



Study Group 1.3  
Gas Rent and Mineral Property Rights

**Joint Committee Meeting of WOC 1**  
**Kota Kinabalu**  
**4~7 September 2013**

# Gas Rent and Mineral Property Rights

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- Fiscal Regimes
  - Mozambique
  - Tanzania
  
- Case Studies(Ultra Deepwater Gas Cases)
  - General Assumption
  - Deepwater Gas Discovery under current Fiscal Regimes
  - Deepwater Gas Discovery with gas volumes(2~15Tcf)
  
- Conclusions

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# Fiscal Regimes(Mozambique)

- Royalty : 6 % for natural gas, 10% for crude
- Cost Recovery is limited to 65% of "Disposable Petroleum"
- Production Sharing (R-Factor Base) from "Profit Petroleum"

Government (%)	R-Factor	Contractor (%)
10	$R < 1$	90
20	$1 \leq R < 2$	80
30	$2 \leq R < 3$	70
50	$3 \leq R < 4$	50
60	$4 \leq R$	40

Source : Wood Mackenzie

# Fiscal Regimes(Mozambique)

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## ○ R-Factor

### R-Factor

= Cumulative Cash Inflows<sub>(n)</sub> / Cumulative Capital Expenditures<sub>(n)</sub>

### Cumulative Cash Inflows<sub>(n)</sub>

= Cumulative Cash Inflows<sub>(n-1)</sub>  
+ Concessionaire Portion of Profit Petroleum<sub>(n)</sub>  
+ Concessionaire's Cost Petroleum<sub>(n)</sub>  
- Operating Cost<sub>(n)</sub>  
- Computed Corporate Income Tax<sub>(n)</sub>

### Cumulative Capital Expenditures<sub>(n)</sub>

= Cumulative Capital Expenditures<sub>(n-1)</sub>  
+ Exploration Costs<sub>(n)</sub>  
+ Development and Production Capital Expenditures<sub>(n)</sub>

Source : Wood Mackenzie

# Fiscal Regimes(Mozambique)

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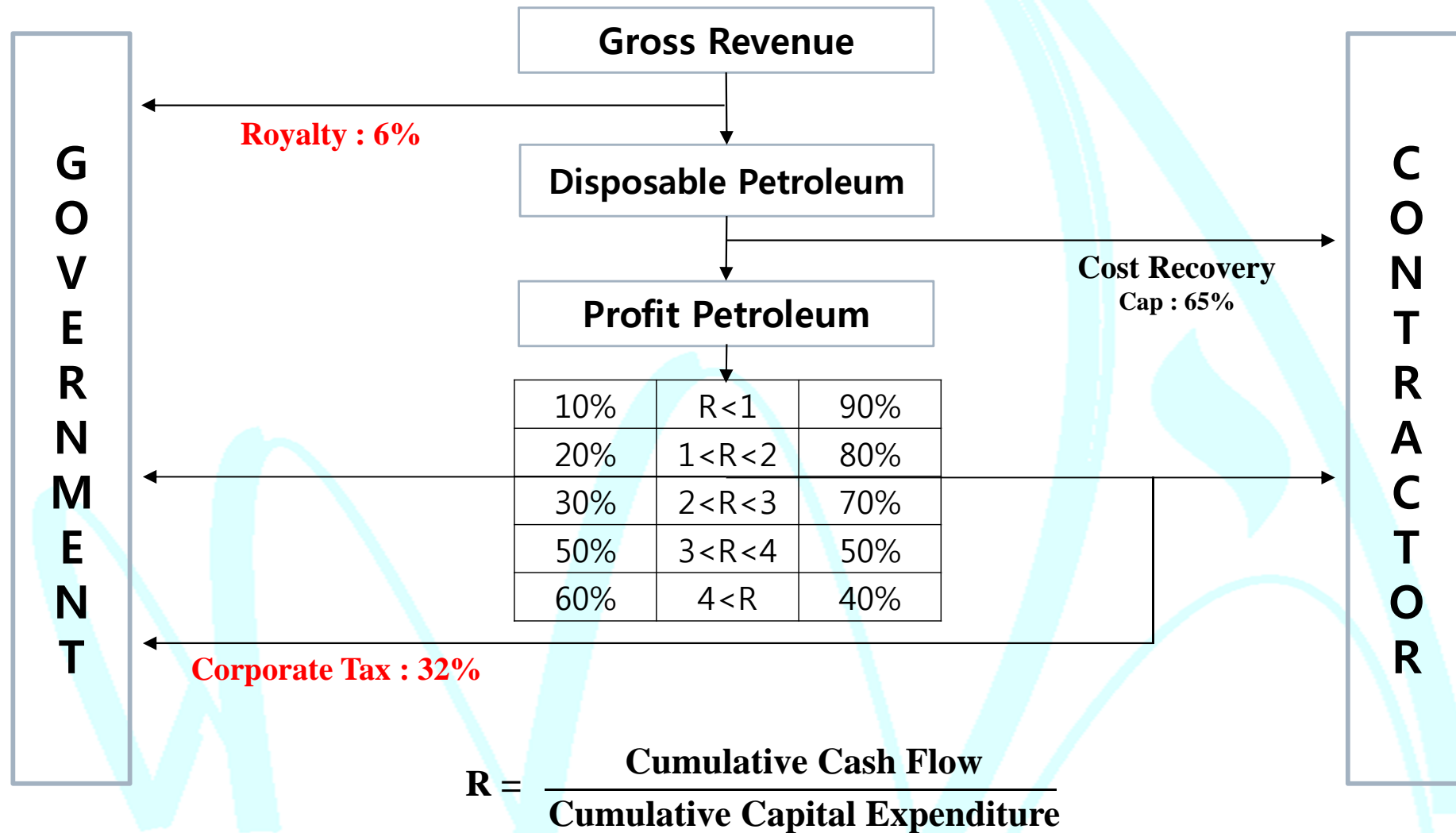
- The Corporate Income Tax: 32%
- Signature Bonuses: Payable
- Production Bonuses

