



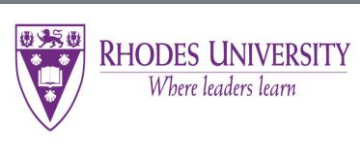
21 April 2016

Occupationally Directed Study: Mining

green skills
Building capacity for a sustainable future

Green Skills for Mining: Coal

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Goals of the Study

1. What are the essential 'green skills' for mining?
 2. Which of these skills are scarce?
 3. What are the implications for career pathing?
 4. What are the supply pipelines & challenges?
- To inform the Sector Skills Plan
 - And develop a methodology for future studies



Key Learnings:

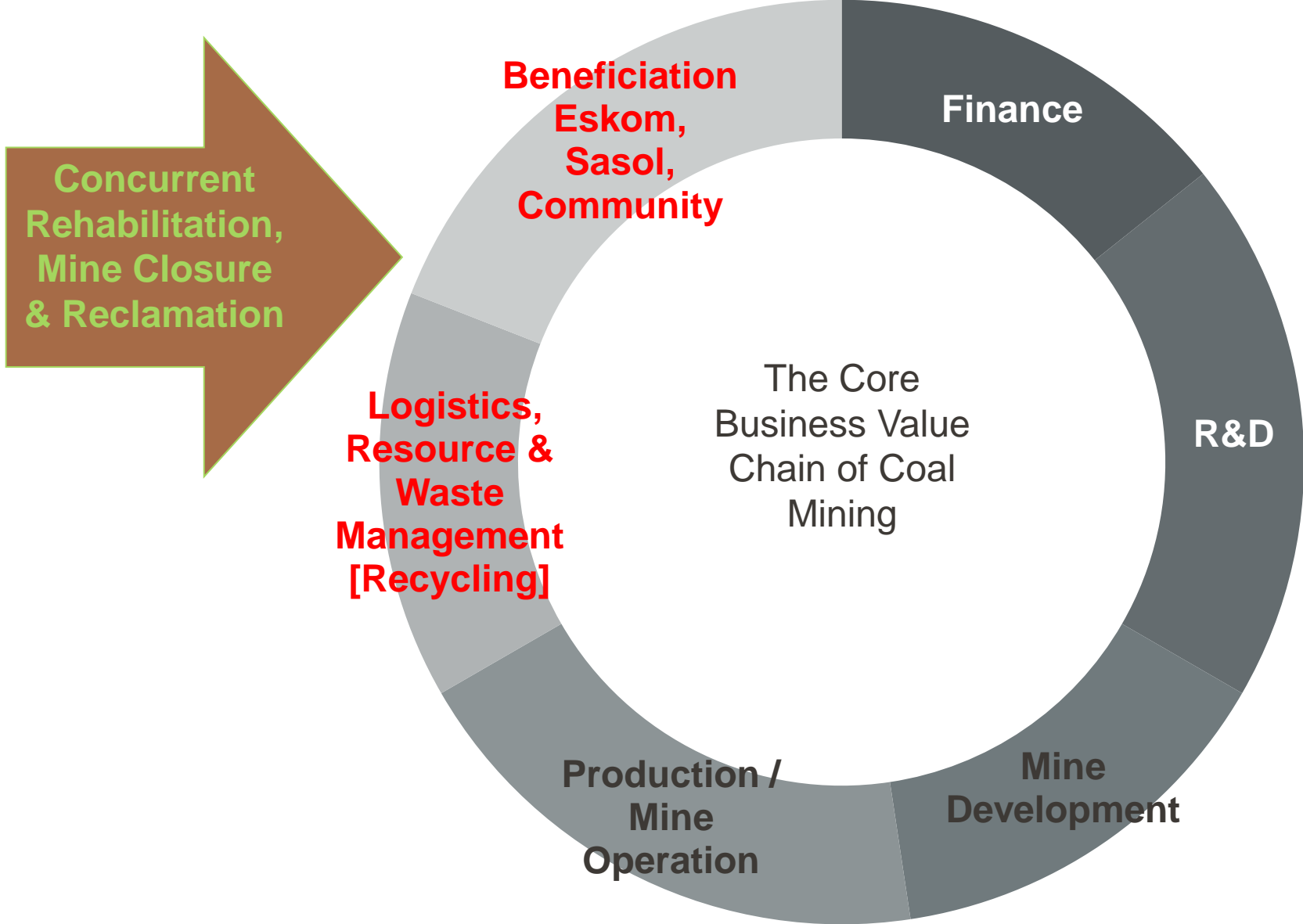
Demand for green skills can be hidden

- By being 'everywhere'
- By narrow analytic frameworks

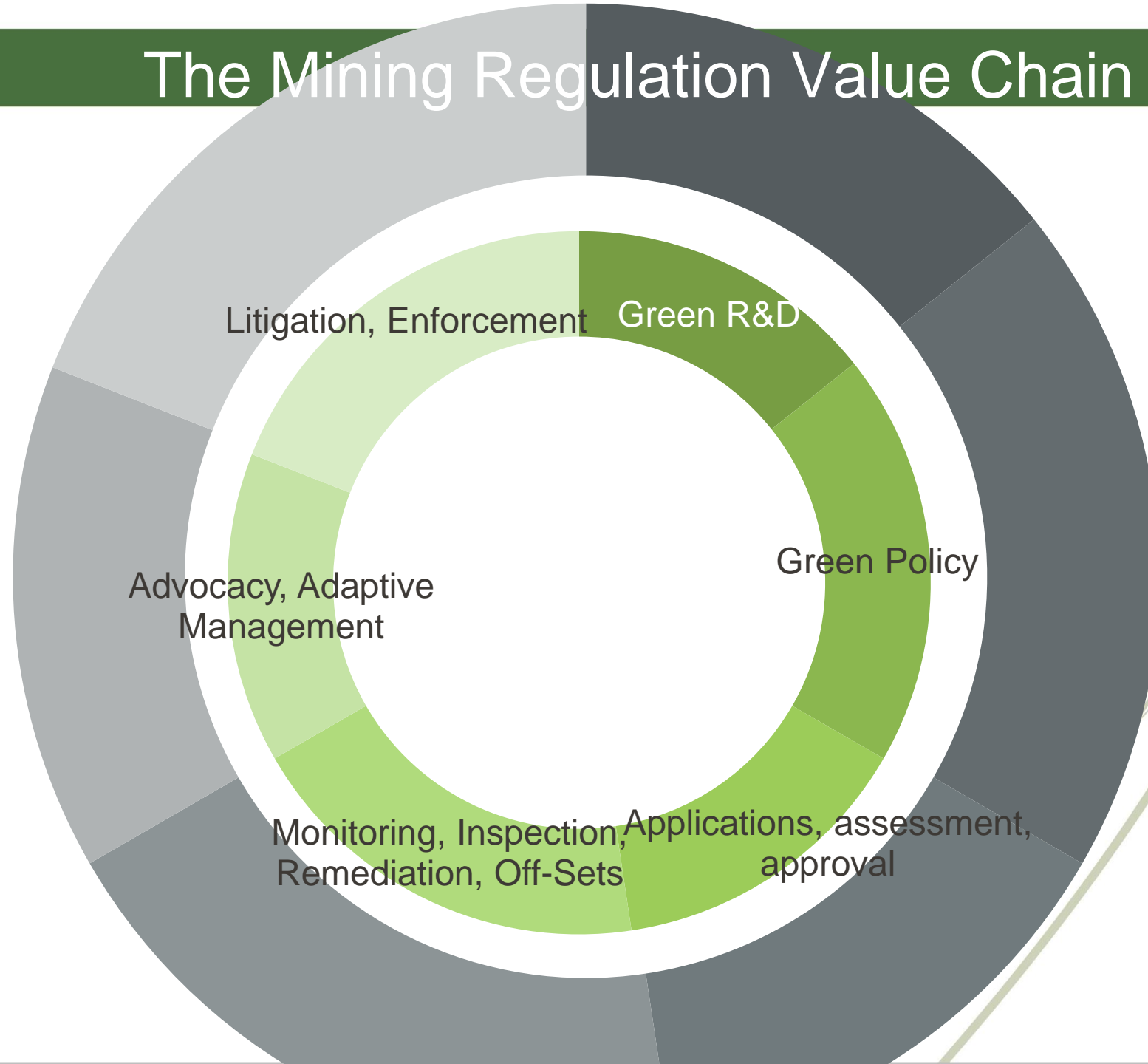
A typical mining value chain:



