



**GLOBAL ENERGY MARKET**

# Worldwide Petroleum Industry and Regimes



- Ownership of petroleum resources
- Petroleum project lifecycle
- The need for foreign investors
- Competing for investment capital
- Properly comparing Timor-Leste with competing regimes
- Balancing needs of investor and Government
- Striking the balance: Possible fiscal instruments



Ownership of petroleum resources

# Ownership of Petroleum Resources



- In every country, the State is the owner of petroleum and mineral resources
  - In only one country, the US, does some of the state's ownership pass to individuals
- The State is then responsible for putting in place the necessary authorities for the proper development of its petroleum resources



Petroleum project lifecycle

# Petroleum Project Lifecycle



- The development of a petroleum project can be described in 5 main steps:

Exploration

- Exploration....
  - Conducting geologic surveys
  - Drilling wells
- .... to find deposits of oil and gas

# Petroleum Project Lifecycle



- The development of a petroleum project can be described in 5 main steps:



- Appraisal....
  - Further drilling and geologic studies
  - Review of export and market options
- ....to determine if there is enough petroleum for a commercial project

# Petroleum Project Lifecycle



- The development of a petroleum project can be described in 5 main steps:

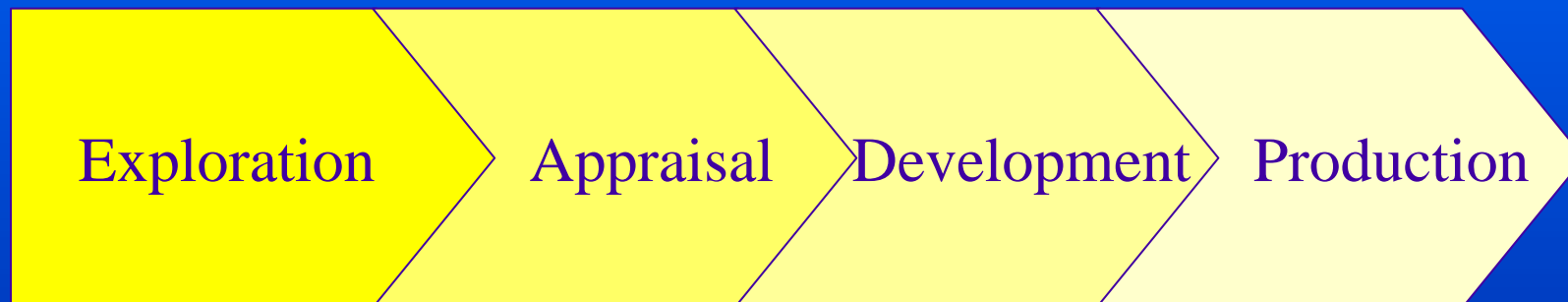


- Development ....
  - Drilling of additional wells; and
  - Construction of facilities
- .... for the production and sale of petroleum

# Petroleum Project Lifecycle



- The development of a petroleum project can be described in 5 main steps:

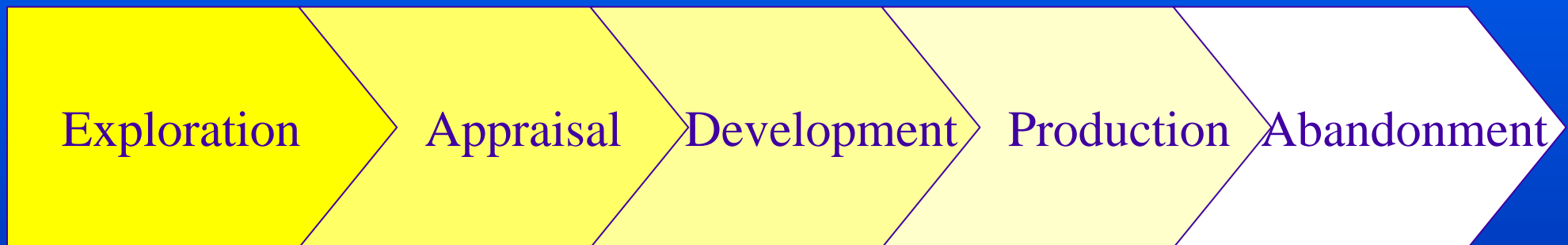


- **Production.....**
  - Operation and maintenance of wells and facilities
- .... to produce oil and gas efficiently and safely

# Petroleum Project Lifecycle



- The development of a petroleum project can be described in 5 main steps:



- Abandonment .....
  - Plugging wells;
  - Removal of facilities; and
  - Restoration of operating areas
- ... once production has ceased.



