



SAVE NATURE PLEASE

A BEHAVIOUR
CHANGE FRAMEWORK
FOR CONSERVATION

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FOREWORD

Beside the intrinsic value of nature and the diversity of life that we have the moral duty to respect and preserve, humanity needs nature and all that it provides for well-being and development. Yet deforestation, land degradation, climate breakdown, pollution in its multiple forms and biodiversity loss are all destabilizing the Earth's systems and threatening our ability to thrive and prosper. Our efforts to reverse these harmful trends and activities have so far not been enough.

We have caused these complex problems through our own actions, choices and decisions. And now, for our own survival, we must shift toward behaviours that help protect and restore nature and a living planet.

For every environmental challenge, humans are both the problem and the solution.

Human behaviour – collective or individual – and how we understand and interact with nature is complex, influenced by many different social, cultural and economic factors unique to individuals, communities and nations.

Through a multi-disciplinary approach, behavioural science is creating a new body of knowledge that can help us tackle and solve some of the most serious environmental and conservation challenges we face today.

Whether decisions are being made by citizens, consumers, families, friends, colleagues, corporations, financial institutions, civil

society organizations or governments, behavioural science can help us understand the drivers of how we make decisions that can support or affect a sustainable and, in particular, carbon-neutral and nature-positive future.

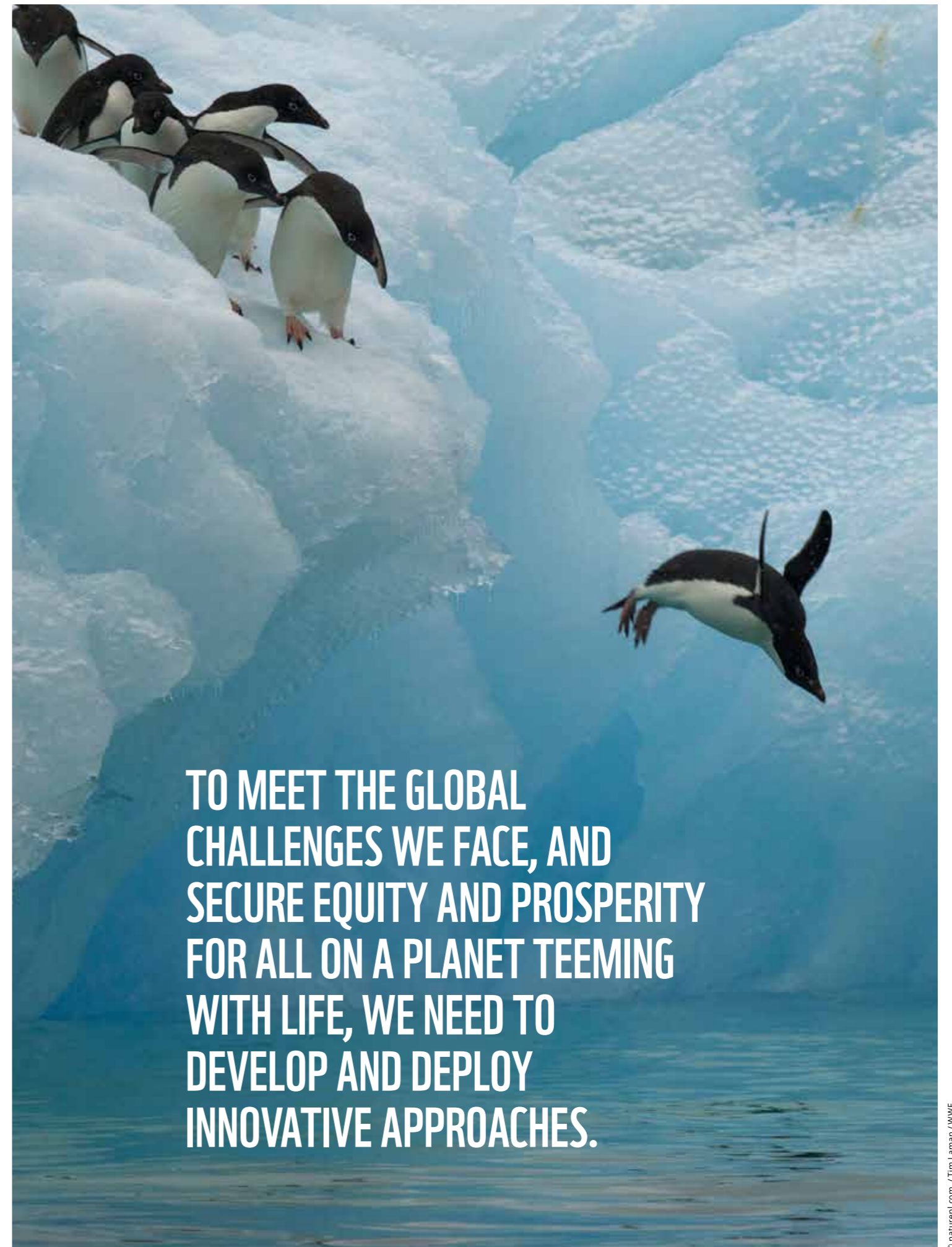
Shaping government and corporate policies and practice through powerful, science-based advocacy, uniting citizens around the world in shared purpose through Earth Hour, tackling food waste through the Save 1/3 initiative, and reducing consumer demand for ivory through the #TravelIvoryFree campaign, WWF often uses behavioural science to inform the designing of programmes, projects and activities.

Now, our new SAVE NATURE PLEASE framework presents the fundamentals of behavioural science in an easily accessible format that we hope could benefit all involved in driving positive change vis a vis some of today's existential challenges the planet and our society are facing.

To meet the global challenges we face, and secure equity and prosperity for all on a planet teeming with life, we need to develop and deploy innovative approaches. Using behavioural science is one way of beginning to deliver the systemic changes we need to ensure the long-term survival of people and the living planet we all share and depend on.



MARCO LAMBERTINI
DIRECTOR GENERAL
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INTRODUCTION

OVER THE LAST DECADE, PERHAPS THE MOST IMPORTANT CHANGE IN CONSERVATION HAS BEEN AN INCREASING FOCUS ON HUMAN BEHAVIOUR, MOTIVATED BY THE UNDERSTANDING THAT UNSUSTAINABLE BEHAVIOURAL PATTERNS ARE THE ROOT CAUSES BEHIND THE CURRENT BIODIVERSITY AND CLIMATE CRISES.



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LEADER - MARKETS
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Truly addressing habitat loss, overexploitation, pollution, species decline and climate change requires a deep transformation of the behaviours that drive them.

At the same time, recent years have brought a growing interest in the science of behaviour. Decades of research have transformed our understanding of how people make decisions and why we do what we do, even in cases where we understand that it is wrong. Different behavioural science disciplines provide a wealth of insights that we can use to design interventions for a better world by overcoming the split of brain and body or cerebral and automatic control of human actions. And there's much we can learn from other areas, like advertising and public health, that have drawn on behavioural science for many years.

This publication provides a guide for anyone looking to design effective behaviour change campaigns. Part I introduces WWF's own behaviour change framework, *SAVE NATURE PLEASE (SNP)*. It walks you through each stage and component of the process, illustrating insights with examples. It also includes a section on monitoring and evaluation, as this is crucial to designing and implementing effective interventions. Part II provides an overview of the theory behind the framework, introducing key findings from the behavioural sciences and how they relate to conservation.



Farm © Alfforo, bee © WWF-US / Clay Bolt

This work complements existing platforms such as [Rare's Center for Behavior & the Environment](#) and [IUCN's Commissions on Education and Communications](#). Other online materials and communication toolkits targeted at the conservation community include [Futerra's Branding Biodiversity](#) and [Change Wildlife Consumers' Toolkit](#). Additionally, the open-access [Behaviour Change for Conservation Online Course](#) is designed to help develop or implement conservation-related behavioural change interventions.

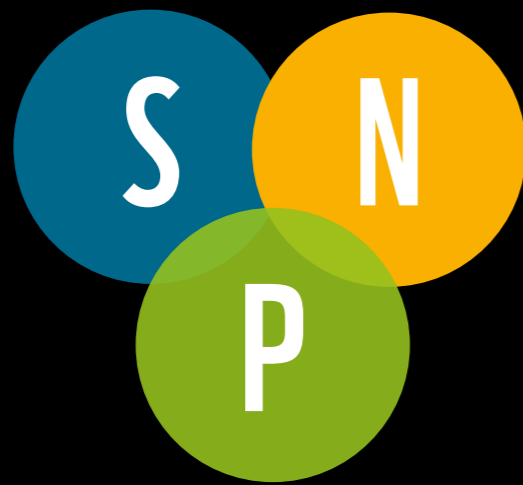
WWF International's Markets Practice team together with WWF-Germany have been leading the development of this publication. We encourage you to reach out to us to find out more about the developments taking shape in this space and how we can help support your projects.

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PART ONE

SAVE NATURE PLEASE



THE FRAMEWORK

THIS DOCUMENT IS A PRACTICAL GUIDANCE TOOL TO ENABLE THOSE SEEKING TO CREATE CHANGE IN THE WORLD TO APPLY THE KEY PROCESSES AND PRINCIPLES OF BEHAVIOUR CHANGE TO INFLUENCE THE DECISIONS OF CITIZENS, BUSINESS LEADERS, POLICYMAKERS AND PARTNERS.

STEP 1 DEVELOP INTERVENTIONS



STEP 2 DELIVERY PRINCIPLES



STEP 3 MEASURE AND SCALE



This document is a practical guidance tool to enable those seeking to create change in the world to apply the key processes and principles of behaviour change to influence the decisions of citizens, business leaders, policymakers and partners. The framework is designed to support colleagues through the process of developing, delivering, measuring and scaling behaviour change interventions. It draws heavily on a range of proven models, and combines several methods and tools for designing, implementing and evaluating behaviour change in conservation. The framework also enables flexibility to incorporate wider tools, theories and methodologies, depending on the local context.

WHY DO WE NEED A FRAMEWORK?

This simple framework will help you apply behaviour change strategies within any conservation-based programme. It seeks to:

- Build consistent understanding of how to apply behavioural science among colleagues
- Ensure key principles of behavioural science are easy to remember and adopt
- Enable colleagues to apply behavioural insight in practice, through a toolbox of proven strategies
- Upskill colleagues to ensure they have the same knowledge as potential collaborators and partners

- Provide a vehicle for future thought leadership and collaboration.

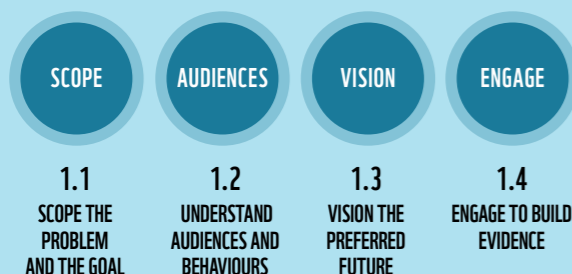
It's not intended to be a complete guide to the constantly evolving body of evidence on what influences behaviour, but rather a simple, memorable system to help you consider where, when and how behavioural insights could be applied to meet specific goals.



SAVE

DEVELOPING BEHAVIOUR CHANGE STRATEGIES AND INTERVENTIONS

This step lays the groundwork for developing interventions and focuses on gathering evidence as the essential bedrock of behavioural strategy. It's a collaborative process that needs to be repeatedly revisited and refined. It begins with reviewing existing data and insights to understand what is already known about the current situation and engaging stakeholders and partners as needed during the process to plug gaps and co-design possible solutions. During this stage, we seek to understand the Why, What, Who, When, Where and How.



1.1 SCOPE

1.1 SCOPE THE PROBLEM AND THE GOAL

This involves desk research and analysis to learn from existing evidence to:

- Understand the market, policy and social context and drivers for action
- Identify the specific causes of the issue and opportunity areas
- Understand current actions in the space and learn from best practice
- Define the problem and the specific goal/target we seek.

USEFUL TOOLS FOR UNDERSTANDING THE CONTEXT INCLUDE

ISM Tool

Encourages consideration of all the Individual, Social and Material factors that require action to change behaviours, highlighting the importance of infrastructure, policy, social and cultural context alongside personal values, attitudes and skills.

Com B Behaviour Change Wheel

Identifies similar factors with a focus on capability, opportunity, motivation.

