

Resilience in Lebanon: Getting ready for Oil & Gas Activites



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Lebanese Petroleum Administration, Board Member

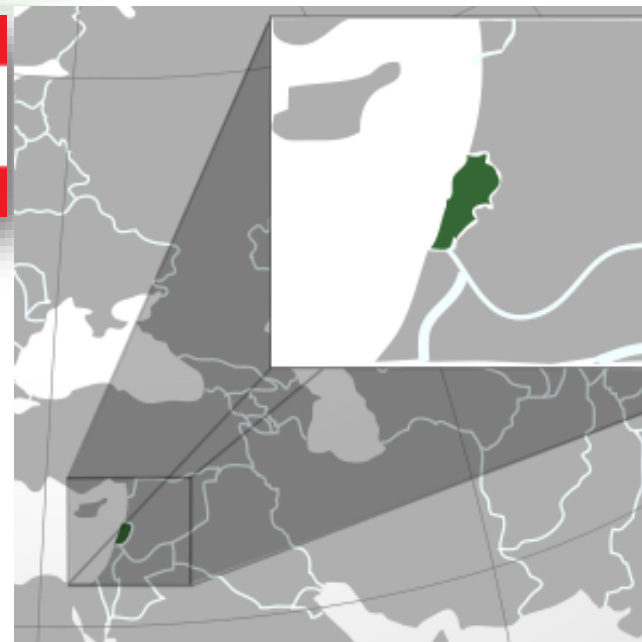
IAIA'16 Resilience and Sustainability
*Session ID#28 Oil pollution and gas leakages,
social and natural resources resilience*



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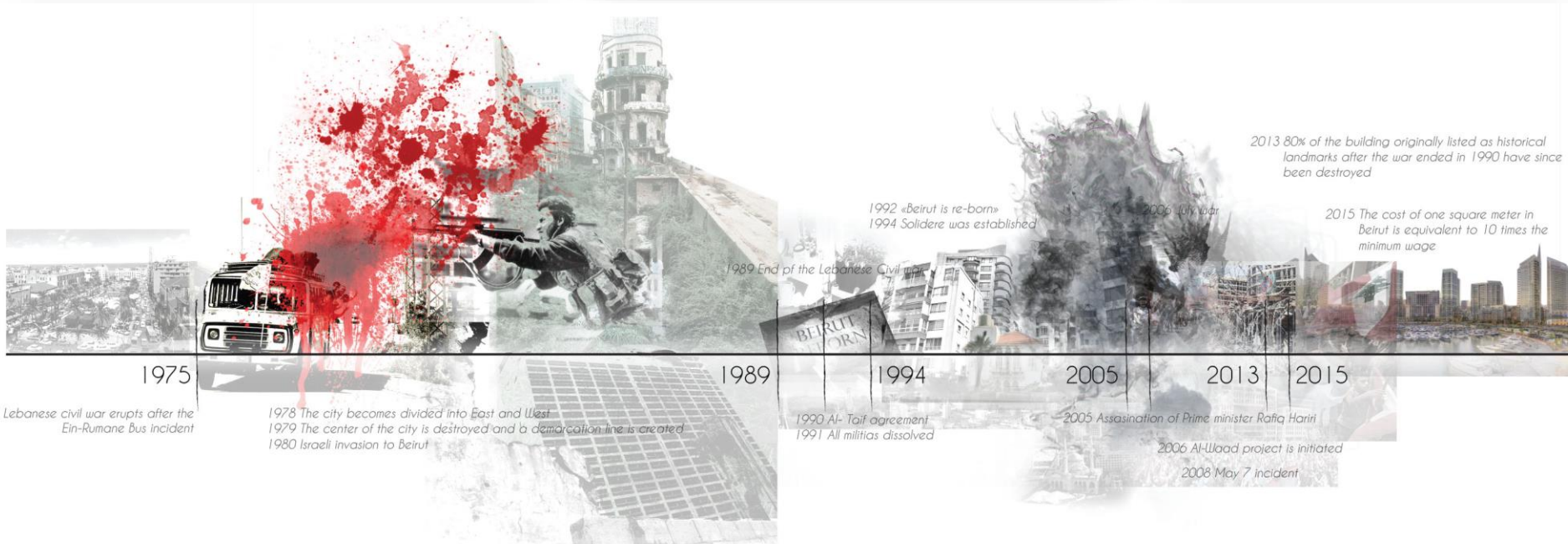
A History of Crisis and Resilience

Statistics



Key Facts (2015)	Japan	Lebanon	Ratio
Area (sq km)	378 k	10.4 k	36
Population	127 M	4.5 M	28
GDP (\$ billion)	4,116	81	50

Wars and Civil Unrest



Political, Social and Economic Shocks.... but

SYRIAN REFUGEE CRISIS

Families Fleeing Violence

There are more than 4.7 million Syrian refugees in neighboring countries. Nearly one million have applied for asylum in the safety of Europe. More than **13.5 million people** are still in need of assistance inside Syria.



1 in 5 people is a Syrian refugee

LEBANON
1,069,111



1 in 13 people is a Syrian refugee

JORDAN
637,859

EGYPT
118,512

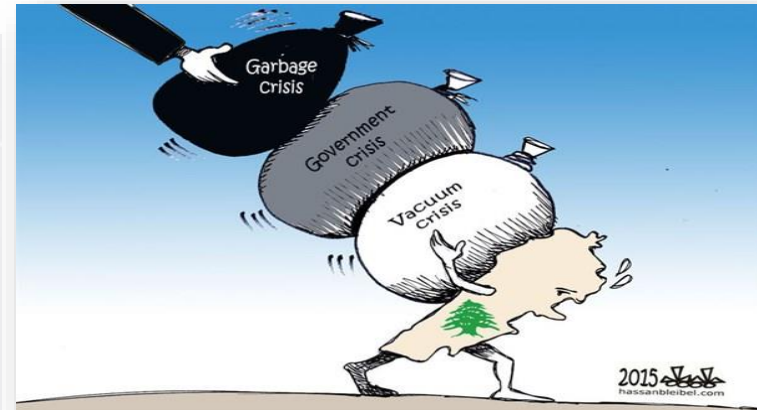
TURKEY **2,620,553**

SYRIA
6.6 million people
internally displaced

IRAQ
245,543



As of February 24, 2016
Sources: <http://data.unhcr.org/syrianrefugees/regional.php>
[UNOCHA.org/syria](http://unocha.org/syria)



2006 War

- Biggest oil spill in Eastern Mediterranean
- 2nd biggest oil spill due to acts of war
- 18,000 ton HFO
- 100 – 120 km of coastline affected
- Reached Syria and threatened Cyprus
- Response and clean up was delayed for a month due to embargo
- Total Environmental cost ~ \$850M USD



2006 Oil Spill



Secret to Resilience

- Adaptation
- Entrepreneurship
- High human capital
- Livelihood diversity
- Active civil society
- High awareness
- Strong media



.... as well as Lessons Learnt

- 🌱 Risk assessment and management
- 🌱 Logistical and Infrastructural preparedness
- 🌱 Build a resilient system that can adapt to emergencies and recover from shocks

