PROGRESS REPORT

DECEMBER 2022- NOVEMBER 2023

RICH
Research and Innovation
Circle of Hyderabad

HYDERABAD S&T CLUSTER

(RESEARCH AND INNOVATION CIRCLE OF HYDERABAD)

RICH
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Circle of Hyderabad

1. Sustainability vertical

1.1 Project Name: Green Hydrogen Valley

About the project

Establish a Green Hydrogen Valley in the region, with a focus on key industry clusters like fertilizer, mobility, mining and cement.

Project End Beneficiary: Industry, Research Institutes, Startups

Implementing/ collaborating agencies
- Academic: IIT Hyderabad, CSIR IICT Hyderabad
- Industry: NTPC, RFCL, AGI Glaspac, TSRTC, SCCL, RIL, Volvo, Nanosol Energy, Homi Hydrogen

Role of RICH: RICH is anchoring the consortium comprising start-ups, research centers, and industries.
- Working on refine techno-commercial strategy and business model along with consortium members preparing the DPR for the program.
- RICH shall assume the role of program management unit for the consortium once the program enters implementation phase.
- Liaise with Government agencies as required

Total Funding Required: Rs 160 Cr for 5 years

Impact: This is a project of strategic importance for the country and will set a template for Green Hydrogen clusters that would have to be setup across the country for large scale roll out of Green Hydrogen
- Indigenization of green hydrogen technologies (esp. membrane & storage)
- Achieve Levelized cost of green hydrogen at par with USDOE projections for year 2026
- Capacity building for at least 100 resources engaged on the project
- Provide inputs into progressive and practical measures for consideration under the Green Hydrogen mission

1.2 Program Name: Green Hydrogen Technology Accelerator (Energy Leap)
Green Hydrogen Technology Accelerator (Energy Leap)

About the project

A collaborative initiative by RICH to support early-stage start-ups and catalyze innovation in the Green Hydrogen space.

Implementing/ collaborating agencies

Xynteo, SED Fund, Technip Energies, CIIE, Cambridge Cleantech, Catapult

Project End Beneficiary: Green Hydrogen Startups, Industries in GH value chain, Offtakers

Role of RICH:

RICH shall co-anchor the programme and act as a program management partner

- Establishing innovation network comprising research institutions, startups and industries
- Facilitating workshops and mentoring sessions for go-to-market strategy, corporate connects, customer connects, and funding opportunities
- Indigenization of GH technologies and cost reduction

Total Funding Required: Rs 40 Cr for 5 years (Raised 3.12 Cr from SED fund)

Impact:

- Accelerate the growth of ~ 40 GH startups
- Indigenization of green hydrogen technologies in the production, storage, dispensation and system integration areas
- Achieve Levelized cost of green hydrogen at par with USDOE projections for year 2026

1.3 Development of a Roadmap for a Green Hydrogen cluster in Ramagundam, Telangana, India.

About the Project

Develop a long-term roadmap for integrated decarbonization of industrial cluster in the Ramagundam region leveraging Green Hydrogen as the principal energy vector.

Implementing/ collaborating agencies

GIZ

Project End Beneficiary: Green Hydrogen Industries, Telangana State

Role of RICH: RICH shall work with the industries and ecosystem players in the Ramagundam region and function as a coordinator for the study.

- Establishing innovation network comprising research institutions, startups and industries
- Facilitating workshops and interaction sessions with industries in the Ramagundam cluster

Total Funding Required: Raised ~0.5 Cr funding from GIZ

Impact:
- Demand assessment for GH in the region and identify projects with large decarbonization potential
- Opens doors for funding from intergovernmental agencies for decarbonization of industries in the region
- Identification of key levers for regional energy transition, and accelerate the transition of industries towards NetZero by 2070
- Development of a long term roadmap for integrated decarbonization of industries in the region, which shall serve as a precursor for a more detailed blue print and implementation plan

1.4 Project Name: Green Hydrogen Policy for Telangana State

About the Project
Prepare a comprehensive, progressive, pragmatic, and balanced Green Hydrogen policy for the state of Telangana.

Implementing/ collaborating agencies
SED Fund, EY

Project End Beneficiary: Green Hydrogen Ecosystem, Telangana State

Role of RICH: RICH shall prepare a draft GH policy for the state and hold consultations with state agencies, industries, think tanks and subject matter experts to fast track the approval of a green hydrogen policy.

Total Funding Required: Raised necessary funding from SED

Impact:
- Accelerate the transition of industries towards NetZero by 2070
- Attract investments into the state to the tune of 80K Cr, and employ ~60,000 people in the sector
- Value of GHG emissions avoided is ~43K Cr

1.5 Project Name: Alternate Chemistry Battery Energy Storage

About the project
Develop a Hybrid energy storage system comprising Conventional Batteries and Zinc Air batteries for application in Microgrids.

Implementing/ collaborating agencies
IITH, TIFT, HBL Power Systems, Amara Raja Batteries

Project End Beneficiary: Utilities, Battery industry

Role of RICH: RICH is acting as the ecosystem enabler and strategic convenor for the consortium. RICH shall assume the role of project management unit one the project is funded.

- Lead the consortium in identifying industry requirements and conceptualising the project idea for hybrid energy storage along with the consortium
- Ensure that the proposed research objectives are matching industry expectations and that there is a market for the developed technologies

Total Funding: Rs 1.5 Cr for 3 years

Impact:
- Develop a Hybrid energy storage system that integrates different chemistry batteries and having application in Microgrids
- Understand the suitability of various battery systems for application in microgrids and energy communities.
- Accelerate the pace of innovation and strengthen collaboration between academia and industry in the area of energy storage.
- Enhance and optimize efficient, low-cost, clean energy use by 10% within Microgrid applications.
- Gain access to field-ready technologies and technical know-how in Sodium ion and Zinc-air battery production technologies.

1.6 Project Name: Demand Response Driven Energy Advancement

About the project
Demonstrate Techno-economic feasibility of Demand Side Energy Management with multiple Power distribution companies.