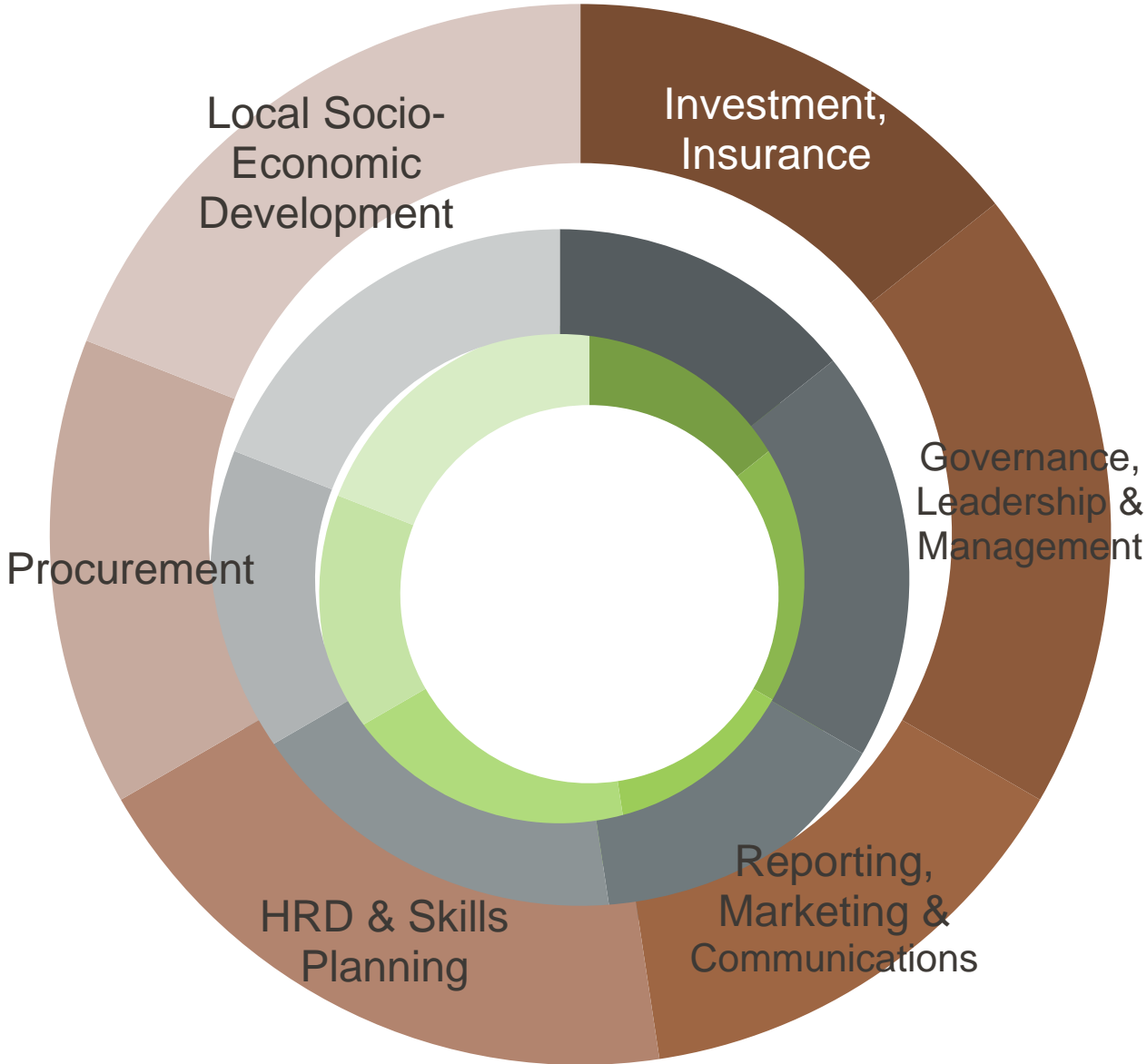
Connected Value Chains in Coal Mining: 1



