

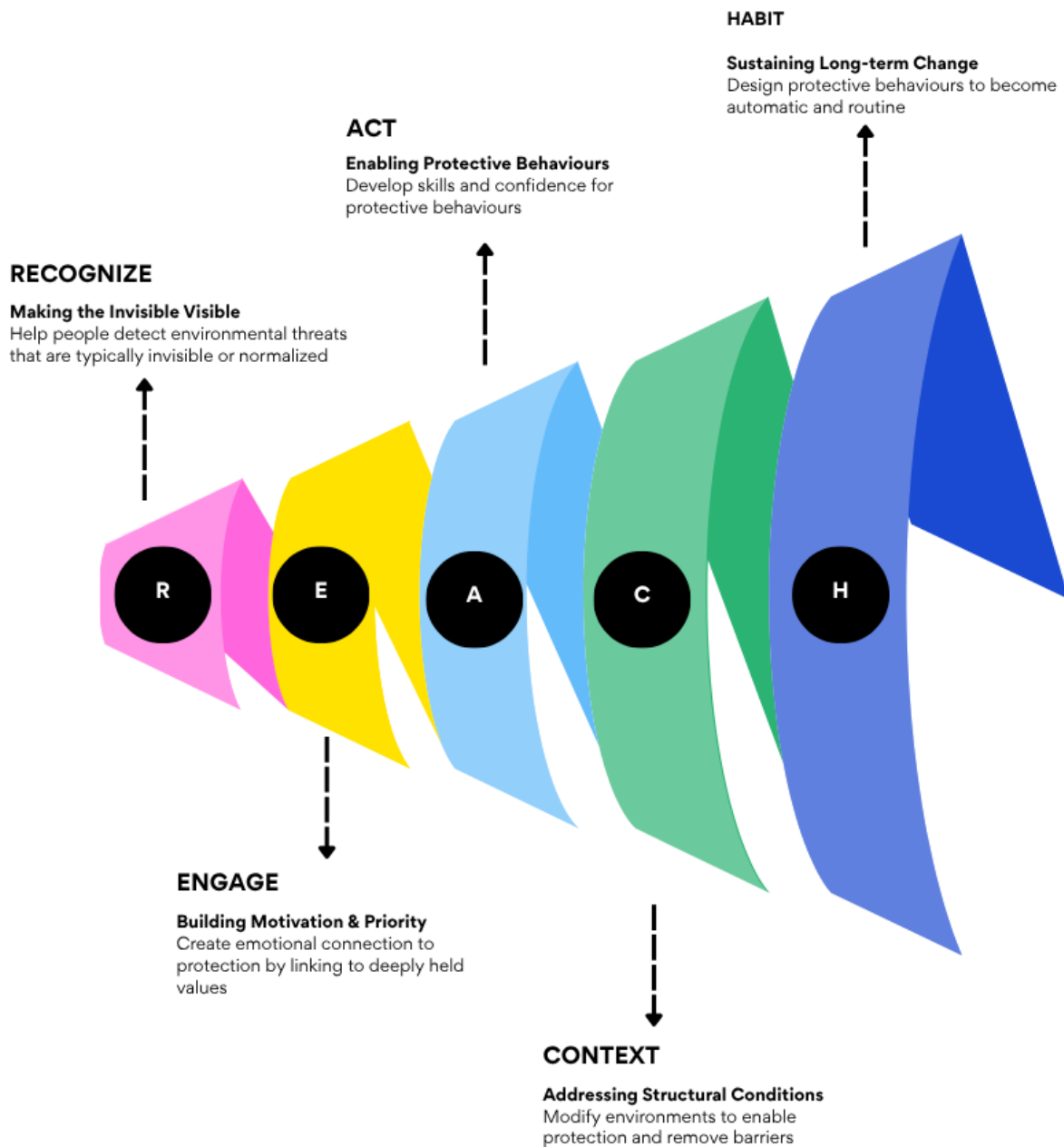




Environmental Health

SBC of Environmental Health Threats for Children

REACH Framework



Recognise : Making the invisible, visible

The Sensory Gap Problem:

- â Humans evolved to respond to immediate, visible threats (predators, fire, contaminated food)
- â Environmental health threats operate below sensory thresholds
- â E.g. Research from Bangladesh shows citizens' perception of air quality correlates poorly with actual measurements

Theories:

Risk Perception Theory:

- â€¢ Risk perception requires both cognitive understanding AND emotional salience
- â€¢ The "risk perception paradox": High awareness â€¢ protective action without perceptual availability

Availability Heuristic:

- â€¢ People judge probability by ease of recall/imagination
- â€¢ Invisible threats are cognitively "unavailable" â€¢ systematically underestimated

Protection Motivation Theory:

- â€¢ Threat appraisal requires perceived severity AND vulnerability
- â€¢ Without sensory detection, both remain abstract concepts