1.2 AUDIENCES

1.2 UNDERSTAND AUDIENCES AND BEHAVIOURS

Behavioural science isn't limited to end consumers, but can be applied to all audiences. We are all human with similar psychological biases, whether we are acting in our personal or professional roles as business leaders, colleagues, government officials or global citizens. Gathering audience and behavioural insights to inform interventions involves both learning from existing data and carrying out primary research as needed. The process includes the following steps and is designed to be iterative to enable learning to feed back in as new evidence is uncovered.

1.2.1 Define priority audiences and understand their behaviours

An effective behaviour change intervention to drive systemic change will identify all the relevant stakeholders and partners that can help us achieve our goals, including corporates, supply chain companies, primary producers, policymakers, local government officials, NGOs, media, networks and consumers.

Specific audiences have specific behaviours, so



it's important to segment audiences clearly to target interventions.

If you're seeking to influence corporates or public sector employees, you may want to prioritize based on sector, business type, size or role. Evidence from the initial scoping step will inform your decision on who to target to address the biggest specific causes of the problem. For example, if you've identified "on the go" plastic packaging use as a key problem, your behavioural interventions may focus specifically on this area by working through hospitality and food-service partners.

In segmenting target audiences, we would consider factors such as geo-demographics, life-stage and household size/type, alongside behavioural intentions and willingness and ability to

act. Consider what people *think, feel, believe* and *do*. Useful models to understand behaviours include:

- The **trans-theoretical model** of behaviour change can be applied to identify where audience segments lie on the "stages of change" from pre-contemplation through to action and maintenance.
- The **diffusion of innovation model** highlights the need to tailor approaches along the adoption curve from innovators to laggards and shows the importance of interpersonal communication and social observability in changing behaviour.
- **Ajzen's Theory of Planned Behaviour** emphasizes the importance

of perceived behavioural control or ability to carry out the change, alongside attitudes and norms.

- **Meta-analysis by Rare** of 84 social marketing campaigns applied variables from all these models to identify behavioural levers, including knowledge (systems and solutions), attitudes and interpersonal communication factors. An effective segmentation model will draw on a mix of these variables as appropriate to the issue, using both qualitative and quantitative research to scope the size and potential of each segment to deliver the change sought.



selling ivory from x to y by 2025.

It's important to establish behavioural goals that can be reliably measured and to consider what data is already available or can be collected on our behavioural outcome to achieve this. Often this will involve a mixture of hard measures and proxy indicators for which data is available. (This is discussed further in the "PLEASE" component of the SNP framework.)

1.2.3 Identify benefits and barriers to behaviours, key motivators and biases at play

Having identified our core audience and behavioural goal, we need to analyse the drivers of behaviour to understand why our audience is acting in this way and what may motivate them to act differently in the future. Evidence to inform the analysis should

1.2.3 USEFUL TOOLS INCLUDE:

Benefits and Barriers Grid or Dan Ariely's Fuel and Friction Model
Can help identify reasons for and against a proposed action or behaviour. This exercise seeks to identify ways to increase the benefits/fuel and reduce the barriers/friction to our preferred behaviour, while increasing the barriers/friction and reducing the benefits/fuel of the current behaviour.

Motivation Wheel (p13)
Helps identify the key motivators that persuade the target audience to act in the preferred behaviour.

Cognitive Bias Codex
Categorizes almost 200 different cognitive biases so far.

draw on research among the target audience to avoid our own innate bias and ensure it is rooted in genuine human insight.

1.2.4 Map the decision-making journey

Mapping the decision-making journey in detail is important to understand all the influences and context around the specific behaviour. It helps to identify all possible frictions, bottlenecks, touchpoints, influencers and moments of change where interventions may be most needed. All behaviour takes place in space and time, so this is useful to inform the "Who, What, When, Where, Why and How" at each stage of the behaviour change journey.

1.2.4 USEFUL TOOLS INCLUDE

Journey mapping
This exercise encourages the user to mentally journey through a series of actions that lead to the envisioned future outcome.

1.2.2 Define specific behavioural goals for each audience

In parallel with identifying audiences, we need to identify specific behavioural goals for each group. Initially this involves identifying a long list of "micro-behaviours" that we wish each audience to adopt, before prioritizing to focus on the specific future behaviour that will have the most impact. Successful behavioural interventions are focused on one audience and one behaviour at a time, so this may highlight the need for multiple tailored behavioural interventions for different audience groups.

In each case, we need to be very specific to define a "SMART" behavioural objective. High-level goals such as "eat less meat" or "reduce plastic use" should be translated into SMART behavioural objectives, for example:

- Increase the number of 18- to 21-year-old students who replace meat products with plant-based alternatives in meals prepared at home at least twice a week, from x% to y% by 2025.
- Increase the number of countries who legislate to ban single-use plastics from x to y by 2025.
- Reduce the number of tour guides in Thailand who take tourists to markets

1.3 VISION

1.3 VISION THE PREFERRED FUTURE

A clear vision of our preferred future provides an inspiring narrative and compass for our journey in effectively shifting behaviours. Typically, this would be co-designed through workshops using visioning techniques such as **future pacing**. This technique **respects and acknowledges people's current behaviours**, before projecting them into a preferred future state to vision what we want them to *think, feel, believe* and *do*, using all the senses. This can be useful to develop a conceptual map that walks back through the journey and identifies all assumptions and steps to get there. Alternatively, we can apply **appreciative inquiry**, a philosophy that focuses on expanding on what's working well as a means to encourage incremental shifts in the same direction.

1.3 USEFUL TOOLS INCLUDE

- **Example theory of change for Rare's Pride programme.**
- **Visioning Think Feel Believe Do grid** (top right) – engages citizens, influencers, stakeholders and collaborators to co-create possible solutions

1.4 ENGAGE

1.4 ENGAGE TO BUILD EVIDENCE

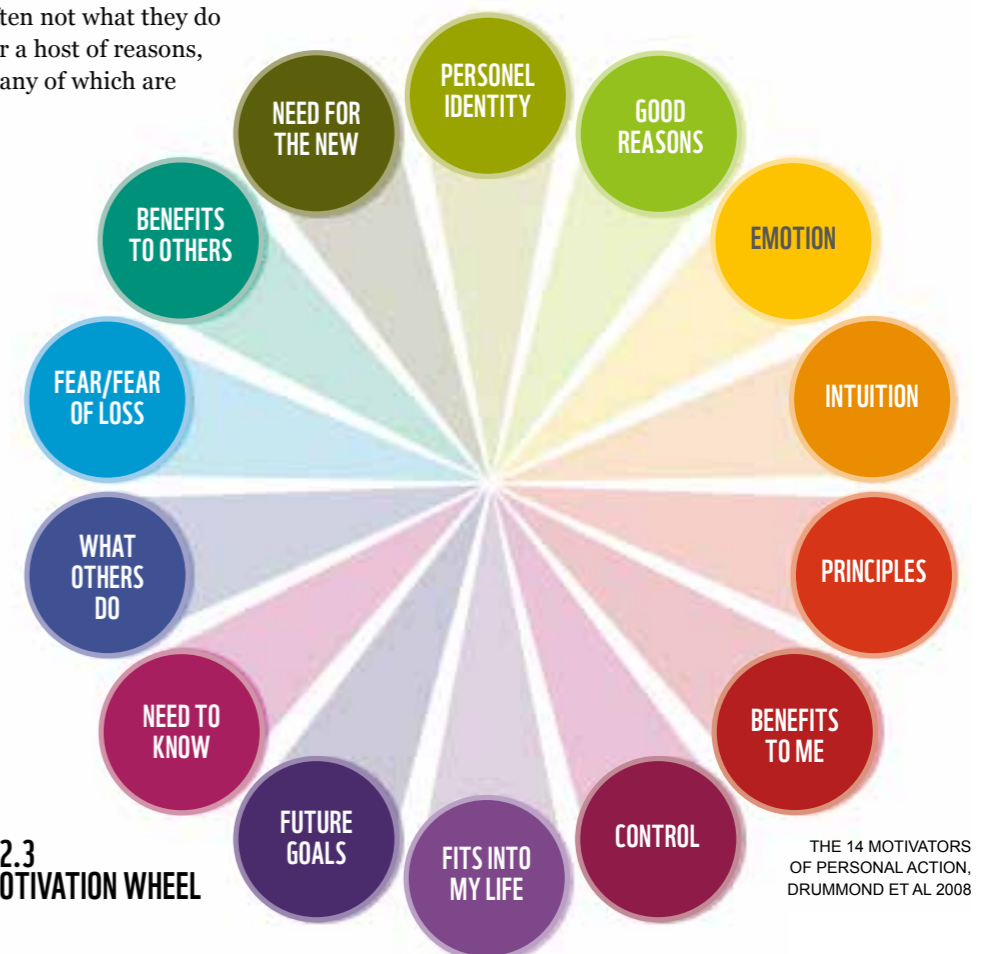
Engaging citizens, influencers, stakeholders and collaborators is essential throughout the development stage to plug gaps in our understanding, uncover authentic, emotional, human insight on which to base our strategy, and co-create possible solutions.

A wealth of techniques can be used, depending on objectives. However, it's important to recognize that what people say is often not what they do for a host of reasons, many of which are

non-conscious or difficult to verbalize in an artificial research setting. This is why behavioural scientists use techniques that minimize the cognitive load on the participant

and provide a more naturalistic environment, for example ethnography or neuroscience tools such as biometrics to measure emotion.

1.3 THINK, FEEL, BELIEVE, DO GRID



THE 14 MOTIVATORS OF PERSONAL ACTION, DRUMMOND ET AL 2008



NATURE

PRINCIPLES FOR DELIVERING INTERVENTION

This step of the framework identifies key principles to consider in the delivery of behavioural interventions. It draws on an extensive evidence base and is aligned to other proven models, most notably the **EAST framework** developed by the Behavioural Insights Team (BIT) and the 15 strategies outlined in **Behavior Change for Nature: A Behavioral Science Toolkit for Practitioners** from Rare Center for Behavior and the Environment and BIT.

NORMAL

2.1
NORMS: SOCIAL
IDENTITY REALLY
MATTERS

ATTRACTIVE

2.2
MAKE IT
ATTRACTIVE

TIMELY

2.3
TARGET
INTERVENTIONS AT
STRATEGIC MOMENTS

UNCOVER

2.4
UNCOVER
WHAT'S
HIDDEN

REWARDING

2.5
REWARDING AND
BEHAVIOURALLY
INFORMED
INCENTIVES

EASY

2.6
MAKE IT
EASY

2.1 NORMAL

2.1 NORMS: SOCIAL IDENTITY REALLY MATTERS

As social animals, we are heavily influenced by social and cultural norms. The social groups we are a part of guide our values, attitudes and behaviours. For the most part, we want to fit in and conform to group norms to protect our personal and social identity. According to Rare, “the strongest predictor of pro-environmental behaviours is your belief that other people are doing them and think you should too”. Interestingly, evidence shows that people often say they are willing to change their own behaviours when asked privately, but believe that other people are not, creating barriers to change.

Professor Cass Sunstein, founder and director of the Program on Behavioral Economics and Public Policy at Harvard Law School, **outlines four principles** that explain how large-scale social change happens: preference falsification (we don’t disclose what’s in our heads so don’t know what people really think); diverse thresholds (we all have different triggers for action); social interdependencies (crucial to observe that others are acting); group polarization (unpredictable).

We can use these insights in various ways:

Social proof. Using descriptive norms to highlight what most people do in a situation encourages others to do the same – e.g. “9 in 10 people say they always recycle paper.” Using dynamic norms can also be effective in encouraging less

established behaviours, e.g. “x% of young people are eating less meat.”

Social modelling. Drawing on peer networks and those we admire to model behaviours in practice encourages us to follow suit. We can use celebrities, trusted advisors and peer groups to highlight the social acceptability of behaviours, and foster community networks to enable visible collective action, provide mutual support and encourage behaviours to spread.

Commitment devices. Making a public commitment, in writing, in front of others whose opinion we value increases the likelihood of following through with good intentions. We can use commitment devices to voluntarily “lock” ourselves into doing something in advance and increase the cost of failure – the greater the cost of breaking a commitment, the more effective it is if we want to maintain a consistent positive self-image and protect social reputation. “Commitment contracts” can also be personal – apps such as **stickK** can help ensure people follow through with intentions.

Reciprocity. Our natural instinct is to want to return favours – we can harness this by providing structures and opportunities to do so.

Change norms through public policy. Policy change and regulation send a clear signal and act as a double nudge to change social and cultural norms. Typically, this is achieved through taxes, bans, subsidies or legislating for transparent measurement of impacts and progress towards targets.