Implementing/ collaborating agencies
IIMA, SIN, BRPL, BYPL, NPCL

Project End Beneficiary: Utility companies, Consumers, Power companies, Energy Regulators

Role of RICH: RICH shall be oversee the project implementation in India.
- Work with utilities on awareness creation, onboarding industries, designing use cases and studying the techno-commercial feasibility of ADR
- Pursue policy and regulatory advocacy with Energy sector regulators and liaison with utilities

Total Funding: Rs 1.5 Cr for 3 years

Impact:
- Improve grid stability and enhances integration of RE into the grid
- Blueprint for the large-scale roll-out of demand-side energy management in India
- Improves ROI for distributed energy asset owners like EV's, Battery Energy storage systems, HVAC etc.
- Defer capital investments into grid upgrades by better managing demand side resources
- Come up with Policy and Regulatory guidelines based upon the project learnings

1.7 Project Name: Smart EV Skill development Center

About the Project
Setup a MSME industry focused EV skilling center in collaboration with ni-msme, EV skilling
players and international collaborators

Implementing/ collaborating agencies
Ni-msme, NPTC, EV Master Class, ISIE, Global Wales

Project End Beneficiary: Students from marginalized communities, Diploma, ITI and
Engineering Students, Engineering Colleges

Role of RICH: As an ecosystem enabler, RICH is involved in defining the structure of program,
onboarding and defining roles and responsibilities of the partner institutions and securing CSR
funding for setting up labs in the EV skilling center. Global Wales offered a weeklong immersion
session to Indian engineering colleges to showcase its capabilities.

Total Funding Required: ~14 Cr funding required over 3 years

Impact:
- Impart employable skills to students from Tier 2 & Tier 3 regions and marginalized
  communities, and address the manpower requirements of the MSME sector players in the EV
  industry.
- Develop a self sustainable model for international collaboration in the skill development and
  capacity building area.

- Establish strong collaboration between ni-msme and EV industry for internships and employment of students.
- Offer internationally recognized EV courses along with international partners like NPTC.

1.8 Project name: COE on E-Waste Management

About the project

The project aims to setup a CoE on E-Waste management and ensure future readiness of the nation in e-waste handling, such as solar panels, lithium-ion batteries, and permanent magnets.

Implementing/ collaborating agencies

CMET, Greenko, Telangana State, MietY

Project End Beneficiary: Pollution Control Board, Government, Research institutions, Startups, Bulk Waste Generators

Role of RICH: Onboarded key industry partner for funding the CoE, and provide technology mentorship and market access to startups
- Ensure alignment between Research and industry in the E-Waste area

Total Funding Required: Rs 70 Cr raised for setting up CoE

Impact: Promotes industry facing research and IP generation in the E-Waste management area and develops Skilled manpower for industry

- Develop a robust mechanism for e-waste management involving multiple stakeholders in the e-waste value chain
- Future readiness in e-waste handling, such as solar panels, lithium-ion batteries, and permanent magnets.
- The country will be better prepared to handle future e-waste, such as solar panels, lithium-ion batteries, and permanent magnets, and recover the wealth.

1.9 Sustainability- Ecosystem Building Activities

S. No.	Activity / Event Description	Participation	Organizing/ Participating Entities
1	Green Hydrogen Stakeholder Consultation	Producers, Off takers, OEM's, Systems Integrators, Research Institutes	IITH, IICT, ARCI, NTPC, RFCL, BHEL
2	Interaction with IMT Hyderabad	Introduced innovation ecosystem and discussed opportunities for engagement	IMT Hyderabad
3	Startup Launch	Testing and encouragement for Hydrogen 2W startup mentored by RICH	VNT - VJIT
4	College Entrepreneurship	Evaluation of startup ideas of young entrepreneurs from schools and colleges	AIC-CBIT
5	International Day of Light	RICH brought in many industries that work on photonics to the panel discussion	TIFR
6	Seminar on Funding options for startups in EV industry	RICH presented about funding opportunities available for startups and entrepreneurs in the area of EV	IIT Hyderabad
7	Connected Autonomous Shared Electric Vehicles	RICH facilitated a 1 week workshop on CASE vehicles in collaboration with NPTC group of colleges UK	Geetanjali College of Engineering and Technology
8	Faculty Development program on Problem Solving and Decision Making in R&D	Spoke about the different tools and methodologies available for problem solving and decision making in R&D	Gokaraju Rangaraju Institute of Engineering and Technology
9	Seminar on Research Proposal Writing	Gave a information session on proposal writing and the avenues available for funding	G Narayanamma Institute of Technology and Science
10	CEO Forum Meeting on "Green Economy	Participated in a panel discussion on Green Hydrogen and its role in Green Economy. Also highlighted the pathways to transitioning from carbon based economy to low carbon economy	FTCCI

2. Food & Agriculture vertical

2.1 Project name: Agritech Innovation Pilot (AIP)

About the Project
RICH co-developed the Agritech Innovation Pilot (AIP) with AgHub, the incubator hosted by the state agricultural university (Professor Jayashankar Telangana State Agricultural University), to enable agtech start-ups undertake pilots to generate scientifically validated use cases and assessing its technology and business models.

Implementing/ collaborating agencies
- AgHub at PJTSAU
- Department of Agriculture, Government of Telangana
- Emerging Technologies Wing, Government of Telangana
- Participating start-ups of Cohort 1: KrishiTantra; Marut Drones; Satyukt; TraceX; Transity; xMachines; Thanos Technologies

Beneficiary
- Start-ups benefit from refining its technology application and use case pitch, and access to Department of Agriculture (Government of Telangana) projects.

Proposed outcomes
AIP focus on product development, technology validation, market expansion, networking, funding for start-up development.

Impact/Outcome

- Developed compendium of 86 ag-tech start-ups, covering 10 emerging technology domains.
- Co-designed AIP approach with partners with goal of wider adoption of proven technologies among farming community in the state, with support of Department of Agriculture.
- 7 start-ups selected after rigorous assessment and use case application for first cohort. AIP now running its 5th cohort and has supported 25 start-ups.
- Customized pilots designed for each start-up in consultation with scientists, and tested across 11 KVKs and ARS locations, covering 7 crops and over 3000 farmers.

