

Korea University: Climate-Tech Entrepreneurship

Where Knowledge becomes Enterprise

—Transforming Research, Technology, and Ideas into Company.

Professor
Jaehong Park

Korea' s fruit map is changing

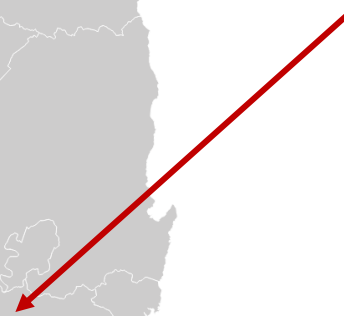
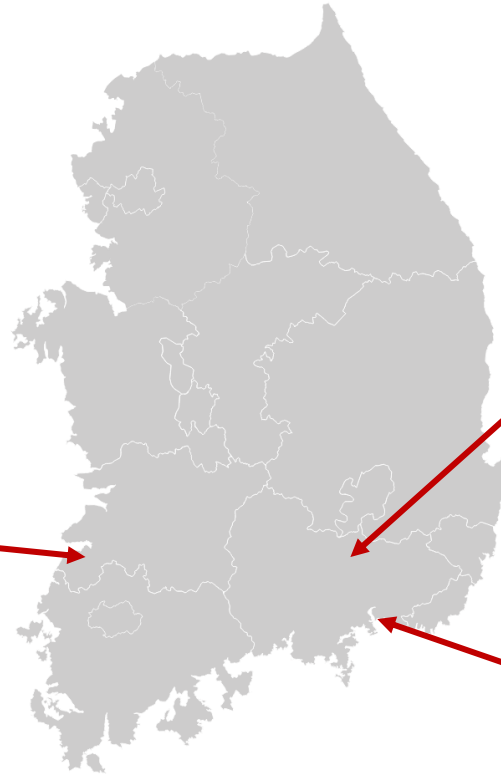
Climate change is already reshaping Korea's agricultural geography — changing what can be grown, and where.

THEN
Imported
from tropical regions



NOW
Grown
inside Korea

1.7x Subtropical Fruit Cultivation Area (2017 v 2022)



CLIMATE CHANGE IN EVERYDAY LIFE

From “Vacation” to “Coolcation”

Climate change is changing not only our environment — but our choices.



TRADITIONAL SUMMER ESCAPE

Tropical beach destinations

Finland summer bookings

Sapporo summer stays

A NEW SUMMER ESCAPE

Sapporo / Sydney / cooler regions



Introduction of Korea University Tech-Entrepreneurship

The Institutions Behind KU's Startup Ecosystem

Education, mentoring, space, prototyping, incubation, investment, and commercialization
— one connected pipeline.



CRIMSON START-UP SUPPORT FOUNDATION
Central Startup Platform

KU Technology Holdings

Investment · TIPS · R&D

Silicon Valley · Beijing

KU Medical Technology Holdings

Biohealth commercialization

Medical faculty startups

PHYSICAL & PROGRAM INFRASTRUCTURE

Pi-Ville 99

KU Makerspace

X-GARAGE

KU-3DS

CampusTown Cafés
Cafés

Incubation Center



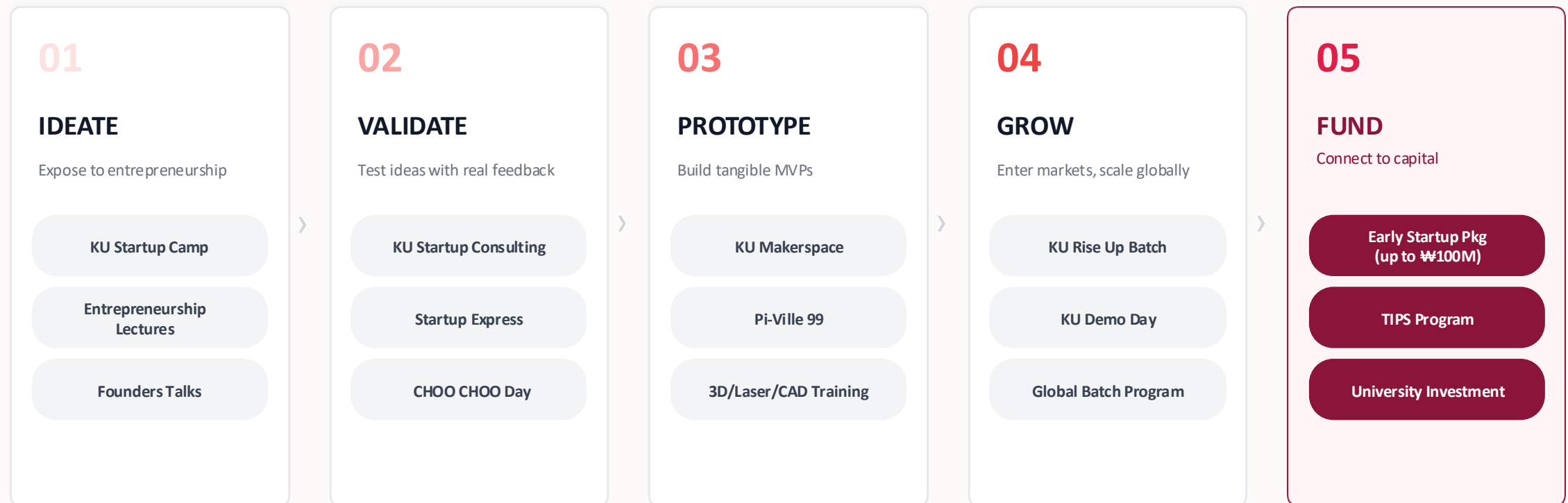
PI-VILLE 99 · STARTUP CONTAINER VILLAGE



X-GARAGE · KU MAKER & PROTOTYPE HUB

From Idea to Company in Five Stages

KU does not just support startups — it operates a structured 5-stage validation pipeline.



From Classroom Ideas to Startup Teams

How a single student moves from a lecture hall to a funded venture.

