



Adaptation and Resilience: Introduction and Business Models



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SESSION RULES



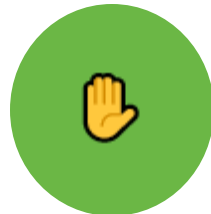
A face to a name

Please have your video on if you can.



Microphone etiquette

Please mute when you are not speaking.



Conversation style

Feel welcome to raise your hand and we will come to you for questions/comments.



AGENDA

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Introduction



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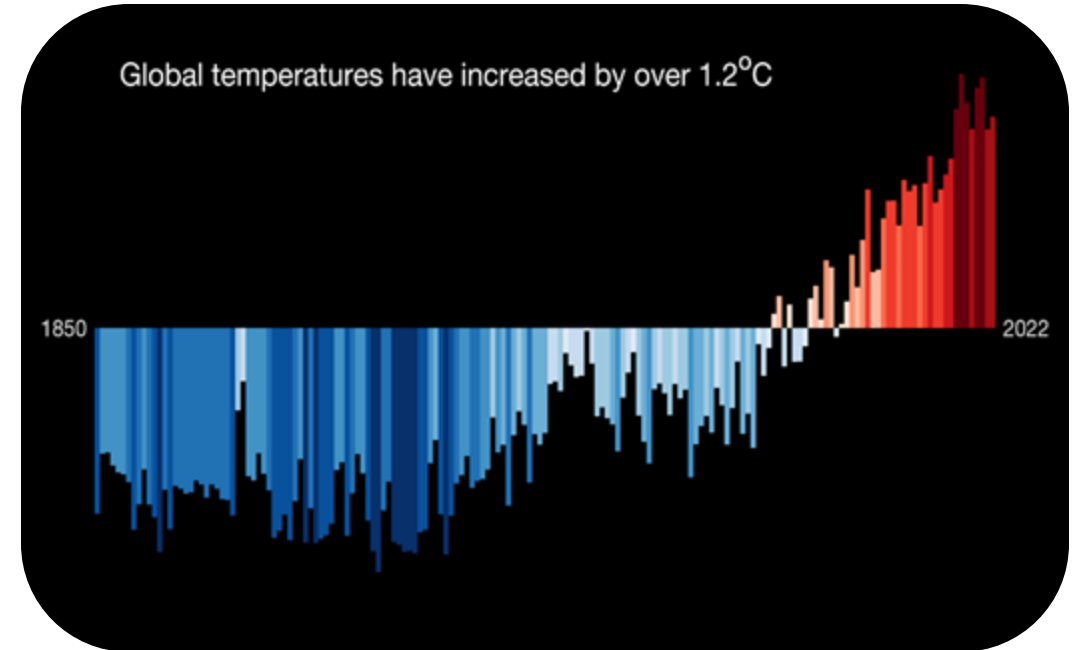
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The world is warming rapidly

- Currently at 1.2°C above pre-industrial global temperatures
- Individual months in 2023 shattered previous records
- 2023 set to be warmest year on record, exceeding 1.5°C
- We will consistently breach this threshold by 2030s





Warming is making many climate hazards worse

HEAT
EXTREMES



DROUGHT



WILDFIRES



STORMS



FLOODS



SEA-LEVEL
RISE



With intensifying impacts on

Water
supplies

Ecosystems

Disaster risk

Infrastructure

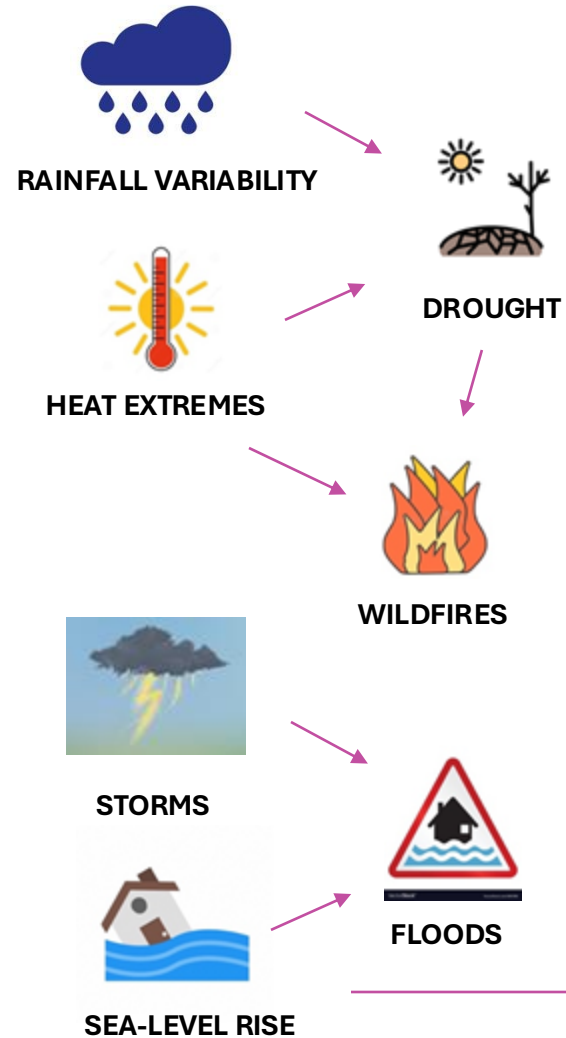
Agricultural
production

Supply
chains

Health



Intensifying hazards



Primary impacts

- Water stress + demand
- Heat stress (plants, animals, people, infrastructure)
- Agricultural yields
- Pests & diseases

Forest & ecosystem loss
Damage to agriculture
Damage to infrastructure
Transport, comms disruption
Shifts in ecological ranges
Loss of settlements

Erosion, inundation, salinization

Secondary impacts

Increased costs

Income & livelihoods

Supply chain disruption

Food prices & insecurity

Increased poverty

Worsening health

Migration

Insecurity

High temperatures exacerbated by climate change made 2022 Northern Hemisphere droughts more likely

Climate change, not El Niño, main driver of exceptional drought in
highly vulnerable Amazon River Basin



Drought & wildfire, Bolivia (Source: [WWA & EU](#))

Likelihood of Cape Town water crisis tripled by climate change



Drought, Southern Ethiopia, 2022 (Source: [EU/Flickr](#))

Climate change increased heavy rainfall, hitting vulnerable communities in Eastern Northeast Brazil

Climate change likely increased extreme monsoon rainfall, flooding highly vulnerable communities in Pakistan



Climate change exacerbated heavy rainfall leading to large scale flooding in highly vulnerable communities in West Africa



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Reducing vulnerability and improved land management needed with increasing heavy rainfall in Mindanao Island, southern Philippines



EXERCISE 1 – Hazards & impacts

- Identify one or more key climate **hazards** that affect the sector, context, or geographical area in which you live and work – are these changing?
- What **impacts** are associated with these hazards – what problems do they cause for your sector, business, community, or other stakeholders?



EXERCISE 1 – Hazards & impacts

Hazards	Impacts
Increased rainfall variability	Shifts & unpredictability in start & end of rainy seasons, increased risk of dry periods within growing season – seed & crop losses
Higher temperatures & lower rainfall	Increased evapotranspiration, reduced soil moisture – reduced productivity
More intense rainfall	Crop damage, soil erosion, flooding, infrastructure damage



Adaptation & Resilience in detail



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Importance of Climate Adaptation and resilience

*Without adaptation and resilience, communities can face **severe disruptions**, ranging from extreme heat waves to flooding. By planning and taking action, we can mitigate the risks and protect our future.*



Reduces Vulnerability & Builds resilience

- Enhances ability to cope with climate impacts
- Promotes flexibility to unexpected changes



Protects Livelihoods & Ecosystems Supports Economic Sustainability

- Safeguards agriculture, biodiversity, and natural resources.
- Safeguards infrastructure and industry



Improves Public Health

- Minimizes climate-related health risks



Encourages Proactive Planning

- Allows for anticipating and planning for future challenges



Importance of Climate Adaptation and resilience: **Preparedness**

Drought-Resistant Crops

Selectively bred crops can survive with less water and high temperatures.

Vertical Farming

Growing crops in stacked layers indoors allows for year-round farming with controlled water and light, which is useful in regions with extreme weather.





Importance of Climate Adaptation and resilience: **Resilient Agriculture**

Early Warning Systems

Warn of imminent extreme weather events, allowing people to prepare or evacuate.

Floating Architecture

In flood-prone regions, buildings and even farms are being designed to float.

Green Roofs and Walls

Absorb heavy rainfall, reducing flood risks, and also provide insulation, reducing energy costs.





Importance of Climate Adaptation and resilience: **Water systems**

Rainwater Harvesting

Simple systems to collect and store rainwater can help communities become more resilient to droughts. Reuse of stormwater, reducing the risk of flooding and soil erosion.

Managed Aquifer Recharge (MAR)

Involves storing excess water (from rainfall, treated wastewater, or other sources) underground in natural aquifers for later use. This water can be pumped back to the surface when needed.

Desalination Technology

Removing salt and other impurities from seawater to produce freshwater.