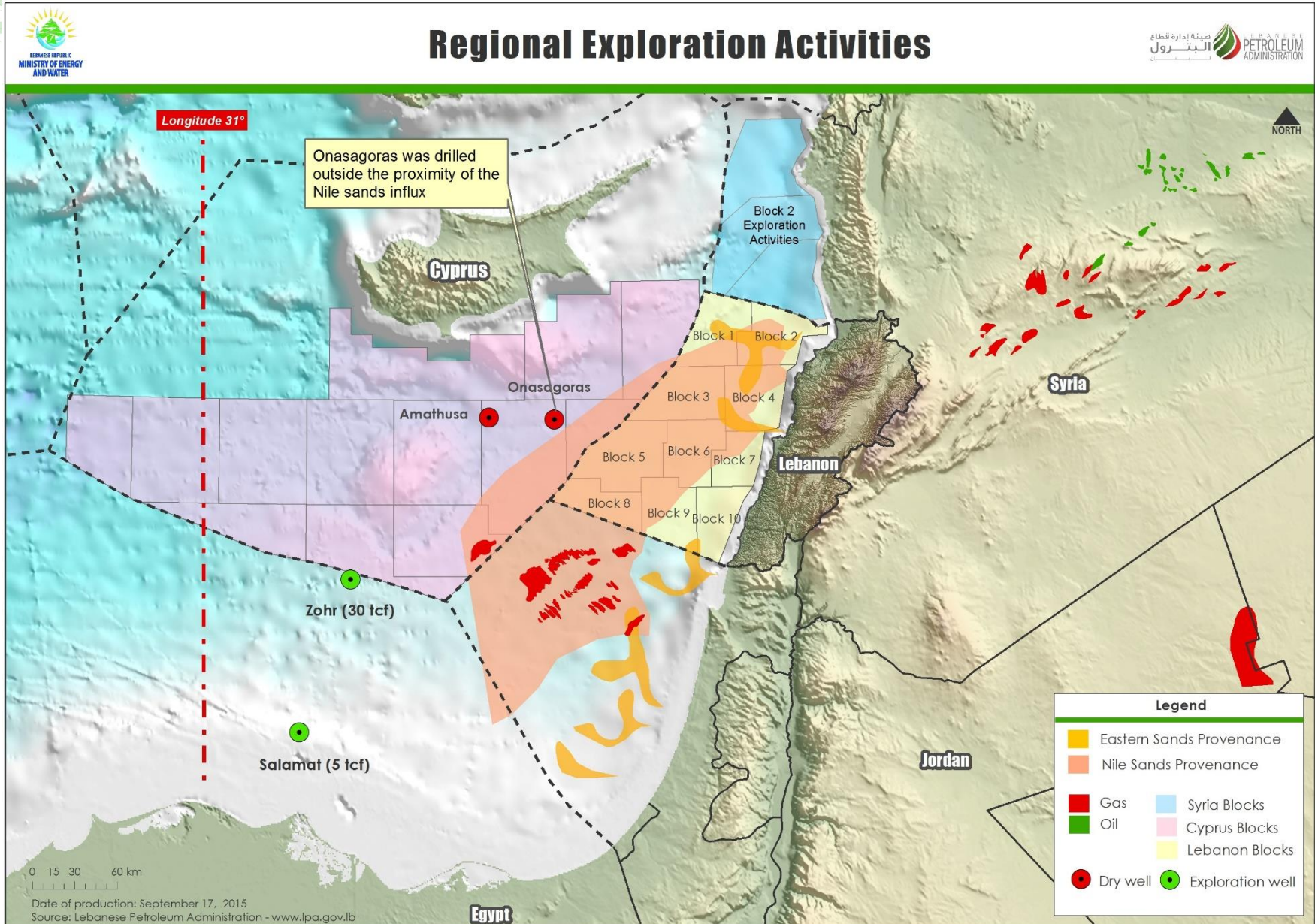




Is Lebanon ready for the additional challenges from the O&G?