<b>Production</b>	<b>Production Bonus(\$)</b>
Initial Commercial Production	200,000
Production > 25,000 BOE per day average for a month	200,000
Production > 75,000 BOE per day average for a month	200,000

Source : Wood Mackenzie

# Fiscal Regimes(Mozambique)

## ○ Schematic



Source : Wood Mackenzie

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# Fiscal Regimes(Tanzania)

- Royalty
  - Deepwater(5%), Onshore/Offshore(12.5%)
- Production Sharing(Daily Production based)
  - Natural Gas(Deepwater)

Daily Natural Gas Production(mmcfd)	TPDC (%)	Contractor(%)
0-249.99	50	50
250-499.99	55	45
500-749.99	60	40
750-999.99	65	35
1,000-1,249.99	70	30
1,250-1,499.99	75	25
> 1,500	80	20

# Fiscal Regimes(Tanzania)

- Production Sharing(Daily Production based)
  - Natural Gas(Onshore/Offshore)

[Source : Tanzania Model PSA]

Daily Natural Gas Production(mmcfd)	TPDC (%)	Contractor(%)
0-19.99	60	40
20-39.99	65	35
40-59.99	70	30
60-79.99	75	25
80-99.99	80	20
>100	85	15

# Fiscal Regimes(Tanzania)

- Production Sharing(Daily Production based)
  - Crude Oil

[Source : Tanzania Model PSA]

Daily Crude Production(b/d)	TPDC (%)	Contractor(%)
0-12,499	70	30
12,500-24,999	75	25
25,000-49,999	80	20
50,000-99,999	85	15
>100,000	90	10

# Fiscal Regimes(Tanzania)

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- No “ring fence” in the Contract Area
- Corporate Income Tax : 30%
- Additional Profit Tax(APT)
  - This is payable when contractors achieve specified real rates of return on net cash flow from Development Area
  - APT rate(%)