- INR 11 cr raised by 4 start-ups after pilot period; market linkage with over 100 FPOs (1.3mn farmers); agri-drone start-ups received DGCA certifications; guidelines for autonomous drone-based spraying of agro-chemicals.
- AIP as pre-cursor to *Saagu Baagu* project of Government of Telangana & World Economic Forum.

2.2 Project Name: Emerging technologies for agricultural development in Telangana

About project

Telangana was the first state to secure a project from the Ministry of Agriculture & Farmer Welfare, Government of India under the National e-Governance Plan on Agriculture (NeGPA) to demonstrate the effectiveness of digital technologies in agriculture. In line with the State's mandate to encourage use of technology in agriculture to increase farmers income, the project is being jointly implemented by Department of Agriculture, RICH and Emerging Technologies Wing, with technical support from PJTSAU.

Implementing/ collaborating agencies

- Professor Jayashankar Telangana State Agricultural University(PJTSAU)
- Department of Agriculture, Government of Telangana
- Emerging Technologies Wing, Government of Telangana
- Participating start-ups of Cohort 1:Aquastride; KrishiTantra; Nebula; Farmsathi; TraceX

Beneficiary

Opportunity to test emerging technology solutions in field conditions against identified use cases. Post successful validation, such solutions can be scaled-up across the state for efficient utilisation and management of resources.

Funding:
- INR 3.10 cr funding approved for the state to undertake five sub-projects

Proposed outcomes

Demonstrate technology use case application:
- Irrigation management (to increase water savings by 20%)
- Reduce fertilizer application through better soil nutrition management (Reduce fertiliser usage by 15 to 20%)
- Application of autonomous agri-robots for field operations in oil palm
- Onsite quality assaying platform for agri produce procurement
- Design seed traceability systems

Impact/Outcome
- Use case on irrigation management and soil nutrition: completed field trials; awaiting result verification by PJTSAU
- Use case on seed traceability sub-project: platform developed and UAT completed; awaiting APC review

- Use case on ag-robotics and quality assay: in progress
- Applied for NeGPA phase 2 proposal with 9 use cases; funding of INR 6.7 cr; awaiting approval from Government of India.

2.3 Agri Sandbox (Policy & Regulatory)

About the Project
Aims to create an enabling environment for the development, validation, and scaling-up of emerging technologies and business models in the agricultural sector.

Implementing/ collaborating agencies
- Department of Agriculture, Government of Telangana
- Emerging Technologies Wing, Government of Telangana
- International Finance Corporation
- World Economic Forum

Beneficiary
The Sandbox will help the government, regulatory and policymakers to run experiments in a safe environment to understand and address some of the critical issues faced by the sector, and in developing guidelines that spur innovation and agtech growth.

Proposed outcomes
The Sandbox will help the government, regulatory and policymakers to run experiments in a safe environment to understand and address some of the critical issues faced by the sector, and in developing guidelines that spur innovation and agtech growth.

Impact/Outcome
- To develop a compendium of start-ups that have a proven record of improving farmer income.
- Steering Committee members identified and approved in principle by Government of Telangana.
- Regulatory sandbox to undertake use case identified by Department of Agriculture, Government of Telangana.
- Conducted roundtable on spurious seed issue in Telangana with relevant stakeholders
- Post trial, selected start-ups will be linked with AIP and Saagu Baagu platform for validation and scale-up.

2.4 Project name: Data for agtech development: The Agri Collaboratory

About project

TAC comprises of not-for-profit group organisations that support the Government of India initiative towards the creation of an open-source agri-stack and agri-database.

Implementing/ collaborating agencies

- Foundations/Research: iSPIRT, Samunnati, Linux Foundation, IISc (IUDX team)
- Public sector: Niti Aayog, Government of Telangana, CGIAR, PJTSAU
- Ecosystem: Social Alpha, Sattva Consulting
- Start-ups: Satsure, Digital Green
- Industry: ITC Ltd
- **Beneficiary**
- To develop an open-source, good digital public agri-stack, and develop use cases for the overall development of the agriculture sector and improve the livelihoods of farmers

Proposed outcomes

To develop an open-source, DPG agri-stack, and develop use cases for overall development of the agriculture sector and improve the livelihoods of farmers.

Impact/Outcome

- Demonstrating benefits of data based applications in agriculture
- Piloting 'ease of access to credit' module with 7000 farmers in Mulkanoor, Telangana
- Linking with Department of Agriculture, Government of Telangana farm record database in process
- TAC is implementing agri fintech use case in Government of Telangana ADeX experiment

2.5 Project name: Data for Agtech Development - Geospatial Tech Solutions

About the project
Support start-ups working on innovative agribusiness models in the geospatial technology domain through refining ideas, mentorship, testing and piloting in a sandbox environment, and upscaling

Implementing/ collaborating agencies
Mahalanobis National Crop Forecast Centre

Beneficiary
To promote geospatial technology applications in building robust agtech solutions

Proposed outcomes
Goal is to enable agtech start-ups usng geo-spatal datasets to improve fare income

Impact/Outcome
- Support agtech start-ups with access to geospatial datasets, mentoring and capacity building workshops by MNCFC scientists
- Scope to connect with DAFW schemes and projects
- Organized workshop on Geospatial technology applications & Opportunities for agtech start-ups
- Over 84 participants joined the workshop, representing 50 start-ups, 13 research organizations, 14 industry and 3 ecosystem partners from across India.

2.6 Project Name: KisanMitr

About the project

KisanMitr is an initiative from the O/o the Principal Scientific Adviser (PSA), Government of India. KisanMitr or Friends of the Farmers aims to make Indian farmers more self-reliant by giving them market insights and recommendations based on information from various data sources from different Government departments. The platform also operates as a buyer-seller interface.

Implementing/ collaborating agencies
- Technical partner: Indian CST (maintaining KisanMitr platform, market collaborations)
- FPO partner: Samunnati Foundation (onboarding start-ups and FPOs)

Beneficiary
- One stop shop for farmers/FPOs to access markets (inputs & produce), to access agtech start-ups, and market information.