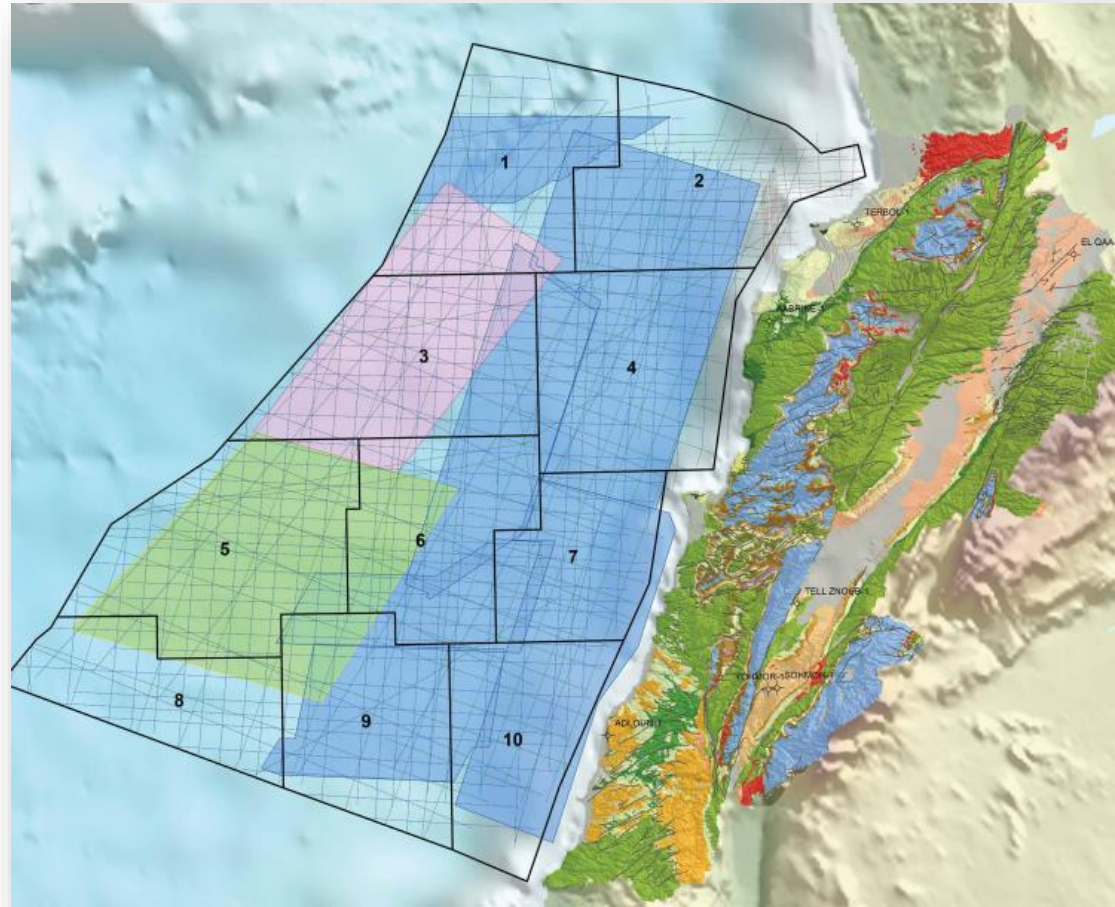
O&G Era in the Levant Basin

Regional Exploration Activities

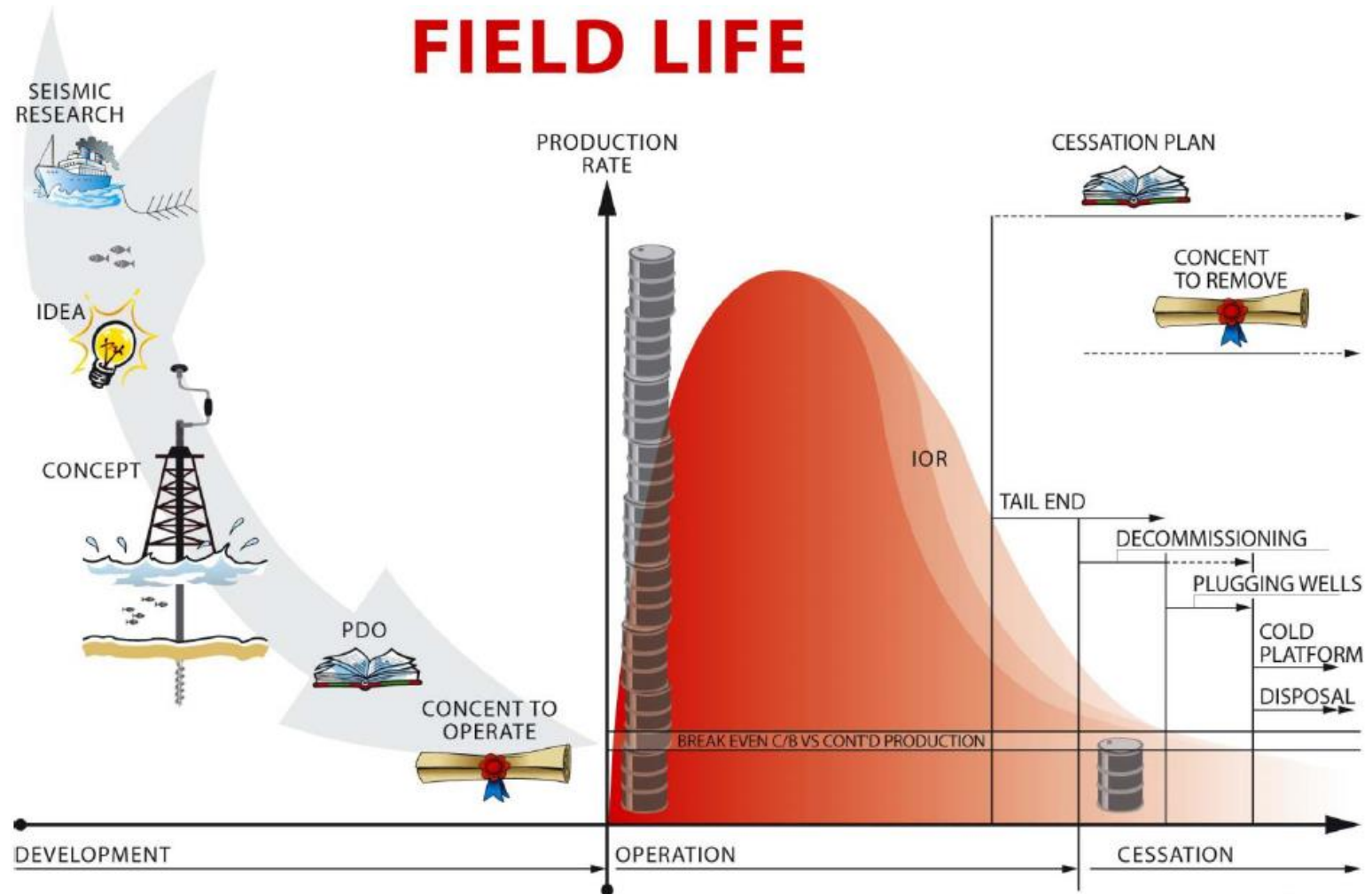


Lebanon Prospectivity

- Moderate prospectivity
- Deep waters
- Gas, Condensate and Oil