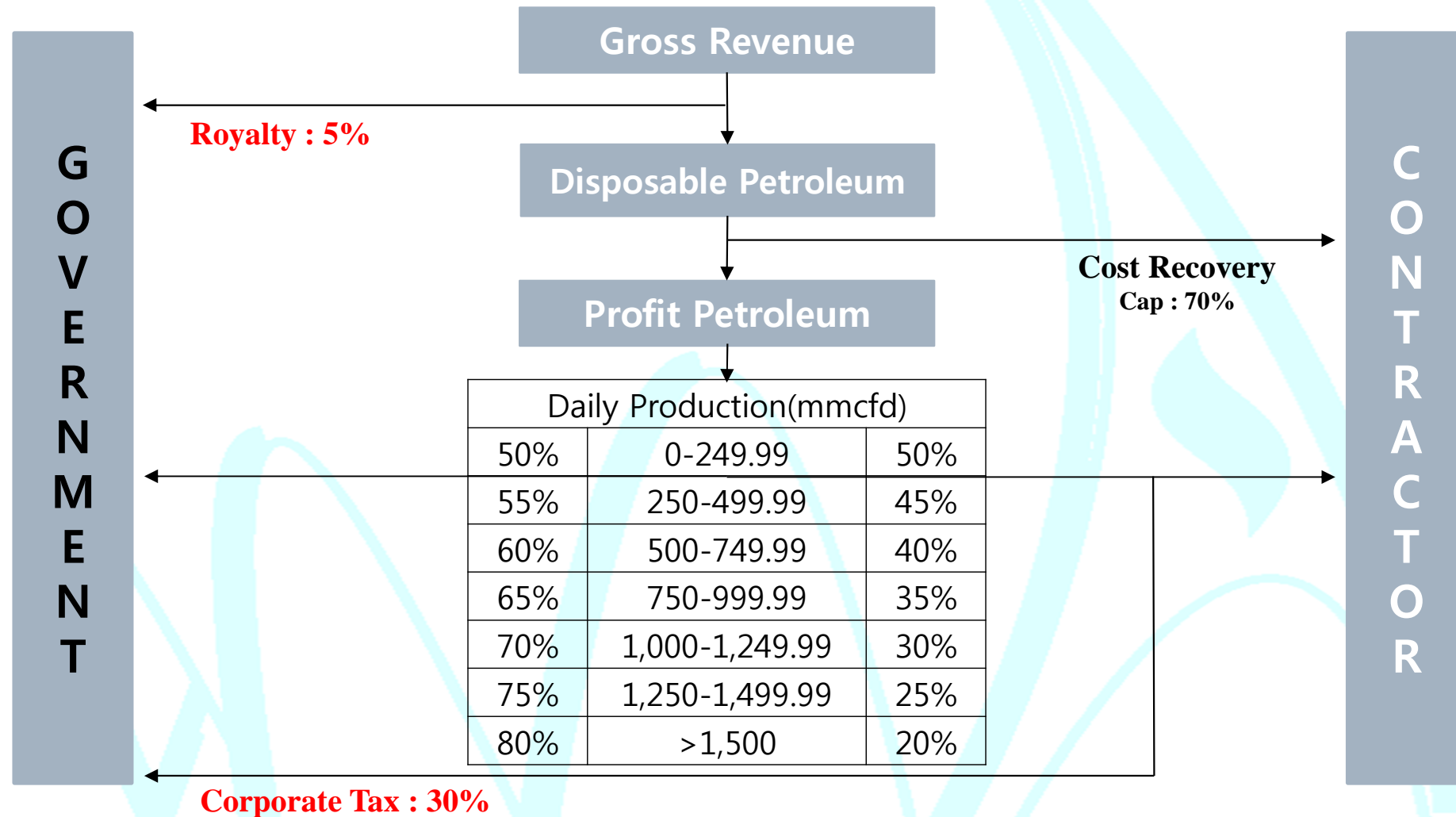
[Source : Wood Mackenzie]

