

Women Entrepreneurs *Grow Global*

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GLOBALCARE
CLINICAL TRIALS



11:00 a.m. CST

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Small Startup, Big Global Impact

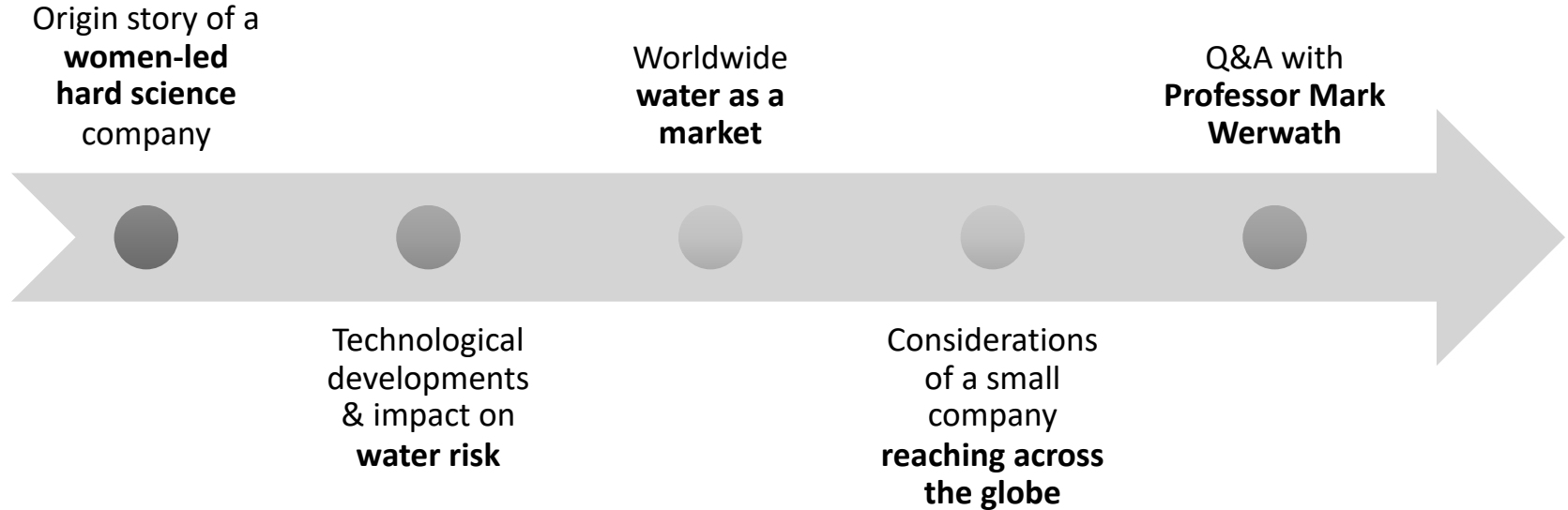
Katie Kollhoff, CEO, NUMiX



Moderator: Mark Werwath,
PhD, PMP

Northwestern | MCCORMICK SCHOOL OF ENGINEERING
Master of Engineering Management

Our Journey Together Today



The
NUMiX
MATERIALS
Origin Story

Identify fit

- De-risk

Develop skills

- De-risk

Build business

- De-risk

When you find someone who makes
work joyful, make it work.

Identify fit

- De-risk

Develop skills

- De-risk

Build business

- De-risk

Subsequent course work to de-risk!
Does it work?
How does it work?
How do we solve problems as a team?



10 week course: build team, skills and idea



Farley Center for
Entrepreneurship + Innovation
NORTHWESTERN UNIVERSITY

Northwestern
INSTITUTE FOR
SUSTAINABILITY AND ENERGY



We **fit** together at the intersection: Water & hazardous metal waste

Engineering
Management
(Chemical)
Hazardous Materials
Process Performance
Analysis & Safety
Consulting

MS Law (IP) &
Mechanical Engineer
Project Management
Nuclear remediation
research



Ian Weise

Katie
Kollhoff

Laurelle
Banta



Olivia Lugar



Matt Heise



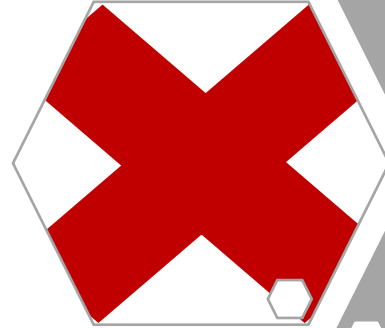
Engineering
Management
(Mechanical)
Equipment Design
Water/wastewater
& energy processes

Engineering
Management
(Materials)
Metallurgy +
Foundry Operations

JD
International strategy
& business
Solid waste runs in
the family!

Project teammates self-selected!

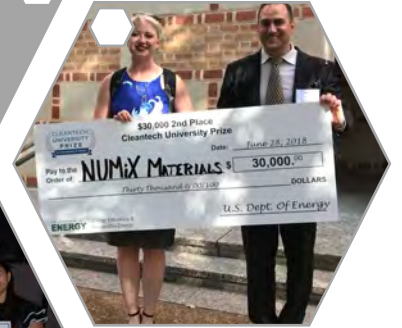
We sought, analyzed, and integrated
coaching and feedback.