EXAMPLES

Descriptive norms

- Personal reports of energy or water consumption compared to neighbours can reduce consumption. For example, Los Angeles **reduced water use** by sending personal letters informing people they were in the highest 1% of water users.

- Including the sentence “**9 out of 10 people pay their tax on time**” in UK government tax reminder letters brought forward £200 million in late tax payments.

- In the UK, a letter was sent from the Chief Medical Officer to select general practices notifying them that they were prescribing more antibiotics than 80% of the practices in their local area. This resulted in 73,406 **fewer antibiotic prescriptions** across 791 practices.

Social modelling

- WWF’s Travel Ivory Free campaign has used celebrities and opinion leaders, including Li Bingbing, Huang Xuan and Zhu Yilong, to model preferred behaviour, driving 3.4 million Chinese outbound travellers to publicly commit not to buy ivory products when travelling in Southeast Asia.

- The Real Junk Food Project runs a network of “**Disco Soup**” events

where communities come together for a food waste feast accompanied by music.

- Community fridges** enable neighbours to donate surplus food and provide a visible sign of local action.

- Studies have shown that one of **the most important factors** for a household purchasing solar panels is whether other households in the neighbourhood have them, more so than age, race, income or political affiliation. Community organizers who owned solar panels themselves recruited 63% more households than

Social proof

- Case studies from trusted influencers, recommendations and feedback ratings from others provide social reassurance while reinforcing the author’s belief in the product – up to **66% of customers are more likely to make a purchase** when evidence of by social proof is available.

Commitment

- WWF’s **No Plastic in Nature initiative** encourages corporate partners to commit to set targets on plastic production/use, measure progress against them publicly, collectively support extended producer responsibility legislation, invest in waste management systems

and advocate for better policy measures, including a global agreement on plastic pollution. Making these commitments public encourages them to deliver on their planned actions.

- In the USA, **Change the Course** encouraged public pledges to trigger funds from partners for conservation projects to protect the Colorado River.

Reciprocity

- BIT added 100,000 organ donors in one year by using the message, “If you needed an organ transplant would you have one? If so, please help others.”

- In Costa Rica, **people donated more** to a national park when they were given a gift beforehand or were told how much others donated.

Policy

- Examples of changing norms through legislation include smoking bans and mandatory seatbelts, while taxes and tariffs include plastic bag charges and high rates of VAT on cigarettes and alcohol.

- The UK sugar tax has driven 50% of manufacturers to reformulate drinks, removing 45 million kilos of sugar every year, **saving an estimated £3.3 billion for health services.**

LOS ANGELES REDUCED WATER USE BY SENDING PERSONAL LETTERS INFORMING PEOPLE THEY WERE IN THE HIGHEST 1% OF WATER USERS

© Lauren Simmonds / WWF-UK



POINTING OUT THE ELEPHANT (IVORY) IN THE ROOM THROUGH POLICY CHANGE



Ivory Lane was a fictional yet legal online shop created by WWF to highlight loopholes in Singapore's wildlife laws. It drew attention to the presence of more than 40 local shops that were still selling ivory products. Thousands reacted angrily on social media pages, reaching 5 million people and 70 global media outlets over a span of 10 days. The campaign and the reaction it provoked sparked a national and global conversation around Singapore's wildlife laws, leading to a public consultation by the Singapore authorities, then known as the Agri-Food and Veterinary Authority (AVA). The consultation proposed a ban on the sales of elephant ivory and ivory products in Singapore. WWF helped mobilise concerned citizens in Singapore, and 99% of respondents supported a total ban on ivory – which Singapore duly announced in August 2019.

2.2 ATTRACTIVE

2.2 MAKE IT ATTRACTIVE

We are attracted to things which are new, easy to understand, personal and top of mind (salient). Our responses are strongly influenced by the emotions and associations triggered by how a choice is presented.

We can use this insight in various ways:

- Attract attention.** In order to act, we need to be aware of the issue. This is achieved through single-minded simple messaging, the use of colour and images, simplification and “chunking” (breaking information down then grouping the bits together into a meaningful whole).
- Appeal to emotion.** As emotional beings, our decisions are primarily driven by how we feel. Our fast, instinctive, emotional “System 1” brain drives 90-95% of our actions, while the slow, rational “System 2” part rationalizes decisions afterwards. Authentic human emotional insight is at the heart of successful behavioural interventions. Further information is available on page 38.
- Make it personal and relevant.** Personalized messages highlighting the consequences of

WWF'S SAVE 1/3 CAMPAIGN WAS AIMED AT RAISING AWARENESS AND SHIFTING BEHAVIOURS TO ACHIEVE LOWER FOOD WASTE.



behaviour enable people to see “what this means for me, in my community” and make the costs and benefits directly relevant. We can use naming, photographs and relevant evidence to encourage action.

- Make it fun.** Gamification can help to make the behaviour fun and may provide an opportunity to achieve targets and compete with oneself or others. “**Fun theory**” includes many examples from giant piano keyboards to encourage people to take the stairs to reverse vending recycling machines and **ballot bins** to reduce littering by getting people to answer fun questions by voting with their cigarette butts.
- Framing.** The way messages or choices are framed in context has the biggest influence on our decisions. We can frame messages in many ways to illustrate the positive or negative aspects of the same decision and tap into non-conscious biases, such as **loss aversion**. Framing can also reinforce core values to drive intrinsic motivation to act.
- Anchoring and decoy effects.** When making decisions, we are naturally inclined to rely on the first piece of information we see, and to consider subsequent information in relation to this “anchor”. This is commonly used

FIGHT FOOD WASTE



WWF's **Save 1/3 Campaign** uses simple, attractive graphics and a clear call to action to raise awareness of the need to reduce food waste and rally citizens to change their consumption behaviours. The universal symbol of the plate increases salience by enabling a global audience to easily visualize and recall the desired behaviour. Most importantly, the design can easily be adapted to reflect different cultural contexts and celebrations (when food waste tends to spike), enabling campaigners to tailor messages to local audience needs while driving a global movement for action.

in discounted pricing, as we are more likely to buy a product that has been reduced. Similarly, decoy effects can be used to influence choices, by adding a third, less attractive option. We can use these

insights in fundraising to make our preferred choice more attractive.

- Messengers.** We are strongly influenced by who communicates information and how we feel about that

source. Trusted messengers improve the effectiveness of interventions. These can be authority figures, those we admire, our peers and people like us, depending on the context.



YOUR PLASTIC DIET CAMPAIGN WAS DESIGNED TO MAKE THE GLOBAL PLASTIC POLLUTION ISSUE MORE PERSONALIZED, THUS ENCOURAGING INDIVIDUALS TO TAKE STEPS TO ADDRESS THE PROBLEM.



EXAMPLES

Attention

- Nutritional labelling on food using colour coding draws on our instinctive response to certain colours (e.g. red is danger).
- Combining eye-tracking lab studies and in-store field trials, **one study found that adding an image of trees** to make the forest certification label on coffee more salient and visually appealing led to greater attention and a 22% increase in sales – whereas concern for the environment and providing information did not necessarily have an impact.

Emotion

- By using an emotional hook, Sport England's

This Girl Can campaign

activated communities to get 2.8 million more women exercising.

- Rare has found that across 450 campaigns in 60 countries, **leveraging the feeling of pride improves conservation outcomes.**

Personalization

- WWF-Belgium's **Families on the verge of extinction** campaign centred on matching rare family surnames to endangered species, adding unique personalization in its messaging. In just two weeks, WWF-Belgium received more online donations than it usually receives annually.
- Adding names and photos to letters and texts increases payment of fines and taxes:

handwritten notes on envelopes increased response rates to a survey by the Irish Revenue.

- A study in British Columbia showed that **messages about the local effects of climate change** plus strong place attachment were most likely to lead to action.

- The UK Financial Conduct Authority tested emails sent to firms who had to apply for authorization. The most effective subject lines used **direct language, primed help-seeking behaviour, and were personalized:** "[Firm name], help is here to complete your application".

- The Danish Business Authority tested letters to urge businesses to sign-up to the "Nutrition Base" including personalization, simple checklists, visuals and chunking

of information. The new letter **increased and sign-ups** when the letter was printed on red paper.

Framing

- **Replacing descriptions** like "vegetarian" and "meat-free" with indulgent language such as "field grown" increases choice of plant-based meal options.
- KBC Bank increased sales of sustainable food in company canteens to by **reframing menu descriptions**, adding visually attractive cues and emphasizing scarcity through "limited availability" signs – they didn't mention the environment, sustainability or health.



LIFE IN PLASTIC, IT'S NOT FANTASTIC

Environmentalists all know that plastic is a problem – but how do we speak to people who aren't swayed by images of choking wildlife and dirty beaches? WWF's **Your Plastic Diet campaign** transformed an environmental crisis into a personal one by showing it's not just whales and turtles that accidentally consume plastic: humans do too. Each and every one of us could be eating an average of 5 grams of plastic every week.

WWF took this abstract scientific data and visualized it in a compelling and universally understood way: you eat a credit card every week. Your Plastic Diet contributed to the largest and fastest public movement in WWF history. By June 2020, close to 1.8 million people had signed a petition calling on governments to reach a legally binding global agreement to end plastic pollution. The success of the petition is evidence of the value of using social norms to drive shifts in behaviour and actions.



2.3
TIMELY



A WWF CAMPAIGN DURING LUNAR NEW YEAR 2020 HAS CONTINUED TO RAISE AWARENESS ABOUT THE POACHING CRISIS THAT KILLS MORE THAN 20,000 ELEPHANTS A YEAR.

2.3 TARGET INTERVENTIONS AT STRATEGIC MOMENTS

Our decisions and behaviours are influenced in the moment by the context, people around us and our emotional state. Major life transitions and temporal landmarks such as birthdays or New Year are moments of change and can be used to reset our intentions and change behaviours when we are most receptive.

We can use this insight in various ways:

- **Moments of change.** It's easier to change behaviour when habits are already disrupted, such as around major life events like moving home, having a child, changing job and so on. The timing of interventions is a critical consideration.
- **Moments of action.** Timely, contextual prompts can disrupt habits by reminding people of the desired behaviours at the point of action. These can take many forms, from bin stickers to encourage recycling, to practical tools to reduce food waste or messages on products used in the environment where the action happens. Moments of action for corporates may be aligned to sustainability reporting or year-end cycles.

- **Focus on the here and now.** Our natural "present bias" leads us to forget deadlines that are far into the future and discount long-term consequences. We are far more influenced by immediate costs and benefits than those that are abstract and may be delivered in the future. We can leverage this by front-weighting immediate costs or benefits through messaging or offering small upfront rewards or losses for the behaviour.
- **Set implementation intentions in advance.** To overcome the intention-action gap, it's important to make a timely action plan to respond to barriers and obstacles that are likely to occur in the moment. Writing implementation intentions ("if situation x happens, I will do y") means people are more likely to achieve a future goal, particularly where the plan breaks down a complex goal into manageable actions. This can be used to help to overcome the "sunk cost fallacy" (continuing with something because you've already invested time or resources in it) and "escalation of commitment" to a failing project if, for example, new insight reveals that changes to existing plans are needed.

TRAVEL IVORY FREE....



A WWF-led campaign during Lunar New Year 2020 continued to raise awareness about the poaching crisis that kills more than 20,000 elephants a year. Despite the introduction at the end of 2017 of a domestic ban by China on selling and buying ivory, people continue to buy ivory products when they travel abroad. WWF's #TravelIvoryFree campaign, building on similar campaigns in previous years, focused on Chinese travellers visiting popular destinations across Southeast Asia. Timely placement of posters in airports, convention centres and hotels in multiple cities across targeted countries in Southeast Asia have

proven successful as the campaign has been viewed 260 million times on social media platforms such as Facebook, Instagram and Weibo. Coupled with the strategic appointment of popular Chinese actor Zhu Yilong as a WWF Ambassador, the campaign has garnered up to 3.4 million pledges to travel elephant ivory free.



A carved ivory sculpture, now illegal to buy or sell in China

EXAMPLES

- **Moments of change** Portland, Oregon, USA recent home movers were four times **more likely to sign up** to a bike sharing scheme than those who simply had a new bike rack in the neighbourhood. Asking people to sign honesty declarations upfront on forms or audits **increases honesty**. Prompting legacy gifts while writing wills **increases donations**.
- **Here and now** The UK Financial Conduct Authority found that sending letters 20 days before the deadline (vs. 60 days) this means that the most effective way proven to get responses was to time the action. It was proven to be more effective than even other tactics, thus exemplifying the impact of timely actions.