Sensory Detection

- Direct sensing: Using human senses when possible
- Proxy indicators: Observable signs that correlate with invisible threats
- Technology aids: Monitors, apps, and measurement tools
- Biological markers: Health symptoms that indicate exposure

Engage: Motivating knowledge

The Awareness-Action Gap

- â€¢ Information alone rarely changes behaviour
- â€¢ Environmental health competes with immediate survival needs
- â€¢ Emotional connection drives prioritization

Theories

Value-Belief-Norm Theory (Stern, 2000)

- â€¢ Personal values â€¢ beliefs about consequences â€¢ moral obligation â€¢ action
- â€¢ Environmental concern correlates only modestly with behaviour
- â€¢ Need emotional activation of existing values

Risk-as-Feelings Theory (Loewenstein et al., 2001)

- â€¢ Emotional reactions to risk often diverge from cognitive assessments
- â€¢ Affect heuristic: Feelings guide judgments more than analysis
- â€¢ Vividness, proximity, and similarity trigger stronger emotional response
- Construal Level Theory (Trope & Liberman, 2010)*
- â€¢ Psychological distance affects prioritization (temporal, social, spatial)
- â€¢ Distant/abstract threats = low priority; Near/concrete = high priority
- â€¢ Reducing psychological distance increases engagement

Act: Taking action

The Intention-Action Gap

- â€¢ 70% of motivated people fail to sustain new behaviours
- â€¢ Knowledge + motivation â€¢ action without capability
- â€¢ Skills, confidence, and support systems essential

Theories

COM-B Model (Michie et al., 2011)

- â€¢ Capability (physical/psychological) + Opportunity + Motivation = Behavior
- â€¢ COM-B based cookstove intervention in Uganda resulted in 72,535 improved cookstoves sold, achieving 36% reduction in fuel consumption
- â€¢ Application: Address all three components systematically

Protection Motivation Theory (PMT)

- â€¢ Response efficacy: Belief that the action will work
- â€¢ Self-efficacy: Confidence in ability to perform the action
- â€¢ Response costs: Barriers to performing the action

Protective Action Decision Model (PADM) (Lindell & Perry, 2004)

- â€¢ Covers the full decision-to-implementation pathway
- â€¢ Protective action search: Finding feasible options
- â€¢ Protective action assessment: Evaluating options

â€¢ Protective action implementation: Actually doing it

Context: Structural Conditions

The Structure -Agency Gap

- â€¢ Individual agency operates within structural constraints
- â€¢ Protective behaviours require enabling conditions
- â€¢ Knowledge + motivation â€¢ action without supportive context

Theories

Social Ecological Model (Bronfenbrenner)

- â€¢ Individual behaviour nested within multiple system levels
- â€¢ Environmental factors shape behavioural possibilities
- â€¢ Structural interventions have cascade effects across levels

Capability Approach (Sen, 1999)

- â€¢ Distinction between capabilities and functions â€¢ Resources + conversion factors = real opportunities
- â€¢ Context determines what behaviours are actually possible

Habit: Creating lasting change

Action Over Time and interacting with structure

- â€¢ Conscious decision-making is cognitively taxing
- â€¢ Competing priorities erode initial motivation
- â€¢ Protection behaviours require constant willpower without habit

Theories

Dual Process Theory (Kahneman, 2011)

- â€¢ System 1 (automatic) vs System 2 (deliberative) thinking
- â€¢ Habits shift behaviour from effortful System 2 to automatic System 1
- â€¢ Environmental cues trigger responses without conscious decision

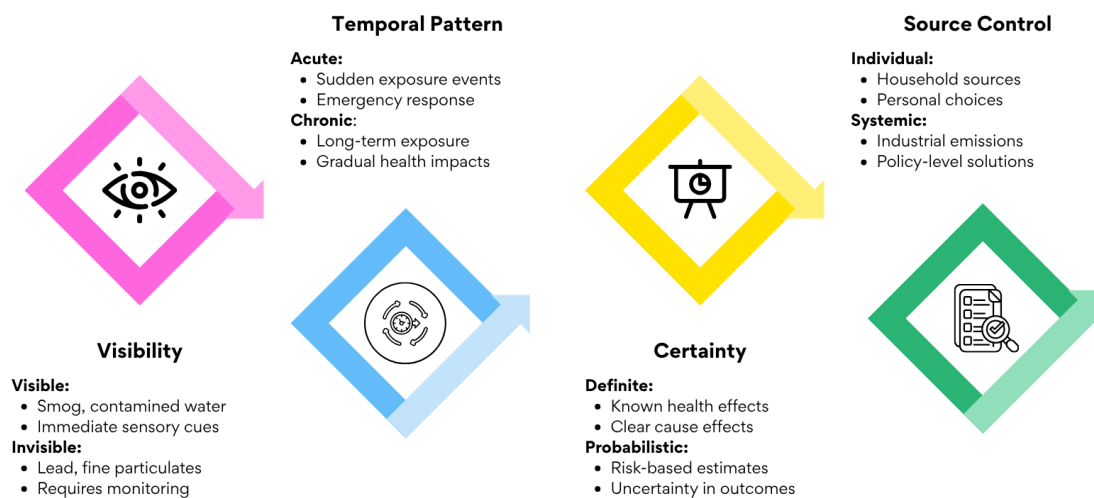
Habit Loop Model (Duhigg, 2012)