Northwestern
University's
VentureCat



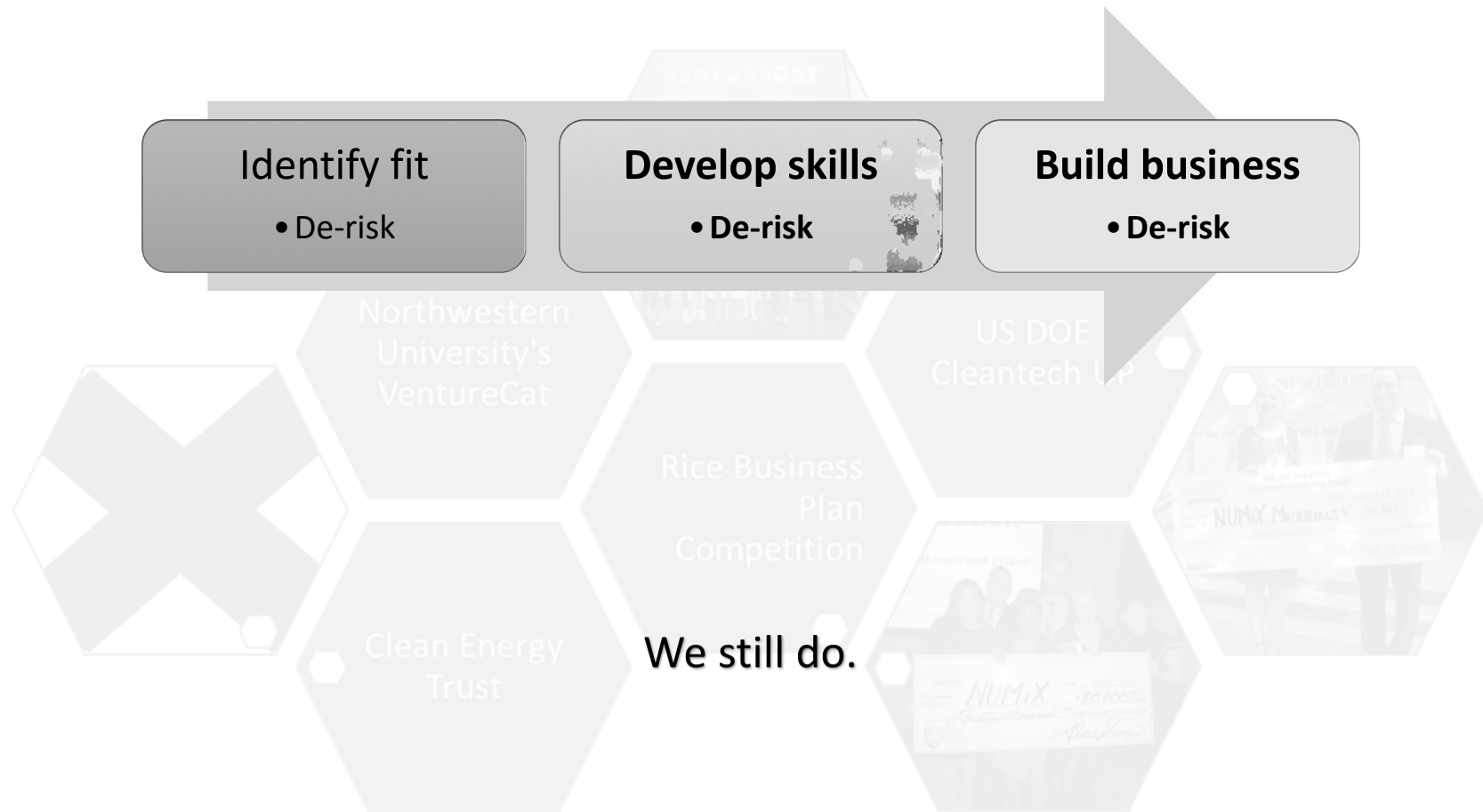
US DOE
Cleantech UP



Rice Business
Plan
Competition



Clean Energy
Trust



In our **culture**,
we **ask** why,
we **examine** horizons,
and we **grow** from every lesson.



Complementary interests, skills &
growth mindset are key to building.



Culture is worth talking about,
early and often.



What you want to see
is what you should be.

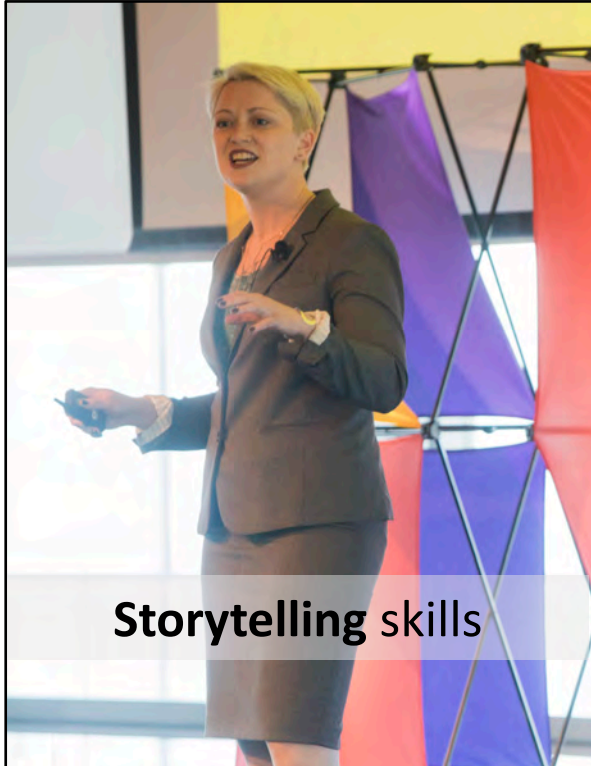


Difficult conversations liberate
when done early and well.

Engineering
Workshops
Materials
Innovation
Community



Technical skills



Storytelling skills



Marketing skills

Identify fit

- De-risk

Develop skills

- De-risk

Build business

- De-risk

We grow into award-winning team!