Importance of Climate Adaptation and resilience: **Nature-based solutions**

Mangrove forests

Natural barriers against coastal erosion and flooding. They absorb and disperse the energy from storm surges and even tsunamis, providing a protective buffer for coastal communities.

Agroforestry

combines agriculture and forestry practices to create more diverse, productive, and sustainable land-use systems. Trees are planted alongside crops or pastureland to provide shade, improve soil quality, and reduce erosion.

Oyster beds

Natural barriers that stabilize shorelines and reduce the impact of waves and storm surges. Like coral reefs, they also act as natural water filters, improving water quality.





Risk, Resilience & Adaptation

Understanding key terms and concepts & their relevance in terms of business



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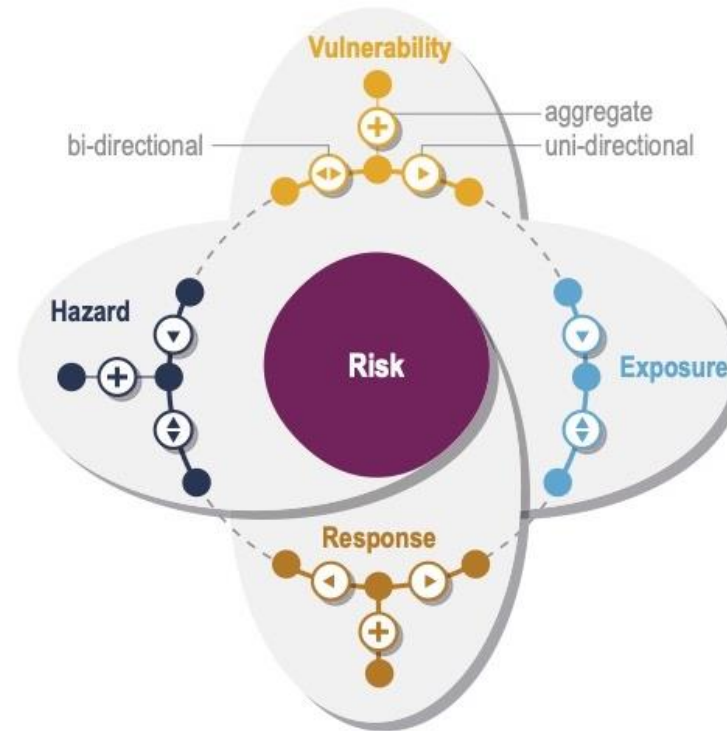




Worsening impacts mean increasing risks

Vulnerability: Susceptibility of population/system to harm when exposed to a hazard

Hazard: Potentially harmful manifestation of climate change (shock, stress, extreme, trend), reduced through mitigation



Exposure: Number of people, amount/value of assets in an area affected by a hazard

Response: Actions taken to address hazards that might reduce or inadvertently increase risk – responses themselves can be/create risks

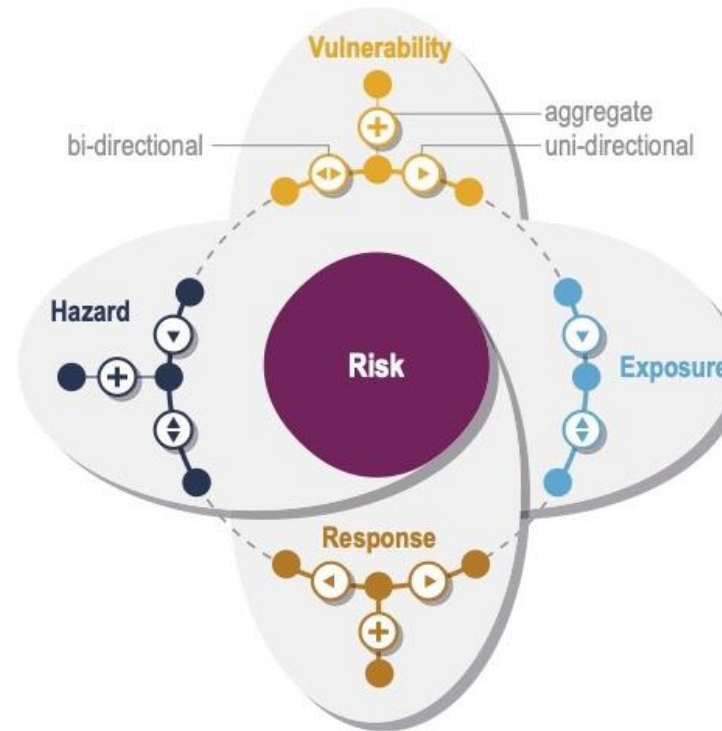


Reducing climate change risks

Reduce vulnerability - Improve ability of people, organisations, systems, to cope with & adapt to climate change impacts

Key adaptation & resilience building opportunities for businesses

Reduce hazards
Reduce emissions (mitigation)
Reduce likelihood & magnitude of floods, landslides, etc. through local physical interventions



Reduce exposure
Relocate settlements, people, infrastructure, economic activity - away from high-risk areas
- winners & losers, can increase risk for some

Better responses - Ensure short-term responses provide foundation for effective, sustainable & equitable adaptation in longer-term

Different ways of reducing risk

Mitigation

Avoiding and reducing emissions of heat-trapping greenhouse gases & enhancing sinks to sequester & store them.

Addresses root causes of climate change & reduce hazards

Resilience

Capacity of people or systems to anticipate & absorb shocks & recover from their impacts

Reduce vulnerability to a range of often familiar hazards

Adaptation

Adjustments that enable populations and systems to survive or function under new environmental or climatic conditions

Reduce vulnerability to new & emerging hazards



RELATIONSHIP BETWEEN ADAPTATION & RESILIENCE

Resilience building activities generally focuses on existing hazards and risks, albeit ones that are most likely evolving due to climate change; often pays little or no attention to specific future risks

BUT

Difference between adaptation & resilience

Resilience to climate change necessarily involves adaptation to new hazards & risks

Resilience as capacity to **anticipate** hazards, **absorb** & **recover** from their impacts, **adapt** to new hazards & risks, and **transform** where existing systems and behaviours are unviable under climate change

Important to specify risk, vulnerability, resilience and/or adaptation *of whom (population or system), to what (hazard), in relation to what impacts, and over what timescale(s)?*



AVOIDING MALADAPTATION

Maladaptation: actions that may lead to increased *risk* of adverse climate-related outcomes, including via increased *greenhouse gas (GHG) emissions*, increased or shifted *vulnerability to climate change*, more inequitable outcomes, or diminished welfare, now or in the future (IPCC 2022: 2915)

Avoid actions that displace risks, create new risks, increase the vulnerability of other (non-target) populations & systems, and deliver short-term benefits at expense of longer-term sustainability

- Consideration of maladaptation addresses ‘response’ element of risk

E.g., irrigation to address increasing water scarcity that is not sustainable and depletes groundwater reserve to point where agricultural systems collapse



EXERCISE 2 – ADAPTATION & RESILIENCE APPROACHES

Hazards	Impacts	Adaptation/resilience approaches
Increased rainfall variability	Shifts & unpredictability in start & end of rainy seasons, increased risk of dry periods within growing season – seed & crop losses	
Higher temperatures & lower rainfall	Increased evapotranspiration, reduced soil moisture – reduced productivity	
More intense rainfall	Crop damage, soil erosion, flooding, infrastructure damage	

- What approach(es) might we use to address the risks identified in Exercise 1?
- Are there any risks of maladaptation? If so, how would you address them?



EXERCISE 2 – ADAPTATION & RESILIENCE APPROACHES

Hazards	Impacts	Adaptation/resilience approaches
Increased rainfall variability	Shifts & unpredictability in start & end of rainy seasons, increased risk of dry periods within growing season – seed & crop losses	Resilience of existing agricultural systems through forecasts, insurance, water storage, irrigation Adaptation – drought tolerant & short-season crops
Higher temperatures & lower rainfall	Increased evapotranspiration, reduced soil moisture – reduced productivity	Resilience through systematic irrigation Adaptation – drought tolerant crops
More intense rainfall	Crop damage, soil erosion, flooding, infrastructure damage	Resilience - flood early warning systems, resilient infrastructure, land cover Adaptation – relocating infrastructure & activities away from high-risk areas

Maladaptation risks: sustainability of irrigation under scenarios of lower rainfall, higher temperatures and declining groundwater; risks livelihoods, food security & local economies reliant on become reliant on unsustainable irrigated agriculture that is liable to future collapse.

Potentially reduced by ensuring irrigation is highly efficient, assessing conditions under which it fails, & regularly monitoring groundwater resources



The Climate Causality Framework

From impacts to opportunities



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Adaptation/resilience as an opportunity for business

- Intensifying climate change hazards and impacts pose severe risks to ecosystems, livelihoods, food production, water security, infrastructure, health, economy
- These risks need to be addressed through resilience & adaptation
- This means opportunities for the private sector to drive adaptation innovation, often with support from donors & multilateral climate funds that recognize limits of conventional projects
- Taking these opportunities requires understanding of what is needed to address impacts





Adaptation & resilience as an opportunity for business

Sub-section title to go here.

