Coal bed methane development in Indonesia: the economics of the stakeholders' perspective.

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COAL BED METHANE DEVELOPMENT IN INDONESIA: THE ECONOMICS OF THE STAKEHOLDERS' PERSPECTIVE

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Overview

The Government of Indonesia (GoI) initiated a study on Coal Bed Methane (CBM) resources in 2002 through its oil and gas research institution called Lemigas. This contributed to the first CBM project starting in 2008 by PT Medco CBM Sekayu, in South Sumatra Basin, followed by six other CBM projects that year. The number of projects increased significantly and by 2012, Indonesia had 54 CBM blocks. However, this number has now decreased to 30 CBM blocks by the end of 2018, and is going to be lower in 2019 since there are 3 blocks considering termination process. The growth of the industry has been very slow and vulnerable.

This paper will discuss the main economic issues in the CBM industry in Indonesia from six different stakeholders' perspectives, the GoI, CBM investors, industry association, consultancies, industry observer, and local communities in which CBM projects have been developed. The GoI was represented by the Special Task Force for Oil and Gas Industry (SKKMigas) and the Association of Oil and Gas Producer (ADPM); the CBM investors were represented by the current investor, prospective investor which was also an ex-investor; the industry association was represented by the Indonesian Petroleum Association, the consultancies were represented by the IHS Markit and WoodMackenzie; an industry observer was represented by an individual who concerns on the industry, and the local communities were represented by the local communities in the four main CBM basins which are Kutai Basin, Barito Basin, South Sumatra Basin and Central Sumatra Basin.

This paper comprehensively examines and analyses the economic issues of the CBM industry in Indonesia to present a deeper and better understanding what lies behind the deterioration of the industry. The result of this latter analysis will be internalised into the development of a fiscal model that then determines at what level incentivisation (from taxation) will result in the development of new CBM.

Methods

This paper uses the triangulation method, both in its data collection and analysis, i.e. this paper applies data triangulation, investigator triangulation, methodological triangulation and theoretical triangulation. The data sources used were primary and secondary data: (1) to obtain the primary data, the researcher conducted stakeholder interviews and, held focus group discussion (FGD) amongst stakeholders; and (2) an extensive academic and policy literature study obtained the secondary data. The results of the interviews and FGD were analysed qualitatively and quantitatively (coded) using the *NVivo* software program. This paper uses multi-disciplinary theory, which gives a different perspective in each theory in its literature study, such as: Economy (fiscal model and its economic evaluation), legal (energy law and regulation), and technical (CBM geology and its technical). These theories have strong connection presented in the analysis.

Results

This paper classifies the results in the development of CBM industry in Indonesia into five points, which are: (1) GoI related issues, (2) taxation, (3) local content, (4) investors perception, and (5) technical implementation issues. Highlighted below are the results from three of these areas and the final paper would cover the other results in more detail. These results below build on previous literature in the area and hence their significance in highlighting them specifically below.

The first category is issues related to the policy development by the GoI. It was mentioned during the FGD that the GoI has not put their focus on the energy industry, but on national infrastructure in general. The GoI has failed to implement its new paradigm for the energy industry which has been formulated in the Government Regulation (GR) No. 79/2014. This latter paradigm advanced that energy resources shall not be the source of the revenue but the engine of growth for the country. The lack of GoI involvement in the industry is shown by its conflicting Key Performance Indicators (KPI) set by a range of different ministries. There has been a slow response from the GoI towards investors' concerns, such as the implementation of the new Gross Split PSC for the CBM industry. There is also land access issues which the GoI can actually be more involved by implementing properly the Law on Land Agrarian, No. 2/2012 Article 6 and Article 52. The other involvement that the GoI can be more active is in the 10% local participating interest which is regulated under the Government Law (PP) no. 35/2004 Article 34. There is no clear action from the GoI regarding to this implementation which is shown by inexistence of the derivative legislation from this law. This

participating interest was never been considered influencing the project economics by old existing investors due to unclear regulation being set. The GoI can also be more involved in regulating gas price for CBM to support the industry growth and also be involved in creating such condition in which affordability at all cost can be achieved. All issues show that the GoI is not ready to develop the CBM industry in Indonesia.

The second category is the issues related to taxation and the development of a fiscal regime for the CBM industry. The regulation set for the industry does not support the industry to grow. The procedures in support of this PSC have created a situation in which the CBM investors have to meet higher technical standards than applied to conventional hydrocarbons which are more expensive. This has led to financial issues for investors due to the massive and intensive expenditures at the initial stage of CBM projects when they were implementing the Net Production Sharing Contract (PSC) as its fiscal regime. This has resulted in creating a non-commercial project and uncompetitive CBM gas compared to conventional gas.

The third category is the issues related to the local communities (or local content has is referred to by the literature). There is a concern on Corporate Social Responsibility (CSR) issue of companies involved in the sector. CSR related issues have been known to have a significant impact towards industry growth. This can be classified as a social cost of a project. In Indonesia, CBM projects are always located in a densely populated area. This is an issue for the industry, since the social cost is very unpredictable. According to the GoI and investors the local communities are important aspect for the industry to increase engagement with. The local impacts being analysed in this paper are the impact on employment, education, health care services, infrastructures, and the environmental impacts. Meanwhile the local expectations being analysed in this paper is to encounter the local impacts, which are the expectation on employment, education, health care services, infrastructures, and the financial benefits for the environmental impacts.

Conclusions

This paper concludes that there are five identifiable challenges that hamper the growth of the CBM industry in Indonesia. These are: policy development; the fiscal regime; regulation being implemented for the industry; investor relations; and technical problems. These issues are inter-connected and these issues shall be addressed to improve and support the growth of the CBM industry in Indonesia. There are several themes that run across these five issues and one of these relates to data production, for example, in relation to technical issues, there is a lack of research and studies to update knowledge in the area. These issues have significant influence to the economy and continuity of the project which are very much related to the fiscal regime being applied to the industry. These issues are being addressed in the fiscal model constructed in the further research and paper.