MOMENTS OF ACTION



Earth Hour exemplifies a moment of action that has become a model of best practice, with huge global reach and an attractive, clear proposition to unite global citizens behind our common cause. Started by WWF and partners as a symbolic lights-out event in Sydney in 2007, Earth Hour is now one of the world's largest grassroots movements for the environment. Held every year on the last Saturday of March, Earth Hour engages millions of people in more than 180 countries and territories, switching off their lights to show support for the planet. It has become a catalyst for positive environmental impact, driving legislative changes by harnessing the power of the people and collective action.



2.4
UNCOVER2.4 UNCOVER
WHAT'S HIDDEN

We behave differently when we believe we are being watched by others to comply with accepted norms and protect our reputation. Increasing the observability of behaviour, through actual or implied surveillance, leverages the personal and social cost of transgressing and can be used to both curb undesirable behaviour and reward preferred behaviour.

We can use this insight in various ways:

Increase accountability. Public league tables, audits, pledges and scorecards drive performance improvement to protect reputation and encourage compliance with industry benchmarks. Transparent signposting is important to drive public recognition and act as a social incentive.

Shine a spotlight. The use of cameras and photos provides evidence of behaviour. However, even the illusion of observability, e.g. through “fake eyes” above an honesty box, subconsciously influences us to do the right thing. Creating visible signals of “good” behaviour is also a powerful influence as it increases the social reward and makes behaviour more noticeable and normalized, for example through uniforms or accreditations.

WWF'S PALM OIL BUYERS SCORECARD ASSESSES MAJOR RETAILERS, CONSUMER GOODS MANUFACTURERS AND FOOD SERVICE COMPANIES FROM AROUND THE WORLD FOR THEIR PERFORMANCES AND COMMITMENTS ON RESPONSIBLE PURCHASING OF PALM OIL.

EXAMPLES

Increase accountability

• **CDP** (formerly the Carbon Disclosure Project) runs a global system for investors, companies, cities, states and regions to publicly disclose their environmental impacts in order to increase transparency and drive action. In 2019, more than 8,400 companies and 920 cities, states and regions disclosed through CDP and reported their scores in public reports.

Shine a spotlight

• In Newcastle, England, placing posters featuring large eyes above cycle racks reduced bike thefts by 62%.

• “Communitrees” installations reduced littering in the Forest of Dean, England by 30%.

A report by Rare includes further examples:

- Adding a photo of the driver to letters sent to those who failed to pay road tax increased payment rates by over 20%.
- In Indonesia, increasing the likelihood of an audit from 4% to 100% for construction projects reduced the amount of funds that went missing from 29% to 20%.
- In Papua New Guinea, “Phone Against Corruption” enabled citizens to report

fraud anonymously via their mobile phones to identify more than 300 cases of alleged corruption involving over US\$6 million.

• In India, students took a time-stamped photo of the teacher and class at the beginning and end of each day, with the teacher's salary linked to their attendance. The combination of an incentive with bottom-up social pressure from students increased teacher attendance rates from 58% in control schools to 78%.

DIGGING DEEP AND MAKING IT COUNT...

WWF's **Palm Oil Buyers Scorecard** assesses major retailers, consumer goods manufacturers and food-service companies from around the world for their performance and commitments on responsible purchasing of palm oil. Scorecards highlight the leaders and laggards, monitoring and encouraging progress against commitments made by providing recommendations. Through uncovering information that would otherwise be hidden from consumers, publications

such as this are used to increase accountability among companies that are in a position to deliver positive impact. WWF has produced similar scorecards in other sectors, including for **soy buyers** and **sustainable retailers** focusing on items such as single-use plastic usage and responsible procurement.

2.5
REWARDING2.5 MAKE IT REWARDING
– BEHAVIOURALLY
INFORMED INCENTIVES

Behaviourally informed **incentives** and disincentives, including taxes, fines, rewards and sanctions, are powerful ways of encouraging action – though we should take care to ensure that they reinforce rather than crowd out intrinsic motivation. As humans, we are naturally **loss averse**, meaning we don't like to miss out, and we can harness anticipated regret in the design of interventions to motivate behaviour change.

We can use this insight in various ways:

- Lotteries and prize draws work because we focus on the size of the prize more than our odds of winning. They can take many forms. “Regret lotteries” draw on our loss aversion by informing people who don't participate that they've missed out on a possible reward. Regret lotteries are often based on existing identifiers such as postcodes, licence plates or account numbers, encouraging regular ongoing participation.
- Offer upfront rewards. Incentives can also harness loss aversion by giving people upfront benefits or payments – which may be taken back depending upon performance.

- Group incentives, where payment is made to all members of a group, are useful to encourage compliance and drive peer-to-peer enforcement.
- Harness scarcity. If we feel supplies of products, services or rewards are limited, we are more likely to be attracted to them.
- Use a range of rewards and sanctions. Money is only one type of incentive – it's important to draw on a mixture of “currencies”, including self-image, social influence, public recognition, time and experience. Evidence shows that financial incentives can backfire where behaviour is intrinsically motivated or driven by peer pressure or altruism (e.g. volunteering...), where symbolic rewards or recognition are likely to be more effective. Similarly, financial sanctions can remove guilt and act to license the behaviour, so should be used with care.

SAVING THE WORLD IS REWARDING

In 2020, WWF and the World Organization for the Scouting Movement (WOSM) launched the new Champions for Nature Challenge Badge (formerly known as the World Conservation Badge). Recognizing the important role of young people in creating a more sustainable world, the Champions for Nature Challenge aims to raise awareness and inspire action for nature and the environment among more than 50 million Scouts and their communities in 224 countries and territories around the globe. The challenge specifically addresses responsible consumption, helping young people to better understand the impact of their consumer habits on the environment and how to make and advocate for more sustainable choices. To recognize their commitment to champion nature, Scouts are rewarded the Champions for Nature Challenge Badge by completing three levels of age-appropriate educational activities and carrying out community projects in service of the environment.



EXAMPLE:
USING TRASH
INSTEAD OF
CASH

EXAMPLES

Lotteries and prize draws

- The **Stockholm speed camera lottery** automatically entered careful drivers into a lottery for sticking to the speed limit, reducing average speeds to 25km/h for 25,000 cars involved in the trial.
- In China, lottery tickets printed on the back of till receipts **reduced tax avoidance** as customers asked for receipts, forcing businesses to declare that revenue.
- In the Netherlands, a study found that anticipated regret increased participation rates in a postcode lottery, compared to a regular ticket lottery.

Range of rewards

- Hairdressers in Zambia were most likely to give out condoms when **incentivized with gold star** window stickers rather than various cash incentives.

- **Using trash instead of cash** – a McDonald's Sweden green festival campaign accepted empty cans as currency.
- European Recycling Platform (ERP) and Heavenly Music Services' Make Noise nationwide tour provided tickets to see bands **in exchange for old electronic products**.

Group incentives

In England, **Anglian Water's Slug-it-Out** campaign provided incentives to farmers to encourage them to stop using the slug control pesticide metaldehyde. Payments were only made if all farmers complied, measured by water quality readings. Since 2015 the programme has engaged 225 farmers leading to a 96% reduction in the level of metaldehyde across the region.

2.6
EASY

2.6 MAKE IT EASY

The strongest lesson from behavioural science is to make the desired behaviour as easy, effortless and friction-free as possible. The smallest of details can make a big difference if it increases the amount of effort it takes to achieve a behaviour.

It is important to consider the role of all actors. We can engage individuals to influence underlying attitudes and values and boost **self-efficacy** (the belief that the behaviour can be carried out) alongside the policymakers, organizations and companies who can change the **choice architecture** (the context in which choices are made).

We can use this insight in various ways:

Change the default.

Automatic defaults work because we have a strong tendency to go along with the status quo or pre-set option. This is used widely, for example to default people into certain tariffs for services, to auto-renew subscriptions, to auto-enrol people for pensions, or encourage organ donation by changing to an opt-out system.

Provide substitutes for undesirable behaviour.

Signpost alternative products and services that fulfil the same physical and emotional need. For example,

encourage people to buy sustainable local souvenirs instead of ivory, or eat plant-based meals instead of meat (though be sure the substitutes suggested don't have any unintended negative impacts).

Alter the choice setting.

Make the desired behaviour more convenient and effortless and add friction or hassle to the undesirable behaviour. For example, provide infrastructure and systems to enable recycling or design products, services and spaces to encourage healthier choices.

Simplify the complex.

Ensure it's easy to understand and carry out the desired behaviour by simplifying messages and breaking down complex goals into easy achievable steps. Focus on a clear, specific call to action and cut extraneous information to the bone.

Boost personal agency.

People with positive views of their own ability or self-efficacy exert more effort to succeed and are more likely to persist in the face of adversity. While **"nudges"** seek to make behaviour easier by altering the choice environment, **"boosts"** (developed by the Max Planck Institute) build competence, skills and knowledge to make it easy for people to implement intentions.

EXAMPLES

Change the default

- Using smaller plates or pack sizes **reduces food consumption**, integrating **vegetarian choices** into menus normalizes them, while healthy food is twice as likely to be chosen if it is **placed at the top or bottom of a menu**.
- In Germany, defaulting energy customers onto a renewable tariff **increased the number of consumers using green energy tenfold**.
- WeWork, a global office space company, introduced a **companywide policy** to no longer provide meat to employees at events, nor to reimburse employees for purchases of meat on expenses.

Alter the choice setting

- Field trials at the University of Cambridge show that **doubling availability of vegetarian options** in cafés from 1 in 4 to 2 in 4 dishes on menus increased sales between 41% and 79%.
- Using recycling containers with special lids to make it clear what goes where **improved recycling of beverage cans by 34%** compared to containers with no lids.

Simplify the complex

- WWF-South Africa's Sustainable Seafood Initiative (**SASSI**) drove change throughout the seafood supply chain with tools such as colour-coded



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fish guides and an app to enable citizens to choose sustainable seafood.

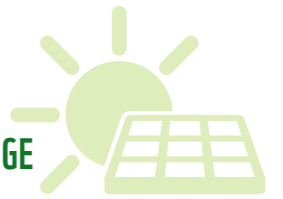
- In the Bahamas, **providing size gauges to fishers** enabled processors to record almost zero undersized lobster.
- Removing clicks from online processes and pre-filling forms increases responses: in the UK, BIT removed one click from the online tax payment process to improve response rates by 21%.
- In the UK, **Change 4 Life** created a movement to reduce obesity by providing practical tools for everyone who could help motivate families to change behaviours,

including community leaders, teachers, health professionals, charities, leisure centres, retailers and food manufacturers, as well as extra support for 200,000 of the most at-risk families.

Provide substitutes for undesirable behaviour

- BIT partnered with the UN Development Programme and the Solomon Islands government to encourage trial schools to **switch to reusable lunch containers** in place of single-use plastics. It found that a deposit return incentive was most effective.

IN FRANCE, A COACHING/LIFESTYLE APP WAS LAUNCHED. TO MAKE IT EASY TO FIND WAYS TO CHANGE HABITS TO REDUCE IMPACT ON CLIMATE CHANGE.



WE ACT FOR GOOD



In France, WWF launched a coaching/lifestyle app, **We Act For Good (WAG)**, to help people change habits to reduce their climate change impact. The app was designed to be fun, offering tailor-made programmes and simple actions and creating a community of like-minded individuals. WAG aims to overcome the four barriers to behavioural change for the environment: I don't know what to do, I don't want it to be difficult, I don't want to be alone, it's too expensive. Through making the change easier and the challenges achievable, the app boosts users' confidence in adopting new habits and sticking to them. The call to download the app, addressing the first dreaded intention-action gap, normalizes concerns by sharing facts such as "87% of French people are concerned about ecological issues". Additionally, the We Act For Good community creates a new social norm for the individuals to adapt to. Despite being solely available in France, it has reached approximately 540,000 downloads with almost 2 million challenges started since its launch in 2018.



PLEASE

MEASURING AND SCALING INTERVENTIONS

The final stage of the framework is focused on monitoring, gathering evidence of effectiveness, adapting interventions as needed and scaling up by empowering others.

It is only through **piloting** interventions in the real world that we can reliably gauge effectiveness in context, because what people say is not necessarily what they do in practice.

It's important to identify **learnings** for the future by **evaluating** both the outcome and the process to understand not only the impact but also why the intervention has performed that way. Understanding what went wrong is equally as important as learning from success.