Proposed outcomes

Provide easy access for farmers and FPOs to avail new technologies developed by research organizations

Impact/Outcome
- Onboarding FPOs and start-ups in the platform.
- Supporting the technical partner with screening the technologies sourced from various research institutions.
- Discussed with Samunnati Foundation and NABARD on challenges faced by FPOs on market access.
- 1313 agro technologies listed on the platform.

2.7 Project Name: Data for Policy

About the project

Data in Climate Resilient Agriculture (DICRA), developed by UNDP India under its Data for Policy initiative to identify farms highly vulnerable to climate change. It uses open-source technologies to facilitate analysis and insights sharing on climate resilience, based on empirical inputs crowdsourced from data scientists and citizen scientists. DICRA was launched in collaboration with Government of Telangana.

Implementing/ collaborating agencies
- United Nations Development Program (UNDP), India
- Department of Agriculture, Government of Telangana
- Aranya Agricultural Alternatives
- Krishi Vigyan

Beneficiary

DiCRA is an open-source platform to strengthen evidence-driven policy making for building climate resilient food system.

Proposed outcomes

To provide scientists and policymakers with new ideas for climate-resilient agricultural research and to promote adoption amongst farming community.

Impact/Outcome

- Identified 25 climate-resilient agriculture practices in Telangana through ethnographic studies.
- Trained over 110 farmers as citizen scientists.
- Designed knowledge products (videos, newsletters, field stories) for wider adoption among practitioners through the DiCRA network.
- DICRA scaled to 7 states, and platform to be managed by NABARD
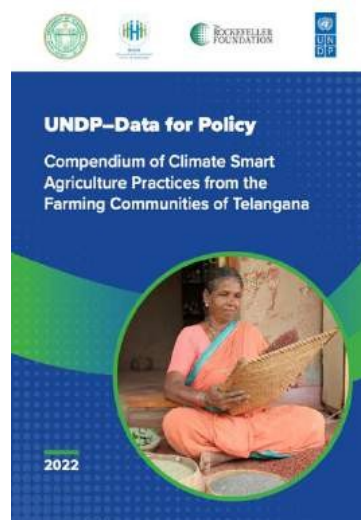
2.8 Project Name: Rejuvenation of Community Ponds in Telangana

About the project

Build collective ownership through local NGOs to rejuvenate water bodies for the community.

Implementing/ collaborating agencies

- IIT-IIT
- Aranya Agricultural Alternatives

Beneficiary

- Desilting waterbodies to improve storage capacity and building ownership over common public good management.

Proposed outcomes

To demonstrate that collaborative desilting is sustainable, cost-effective and beneficial to community.

Impact/Outcome

- Implemented since November 2022
- IIT-IIT used satellite data and ground truthing to map dried tanks in identified locations
- Aranya mobilized farmers for community-level training and field operations
- 7 panchayats in Nirmal district and 3 panchayats in Sangareddy district in Telangana
- 14 tanks identified, and rejuvenated water capacity of over 20cr lt
- 264 farmers benefited and over 200,000 m^3 silt carted
- 117 water bodies identified in the state for next cycle
- Exploring CSR support for funding the module and site operations

2.9 Project Name: Agtech PoC in Telangana | Murata Electronics India Private Limited

About the project

Government of Telangana is keen to attract high-quality global companies. RICH is working with start-ups under SICJ initiative of Japan International Cooperative Agency (JICA) to help them understand the Indian market and to develop appropriate market entry strategy.

Implementing/ collaborating agencies

- Murata Electronics India Private Limited
- Siddipet Kisan Agro Producer Company Pvt Ltd
- NABARD

Beneficiary

- Company; facilitate market trials, field pilots at multiple locations in the state to validate the product development hypothesis

Proposed outcomes

To demonstrate profitable use cases in agriculture

Impact/Outcome

- Phase 1 pilot completed in December 2022
- Phase 2 with 25 farmers (60ac) during January-June 2023
- Feedback: Reduced cost of cultivation by up to 8 percent; fertilizer costs reduced by 26 percent and irrigation usage (hours) decreased by 23 percent
- Phase 2(a) continuing in current crop season
- Connected with Samunnati for trials in Tamil Nadu
- Linked with NABARD Regional Office for Phase 3 (January 2024) covering 100 farmers (250 ac)

2.10 Project Name: Agri Nutri Connect

About the project

Impact nutritional status of small-holder farming communities through nutrition-sensitive agriculture interventions and complementary social and behaviour change communication.

Implementing/ collaborating agencies

- Funding partner: CSOs/CSR; United Way of Hyderabad
- Research: ICMR-NIN, ICRISAT, HarvestPlus
- Department of Agriculture; Women Development & Child Welfare, Government of Telangana

Beneficiary

To develop sustainable agriculture production methods that improves farm-based livelihood and addresses malnutrition in the resource-poor communities. Project is conceptualized to encourage communities to adopt healthier agricultural/livestock production and nutrition choices.

Proposed outcomes

To demonstrate the feasibility of a holistic, sustainable and scalable nutrition amelioration protocol which can be applied across the country

Impact/Outcome

- Pre-project studies: Conducted validation studies on nutritional status of women and adolescent girls in Vikarabad, Telangana in partnership with ICMR-NIN

- Planned project impact:
- Introduce nutrient-rich millets, legumes, vegetable varieties/hybrids, and high biomass-producing fibre-rich fodder in target region – 1000 smallholder farmers
- Design and implement locally produced (self-sustaining seed system), locally procured and processed (food processing facility), and locally consumed (nutrient-enriched food) agribusiness model to benefit farming community and address malnutrition covering 10 villages in Vikarabad.