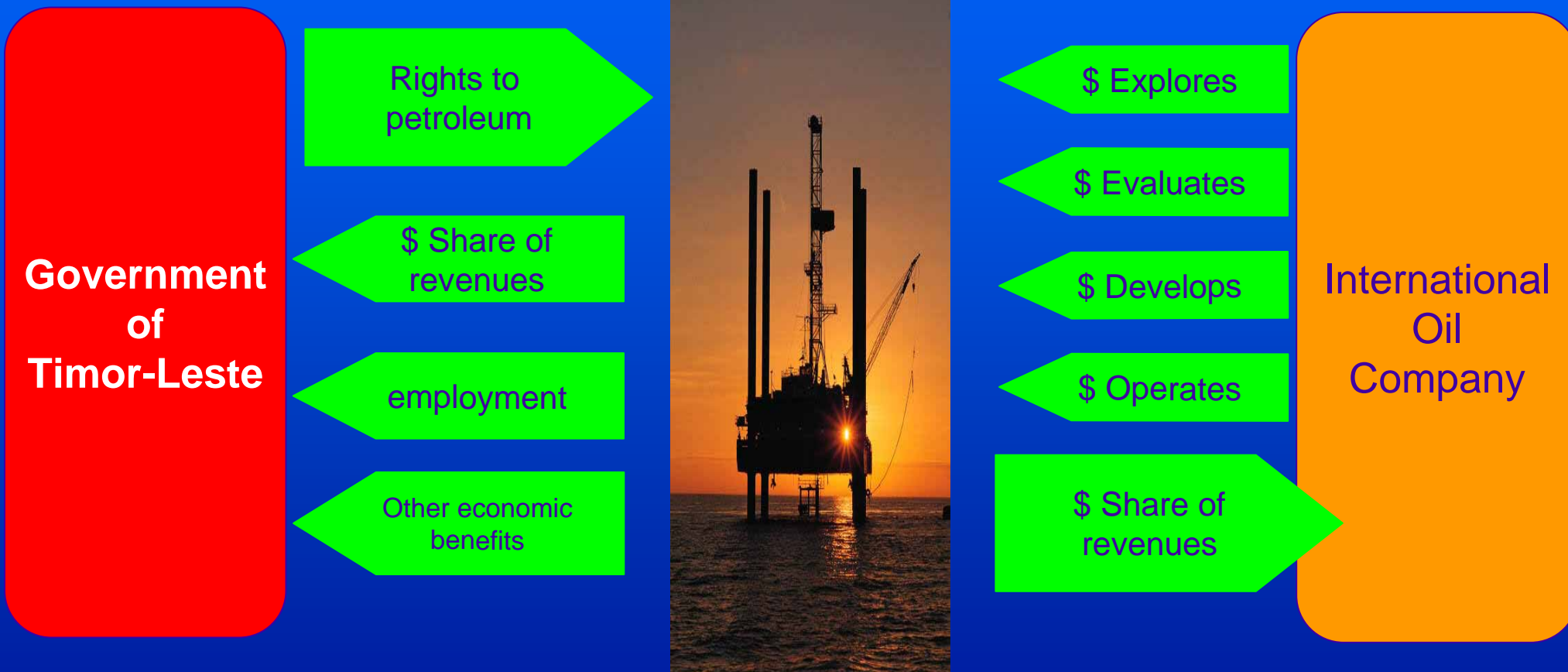
The need for foreign investors

# The Need for Foreign Investors



- Exploration is difficult, risky and expensive
  - +/- 40% of wells find petroleum
  - Only about 10% lead to commercial development
- Development is technically demanding and very expensive
  - Especially for offshore deposits. Bayu-Undan will cost around US\$3.5 billion to develop
- Specialized skills are required
- The government does not have either the money or the expertise
- International oil companies do

# The Need for Foreign Investors





Competing for investment capital

# Timor-Leste competes for investment in a global market



- **Dramatic increase in number of countries competing for oil company risk capital**
  - Between 1985 and 2000 roughly 50% of the open countries reduced overall government take
- **Dramatic reduction in number of companies exploring**
  - Larger companies with larger materiality thresholds
  - Industry gravitating towards extremes of scale
- **Uncertainty over geopolitical stability in key petroleum producing regions**

