LOUISIANA DRI

Innovations in Disaster Risk Reduction: Advancing Flood and Wind Resilience in South Louisiana

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LOUISIANA DISASTER REDUCTION INITIATIVE

South Louisiana is Ground Zero

for a national challenge in resilience and insurability .

$4,500,000,000

South Louisiana's estimated annual losses from wind and flood related disasters by 2050

Louisiana's insurance premiums are

3X the national average & 47% higher than Florida

$5,353 average annual costs to homeowners

10.5% of the medium household income

Projected Annual Property Losses from Wind by Census Block, 2025

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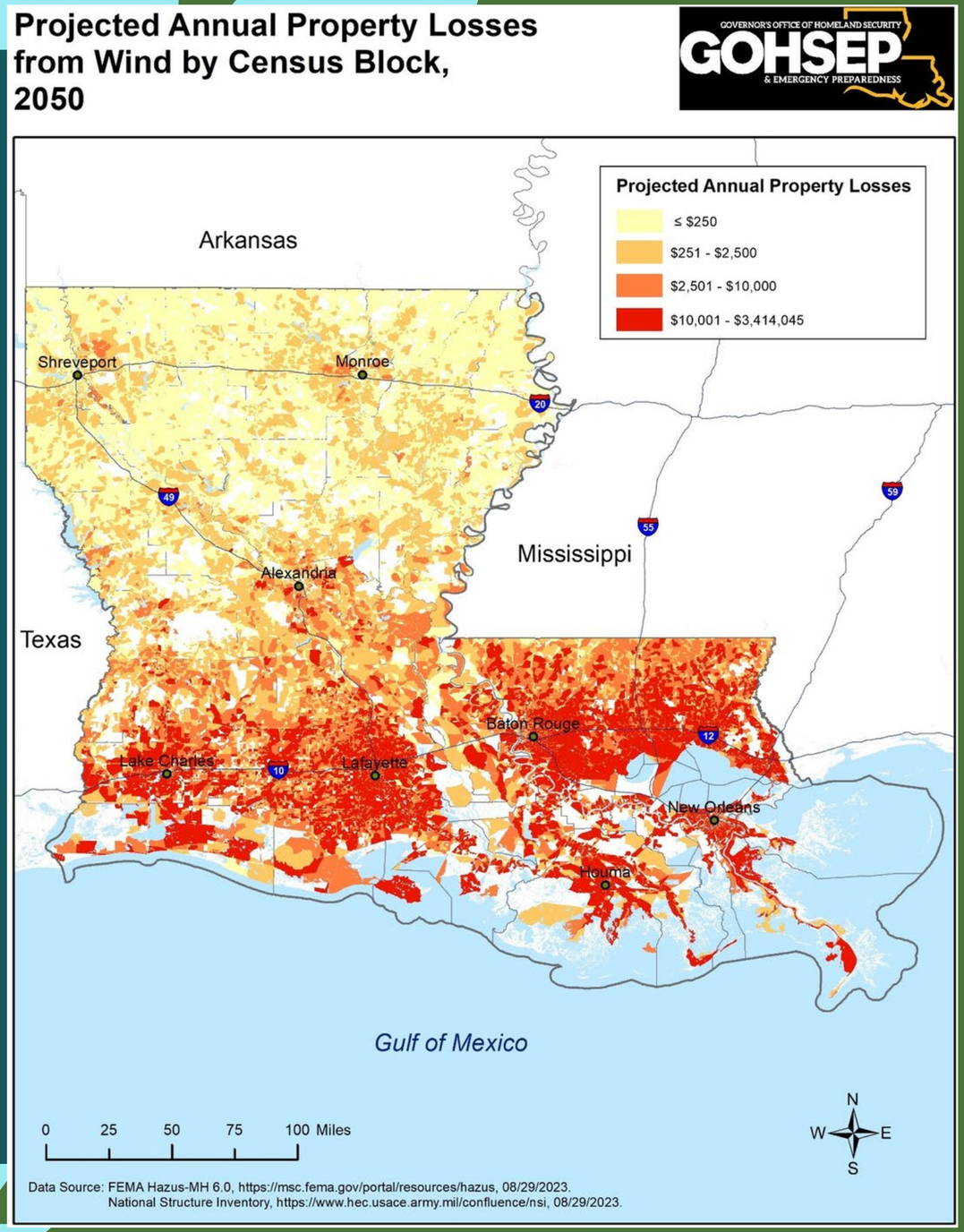

Parishes most susceptible to flood loss:

- St. Tammany
- Terrebonne
- Lafayette
- St. Mary
- Jefferson

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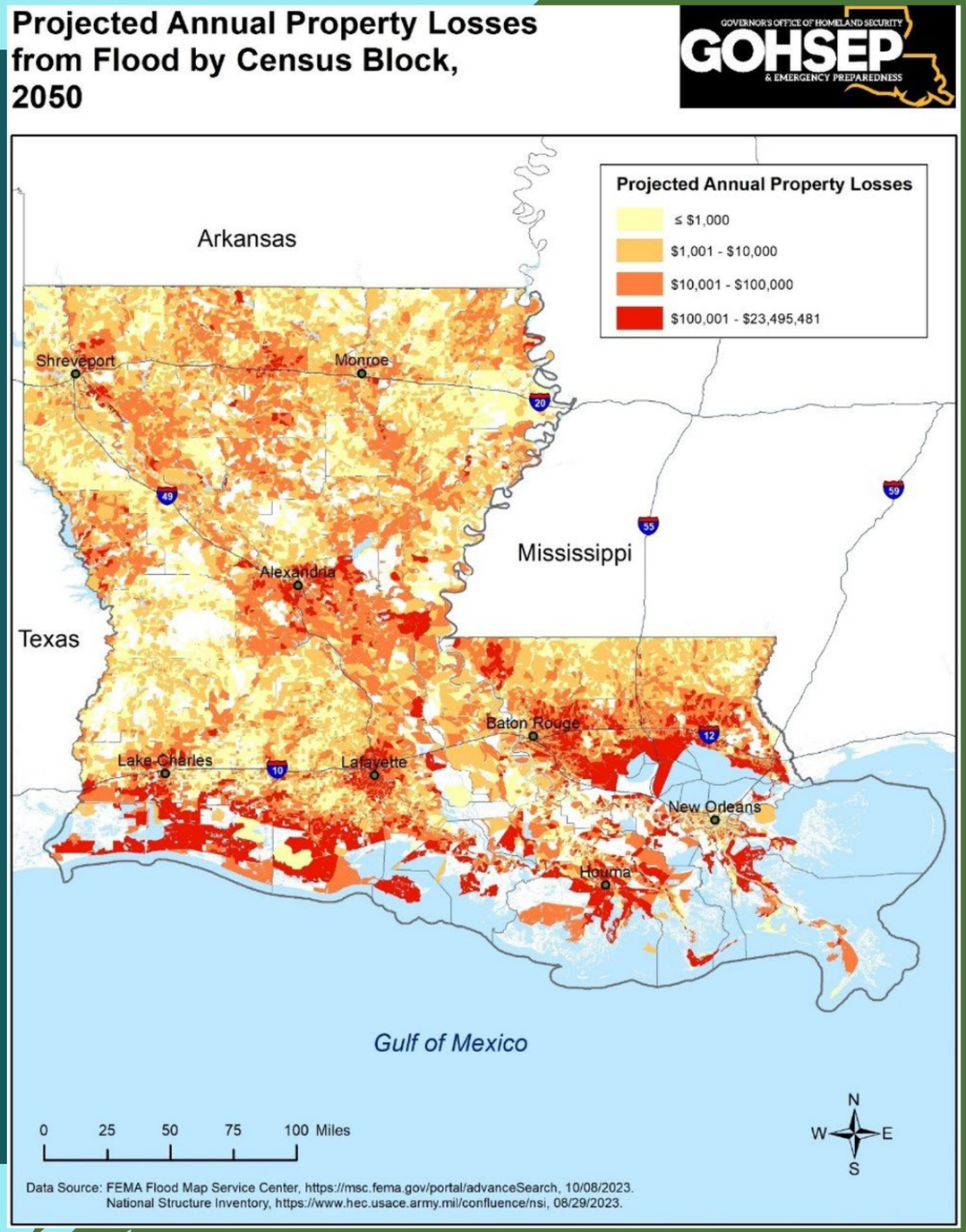

What's an acceptable percentage of buildings to flood over a 50 -year period?

- 5%
- 10%
- 20%
- 30%
- 40%

- 1,000 year
- 500 year
- 225 year
- 140 year
- 100 year

Community -Engaged Approach to Identifying Challenges & Solutions to Disaster Risk Reduction

Over 8 months, we engaged over 130 community partners to understand the problem. We hosted listening sessions, interviews, and surveys to gather insights, ensuring the identified challenges reflected real needs. Participants collaboratively mapped problem areas, voiced concerns, discussed root causes, and prioritized issues. Several themes emerged from our research.