2.11   Food and Agriculture - Ecosystem Building Activities

#	Event	Partner
1	Non-Farm Enterprise Opportunities	NRLM
2	Start-up Meeting with IFC	IFC
3	VAIGA 2023	Opportunities in agri-entrepreneurship	Govt of Kerala
4	Whats Cooking Series? About DICRA	UNDP/World Bank
5	Roundtable of Seed Traceability	IFC
6	Stakeholder Consultation Workshop on Managing Water Stress in Indian Agriculture	PwC
7	Learning Table on Growth of Agritech – Transforming agriculture value chain integration Technological Disruption	ISB
8	Data x ADB	Addressing challenges in agriculture with digital technology	ADB
9	Inclusive and Sustainable Value Chain Development for CBOs	NIRD-PR
10	Agribusiness Incubation ecosystem and opportunities in Agri sector	KAU-RABI
11	National Faculty Development Program on Innovation and Incubation Ecosystem to Support Agri-Startups and Entrepreneurship	MANAGE
12	Basic program on financing agro start-up for bankers/NGOs/FPOs - Scope of start-ups in India	ICAR-CIFA
13	Livestock Industry Meet	Accelerating entrepreneurship in meat sector	ICAR-NMRI
14	Geospatial technology applications & Opportunities for agritech start-ups	MNCFC
15	IKMC 2023	IKP

3. Life Science vertical

3.1 Project Name - Acceleration Initiative for Devices and Diagnostics (AID)

About the Project

Telangana is committed to being the location of choice for all life sciences-related activities. One current gap is that the state does not have a strong diagnostics and devices industry. RICH aims to address this gap through its Acceleration Initiative for Devices and Diagnostics (AID) program. The AID program identifies and nurtures the best start-ups in the medical devices and diagnostics domain for local, national, and global impact, and provides them with structured support for clinical advice, regulatory advice, go-to-market strategy, access to funding, and market access through workshops and one-on-one mentoring.

Collaborators

Knowledge Partner- AIC-CCMB
Clinical Validation Partner – Malla Reddy Health City
Business Domain Partner – I-Venture@ISB

Proposed Outcomes

Primary outcomes: The primary objective of AID is to support upto 50 start-ups across mid stage and late stage in three years, so that at least 10 of these start- ups with high impact potential, scale up to touch the lives of at least 10 million people each.

Secondary outcomes:
- Increased adoption of innovations in clinical and healthcare settings
- Knowledge sharing through publishing of white papers

Progress against outcomes

- Supported 36 startups in the last 3 years through 4 Cohorts
- Helped 3 startups (Briota Technologies, CareNx, Nemo Care) through the validation studies at the Hospitals by providing with the test bed support.
- Engaged with more than 20 clinicians through 12 Hospitals

Impact goals

- **Scale Impact**: By measuring the number of start-ups evaluated and clinically validated , number of patients benefited from selected start-ups /potential of start-ups to create impact in community
- **Financial Impact:** By measuring the joint funding raised or the grants received by the start-ups either as scale-up grants or funds for validation studies , track how AID has enabled start-ups to generate revenue as they move up to the manufacturing stage
- **Ecosystem Impact:** By measuring the - number of evaluation committee members, advisory members, mentors, incubators, and VCs identified and on-boarded, number of mentoring sessions completed on average per mentee , number of start-up-industry/hospital connections facilitated.

Proposed revision (if any)
Project Tej is merged with AID

In Collaboration with: ATAL INCUBATION CENTRE CENTRE FOR CELLULAR & MOLECULAR BIOLOGY   I-Venture@ISB   MALLA REDDY HEALTH CITY

Envisioned Impact:
To accelerate start-ups by providing guidance for
- Product Refinement
- IP Rights
- Regulatory
- Clinical advice and validation
- Usability Assessment
- Market access
- Fund raising

Clinical Validation Portfolio

nemocare Raksha

Impact Numbers

Startups Supported 36	Mentors Onboarded 35	Domain Workshops Organized 21 (Last 6 months)
One on One Mentoring Sessions > 50	Funds Raised by start-ups in last 6 months > 6 Cr	Institutional Connects 20

Hospital partners

SUNSHINE HOSPITALS   KIMS HOSPITALS   Smitine   FERNANDEZ HOSPITAL   UCCHVAS   LEPRA   APOLLO   ASIAN SPINE   AIG   ADITYA HOSPITALS

3.2 Project Name – International Engagements

About the Project

The Telangana Government is keen to attract high-quality global companies under the Invest India Scheme. RICH works with startups of EU-India Inno-center & Japan International Cooperative Agency (JICA) initiative of Social Innovation Concierge of Japan (SICJ) to help them understand the Indian market and to develop Indian market entry strategy.

Collaborators

- EU-Indo Innocenter
- JICA

Proposed Outcomes

- To demonstrate the ease of doing business in India by providing guidance on regulatory, clinical validation and market entry support

Progress against outcomes

- Supported close to 12 Startups by connecting them with regulatory experts and clinicians for their product validation in India through JICA and EU India Innocenter

Impact goals

- Market entry in India

Partners

Startups Supported

3.3 Project Name – National Reagents Consortium

About the Project
RICH supported in the efforts to manufacture indigenous COVID testing kits, reagents and components locally which is available on demand from Indian MSMEs and startups.

Collaborators
• Research Partners: CSIR-CCMB
• Industry Partners: Huwel Lifesciences Pvt. Ltd., Sapala Organics Pvt. Ltd., BioArtis, BioServe, Promea Therapeutics, Richcore Lifesciences Pvt. Ltd., and others
• Funding Partner: FIND India, supported by the Bill and Melinda Gates Foundation

Proposed Outcomes

- 100% of local demand of affordable testing kits, and high-quality reagents and components to be met by indigenous manufacturers.
- Establishment of a Consortium of MSMEs to enable them to cater to national and global demand.
- Demonstration of proof of concept and a model for replicating the interventions for molecular diagnostics in disease areas other than COVID.
- Creation of streamlined network of all relevant stakeholders in the entire value chain.

Progress against outcomes

- Identified 20+ MSME manufacturers of components, reagents and kits, and actively assisting these MSMEs for quality testing, validation and capacity building.
- The pilot phase of the program, concluded in March 2021, was funded by FIND India with support from Bill and Melinda Gates Foundation. The project received a No-Cost Extension which concluded in August 2021.