PILOT

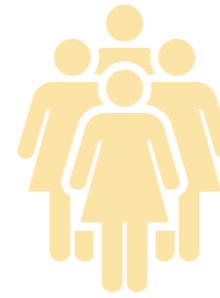
LEARN

EVALUATE

ADAPT

SCALE

EMPOWER



BEHAVIOUR CHANGE CAN TAKE TIME, AND EVALUATION NEEDS TO BE SUFFICIENTLY LONG TERM TO DEMONSTRATE THAT AN INTERVENTION HAS LED TO AND MAINTAINED IMPACT.

Equally essential is the need to consider how evaluation results will be used for decision-making. It is likely to involve a process of **adapting** before **scaling-up** what works by **empowering** and enabling collaborators, for example through toolkits and capacity building.

MONITORING AND EVALUATION (M&E)

A key distinction between approaches to M&E is their capacity to tell whether an intervention actually caused the change detected. Impact evaluation, a specific approach to M&E, is designed to attribute an outcome to an intervention, while other approaches simply indicate if variables of interest have changed in the presence of an intervention.

Impact evaluations have experimental or quasi-experimental research designs that use control groups, which are not subject to an intervention, to explore what would have happened in the absence of an intervention (known as a counterfactual). This allows researchers to say whether an intervention caused a particular change. **A/B testing** is a commonly used approach to determine which of two (sometimes more than two) approaches work. The **BIT/Rare Behavior Change for Nature Toolkit**

appendix provides detailed information on these techniques.

While answering questions around attribution is vital to contributing to the knowledge base on effectiveness of interventions, such approaches to evaluation are often more expensive, time-consuming and not suitable for every context.

Bringing science to adaptive management

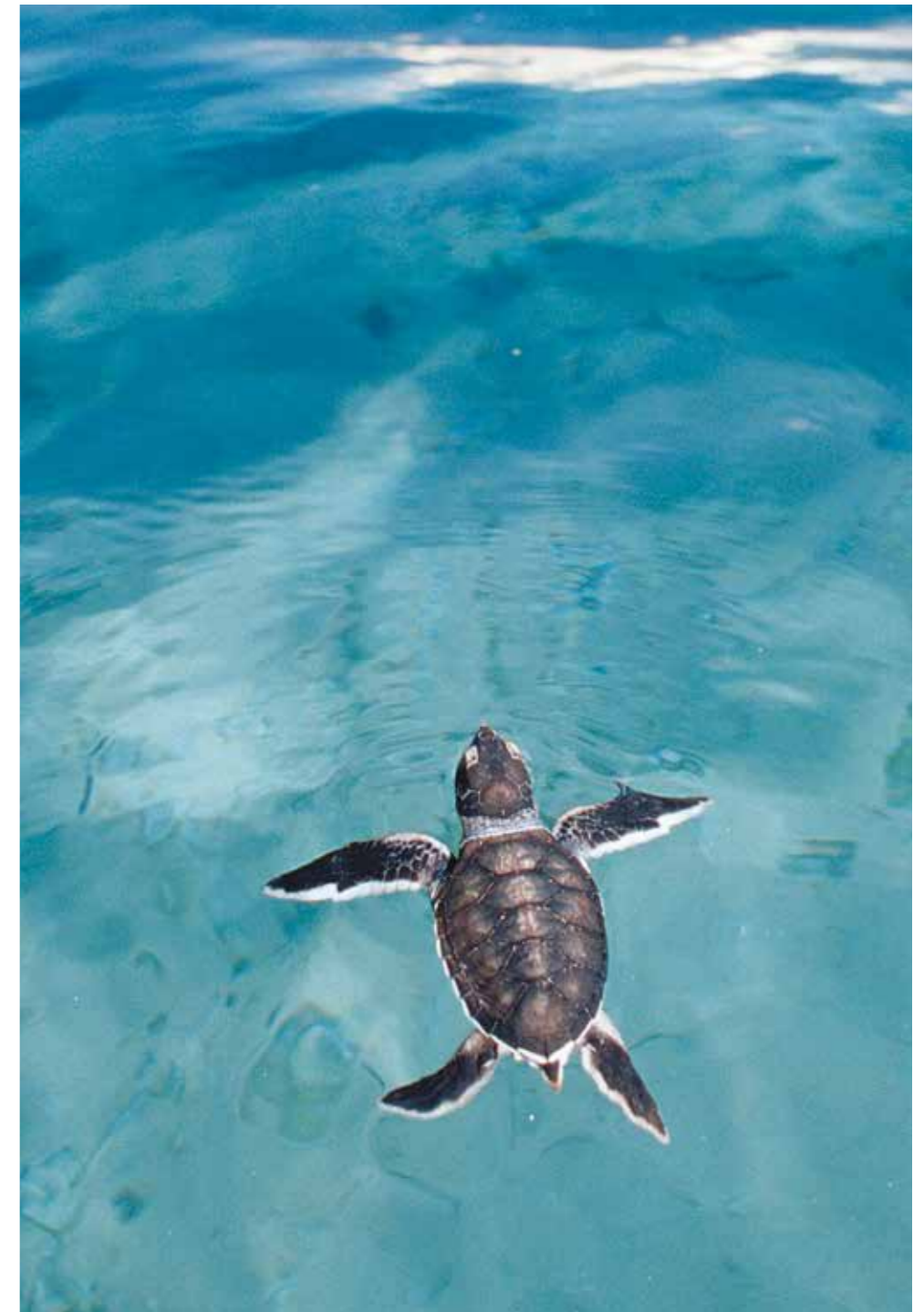
Different types of research inform different stages of project design and implementation.

Questions for project design

- Who is the target audience?
- What is the most appropriate intervention given the context?

Questions for M&E

- Did the intervention have the desired impact? Are there any unintended impacts?
- How might the intervention be modified to deliver the desired impact?
- If the project didn't work, was it theory failure? Or implementation failure?



Other types of evaluation explore how interventions contribute to a desired change in the world. Research design for understanding contribution is often simpler – collecting data before and after an intervention or monitoring outcomes of interest after an intervention, supplemented with qualitative data exploring how outcomes occurred. This type of evaluation in conservation is referred to as **performance measurement**. While it can't tell us if an intervention caused the outcome we see, it still provides relevant context data and can help inform some adaptive management decisions.

As behaviour change interventions seek to change human behaviour, it's easier to measure impact through real-world trials than when we're dealing with ecological conservation outcomes. Human behaviour changes can often be detected more quickly, while changes in conservation outcomes take longer to detect, and are more difficult to isolate using experimental designs.

M&E for behaviour change interventions can answer adaptive management questions, identifying if, how and why interventions deliver impact, and how they might be improved to achieve results. To decide what type of M&E to engage in, think about the key

decisions your results will inform, key audiences and available resources. For example, the decisions M&E results aim to inform will determine if an impact evaluation is necessary, or if performance measurement is sufficient. Key audiences will help inform the types of products your evaluation will need to produce, and available resources will affect your capacity to collect data.

A foundational step in any evaluation is to understand and articulate the **theory of change**, which describes how you expect your intervention to achieve impact. This provides a base for designing what causal linkages your evaluation needs to test. A theory of

change is often developed before implementing an intervention, and ensuring that the theory of change has clear, measurable outcomes provides a strong base for designing an evaluation. There are many ways a team can develop a theory of change, such as narratives, results chains, or a combination of both.

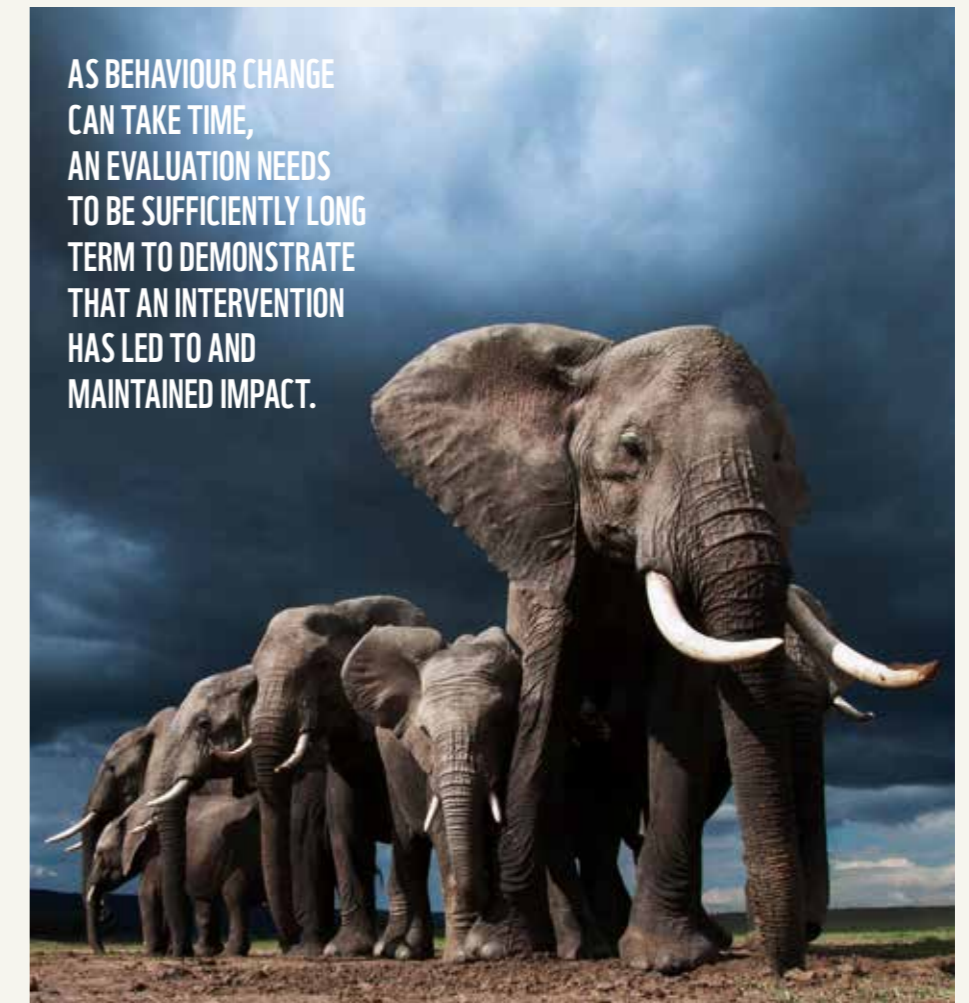
Understanding what evidence already exists for explaining parts of the theory of change can help you identify the most critical links to test in an intervention. For parts in a chain where little evidence exists, investment in impact evaluation can provide useful knowledge for implementation while also contributing to a broader evidence base on unknown relationships. For parts where relationships are already well understood, performance measurement can help you understand if the intervention is going as planned and delivering expected results.

Different types of data can help answer evaluation questions. **Quantitative** data is collected uniformly across a population or area of interest and reported numerically. **Qualitative** data is contextual and provides open-ended narrative responses explaining how and why certain outcomes occur. **Mixed methods** bring these two approaches together, using quantitative data to measure what has changed, with qualitative data

providing useful context to explain why and how. Selecting appropriate data to collect will depend on the types of questions an evaluation seeks to answer and resources available.

For evaluating behaviour change interventions, we can measure three types of behaviour: intended, reported and actual. Measuring intended behaviour involves asking a respondent about planned future behaviour, while reported behaviour asks individuals to describe the behaviours they have engaged in. Actual behaviour can be measured through direct observation or by developing a method to quantitatively measure behavioural engagement. For example, if you're trying to decrease energy usage, you could ask respondents to tell you what energy-saving measures they take (reported behaviour) or you can read their electricity meter before and after the intervention. When possible, it's best to measure actual behaviour given the amount of bias that can afflict reported behaviour. However, this can be difficult and impossible in certain scenarios when there isn't a quantitative variable to measure a particular behaviour. As a result, it's important to select the method of behaviour measurement most suited to the intervention and context.

AN EXAMPLE MEASUREMENT FRAMEWORK



Outcome measures may include a range of behaviour change indicators. These include the primary target behaviour, which is generally linked to prevalence (e.g. reduction in ivory purchasing), along with intermediary measures relating to the theory of change underpinning your behavioural intervention (e.g. increase in whistleblowing). It's important to

consider proxy metrics using data that is readily available and easy to obtain – for example, the number of border seizures may be a proxy for the number of people trafficking illegal wildlife products. On p32 is an example measurement framework using the "5A" model on the #travelivoryfree campaigns, which can be tailored to support M&E needs at programme level or to measure the impact of

specific campaigns and interventions. It highlights the importance of moving beyond data related purely to awareness (communications) and advocacy (likes, shares, etc.), to include attitude shift (intermediate measures), action (actual behaviour change) and added value (social, economic and environmental benefit).