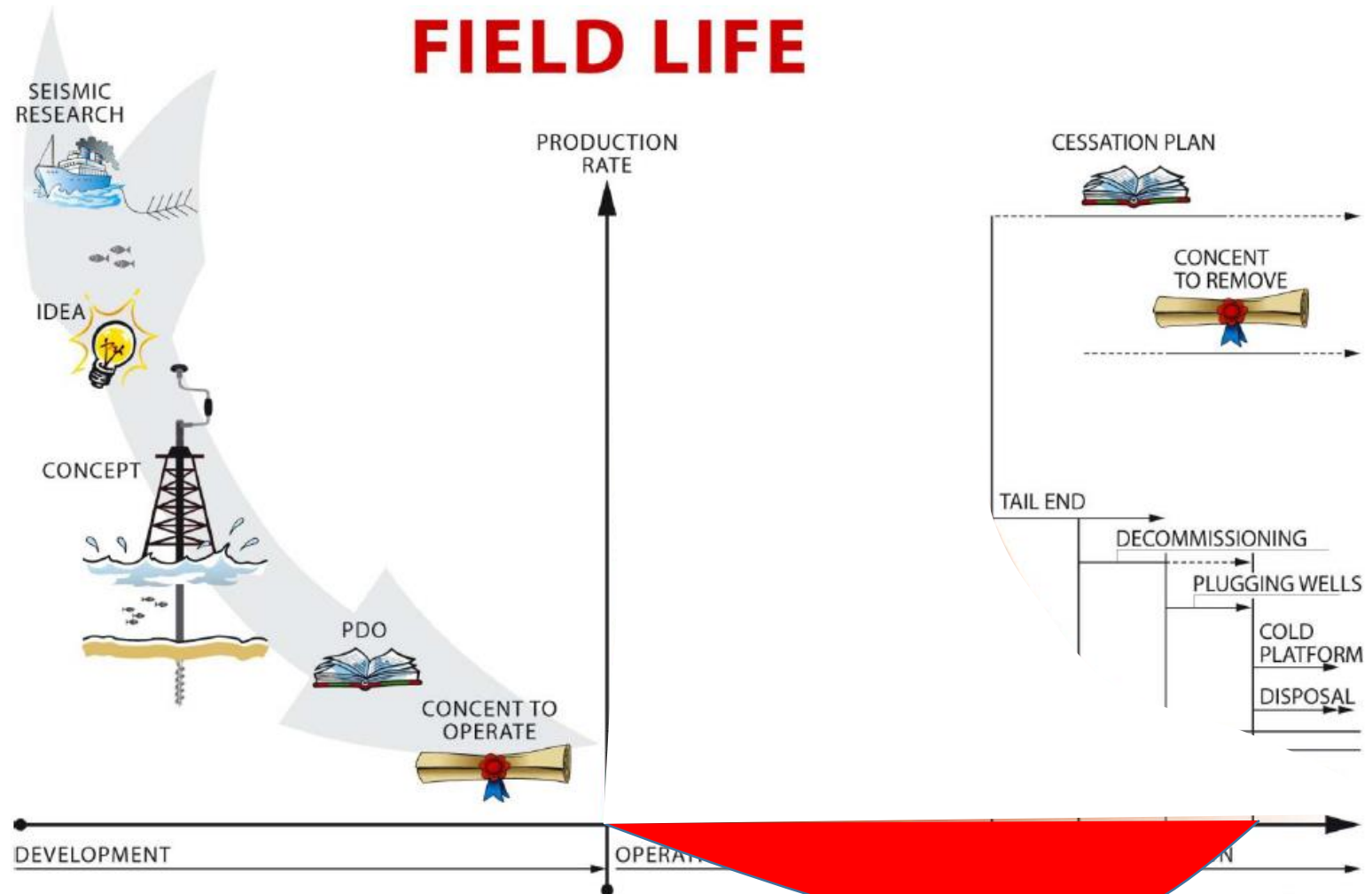


From Prospectivity to Monetization



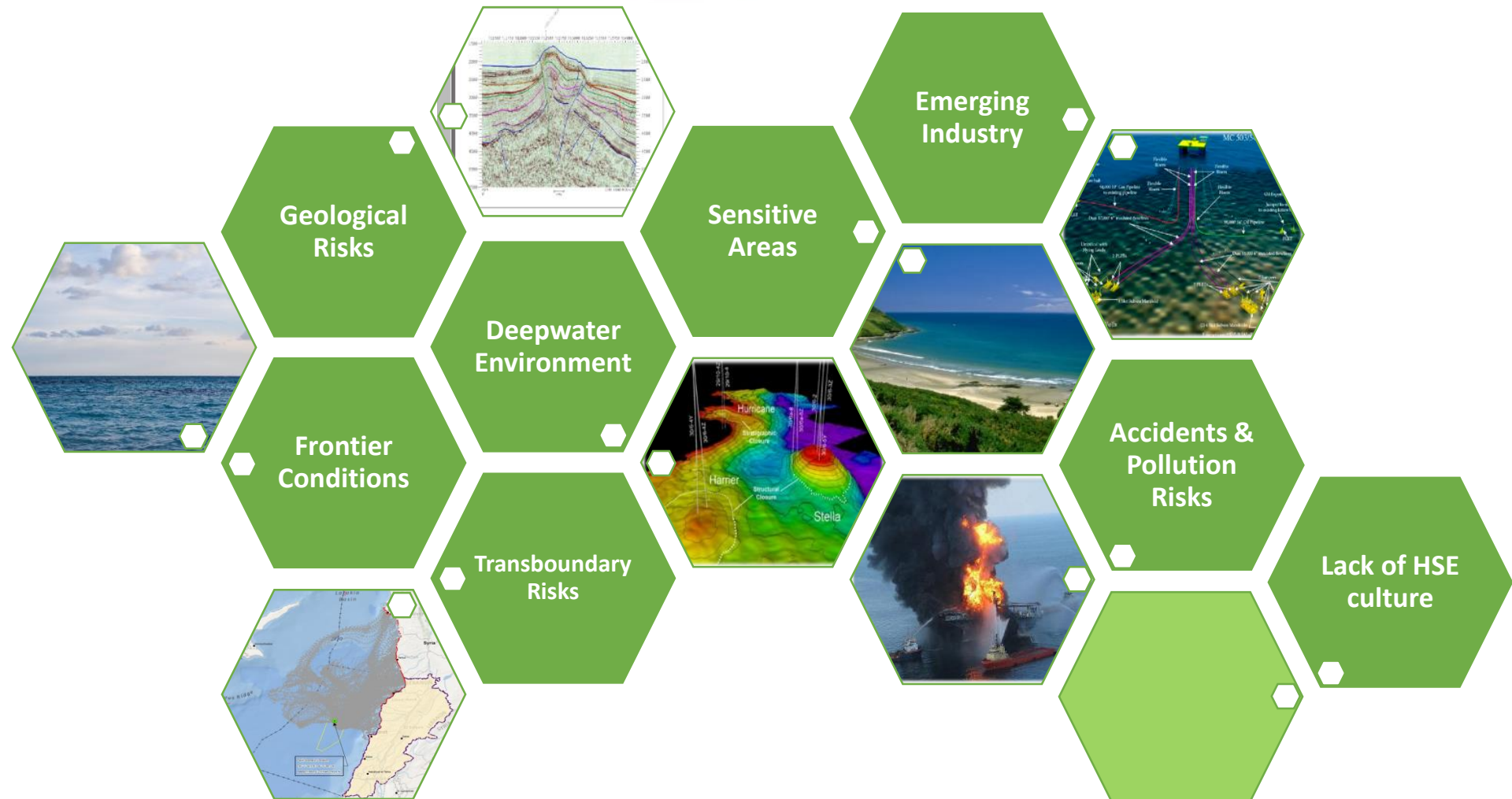
OD 0302003

From Prospectivity to Monetization



OD 0302003

HSE Challenges in O&G Lebanon