Impact goals

- The increased availability and wider reach of affordable testing kits served as a great tool in the management of infection spread. Thus, expand India's R&D capabilities for making low-cost and high-quality reagents readily available.
- New business opportunities worth crores of rupees are opened up for the MSME sector by raising to international standards and capacities.
- The program acts as a proof of concept and model for replicating the interventions for molecular diagnostics in disease areas other than COVID.
- Creation of streamlined network of all relevant stakeholders in the entire value chain will be enabled which could be made available on demand.

Research Partner: CCMB

Industry Partners HUWEL LIFESCIENCES PVT. LTD, bioserve A REPROCELL COMPANY, Bioartis, LAURUS Bio, Sapala, promea

Funding Partners FIND, BILL & MELINDA GATES foundation

3.4 Project Name – Cancer Genome Mapping / Indian Cancer Genome Atlas

About the Project

The project aims to do whole genome, epigenome, metagenome and transcriptome sequencing of Indian stomach and biliary duct malignancy patients to uncover the whole mutational, immunological and infection landscape that shall help in identifying actionable mutations and elucidate functional or clinical implications of these identified mutational signatures.

Collaborators

- Hospital Partner - Indo-American Cancer Hospital, AIG Hospital, KIMS-Ushalakshmi Centre.
- Academia/Research Institute - CSIR-CCMB

Proposed Outcomes

- To generate data on various Indian cancer types to identify actionable mutations, elucidate their functional or clinical implications, and create the genome profile along with clinical data.

Progress against outcomes

- Partners are identified and preliminary discussion on project proposal was initiated for submitting for CSR funding.
- Alternative, approach to partner with ICGA and strengthen the population representation from South India is being discussed.

Impact goals

- Next-generation sequencing of gastric carcinoma and biliary duct tumours and control tissue will help to understand the events involved in the onset and progression of gastric cancer and the identification of new targets for drug development.
- Identification of pathogenic and driver mutations, characterization of the molecular profile of tumours, and prediction of clinical outcomes for the patients
- Identification of genetic, epigenetic, and metagenomic disease-modifying factors Development of risk scores for prognostication/therapy.

Hospital

Telangana's Districts Distributed Care

CION Cancer Clinics

Hyderabad Region

BASAVATARAKAM INDO-AMERICAN CANCER HOSPITAL & RESEARCH INSTITUTE

Pathology Labs - Biobank

pathlabs

SAPIEN BIOSCIENCES
Advancing Science, Personalizing Medicine

PathnSitu Biotechnologies

Research Institute

CCMB

GenepoweRx
Genetic Science powered by K&H

Data Management Partner
Yet to be identified

3.5 Project Name - Creation of biobank at public hospitals

About the Project
The project aims at creating a disease-oriented bio-bank to store bio-specimens that are annotated not only with medical but also with epidemiological data to understand treatment patterns and identify the best interventions to increase survival outcomes of cancer patients.

Collaborators
- The Foundation for Innovative New Diagnostics: Integrated Biobank
- LEPRA

Proposed Outcomes
- Preservation of digitised health records and samples of a large number of patients, truly representative of the population.
- Open data sets of disease trends, patient demographics, medicine prescriptions, and samples of pathology, radiology and other labs.
- The biobank will provide patient risk classification solutions and help in adopting the personalised/precision medicine approach.

Progress against outcomes
- Establishment of biobank facility at Lepra by FIND was initiated but the project got cancelled due to funding challenges of FIND.
- Proposal is submitted for CSR funding.

Impact goals
- Effective Government funds allocation and policymaking, for researchers, to identify big problems, and for innovations to be tested and fast-tracked.
- National and international universities, and industry collaborations for research purposes.
- Generation of employment for high-skilled biotech professionals

FIND   LEPRA
A GuideStarIndia certified NGO

3.6 Project Name - Digitisation & Data analysis of Health records

About the Project
LEPRA Society – INAI, IIIT-Hyderabad's INAI institute is building a digital tool and database for LEPRA Society's clinical data collected from past 20 years**.**
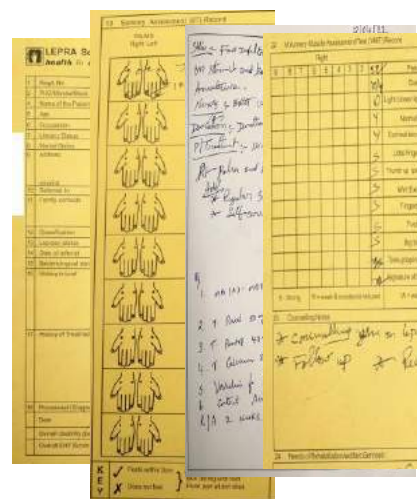
Collaborators
LEPRA Society

Proposed Outcomes
- Helping the LEPRA organization with the digitization of patient clinical records from past 20 years by partnering with INAI, IIIT-Hyderabad.
- INAI institute to build a digital tool for collecting clinical records digitally.
- **T-Diagnostics Data Analytics challenge**: Enhancing the value of collected data by running predictive analytics and providing insights for data driven decision making

Progress against outcomes
- Lepra was connected with INAI, IIIT-Hyderabad and discussion is in progress.
- Round table with the Commissioner Smt. Sweta Mohanty, Department of Health, Medical & Family Welfare (DHMFW) was conducted to brief the requirement.
- **T-Diagnostics Data Analytics challenge** –
  - Challenge was conducted to receive proposals from the digital health deep tech startups. 12 startups submitted and are screened.
  - Pilot data necessary for the analysis needs to be shared for DHMFW to start the analysis.

Impact goals

- To digitize retrospective data to enable analysis of longitudinal patient data.
- To enhance clinical operations and workflow using digital tool.
- **T-Diagnostics Data Analytics challenge**
  - To provide population level health analytics dashboard for policy and decision making for resource allocation.
  - To provide individual level preventive prescriptive information based on predictive analysis with the risk stratification.

inai
Applied AI Research Centre

LEPRA
Is Registered as LEPRA Society
A GuideStarIndia certified NGO

3.7 Project Name - Population Level Metabolic Research & Intervention

About the Project

A population-based research study to understand and correlate metabolic profile with metadata, genomics, epigenetics, and microbiota data. Followed by intervention and policy advocacy to address the nutritional and health needs of public health as a part of a futuristic personalised medicine initiative.