1

IDEATE

Startup lecture or KU Startup Camp

2

VALIDATE

Join a startup club,
form an interdisciplinary team

3

PROTOTYPE

Receive mentoring, build an MVP

4

GROW

Startup Express or CHOO CHOO Day

5

FUND

Prototype funding or incubation



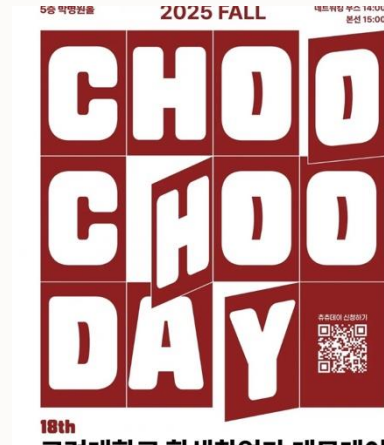
KU STARTUP CAMP



STUDENT STARTUP CLUB



PI-VILLE 99 · MAKERSPACE



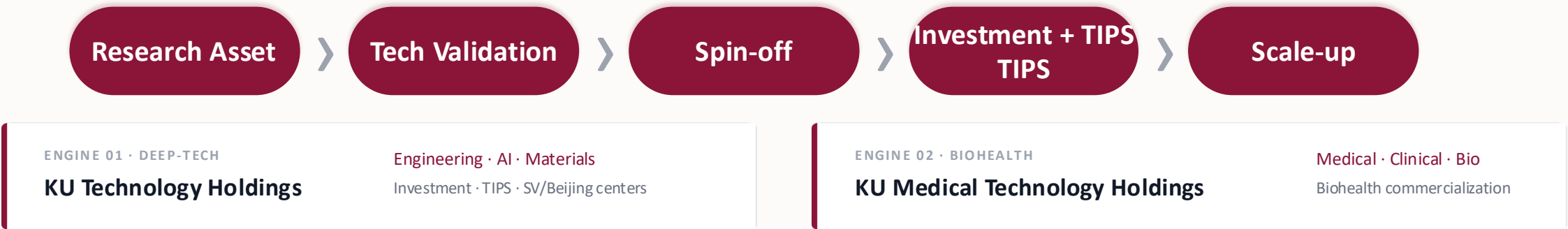
CHOO CHOO DAY · DEMO



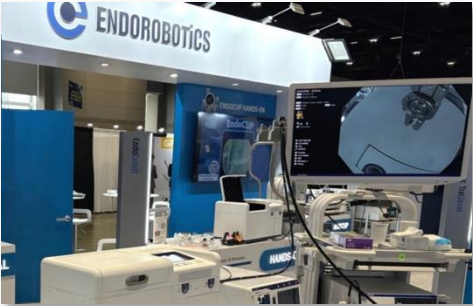
VENTURE INVESTMENT · KU

From Lab Research to Company

KU is not only a student campus — it is a deep-tech company creation platform.



DEEP-TECH COMPANIES FROM KU



MEDICAL ROBOTICS · 2019

EndoRobotics

RoSE Platform

Detachable robotic solution for existing endoscopes — enabling scarless surgery.

Prof. Hong Dae-Hee · KU Mechanical Eng.



MEDICAL AI · 2022

NeuroXT

NEXT-ATNV · NEXT-CDX

MRI-based AI for Alzheimer's — predicts amyloid and tau positivity, finds treatment golden time.

Prof. Sung Joon-Kyung · KU BME & AI



CES 2025 · INNOVATION AWARDS

3 KU Startups · 1 Pavilion

QSIMPLUS · Complexion · TerraMIME

Quantum communication · Smart wearables · Anti-deepfake AI authentication.

KU's first independent CES pavilion · 2025





Introduction of FSTB

*Future Science and Technology Department



과학기술정보통신부

STAR-Academy, supported by the Ministry of Science and ICT

A graduate program at Korea University preparing professionals to bring science and technology to market

Established in 2023, the department offers master's and doctoral programs in entrepreneurship. It prepares professionals to turn advances in science and technology into customer value and market opportunities, then develop them into differentiated business models and scalable growth strategies.

Students explore the full lifecycle of a technology venture—from identifying new business opportunities and developing new markets to managing startups, raising capital, commercializing technology, scaling up, and planning an exit.

LEARNING EXPERIENCE

Three Ways to Learn by Doing

Practice-Oriented Learning

Through flipped learning and action learning, students analyze technologies, products, markets, and every stage of venture development—and apply what they learn in practice.

Entrepreneurship-Focused Learning

Using design thinking and lean startup methods, students uncover real customer problems and develop market-driven business models.

Collaborative Project-Based Learning

Students, faculty, and startups collaborate to solve real-world entrepreneurial challenges and carry out open-innovation projects.



Turning Advanced Technology into Venture Creation

A graduate-level program designed to transform advanced science and technology into real-world ventures — beyond traditional business theory.

Department of Future Science & Technology Business

Korea University

Human

Technology

Sustainability

Opportunity Discovery

Business Model Differentiation

Fundraising & Scale-up

Exit Strategy

Curriculum · Four Modules Following the Real Startup Journey

MODULE 01

Entrepreneurial Opportunities

Venture Startup Theory

Tech Business Insight

Digital Healthcare

MODULE 02

Strategic Planning & Execution

Business Modeling

Startup Marketing

Tech Business Plan Writing

MODULE 03

Start-up Management

Beyond Capstone

Startup Tech Management

Fundraising & Investment Attraction

MODULE 04

Scale-up & Exit

Scale-up Strategy

Global S&T Commercialization

CVC & Open Innovation

CURRICULUM

The Venture-Building Journey in Four Modules

MODULE 01

Identifying Venture Opportunities

Venture Entrepreneurship

Students examine how Industry 4.0 technologies and climate change are reshaping the business landscape and learn to identify emerging markets and new venture opportunities through key theories and case studies.

Advanced Technology Business Insights

Students explore shifts in technology and business—from AI, IT, biotechnology, and big data to the gig and sharing economies—to develop the insight needed to recognize promising business opportunities.

Industry 4.0 and Digital Healthcare

Through expert-led discussions, students explore how Industry 4.0 technologies are converging with healthcare fields such as advanced medical materials, neuroengineering, and genomics—and where these fields are headed.

MODULE 02

Strategy Development and Execution

Business Modeling

Using frameworks such as Kauffman PEV and the Business Model Canvas, students design the core elements of a venture and develop a viable revenue model.

Entrepreneurial Marketing

Students apply marketing principles and methods—from customer discovery to customer retention—in real startup settings to attract and retain paying customers.

Developing a Technology Commercialization Plan

Students develop commercialization plans focused on market potential, feasibility, and profitability, then refine them through feedback from faculty, accelerators, venture capitalists, and entrepreneurs.