- Intensifying climate change hazards and impacts pose severe risks to ecosystems, livelihoods, food production, water security, infrastructure, health, economy
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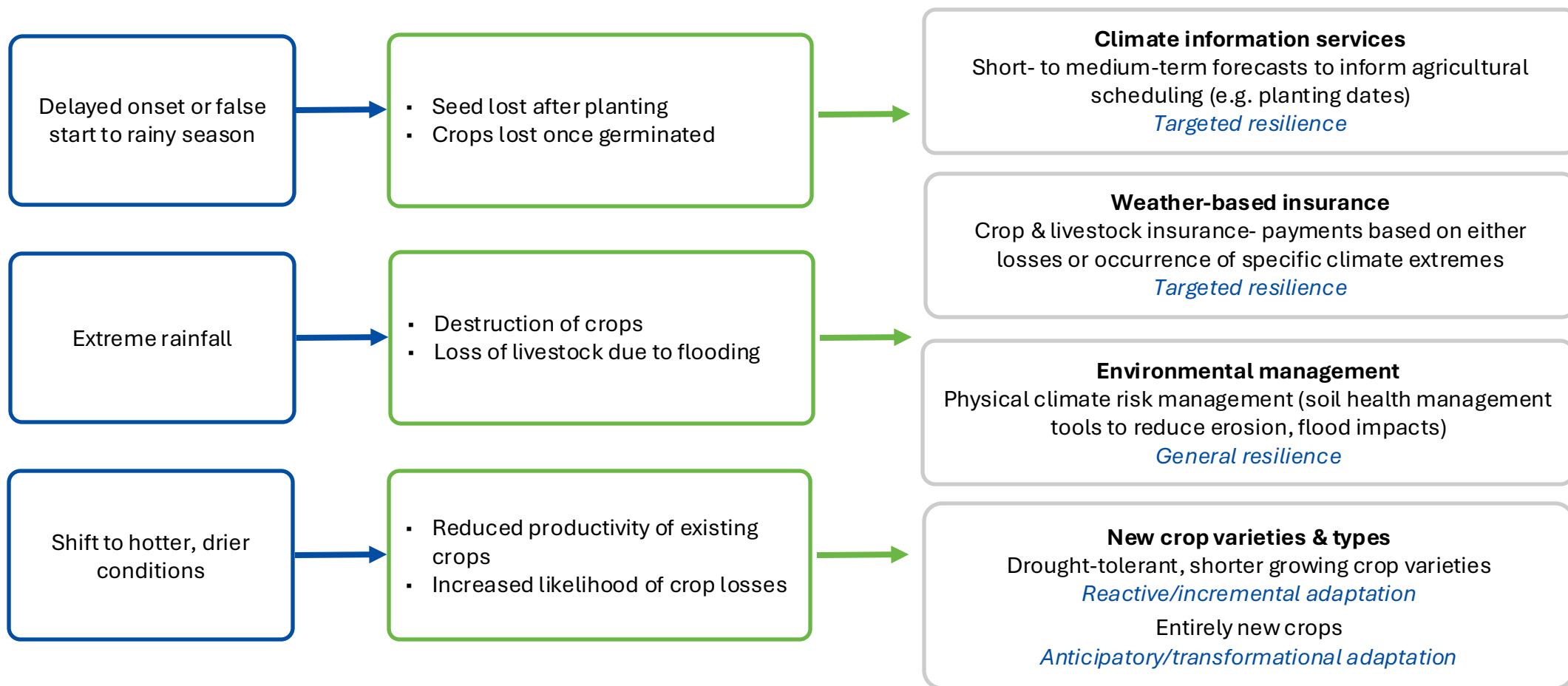