131

Collaborators and Community Partners

152

Hours of In -Person & Virtual Conversations

379

Partner Surveys Analyzed

108

Participants in Listening Sessions

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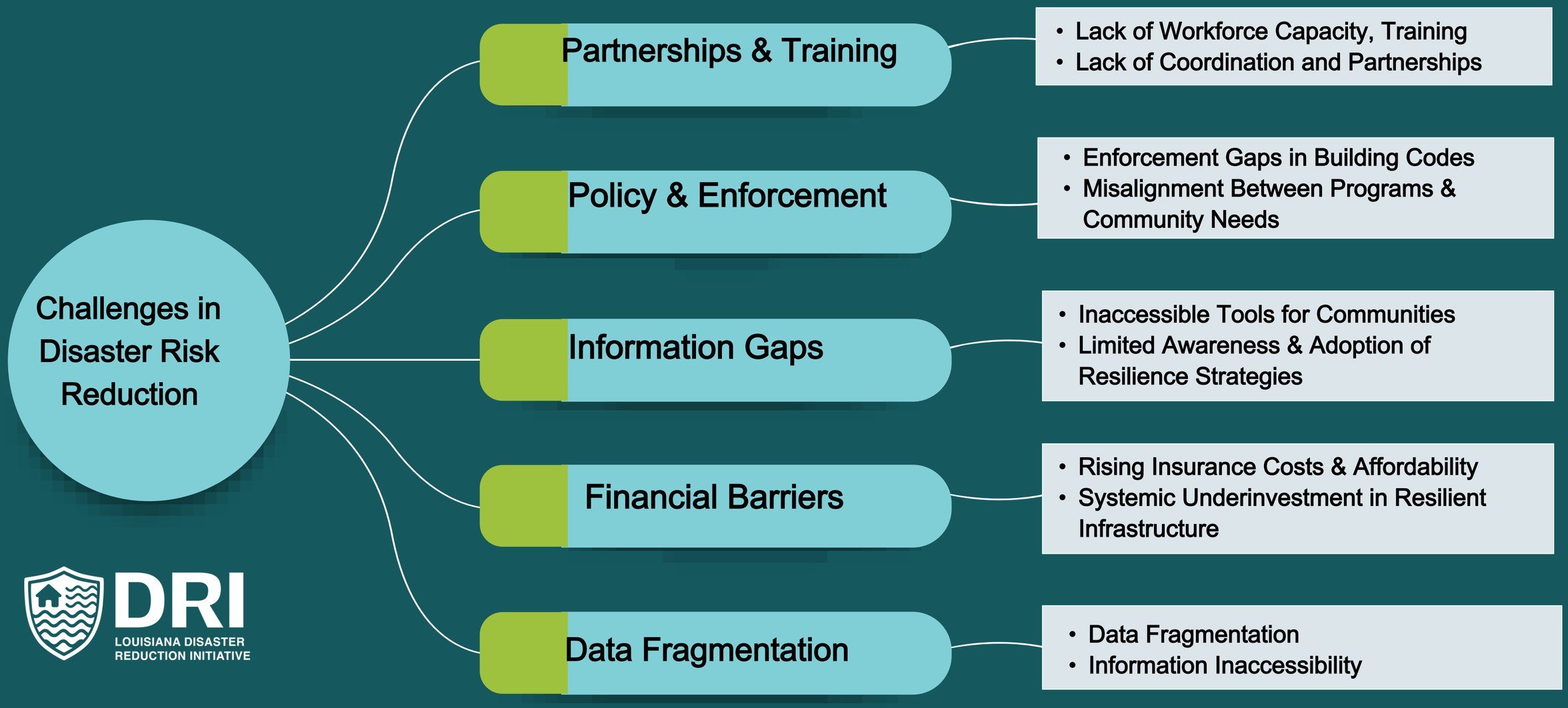
Identified Issues & Gaps



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WORKFORCE CAPACITY & TRAINING

> “The permitting and compliance process is getting stricter, but we’re not training the workforce to actually meet the standards.”
>
> DRI Listening Session #1 - Misc. Breakout

Lack of skilled workforce for resilient construction & retrofitting.

"We have a solid contractor base in Louisiana, but they need structured opportunities to upskill and certify in resilience techniques." - Education & Workforce

Educational tools must be more accessible, culturally relevant, and user-friendly.

"Gamified tools and mobile curricula can create a skilled resilience workforce." - Education & Workforce

Disconnect between resilience policies and real-world implementation skills.

"Most of the workforce doesn’t know how to meet building standards, not because they can’t, but because the training isn’t accessible." - Community Engagement

POLICY & ENFORCEMENT

> “Many municipalities lack digital permitting and tracking systems, leading to inconsistent application of building standards.”
>
> DRI Listening Session #1 - Misc. Breakout

Strong policies exist, but enforcement is weak due to lack of capacity, funding, and oversight.

"The permitting and compliance process is getting stricter, but we’re not training the workforce to actually meet the new standards." - Miscellaneous

Permitting and compliance processes are inconsistent across regions.

"We need liability documentation and compliance monitoring to ensure that resilience codes are actually followed." - Miscellaneous

Financial and regulatory incentives for compliance are lacking, discouraging builders from adopting resilient practices.

"If there’s no funding or insurance discount tied to resilience upgrades, why would a contractor push for them?" - Strategic Regional Investment

INFORMATION GAPS

> We can’t just give people data —we need tools that translate information into action for communities.
>
> DRI Listening Session #1 - Strategic Regional Investment

Vulnerable groups often lack access to tools, funding, and resources

"The programs exist, but they aren’t reaching the communities that need them the most." - Strategic Regional Investment

Lack of Decision -Support Tools

"We need decision -support platforms that serve communities, not just policymakers." - Translation of Innovation

Barriers to Training & Knowledge Sharing

"Many resilience resources assume internet access and technical literacy, but that’s not the reality in every community." - Education & Workforce

RISING INSURANCE COSTS & AFFORDABILITY

> **Premium reduction [tools] could incentivize mitigation investments by demonstrating long term cost savings.**
>
> DRI Listening Session #1 - Strategic Regional Investment

Skyrocketing insurance premiums threaten housing affordability and cause displacement

"Flood insurance rates are expected to increase 20% —this will lead to vacant homes as people cannot afford rising premiums." - *Misc.*

High insurance costs limit people from investing in resilience efforts

"In 5 years, insurance will be $10,000 a year down in Houma, and the homes will then be empty." - Misc.