	First Account	Second Account
B factor(%)	20	30
Tax Rate(%)	25	35

\* B factor : accumulated cash position

# Fiscal Regimes(Tanzania)

## ○ Schematic (Based on the Deepwater Gas)

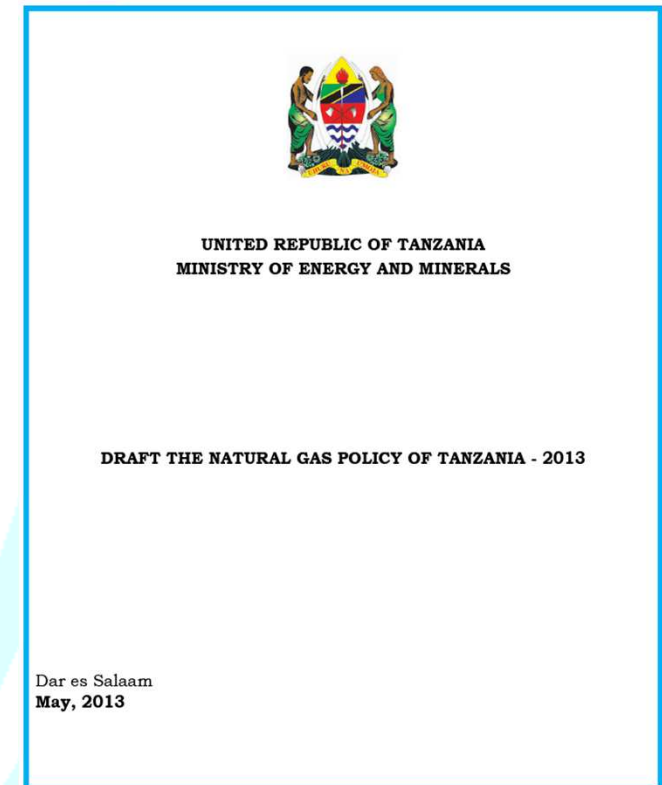


[Source : Tanzania Model PSA]

# Fiscal Regimes(Tanzania)

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- Current status of Tanzanian Policy
  - Released a revised draft of **Natural gas Policy** (May 2013)
    - Development of Natural gas infrastructure
    - Natural gas for Domestic/Export market
    - Revenue management
    - Natural gas pricing
    - Legal and regulatory framework



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# Case Study

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- General Assumptions
  - Ultra Deepwater Gas Discovery(Water Depth : 2,000m)
  - Distance to delivery point : 75km
  - Exploration & Appraisal Cost : US\$ 700 million
  - Exploration in seven years
  - Development in four years
  - Year to plateau : 4 years
  - Plateau duration : 10 years
  - Field life : 20 years
  - Same Production Schedule and Expenditures in 2 countries
  - No Signature/Production Bonuses



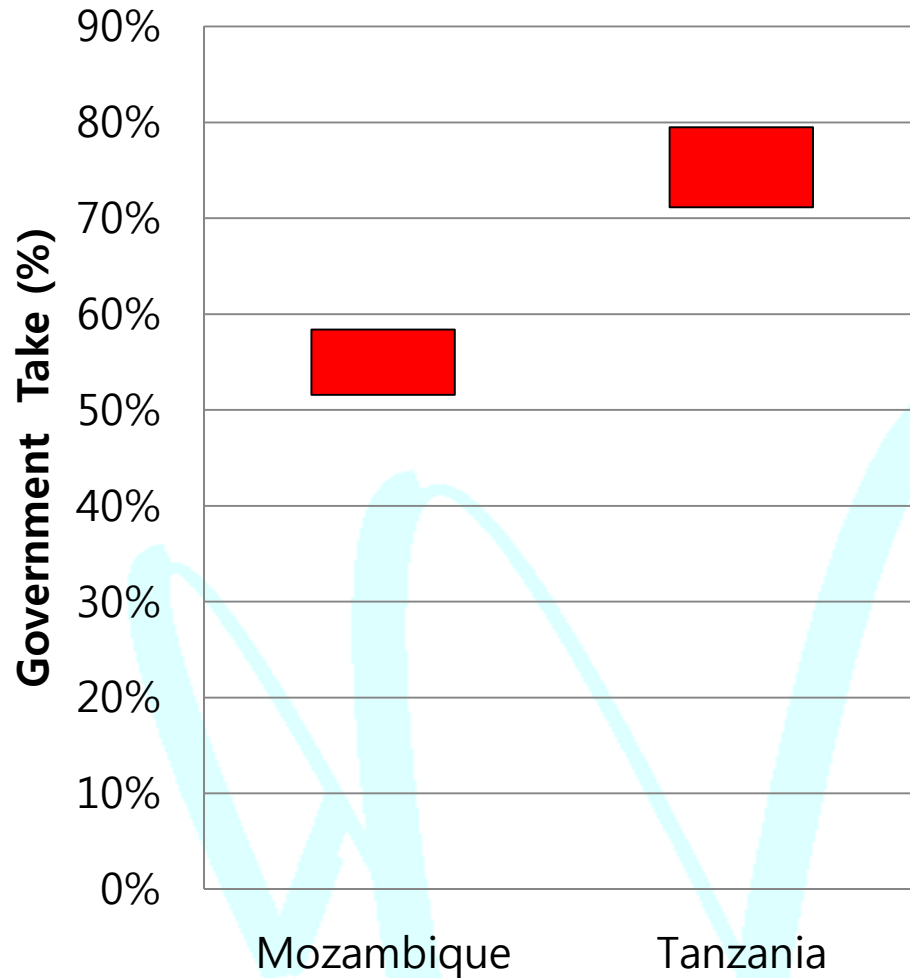
# Case Study (Current Fiscal Regimes)