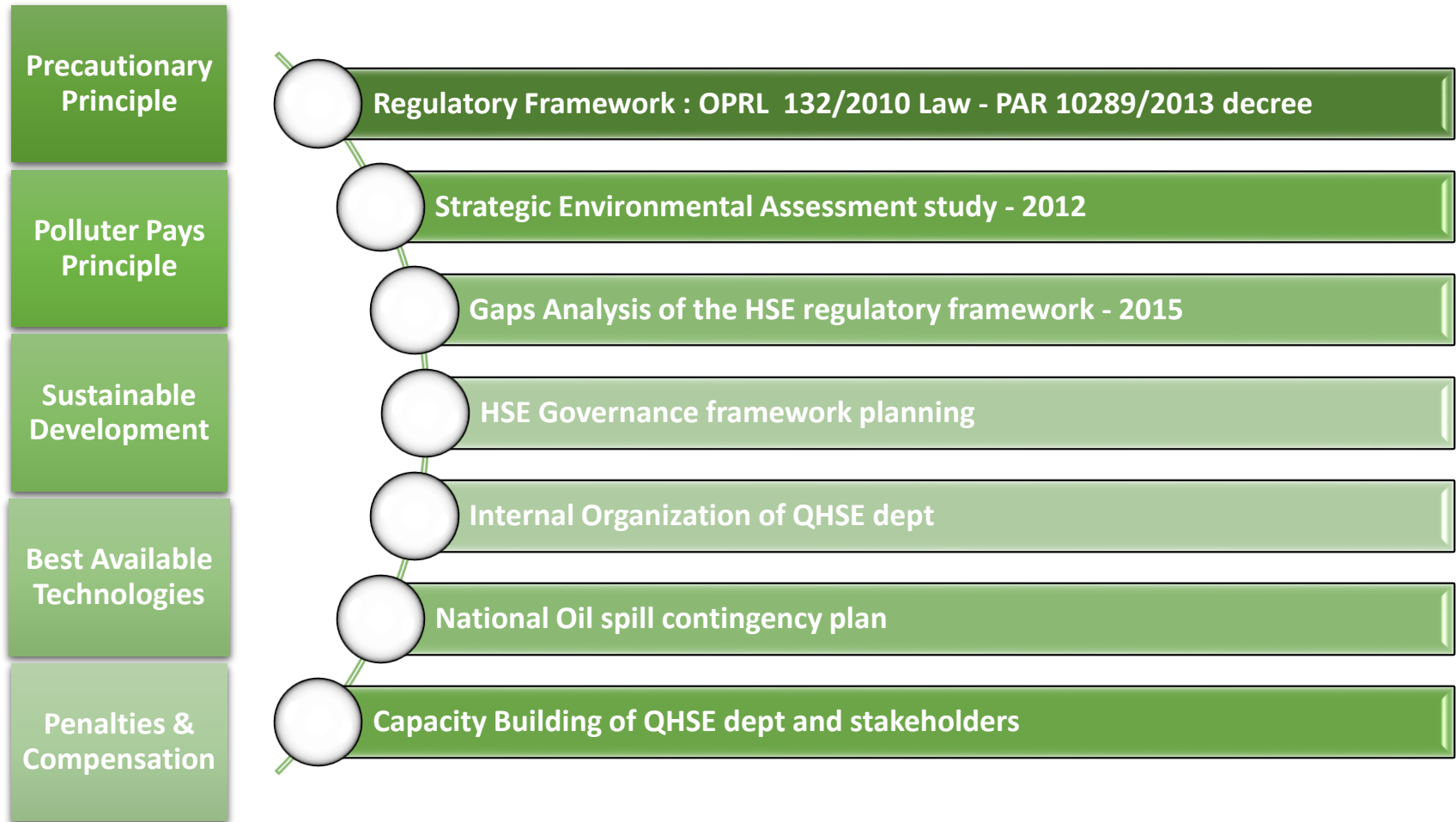
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Preparedness Front

Integrated Management of the Sector

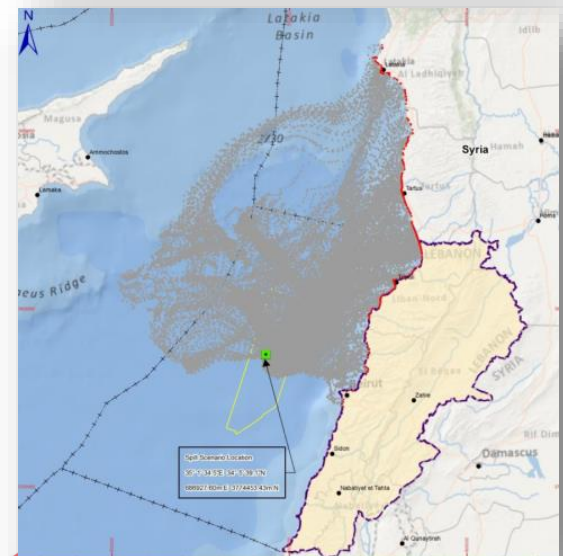
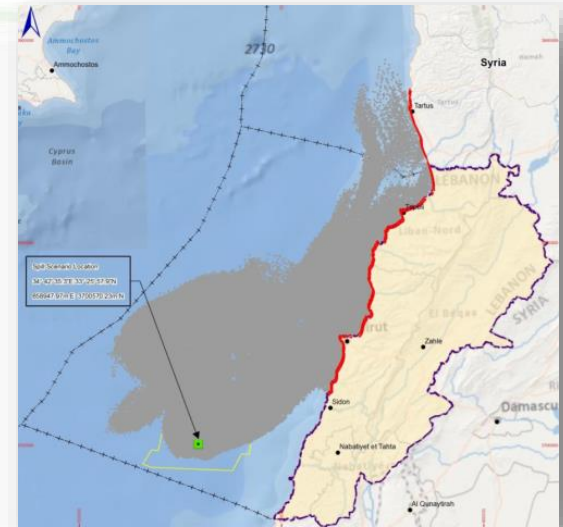