Lack of Insurance Transparency Prevents Homeowners from Investing in Resilience

"Homeowners have no way to calculate how resilience upgrades will impact their insurance rates —if they did, more people would invest in mitigation." - Strategic Regional Investment.

DATA FRAGMENTATION

> “We are dealing with a combination of fragmented data, inaccessible information, and hidden expertise.”
>
> DRI Listening Session #1 - Community Engagement

Disaster data is fragmented, outdated, & hard to access.

"We don’t need more data —we need a way to connect and use the data we already have." - Strategic Regional Investment

Mapping systems & data tools need better integration

"We need decision -support platforms that integrate flood maps, insurance models, and building data. Right now, it’s all disconnected." - Strategic Regional Investment

Public access to updated disaster risk data is inconsistent

"Resilience planning tools exist, but they’re scattered across multiple agencies; there’s no single place for communities to access what they need." - Miscellaneous

LACK OF COORDINATION & PARTNERSHIPS

> Many efforts to reduce risk are fragmented and not communicated across the “ecosystem.” We need everyone working together in the same direction.
>
> DRI Listening Session #1 - Community Engagement

Resilience efforts lacks coordinated partnerships across sectors and stakeholders

"Too many resilience projects happen in silos. If we don’t coordinate, we’re duplicating efforts and wasting resources." - Strategic Regional Investment

There is a lack of community engagement and partnership

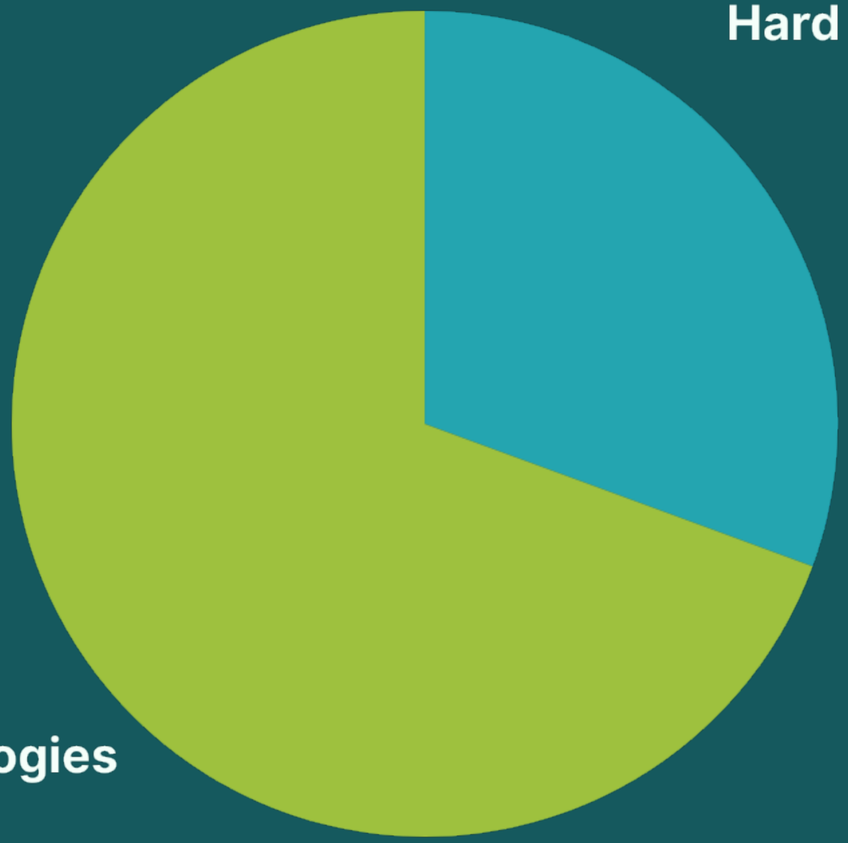
"Vulnerable communities don’t just need information; they need guidance on how to actually access and use resilience programs." - Miscellaneous

No centralized coordination mechanism exists within disaster risk reduction

"There’s no central hub for resilience data and planning — communities don’t know where to go for help, and agencies aren’t aligned." - Community Engagement

IDENTIFYING SOLUTIONS

Soft vs. Hard Technology Needs by Mentions



SOFT TECH CITED AS A SOLUTION OVER HARD TECH

In our partner engagement, soft technologies were mentioned heavily across DRI listening sessions, and surveys.

A substantial need was identified for soft tech in the form of data, tools, and applications for decision support, insurance assistance, compliance, and education.