☐ Cue ☐ Routine ☐ Reward creates neurological patterns

☐ Habits formed in stable, consistent environments are more likely to become automatic
Repetition in consistent contexts builds automaticity

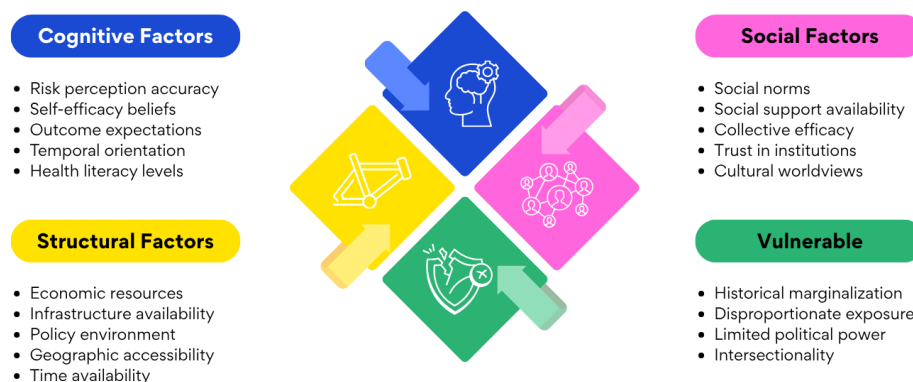
Threat Characteristics

Properties of the environmental health threat



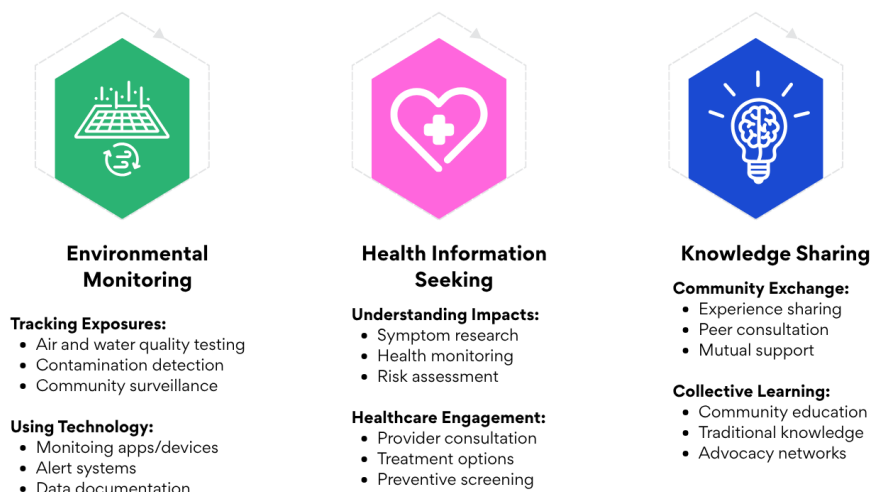
Behavioral Determinants

Factors that drive or constrain positive behaviors



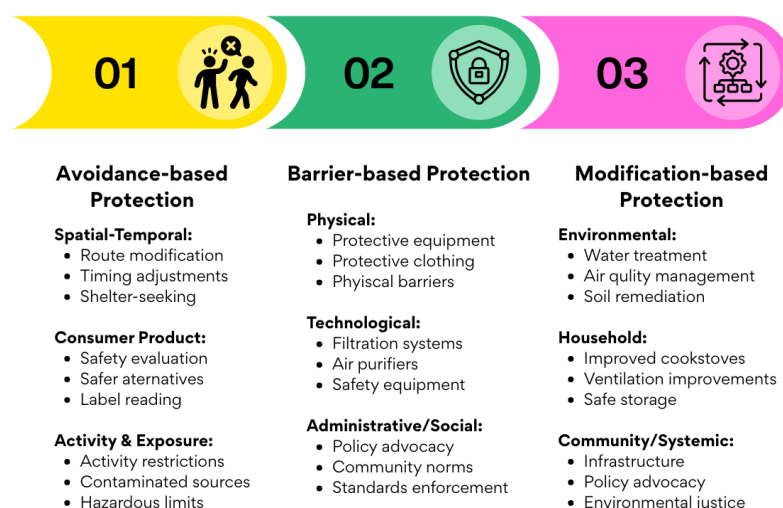
Threat Detection & Monitoring

Three mechanisms for environmental health awareness



Protection Behaviors

Three mechanisms for environmental health protection



3 Communication Guide have been developped based on the REACH Framework.

- Lead Poisoning Prevention Message Guide
- Air Pollution Prevention Message Guide
- Extreme Heat Prevention Message Guide