# Countries Competing: 1980's



Accessible  
Inaccessible

# Countries Competing: 1990's



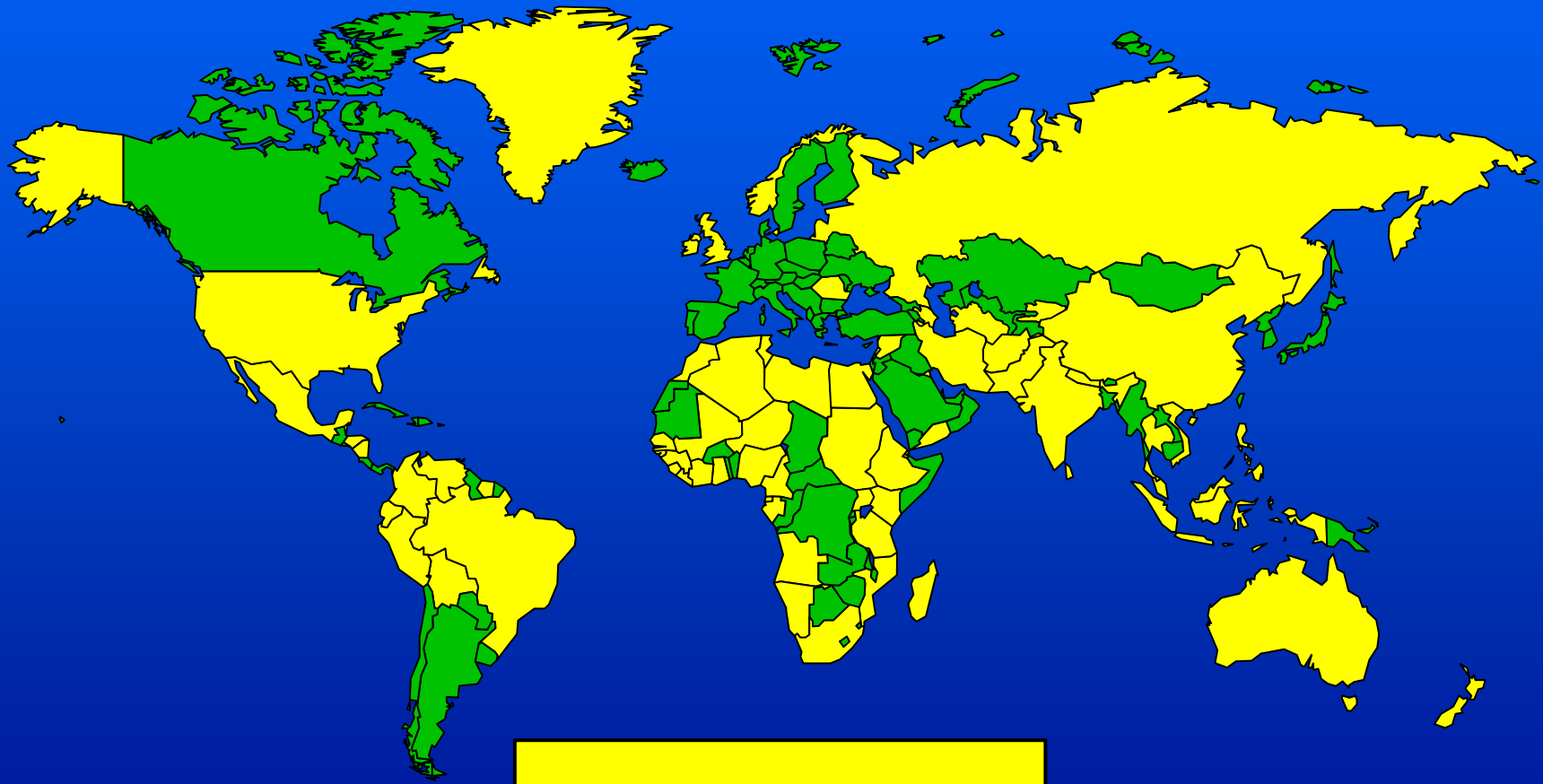
# Countries Competing: Today



 Accessible  
 Inaccessible



# Competition for E&P Capital



Licensing Rounds  
in 2004

# Number of Companies Competing: Top Public Companies Jan 98

## Market Capitalization (\$Billion)



Royal Dutch Shell	198.7	YPF	12.1	LASMO	4.1
Exxon	152.0	Norsk Hydro	11.7	Anadarko	3.6
BP	75.0	Enron	10.6	Vastar	3.5
Mobil	56.9	Marathon	9.7	Gulf Canada	3.4
Chevron	50.3	Occidental	9.7	Renaissance	3.4
ENI	45.6	Unocal	9.6	Enron O&G	3.3
Amoco	42.3	Petrofina	8.6	Apache	3.2
Elf	32.1	Burlington	7.9	AEC	3.1
BHP	30.1	PetroCanada	7.0	Can. Oxy	3.1
Texaco	28.7	Coastal	6.6	Norcen	3.1
TOTAL	27.0	UPR	6.2	Can Natural	3.0
ARCO	25.8	PanCanadian	5.8	Kerr McGee	3.0
BG	18.8	Suncor	5.4	Pioneer	2.9
Conoco (Oct. 98)	15.5	Amerada Hess	5.1	Oryx	2.7
Phillips	12.8	Talisman	4.8	Noble	2.0
Repsol	12.8	Enterprise	4.7	UTP	1.8

# ...Is Getting Smaller

Same List in August 2004



ExxonMobil	\$296.5	Repsol YPF	25.2	Marathon	12.2
BP	204.5				
		Encana	19.6		
Royal Dutch Shell	168.2	Occidental	19.0		
Total	119.2	CNOOC	19.2	Unocal	9.2
		Imperial Oil Ltd	17.1	Talisman	8.4
ChevronTexaco	100.9				
PetroChina	85.7	Apache	14.2	CNR	8.4
ENI	76.4	Devon	16.0		
ConocoPhillips	51.2			Murphy	6.6
SNP (China P & Ch)	33.8	Anadarko	14.5		
		Suncor	12.8	Amerada Hess	7.1
Petrobras	30.8	Burlington R.	14.0		
		Petro_Canada	12.2	Kerr-McGee	7.6
Statoil	26.9				



