Leaving No One Behind

Inclusive learning as a pathway to participation in sustainable mechanization

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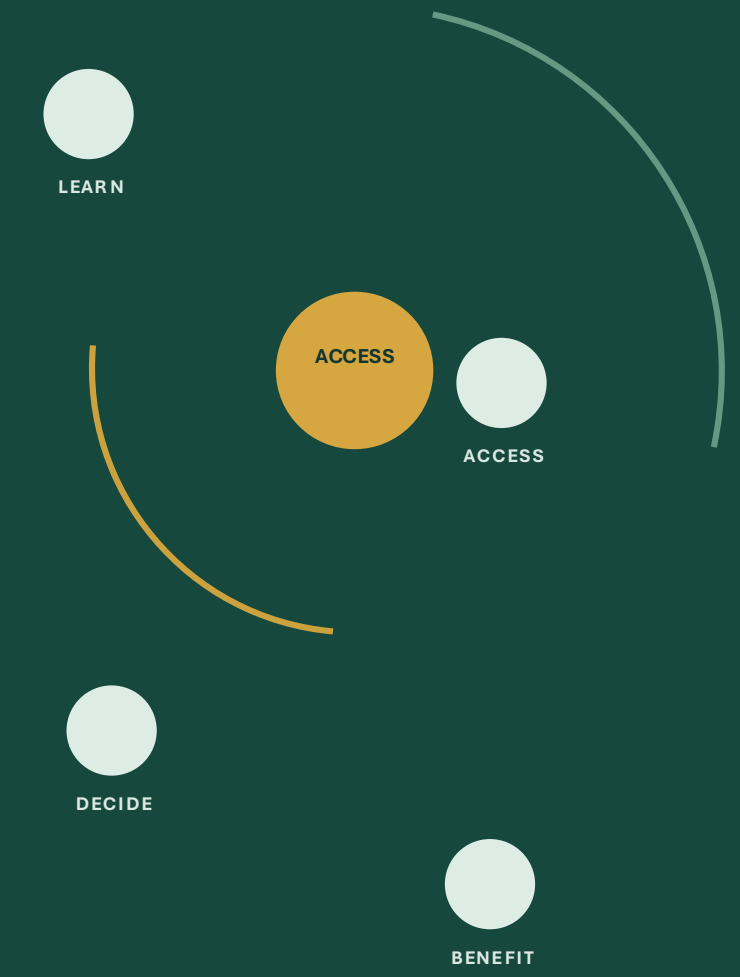
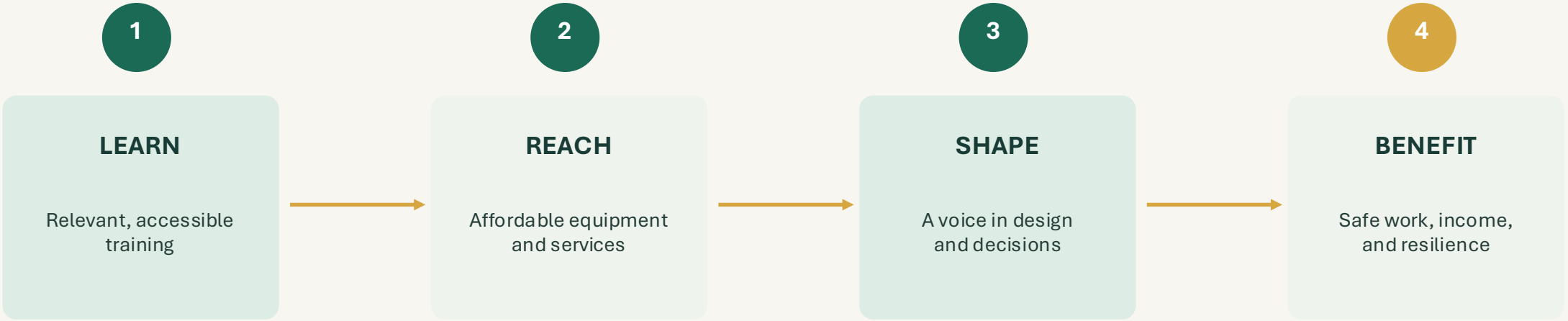


Inclusion is a condition for participation

A technology is inclusive only when people can reach it, learn it, shape it, and benefit from it.



A practical LNOB test for every technology and training investment

Framing: RFSAM11 Concept Note, Session II; UN 2030 Agenda, LNOB commitment.