Identify fit

- De-risk

Develop skills

- De-risk

Build business

- De-risk

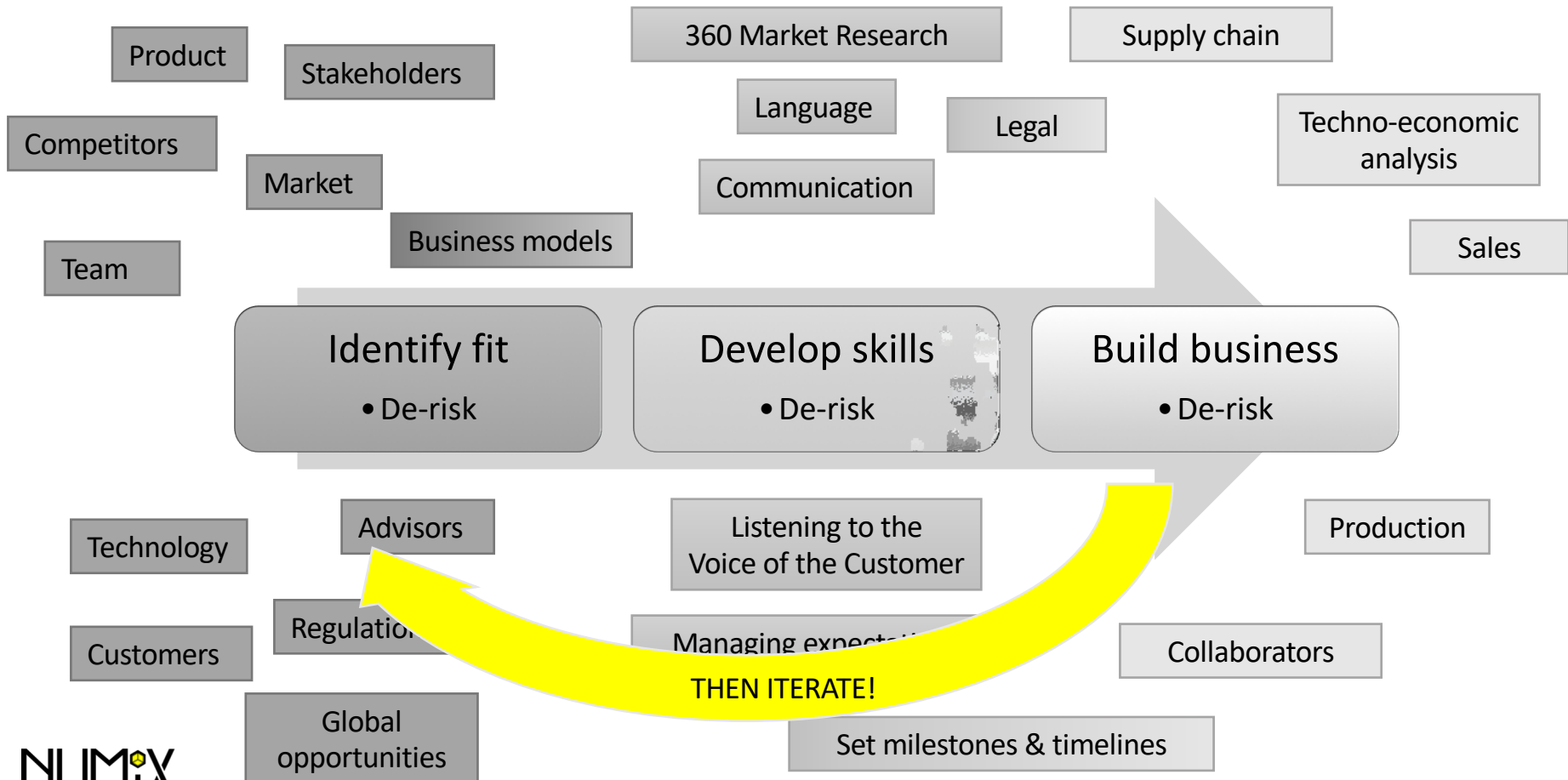
VentureCat



NUMiX Materials raised \$140k in cash and grants in 3 months



With a capable and cohesive and communicative team,
everything else is just problem solving.

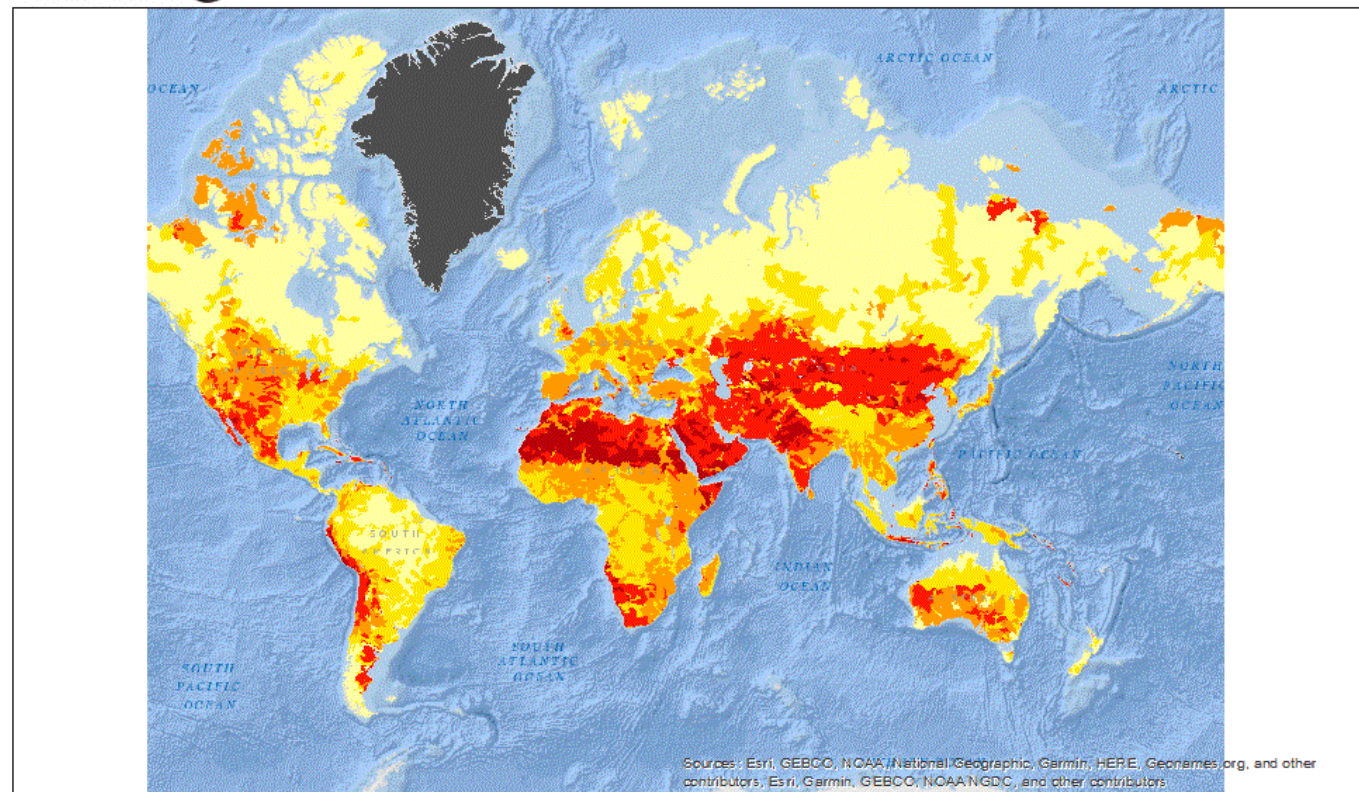


WHAT DRIVES US

Tech developments & growing water risk

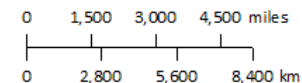
- Globally, mining, processing, finishing, using, and disposing of metals results in metal-laden water, poisoning the well in a time of growing water crisis.
- Just the one microchip plant in Burlington, Vermont, makes 2 million gallons of ultrapure water a day for use in manufacturing semiconductors. and there are dozens of chip plants around the world. This ultrapure water immediately dissolves out metal particles.
- Making LCDs requires heavy metals such as mercury, cadmium, chromium, zinc and copper. Foxconn is building a plant in Wisconsin that will draw 7 million gallons of water a day from Lake Michigan.