HSE Governance

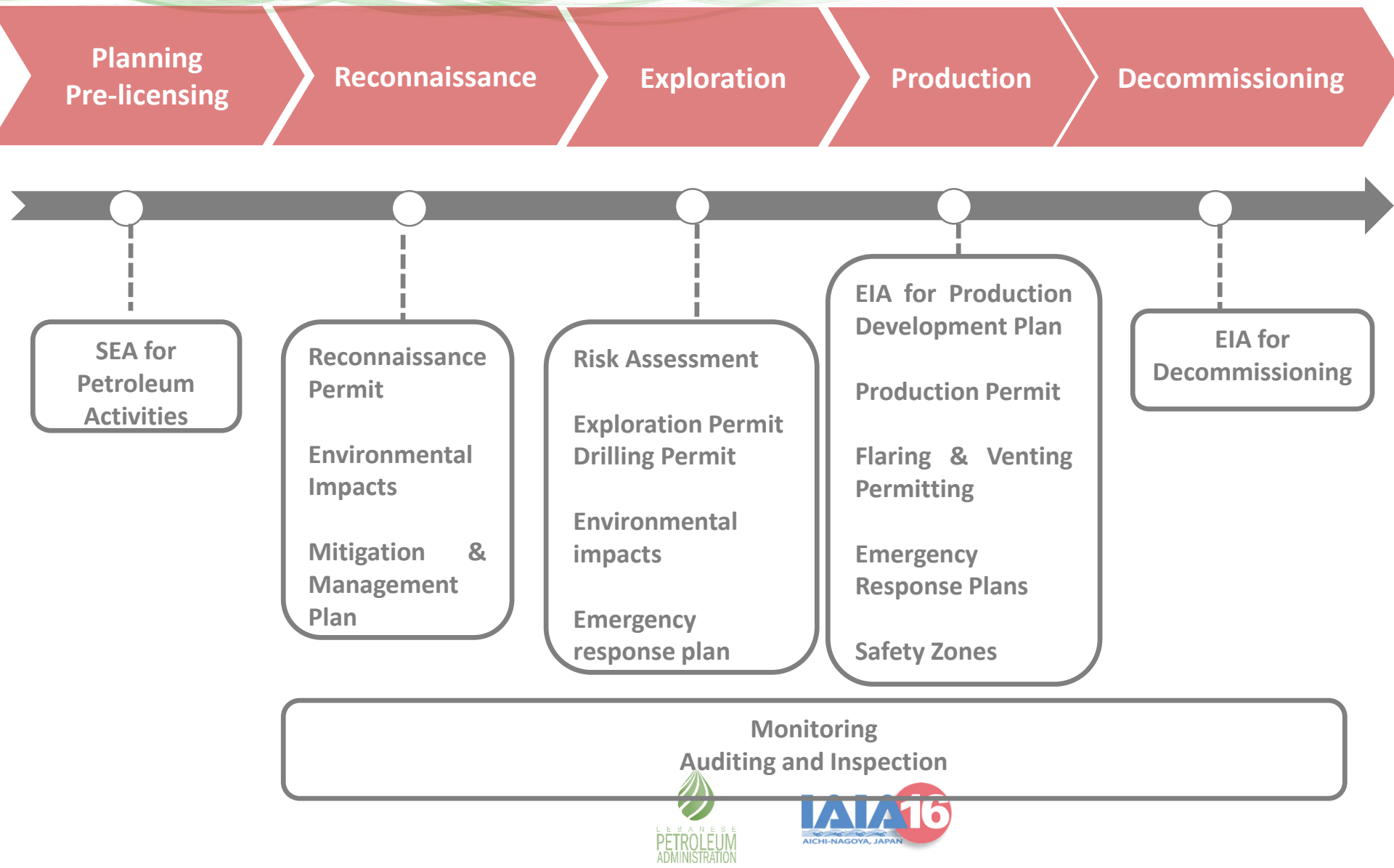


SEA for Offshore Activities in Lebanon

- To Identify environmental and socio cultural / economic impacts
- Identify potential environmentally sensitive areas and provide protection guidance
- Assess environmental and socio-economic opportunities and risks
- Suggest mitigation measures for risk and impacts management



OPRL 132 (2010) and PAR (2013) QHSE Provisions



HSE Framework Update



Governance
Model



Institutional
Design

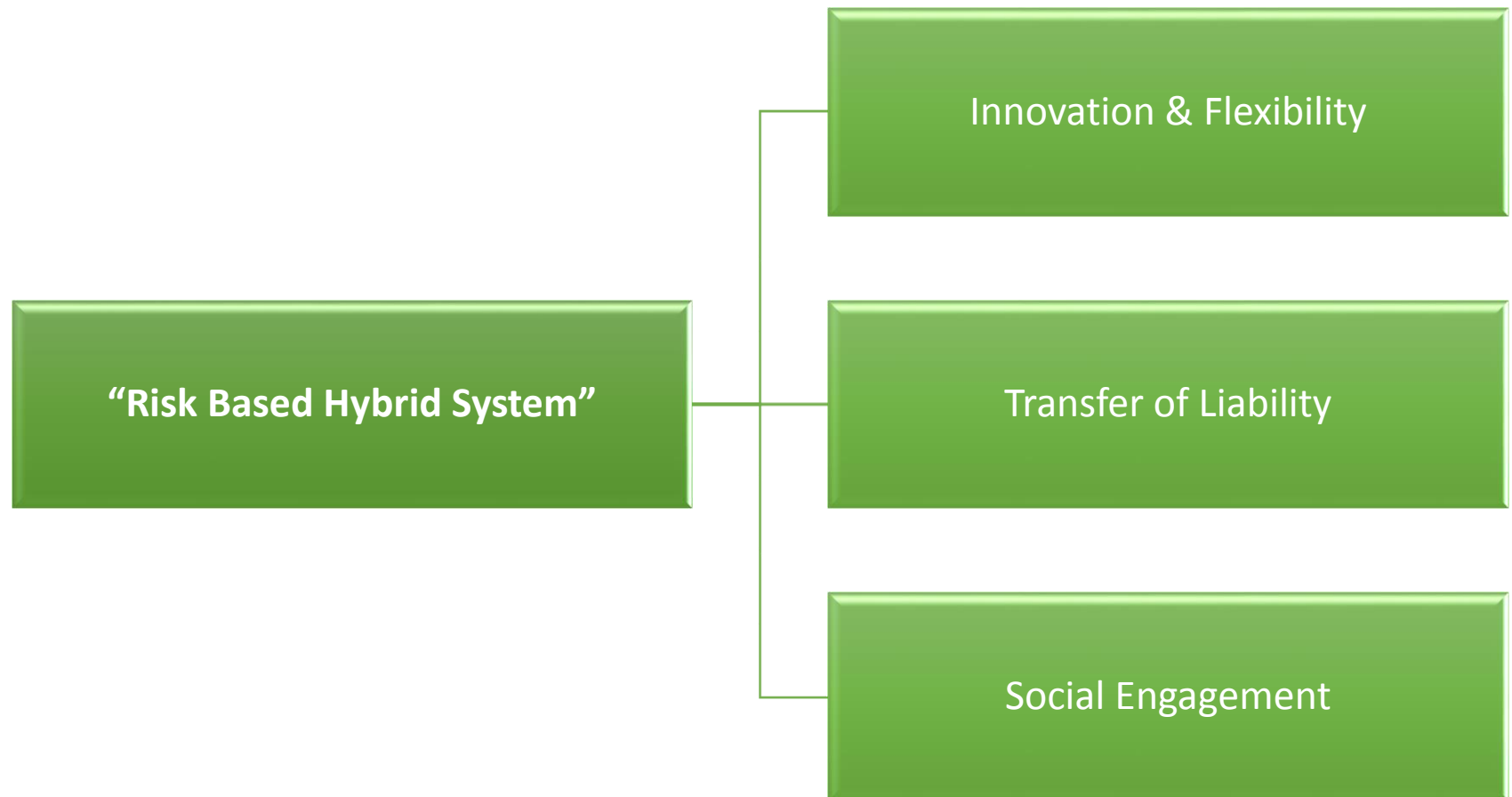


Sector Specific
Framework
Development



Framework
Implementation

Building on the Strengths



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Response Front

Oil Spill Planning

Ongoing



Data Collection and
Analysis



Stakeholder Engagement
Meetings – Identify Gaps
and Challenges



Update National Oil Spill
Contingency Plan



Identify Specific Needs



Training and Exercises

A Collaborative Approach

Proposed ICS Structure

Incident commander:
MoPWT / LPA

Incident Command Advisory Group (ICAG):

- MoPWT
- MoE
- MoEW
- Industry (polluter)
- LAF
- LPA
- Government Ministries or Directorates if spill in their jurisdiction

Incident Commander

Incident Command Advisory Group

Public Affairs
MoIn

Security
MoI (Police)

