MINING SUSTAINABLE DEVELOPMENT MANAGEMENT PLAN

"An "All-Inclusive" Operational Guideline to Secure the "Social License" to operate and "*SUPPORT*" the Sustainability of Mining Host Communities."

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RESEARCH PROBLEM

The mining sector is an **environmentally and socially sensitive** industry due to its operational impacts (Mancini & Sala, 2018).

Its **impacts are highly visible** and incidents such as Ok Tedi in Papua New Guinea and Samarco in Brazil have tarnished the image of the industry (Moran et al., 2014).

Host mining communities, living in resource rich areas of the world are also **subjected to severe social and environmental impacts** (Carvalho, 2017; Jaskoski, 2014; Kemp, 2009; Mensah & Okyere, 2014).

Due to these, **conflicts are growing** (Andrews et al., 2017), the industry is increasingly under pressure to be accountable to stakeholders over its social and environmental impacts. Social **License to Operate is one of the top 3 risks** (E&Y, 2020)

Therefore, the research problem is to **mitigate the impacts of mining operation on mining host communities**, during all phases of the LoM, and maintain Sustainable Mining Development for the benefit of CURRENT and FUTURE generations.

RESEARCH QUESTION

How can SMD and CSR frameworks be applied, **evaluated and managed** at the community level to promote sustainability during Life of Mine (LoM)?

What are the best sustainability indicators that can be used for evaluating the performance of these frameworks?

What level of stakeholder participation is required to achieve the application of SMD during the LoM to benefit host community, company and key stakeholders?

What are the mechanisms to mitigate the impacts of mining operation during the LoM and maintain SMD by developing and implementing a performance driven, measurable and value-added Mining Sustainable Development Management Plan (MSDMP) as a standard sustainability operational guideline?

OBJECTIVES

UNDERSTAND the nature and scale of social and environmental impacts of mining operations, at SITE LEVEL during LOM.

IDENTIFY the nature and ACTUAL sources of potential impacts.

ASSESS and DETERMINE the SIGNIFICANCES of the impacts (through stakeholder engagement), as KEY indicators.

PRIORITIZE the most significant KEY impact indicators for measuring & reporting

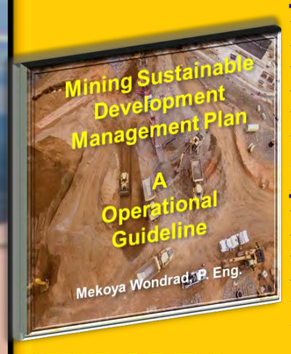
DEVELOP Standard Guideline, IMPLEMENT & CONINUOSLY MONITOR key SUSTAINABILITY indicators.

RESEARCH OUTCOME

NET POSITIVE SUSTAINABLE MINING DEVELELOPMENT

"A MINING DEVELOPMENT that MEETS THE NEEDS OF THE PRESENT WITHOUT COMPROMISING the ABILITY OF FUTURE GENERATIONS to MEET THEIR OWN NEEDS"

SIGNIFICANT CONTRIBUTION



CURTAIL the Social and Environmental Impact of Mining Operation, at LOCAL Level.

PROMOTE Responsible Mining During LOM by Monitoring & Reporting Key Impact Indicators.

