SUVIKALP- Mine Repurposing Tool; Transforming Closed and Abandoned Mines into Productive Assets

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Mine closure is an integral part of the mining lifecycle. However, the responsibility towards a mining region does not end with the completion of mining operations. Ensuring productive utilisation of post-mining land, environmental restoration and sustainable socio-economic development requires a structured approach to mine repurposing. Recognising this need, the Coal Controller Organisation (CCO), under the Ministry of Coal, Government of India, has developed **SUVIKALP – Mine Repurposing Tool**, a digital decision-support platform aligned with the *Mining Plan Guidelines for Coal and Lignite Mine, 2025*.

SUVIKALP aims to establish a scientific, transparent and standardised framework for identifying suitable post-mining land-use opportunities. It addresses the challenges associated with fragmented assessments, independent evaluation of multiple parameters and limited integration of community priorities in conventional mine repurposing decisions.

Scientific and Data-Driven Assessment

SUVIKALP brings together geo-mining characteristics, environmental conditions, infrastructure availability, resource constraints, financial considerations and socio-economic factors within a unified digital platform. Users can create a comprehensive site profile by entering relevant mine-specific information, enabling systematic assessment of potential repurposing alternatives against the characteristics and constraints of individual mine sites.

The platform employs a **Multi-Criteria Decision-Making (MCDM)** methodology based on *TOPSIS (Technique for Order Preference by Similarity to Ideal Solution)* to evaluate and rank potential repurposing options. This approach facilitates objective comparison of alternatives against multiple parameters, providing stakeholders with transparent, consistent and evidence-based recommendations.

The assessment process follows a structured sequence comprising factor selection, generation of potential options, integration of community priorities, suitability assessment and final ranking. This enables mine owners, project proponents and government agencies to make informed decisions based on site-specific conditions rather than relying exclusively on subjective assessments.

Integrating Community Priorities through RECLAIM

Sustainable mine repurposing must address the aspirations of communities residing in mining regions. Accordingly, SUVIKALP integrates **RECLAIM – Community Engagement and Development Framework** to incorporate local priorities into the project evaluation process.

The framework facilitates systematic consideration of community preferences alongside technical feasibility, environmental suitability and economic considerations. This helps ensure that proposed redevelopment initiatives are aligned with local development needs, employment generation, livelihood opportunities, infrastructure development and long-term community benefits.

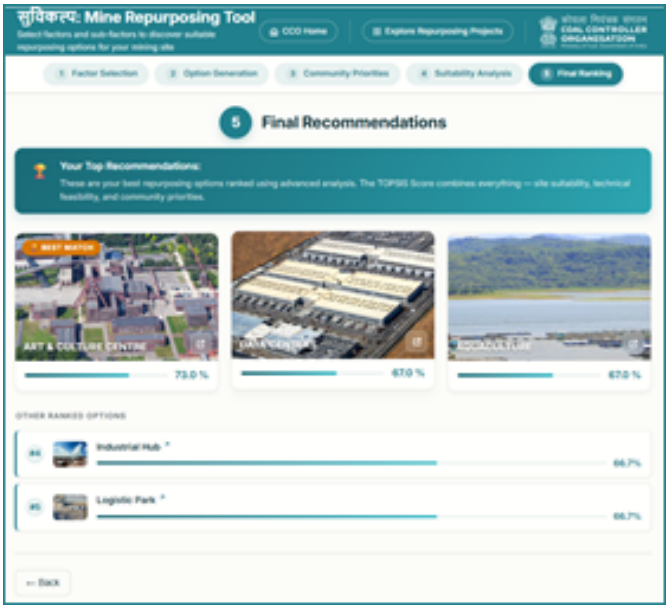
By bringing community perspectives into the decision-making process, SUVIKALP promotes a participatory approach to post-mining development, strengthening the linkage between mine closure, regional development and inclusive growth.

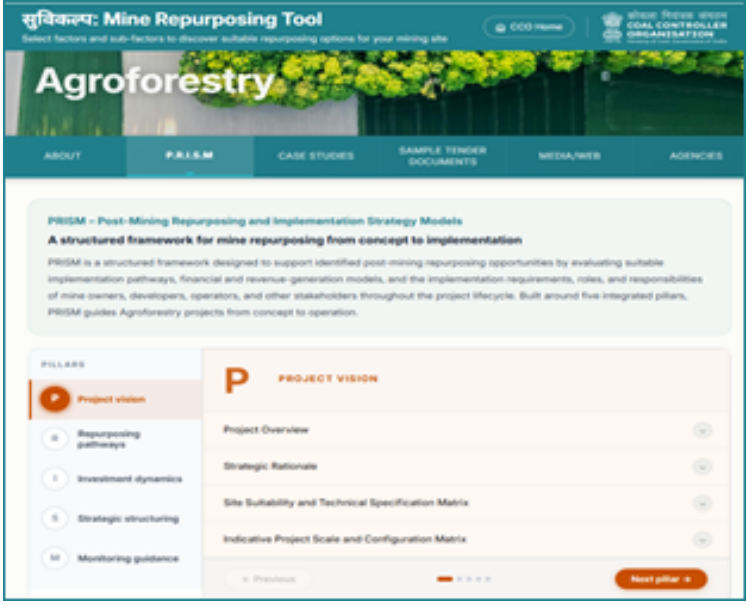
From Project Identification to Implementation: PRISM

A distinguishing feature of SUVIKALP is its **PRISM (Post-Mining Repurposing Implementation Strategic Model)**, which extends the platform beyond the identification and ranking of potential projects.

PRISM provides a structured approach to exploring implementation pathways, including project vision, repurposing strategies, investment dynamics, strategic structuring and monitoring. It is supported by an integrated knowledge repository comprising project concept notes, national and international case studies, sample tender documents, details of implementation agencies and best-practice resources.

This integrated approach enables stakeholders to move from identifying suitable opportunities towards understanding the practical requirements for project development and execution. It also facilitates knowledge sharing and provides reference materials to support informed planning and implementation.





Way Forward: Building an Implementation-Oriented Framework

The next phase of SUVIKALP will focus on expanding its adoption and strengthening the transition from project recommendations to implementation. Key priorities include:

1. **Wider Adoption:** Expand SUVIKALP across closed and abandoned coal and lignite mines.
2. **Project Development:** Convert recommendations into site-specific feasibility studies, concept notes and DPRs.
3. **Institutional Convergence:** Strengthen coordination among government, industry, experts and implementation agencies.
4. **Investment Mobilisation:** Explore funding and partnerships for viable mine repurposing projects.
5. **Knowledge and Capacity Building**: Share best practices and build stakeholder capacity.
6. **Monitoring and Evaluation:** Track implementation and assess environmental, economic and community benefits. Towards a Sustainable Post-Mining Future

SUVIKALP represents an important step towards institutionalising scientific and participatory decision-making in mine repurposing. By integrating technical assessment, community priorities, objective project ranking and implementation guidance within a single digital ecosystem, it provides a structured foundation for sustainable post-mining land-use planning.

The long-term vision is to evolve SUVIKALP into a scalable national knowledge and decision-support ecosystem, adaptable to diverse mining conditions and regional development priorities. The success of this initiative will ultimately be reflected not merely in the identification of suitable projects, but in their successful implementation and the lasting benefits delivered to mining communities.

Through SUVIKALP, the objective is to transform the legacy of mining from resource extraction into an opportunity for environmental restoration, economic diversification and sustainable regional development.

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