Safety
MOL

Legal Adviser
MoJ

Command Staff

**Operations Section
LAF**

**Aviation
Division
LAF**

**Marine
Division
LAF**

**Shoreline
Division
LAF**

**Aerial
Dispersants
Contractors**

**Containment
& Recovery
LAF**

Sector A

**Aerial
Surveillance
LAF**

**Marine
Dispersants
LAF**

Sector B

**Wildlife
MoE**

**Health and
Safety
MoI/MoPh/LAF**

**Waste
Management
MOE**

**Planning Section
MoE**

**Situation Unit
MOE**

**Environment
Unit
MOE**

**Resource
Deployment
Unit - LAF**

**Documents
Unit
MOE**

**Resource
Planning Unit
MOE**

**Subsistence
Unit
LAF**

**Supply Unit
LAF**

**Facilities
Support
Unit - LAF**

**Comms
Unit
LAF**

**Transport
Unit
LAF**

**Logistics Section
LAF**

**Finance Section
MOF**

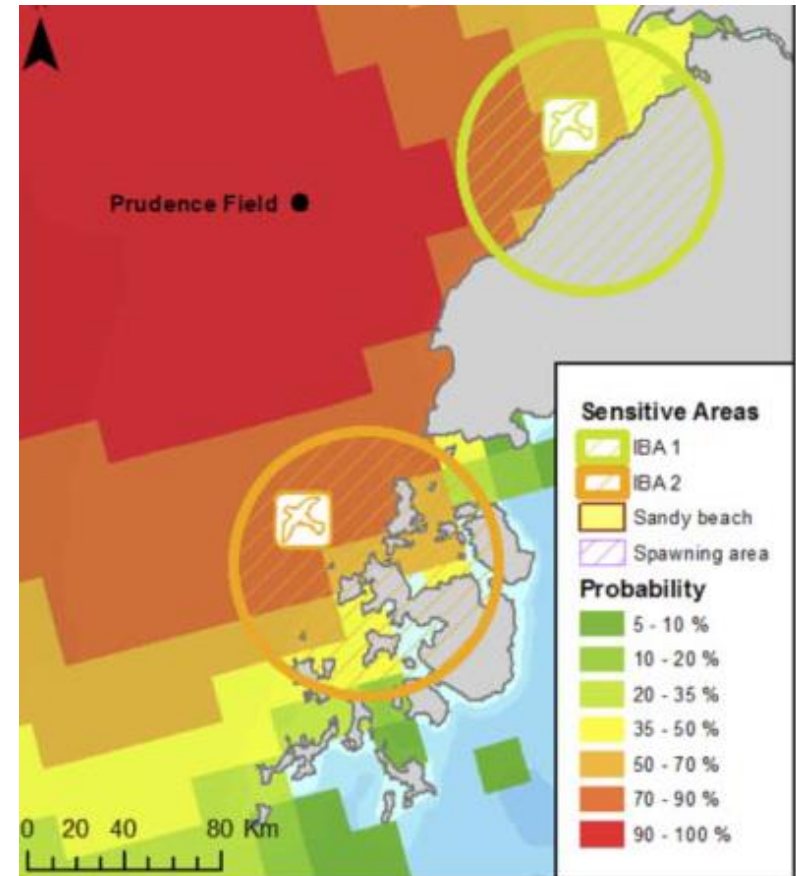
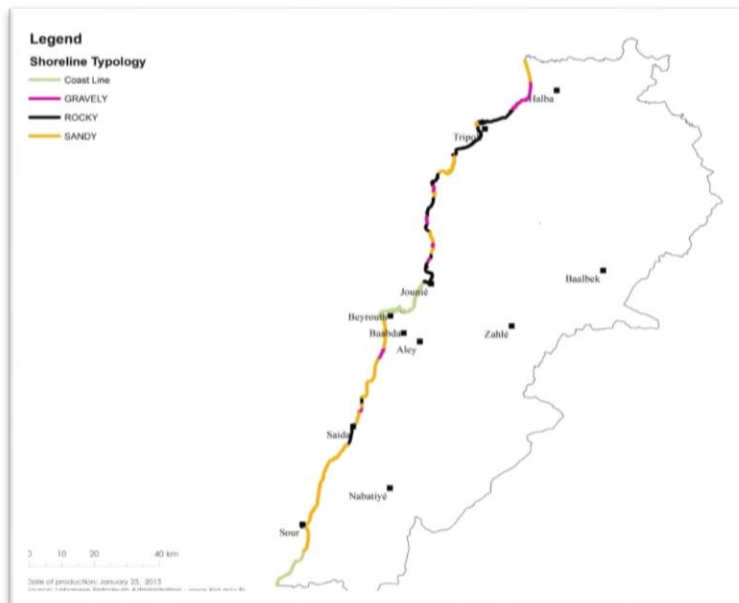
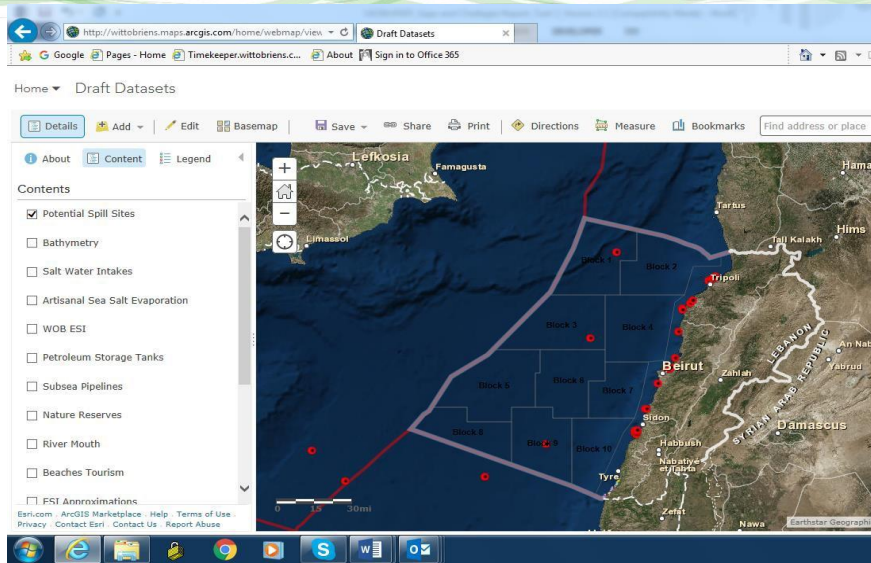
**Cost Unit
MOF**

**Time Unit
MOF**

**Claims
HRC**

**Accounts
MOF**

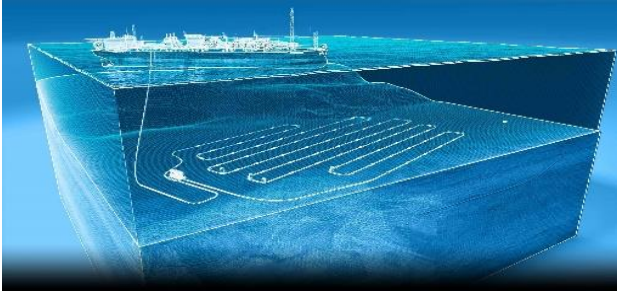
Risk-Based Planning



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Improving Resilience?