MODULE 03

Startup Management

Startup Studio

Students from diverse backgrounds work in teams with faculty advisors to define real startup challenges and take solutions from planning and design through implementation.

Technology Management for Startups

Through case studies, students learn how startups operate and develop practical management skills in strategy, leadership, human resources, finance, and communication.

Financing and Fundraising: Strategies and Case Studies

Students examine key issues in external financing and fundraising from a venture capitalist's perspective and develop strategies for each stage of growth.

MODULE 04

Scale-Up and Exit

Startup Management or Scale-Up Strategies for Startups

Through case studies, students explore the key drivers of successful scale-up and strategies for achieving sustainable, resilient growth.

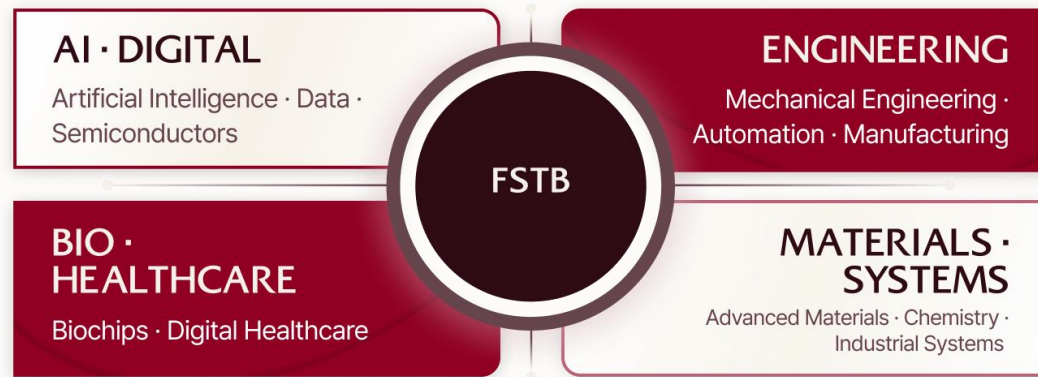
Global Science and Technology Innovation and Commercialization

Students analyze global trends in advanced technology and technology-driven business models, then develop strategies for entering international markets and building global ventures.

Corporate Venture Capital and Open Innovation

Students examine CVC investment strategies and open-innovation partnerships between corporations and startups while exploring the role and future development of Korea's corporate venture capital ecosystem.

Faculty Bridging Entrepreneurship and Deep Tech



CORE FACULTY



Professor
Jaehong Park

Technology
Entrepreneurship ·
Business Growth ·
Scale-Up



Professor
Youngwoo Sohn

Business Models ·
Corporate
Venturing · Open
Innovation



Professor
Seok Chung

Micro-
Biosystems ·
Biochips · Organ-
on-a-Chip

PARTICIPATING FACULTY

Dae-Hee Hong

Mechanical Engineering · Production Automation

Yong-Nam Song

Mechanical Engineering · STAR

Tae-Soo Chung

Mechanical Engineering · Production Automation

Joongheon Kim

Electrical and Electronic Engineering ·
Semiconductor Engineering

Jae-Won Jeong

Mechanical Engineering · Production Automation

Joong-Bae Kim

Chemical and Biological Engineering ·
Biochemical Engineering

Dong-Kwon Lim

KU-KIST · Chemistry · Advanced Materials

LEARN FROM INDUSTRY EXPERTS

Industry experts from a range of fields serve as adjunct faculty, bringing firsthand experience and real-world cases into the classroom.

Venture Capital · Startup Acceleration

Technology Commercialization
· Open Innovation

Biotechnology · Healthcare

Management · Organizational
Consulting

Where Technology Becomes Business —and Investment Drives Innovation

Students and alumni working across technology commercialization, technology entrepreneurship, and venture investment do more than share expertise. Together, they validate technologies and markets, build ventures, and connect businesses with capital and growth networks—creating a virtuous cycle of innovation and growth.



Tech Leadership Course

Not a lecture-based exchange — a studio + lab + capstone program connecting science with strategy.

PROGRAM IDENTITY

CORE Tech Leadership Course

PROGRAM FORMAT

Selective Cohort

Studio + Lab

Policy Practicum

Capstone w/ Industry

KU students × Partner-university students

CURRICULUM · CROSS-DISCIPLINARY CONVERGENCE



Climate Tech



Semiconductors



Batteries



Biohealth



Smart Mobility



Intl. Politics & Security



Industrial Policy



Entrepreneurship



Field Projects

CMK Green Society closes the gap between research and adoption

RESEARCH PIPELINE

NST + research institutes

Discover and advance climate technologies.

POLICY & GLOBAL

NIGT

Policy, evaluation and international cooperation.

MARKET ADOPTION

Industry + investors

Pilots, demand, partnerships and capital.

COMMERCIALIZATION

Korea University FSTB

Business models, strategy, IR and investor readiness.