CLIMATE CAUSALITY FRAMEWORK – AGRICULTURE EXAMPLE

Climate Hazards

Impacts of Hazards

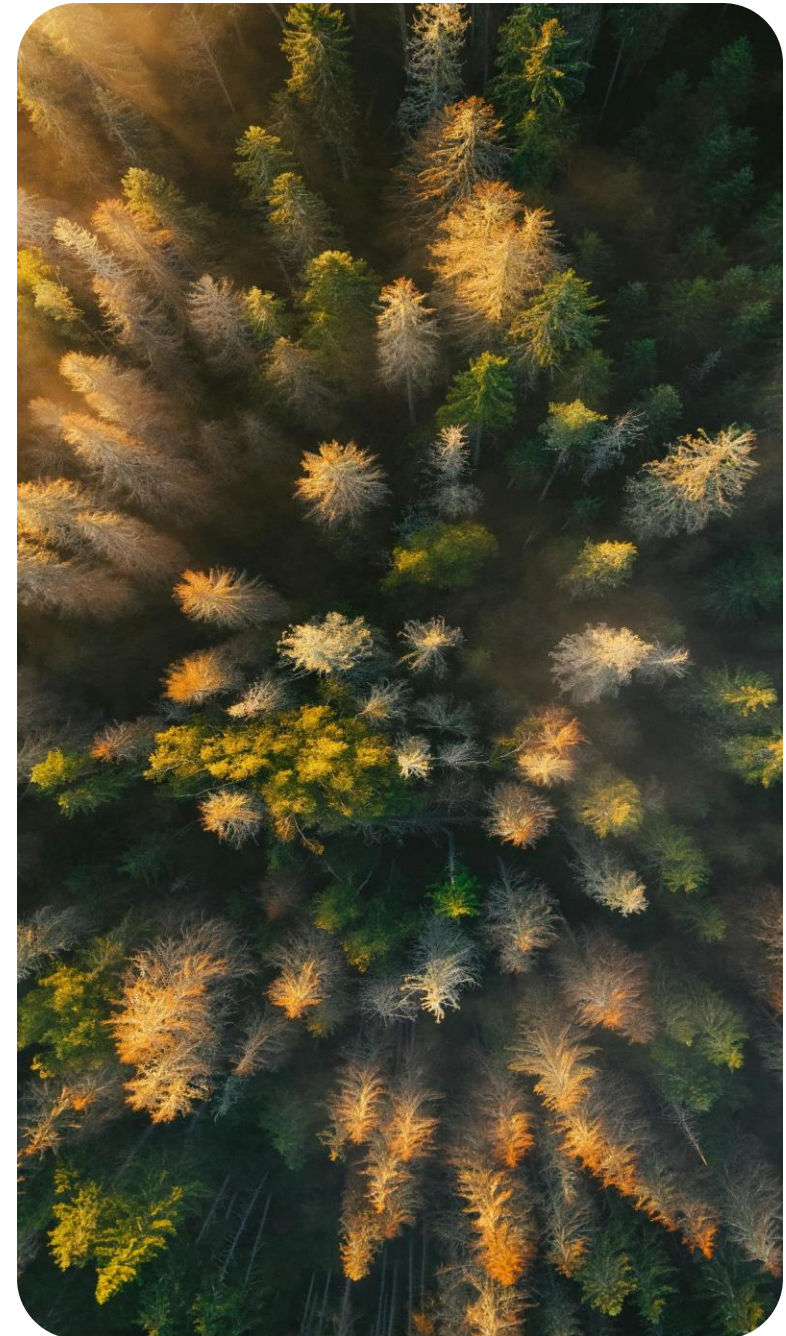
Adaptation/resilience Innovations

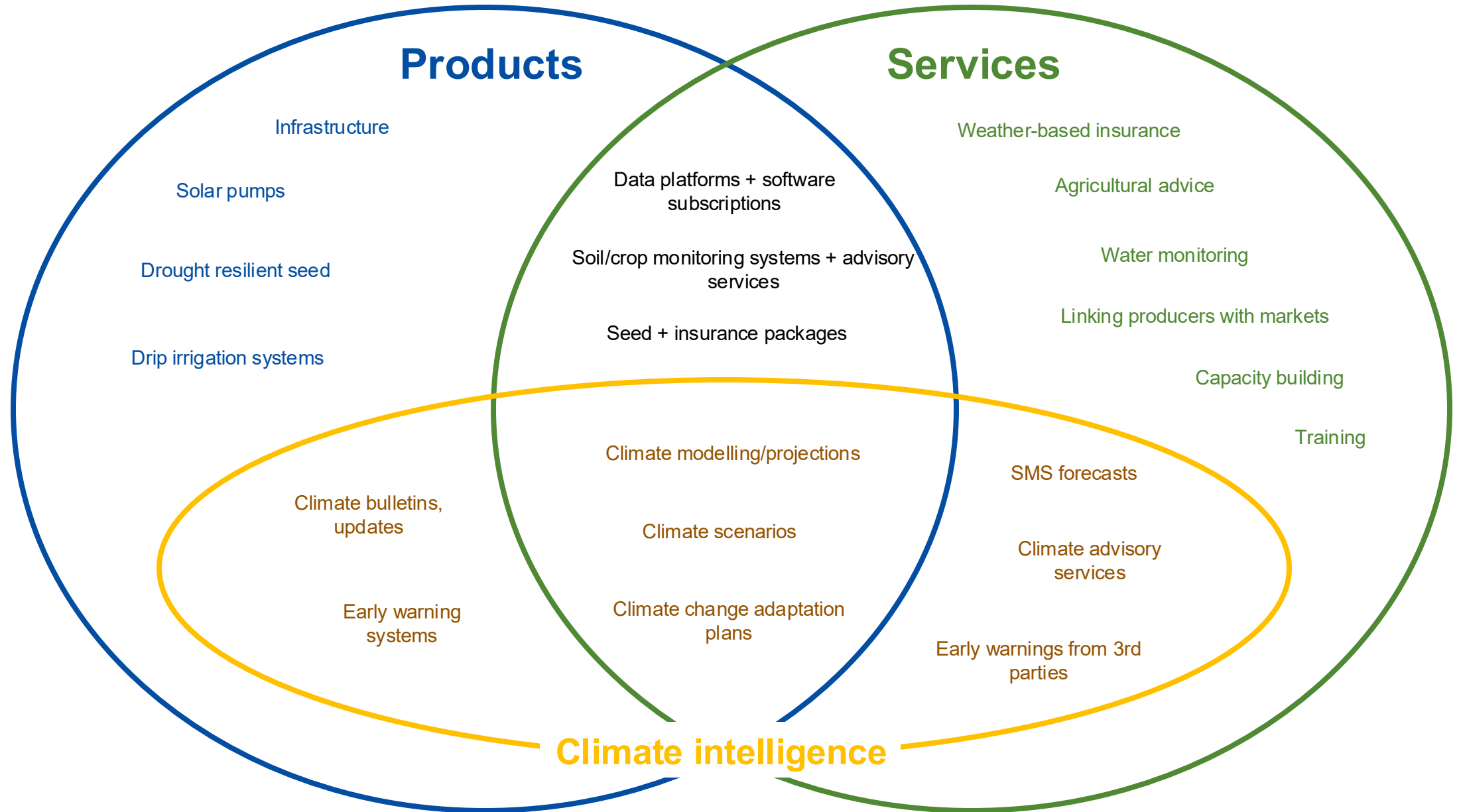




PRODUCTS AND SERVICES FOR ADAPTATION & RESILIENCE

- **Products** - tangible items that a company offers to consumers / physical items that a company can make for someone; ownership rights can be established, might be traded or exchanged
- **Services** – intangible item arising from the output of one or more individuals that is consumed at the same time it is produced; provided or performed for another person or organisation
- **Climate intelligence** – most commonly a subset of services relating to data & information that enable the identification, monitoring & assessment of climate hazards, impacts, risks & adaptation options



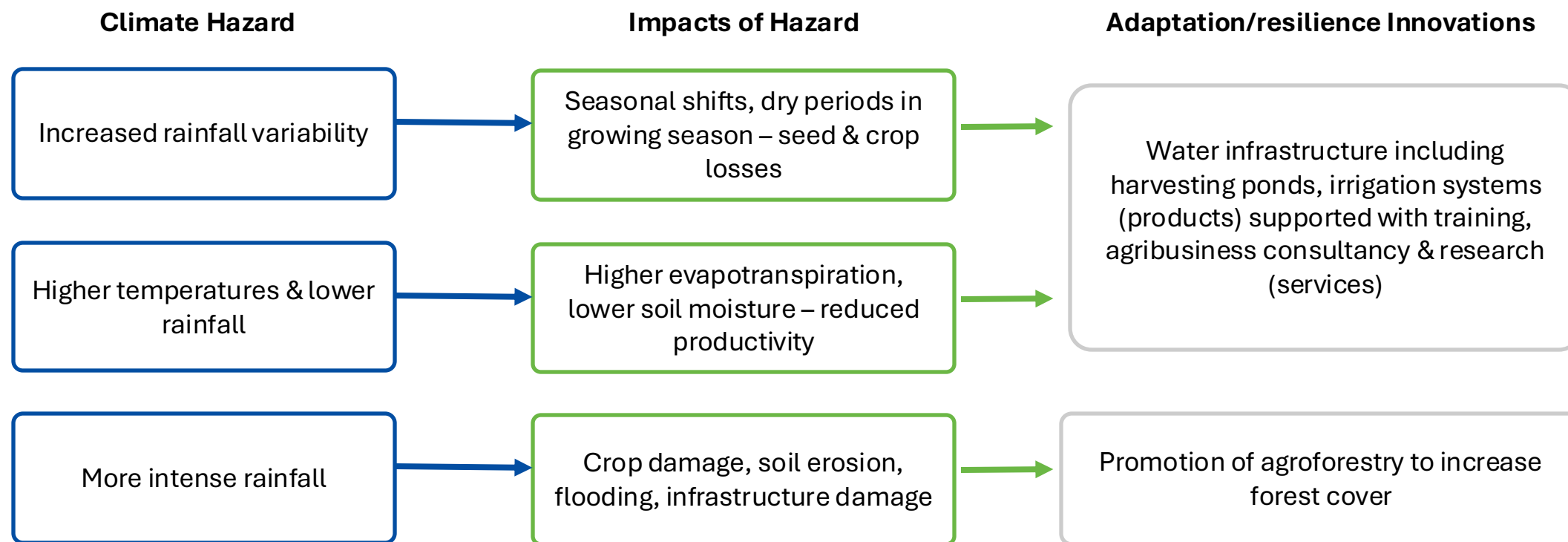




Example – Framework application, Kenya

MajiAgri – Water supply & irrigation infrastructure

Products & services





Adaptation & resilience Business models



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What is an A&R business model?

A&R business models are about more than ‘going green’

- Not focused on reducing emissions and not linked to carbon markets
- However, may generate mitigation ‘co-benefits’ that can help leverage finance
- Instead, focus is on addressing hazards, risks and impacts

Adaptation business models help people and organizations survive and navigate climate change by reducing the risks and costs associated with climate change hazards and impacts





An A&R business is a company providing technologies, products, or services that:

Address systemic barriers to adaptation by strengthening users' ability to understand and respond to climate change risks and impacts (enabling adaptation)

AND / OR

Prevent or reduce physical climate risk or impacts on assets, economic activities, people, or nature (direct adaptation)





When is a business an A&R innovation business?

When it increases the following resilience capacities of its clients

Anticipatory

E.g. forecasts for planning,
agricultural scheduling.



Resilience to existing hazards & risks

Absorptive

E.g. drainage for better floodwater
accommodation



Adaptive

E.g. water storage or irrigation
systems for increased drought



Resilience & adaptation to new/evolving hazards & risks

Transformative

E.g. new production systems for
novel climatic conditions



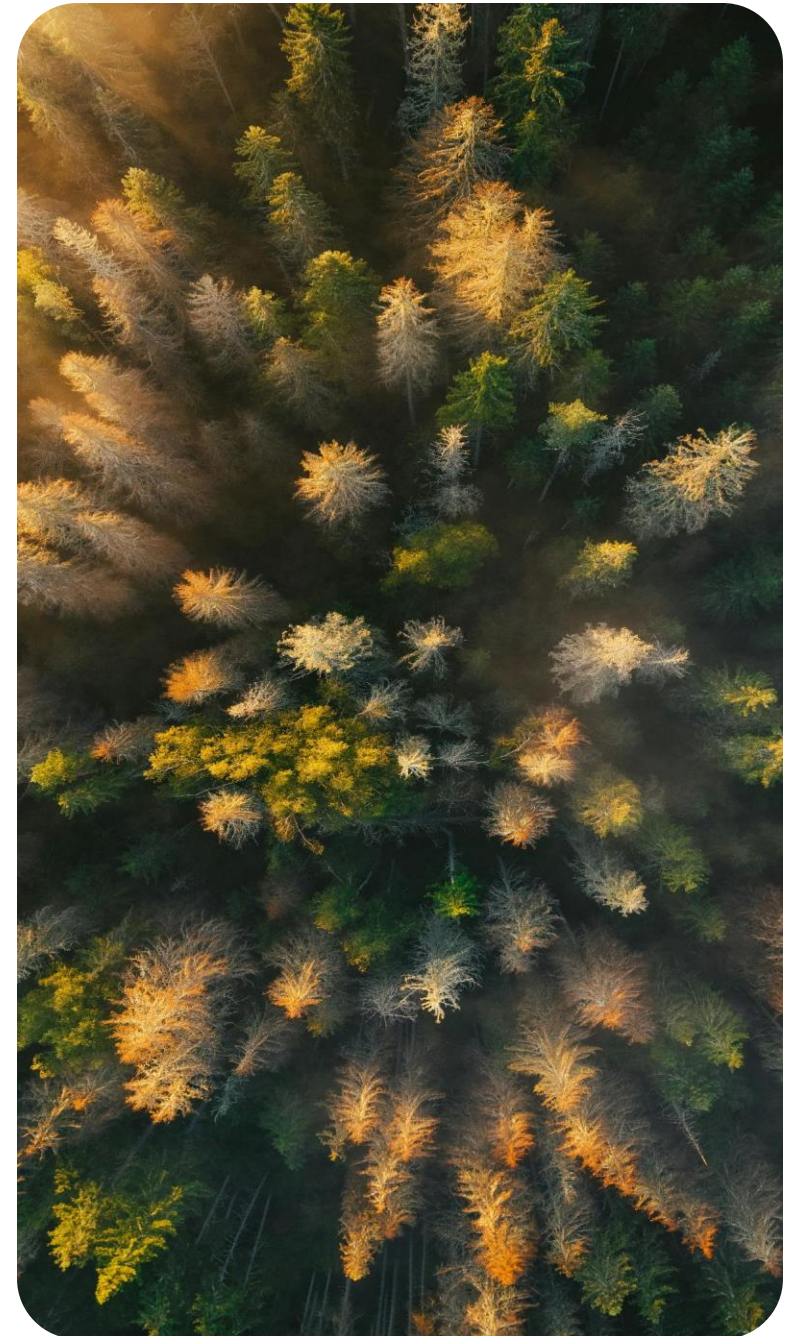


WHEN IS A BUSINESS AN A&R INNOVATION BUSINESS?