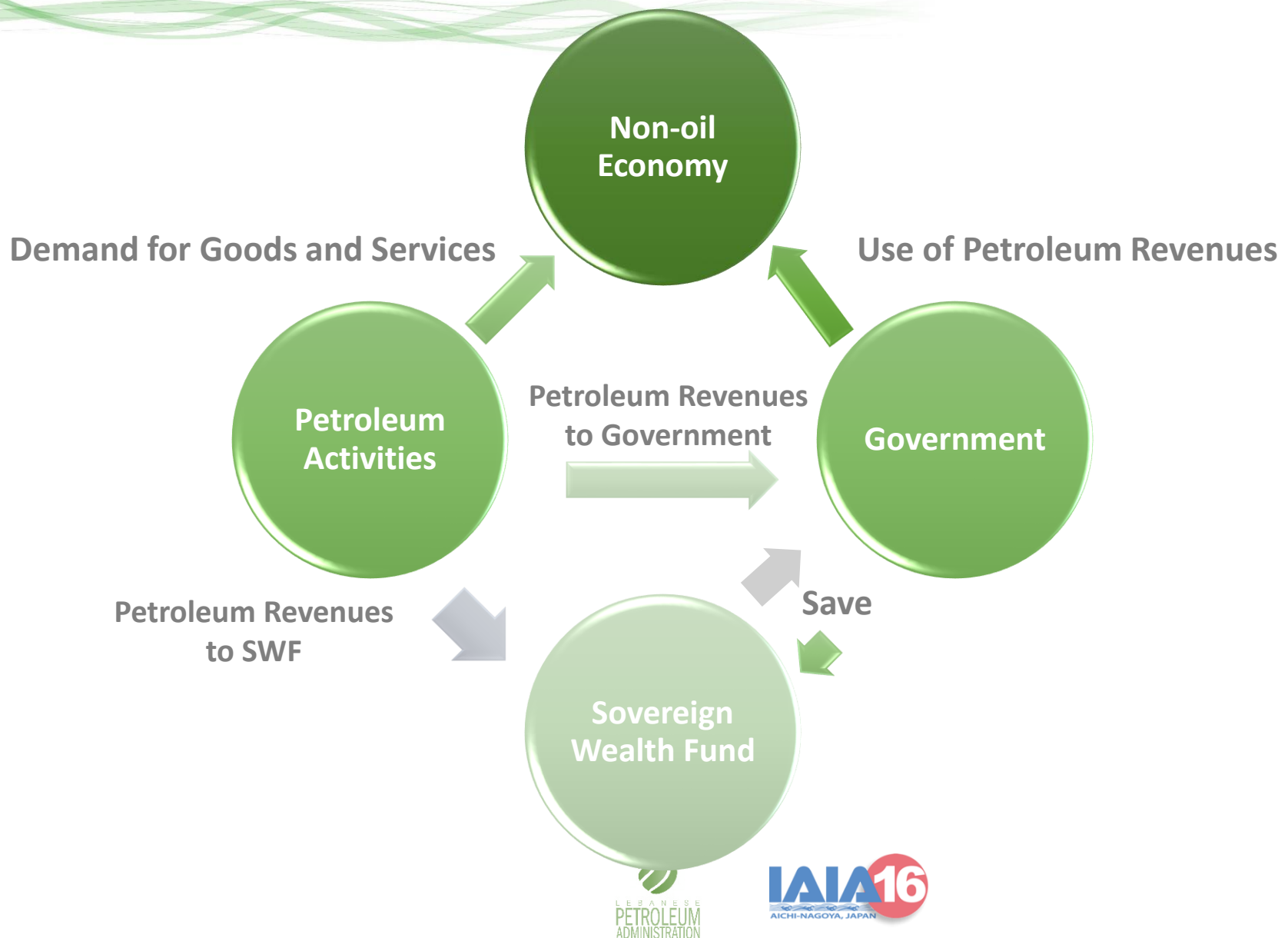
Resource Management



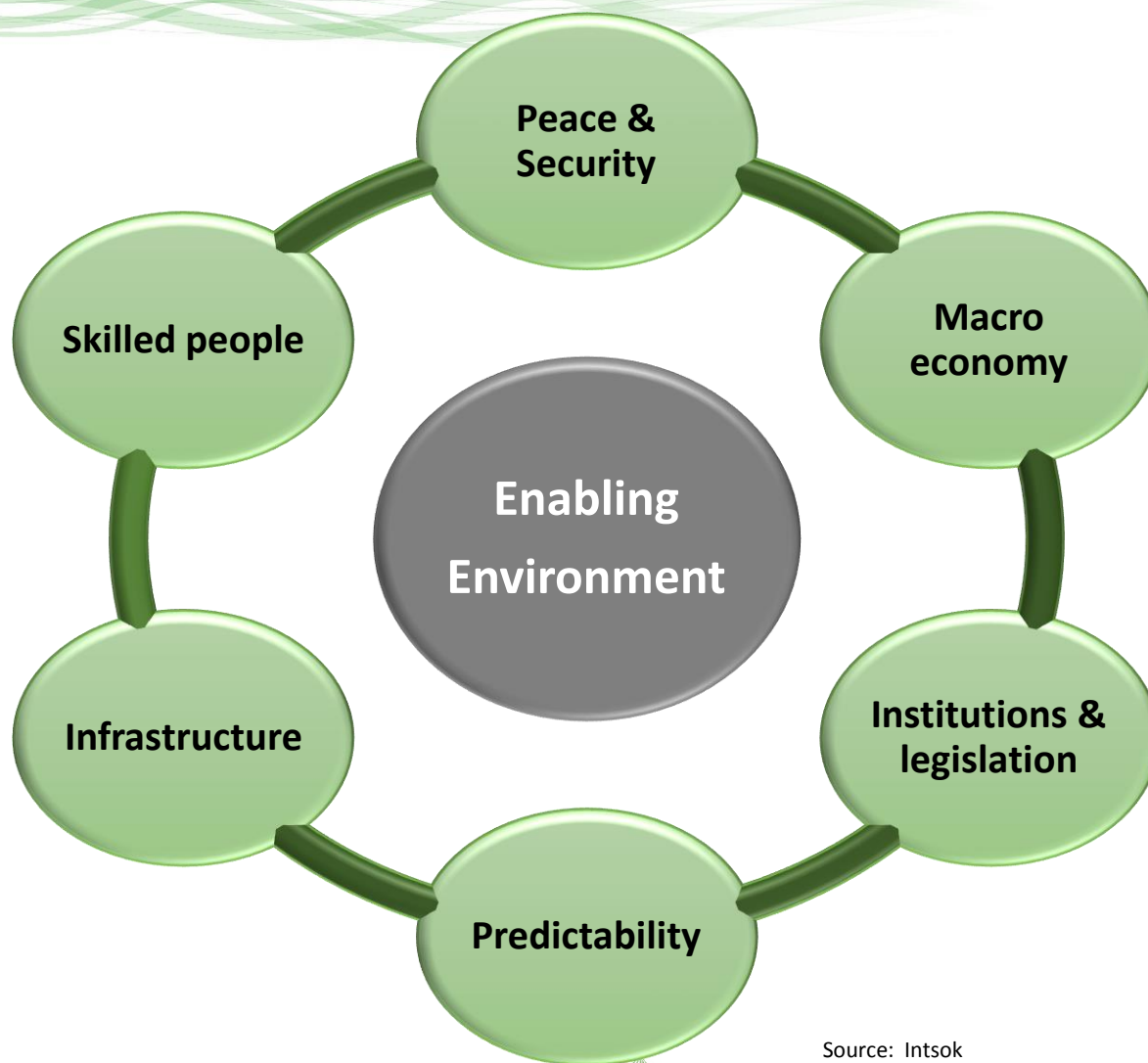
Oil & Gas
Non-renewable
Natural Asset

SWF
Renewable
Financial
Asset

Sustainable Economic Development



Creating an Enabling Environment



Source: Intsok



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Thank you