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lembaga pengelola dana pendidikan

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Coal Bed Methane (CBM) Development in Indonesia: The Economics of the Stakeholders' Perspective

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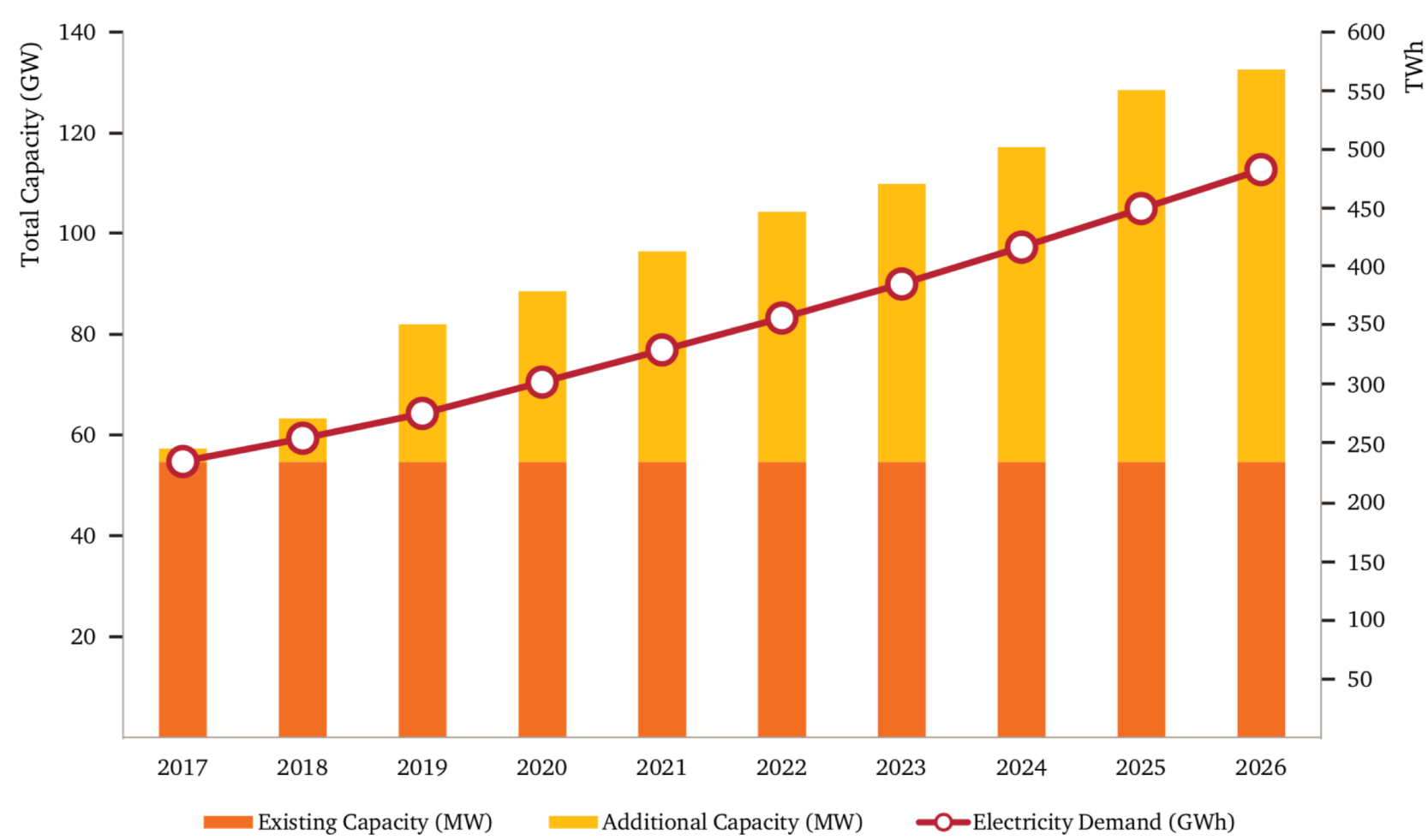
"Local Energy, Global Market"
27th May – 1st June 2019

About

Background (Electricity Demand & Supply, Government Plan & CBM in Indonesia)
Research Questions
Methodology (Data Collection; Analysis)
Findings & Analysis
Conclusions & Recommendations

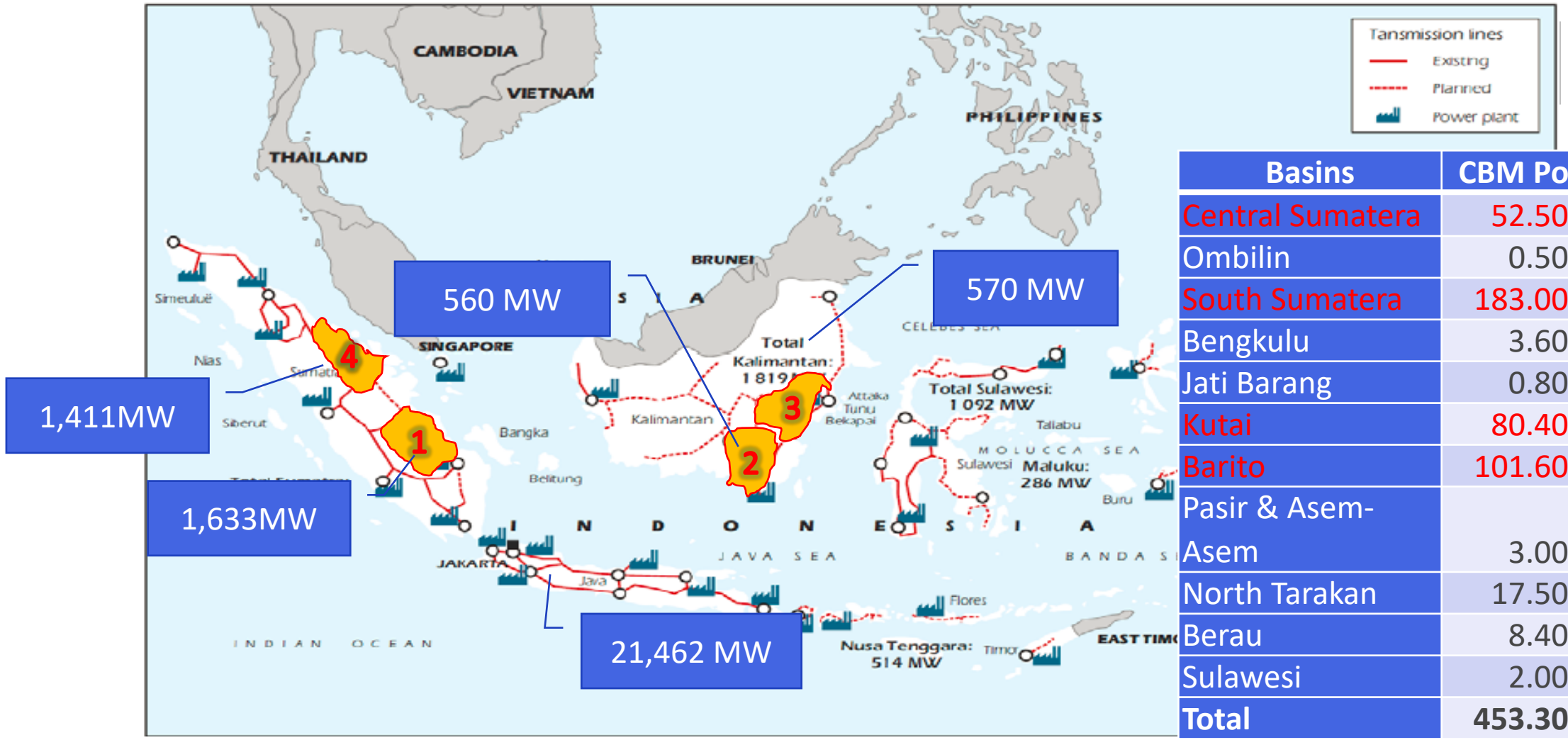
Electricity Demand in Indonesia



Source: RUPTL, 2017 (Electricity Supply Business Plan,2017 by the Ministry of Energy & Mineral Resources, Republic of Indonesia)