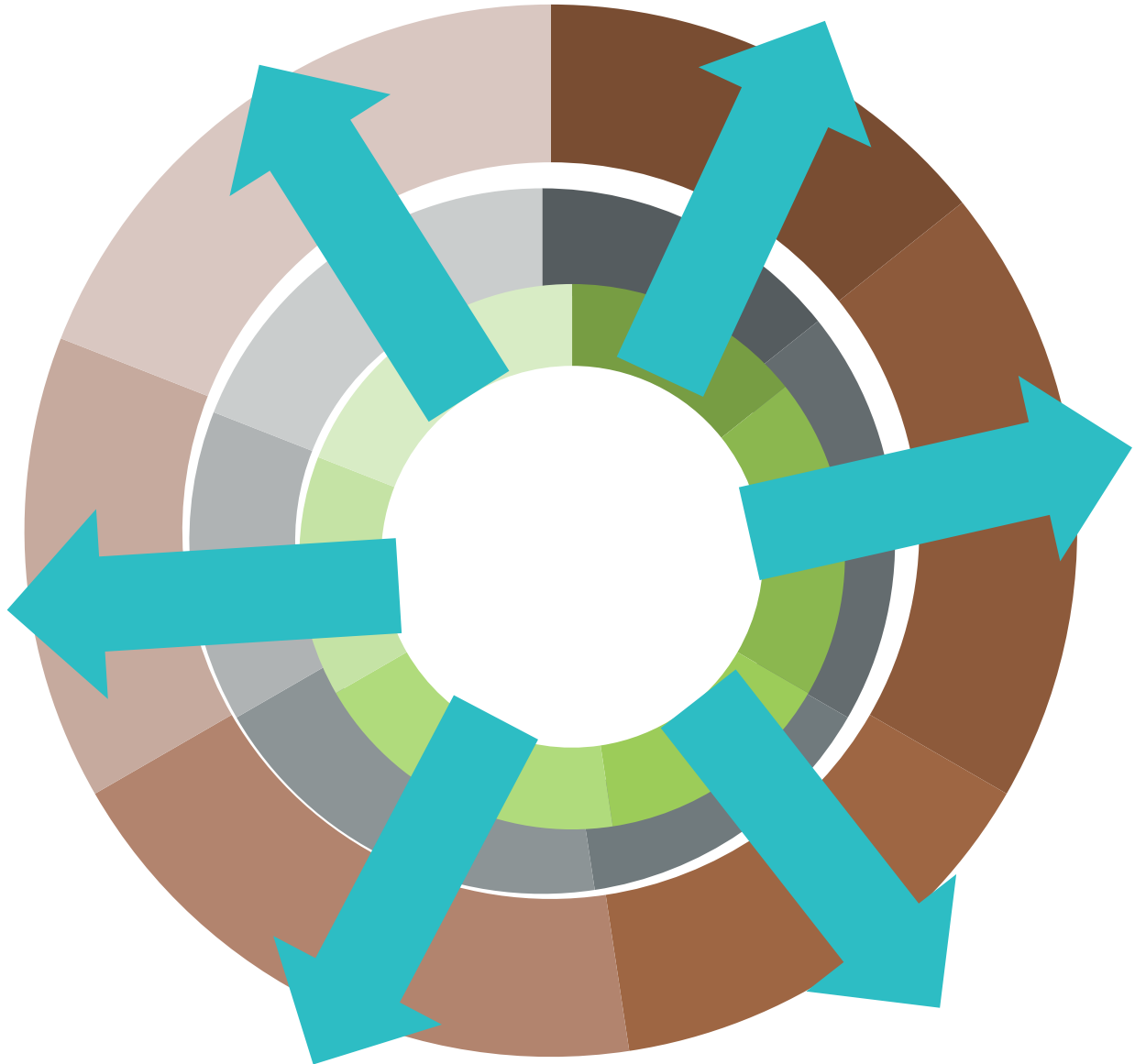
The Mining Regulation Value Chain



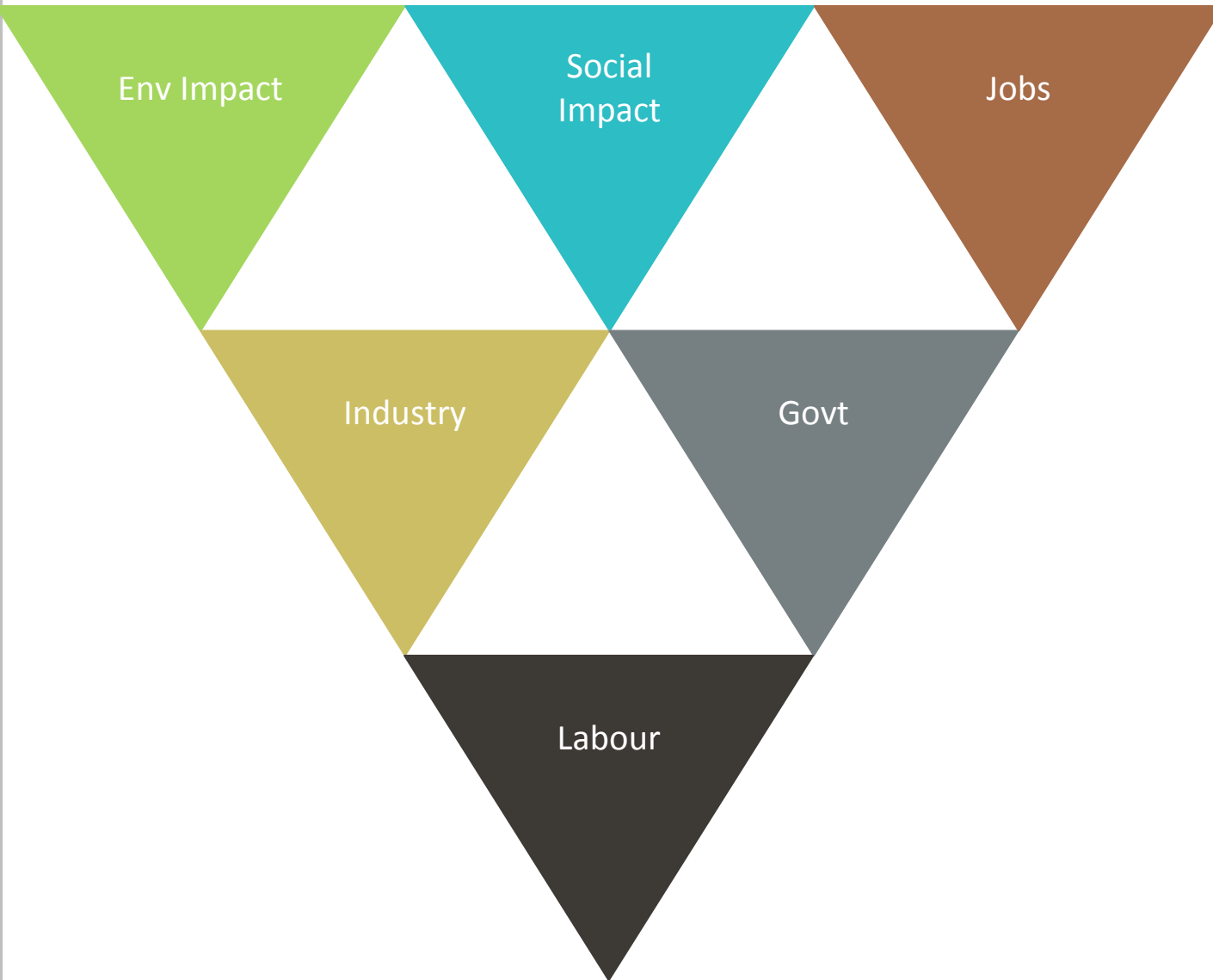
3. The Enabling Value Chain