- Assumptions
  - Recoverable Reserves : 2~15 Tcf ,
  - Feed Gas Price : 5\$/mcf@2013, Annually 2% Inflation
- Typical Fiscal Regimes for Deepwater Blocks

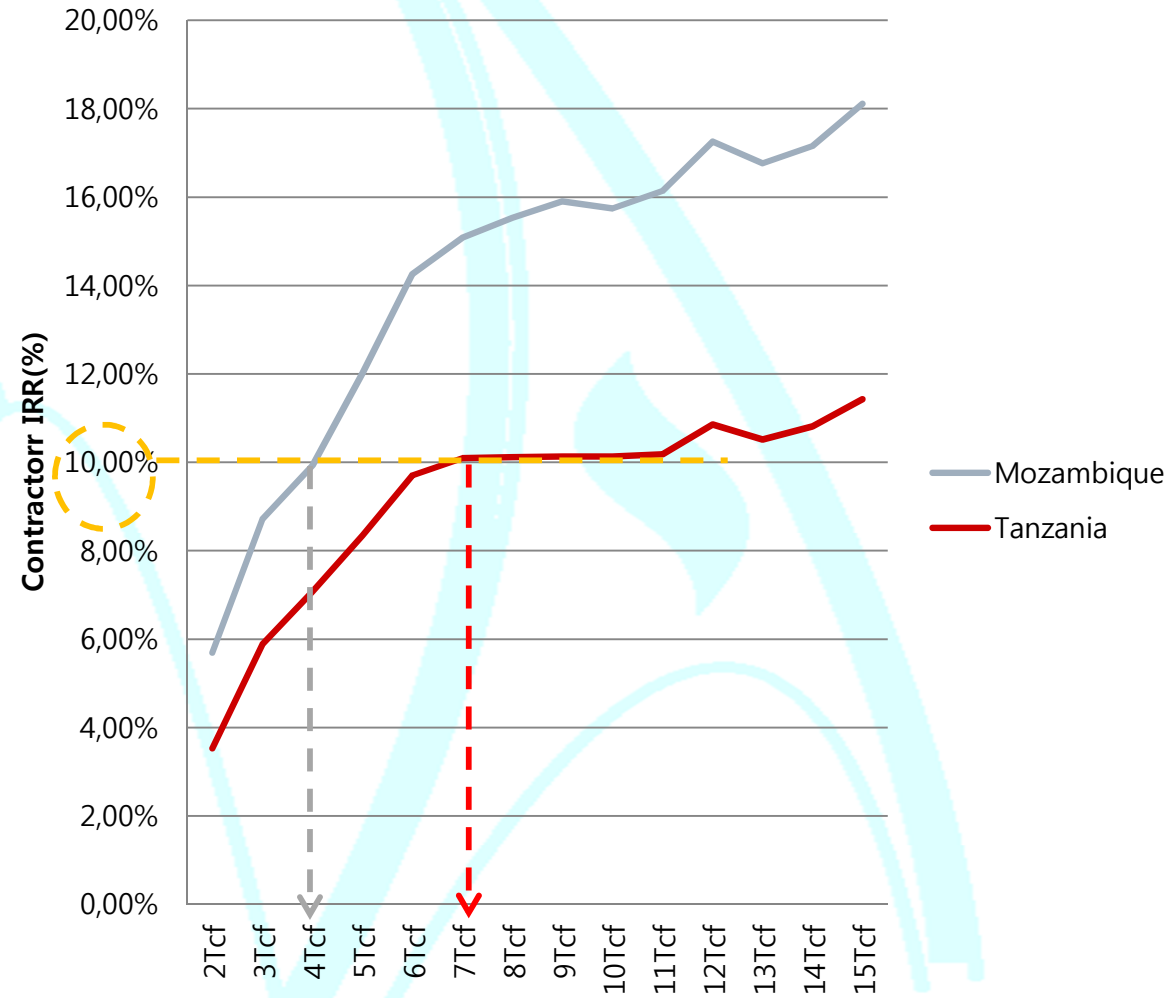
	<b>Mozambique</b>	<b>Tanzania</b>
<b>Royalty</b>	6%	5%
<b>Cost Recovery Cap</b>	65%	70%
<b>Profit Sharing</b>	R-Factor Base	Production Base
<b>Income Tax</b>	32%	30%