General Plan for National Electricity 2015 -2034
Government Program - 35,000MW

CBM Potential Resources & 2017 Electricity Supply



Basins	CBM Potential
Central Sumatera	52.50 TCF
Ombilin	0.50 TCF
South Sumatera	183.00 TCF
Bengkulu	3.60 TCF
Jati Barang	0.80 TCF
Kutai	80.40 TCF
Barito	101.60 TCF
Pasir & Asem-Asem	3.00 TCF
North Tarakan	17.50 TCF
Berau	8.40 TCF
Sulawesi	2.00 TCF
Total	**453.30 TCF**

(International Energy Agency, 2014 &

Directorate General of Electricity Ministry of Energy & Mineral Resources, Republic of Indonesia,2017)

CBM projects growth

Sources: Graph is developed by the Author in 2018 using the data from SKKMigas (2018)

Research Questions

- What are the issues that impede the CBM (Coal Bed Methane) development in Indonesia?

Identifying Issues

Local Impact & Local Expectation towards CBM Development

Survey

How?

- 6th - 21st December 2017
- 4 Basins – 11 villages (161 collected, 25 sampling errors, 130 analysed)

- Blocks CBM in Indonesia
- Villages located Closest to CBM Well
- Awareness of CBM Development

Interviews

Who?

- 8th Jan 2018 – 16th May 2018
- One to One Interview, Phone, & email
- Open questions

- Government
- Investors
- Industry Association
- Consultancies

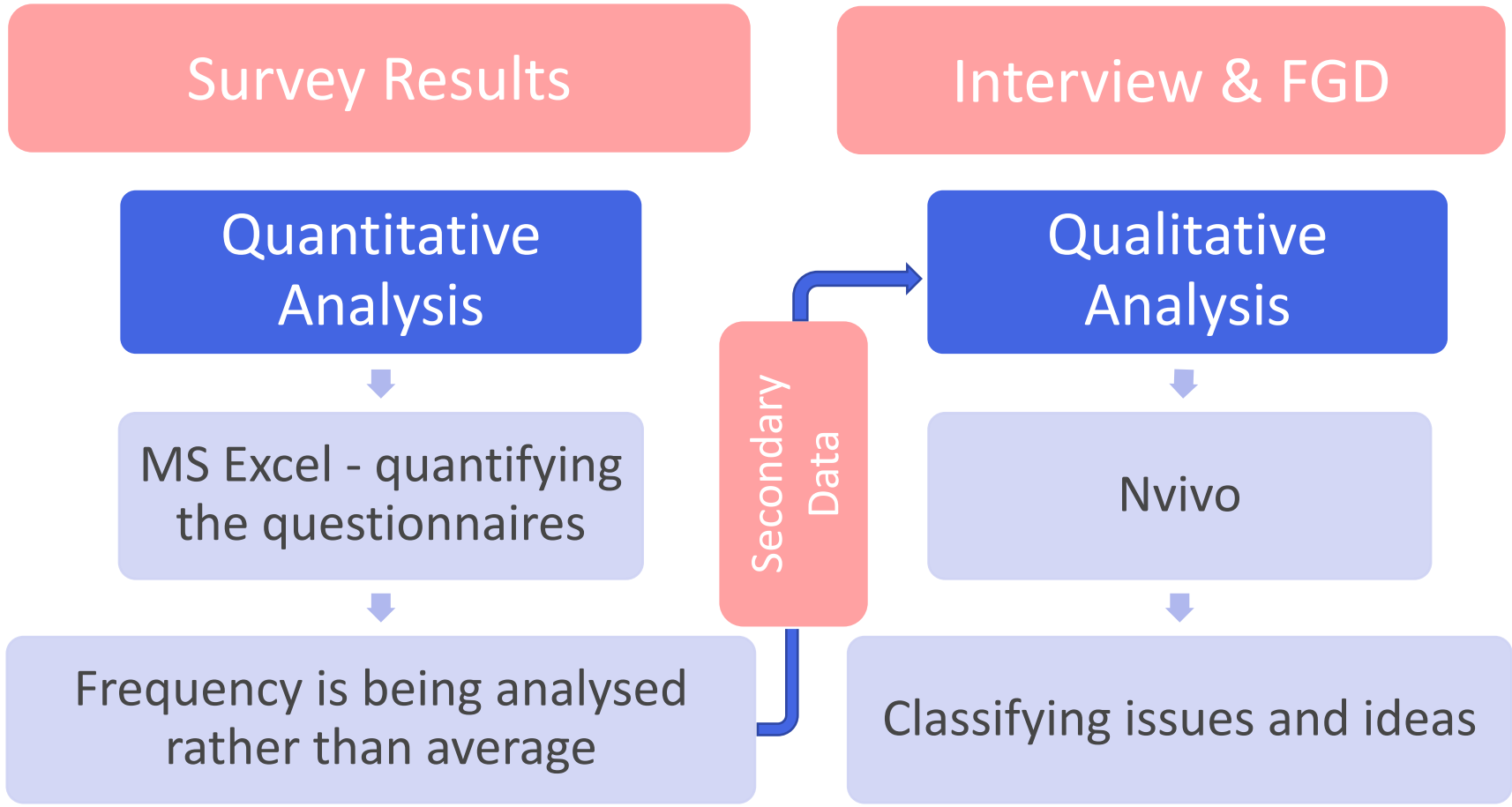
Focus Group Discussion

Who?