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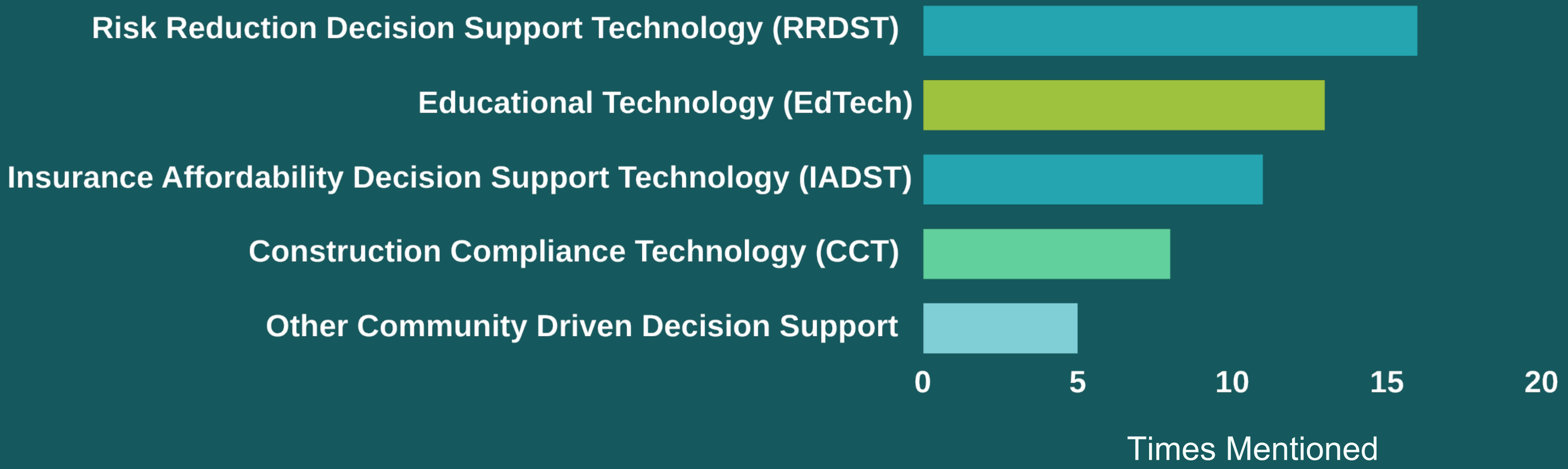
Identifying Solutions

Technology Areas by Frequency of Supporting Quotes



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The Need

- Rising frequency & severity of disasters
- Growing vulnerability of critical infrastructure
- Urgent need for innovative solutions
- Gaps in disaster risk reduction technologies and workforce skills

The Response

- Partnerships across sectors
- Use-inspired research focused on practical solutions
- Translation of innovation into real-world practices
- Build workforce capacity disaster risk reduction
- Education & training tailored to local needs

The Outcomes

- Strong cross-sector partnerships driving continued innovation
- Resilient infrastructure & prepared communities
- A sustainable ecosystem that supports continuous adaptation and resilience-building

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Louisiana DRI: NSF Engine

Three Core Functions:

- Use-inspired research and development
- Translation of innovation results to society
- Workforce development leading to higher-wage, better quality jobs

Funding Amount :

- The awards are up to $160 million in value over 10 years

Louisiana DRI Timeline

- May 2022: NSF Engines Program Launched
- April 2024: New NSF Engines Funding Announced
- May 2024: Start of Community-Engaged Research and Solution Identification
- August 2024: Preliminary Proposal Submitted
- October 2024: NSF advanced 71 teams in the NSF Engines competition
- February 2025: Louisiana DRI Submitted***

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DRI Vision

The Louisiana Disaster Reduction Initiative (DRI) aims to become a **national leader in disaster risk reduction by 2036,** transforming community adaptation to increasing flood and wind risks in South Louisiana and beyond.

DRI Mission

DRI will build a scalable, self-sustaining development ecosystem that focuses on creating, evaluating, and deploying commercial technologies with our core partners. Driven by use-inspired research, we continuously improve and share our innovations through community engagement and workforce development in four key areas:

- **Risk Reduction Decision Support Technology (RRDST),**
- **Insurance Affordability Technology (IAT),**
- **Construction Compliance Technology (CCT),**
- **Educational Technology (EdTech).**

FOUR TECHNOLOGY UMBRELLAS

DRI will focus on the development, deployment, and widespread commercialization and adoption of technologies and tools in four areas:

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Risk Reduction Decision Support Technology (RRDST)

Models, data, and applications providing actionable data for flood and wind risk mitigation and adaptation decision making.

Insurance Affordability Technology (IAT)

Applications linking mitigation actions to tangible cost savings on insurance premiums.

Construction Compliance Technology (CCT)

Platforms that facilitate compliance verification with building codes, technical standards, and above-code standards like FORTIFIED™.

Educational Technology (EdTech)

Educational products and interactive tools for capacity building, workforce development, and community disaster risk reduction.

Engaging Partners across Sectors

DRI will engage cross-sector partners to identify needs, develop solutions, and co-produce technologies

Driving Research & Development

DRI will conduct innovative, use-inspired research to develop new methods and knowledge, translating technology into practice.

Translating Innovation into Action

DRI partners focus on innovation & commercialization of tech to improve decision-making, reduce insurance burdens, & close educational gaps.

Building Workforce Capacity

DRI will create a new risk reduction economy by professionalizing disaster risk reduction & building a new workforce.