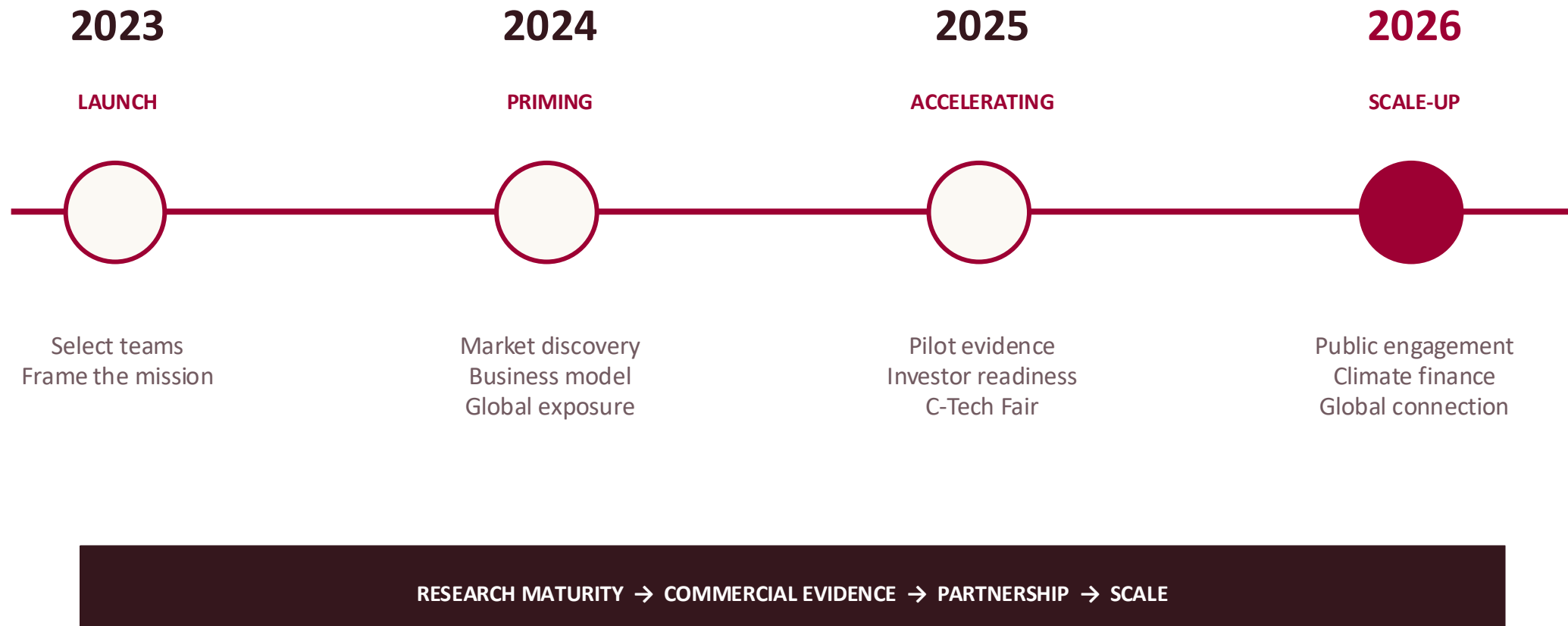


*ChungMongKu Foundation

**National Research Council of Science and Technology

***National Institute of Green Technology

Three years turn a research team into a market-facing venture



Three domains create a balanced climate-tech pipeline

01

ECOLOGY

KU Ojeong + E3
Code of Nature
BlueCaBorn

02

RESOURCES

KIER sustainable aviation fuel
KITECH + Nanointech lithium

03

CLIMATE

EcoHydro · Huject
Korea Grid Forming
KIER CernShift

Each team pairs technical ambition with a defined route to social and commercial adoption.