Global Water Risk Today

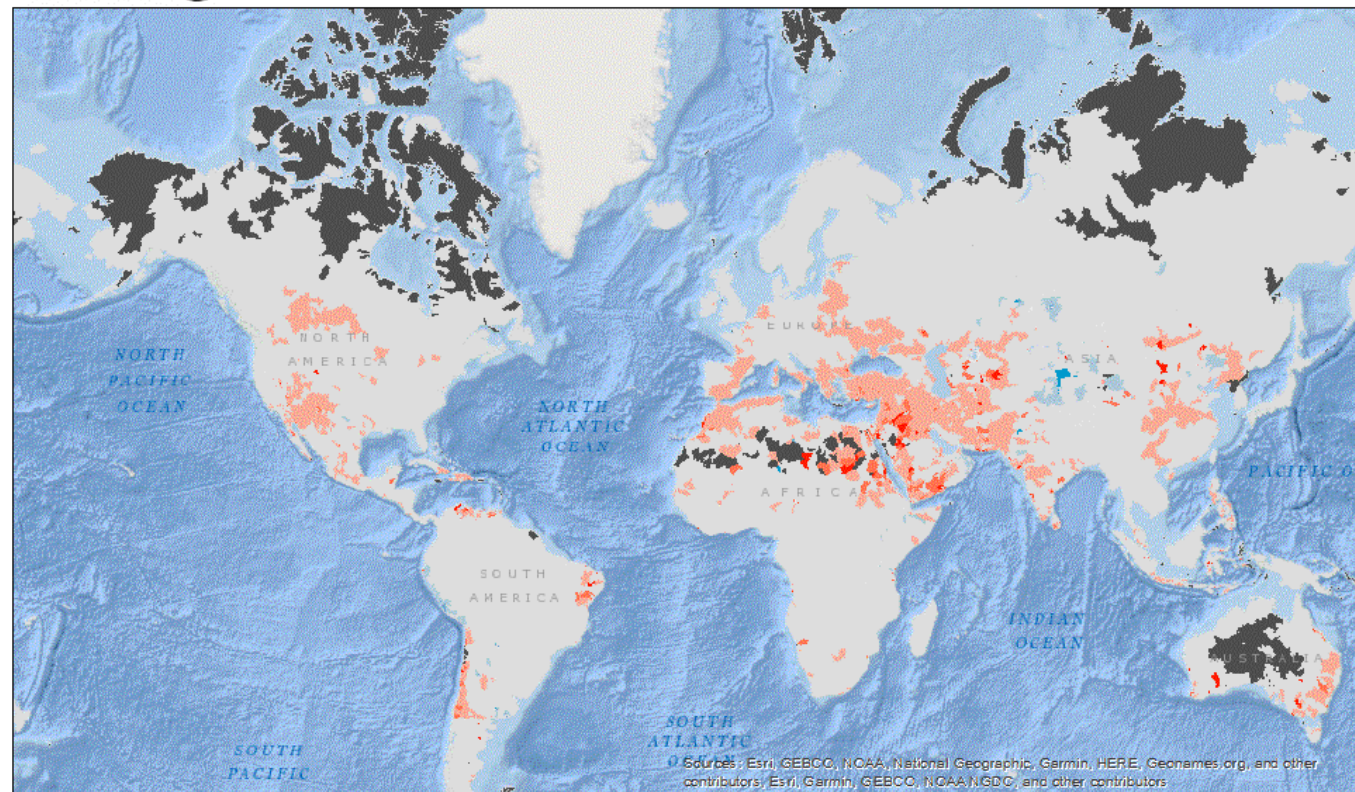


Overall Water Risk

Legend:



Global Water Risk Tomorrow



Projected change in water stress (Change from baseline to 2020 business as usual)

Legend:

ws2028cl

2.8x or greater decrease

2x decrease

1.4x decrease

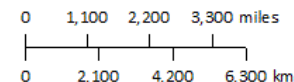
Near normal

1.4x increase

2x increase

2.8x or greater increase

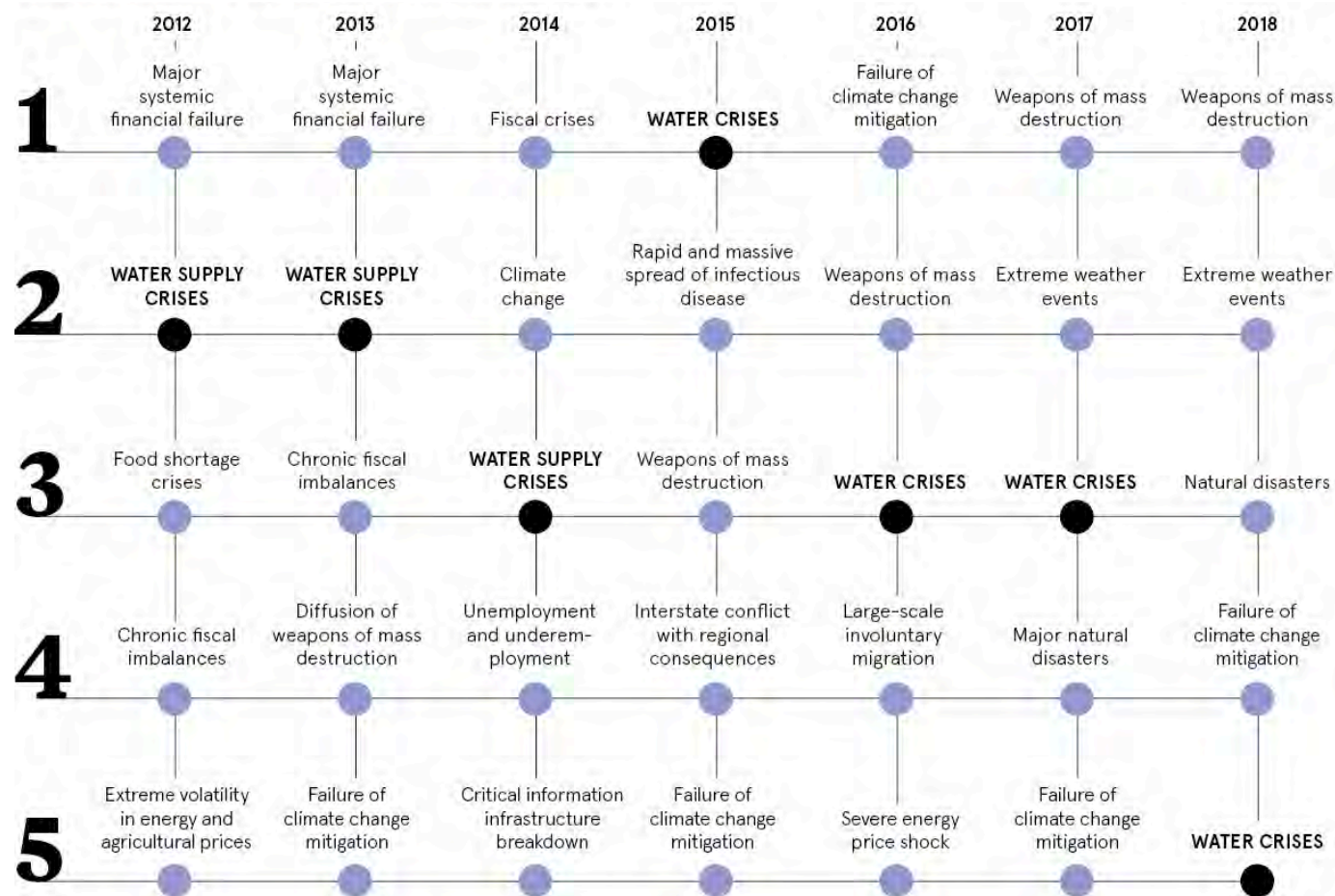
No data



Materials LLC 2018