Properly comparing Timor-Leste  
with competing regimes

# Properly comparing Timor-Leste with competing regimes



- **Learning from and about others**
  - We studied and learned from the actions and experiences of many other countries
  - Benchmarking single aspects of an overall regime can lead to incorrect conclusions
- **Understanding the bases on which countries compete**
- **Understanding yourself**
  - Proper application to a country's particular situation

# Learning from and about others



- The true value to a state or an oil company is calculated by evaluating the entire package of terms, not any one item.
- Fiscal and technical features of regimes in many different countries were reviewed and discussed in developing the Timor-Leste petroleum regime.
- There are examples of a particular type of regime being very successful in one country and unsuccessful in another.
- The key is understanding why.

# Understanding the bases on which countries compete



- Technical Prospectivity
  - Conventional thinking
- Legislative Framework
  - Technical obligations
  - Fiscal obligations
  - State's role and take
- Legal Framework
- Contractual Terms
  - Decision-making
  - Dispute resolution
  - Transparency
  - Liability
- Costs
  - Infrastructure, location, depth
  - Indirect taxes, duties
  - Local content rules
  - Local labor rules
  - Environmental issues
- Infrastructure
  - Roads, ports
  - Power
- Country "Stability"
- Company "Comfort"

# Understanding yourself



- **Timor-Leste is not like any other country**
  - Start-up phase for the entire government, not just energy is new
  - Developing economy
  - Active petroleum developments from day 1
  - Joint development with another sovereign government
  - Limited experienced people
  - Limited financial resources
  - Limited data on previous activity
  - No petroleum legislation
  - Exporter of raw product / importer of refined products

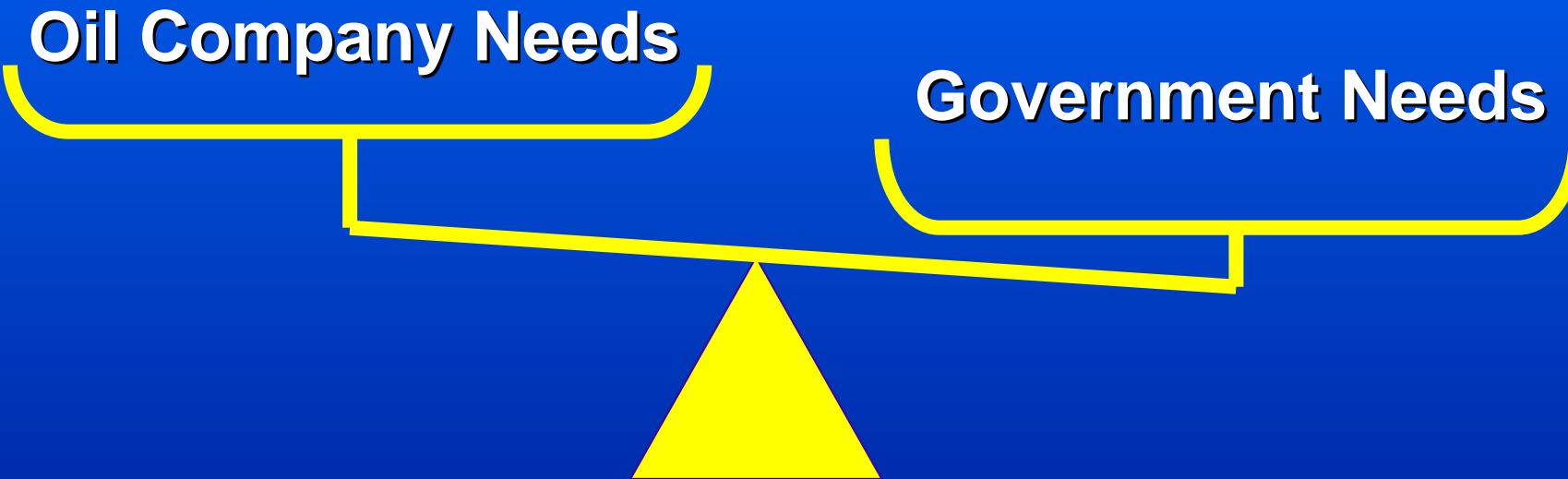


Balancing needs of investor and  
Government

# The Need for Foreign Investors



The needs of the investor and the Government must be balanced ...



Unacceptable

Acceptable

Unacceptable

...and that balance can't tilt too far to either side.