# Case Study 1 (Current Fiscal Regimes)

## Undiscounted Gvt. Take



## Contractor IRR vs Field Size



# Case Study 2 (Proposal)

## ○ Assumptions

- Recoverable Reserves : 2~15 Tcf
- Feed Gas Price : 5\$/mcf@2013, annu. 2% inflation
- Negotiation in profit sharing with Tanzanian Govt.

	Mozambique	Tanzania
Royalty	6%	5%
Cost Recovery Cap	65%	70%
Profit Sharing	R-Factor Based	Production Based
Income Tax	32%	30%
Additional Tax	X	FANCP 25% SANCP 30%

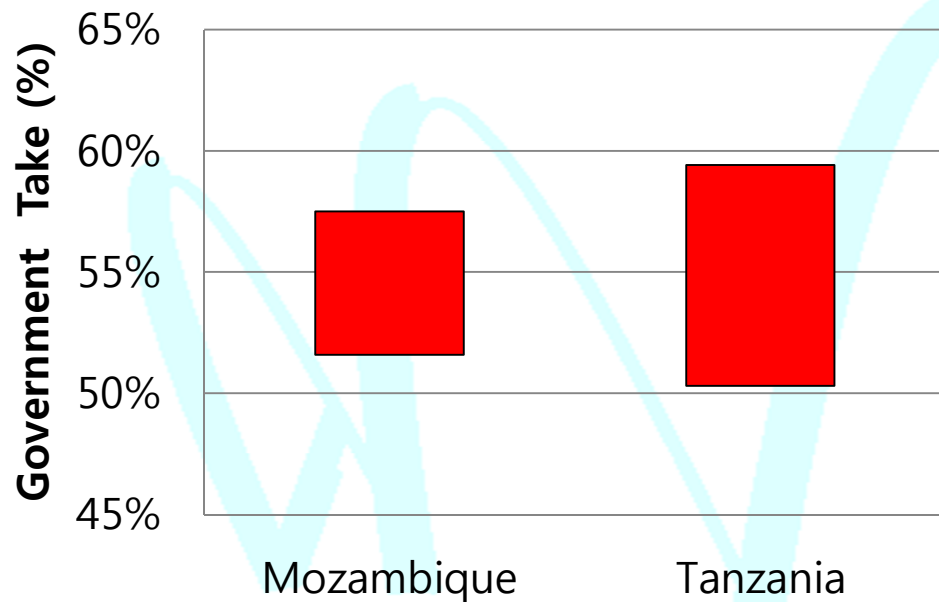
Daily Production (mmcf/d)	Tanzanian Govt. (%)
0-249.99	18
250-499.99	23
500-749.99	28
750-999.99	33
1,000-1,249.99	38
1,250-1,499.99	43
1,500-1,749.99	48
>1.750	53