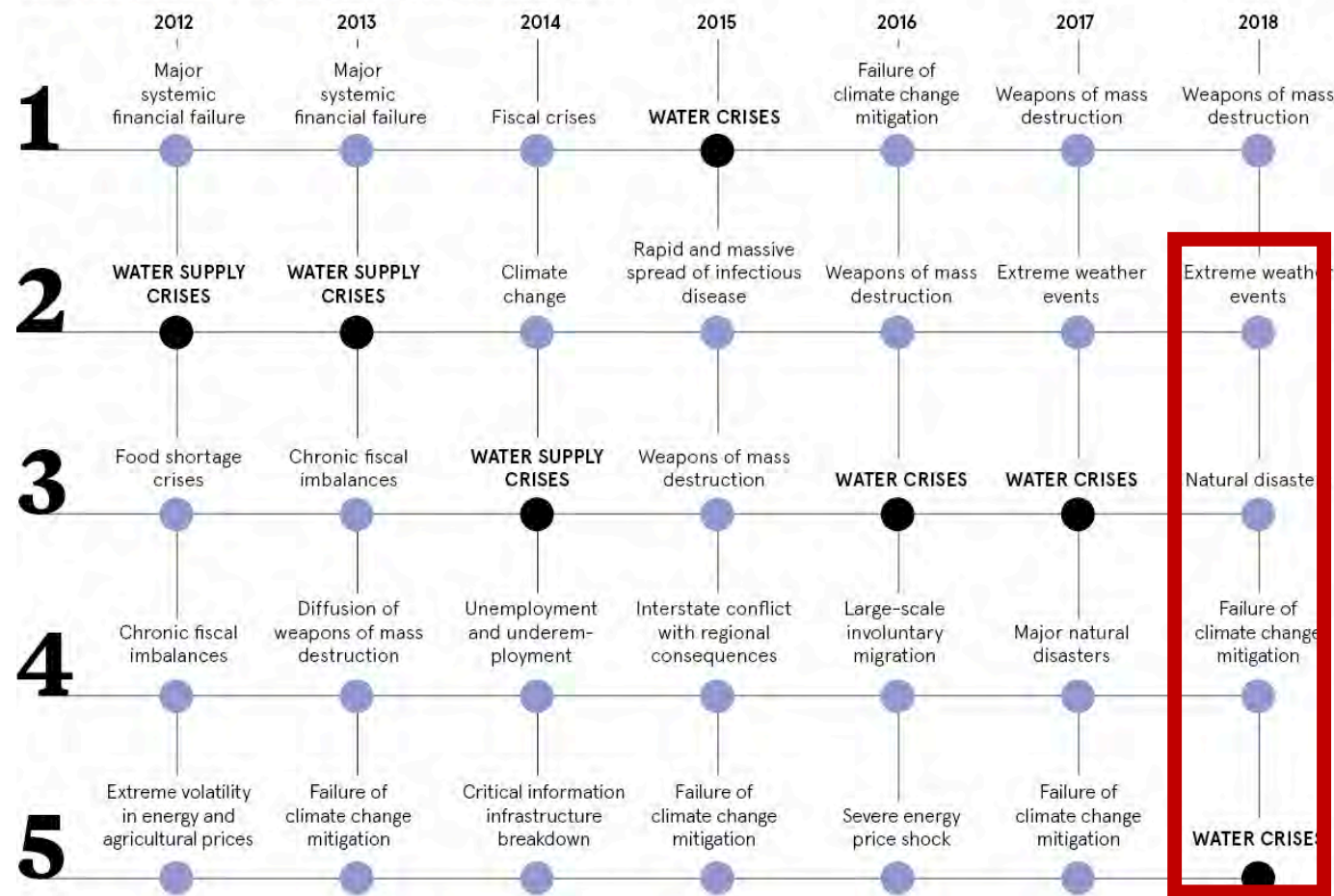
TOP GLOBAL IMPACTS

Water is
among
TOP FIVE
7 years running

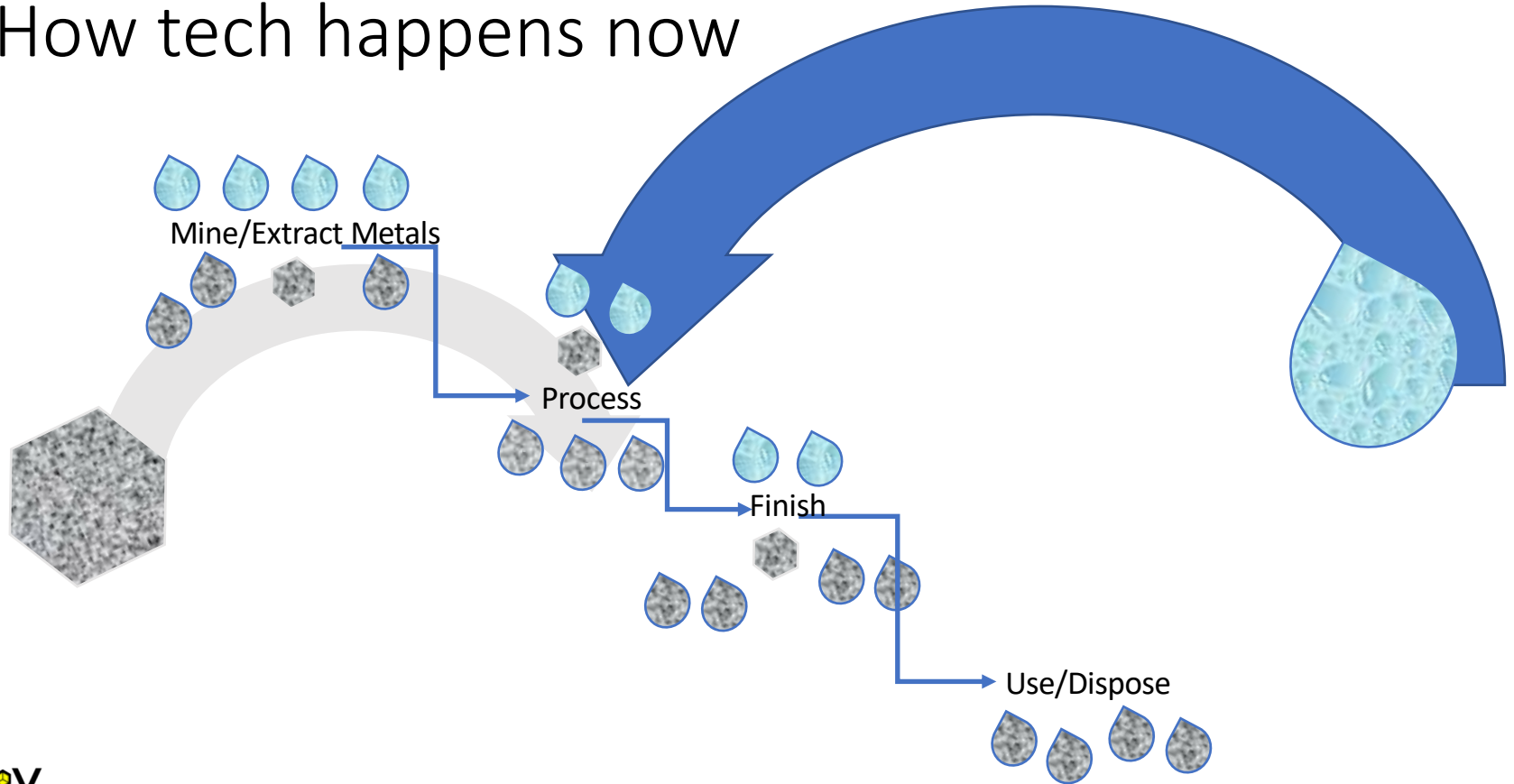


TOP GLOBAL IMPACTS

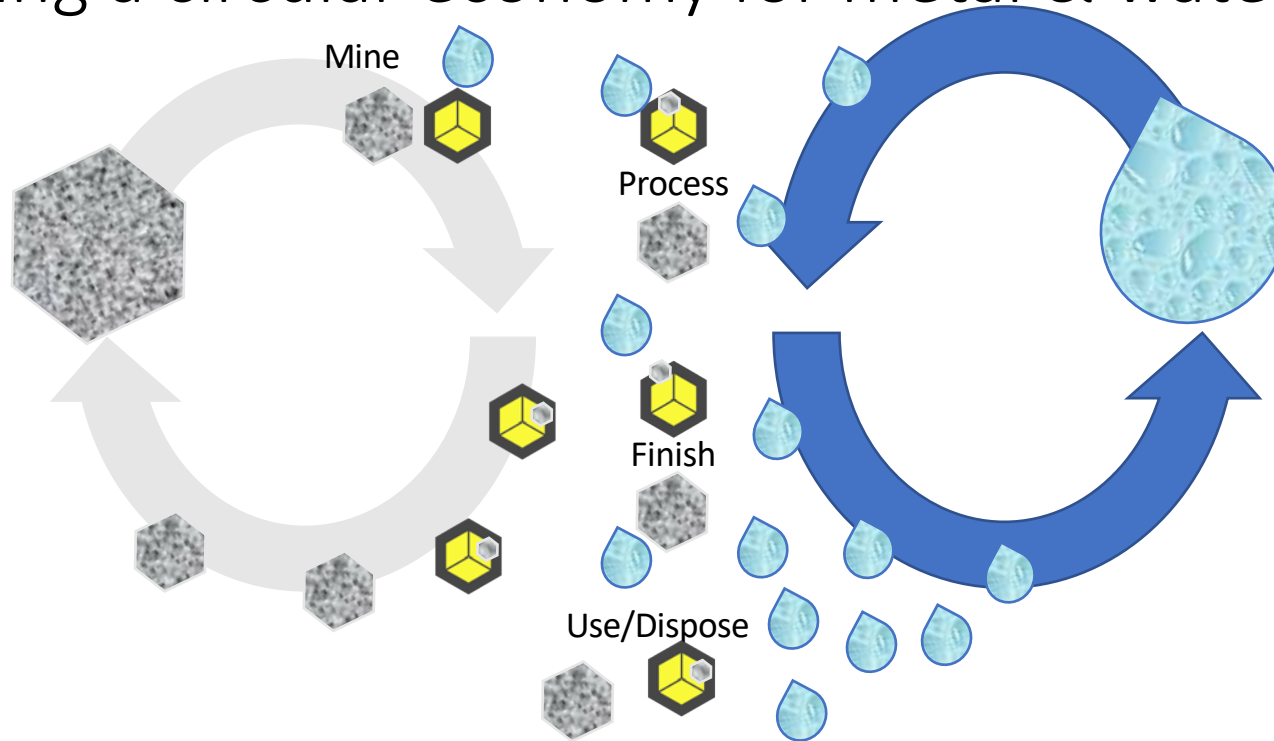
And is implicated in others!