# A Proper Balance



- **Oil Company**

- Stability
- Transparency
- Timeliness
- New opportunities
- Return on Investment

- **HOST GOVERNMENT**

- Fair Share
- Commitment
- Some control
- Technology transfer
- Local goods & services
- Investment options





Striking the balance: Possible  
fiscal instruments

# Fiscal Terms and the Sharing of Benefits



- Private capital is encouraged by giving investors the opportunity to earn a return
  - Revenues in excess of a fair return are known as “Economic Rent”
- Returns are provided by sharing benefits
- Sharing of benefits is a balance between nation’s rights as resource owner, and the contractor as capital provider
- Systems that share benefits in alignment with investment decision-making processes can be expected to be the most robust

# Capturing Economic Rent



- In an ideal world, a government might try to set its take so as to capture 100% of the Economic Rent
- In the real world, fiscal terms are set at the beginning, not retroactively, thus;
  - Sometimes they capture  $<100\%$  and shift extra value to the investors
  - Sometimes they capture  $>100\%$ , and stifle further activity
- A good system will have flexibility to adjust to the changing conditions of the real world

# Variety of Fiscal Tools used to collect Economic Rent



- **Bonuses**
  - Signature / Production
- **Licenses Fees**
- **Land Rentals**
- **Carried participation**
  - Though this may also be considered an investor cost
- **Production share before cost recovery / Royalty**
  - A form of non-recourse loan on economic rent
- **Production share after cost recovery**
- **Taxes**
  - Corporation Tax
  - Other Taxes
  - Special Petroleum Tax

# Application of the Fiscal Tools



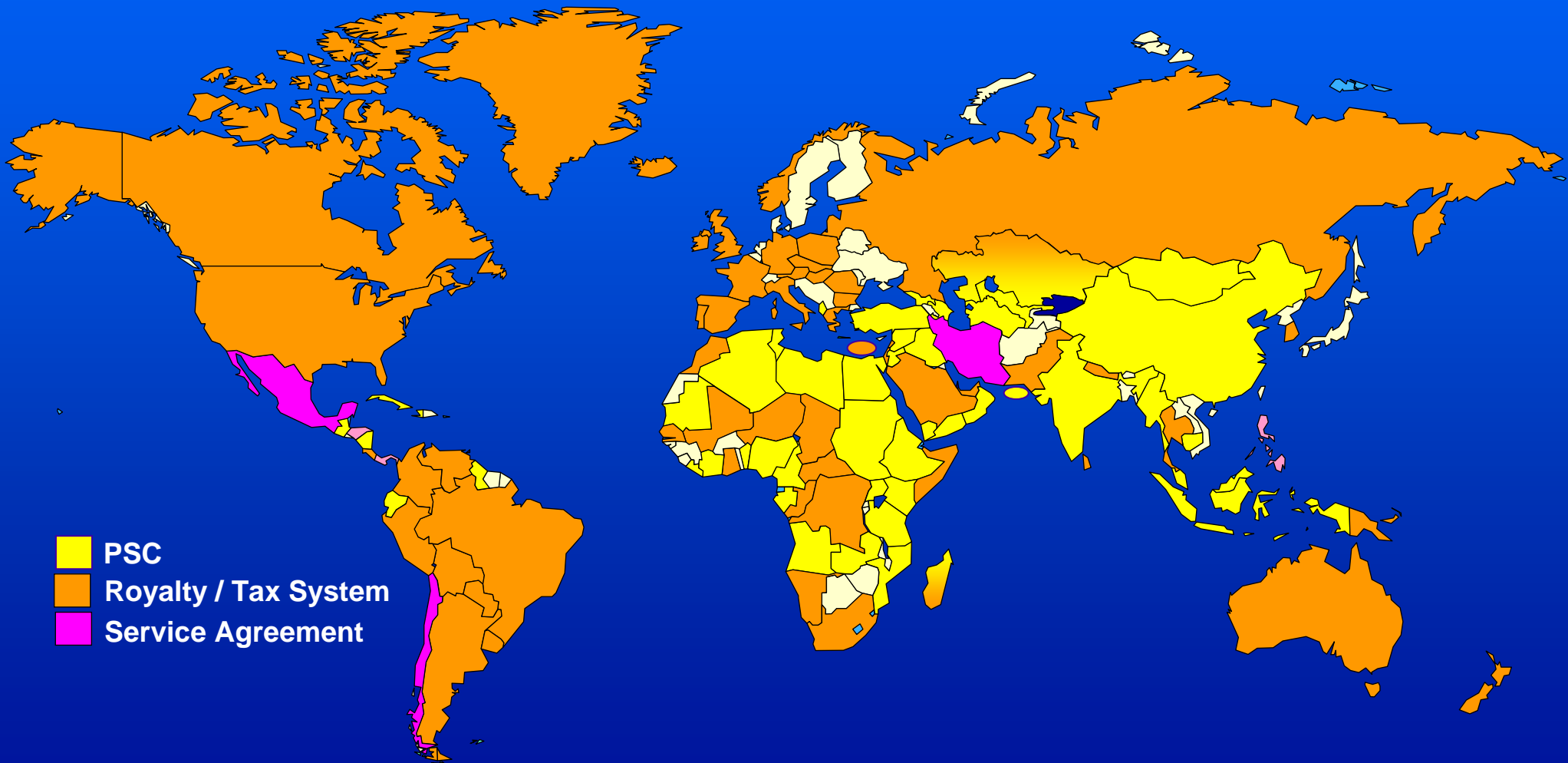
- There is a wide variation in how the Fiscal Tools are applied
  - Each can produce very positive and very negative results depending on all the circumstances of a given situation
- Timing of application is equally important