- 4th Feb 2018

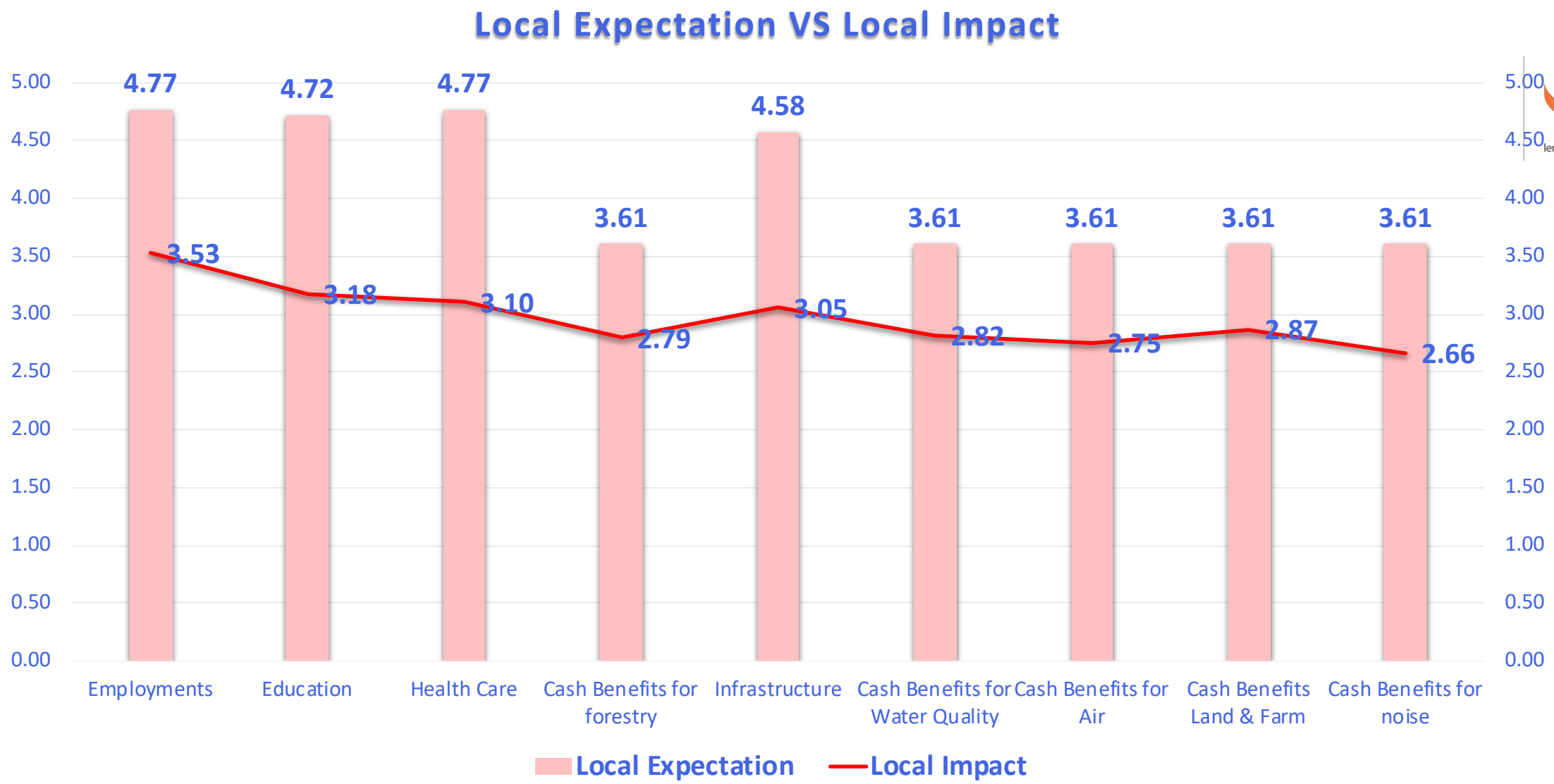
- Government
- Investors
- Industry Association
- Local Communities *)