How tech happens now



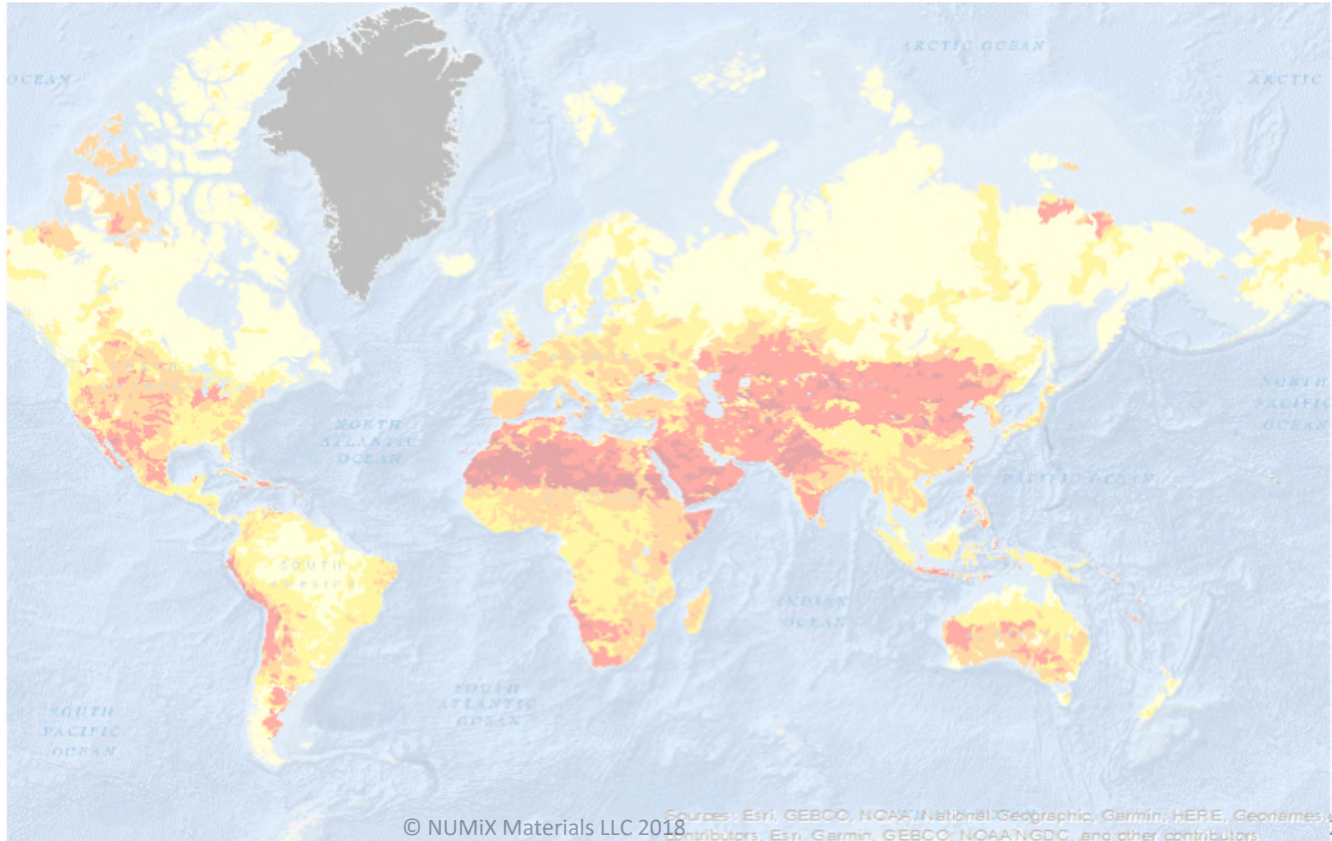
THE NUMIX VISION: Enabling a circular economy for metal & water



WATER, WATER EVERYWHERE: Worldwide water as a market



Water crises exist or arise across the globe.



United Nations: “Water is critical for sustainable development & eradication of hunger & poverty.”