Fostering Strategic Regional Investment

DRI will establish a self-sustaining engine by activating regional funders & founders and emphasizing long-term impact through scalable, commercialized tech.

With $146 million in committed resources from 39 partners, and 131 cross-sector collaborators, DRI will transform community adaptation to flood and wind risks by developing a scalable, sustainable model to identify, validate, and deploy co-produced soft technologies.

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Long-term outcomes of Louisiana DRI

Estimated $4 –$11 cost savings per $1 invested*

30 –50% savings on recovery costs*

40% reduction in damage costs & insurance*

Doubling employment in relevant fields*

Up to 10% annual growth in risk reduction industries*

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*Based on published research and results of complementary initiatives

Louisiana DRI: Transforming Gaps into Solutions

Breaking Down Silos

DRI is uniting diverse experts for rapid, proactive, and coordinated disaster risk reduction solutions.

Scaling Innovations

DRI is turning breakthrough solutions into market-ready technologies.

Unifying Data

DRI is simplifying, and making data more accessible for smarter, pro-active decision making.

Empowering Communities

DRI is engaging local voices to tailor effective, real-world solutions.

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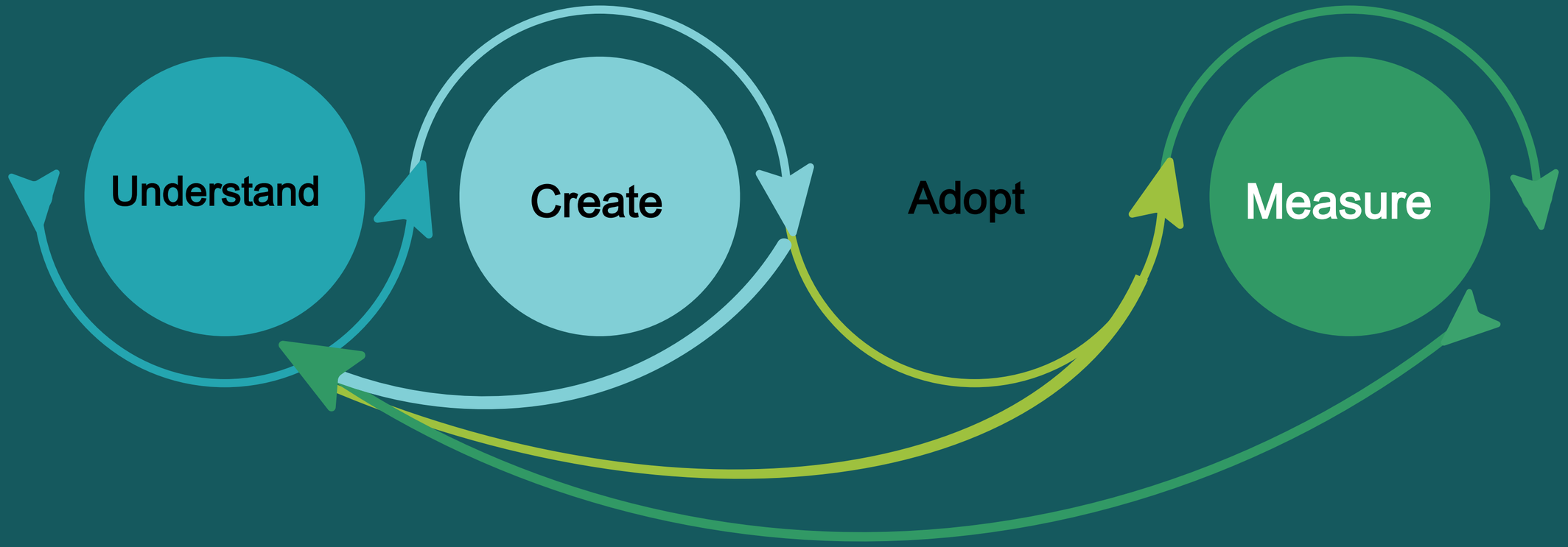

The DRI Participatory Co -Creation & Solution Process

a collaborative and community -engaged process that integrates problem identification, co -created solutions, structured adoption, and participatory evaluation to drive sustainable impact.

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DRI is a Bridge -Building Coalition of Partners

designed to significantly reducing flood and wind risk in South Louisiana

Collaboration & Communication Across Partners

Open dialogue, knowledge exchange, and collective problem-solving among diverse organizations and sectors.

Shared Resources & Data

Pooling resources & expertise maximizes efficiency; transparent data sharing provides insights, identifies gaps, and drives innovative solutions.

Unified Goals

Clear objectives to align everyone with the broader vision, empowering partners to contribute unique capabilities for stronger outcomes.

Continuous Feedback & Adaptation

Ongoing evaluation for real-time responses to changes and fostering a resilient, future-ready ecosystem.