Three technologies show three routes to market

ECOLOGY

BLUECABORN

Artificial coral polymer for voluntary ocean carbon capture

Route: restoration partners + carbon markets

RESOURCES

KITECH + NANOINTECH

Next-generation lithium concentration for resource efficiency

Route: industrial validation + process partners

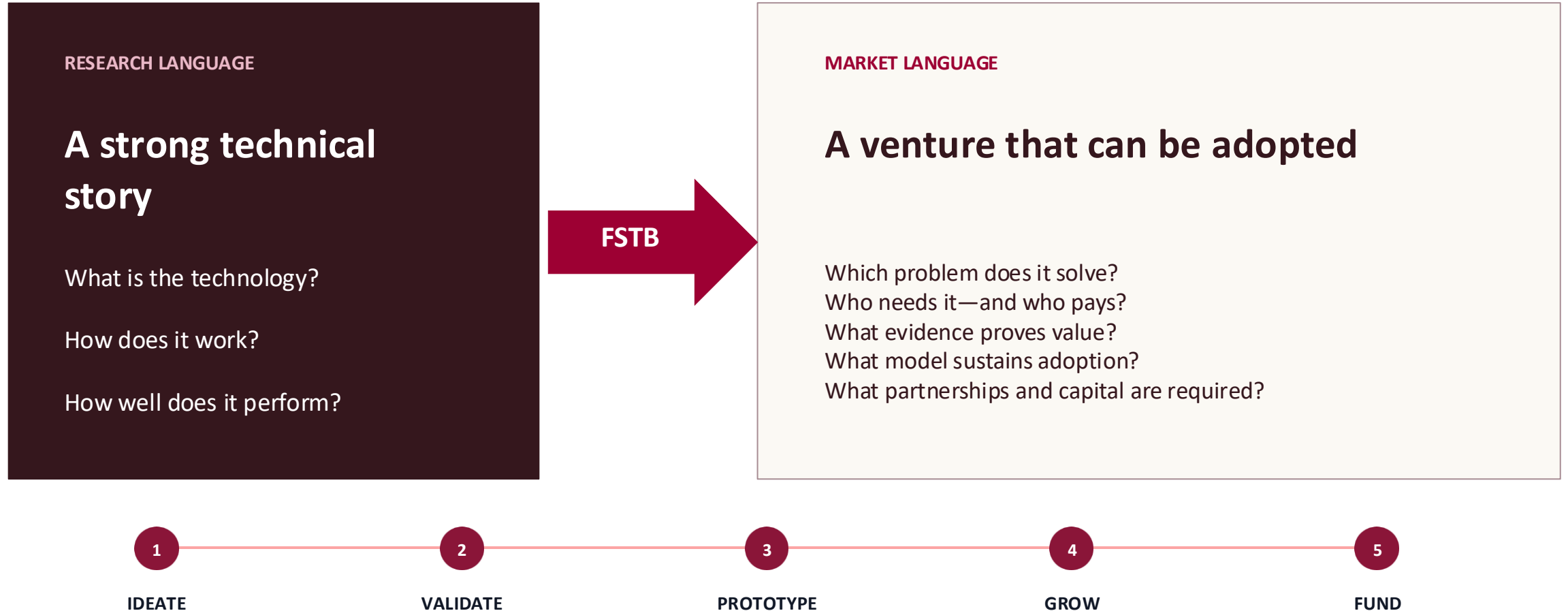
CLIMATE

ECOHYDRO

Eco-friendly nanocatalyst for high-efficiency green hydrogen

Route: demonstration + energy-industry adoption

Korea University turns technology into market language



Nine teams evolved closer to market

40+

MOUs & letters of intent
up from 6

10+

private & public investments
across the nine-team portfolio

2 NEW COMPANIES

2 TECHNOLOGY TRANSFERS

42

NEW JOBS

93

RESEARCHERS

15

STANDARDS & CERTIFICATIONS



The model is expanding toward global connection



2024

UKC forum + Silicon Valley
Stanford Doerr School

2025

C-Tech Fair
Market and investor connection

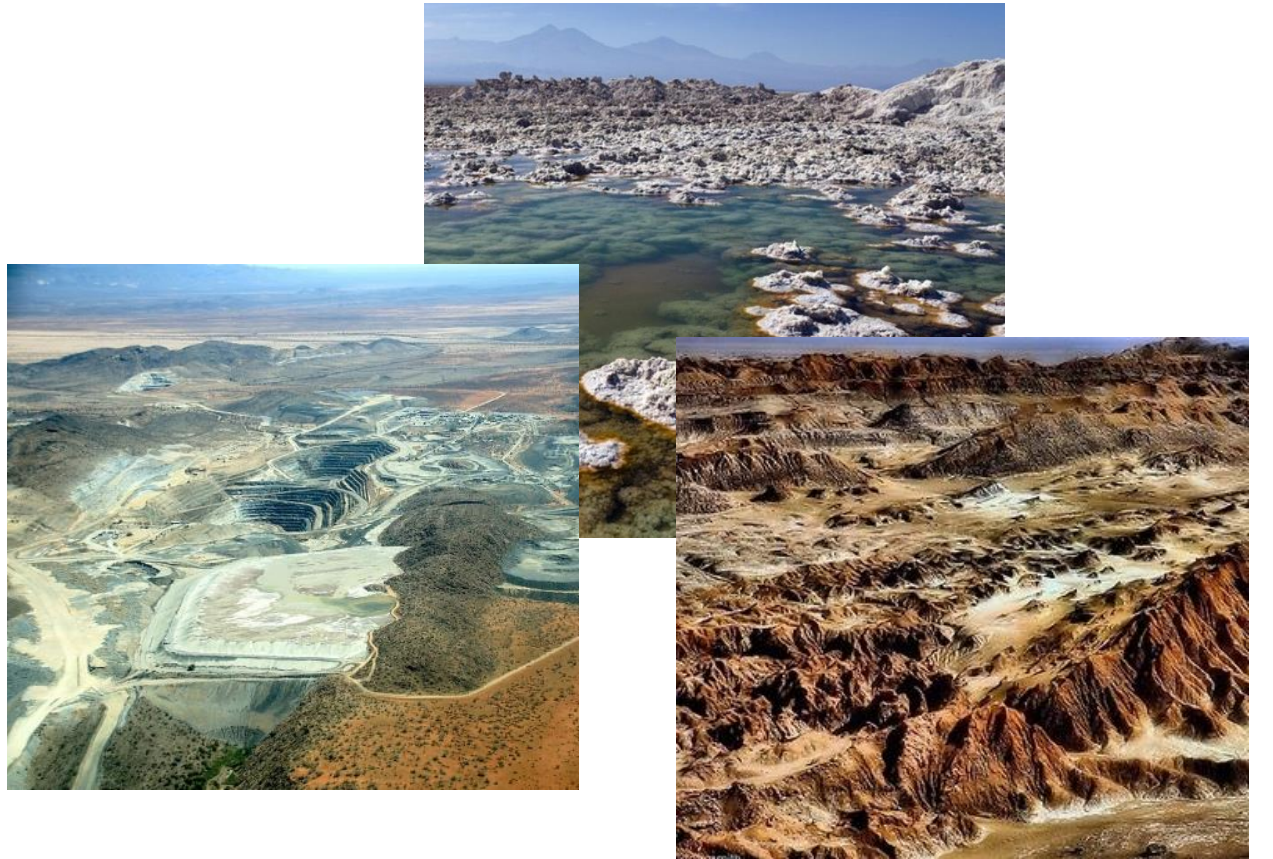
2026

UN CTCN keynote · public lecture
Climate-finance dialogue



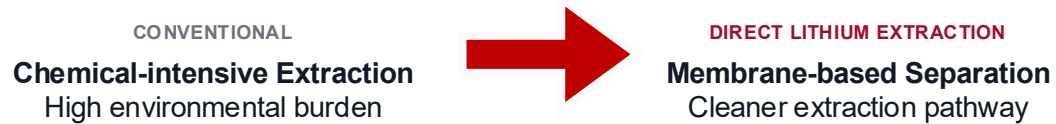
KU Climate Tech Incubation

1 Direct Lithium Extraction



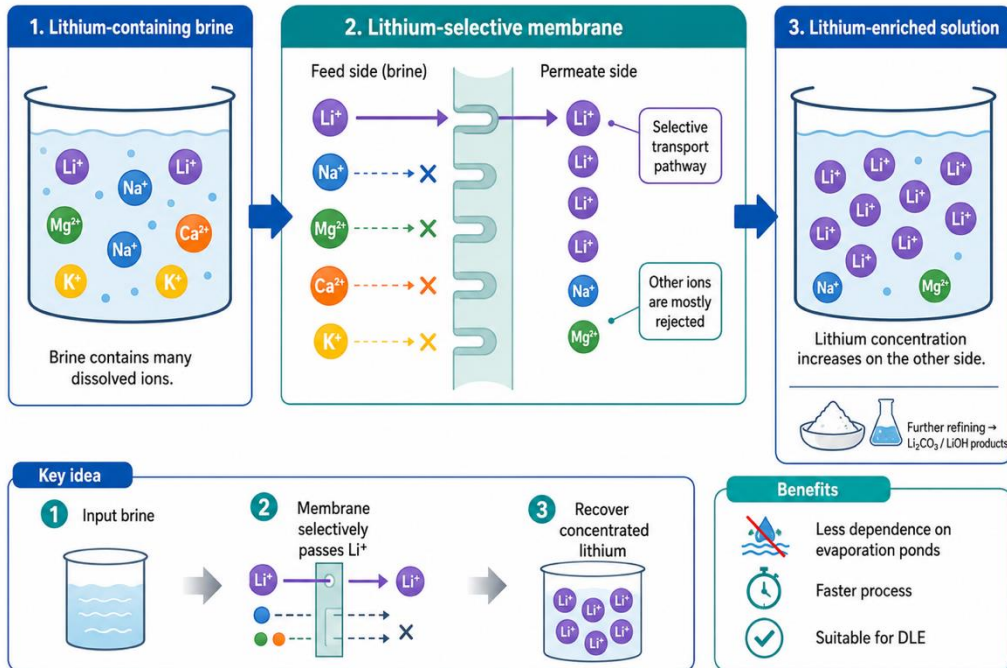
Good Technology, Still Inside the Lab

The technology existed. The pathway to market did not.



How Membrane-Based Lithium Extraction Works

Selective membrane separation for direct lithium extraction (DLE) from brine



“The missing piece was not technology. It was commercialization and Business Model”

KITECH researcher-developed membrane DLE technology had the potential for lower-chemical lithium separation, but remained primarily inside the research environment.