Primary Data Collections Processes

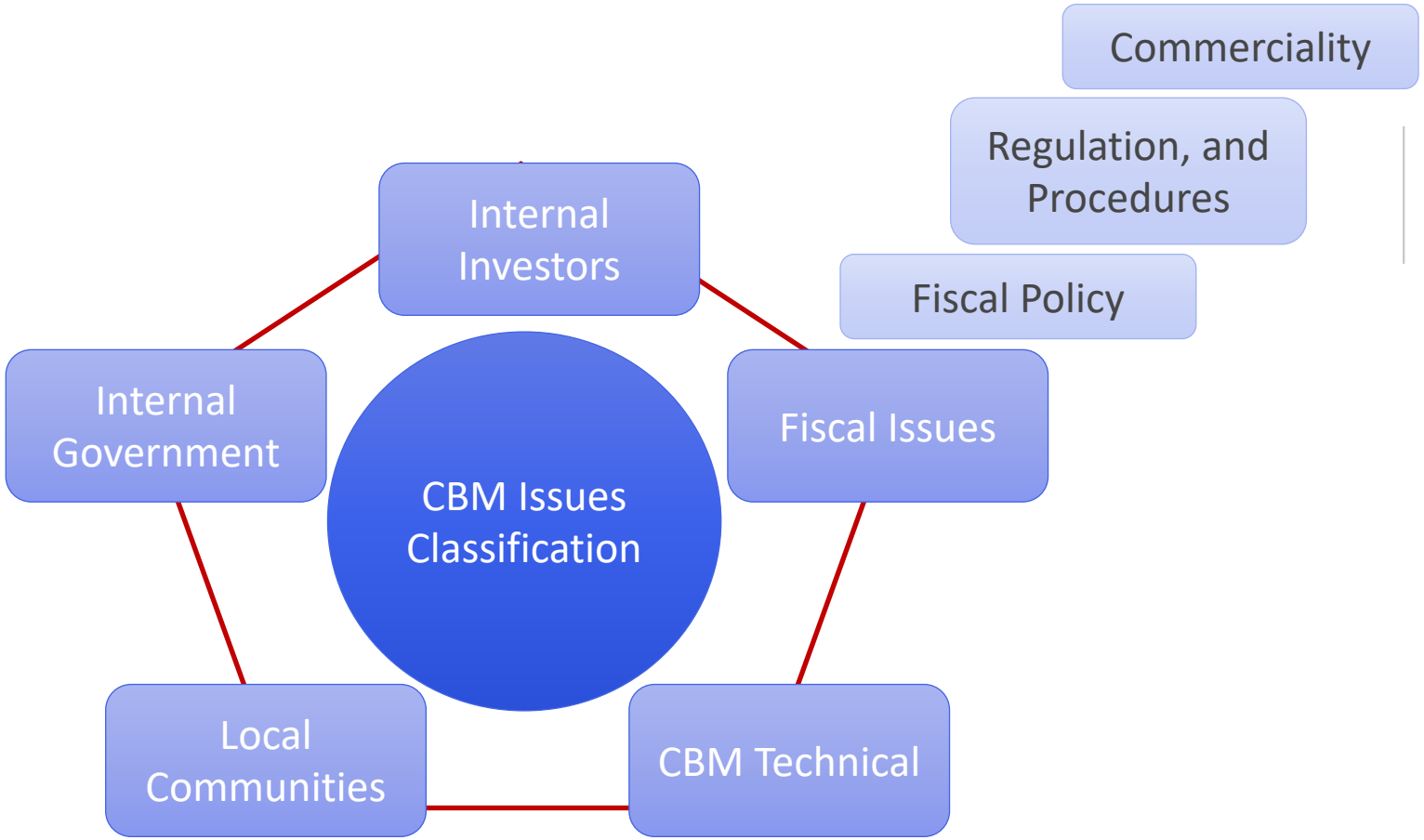


Data Analysis Processes

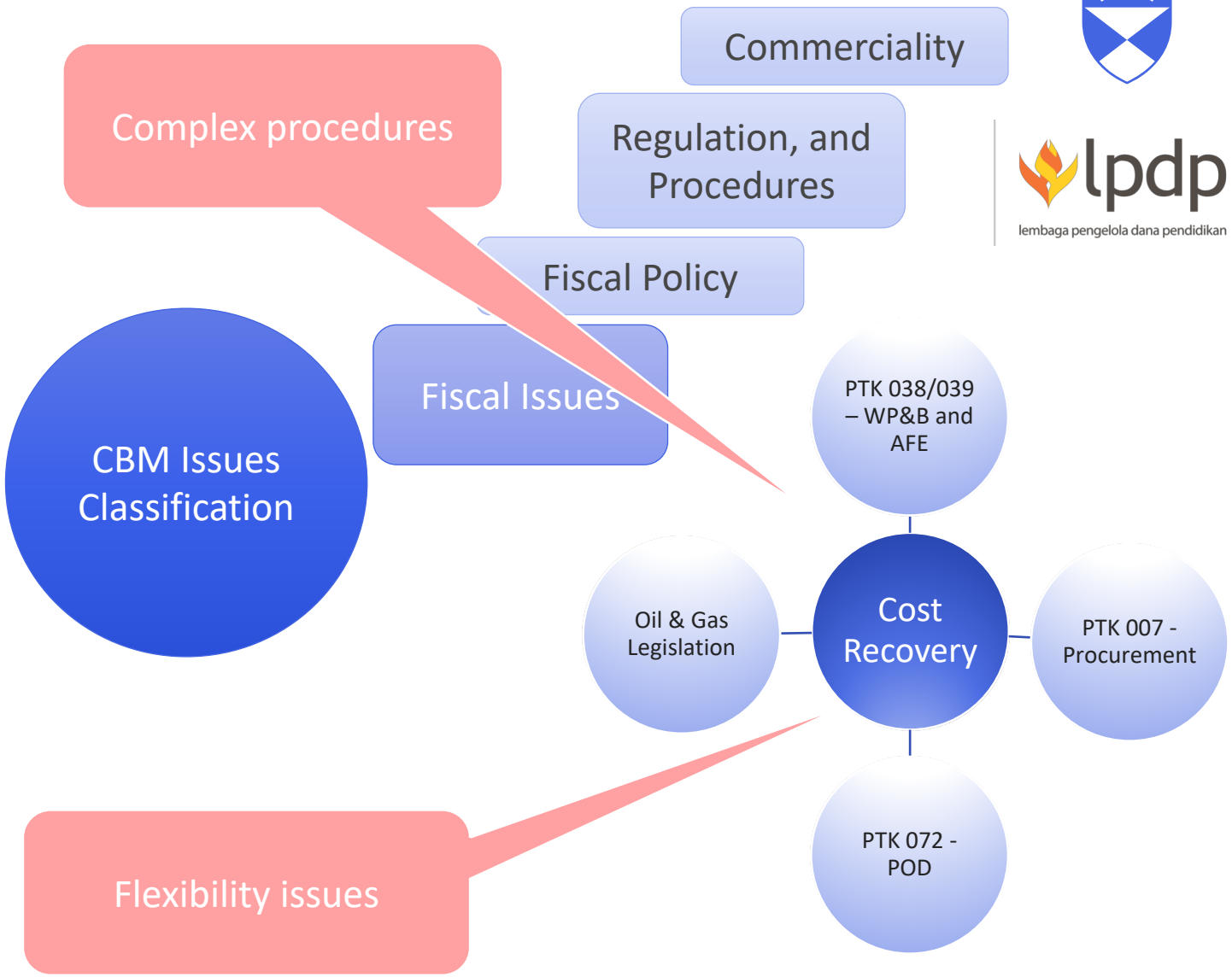
Results Analysis - Survey



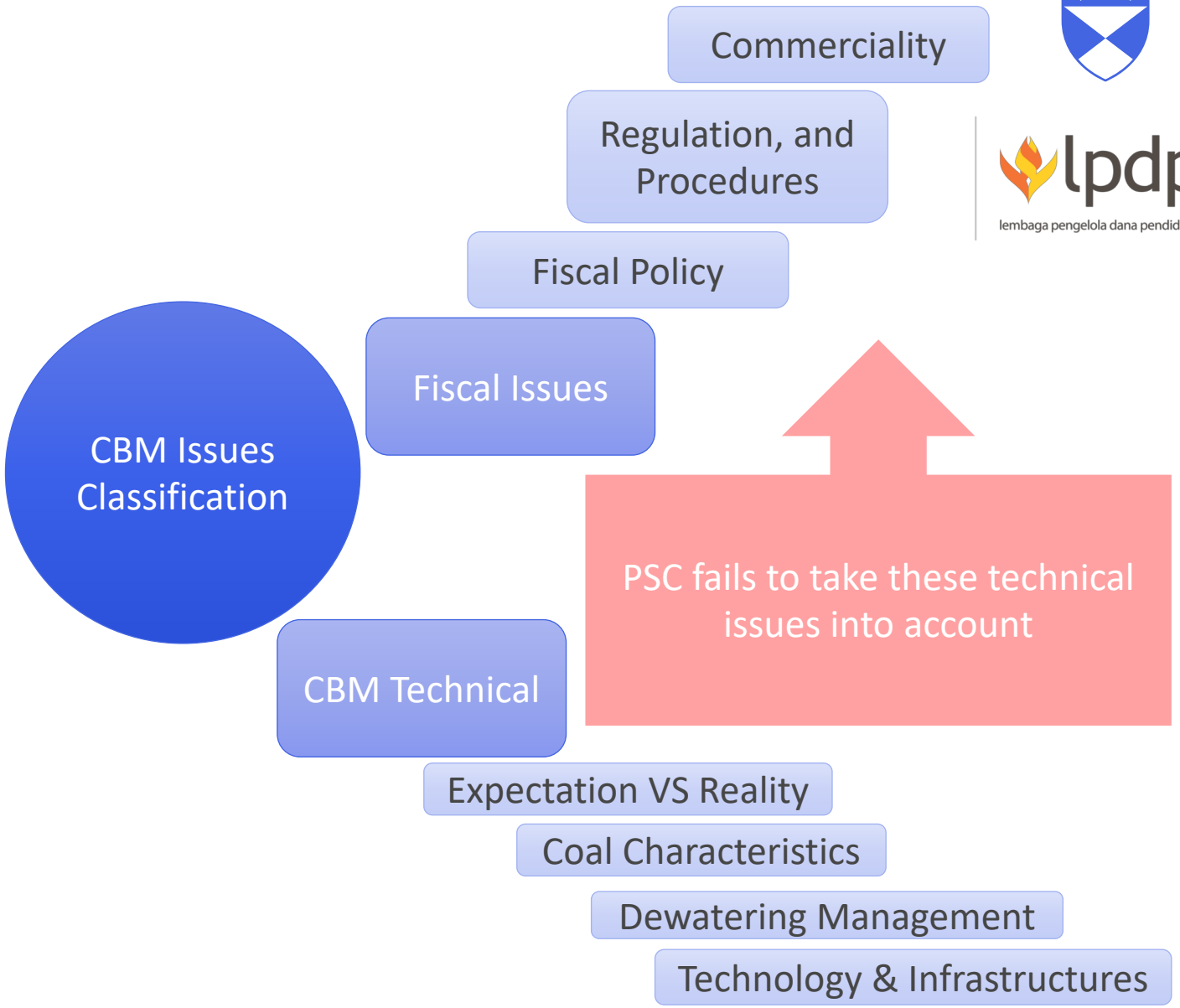
Findings


Commerciality
Regulation, and Procedures
Fiscal Policy
Internal Investors
Internal Government
CBM Issues Classification