# Application of the Fiscal Tools



- Two main types of systems
  - Revenue-Based; or
  - Profitability-Based

# Fiscal Regime Types Today



# Revenue-Based Fiscal Systems



- Generally include a Royalty, or First Tranche Petroleum share
- Generate more stable State revenue streams
- Are simple to administer and calculate and require little audit ability/infrastructure on the part of the State
- State starts receiving funds with first production
- Increases cost consciousness of companies, and discourages "gold-plating"

# Issues associated with Revenue-Based Systems

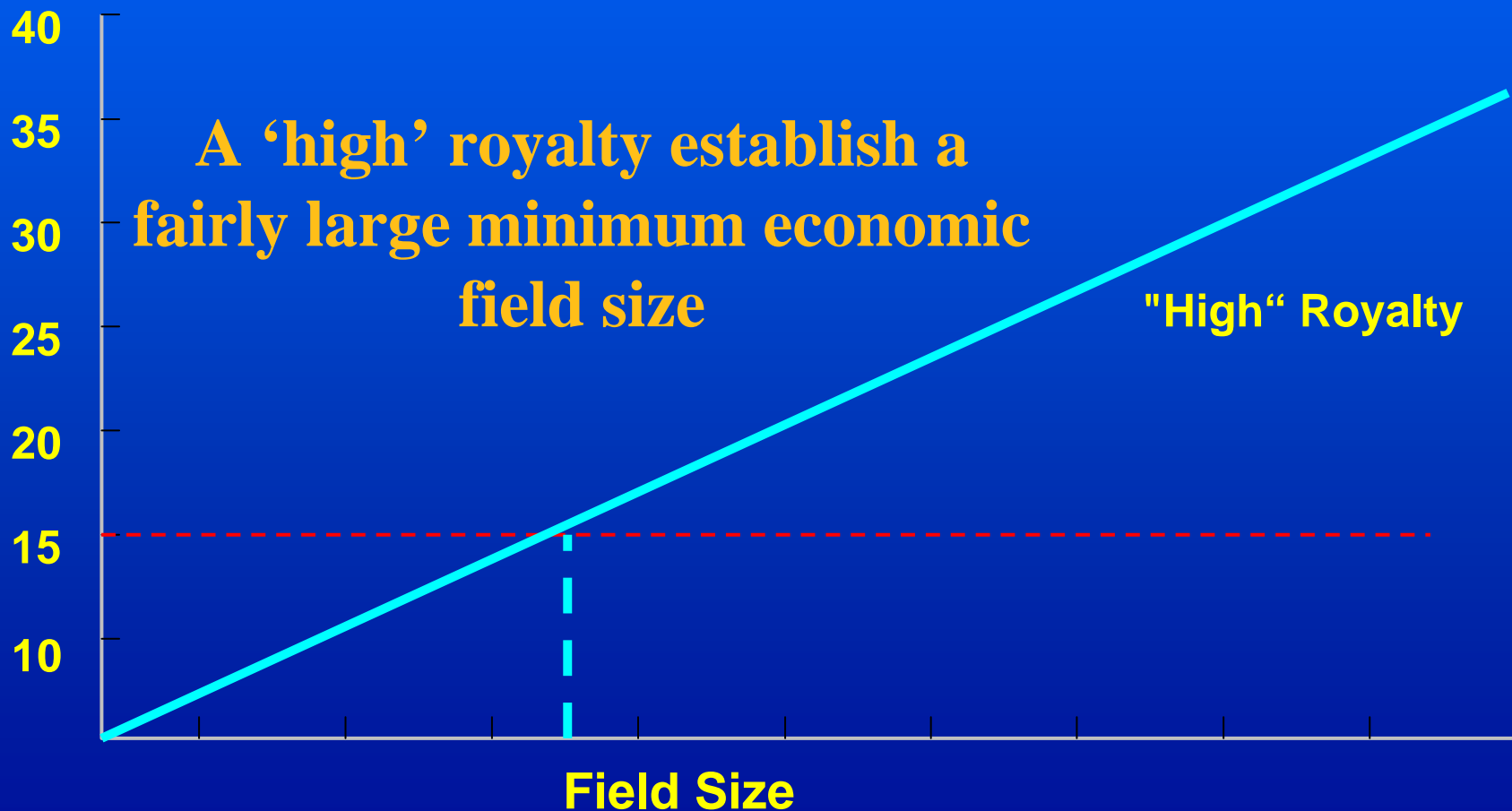


- Sets an entry economic threshold
  - Discourages development of smaller fields
- Impacts post-development capital investment
  - Increases time for investment capital recovery
  - Increases cost of capital
- Leaves recoverable reserves in the ground
  - Encourages earlier abandonment of producing fields
- Lacks flexibility to accommodate changes in the underlying conditions (price, cost, etc.)