When it reduces the impacts and costs of climate hazards

- What climate hazards is it helping customers adapt to?
- What costs & impacts (associated with these hazards) is it reducing?
- How is it reducing these costs and impacts (through what mechanisms)?
- *If it is enabling adaptation rather than targeting direct adaptation, how is it doing this and which hazards, costs & impacts are most relevant?*

Refer to the Climate Causality Framework as a rationale for the business model





Example – Framework application, Kenya

MajiAgri – Water supply & irrigation infrastructure

Products & services

- *Social enterprise with goal of transforming rain-fed farming to irrigated agriculture*
- *Water infrastructure (harvesting ponds, irrigation), training, agribusiness consultancy*
- *Blends products and services; spans resilience & adaptation categories*

Absorptive – irrigation allows farmers to absorb/cope with impacts of droughts, longer dry periods in the growing season & unpredictable rainfall

However, note risks of maladaptation if irrigations leads to adoption of more water-intensive crops in area with declining rainfall and water resources, including groundwater



Examples of A&R innovation businesses

Real world case studies



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AGROSMART (BRAZI)

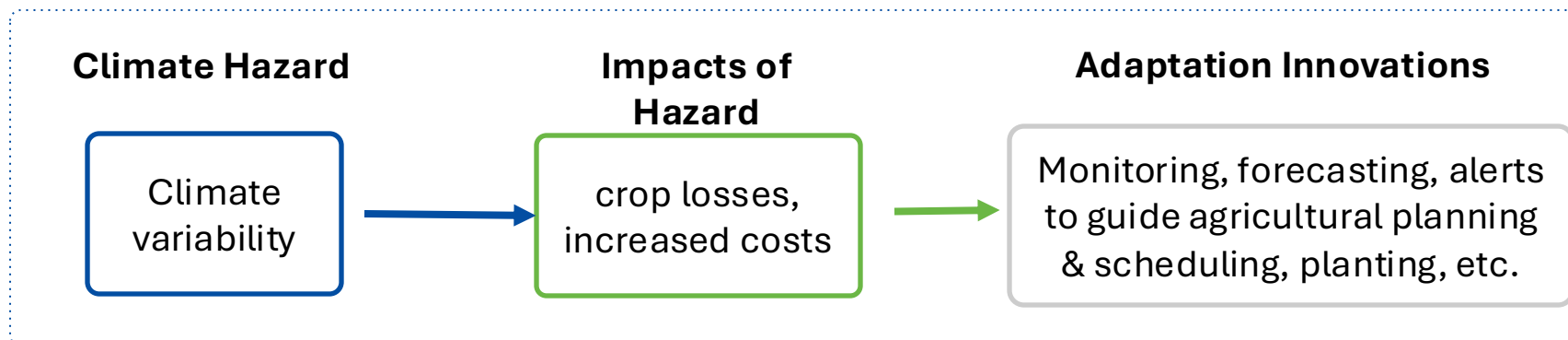
Data services for agriculture

Capacities supported: Anticipatory, absorptive

Provides: services/Climate intelligence

Data platforms and apps for agricultural & climate intelligence

- "brings together the main data, information and indications for your crop"
- Integrates forecasts, custom alerts, sensor telemetry, digital field notebook, irrigation management, reports
- Rainfall & vegetation maps, spraying scheduling (wind), farm-level forecasts
- Targeted resilience across 9 countries in Latin America, 48 million ha, >100,000 farmers





INTEGEMS (Sierra Leone)

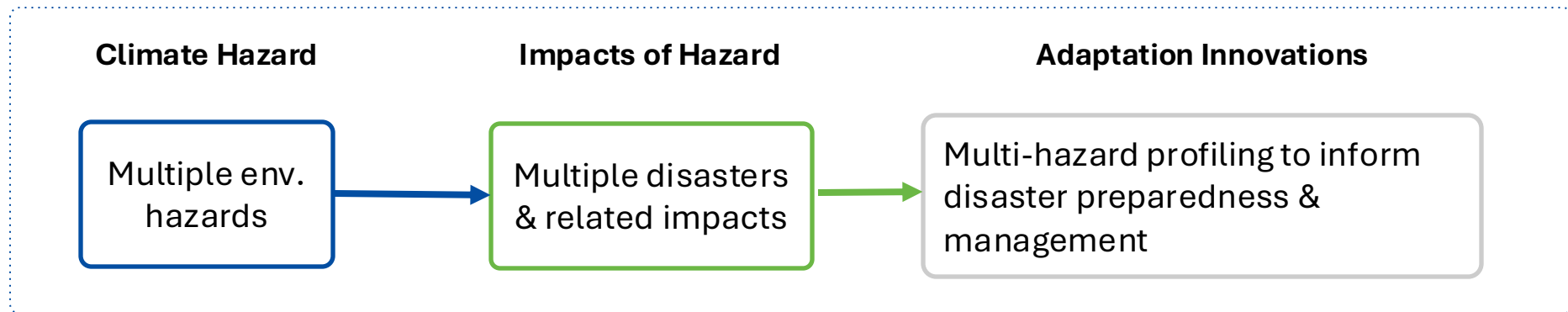
Integrated geo-information and environmental management services

Capacities supported: Anticipatory, adaptive

Provides: services

Environmental & climate information services

- Hazard and risk mapping, climate information disaster management, early warning systems, data collection
- Provision of expertise through consultancy activities
- Multiple partners & clients, including government departments & development agencies
- E.g. national M&E systems, EIAs, development of data dashboards,





TOSHEKA TEXTILES, MAKUENI, KENYA

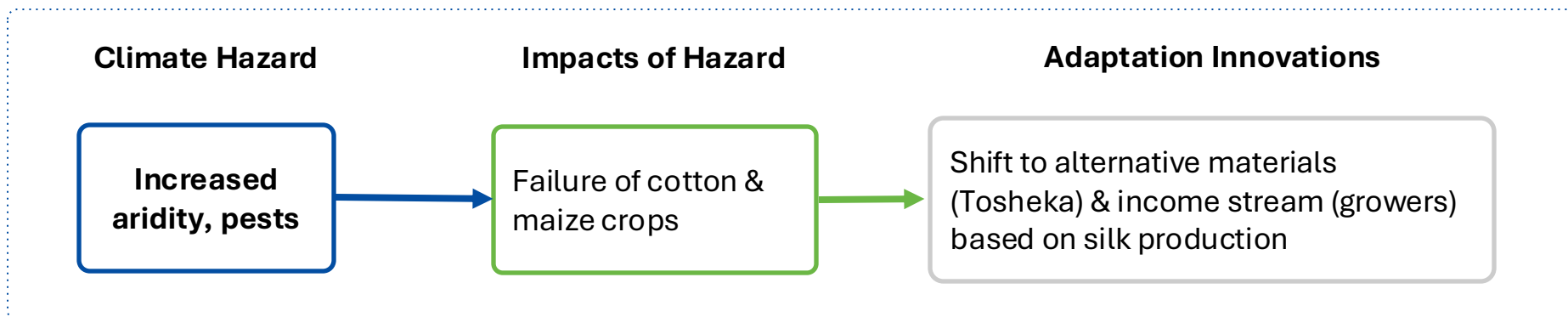
Social enterprise for silk production & garment manufacture

Capacities supported: Transformative

Provides: products & services

Contract farming of silk via social enterprise

- Tosheka provides materials for rearing *eri* moth, whose cocoons provide raw material for silk
- Caterpillars feed on native castor plant, which is more resilient to increasingly frequent drought and pests than cotton & maize, thus providing the basis for livelihoods that are better adapted to emerging climatic conditions
- Tosheka markets textiles from silk nationally & internationally, while growers enjoy reliable, climate resilient income





Adaptation & resilience Customers & business modelling



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TYPES OF CUSTOMERS

Individuals/ Households

Affordable products, services – small-scale equipment, insurance, seeds, SMS forecasts, food products, etc.

Other businesses

Consultancy services, data, materials, equipment, supply chains, market access, processing

Other Bodies

Multilateral orgs, NGOs, research bodies, projects

Research, data, engagement, implementation, materials, equipment, aggregation (micro-insurance, contract farming, etc.)

