cycle times between capital expenditure on a well and its initial production (delay risk); and
- (iii) **extend the period between capital expenditure on a well and its initial production**, typically due to logistical issues, backlogs of well completions, or insufficient infrastructure capacity (cycle-time risk)

How the contract could be useful..

- comprehensive contingent contract should stipulate **the parties' obligations in each possible state of the potential scenarios** and the division of the gain (or loss) from the contract in each state.
- comprehensive, complete contingent contract should set **an investment incentive** and **agreed sharing of risks** over each state of the potential scenarios.
- each state can be defined in **both quantitative and qualitative terms** which reflect the values of V and C and the factors that produced V and C.
- Additionally, the risk allocation can also be achieved by setting out **contractual provisions which declare which party will be liable for (or exempted from)** a given risk and to what extent, and enables the risk to be allocated between the parties in advance.

Elements of a Risk Management Plan




ESTABLISH THE CONTEXT
Internal context
External context
Risk Management context
Develop criteria
Decide the structure
IDENTIFY RISKS
What can happen?
When and where?
How and why?
ANALYSE RISKS
Identify existing controls
Determine consequences
Determine likelihood
Determine level of risk
EVALUATE RISKS
Compare against criteria
Set priorities
Treat risks
NO
YES
TREAT RISKS
Identify treatment options
Assess treatment options
Prepare and implement treatment plans
Analyse and evaluate residual risk
ASSESS RISKS
COMMUNICATE AND CONSULT
MONITOR AND REVIEW

Observation

- This approach to final decision-making profoundly depends on the qualitative judgment and experiential knowledge of contract specialists.
- The problem of this kind of decision-making process is ambiguous/ vague/ unstructured.
- Barely be applied, analysed and retrieved by others

Future Research

- Taking into account that the current research has employed qualitative risk management to allocate contractual terms to overcome exposures and uncertainties in the operational and legal risks in oil and gas projects
- Future research would consider quantitative methods to quantify the relevant risks and integrate the same in the contractual provisions.

Thank you for your kind attention.

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