Fiscal Issues
Local Communities
CBM Technical

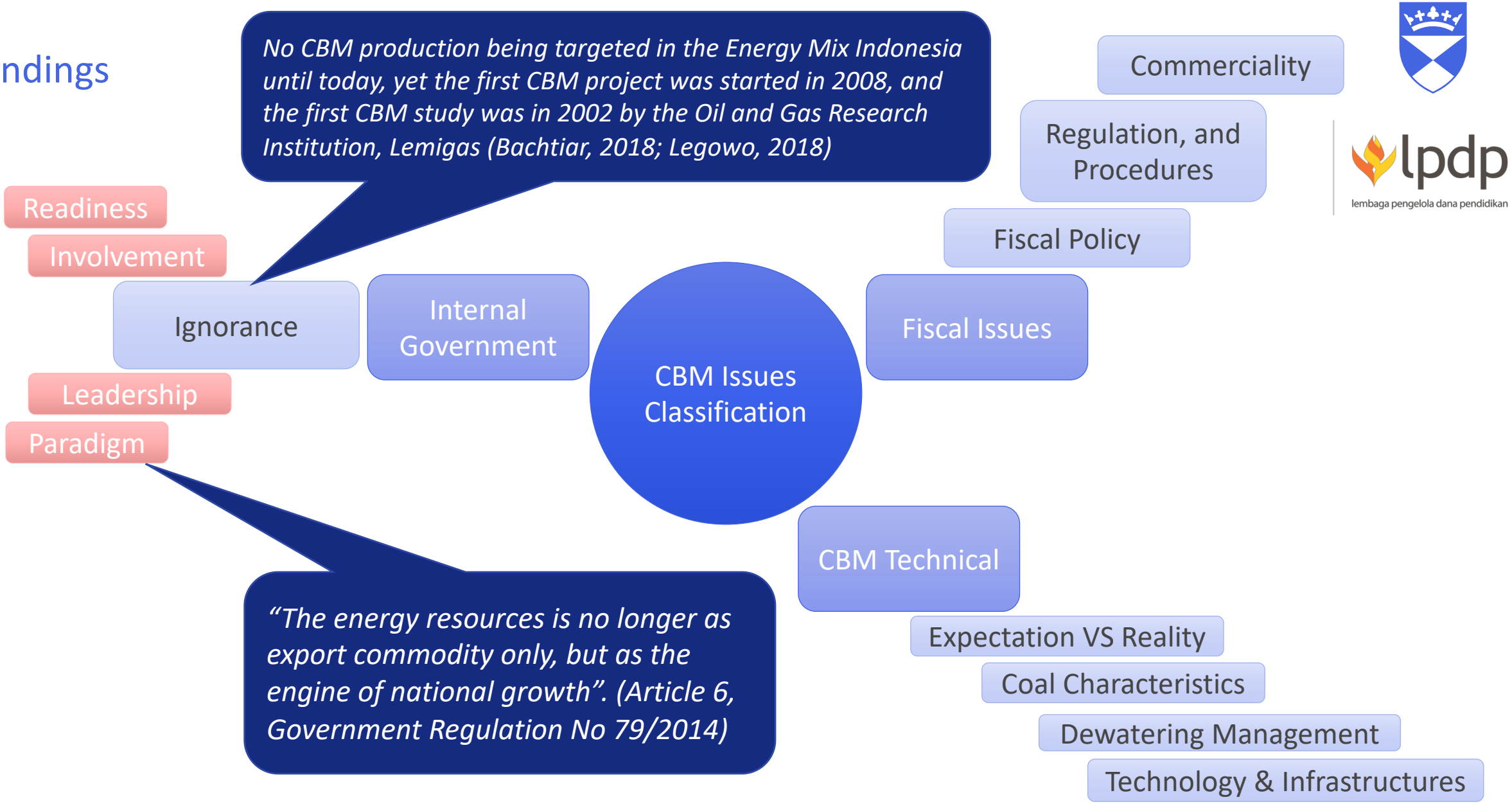
Findings


Commerciality
Complex procedures
Regulation, and Procedures
Fiscal Policy
Fiscal Issues
CBM Issues Classification
PTK 038/039 – WP&B and AFE
Oil & Gas Legislation
Cost Recovery
PTK 007 - Procurement
PTK 072 - POD
Flexibility issues