From Lab to Field Application

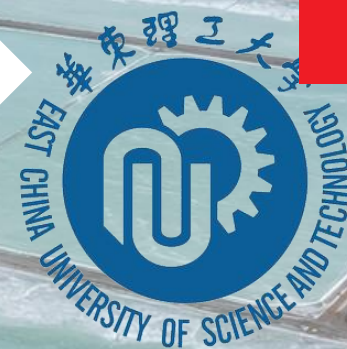
Commercialization is not simply transferring technology. It is connecting complementary capabilities.



Core technology · Research expertise



FSTB

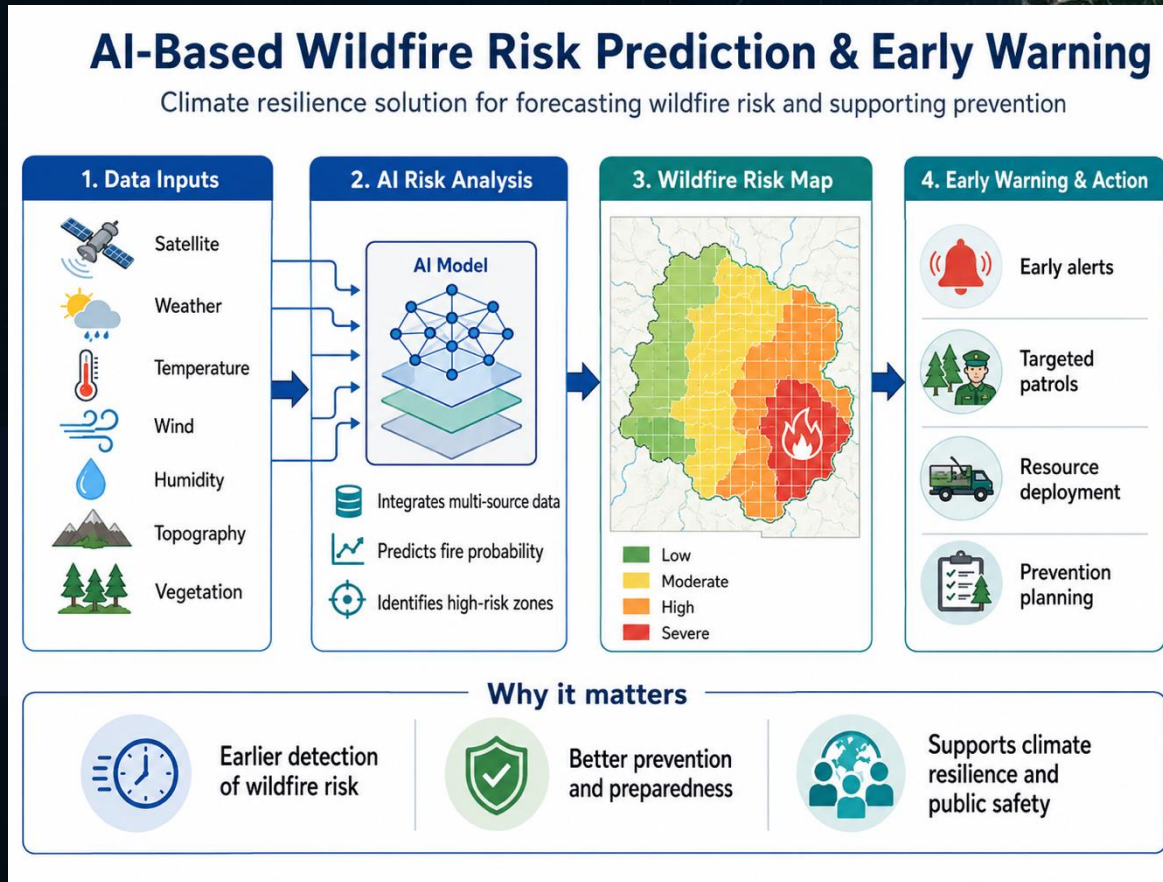


Hardware · Local resources · Implementation

2 AI-Based Wildfire Detection System

From Prediction to Prevention

Satellite-based risk diagnosis can help decision makers act before disasters happen.