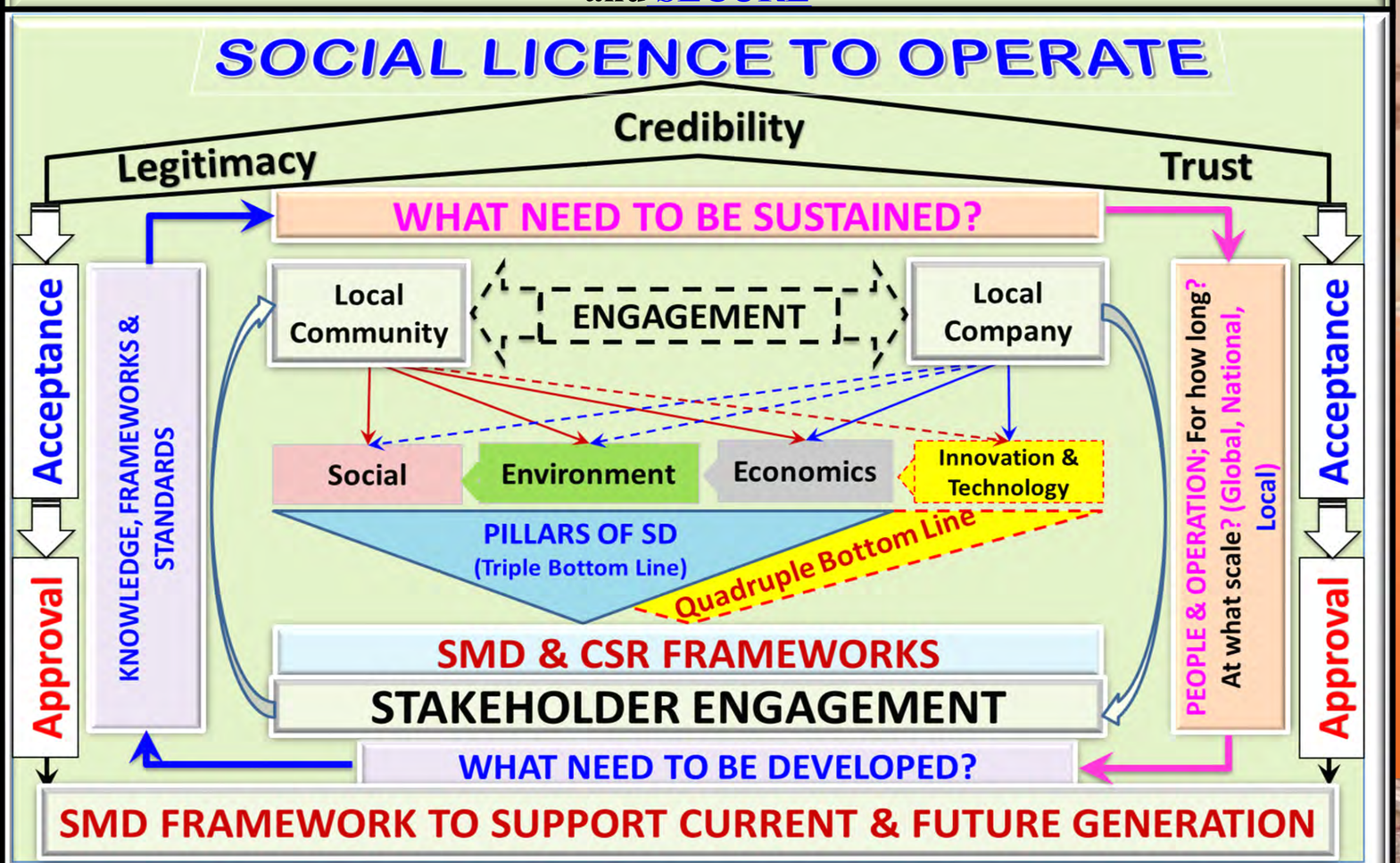
SUPPORT Sustainable Mining Development by Implementing Standard Operational Guidelines.

CONTRIBUTE to Applied Management Research (especially from mining perspective).

PROVIDE GUIDANCE to future researchers, NGO's, UNDP, and Stakeholders.

THEORETICAL & CONCEPTUAL FRAMEWORK

A FRAMEWORK for managing EACH PHASE of the LIFE OF MINE operation to *SUPPORT SUSTAINABLE MINING DEVELOPMENT* and SECURE



RESEARCH METHODOLOGY – EXPLANATORY SEQUENTIAL

MIXED

RESEARCH INTEREST	PROBLEM DEFINITION	RESEARCH QUESTION	RESEARCH METHOD
MINING SUSTIANABLE DEVELOPMENT	IMPACTS OF MINING OPERATION	HYPOTHESIS, QUERIES, OBJECTIVES	Two-Phase Explanatory Sequential Design (Burns, 2017)

RESEARCH PARADIGM	ONTOLOGY (Reality Exist)	EPISIMOLOGY (Truth about Reality)	QUERIES (about knowledge)	MIXED METHODS
	Asserts that there is a reality called SD, and that the researcher has his own unique interpretation of this reality.	One or multiple realities; can be examined (relationships in the research is determined by what the researcher deems as appropriate to this particular study).	The researcher query about what can he learn and how can he find the knowledge and the truth about the reality he want to discover.	Researcher adopts a relational epistemology, a non-singular reality ontology, a mixed methods methodology, and a value-laden axiology

EXPLANATORY SEQUENTIAL

Phase 1 — QUANTITATIVE Data (Collection & Analysis) → Identify Results for Follow-Up

Reviewing, Developing & Quantifying Mining SIs (using global/industry database).

Phase 2 — QUALITATIVE Data (Collection & Analysis) → Interpretation & Findings

Interviewing, Engaging, Assessing & Verifying "key" mining Sis.

The researcher, by using a Pragmatic Axiology gains knowledge in pursuit of the desired ends of the research "**Sustainable Mining Development Management Plan**" as influenced by his findings, values and politics.

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