Collaborators
- Research Institution: CSIR-CCMB, CDFD, TIFR, ICMR-NIN, IMTech
- Academic Institution: IIIT-H, University of Hyderabad
- Industry: INAI- Intel

Proposed Outcomes

- Research-based knowledge and intervention creation for population-level metabolic and health data to enable next-gen precision medicine and public health resource management.

Progress against outcomes

Initial round of discussions concluded and project in planning stage
Research Institutions:
- CCMB
- CDFD
- TIFR
- NIN
- IMTech
Academic Institution:
- UoH
- IIIT H
Industry:
- INAI- Intel
- Project is dropped.

Impact goals– Not Applicable

3.8 Project Name – One Health

About the project
The Hyderabad One Health Platform seeks to create an integrated health system, uniting practitioners and scientists to monitor pathogens in the dynamic urban environment. This initiative emphasizes real-time data, policy engagement, and citizen involvement to minimize

infectious and zoonotic disease risks. Its three main components are infectious disease surveillance, environmental monitoring, and policy development.

Proposed Outcomes
- Strengthening Citywide Coordinated Surveillance and Response
- Develop metagenomic Pathogen Mapping mechanism.
- Develop vector control strategies.
- Develop predictive modelling for spill-over events.
- Capacity Building and Advocacy for One Health

End users: Hospitals and policy makers

Progress against outcomes: Project in pipeline

Impact goals
To create Hyderabad One Health consortium to build an integrated health system, uniting practitioners and scientists to monitor pathogens in the dynamic urban environment.

3.9 Project Name – Scholarship and mentorship programme for Women in STEM education and careers

About the project:

To provide the women students from marginalized communities with an opportunity for experiential learning through internships in labs of premier R&D institutions or industries.

Proposed Outcomes

- Promotion of entry and retention of women from marginalised communities in STEM
- Awareness of higher education and career opportunities and encouragement to the women students to take up a career in STEM
- Empower female students with sector knowledge and opportunities, and financial independence

Progress against outcomes
- Supported 21 women students from marginalised communities across the country.
- Placed these students to work in labs at country's top research institutions/industries.
- Conducted seminars and mentoring sessions to create awareness of higher education and career opportunities and encouragement to the women students to take up a career in STEM

Impact goals
- Promotion of entry and retention of women from marginalised communities in STEM.

3.10 Project Name – Entrepreneur Fellowship Program for Scientists

About the Project
To equip the science and technology researcher/developer community with entrepreneurial skillset, business/ industry acumen and commercial outlook, needed to facilitate technology innovation and entrepreneurship. Project aligned with National Mission – AGNIi.

Collaborators
- ISB
- Research Institutions and newer IITs to be onboarded

Participation: Scientists or Technology Developers/ Researchers from Research Centres and Institutes/ Universities across Public and Private sectors.

Proposed Outcomes
- To develop entrepreneurial skillset, business/ industry acumen and commercial outlook, needed to facilitate technology innovation and entrepreneurship.
- To educate processes to accelerate the translation of technological inventions/ innovations into products, services, and/or solutions (locally and globally) for societal development

Progress against outcomes
- Identifying the right partner and funding model for the execution of the program.

Impact goals
- No. of institutions onboarded.
- No. of researchers/scientists trained.
- Number of technologies transferred/commercialised as a result of translation of high

potential scientific research to marketable products through University/ Institution Spin-Offs, Partnerships, Licenses, Joint Research/ Ventures.
- Number of multidisciplinary linkages and collaborations forged.
- Systematic increased ROI on public and private expenditure in R&D for scaling S&T based innovation.

3.11 Project Name – ABCs of Medical Devices and IVDs Commercialisation Journey

About the Project
Month-long series focused on creating awareness along with in-depth support to understand the various stages involved in scaling a proof-of-concept validated idea to a marketable product. The series was divided into 4 tracks related to intellectual property, regulatory, industry immersion and Clinical Exposure, followed by a highlight event of Medical Devices and IVDs startup showcase.

Collaborators
IP Partner – Avid Invent
Regulatory partners – IGRF at IKP, CDSCO Hyderabad Zonal Office
Industry Partners – Akriti, PathnSitu, SMT, Huwel Life Sciences
Clinical Partners – AIG Hospitals, Excell Hospitals

Proposed Outcomes
- Government, Industry, Academia & Startup Connect
- Creating awareness along with in-depth support to understand the various stages involved in scaling a proof-of-concept validated idea to a marketable product

Progress against outcomes
- Close to 60 startups/students participated
- 4 Industry Partners, 3 Clinical Partners Onboarded
- CDSCO Hyderabad Zone Office conducted the regulatory

Impact goals
- Ease of access to experts from the ecosystem for scaling the startup solutions

Mentor
Mr. Vinay Kumar Gupta
Assistant Drugs Controller (India),
CDSCO Hyderabad Zonal Office

Regulatory
For the startups needing specific guidance on regulatory

3.12   Project Name – Monthly T-Incubators and Accelerators

About the Project

The vision of RICH from its inception has been to bring the stakeholders of the innovation ecosystem together and identify the challenges and provide necessary interventions. As an S&T cluster, RICH hopes to create strong linkages between existing networks of academic institutions and national research laboratories, along with the relevant ministries, industry partners, state governments, philanthropic foundations, and international institutions of excellence. Facilitating these meetups enables RICH to collaborate and work with the institutes through the incubators and their relevant networks.

Collaborator – Telangana State Innovation Cell and 60 Incubators across Hyderabad

Proposed Outcomes
- Access to the networks and facilities
- Access to the experts from the incubators – Professors/Domain experts/Industry partners/Mentors/Start-ups
- Industry-Academia linkages
- Knowledge sharing through incubator playbook

Progress against outcomes
- Associated with closely to atleast 60 incubators in Hyderabad and adjoining areas through this activity

Impact goals
- Helping each other in enabling a robust ecosystem for nurturing and scaling startups.