AREA	MEASURES TO SHOW THE IMPACT OF IVORY DEMAND REDUCTION INTERVENTIONS: BY 2022...	HOW WILL WE MEASURE THIS?
ATTENTION • Has activity cut through?	<ul style="list-style-type: none"> • x% are aware of communications /activities to encourage them to reject ivory • x% recall of specific messages and channels • x% are aware of the ban on ivory trade in China • x% are aware that 20,000 elephants are brutally killed each year to meet demand for ivory products 	<ul style="list-style-type: none"> • Numbers reached online and face to face • Social media metrics – Reach (unique user); Click through rate, Cost per click; User stay / video views / Q&A views • Globescan annual tracking survey • Online survey (pre/post/control)
ATTITUDES • Have we changed what citizens think, feel and believe? • Are barriers to buying ivory increasing? • Are the perceived benefits of buying ivory reducing?	<ul style="list-style-type: none"> • x% are concerned at the legal consequences of buying, selling or transporting ivory products into China • x% are concerned about cruelty and the possible extinction of elephants • x% are committed to protect elephants • x% feel that it is easy to find good alternatives to ivory • x% say it is difficult to buy ivory • x% believe that everyone is acting to boycott ivory • x% believe that buying or gifting ivory is socially unacceptable – not a symbol of wealth but a source of shame and worry • x% believe that ivory will decrease in value • x% believe that buying ivory brings bad luck • x% would never recommend buying or gifting ivory to friends/family • x% say other people have told me not to buy ivory • x% say they will report anyone who buys or sells ivory to the authorities • x% feel the communications/activities are of value, have taught them something new 	<ul style="list-style-type: none"> • Globescan annual tracking survey • Online survey (pre/post/control) • Commitment pledges
ADVOCACY Have we gained partner support and extra reach?	<ul style="list-style-type: none"> • Xxx partners/travel companies have joined our campaign and used their own channels to reach our audience • Xxx Key opinion leaders/ influencers have supported us to amplify reach • Xxx extra target audience engaged through partner and influencer activity • Xxx attended events, liked, shared, commented on social media 	<ul style="list-style-type: none"> • Partner/KOL monitoring and data • Social media metrics • Social listening – volume/sentiment of user-generated content • Feedback from events
ACTION Have we changed specific behaviours?	<ul style="list-style-type: none"> • x% say they have not bought ivory products in last year/six months • x% say they do not intend to buy ivory in future • x% say they are likely to buy alternatives to ivory in future • Fewer ivory products are available to buy online and in markets • More ivory products are seized at borders, in markets etc. 	<ul style="list-style-type: none"> • Globescan annual tracking survey • Online survey (pre/post/control) • Market data – number of ivory products and alternatives on sale in shops/online • IWT (Illegal Wildlife Trade) seizure data
ADDED VALUE What's the social, economic, environmental, cost benefit?	<ul style="list-style-type: none"> • Is there a reduction in numbers of elephants killed? • How do we ultimately value the benefits to nature? • Can we attribute a cost benefit to this? 	<ul style="list-style-type: none"> • Value modelling impact assessment • Analysis of relevant sources – e.g. field data from CITES (ETIS elephant trade information system, PIKE data on proportion of illegally killed elephants)

Evaluation results may answer critical adaptive management questions for programme managers, but they may have wider use for other practitioners, scientists and stakeholders. Identifying all users of evaluation results beforehand can inform what evaluation products you should develop and ensure you have available resources to do so. Different users may require different evaluation products: for example, technical reports and scientific papers will be useful to academic or technical staff, while lighter briefs, presentations or audiovisual material may help communicate results to other stakeholders. Engaging with potential evaluation users, and even co-designing evaluations with them, can help identify key questions and uses, ensuring that evaluation products are designed to be used.



CHECKLIST

Here's a 10-item checklist to help you apply the SAVE NATURE PLEASE framework in projects and activities.

HAVE YOU...?

1. Carried out desk research to understand the context, learn from best practice and identify key causes to scope the problem and goal?
2. Clearly identified specific audiences where behaviour change will have most impact?
3. Defined specific behavioural goals for each audience and created SMART behavioural objectives?
4. Mapped the decision-making journey to understand all the influences, context, messengers and moments of change around the specific behaviour?
5. Created a vision of your preferred future and developed a theory of change to identify steps to get there, with a clear initial action?
6. Created a measurement framework to identify how you will measure behavioural shifts?
7. Carried out research among the target audience to identify benefits and barriers to behaviours, key motivators and biases at play, co-design interventions and provide a baseline for ongoing measurement?
8. Developed strategies to increase benefits and reduce barriers to the preferred behaviour and provided substitutes for undesired behaviour? Ensured substitutes do not have undesirable consequences?
9. Imagined how behavioural interventions could make desired behaviour Normal, Attractive, Timely, Uncover what's hidden, Rewarding and Easy - NATURE?
10. Piloted behavioural interventions to learn and adapt before scaling up and empowering others through toolkits?

PART TWO

THE FOUNDATIONS FOR BEHAVIOURAL SCIENCE

1. TAKING A SYSTEMS APPROACH TO CHANGING HUMAN BEHAVIOUR

People interact with each other and their environments in complex systems. Complex systems are dynamic and behave in non-linear and often unexpected ways.

For example, seemingly small, insignificant events that occur in the past may play unexpected roles in achieving or hindering the capacity to create lasting change. Research on complex adaptive systems links different disciplines across the natural and social sciences into a new, applied body of knowledge that can be used to solve some of the most serious environmental and conservation problems today (Cumming 2011).

When solving complex conservation problems, we need to recognize that individual and collective human behaviours always occur in complex systems. By improving our understanding of the system's structure, how it works and the relationships between components within the system, we can find leverage points for change (Fuller Transformation Collaborative 2019). These are the points within a system – often involving human behaviour – where a small change could lead to a large shift in its behaviour. Leverage points are also known as “points of power” (Meadows 1999: 1), and include, for example, the power to transcend paradigms or change the goals of the system.

Taking a systems approach to changing human behaviour change requires, from the start, a holistic outlook. When designing behavioural change interventions with lasting impact, we must acknowledge that environmental problems are not isolated issues. We need to see the whole system before we decide what actions to take. Interventions we develop may not only affect the problem at hand, but could also cause unintended effects on other parts of the system. In other words, any single action can create multiple outcomes and feedback loops within a system, including some that might not have been intended.

The Fuller Transformation Collaborative (2019) proposes eight principles to guide actions when striving to create change in complex systems. When striving to create change by changing human behaviour, it's helpful to keep these eight principles in mind to help ensure that whatever actions taken have greater capacity to create lasting positive change for both people and nature.

EIGHT PRINCIPLES OF THE FULLER TRANSFORMATION COLLABORATIVE

Principle 1:

See ourselves in the system. We are all part of the systems we strive to change. By seeing this, we can sharpen our awareness and attune ourselves to the feedbacks and relationships that occur between our individual and collective actions and the broader systems we exist within. Cultivating mindfulness, humility and acceptance of the complexity we exist within provides space for reflection, which can in turn make us strong and resilient agents of change.

Principle 2:

Identify our frames. How we define problems shapes how we find solutions. Our perceptions of problems are often limited by our experience, values and beliefs. Failing to recognize this can increase the risk of misdiagnosing problems based on incomplete understandings of systems. By developing the ability to identify, stretch and reduce our frames when needed, we increase our capacity to see problems in the context of the systems that generate them, increasing the set of solutions we can perceive.

Principle 3:

Co-create with intention. Creating social and environmental change that lasts relies on the behaviours of all actors in a system. Intentional co-creation involves defining problems and solutions together with actors in a system and includes creating a safe space where the diversity of views and visions for the future can co-exist. Not only is co-creation an ethical way to drive change, it is essential for building a coalition of actors with the capacity for enacting change.

Principle 4:

Explore time and scale. We are often tackling problems with limited time and at too small a scale. Developing a sensitivity to both time and scale can help us become attuned to the underlying patterns and trajectory of systems change. With this attention, we can design actions in ways that harmonize time and scale, and build solutions that work with – and not against – systems.

Principle 5:

Find simplicity in complexity. The belief that there exists a simple solution amidst great complexity is important for those wrestling with intractable problems. By working to truly understand and navigate complexity, we train ourselves to discern points of leverage that offer opportunities to transform system structures, patterns and behaviours. By identifying simple solutions, we're equipped to communicate the elegance of systems change, and build stronger foundations and coalitions for change.

Principle 6:

Experiment iteratively. Described most simply as "learning by doing", experimenting iteratively builds our capacity to think and act both quickly and slowly. Systems are always changing; and to ensure our actions are fit for purpose in an ever-changing world, we need to build the ethos of learning and experimentation into ourselves, our organizations and the systems we inhabit. Experimenting iteratively offers us a way to use our experiences as opportunities to learn, integrate and adapt.

Principle 7:

Align structure with change. The characteristics of the formal institutions that govern our work to change systems have the power to either inhibit or advance our capacity to drive change. The environmental and social systems we strive to influence are complex and adaptive, so our organizations and programmes must also have the capacity to adapt and respond to changing conditions.

Principle 8:

Act based on evidence. Acting with evidence encourages evidence-based reflection, which aligns monitoring with the knowledge needs and actions of all actors in a system. Monitoring change in complex systems goes beyond measuring the finite impact of our actions and includes understanding the dynamics our actions influence, the relationships that exist and the trajectory of structural change.

When striving to create change by changing human behaviour, it's useful to keep these eight principles in mind to help ensure that whatever actions taken have greater capacity to create lasting positive change for both people and nature.

2. UNDERSTANDING BEHAVIOUR FROM AN INTERDISCIPLINARY PERSPECTIVE

The science of human behaviour has seen a revolution over the past few decades.

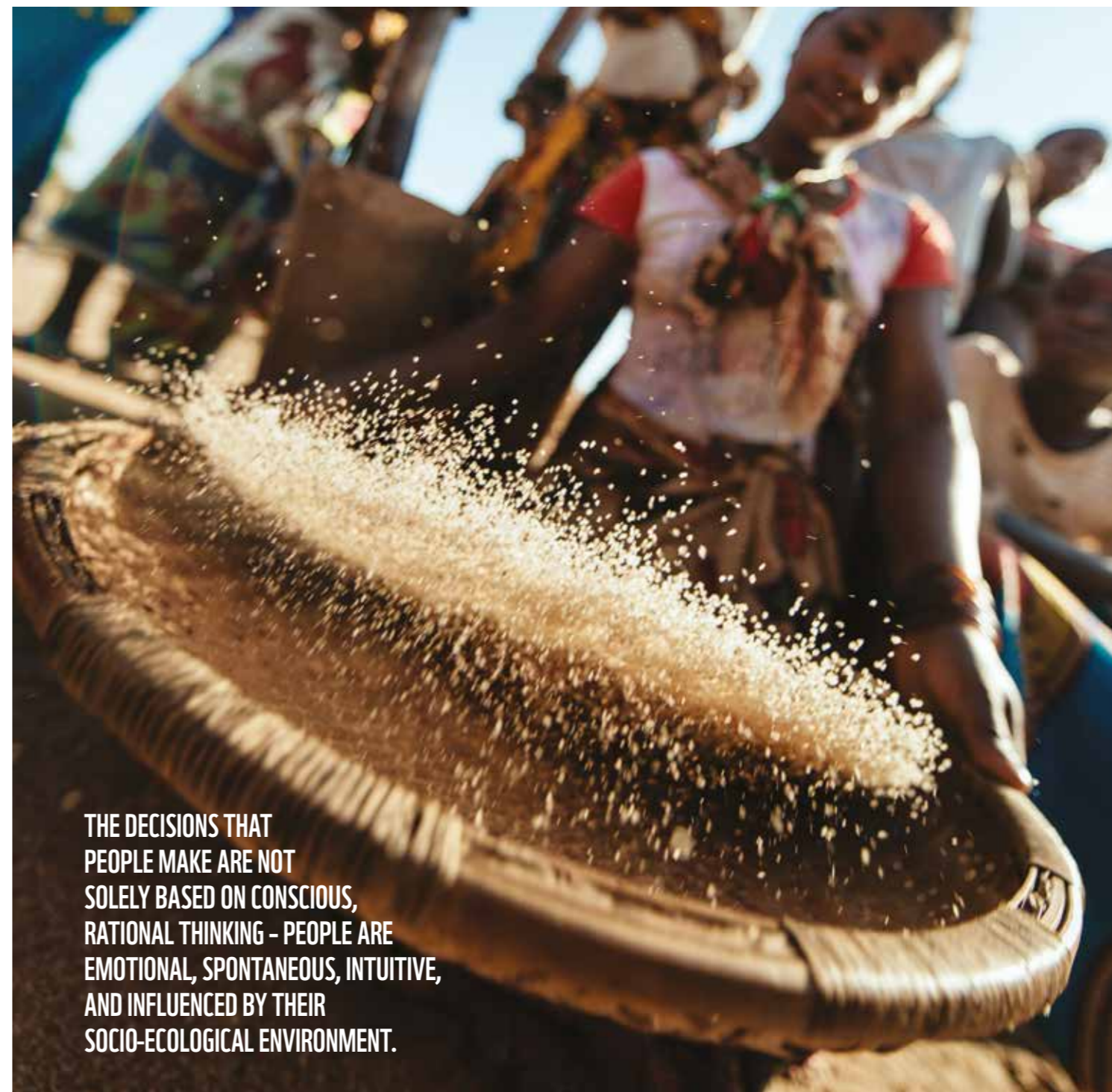
This revolution has not only challenged the way in which we think about how people make decisions, but has also revealed a new and growing set of insights that can be used in finding more effective solutions for all kinds of problems, including environmental concerns. As a result, increasing numbers of publications in the scientific literature, both in conservation and other sectors, detail how techniques from behavioural science can be applied in practice.