Green Skills Are Needed Across All These



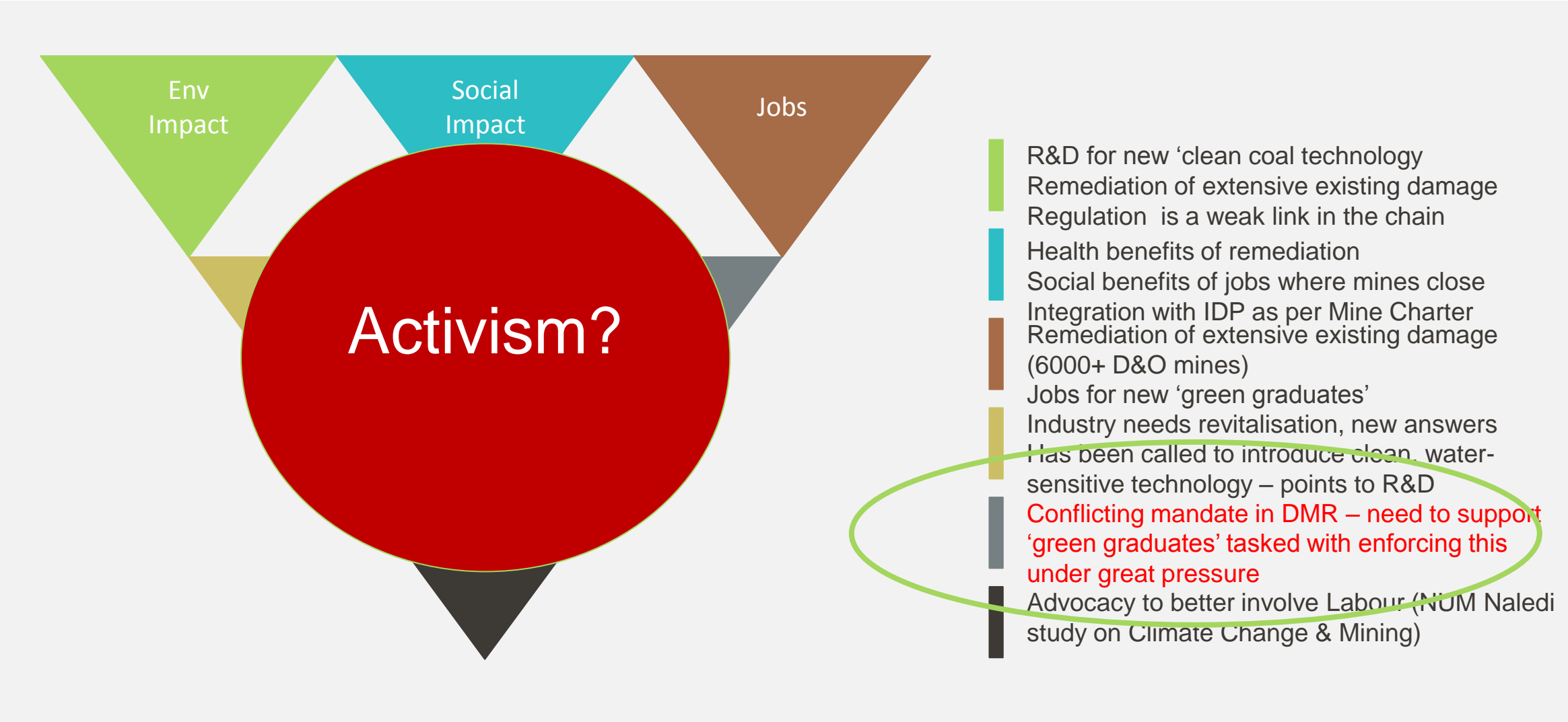
How to Prioritise Among These Skills? (See Hand Out)