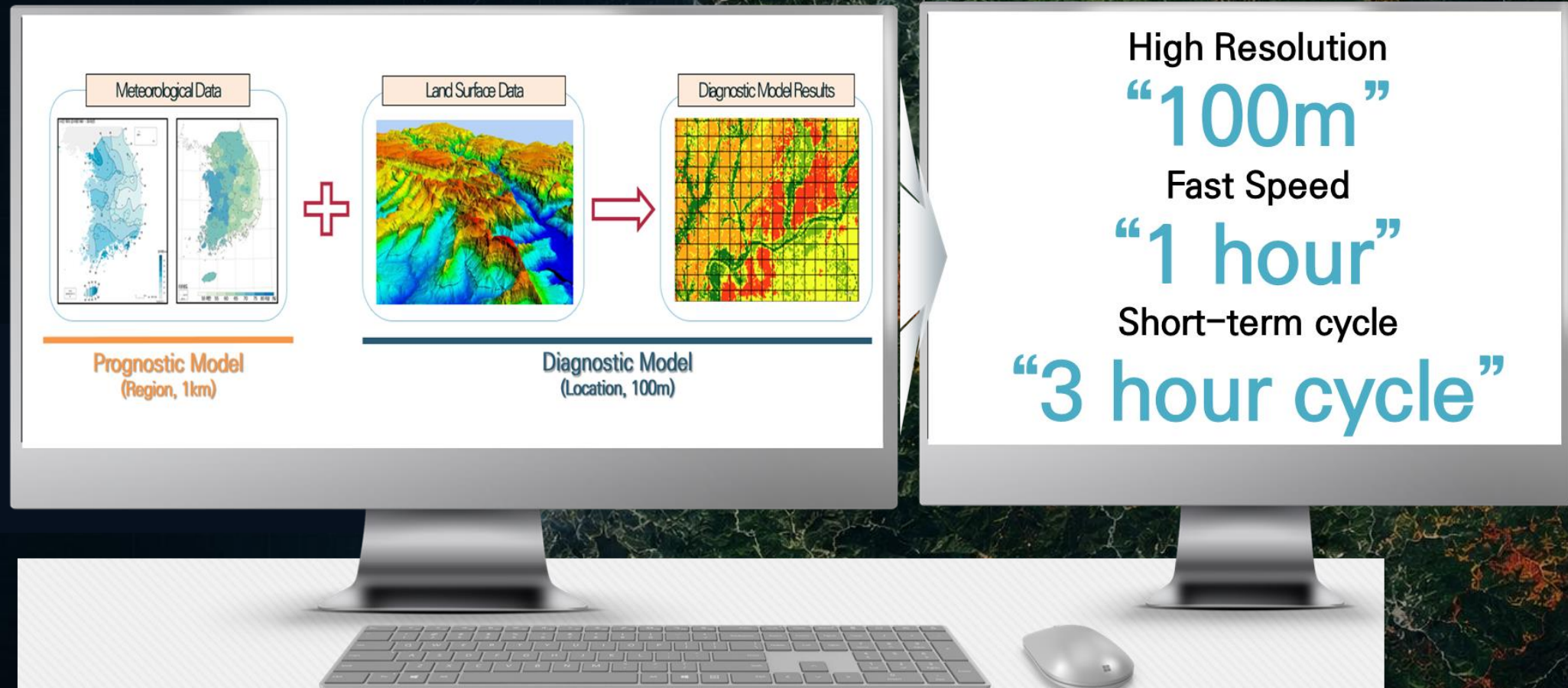


“The goal is not prediction itself. It is enabling earlier decisions before disaster strikes.”

OJERI translates satellite-based risk diagnosis into actionable early-warning information, helping decision-makers move from prediction to prevention.

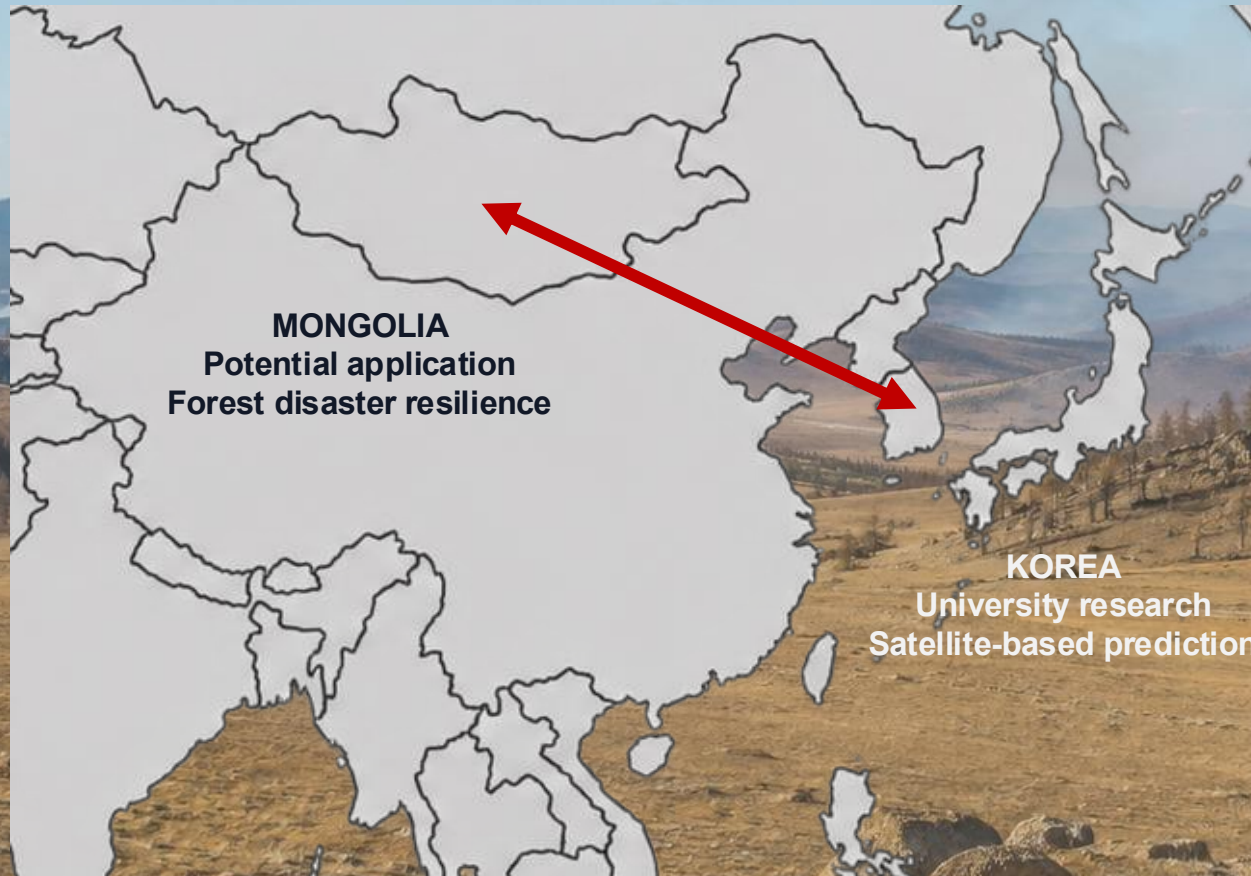
From Prediction to Prevention

Satellite-based risk diagnosis can help decision makers act before disasters happen.



Technology Can Travel.