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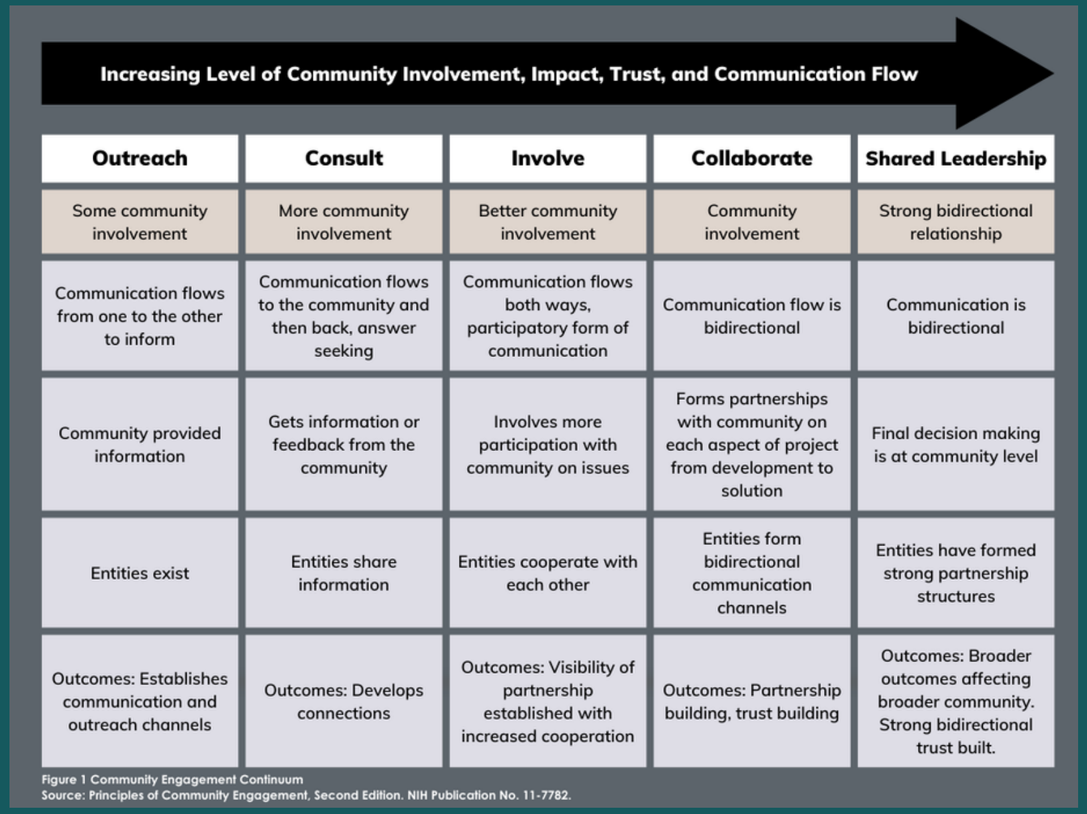
Community Integration: Co-Development & Engagement Framework



Increasing Level of Community Involvement, Impact, Trust, and Communication Flow

Outreach	Consult	Involve	Collaborate	Shared Leadership
Some community involvement	More community involvement	Better community involvement	Community involvement	Strong bidirectional relationship
Communication flows from one to the other to inform	Communication flows to the community and then back, answer seeking	Communication flows both ways, participatory form of communication	Communication flow is bidirectional	Communication is bidirectional
Community provided information	Gets information or feedback from the community	Involves more participation with community on issues	Forms partnerships with community on each aspect of project from development to solution	Final decision making is at community level
Entities exist	Entities share information	Entities cooperate with each other	Entities form bidirectional communication channels	Entities have formed strong partnership structures
Outcomes: Establishes communication and outreach channels	Outcomes: Develops connections	Outcomes: Visibility of partnership established with increased cooperation	Outcomes: Partnership building, trust building	Outcomes: Broader outcomes affecting broader community. Strong bidirectional trust built.

Figure 1 Community Engagement Continuum
Source: Principles of Community Engagement, Second Edition. NIH Publication No. 11-7782.

- All voices are heard and involved in decision-making.
- Opportunities for diverse stakeholders to collaborate, share insights, and shape solutions.
- Accessible engagement channels to lower barriers and foster involvement.
- Access to clear, timely updates to build trust and accountability.
- Opportunities to provide ongoing input to adapt approaches based on community feedback.
- Co-developed community resources for lasting resilience.