Many governments have established "behavioural insights teams" or "nudge units" to improve policy by drawing on behavioural economics and psychology, and marketers and managers are becoming increasingly sophisticated in their "human-centred" approach (Rare 2019). Organizations such as the **OECD**, **World Bank**, and the conservation group **Rare** have published their own guidelines and reports on how to apply behavioural sciences.

Behaviour change is increasingly addressed in conservation journals, and there are opportunities to learn from other sectors, such as development, advertising and public health, which have used techniques informed by behavioural science and psychology over decades. As

most environmental challenges result from human behaviour, behavioural sciences can help provide tools and insights to better understand human-nature relationships and design effective interventions (Amel et al. 2017).

Awareness-raising, information campaigns or education initiatives have long dominated efforts to encourage pro-environmental behaviour (Heberlein 2012). The underlying assumption is that if people only knew of the damage their actions caused (awareness), or if they cared a little more (attitudes and values), then their behaviour would change. However, studies have shown a limited relationship between environmental knowledge and pro-environment decision-making, the so-called value-action gap (Kollmus & Agyeman 2002). In addition, research indicates that education measures alone are insufficient to change behaviour (Amel et al. 2017, Cross 2013, Heberlein 2012, Schultz 2011). The decisions that people make are not solely based on conscious, rational thinking – people are emotional, spontaneous, intuitive, and influenced by their socio-ecological environment.



THE DECISIONS THAT PEOPLE MAKE ARE NOT SOLELY BASED ON CONSCIOUS, RATIONAL THINKING - PEOPLE ARE EMOTIONAL, SPONTANEOUS, INTUITIVE, AND INFLUENCED BY THEIR SOCIO-ECOLOGICAL ENVIRONMENT.

2.1 The behavioural sciences

Several different fields explore human behaviour, creating a considerable knowledge base upon which actions and interventions for more effective conservation can be built. The following lists some of the more mainstream fields of study.

Psychology is the scientific study of the mind and behaviour. With a strong focus

on the individual, psychology aims to describe, explain, predict and change behaviour and mental processes. From a psychological perspective, behaviour is about how individuals attempt to maintain or change a state of affairs. It is understood as an empirical phenomenon, meaning it can be studied through direct observation (Ossorio 2006).

Social psychology links psychology and sociology

by seeking to understand the nature and causes of individual behaviour in social situations (Baron et al. 1989). The discipline also aims to answer how human interactions influence the establishment and functions of social institutions. In a social situation, other people do not actually need to be present: considering what others might think and feel influences people's decisions, even when they are alone.

Environmental psychology was developed in the US in the 1960s and studies the interactions between humans and their environment. In these interactions, individuals change the environment, and their behaviour and experiences are changed by the environment. The field explores issues such as common property resource management, wayfinding in complex settings, the effect of environmental stress on

human performance, the characteristics of restorative environments and human information processing. A branch of environmental psychology also looks at the psychological roots of environmental degradation and the connections between environmental attitudes and pro-environmental behaviours.

Conservation psychology focuses on understanding human-nature relationships and how to influence pro-environmental behaviour. The rise of conservation psychology was due to the increasing relevance of environmental sustainability issues and the promotion of durable conservation behaviour within the field of environmental psychology. This interdisciplinary field draws on areas such as cognitive behaviour and social psychology, sociology, human dimensions of natural resource management and human ecology (Saunders 2003).

Behavioural economics uses insights from psychology for explaining economic decision-making processes – in contrast to neo-classical economics, which assumes a world populated by calculating, unemotional utility maximizers (Mullainathan & Thaler 2000). For example, behavioural economics research in Uganda indicated that when using payments for ecosystem services, targeting individuals instead of communities led to better conservation outcomes (Gatiso et al. 2017).

Social marketing uses principles from commercial

marketing and social science to develop interventions that aim to change people's behaviours for the benefit of the individual and society. One of the more mainstreamed fields of behavioural science, social marketing offers a range of tools for guiding the campaign design process, crafting messages, choosing the right media, and so on. It especially emphasizes the importance of audience segmentation (Smith 2006). Examples of social marketing methods include the 5-steps methodology used by TRAFFIC, Rare's Pride (Hessmiller 2003) and BIT's EAST framework (BIT 2014).

2.2 Defining behaviour

Most definitions of behaviour are rooted in classical behaviourism: behaviours are what can be seen (overt behaviour). In a conservation context, it is useful to employ a broader understanding, as we also intend to instigate and encourage covert or private behaviours that may not be directly observed, such as cognitive behaviours, emotions, attitudes and intentions (Heimlich & Ardoin 2008). We also need to explicitly include the environment as a major stimulus for conservation-related behaviour. In this report, **human behaviour encompasses observable and non-observable behaviour influenced by the state of mind of an individual (including values, beliefs, attitudes, norms and intentions) in a distinct social setting (including social**

norms, cultural aspects and formal regulations such as laws) and environmental context.

Values are a person's principles – what we judge to be important, right and wrong in life. They develop slowly, but once set they are difficult to change. People's personal value priorities often guide their behaviour effortlessly, with little or no conscious awareness (Rohan 2000). Studies show that the people who hold values outside of their own immediate interest are more likely to engage in pro-environmental behaviour.

Beliefs define an idea or principle which we judge to be true. They are informed by our values. Beliefs develop from information that is learned; this means they can be based on facts, but also can be misconceptions or incomplete truths.

Attitudes are comprised of several beliefs about a subject, and indicate our level of like or dislike for a person, place, idea etc. Attitudes change based on experience.

Norms are formed by people who share similar attitudes. They are unwritten societal rules about how someone should behave, and are believed to be the most powerful influencer of human behaviour. Social and cultural norms are different, though the terms are often used interchangeably. Cultural norms form from societal sub-groups; they can be deeply entrenched and are often more difficult

to change. Social norms are broader and are not necessarily historically significant in a society.

An **intention** is planned behaviour. Intentions are good indicators for behaviour, because the correlation between intended and actual behaviour is usually very high (Ajzen et al. 2009).

HUMAN BEHAVIOUR ENCOMPASSES OBSERVABLE AND NON-OBSERVABLE BEHAVIOUR INFLUENCED BY THE STATE OF MIND OF AN INDIVIDUAL INCLUDING VALUES, BELIEFS, ATTITUDES, NORMS AND INTENTIONS.

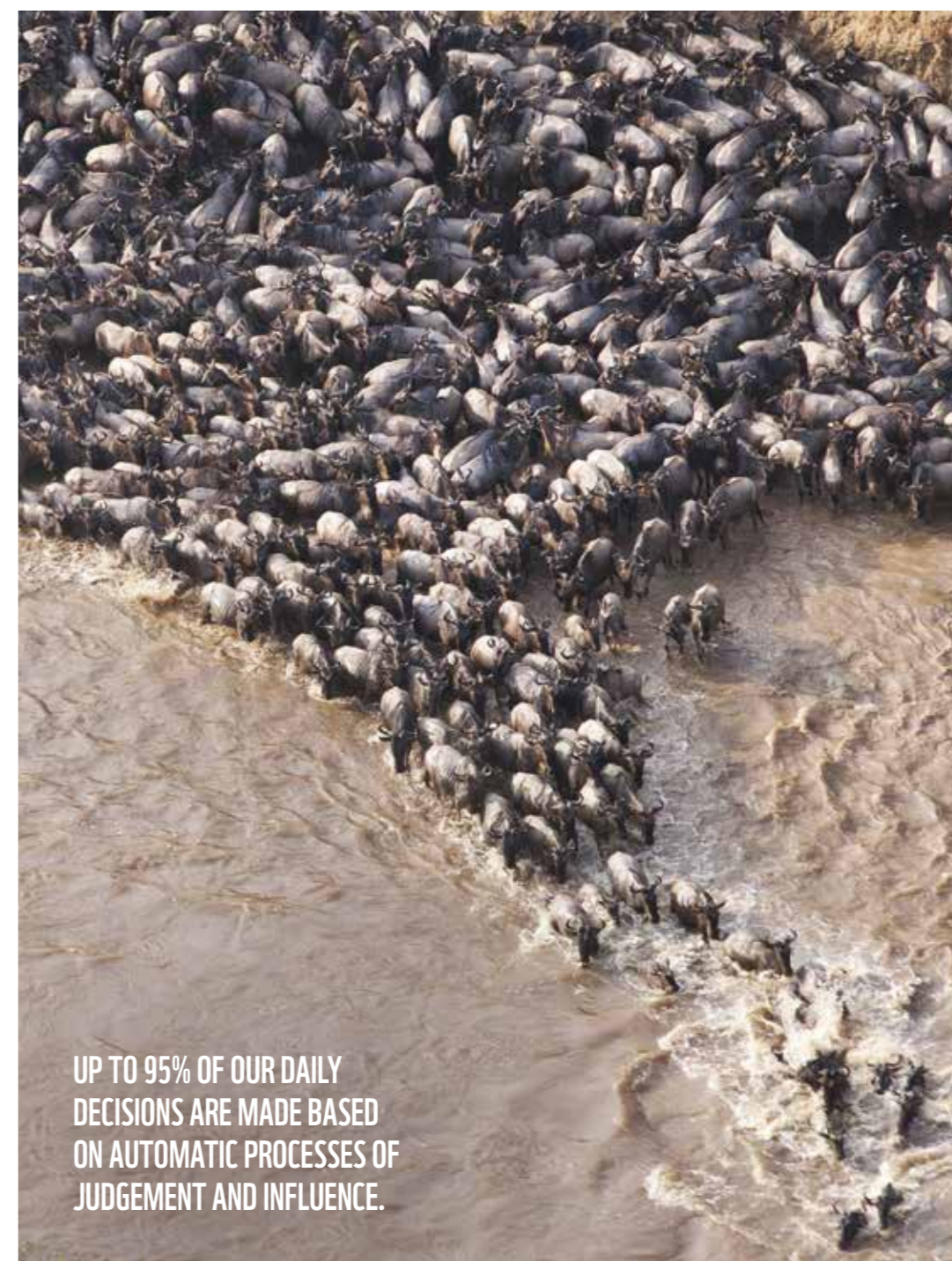


3. BEHAVIOURAL INFLUENCES AND THEORIES

Perhaps the most important lesson from the behavioural sciences is that decisions are often not the result of logical and rational thinking.

Up to 95% of our daily decisions are made based on automatic processes of judgement and influence. This implies that we need to rethink our attempts at influencing behaviour change. Traditional approaches like education campaigns are based on the presumption that with sufficient information and the right incentives, people will make better decisions – but they often don't. While these approaches are still relevant, it's equally important to focus on altering the context in which people act (Dolan et al 2010).

This chapter introduces the defining features of behaviour, and several important theories. However, there exists no blueprint for how to apply them. Human behaviour is complex, fluid and erratic. While the following theoretical considerations are important guidelines, each behavioural issue requires in-depth analysis in order to formulate and implement effective interventions (Smets 2018).



UP TO 95% OF OUR DAILY DECISIONS ARE MADE BASED ON AUTOMATIC PROCESSES OF JUDGEMENT AND INFLUENCE.