# Case Study 2 (Proposal)

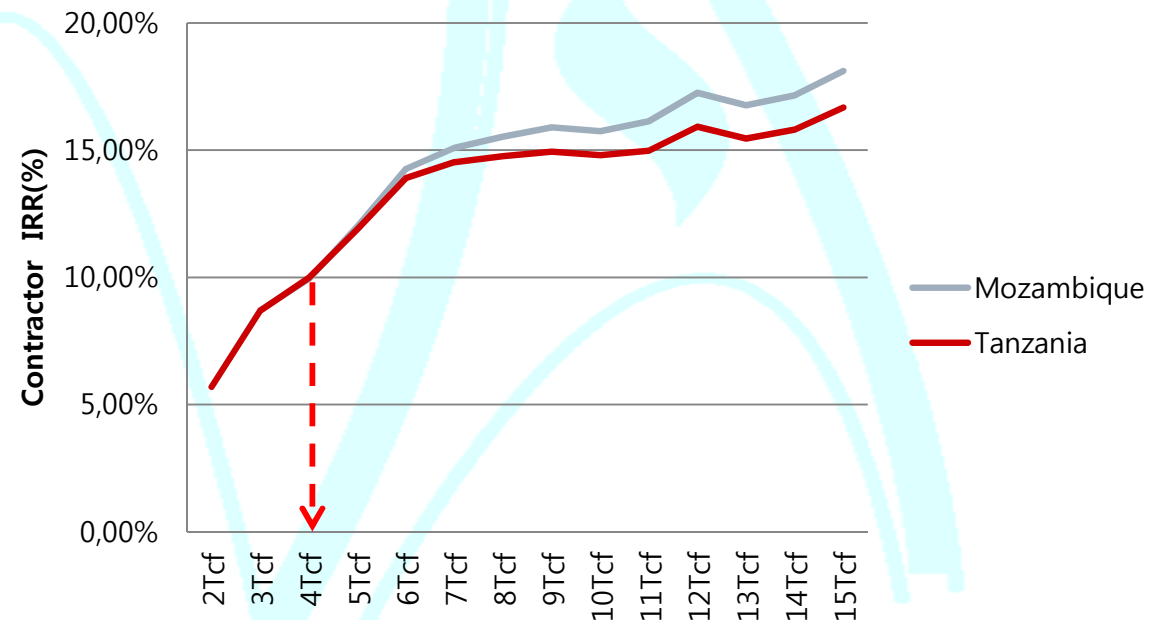
- Contractor IRR is 10% when the gas volume is about 4Tcf.
- Government Take remains in the range of 50%~60% when Gas Volume changes from 2 Tcf to 15 Tcf.

$$* \text{ Government Take (\%)} = \frac{\text{Total Government Revenues}}{\text{Gross Revenues} - \text{Total Costs}}$$

### Undiscounted Gvt. Take



### Contractor IRR vs Field Size



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# Conclusion

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- For ultra deepwater gas project,
  - Mozambican fiscal regimes are relatively attractive and there are several successful ultra deepwater gas projects
  - Tanzanian fiscal regime is less attractive according to the current case study
- To encourage ultra deepwater gas projects in Tanzania, an alternate fiscal design is recommended

# References

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- Republic of Tanzania, Model Production Sharing Agreement, 2008
- Republic of Tanzania, Model PSA Addendum for Natural Gas, 2010
- Republic of Tanzania, Natural Gas Policy of Tanzania, 2013
- Republic of Mozambique, Model Exploration and Production Concession Contract 2007
- Ernst & Young, 2012, Global Oil and Gas Tax Guide
- Wood Mackenzie, Country Report(Mozambique, Tanzania)



Thank you!