



LOCAL INNOVATION



K-DISC
3rd Floor, India Heights Govt. Women's College Road
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INTRODUCTION

The journey of Kerala into a Knowledge Society must make opportunities to identify innovators from all walks of life and provide the right support to nurture them for value creation. Local innovation refers to innovations by society members outside the framework of schools, colleges, and formal industries. K-DISC aims to ensure the right ecosystem for identification and scaling of Local Innovation for risk mitigation, scaling, expert connect, and sustainable value creation.

The process for promotion of Local Innovation will follow the Communities of Practice (CoP) guided Figure of 8 Innovation Life Cycle followed by the Balanced Scorecard (Z curve) approach to translate co-creation to value creation at the local community level. It will leverage the Triple Helix+ model to integrate components of academia, industry, government, community, and environment.

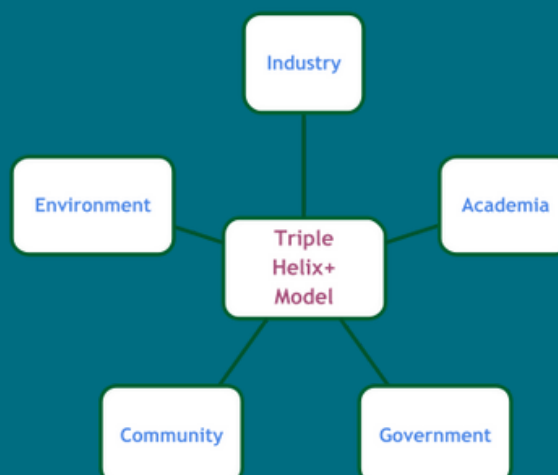
Excerpts from the 2021-22 Kerala Budget Speech

Kerala – an innovation society

61. One, Any person who finds a solution to any of the problems in agriculture, industry, service, business of their locality will have a platform to upload their innovation. K-DISC will classify and evaluate such new ideas and techniques with the help of experts of concerned sectors. In the next stage, Start up Mission and Kerala Digital Transformation Mission in unison will grade these innovations and ensure mentoring and financial assistance for developing them into products. They will take the initiative to spread these products in society as soon as they get a 5 star rating. Conditions will be created for Government and Semi-Government institutions to buy such products at a specified rate without tendering. There will also be a scheme for providing diffusion subsidy in proportion to turn over of services and technologies. This is a conscious intervention to ensure that there will not be any digital divide in integrating new technologies.

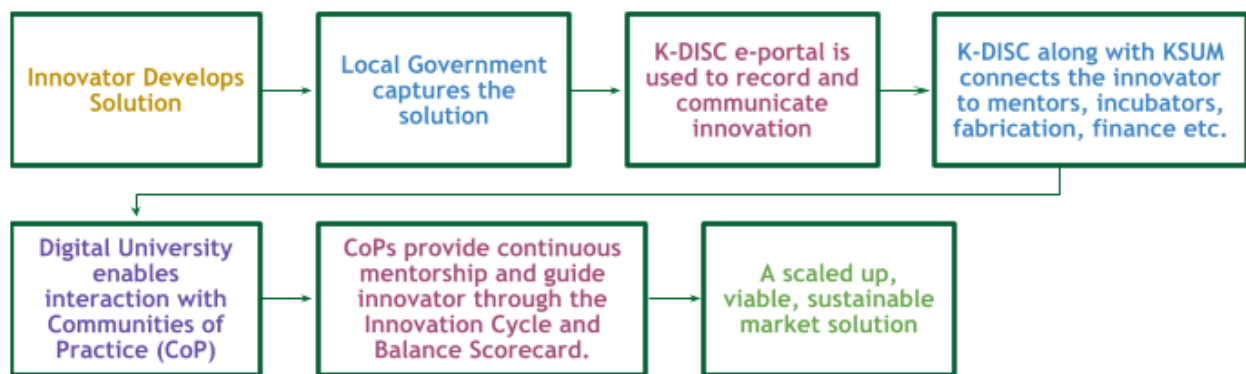
Triple Helix+ Model

The Triple Helix model captures the interplay or relationship between the government, industry, and academia. With the inclusion of the local government as well as the environment as a stakeholder, it becomes a Triple Helix+ (quintuple helix) model.



ROLE OF LOCAL GOVERNMENT

The Local Government is best placed to identify local innovators and innovations and guide them on the right track for scaling and value creation. K-DISC, KSUM, and Digital University provide the ecosystem mechanism to leverage the Triple Helix + Model and the CoP provides continuous mentorship to take the innovator through the Figure of 8 Innovation Cycle and create value using the Balance Scorecard. District level CoPs will guide innovators to build competencies, take their idea to prototypes, converting prototypes to working models and scaling working models to sustainable sources of value generation. Those innovations requiring more advanced levels of expertise will be guided by State level CoPs.



Local Innovation Ideas / Projects Promoted by K-DISC

RIGAS ENGINE

Innovator / Agency: Rajeesh Rajan

Particulars

- The first local innovation of K-DISC awarded a patent for his design of a Two-Stroke Elliptical IC Rotary Engine having better volumetric efficiency than Wankel Engine.
- KDISC had proposed Computational Fluid Dynamics (CFD) for its design and released a grant for this.
- Automaker Mazda had shown interest in the product and Defense Research and Development Organisation (DRDO) had reviewed this earlier.
- The engine has potential applications in aircraft, drones, electric vehicles because of its higher power to weight ratio and low vibration.

MOVING BRIDGE ELECTRICITY GENERATOR

Innovator / Agency: Rejimon Leela Dennis

Particulars

- Utilizing the human energy exerted on the ground in public locations to be converted into electricity.
- A moving bridge electricity unit to be piloted at Veli Tourist Village.

MICROBIAL INOCULANTS FOR WASTE MANAGEMENT

Innovator / Agency: Integrated Rural Technology Centre (IRTC)

Particulars

- The microbial consortium, a combination of bacteria and fungi capable of aerobic degradation of biodegradable solid waste into compost. The compost is highly useful as organic manure.
- K-DISC is helping IRTC in scaling the microbial inoculants and development from the lab scale to commercial so that they would make it available to local government institutions for using composting devices.

HIGH PRESSURE BIO-CNG GENERATION FOR SUSTAINABLE TRANSPORTATION

Innovator / Agency: TReST Park

Particulars

- The project aims to convert locally available biodegradable waste to Bio-CNG (Compressed Natural Gas), which has higher calorific value and high usability, compared to biogas and make it available at high pressure.
- The fabrication of High-Pressure Biogas generation and conversion to Bio-CNG will be the output.
- The bio-CNG so available can be pressurised further and bottled and made available for transportation purposes as well.

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