



ESG – WHAT MATTERS FOR ENGINEERS

Presented by:

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Session I: 22nd August 2023



MATRADE Hall,
MATRADE Exhibition & Convention Centre



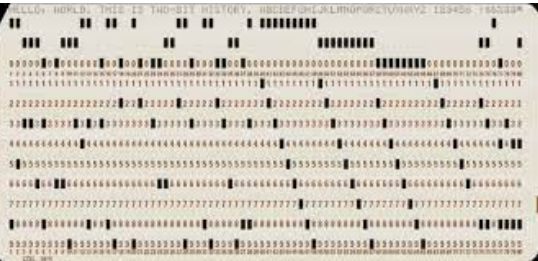
My Personal Technology Shifts



Gadgets



Slide rule



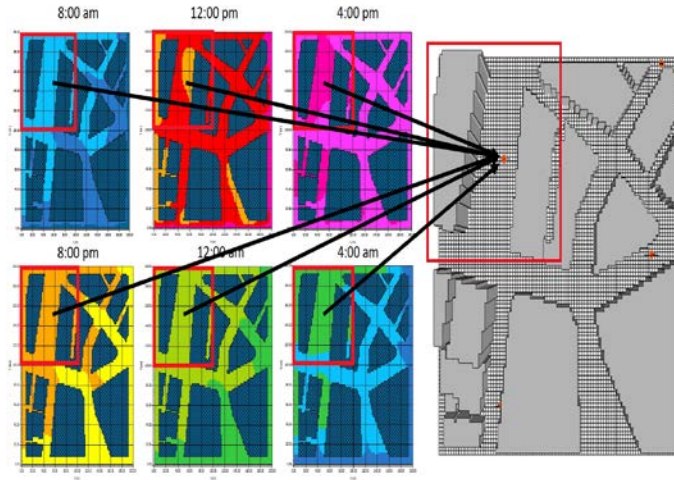
Punch card



Scientific calculator



ASPEN Simulation tool



ENV_-MET
PhD Thesis on Urban Heat Island 2021

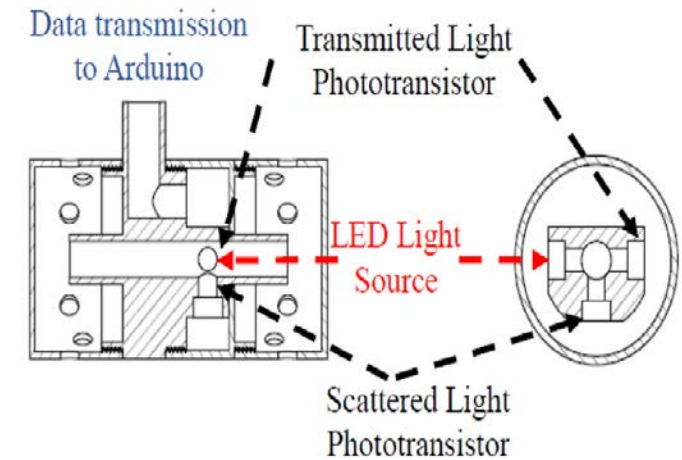
Research



Weather station
Old and automated

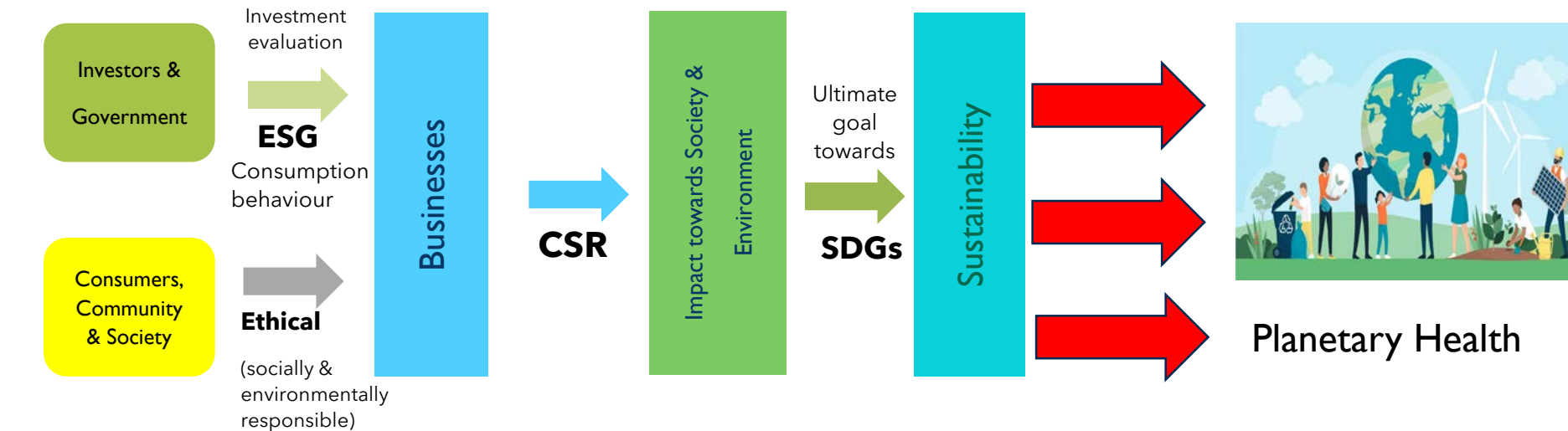


Air sampling at Scotts Base
Antarctica 1999



Ref: Toward industrial revolution 4.0: Development, validation, and application of 3D-printed IoT-based water quality monitoring system 2022 J. Cleaner Production