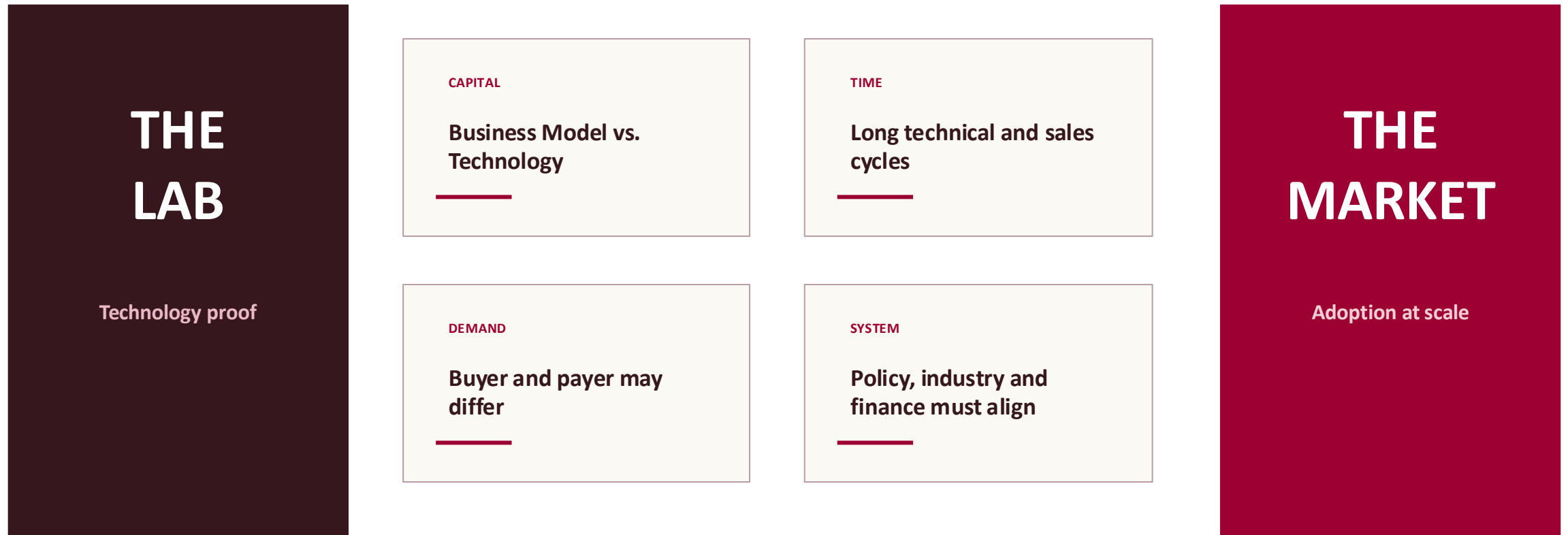
But the way it travels determines whether impact can scale.



Mongolia · wildfire risk

Satellite observation illustrates the scale and remoteness of forest and steppe fire risk — precisely the kind of context where early-warning capability can matter.

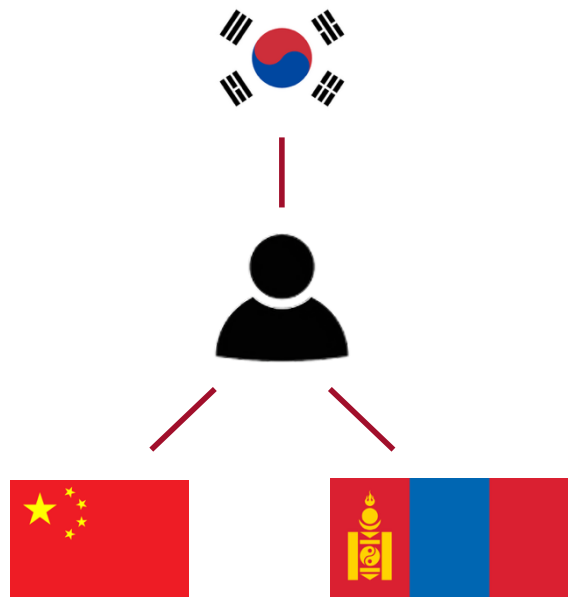
Climate tech carries a wider translation gap



The platform must coordinate evidence, partners, pilots and capital—not only teach startup basics.

Climate Change Is Not a One-Off Event.

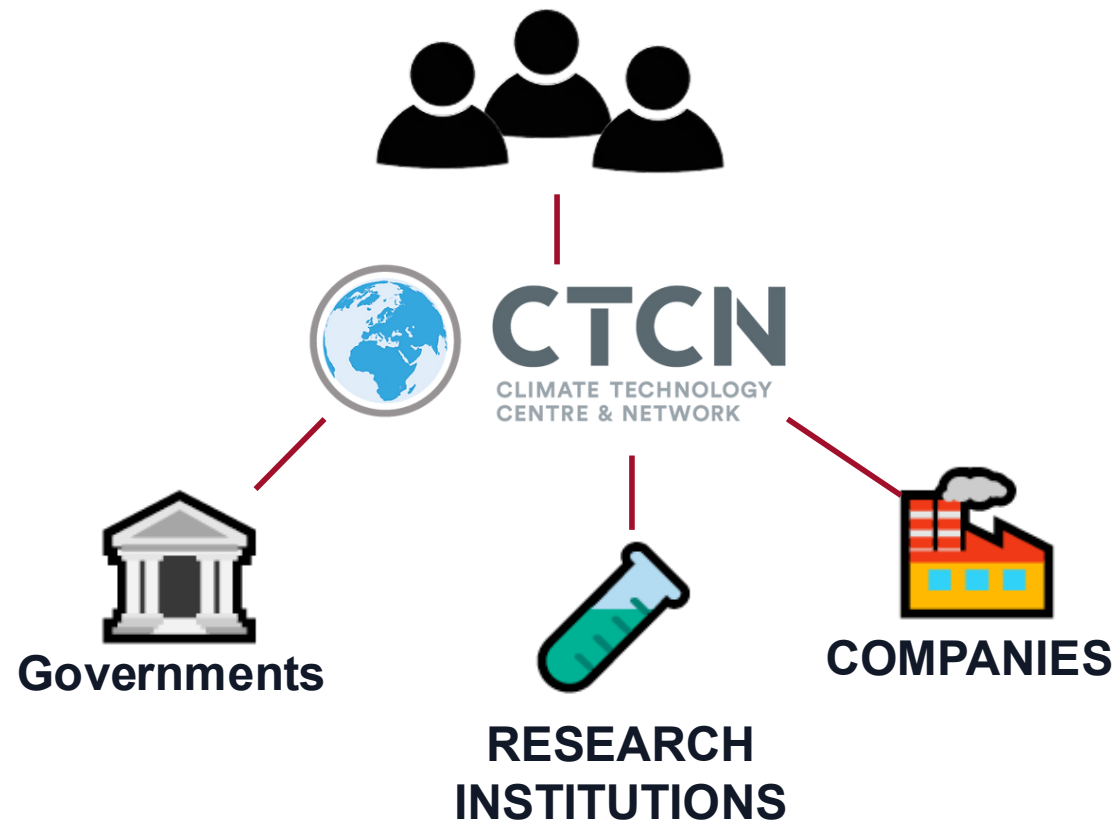
PERSONAL NETWORK



Effective — but difficult to scale.



CTCN + NDE NETWORK



“Can we connect?” -> “Can we make connection sustainable?”



Thank You