# Retaining Economic Rent vs. Lowering Economic Threshold



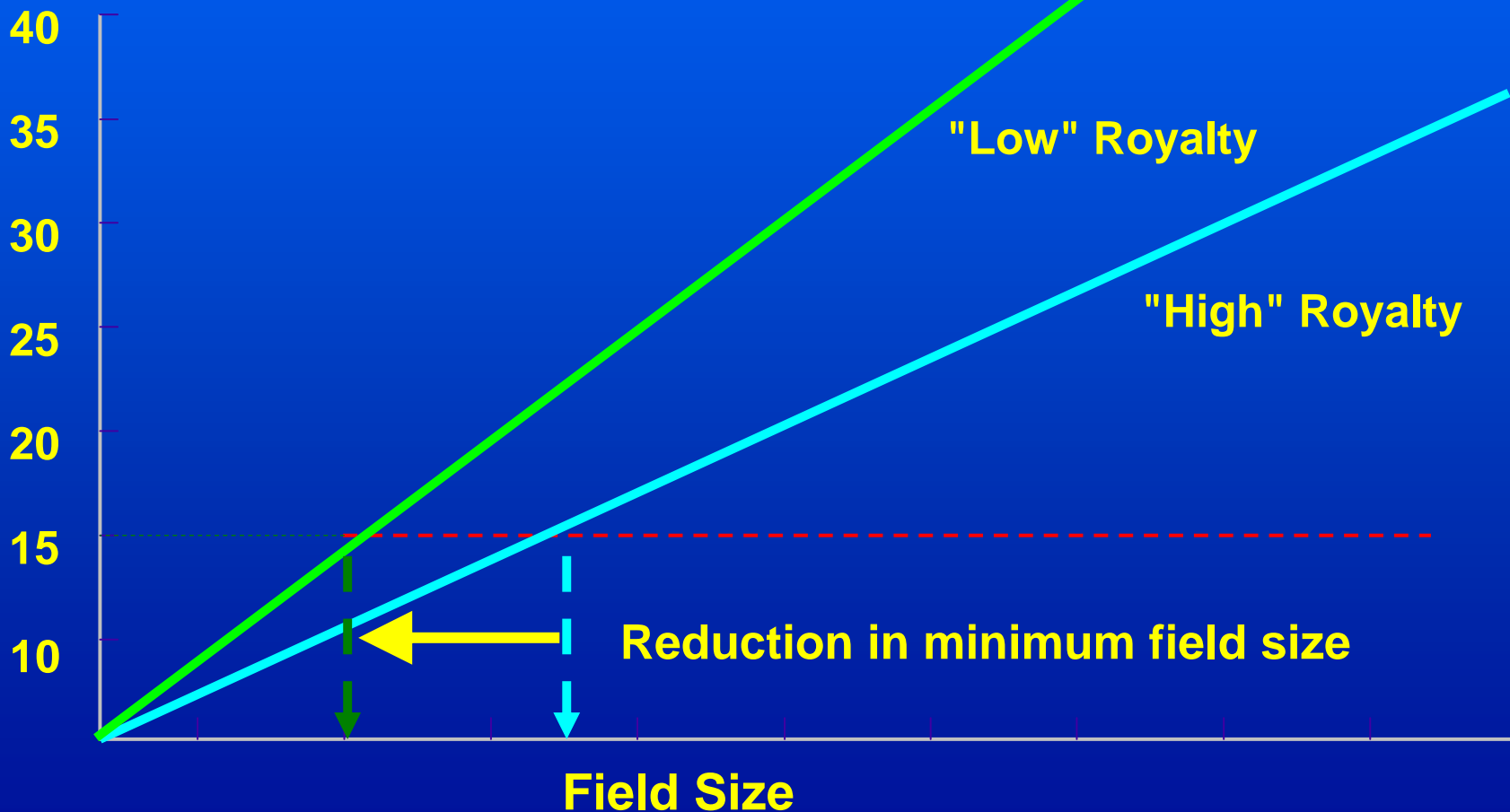
Contractor  
Rate of Return



# Lowering Royalty reduces the Economic Threshold



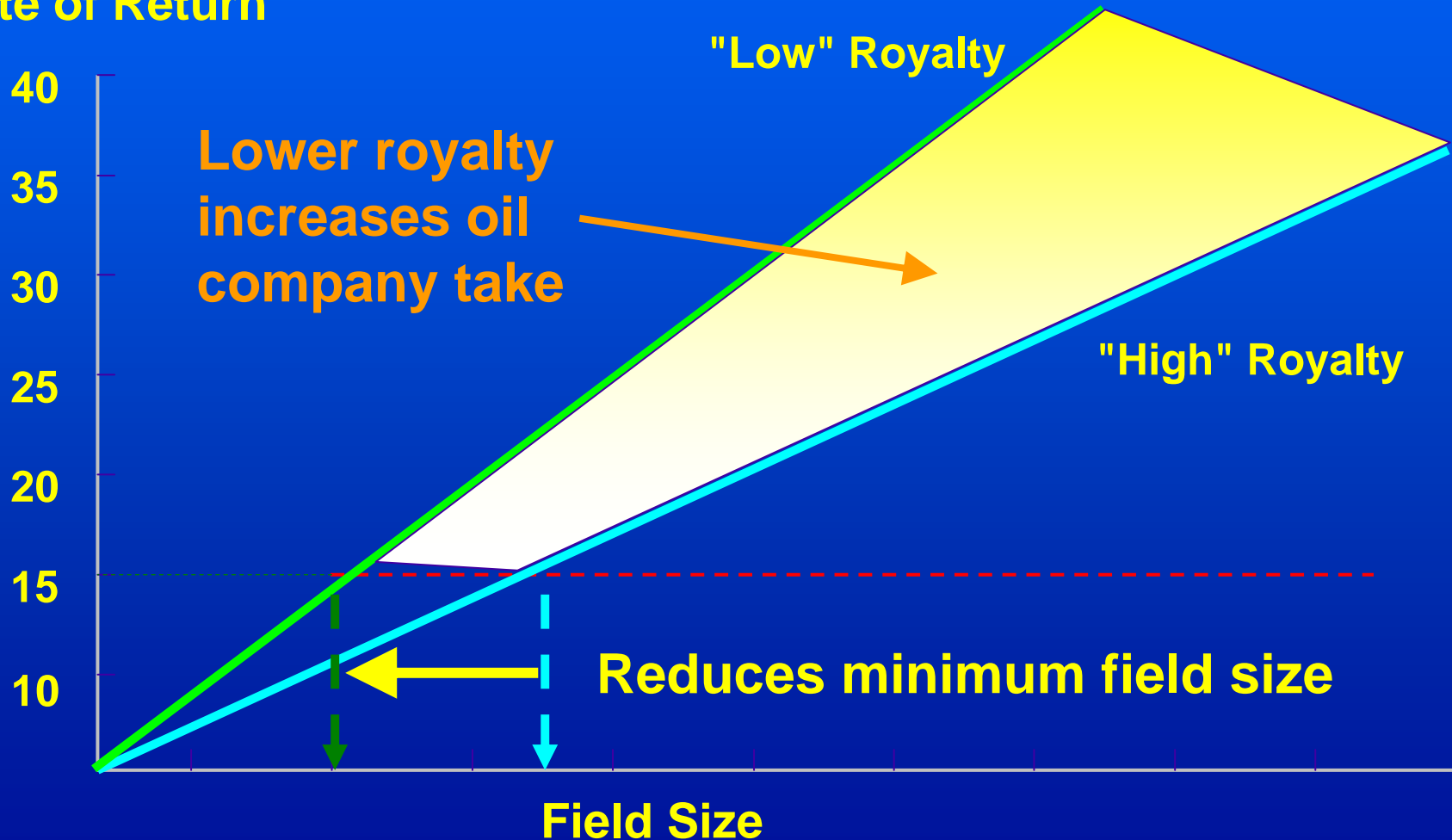
Contractor  
Rate of Return



# However,...



Contractor  
Rate of Return



# Option 2: Profitability-Based Systems



- Many countries employ profit-based systems
- These range from precise instruments (e.g. IRR based taxation) to simple production level-based taxation
  - **PROS**
    - Allows a wider range of fields to be commercial
    - No disincentive for mid/end life investment
    - Extends field life
    - Increases ultimate recovery
  - **CONS**
    - Diminishes incentive for cost control
    - Potentially higher administration burden
    - Potential difficulties in political consensus/approvals

# Combining the Two Systems



Contractor  
Rate of Return

"Low" Royalty

"High" Royalty

40  
35  
30  
25  
20  
15  
10

Lower economic threshold  
results in greater activity and  
higher government revenues

Profit based mechanism acts as a  
balance to give governments a  
fairer share of very robust projects.

Field Size

# Timing is Equally Important



# Timing is Equally Important



# Considerations for the Timor-Leste Structure



- **Must be flexible enough to allow development of:**
  - Seeps;
  - Small onshore accumulations; and
  - World-class, large-scale offshore prospects
- **Therefore:**
  - There needs to be a low barrier to entry; and
  - Needs to address the capture of a larger share of very profitable fields