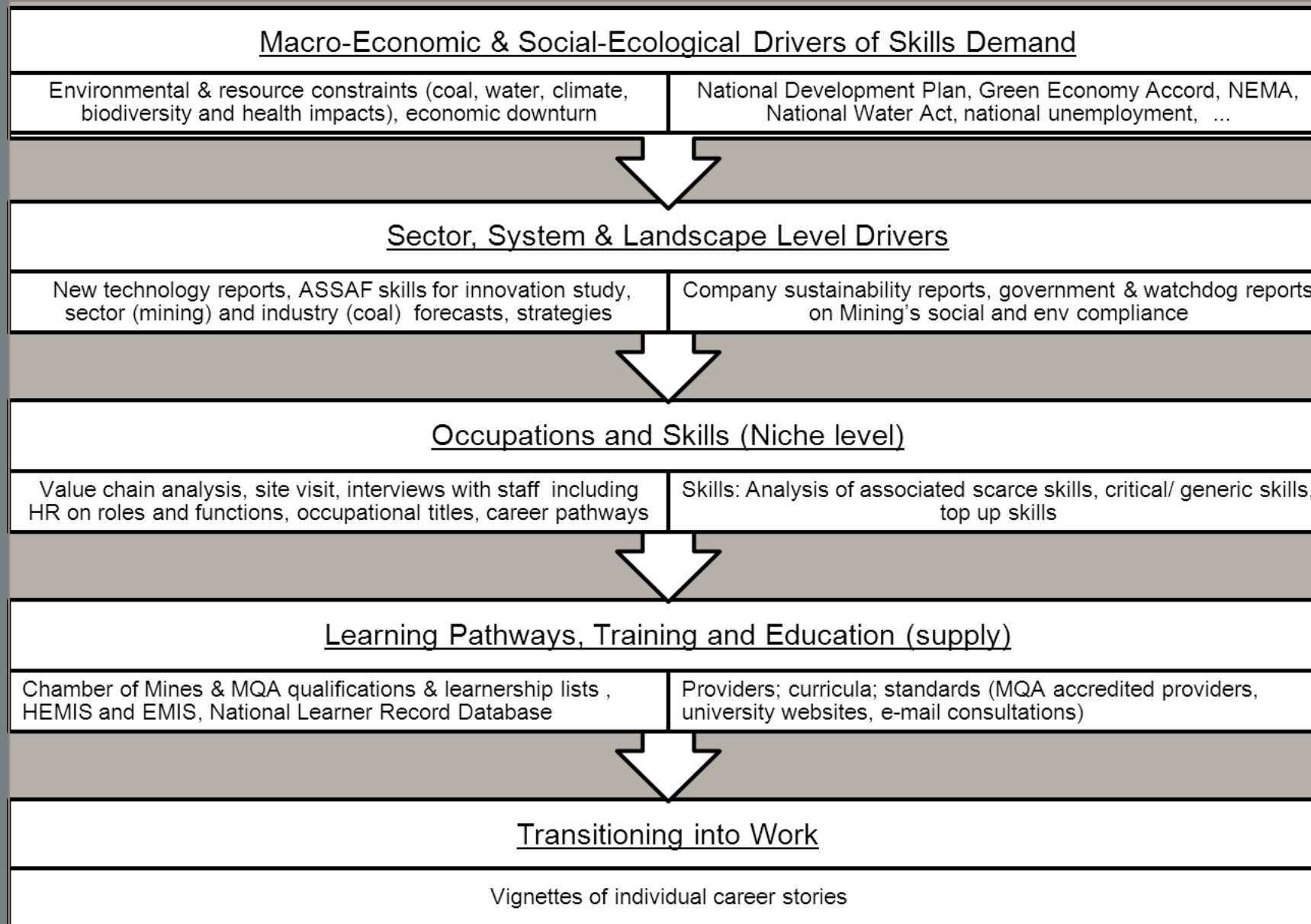
- Env Impact**
 - R&D for new 'clean coal' technology
 - Remediation of extensive existing damage
 - Regulation is a weak link in the chain
- Social Impact**
 - Health benefits of remediating mined areas
 - Social benefits of jobs where mines close
 - Integration with IDP as per Mine Charter
- Jobs**
 - Remediation of extensive existing damage (6000+ D&O mines)
 - Jobs for new 'green graduates'
- Industry**
 - Industry needs revitalisation, new answers
 - Has been called to introduce clean, water-sensitive technology – points to R&D
- Govt**
 - Conflicting mandate in DMR – need to support 'green graduates' tasked with enforcing this under great pressure
- Labour**
 - Advocacy to better involve Labour (NUM Naledi study on Climate Change & Mining)