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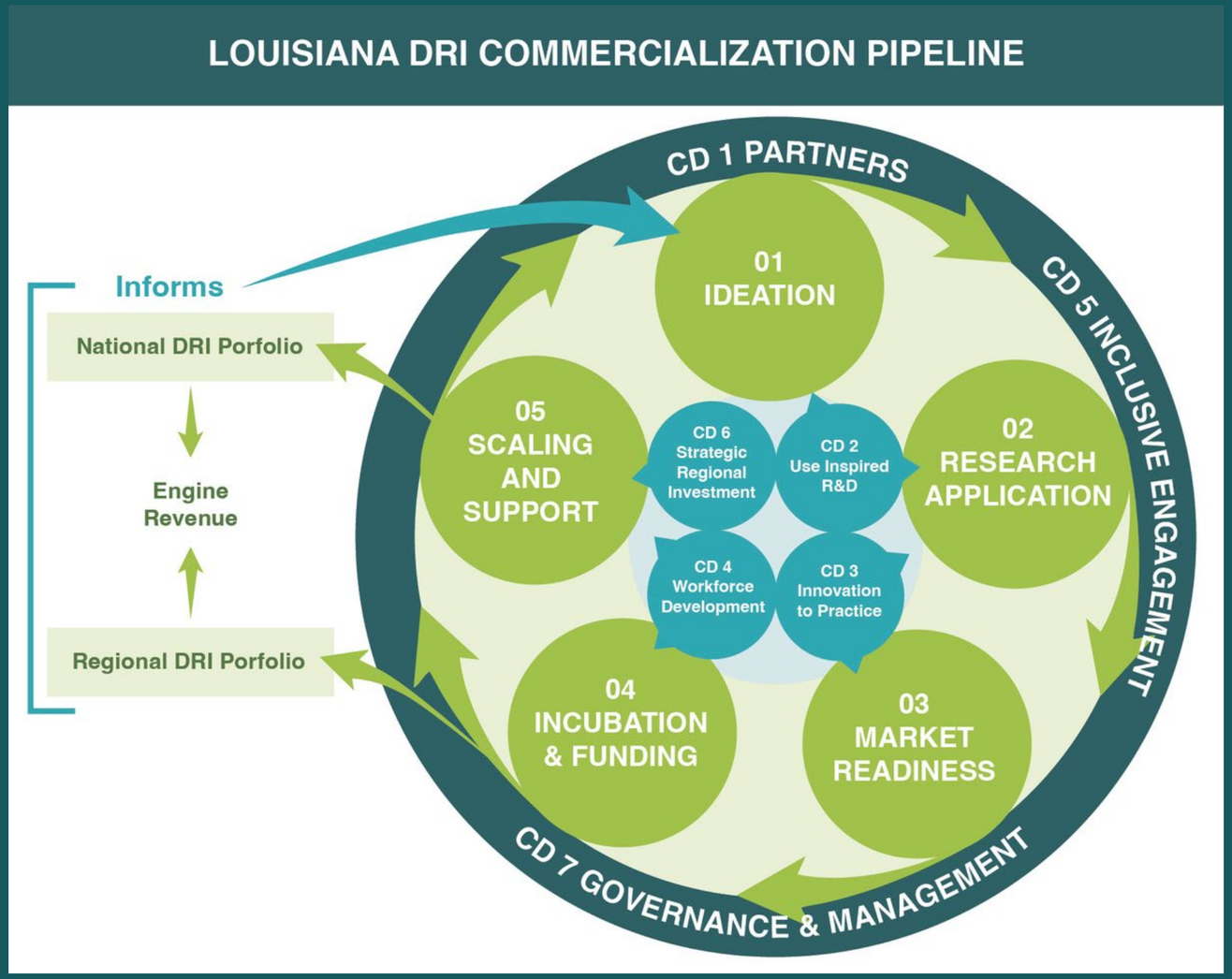

DRI COMMERCIALIZATION STRATEGY

The DRI Commercialization Pipeline is an Innovation Catalyst

DRI bridges academic research and industry to accelerate the commercialization of disaster resilience solutions, reducing duplication and streamlining startup incubation. By connecting agencies, universities, and investors, it drives market-ready innovations that enhance regional and national economic resilience.

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Opportunities to collaborate & be involved in Louisiana DRI

We need to know how you and want to collaborate toward DRI's mission.

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- Serve on a technology co-production team to provide feedback to DRI
- Beta test new technologies
- Serve on a community of practice and/or cross-group solution team
- Develop and submit a business startup proposal for funding from DRI
- Develop and submit collaborative research proposal for funding from DRI
- Develop and submit a collaborative technology proposal to be created within DRI
- Help organize community education, training, and public awareness campaigns
- Create and implement community resiliency plans using DRI resources, including floodplain management and disaster preparedness and response
- Advocate and secure funding and resources for DRI initiatives
- Conduct and publish collaborative research
- Collaborate and support workforce development initiatives
- Teach a course using DRI-provided curriculum
- Develop or enhance a university program to include a series of DRI-related courses
- Attend DRI training sessions or meetings
- Receive communication from DRI

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Questions & Discussion

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THANK YOU

PLEASE COMPLETE THE
COLLABORATION FORM

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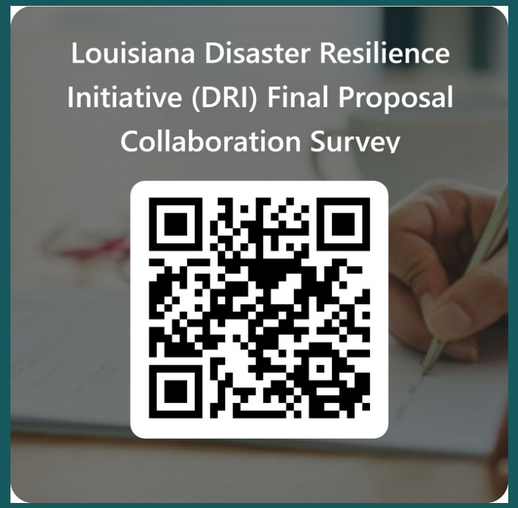

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