Governments

Consultancy, data, implementation, Public goods (early warnings, utilities infrastructure & services, etc.)



Alis Algae Innovation Solutions (Mexico)

Environmental bioremediation

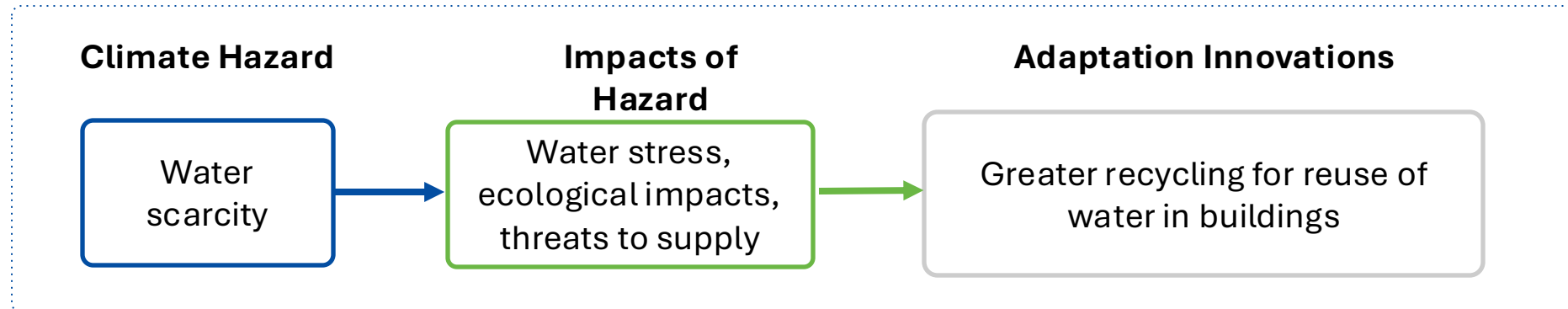
Provides: Products

To Businesses

Capacity: absorptive, adaptive

Water treatment for reuse

- Microalgae for removal of nitrogen & phosphorus from water bodies & industrial/wastewater
- Low cost, circular, no chemical inputs, odourless; produce water for irrigation feedstock
- Microalgae extracts for food and cosmetics





Gentian (UK)

Precision monitoring for biodiversity

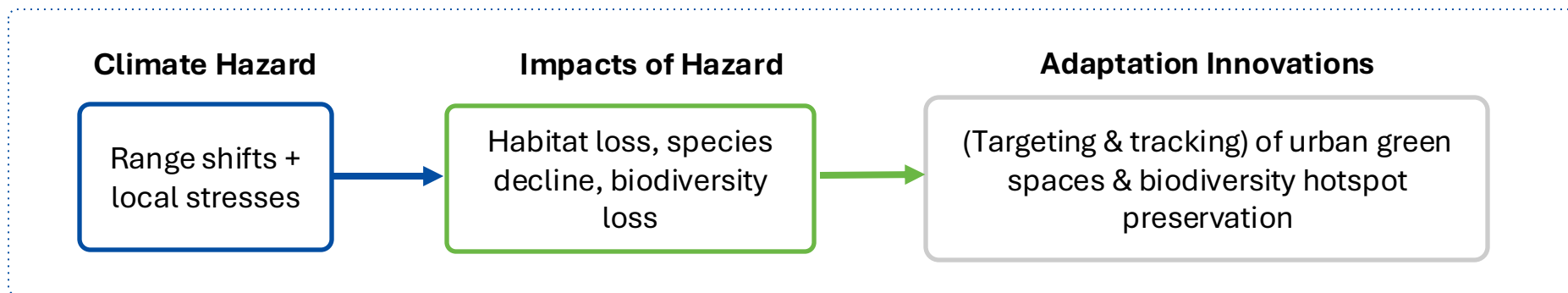
Provides: Services

To: Private sector/government

Capacity: Adaptive

Machine learning & remote sensing to

- Map habitat types using AI algorithms + satellite data to measure & predict biodiversity based on vegetation
- Assess urban green infrastructure for adaptation & identify buildings for green roof retrofitting
- Biodiversity baselines & tracking land use change, e.g. for compliance with biodiversity legislation
- Provides services for developers, landowners, municipalities, real estate agents, large corporations
- Reduce costs, increase transparency & scalability of assessments, which are done remotely



Adaptation & Resilience in the

Business Model Canvas










The Business Model Canvas

Designed for:

Designed by:

Date:

Version:

<p>Key Partners </p> <p>Who are our Key Partners? Who are our key suppliers? Which Key Resources are we acquiring from partners? Which Key Activities do partners perform?</p> <p>MOTIVATIONS FOR PARTNERSHIPS Optimization and economy Reduction of risk and uncertainty Acquisition of particular resources and activities</p> <p>Suppliers, local groups, research organizations, development funders, etc.</p>	<p>Key Activities </p> <p>What Key Activities do our Value Propositions require? Our Distribution Channels? Customer Relationships? Revenue streams?</p> <p>CATEGORIES Production Problem Solving Platform/Network</p> <p>Identify risks & solutions, develop channels</p> <p>Key Resources </p> <p>What Key Resources do our Value Propositions require? Our Distribution Channels? Customer Relationships? Revenue Streams?</p> <p>TYPES OF RESOURCES Physical Intellectual (Brand patents, etc.) Human Financial</p> <p>Human, financial, physical, intellectual resources</p>	<p>Value Propositions </p> <p>What value do we deliver to the customer? Which one of our customer's problems are we helping to solve? What bundles of products and services are we offering to each Customer Segment? Which customer needs are we satisfying?</p> <p>CHARACTERISTICS Newness Performance Customization "Getting the Job Done" Design Brand/Status Price Cost Reduction Risk Reduction Accessibility Convenience/Usability</p> <p>What risks are we addressing & how – resilience capacities, CC Framework?</p>	<p>Customer Relationships </p> <p>What type of relationship does each of our Customer Segments expect us to establish and maintain with them? Which ones have we established? How are they integrated with the rest of our business model? How costly are they?</p> <p>EXAMPLES Personal assistance Dedicated Personal Assistance Self-Service Automated Services Communities Co-creation</p> <p>Customization, after-sales, learning, co-creation</p> <p>Channels </p> <p>Through which Channels do our Customer Segments want to be reached? How are we reaching them now? How are our Channels integrated? Which ones work best? Which ones are most cost-efficient? How are we integrating them with customer routines?</p> <p>CHANNEL PHASES 1. Awareness How do we raise awareness about our company's products and services? 2. Evaluation How do we help customers evaluate our organization's Value Proposition? 3. Purchase How do we allow customers to purchase specific products and services? 4. Delivery How do we deliver a Value Proposition? 5. After sales How do we provide post-purchase customer support?</p> <p>Building awareness, delivery, sales, etc.</p>	<p>Customer Segments </p> <p>For whom are we creating value? Who are our most important customers?</p> <p>Mass Market Niche Market Segmented Diversified Multi-sided Platform</p> <p>Whom are we supporting (customers, needs)?</p>
<p>Cost Structure </p> <p>What are the most important costs inherent in our business model? Which Key Resources are most expensive? Which Key Activities are most expensive?</p> <p>IS YOUR BUSINESS MORE Cost Driven (leanest cost structure, low price value proposition, maximum automation) Value Driven (focused on value creation, premium value proposition)</p> <p>SAMPLE CHARACTERISTICS Fixed Costs (salaries, rents, utilities) Variable costs Economies of scale Economies of scope</p> <p>Fixed & variable costs, economies of scale & scope, cost or value driven approaches?</p>		<p>Revenue Streams </p> <p>For what value are our customers really willing to pay? For what do they currently pay? How are they currently paying? How would they prefer to pay? How much does each Revenue Stream contribute to overall revenues?</p> <p>TYPES Asset sale Usage fee Subscription Fees Licensing/Renting/Leasing Licensing Brokerage fees Advertising</p> <p>FIXED PRICING List Price Product feature dependent Customer segment dependent Volume dependent</p> <p>DYNAMIC PRICING Negotiation (Bargaining) Yield Management Real-time Market</p> <p>Revenue/business model - archetypes</p>		



Business model archetypes

What archetypes are most relevant for
adaptation & resilience businesses?



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BUSINESS MODEL ARCHETYPES

Provide on Demand

Razors & blades

Product Financing

Hidden Revenue

Subscription

Freemium

Franchise

Marketplace

Social Enterprise

Aggregators

Cooperative

Public Good

SOME COMMON ARCHETYPES (1)

Provide on demand

Produce products or services continuously or when demand is expressed & extract value from direct sales

Equipment, seeds, advisory services, etc.