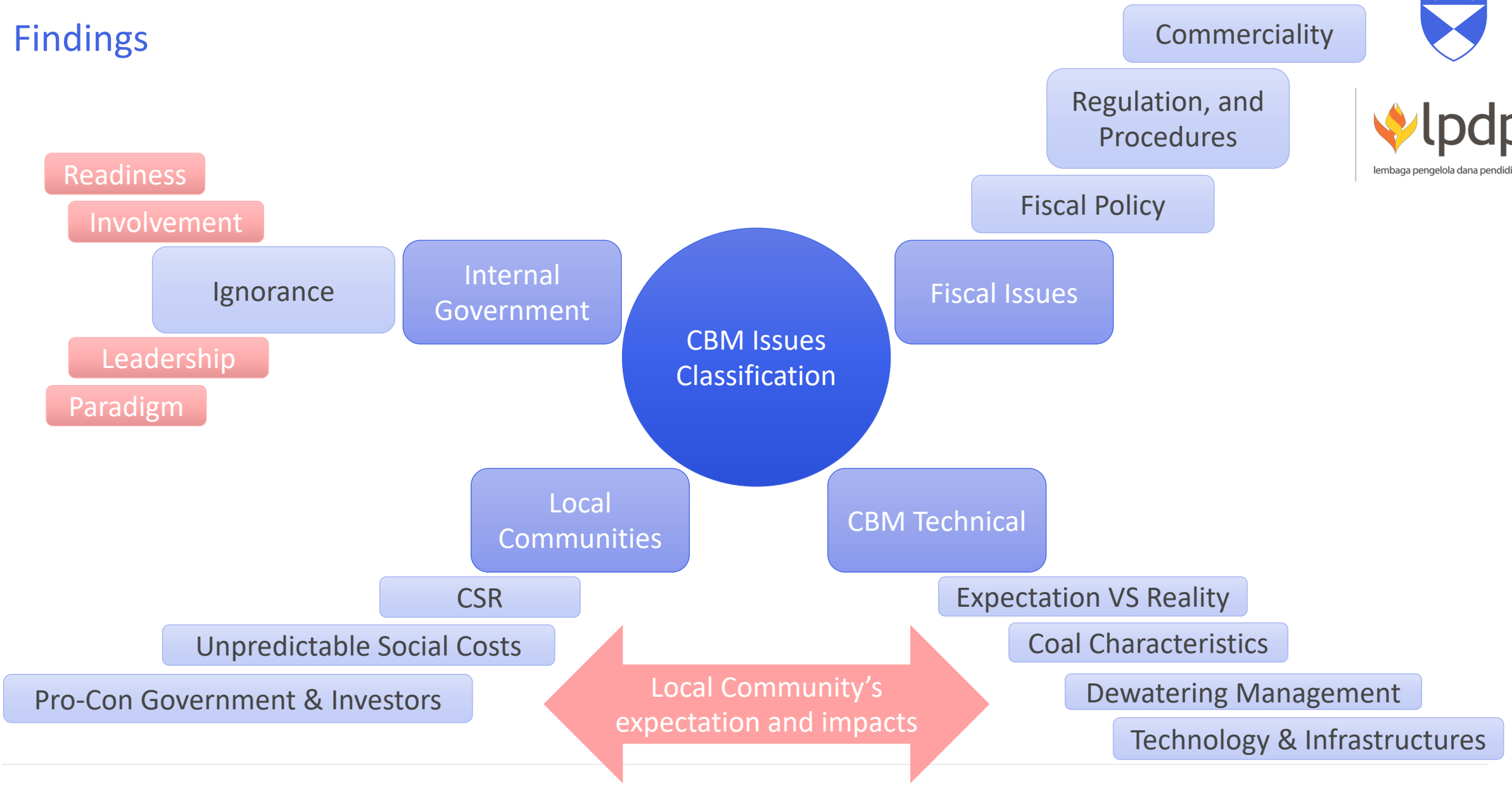
Findings


Commerciality
Regulation, and Procedures
Fiscal Policy
Fiscal Issues
CBM Issues Classification
CBM Technical
PSC fails to take these technical issues into account
Expectation VS Reality
Coal Characteristics
Dewatering Management
Technology & Infrastructures

Findings


No CBM production being targeted in the Energy Mix Indonesia until today, yet the first CBM project was started in 2008, and the first CBM study was in 2002 by the Oil and Gas Research Institution, Lemigas (Bachtiar, 2018; Legowo, 2018)
Readiness
Involvement
Ignorance
Leadership
Paradigm
Internal Government
CBM Issues Classification
Commerciality
Regulation, and Procedures
Fiscal Policy
Fiscal Issues
CBM Technical
Expectation VS Reality
Coal Characteristics
Dewatering Management
Technology & Infrastructures
"The energy resources is no longer as export commodity only, but as the engine of national growth". (Article 6, Government Regulation No 79/2014)