Demand Can Also Be Hidden

Unless the methodological tools are broad and sharp enough

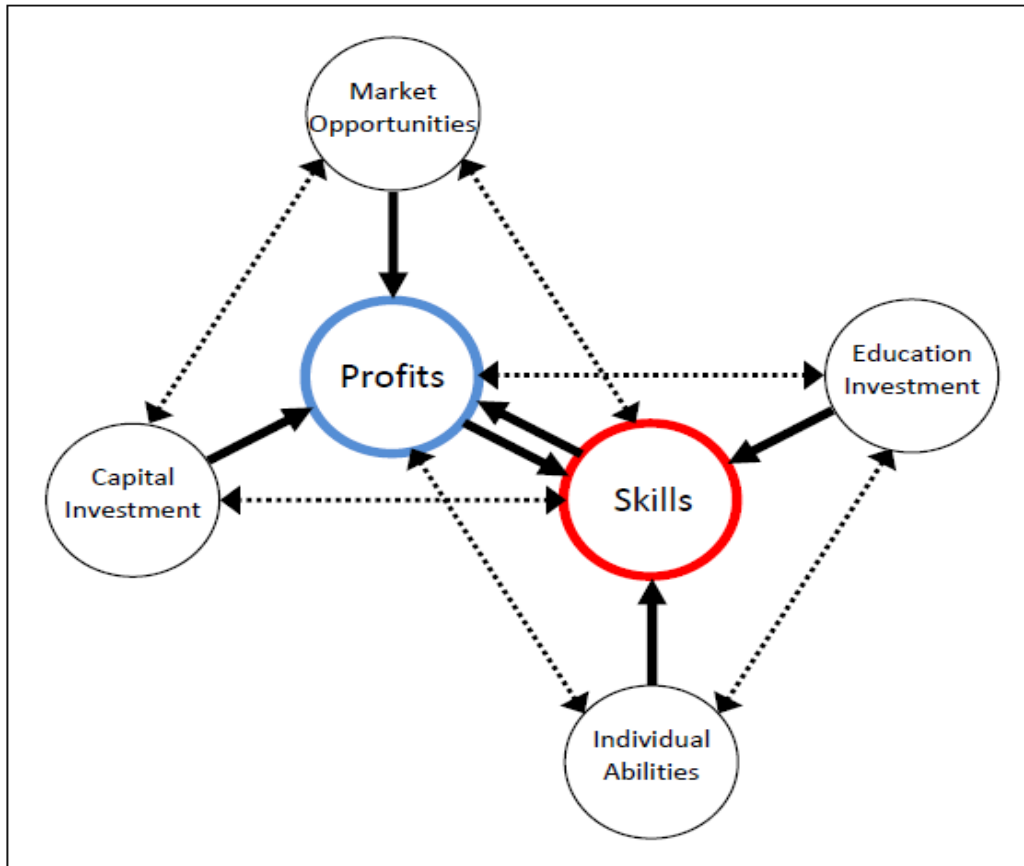


Multi-Level Framework to Understand Demand and Supply:



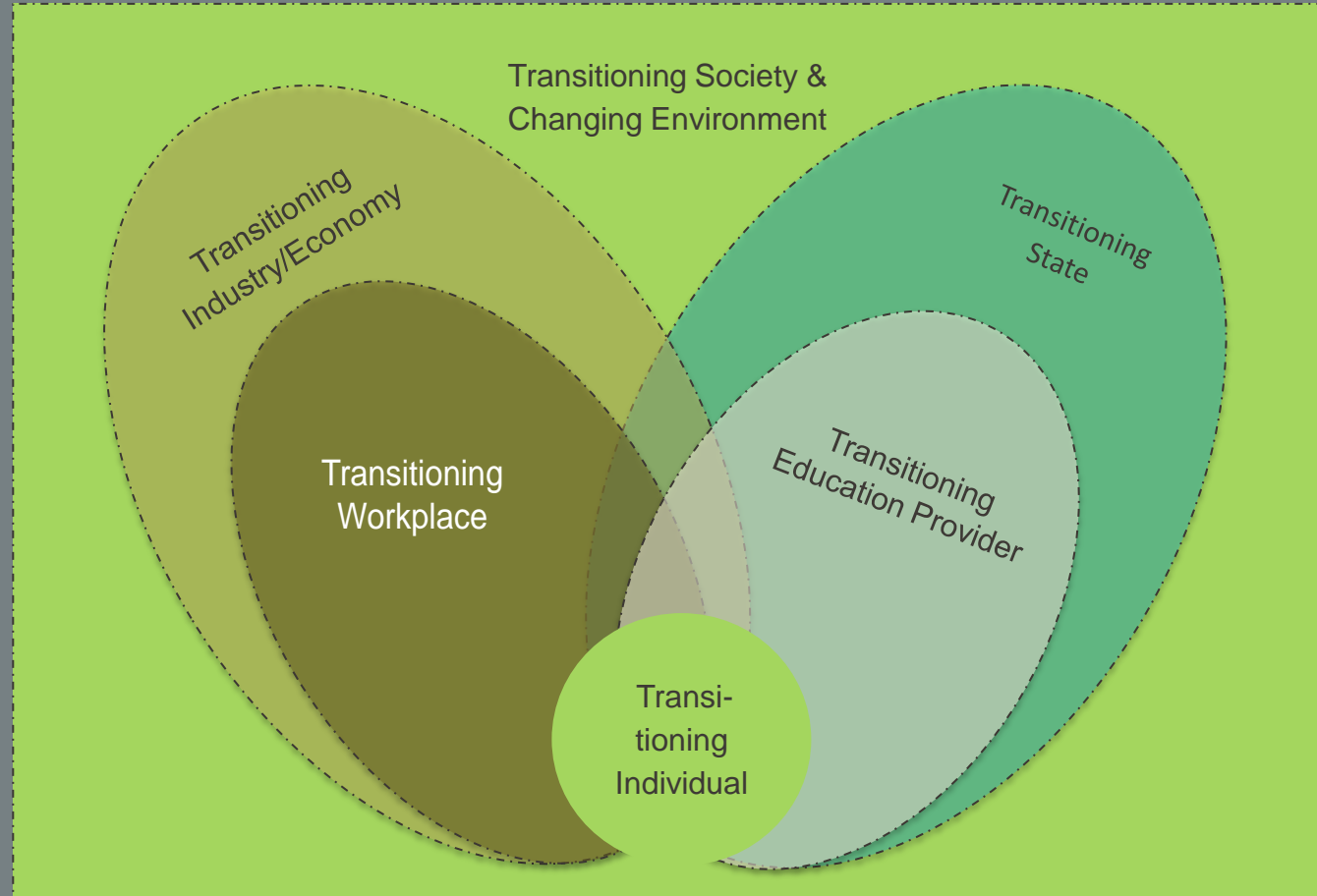
A narrower skills ecosystem:

Figure 3: A model of a skill ecosystem



Source: Dalziel (2012, Figure 19, p. 38) reproduced from Miranda *et al.* (2011, p. 68).

Broader skills ecosystem with drivers of demand for green skills:



Thank You!