ESG and Sustainability – different but related



Return of Value ROV

Nair, Pervaiz and Vaithilingam
SUNWAY University, 2022

Relationship between SDGs, CSR and ESG

(Created by Raja Ehsan Shah, R.S.S. June 2022)

A key concept of ESG is 'materiality' - the importance or significance of an issue. For ESG and sustainability, the term 'double materiality' is used

Sustainability: Inside Out Focus on earth and social system

Earth Systems and Society: how to operate within a 'safe space for humanity' based upon environmental thresholds and societal foundations

- Quantifying the status of threshold issues such as climate, inequality and nature
- Quantifying the current performance of business and finance with respect to the safe operating space
- Identifying the societal value at risk and non-financial impact of current financial performance

ESG: 'Outside In' Focus on enterprise value

Business & Finance: how sustainability concerns impact enterprise value at risk

- Quantifying impact of sustainability concerns on financial performance
- Identifying financial investments needed to improve non-financial performance
- Identifying forward risks of current business model with respect to safe operating space

Ref: Pollard and Bebbington, University of Lancaster

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ESG Matters for Engineers



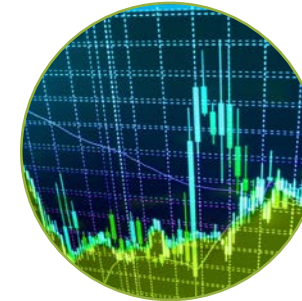
TECHNOLOGY

Innovative
Clean Technology
Smart & Green
Circular Economy



TALENT

Education &
Training
Skills
Competencies



DATA MANAGEMENT & ANALYTICS

Complete -4A
Integrity
Traceable
AI & ML

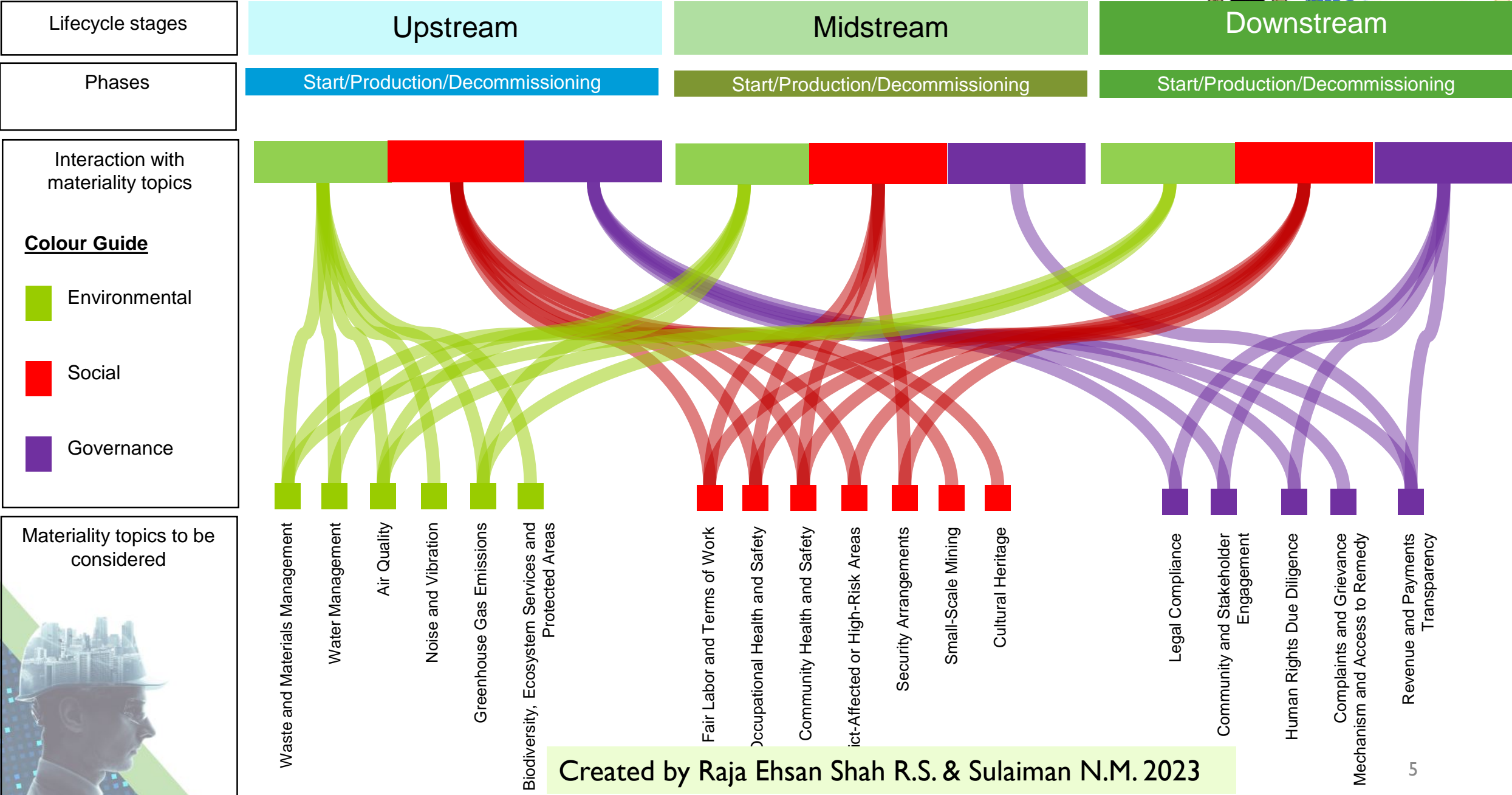


REPORTING

Disclosure
Document
Mandate
Framework
Standards

ESG performance throughout the supply chain.

ESG Materiality Component Mapping-Ecosystem Approach



Q & A





THANK YOU



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