# Designing Sustainable Prosperity (DSP)

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Sustainability is a responsible use of resources, including preserving the environment, to meet current needs without compromising the needs of future generations.

DSP introduces a systems approach to unlock resource rich regions while placing sustainability and community integration at its core. It seeks to balance between prosperity, environmental sustainability, and community well-being, thereby fostering the emergence of resilient and thriving regions. It harnesses the extractive industry as a catalyst for lasting prosperity.

DSP integrates technical, social, environmental, financial, and political aspects to unlock regional potential and tailor solutions that resonate with market needs. Grounded in science principles, it facilitates societal transformation by harnessing the region's unique strengths establishing it as a global centre of excellence in the knowledge economy. Committed to promoting nature positive solutions DSP adheres to UN SDGs, using these benchmarks to prioritize and measure success across economic, social, and environmental dimensions.

The significant risks facing natural resource rich regions are illustrated in figure 1, presenting DSP as a strategic response to these challenges, illustrated in figure 2.

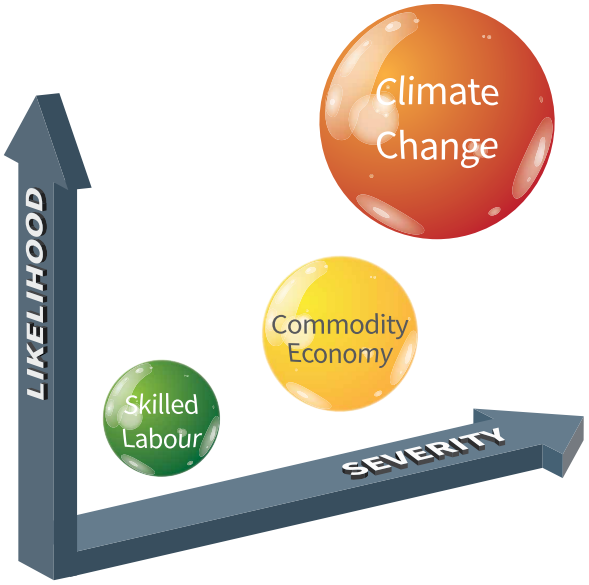


*Fig. 1- Regional Risks*

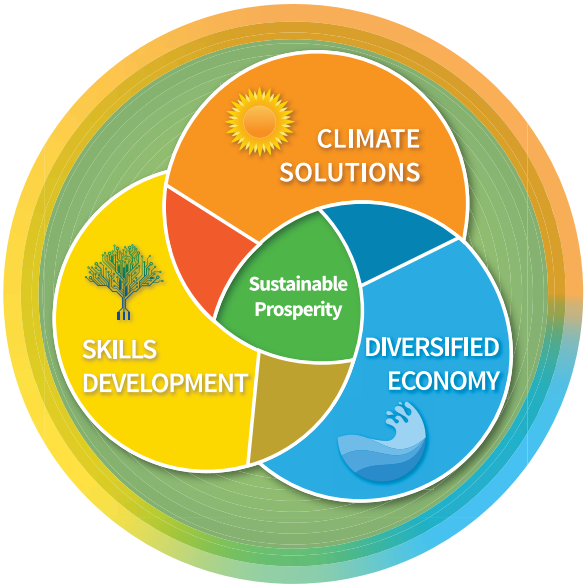


*Fig. 2- DSP Mitigates those Risks*

DSP fosters long-term regional prosperity by promoting sustainable economic diversification and treating regions as interconnected ecosystems. Figure 3 illustrates the economic impact of DSP (green), ensuring sustainable prosperity beyond the lifespan of the extractive industry (red). It also shows the supporting industries in yellow, which follows a similar trend to the extractive industry. The graph illustrates that DSP catalysed by the extractive industry continue to support the region.

The DSP process comprises three key planning phases: The outcomes are investment packages, business cases for key enterprises, and strategic roadmaps.

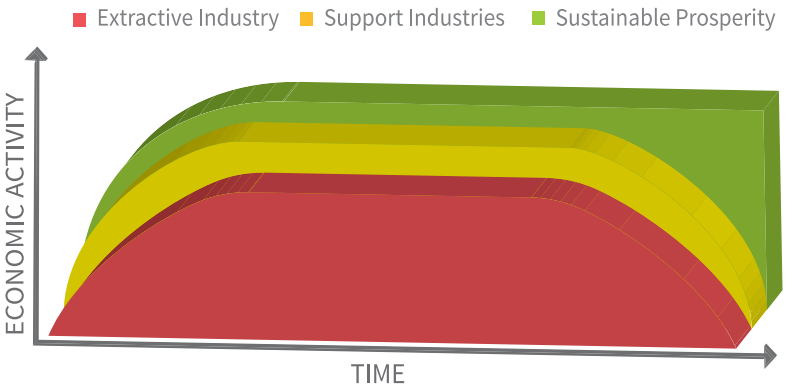


*Fig. 3- Designing Sustainable Prosperity* [1, 2]

1. Building the Design Inputs: Unlocking the hidden potential of natural resources and human talent.
2. Designing System Solutions: Key parties collaborate in a seven-step process (see figure 4).
3. Preparing for Implementation: Creating an environment for effective and purposeful execution.