The SDGs connect learning, work, equality, and partnership

4 QUALITY EDUCATION

Equal access to learning and skills for sustainable development

5 GENDER EQUALITY

Women’s equal participation in technology and decision-making

8 DECENT WORK

Skills, safety, and fair opportunities in changing rural economies

10 REDUCED INEQUALITIES

Track who is reached and who remains excluded

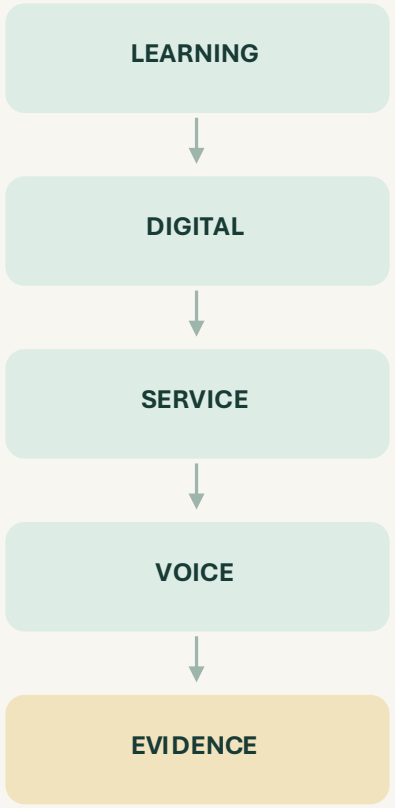
17 PARTNERSHIPS

Align universities, farmers, firms, government, and development partners

LNOB is a cross-cutting test: measure access by gender, disability, age, location, and income where data allow.

UN Sustainable Development Goals: Targets 4.5, 4.7, 5.5, 8.5, 10.2, 17.17; indicator 4.5.1.

Exclusion accumulates across the access chain



Training may be distant, costly, inaccessible, or scheduled around unpaid care.

Connectivity, device access, language, and assistive technology shape who can use digital learning.

Equipment, repair, finance, and custom-hiring services may not reach smaller or remote farms.

Women, persons with disabilities, young people, and smallholders can be missing from design forums.

Average results hide unequal access unless data are disaggregated.

Barriers interact. Address the whole pathway.

Sources: FAO, Gender and innovative and labour-saving technologies; UN CRPD, Article 24.

Kazakhstan: a new institutional platform at KazNARU

KAZNARU

Center for Inclusive Education

Newly established

An institutional commitment to make participation in learning more inclusive.

A practical agenda for the next phase

1. Co-design support with students, faculty, and disability communities
2. Build staff capacity in accessible teaching and learning materials
3. Improve referral, feedback, and assistive-learning pathways
4. Track participation, completion, and experience with disaggregated data

These are proposed priorities, not reported outcomes.

Case description: KazNARU Center for Inclusive Education, newly established (institutional information supplied for this presentation).

Erasmus EduFusion: connect learning with opportunity

A portal can extend learning beyond the classroom when access and usability are designed in from the start.

FACULTY

35

faculty worked with across project activities

→

LEARNING

OPEN

digital resources and practice

→

INDUSTRY

LINK

employer input and work-relevant learning

→

PARTICIPATION

WIDER

more routes into learning and employment

35 is an activity indicator, not a learner-impact measure

Design checks: accessible formats · low-bandwidth access · clear language · feedback loop

Project information: Erasmus+ EduFusion implementation, 2024–2026; KazNARU worked with 35 faculty members.

Inclusive learning is part of inclusive mechanization

Skills and services determine who can use climate-smart technologies safely and productively.

1 → 2 → 3 → 4

ACCESSIBLE LEARNING

Operators, technicians, service providers

PRACTICAL SKILLS

Operation, repair, safety, digital tools

INCLUSIVE SERVICES

Custom hiring, cooperatives, outreach, finance

RESILIENT PRACTICE

Sustainable residue management

Build for varied users: women farmers · young people · smallholders · persons with disabilities

Sources: RFSAM11 Concept Note, inclusive mechanization objectives; FAO, gender and labour-saving technologies.

Five design choices make inclusion practical

CO-DESIGN	Invite women, persons with disabilities, youth, and smallholders into planning and feedback.
DESIGN FOR ACCESS	Use accessible venues, formats, interfaces, and language from the outset.
FUND THE FULL PATHWAY	Budget for training, connectivity, transport, repair, assistive support, and service access.
LINK LEARNING TO LIVELIHOODS	Connect university learning with extension, cooperatives, manufacturers, and employers.
MEASURE DISTRIBUTION	Report who participates, completes training, uses services, and benefits.

Treat inclusion as a funded design requirement, not a final checklist

Recommendations informed by UN CRPD Article 24, SDG Targets 4.5 and 10.2, and FAO guidance on equitable technology access.

Measure whether opportunity reaches the people it is meant to serve

REACH	ACCESS	AGENCY	BENEFIT	SYSTEM
Who was invited and who participated?	**Could people use the learning or service?**	**Did participants shape design and decisions?**	**What changed after participation?**	**Can the institution sustain the change?**
Disaggregate by gender, disability, age, location	Accessibility, cost, connectivity, distance	Representation, feedback, response to feedback	Skills, safe use, service access, livelihood effects	Budget, staff capacity, partnership continuity

Set baselines first. Agree targets with participants. Review results by group and adapt.

Suggested monitoring framework; align with SDG Indicator 4.5.1 and programme-specific baselines.

Leaving no one behind is a test of design and delivery

For every learning programme, machine, or service, ask:

WHO **can access it?**

WHO **can learn to use it?**

WHO **has a voice in its design?**

WHO **benefits from the change?**

Kazakhstan's emerging institutional work and EduFusion show where to begin: make inclusion visible, build capacity, and connect learning with real opportunities.

Thank you

Concept note: RFSAM11, "Leaving no one behind in mechanization"; SDG commitment to leave no one behind.