Razors & blades

Sell core product at low price & extract value from sale of non-durable parts for use with core product

Equipment with non-durable components or that requires servicing

Product financing

Lease or rent a product – part of lease or rent is a fee, part down-payment

Equipment, micro-finance bundling

Hidden revenue

Main revenue from 3rd party that cross-finances provision of product or service to potential buyers

Public goods paid for by government, donors, MDBs, provided by business



R E N A R

RENAR (MEXICO)

Nature based solutions for sustainable water management

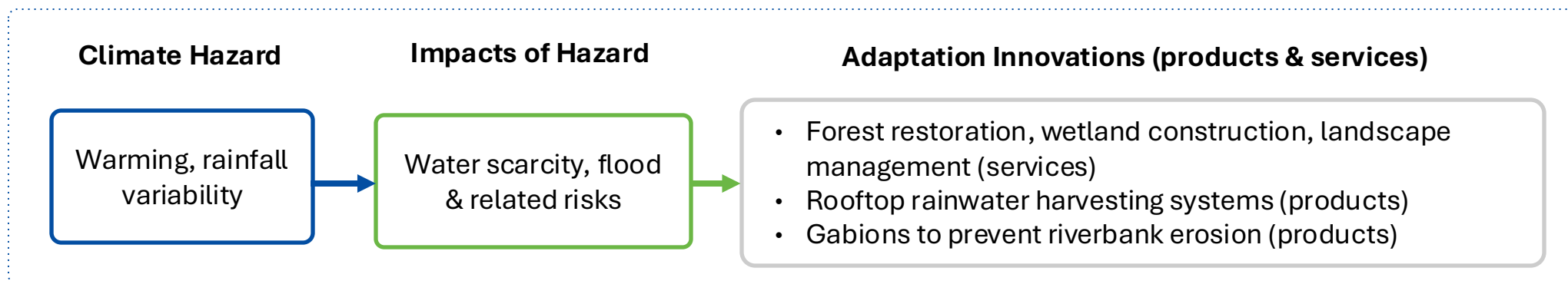
Model: Provide on Demand

Capacity: Absorptive

Provides: Products & services

To: Companies, govts.

- Adaptation & resilience needs addressed – see above
- Customers: large-scale interventions – companies, govts.; smaller – communities, households
- Revenue model: direct selling through provide on demand model
- Engagement: private sector, local govt., communities in areas subject to interventions
- Evolving needs: risks may change due to evolution of hazards, settlement, economic activities
- Keeping pace: track hazards through climate data, maintain engagement with stakeholders



SOME COMMON ARCHETYPES (2)

Subscription

Recurring revenue via a
regular fee for products
or services

**Weather & climate
forecasts, advisories**

Freemium

Offer basic product or
service at no cost and
charge a premium for
more advanced features

**Equipment with non-
durable components or
that requires servicing**

Franchise

Franchisee pays fee to
use larger business'
(franchisor's) trade name
& operating system

**Resilience
products,
consultancies**

Marketplace

Physical or virtual space
(or platform) where
buyers meet sellers

**Adaptation
marketplaces linking
providers & customers**



Water Offsets (UK)

Greywater recycling

Business model: Provide on demand+

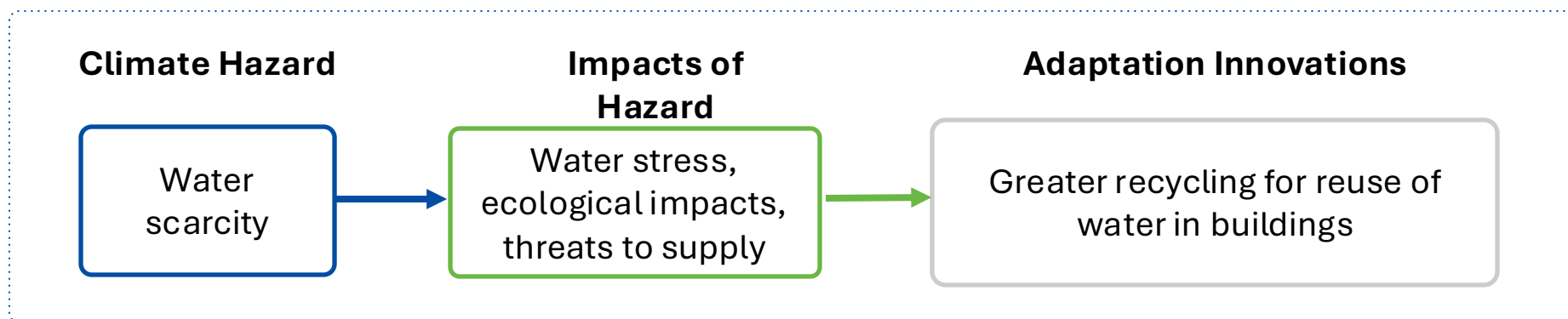
Capacity: Absorptive, adaptive

Provides: Products, services

To: Households, businesses

Water Neutrality software & hardware

- Water reduction, reuse and offsetting, using technology such as Hydraloop with complementary monitoring
- Efficiency, metering, recycling, offsetting within same catchment (water bank)
- Trialled in UK and deploying in Monterrey & São Paulo to reduce water consumption by 25%



SOME COMMON ARCHETYPES (3)

Social enterprise

Sell products and/or services to serve a useful social purpose, e.g. provide employment, livelihoods.

Products derived from resilient & sustainable materials

Aggregators

Brining together small producers to increase efficiency, access to markets, services, etc.

Micro-finance, smallholder insurance, contract farming

Cooperative

Business owned & operated by its members (individuals, households, businesses, etc.)

Resilient production with profits invested in adaptation

Public goods

business provides public goods that are paid for by government or other source (cf hidden revenue)

Early warning systems, information gathering, extension services



Seed Bombs Tanzania

Supply chain traceability

Business model: Public good

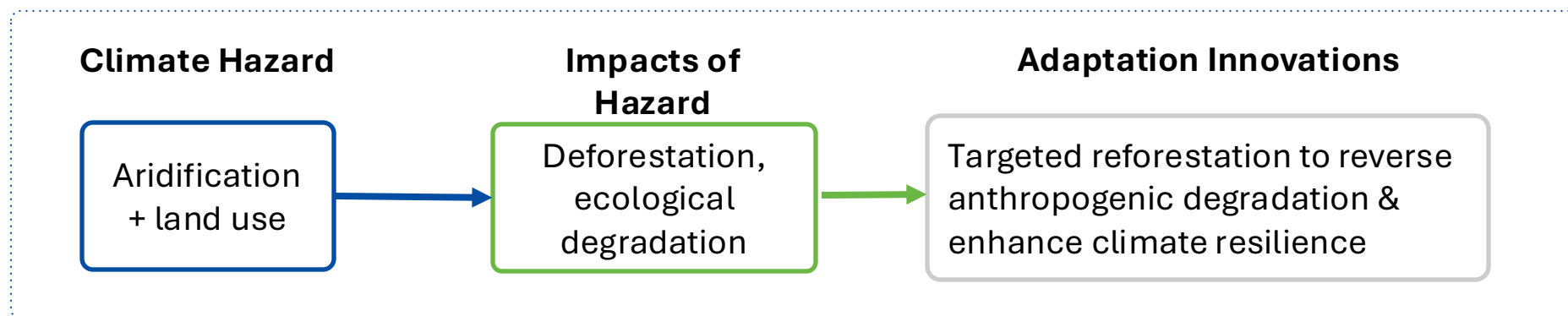
Capacity: Absorptive, adaptive

Provides: Products & services

To: Communities

Training students in conservation & reforestation via seed bombs

- Training programs targeting teachers & students who then distribute tree seeds via Seed Bombs
- Leverages indigenous knowledge & community involvement
- Climate change mitigation via carbon sequestration in new tree cover
- Supported by various partners including national & local government, private sector, non-profits





BUSINESS MODEL ARCHETYPES

Provide on Demand

Razors & blades

Product Financing

Hidden Revenue

Subscription

Freemium

Franchise

Marketplace

Social Enterprise

Aggregators

Cooperative

Public Good



BUSINESS IMPACT

At Climate KIC, we use the Adaptation and Resilience assessment tool to empower start-ups to articulate the impact of their adaptation innovations with confidence, equipping them with a foundational set of key performance indicators (KPIs). It offers a tailored approach to gathering both quantitative and qualitative data, transforming them into actionable insights.