UN SDG indicators are used to establish a baseline assessment of the region's economic, environmental, and social conditions. During the design phase, business cases are strategically prioritized based on these indicators, evaluating their potential regional impact and alignment with global development goals. After implementation, these indicators continue to serve as a critical tool, measuring success and monitoring progress towards achieving a sustainable and equitable future for the region.

DSP encourages collaborative transformation and community empowerment, underpinned by a fresh perspective that is essential to create the conditions for a sustainable region. Figure 4 depicts the Seven Steps of DSP, emphasising the gradual expansion of possibilities and actionable steps towards sustainable prosperity. Steps 1 and 2 prepare the team for embracing new possibilities, while steps 3 to 6 involve planning. The final step focuses on implementation readiness and establishing the environment for sustained action and progress.

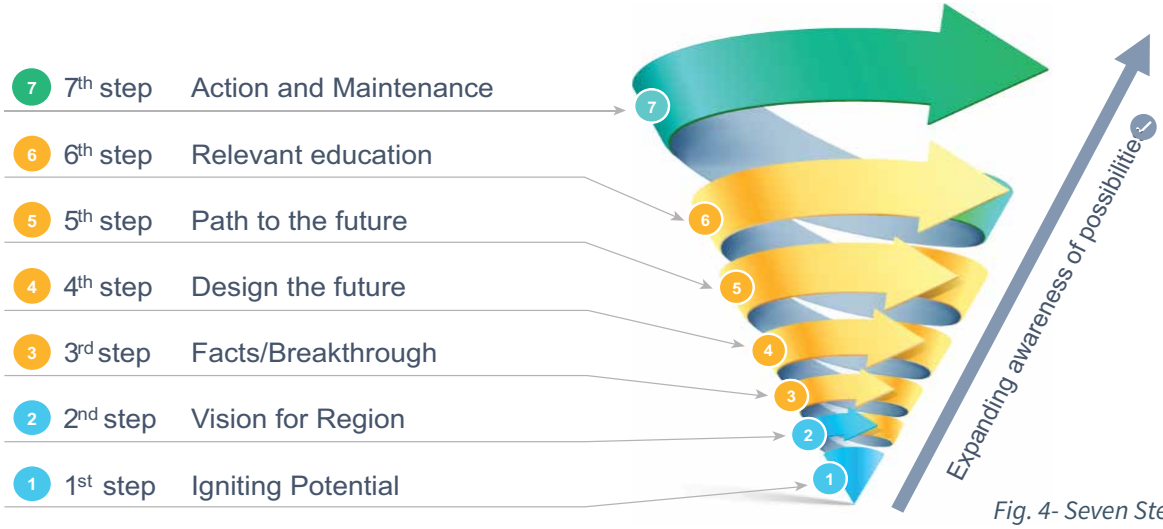


*Fig. 4- Seven Steps of DSP* [2]

References

1. Hiam-Galvez, D., Prescott, F., & Hiam, J. (2020). Designing Sustainable Prosperity "DSP": A collaborative effort to build resilience in mining producing regions. CIM Journal, 69-79.

2. Hiam-Galvez D (Ed.) Designing Sustainable Prosperity: Natural Resource Management for Resilient Regions. Wiley (In Press)

# Designing **Sustainable** Prosperity

## High Level Case Studies

### Southern Peru

In Southern Peru, DSP harnesses the region's abundant solar potential, showcasing how the region's expertise in thermal processing for copper production can be adapted to future sustainable industries. With current capabilities, the region can seize the opportunity to lead on sustainable energy solutions, not just by acquiring technologies, but by showcasing their ability to adapt and evolve complex technologies. Their opportunity lies in advancing direct solar seawater desalination technology by concentrated solar power (CSP): a complex thermal process. This approach addresses water scarcity, promotes precision agriculture, and encourages the development of value-added food products.

### Quebec

Quebec, Canada, is a hub for hydropower energy, yet also faces energy scarcity as it works towards achieving decarbonisation goals by 2050. DSP focuses on establishing a stable grid supply, integrating various green energy sources including hydropower, wind, solar and hydrogen. The expertise in managing energy demand and the supply of a complex green energy ecosystem through the seasons via innovative digital solutions provides a basis for a knowledge industry. Decarbonisation goals can be met while diversifying the economy.

### Ring of Fire

In Canada's Northern Ontario Ring of Fire, a crucial ecosystem thrives above mineral deposits. This development opportunity centres on the preservation and well-being of the wetland ecosystem. The region holds the potential to establish itself as a leading hub for peatland regeneration and carbon capture expertise, a transformation catalysed by responsible resource extraction and guided by Indigenous knowledge. Collaborative partnerships with research centres further enable the delicate balance between ecological preservation and sustainable socio-economic development, firmly rooted in peatland regeneration.

### Northwestern British Columbia

In Northwestern British Columbia (NWBC), Canada, DSP proposed a plan to accelerate mining development while protecting the environment and respecting Indigenous cultures in the region. The process involves leveraging NWBC's abundant natural resources supported by good infrastructure. The initiative focuses on a collaborative mining economy emphasising shared resources and remote operation of mines. This region, with its robust hydropower supply, is uniquely positioned to evolve into a low carbon solutions hub. By integrating its strength in hydropower with innovative approaches in remote sensing, the region could set a benchmark in environmentally sustainable practices.

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