Findings


Commerciality
Regulation, and Procedures
Fiscal Policy
Fiscal Issues
Readiness
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Ignorance
Leadership
Paradigm
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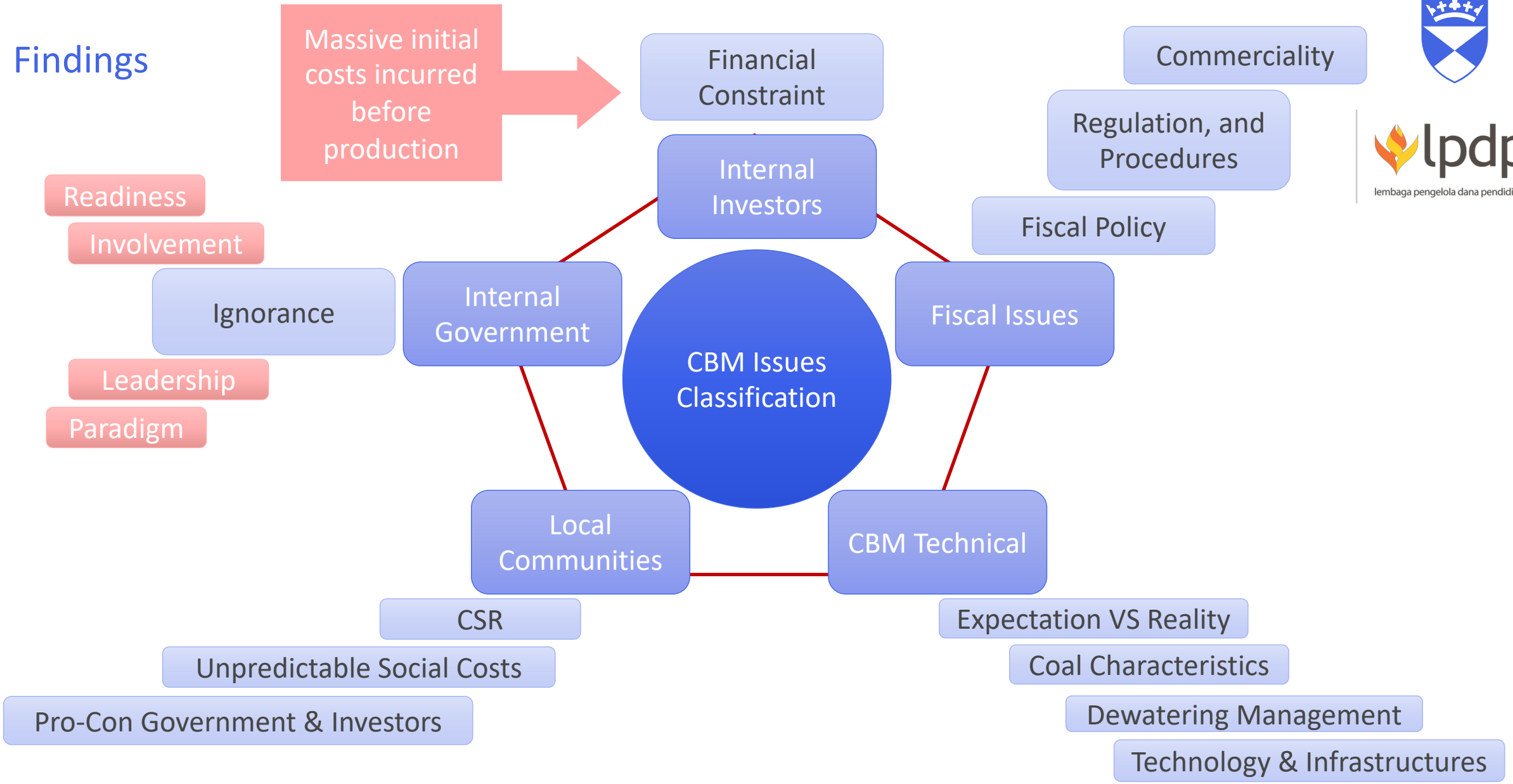
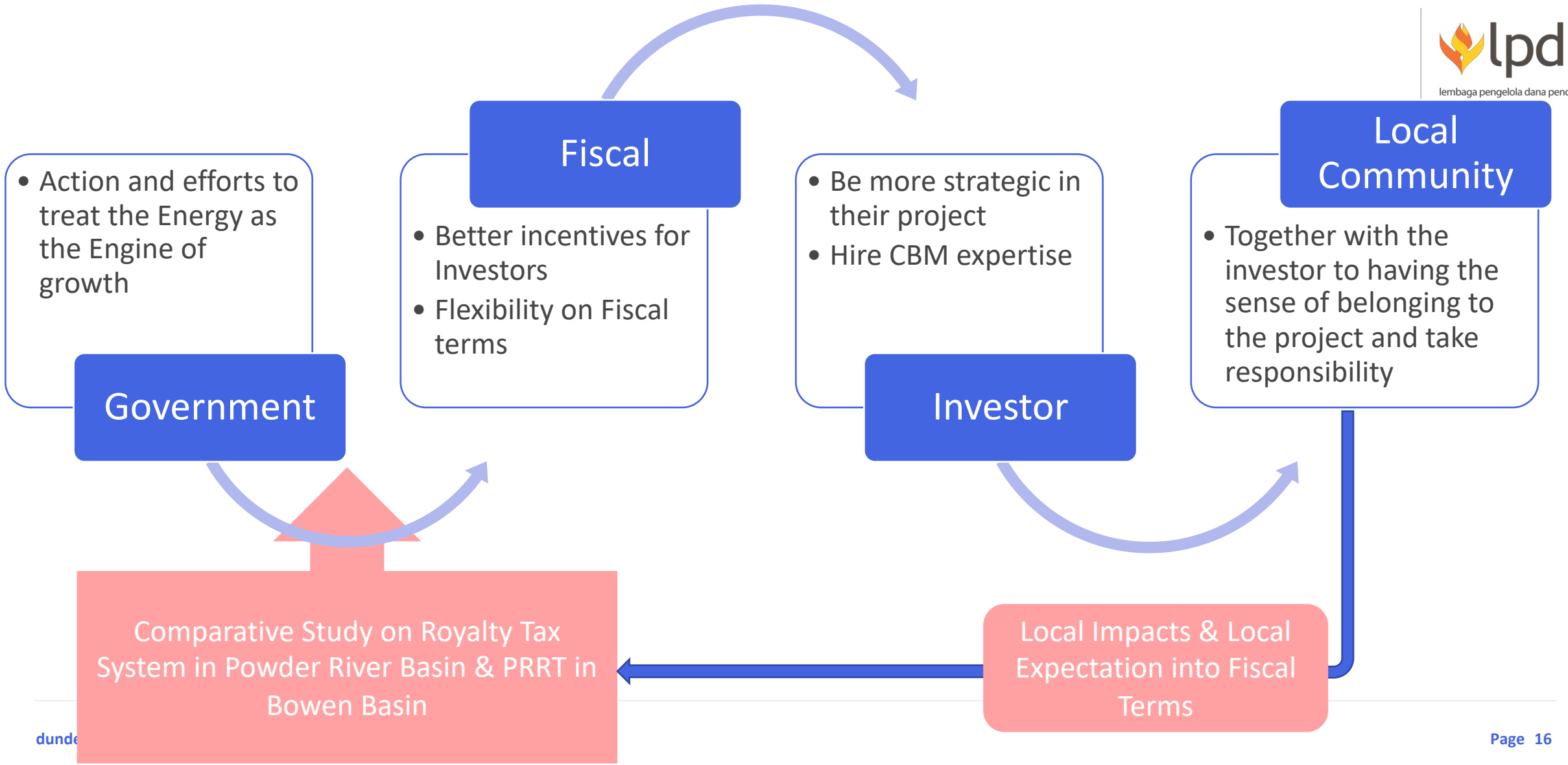
CBM Issues Classification
Local Communities
CBM Technical
CSR
Unpredictable Social Costs
Pro-Con Government & Investors
Expectation VS Reality
Coal Characteristics
Dewatering Management
Technology & Infrastructures
Local Community's expectation and impacts

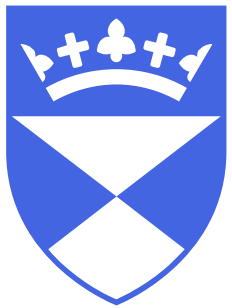
Findings


Massive initial costs incurred before production
Financial Constraint
Commerciality
Regulation, and Procedures
Fiscal Policy
Internal Investors
Readiness
Involvement
Ignorance
Leadership
Paradigm
Internal Government
CBM Issues Classification
Fiscal Issues
Local Communities
CBM Technical
CSR
Unpredictable Social Costs
Pro-Con Government & Investors
Expectation VS Reality
Coal Characteristics
Dewatering Management
Technology & Infrastructures

Conclusions & Recommendation



Thank you!



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