4. Common projects across verticals

4.1 Start-up India Seed Fund Scheme

About the project

SISFS provides financial assistance to start-ups for proof-of-concept, prototype development, product trials, market-entry, and commercialization

Implementing/ collaborating agencies

Startup India Seed Fund, Department for Promotion of Industry and Internal Trade, Government of India

Proposed outcomes

To fast-track growth of start-ups from TRL 3 to 7 (and beyond) in one year. Create a multiplier effect in validation of business ideas of many startups, leading to employment generation and strengthening of innovation ecosystem.

Impact/Outcome

- 140 applications received
- 8 start-ups selected and 5 start-ups received funding
- 50 lakhs disbursed till date
- 1.5 Cr in pipeline to be disbursed

4.2 Project Name: Mission 10x

About project
Telangana State Innovation Ecosystem initiative to fast-track market-ready start-ups over a six-month customized accelerator program

Implementing/ collaborating agencies
- AgHub at PJTSAU
- IKP
- Telangana State Innovation Cell
- CIIE-IIIT Hyderabad
- T-Hub
- AIC- CCMB
- BITS-TBI Hyderabad

Proposed outcomes

Opportunity to support start-ups nominated by the ecosystem with business model review, industry and funding connections to target 10 fold market growth

Impact/Outcome

- 40 start-up applications received; 6 start-ups selected for cohort 2 under agritech and medtech.
- Ongoing – support with start-up growth and market expansion/ business development.

4. Social Media and Events

**Office of the Principal Scientific Adviser
to the Government of India**

RICH
Research and Innovation
Circle of Hyderabad

RICH
COMMUNICATIONS

LOGO CHANGE

RICH
Research and Innovation
Circle of Hyderabad

RICH Old Logo

RICH
INNOVATE · INTEGRATE · IMPACT

Our new logo reflects our commitment to diversity and inclusion while facilitating unique ideation and innovation for regional and national development.

It is a celebration of the vibrant and progressive spirit of RICH—a spirit that has brought us this far and will continue to allow us to solve new challenges through new ideas and thought processes.

RICH New Logo

RICH
Research and Innovation
Circle of Hyderabad

SOCIAL MEDIA PRESENCE

Platform	Followers as of November 2022	Followers as of November 2023
LinkedIn	3965	9138
Twitter	4959	5404

Analytics:

- Doubled the organic growth in terms of followers count, impression on the content produced has double on LinkedIn.

- Consistent impressions growth on Twitter.

- **Launched two new thematic series:**

1. Women in STEM Wednesdays – showcasing and celebrating the women student beneficiaries of our first cohort.

1. Start-up Spotlight series, 'In Focus' – Showcasing start-ups associated with RICH.
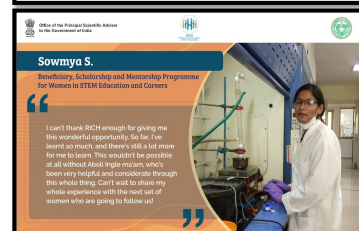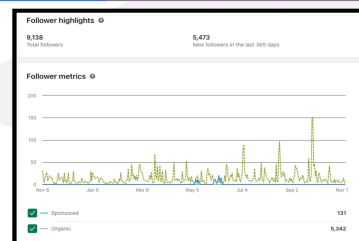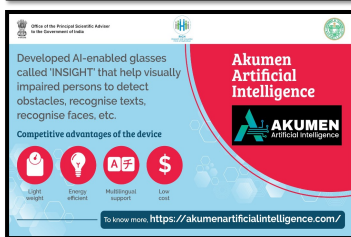
SECTOR SPECIFIC THEMATIC SOCIAL MEDIA SERIES

RICH
Research and Innovation
Circle of Hyderabad

Food & Agriculture

- Series on the DiCRA project with the UNDP and Govt. of Telangana showcasing the identified climate resilient agriculture practices by Telangana farmers


Sustainability

- An educational series on Green Hydrogen, its use cases across industries and the work done by RICH in conceptualizing a Green Hydrogen Valley in Telangana region.
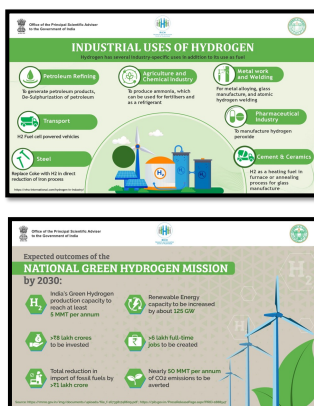
Life Sciences

- Samarthan@RICH is a capacity building monthly series for Health/MedTech start-ups.
- Acceleration Initiatives for Devices and Diagnostics (AID) series on social media was an outreach campaign.
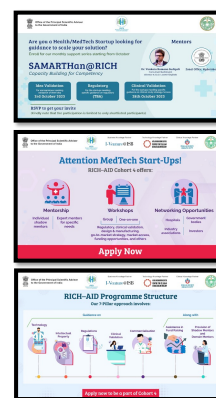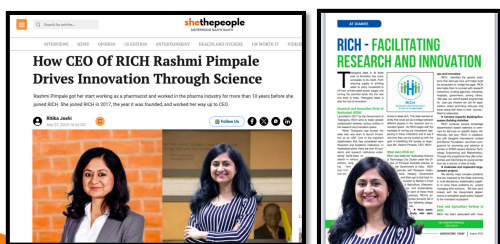
RICH LEADERSHIP AT EVENTS AND IN THE NEWS

Ajit Rangnekar, DG, RICH

Rashmi Pimpale, CEO, RICH

Newsletters Published

G-20 side event
Synergizing Global Efforts to Expand Access to Scholarly
Scientific Knowledge Roundtable

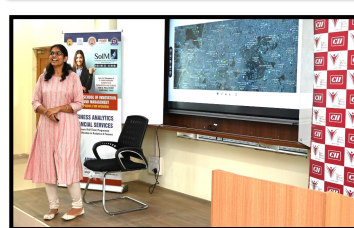# SECTOR HEADS AT EVENTS AS SPEAKERS AND JURY

**Jonathan Philroy, Director, Food &
Agriculture**

**Dr. Sushmitha Sundar, Head, Life
Sciences**

**Srinivas Cherla, Director,
Sustainability**