SUSTAINABLE DEVELOPMENT KNOWLEDGE PLATFORM



HOME

HIGH-LEVEL POLITICAL FORUM

STATES

SIDS

SDGS

TOPICS

UN SYSTEM

STAKEHOLDER ENGAGEMENT

PARTNERSHIPS

RESOURCES

ABOUT

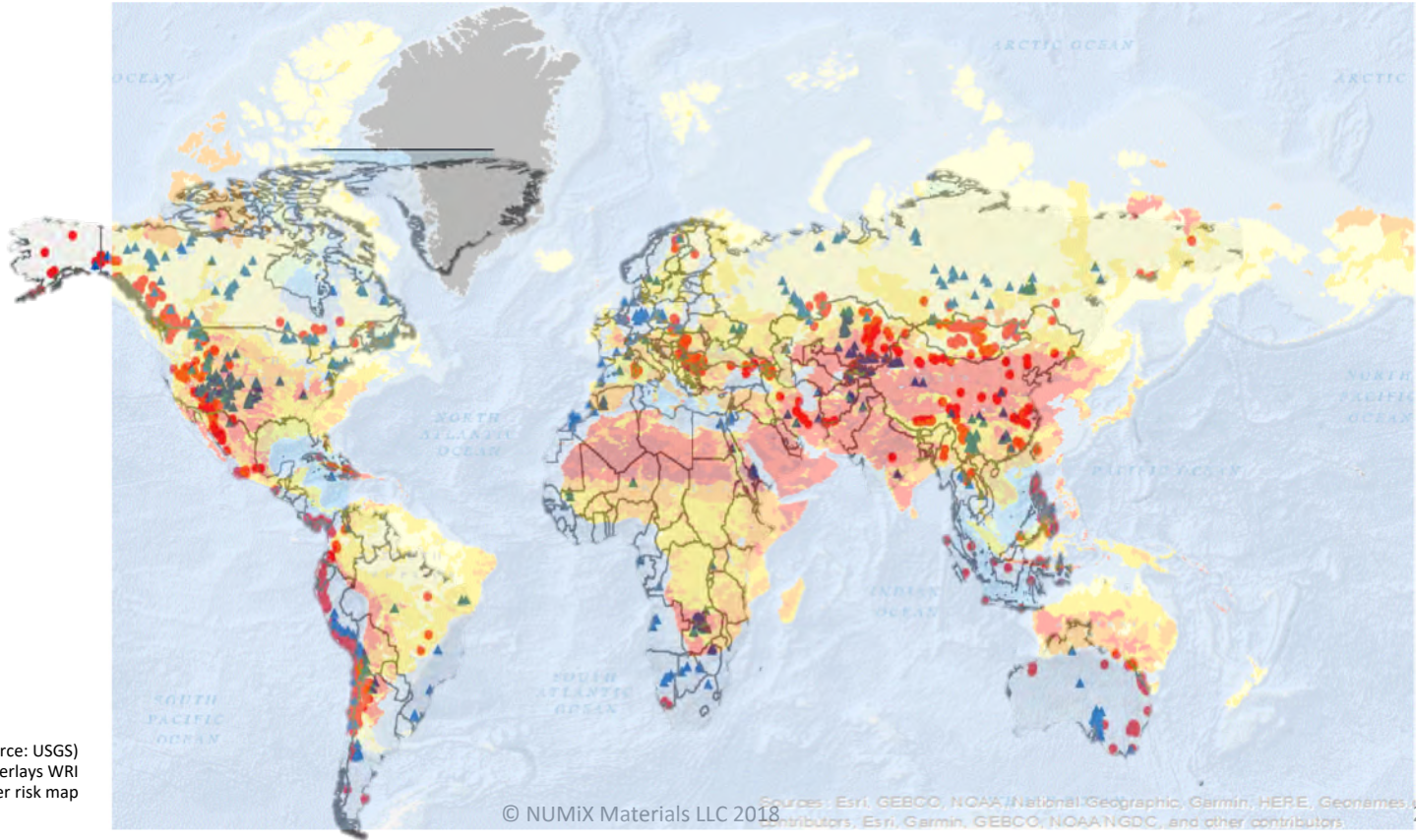
WATER ACTION DECADE



2018 - 2028

Source: <https://sustainabledevelopment.un.org/wateractiondecade>

Copper deposits alone point to future stress.



Copper deposits map (source: USGS)
overlays WRI
water risk map

Many enterprises are developing solutions.



▲ The Ja-Hmad's system of fog nets. Bigger nets will be installed in 2017. Photographs: Sam Ja-Hmad

Source: <https://www.theguardian.com/global-development/2016/dec/26/cloud-fishing-needs-in-precious-water-villagers-rural-morocco-dar-el-hmad>

From cloud fishing/fog harvesting...



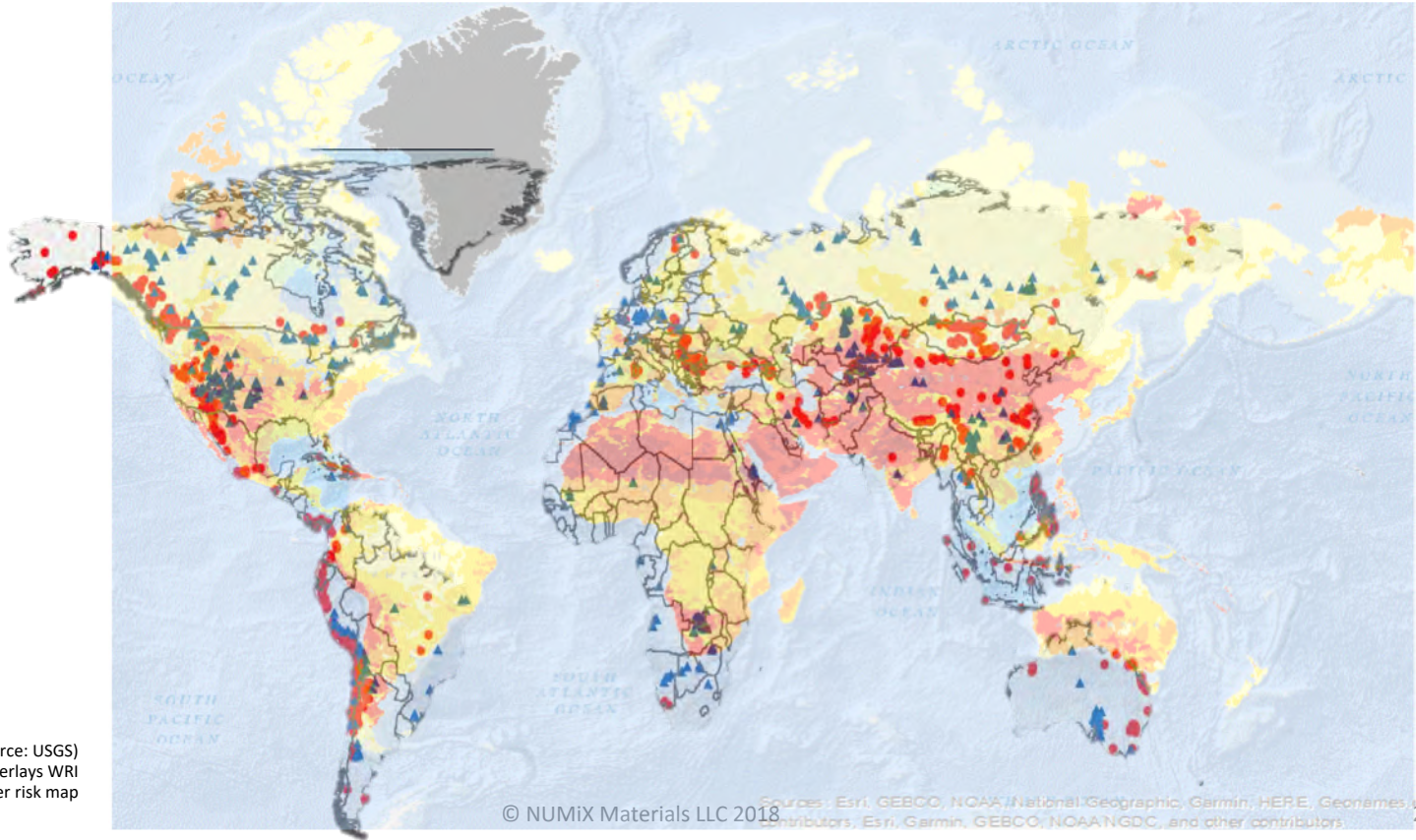
▲ Photograph: Water is Life

Source: <https://waterislife.com/>



...to drinkable books.

We provide a small piece of the global puzzle.



Copper deposits map (source: USGS)
overlays WRI
water risk map

Considerations of a Small Company Reaching Across the Globe

We are constantly thinking about:

- Point of Entry
- Point of Need
- Strategy to Going Global
- Drivers of adoption of water technology
- International stakeholders & adjusting to time zones!
- Production, shipping, monitoring
- Legal & regulatory differences
- Cultural and customary differences

Time for your questions!

Moderator: Prof. **Mark Werwath**

Northwestern University's Master of Engineering
Management & Farley Center for Entrepreneurship and
Innovation

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CLINICAL TRIALS



11:00 a.m. CST

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How to Make Your Global Online Shoppers Feel at Home Wherever They Are



Cristina Bandal,
Industry Segment Manager:
Retail and Consumer Goods, UPS