Our three indicators are:

People

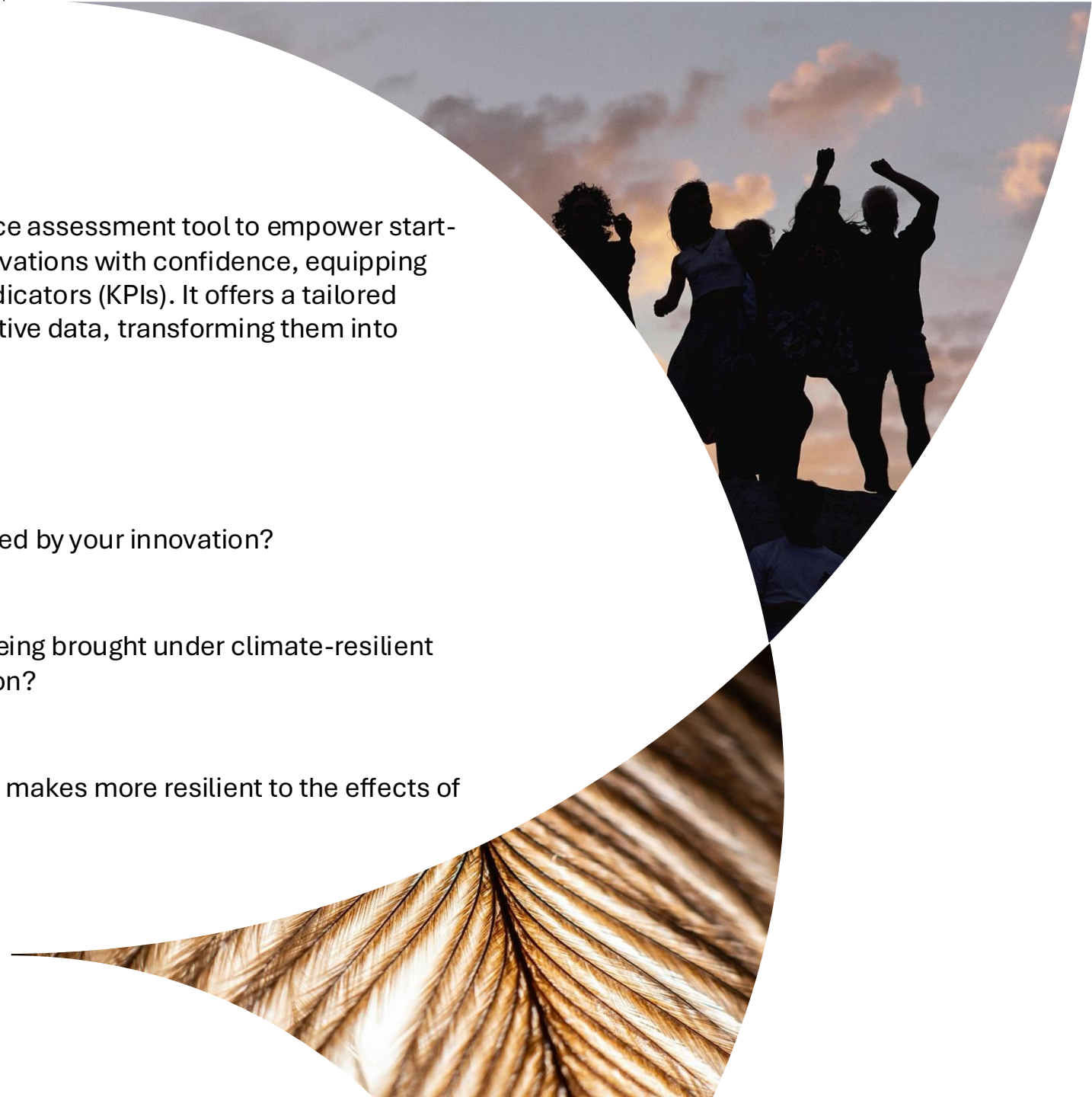
How many people are directly and indirectly impacted by your innovation?

Planet

How many hectares of natural resource areas are being brought under climate-resilient management practices with or due to your innovation?

Economy

What is the value of physical assets your innovation makes more resilient to the effects of climate change?



ADAPTATION & RESILIENCE REPORT

Adaptation & Resilience Characterisation & Impact



Latam Harvest Sustainable husks

Kenia

14th of May 2024

Validation Certificate

Kenia



Climate Causality Framework

Pitch:

Latam Harvest offers sustainable charcoal alternatives made from rice husks, combating deforestation, reducing air pollution, and providing a reliable energy source for communities in Kenya and beyond. Latam Harvest presents an innovative solution to the conventional method of charcoal production, harnessing rice husks to craft environmentally friendly charcoal. This sustainable method combats deforestation and alleviates the detrimental emissions of traditional charcoal production for both communities and the planet.

Business Model:

Latam Harvest employs a direct sales model, offering affordable rice husk charcoal to institutions and individuals while generating revenue from each kilogram sold.

Location: Kenya

Geographical Focus: Africa



Climate hazard

- Extreme weather



Impacts of hazard

- Land and forest degradation
- Landslides
- Loss of biodiversity
- Decrease of food security



Adaptation innovation

- By keeping trees standing and forests intact, they can continue to act as buffers in the case of extreme weather events (e.g., by storing excess water) and generate ecosystem services with a positive impact for their immediate surroundings.
- Improves and protects agricultural productivity
- Avoids damage to natural systems
- Increases the local community's food security

Latam Harvest rice husk briquettes bring explicit climate mitigation benefits. Charcoal briquettes are often produced from virgin wood, while rice husk briquettes are made from agricultural waste. This means the trees that would have been felled for charcoal production can keep standing and functioning as CO₂ sinks.



Latam Harvest facilitates the adoption of a more environmentally and economically sustainable energy source.

Latam Harvest introduces an innovative approach to traditional charcoal production by utilising rice husks to produce environmentally friendly briquettes. This initiative not only fosters sustainability but also enhances food security and provides additional income opportunities for charcoal vendors, while offering cost-effective products to consumers.

In Kenya, it is estimated that 10,000 individuals, including 7,300 women, will directly benefit from this innovation in 2024. This solution addresses pressing challenges in Kenya, such as land and forest degradation, landslides, biodiversity loss, and reduced food security exacerbated by extreme weather conditions.

By preserving trees and maintaining forest ecosystems, Latam Harvest's innovation can mitigate the impacts of extreme weather events, such as by acting as a natural buffer and supporting essential ecosystem services. This approach safeguards agricultural productivity, protects natural systems, and enhances local food security.

In 2023, 50,000 sacks of rice husk briquettes were sold, with projections indicating a rise to 100,000 sacks in 2024.



About this Validation Statement

Validation Certificate

This Validation Certificate demonstrates the substantial impact that the innovation offered by a start-up can have on the adaptation and resilience capabilities in its region and customer base.

Validation involves a structured assessment conducted by a member of the Climate-KIC team to ascertain the extent to which a start-up affects the adaptation and resilience of its region and customer base. This process encompasses various elements, including the provision of a training session, educational materials, coaching sessions, and ongoing dialogue between the start-up and a representative from Climate-KIC. This ensures that claims made by the start-up are verified.

The objective of the Validation Certificate is to assist the start-up in telling its impact story, while also providing a robust tool for engaging potential investors and clients. This serves to underscore the start-up's credibility and potential for growth.

Climate-KIC has validated the information provided by the start-up and has undertaken subsequent inquiries to obtain additional details where necessary. It is acknowledged that there may exist supplementary information not furnished by the start-up, which has not been evaluated by our team.

	Validation Statement	Final Review	Feedback Call	Review of Evidence	Final Review	Release of Validation Statement
Date	29-05-2024	30-06-2024	30-06-2024	14-05-2024	14-05-2024	14-05-2024
Result	-	Satisfactory	-	N/A	Satisfactory	-

Author/Validation: Lila Alvarez-Mendez

Start-up name: Latam Harvest

ET Climate-KIC project lead: Ayoub Derdabi

Date: 14th of May 2024

More information: Adaptation-resilience-tool@climate-kic.org

Validation ID: LA002

Published by: ET Climate-KIC



Validation Statement

Latam Harvest's innovation is primarily focused on climate mitigation, but also has adaptation and resilience co-benefits.

The Climate Causality Framework has been reviewed and is part of this validation.

The innovation supports the following IPCC's resilience capacity category: **Adaptive capacity.**

Definition: Adaptive capacity is the ability of systems, institutions, and humans to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.

Source: *Intergovernmental Panel on Climate Change IPCC 6th Assessment Report 20 March 2023*

If the adoption of the innovation goes as planned in 2024, Latam Harvest's innovation is projected to directly benefit over 10 000 people through improved food security.

Latam Harvest's innovation projects to bring 760 hectares of terrestrial non-forest areas under more sustainable management practices in 2024.



KEY LERNINGS

- Climate change is **intensifying climate hazards & impacts** - adaptation & resilience are key
- Businesses can help reduce these impacts & the associated risks & costs by supporting the **resilience capacities** of their customers to anticipate, absorb, adapt & transform
- Adaptation & resilience businesses can use the **Climate Causality Framework** to identify innovative **products and services** that enhance these capacities for their customers
- Products & services can be delivered using a multitude of **business model archetypes**
- All archetypes are relevant to adaptation & resilience, but some less common archetypes are especially relevant, e.g. for hard-to-reach customers & delivering public good
- Businesses need to **demonstrate impact** - how will they build resilience capacities?

An aerial photograph of a historic stone bridge spanning a river. The bridge is made of grey stone and has a central section with a ramp or stairs. The river is dark and calm, reflecting the sky. On the banks, there are green trees and some buildings. A pink decorative line, consisting of two intersecting arcs, is overlaid on the right side of the image.

Questions?

Please raise your hand if you have a question and we will take as many questions as time allows



Thank you!



This action is supported by the European
Institute of Innovation and Technology (EIT).

A body of the European Union





FEEDBACK

Please scan the following QR code or use the link to access the feedback questionnaire. We would be grateful if you could take 5 minutes to complete it, so that we can improve the learning experience.



<https://t.ly/pdvl8>