WE ALMOST AUTOMATICALLY SLAP A MOSQUITO AS SOON AS WE FEEL ITS BITE, OR COMPLETE A PHRASE LIKE “BREAD AND...” WITHOUT CONSCIOUSLY THINKING ABOUT IT. SYSTEM 1, OUR SUBCONSCIOUS MIND, USUALLY WORKS JUST FINE. IT IS, HOWEVER, BIASED.

3.1 Biases and the two systems of mind

The importance of the decision-making context was already acknowledged in the 1950s by Herbert Simon in his concept of **bounded rationality**. It explains that decision-making processes are influenced or bounded by psychological and environmental constraints. Personal abilities and situational factors such as the presentation of choices or the time for deciding influence the decision itself (Darnton 2008). Simon’s concept was significantly advanced through Kahneman and Tversky’s research on decision-making. In their theory of **judgement heuristics**,

they postulated that “rules of thumb” (heuristics) act as useful shortcuts to reaching decisions, but also lead to systematic errors of judgement, or **biases** (Tversky & Kahneman 1974). We often fall back on these biases rather than considering the actual attributes of the decision we’re making, particularly with complex decisions or choices made under time pressure.

Biases are linked to the so-called “two systems of mind”, a theory brought forward by Kahneman in his famous book *Thinking, Fast and Slow*. System 1 (the fast system) operates automatically and quickly, with little or no effort and no sense of voluntary control, and it’s here where

biases come into play. System 2 (the slow system) demands mental effort, and makes us feel we’re experiencing agency (the power to act and make our own choices). System 1 continuously generates suggestions for System 2 by way of impressions, intuitions, intentions and feelings. If endorsed by System 2, impressions and intuitions turn into beliefs, and impulses turn into voluntary actions (Kahneman 2011: 24).

Kahneman suggests seeing both systems as agents with individual abilities, limitations and functions, which usually work quite well together. The operations in System 2 require attention, and we have only a limited budget of attention to allocate to certain activities. In order to save energy and time, and when things get over-complex, System 1 takes over and makes up to 95% of all decisions. We almost automatically slap a mosquito as soon as we feel its bite, or complete a phrase like “bread and...” without consciously thinking about it. System 1, our subconscious mind, usually works just fine. It is, however, biased.

Researchers have identified some 175 cognitive biases to date. Benson (2016) groups them by looking at the problem they’re trying to solve. This helps understand why these biases exist, how they’re useful, and the trade-offs (and resulting mental errors) that they may introduce.

Problem 1:

Too much information. Because there is too much information, our brains filter those bits of information that are most likely to be useful in some way. For example, we notice familiar things and things that are on our minds – or, conversely, unusual or surprising things. We notice changes, and we tend to weigh their importance by determining if these changes are positive or negative for us. Related biases include the anchoring effect, which is where we depend too heavily on an initial piece of information offered (or “anchor”) when making decisions, and distinction bias (the tendency to view two options as more distinctive when evaluating them simultaneously than when evaluating them separately). We are drawn to details that confirm our existing beliefs and ignore others which contradict them, and notice flaws in others more easily than flaws in ourselves (bias blind spot).

Problem 2:

Not enough meaning. In order to make sense of the limited amount of information which our brain has filtered, we connect the pieces and interpret them with things we already know. Biases related to our tendency to create patterns from incomplete information include insensitivity to sample size and giving weight to personal experiences or isolated examples (anecdotal fallacy). We simplify probabilities and numbers to make them easier to think about, and we tend to think that we know what others are thinking. This can either mean that we assume that they know what we know, or that we assume they’re thinking about us as much as we’re thinking about ourselves. A related bias is the spotlight effect, in which people tend to believe they are being noticed more than they really are.

Problem 3:

Need to act fast. Decisions often need to be made under time and information constraints. In order to act, we must feel confident and believe that what we do is

correct and important. There’s a lot of overconfidence involved, but without it, we might never be able to make decisions at all. We favour the immediate thing in front of us over the delayed and distant, value things more in the present than in the future and relate more to stories of specific people than anonymous individuals or groups. We’re more motivated to finalize things in which we’ve already invested time and effort, because it gives us a sense of completion, and because we want to finish a certain task or portion (unit bias) – studies on healthy eating have found that people will eat more when portion sizes are bigger because of their desire to complete the task. We’re often risk-averse, aiming to avoid mistakes by choosing the option that is perceived as the least risky or that preserves the status quo. We also favour simple options over complicated ones, even if the latter would be a better investment of our time and resources.

Problem 4:

What should we remember? We are able to retain a limited amount of information, so we prefer generalizations because they are easier to remember. Specifics are disregarded, which leads to stereotypes and prejudices. We also store memories differently based on how they were experienced. For example, the so-called “Google effect” refers to our tendency to forget information that can be found via search engines, because we believe we can easily find the details again (Benson 2016, 2019).

BECAUSE THERE IS TOO MUCH INFORMATION, OUR BRAINS FILTER THOSE BITS OF INFORMATION THAT ARE MOST LIKELY TO BE USEFUL IN SOME WAY.



Biases describe behaviour – they don’t explain it. Rather than fixed traits, they are broad tendencies, not shared by everyone and sometimes contradictory. Overgeneralization of biases has led to misguided applications of behavioural science that have little or no effect (Smets 2018). While biases are certainly helpful for building up the model of human cognition and behaviour, they are not panacea, and should not be treated as such.



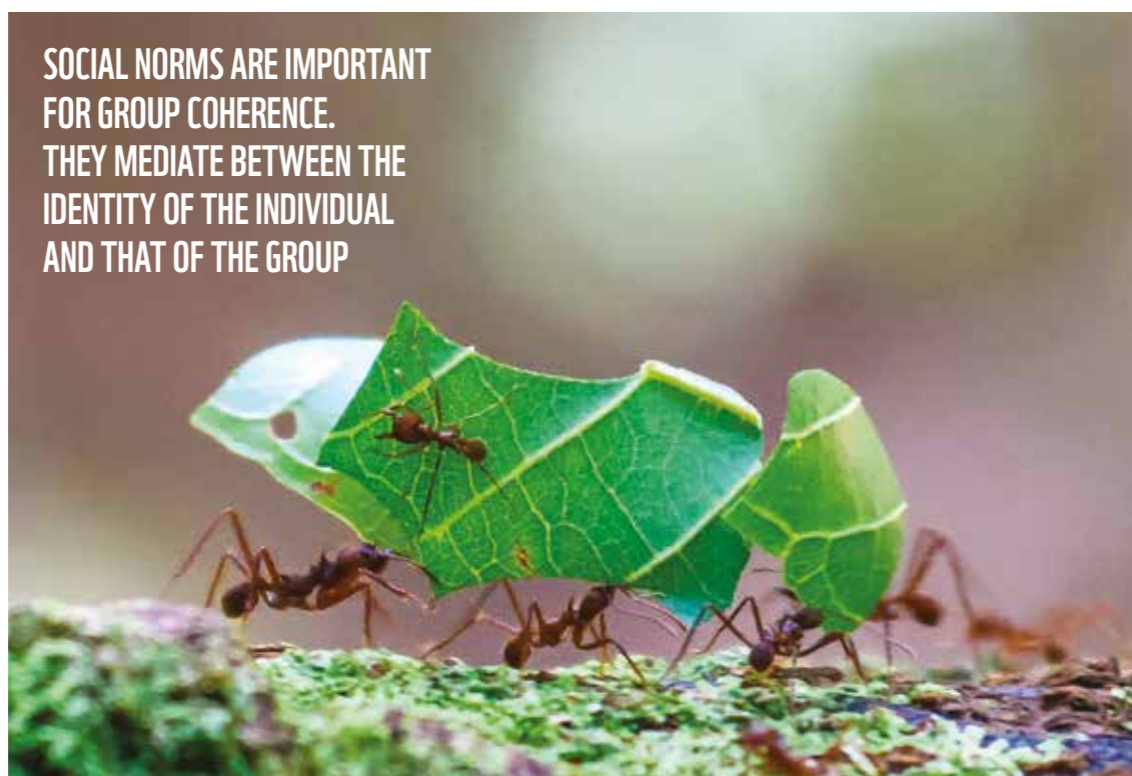
3.2 Guiding factors of behaviour

Norms and identity

Human behaviours are continually influenced by social norms which prescribe or proscribe certain behavioural options (Cialdini et al 1990). Social norms can be a powerful force in both inhibiting and encouraging pro-environmental behaviour. Pro-environmental behavioural change can be considered as a transition in social norms.

Social norms are important for group coherence. They mediate between the identity of the individual and that of the group (Darnton 2008). The groups we belong to (e.g. social class, family, team etc.) can be an important source of pride and self-esteem (Tajfel et al 1979). Groups give us a sense of social identity, a sense of belonging to the social world. We divide the world into “them” and “us” through a process of social categorization, or stereotyping, by grouping things together. In doing so we tend to exaggerate the differences between groups, and the similarities of things in the same group. The central hypothesis of the social identity theory is that members of an in-group (“us”) will seek to find negative aspects of an out-group (“them”), thus enhancing their self-image (McLeod 2019).

While the term is generally used to refer to social norms, there are also personal norms (Schwartz 1977). These are feelings of a moral obligation to act, which are free from social expectations, and can, for example, be used to explain altruistic behaviour. Schwartz argues that personal norms can either arise from personal values or be the result of social



norms. The key distinction between personal and social norms is that the influence of social norms is dependent on external sanctions, whereas the only sanctions applying to personal norms are internalized, such as the feeling of guilt.

Intentions to induce behaviour change must address social norms, and notions of identity. While identity is influential in shaping behaviour, we also behave in certain ways as a means of defining our sense of identity (Darnton 2008). In particular, Jackson (2005: 14) highlights how our consumption of material goods is a way of constructing and maintaining our personal identity.

Agency and control

Agency is the capacity of individuals to make their own free choices. It is the

power to act, which is why individuals are understood as actors (Giddens 1984) who have a sense of control about their actions. In the context of pro-environmental behaviour change, agency has been defined in terms of a person’s belief that they can take “meaningful action”, something that will be effective in creating positive outcomes (Ballard & Ballard 2005). Public responses to many environmental issues – such as climate change – are often characterized by a lack of agency, because individuals believe that the problem is so big that their own actions will not make a difference. Agency can be acquired or learnt, primarily through working with others, through sharing personal experiences and building shared commitment.

Habits and routine

Habits are an important influence on behaviour.

A habit is an instinctive or automatic response, a repetitive action or routine activity which is undertaken with very little conscious thought – like following a specific route to work, buying a given brand of coffee or turning the light on (Jackson 2005, Jager 2003). Habits save cognitive effort, which is then available for other tasks. It’s well-known that old habits can be difficult to break, and new habits are hard to develop. That’s because the behavioural patterns we repeat most often are etched into our neural pathways. In order to disrupt habits or to establish new ones, it’s important to create a specific and reasonable goal for change, remove existing barriers and ensure repetition. The latter especially is a powerful tool for forming and maintaining new habits.

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The key role of emotions

Emotions have been simply defined as “how people feel about something” (Darnton & Evans 2013) and are **fundamental for human behaviour**. Despite an explosion of interest and research into emotions over the last 30 years, many behaviour theories and models of conservation behaviour don’t address emotions. Without emotion, there is no commitment, no motivation and no action (Milton 2002). Emotions define the ways in which people understand and interact with nature. Emotional experiences are cultural and social practices that are connected to specific communities and their development over time (Gaynor et al. 2019). They are embodied in “habits following the logic of everyday practice”: through practice, they become “second nature” (Scheer 2012). Gaynor and colleagues argue that emotions have played a key role in the constitution of human communities, as well as enabling or inhibiting particular kinds of human thoughts and actions in relation to the living planet. In the context of the gathering global climate and extinction crises, this may prove critical in converting rhetoric into meaningful action (Gaynor et al. 2019).

Several studies show that an emotional affinity for nature is a significant motivational factor to get involved in conservation. In 1984, Edward O. Wilson developed his **biophilia hypothesis** arguing that people need to affiliate with other forms of life. As a result of modern

lifestyles, many people lack this affiliation and time spent in nature, which in turn increases the disconnect of humans from nature. Recent investigations have proven the positive effects nature has on the human brain. Summarized in the book *The Nature Fix* (Williams 2017), studies show that interactions with nature help us de-stress, find focus and reduce mental fatigue. They also strengthen the immune system and help to overcome grief and trauma. In the UK and several other countries, doctors can now prescribe spending time in nature as a treatment (Tara 2018).

Emotional involvement is the ability to have an emotional reaction when confronted with something. Kollmuss and Agyeman (2002) have argued that the stronger a person’s emotional reaction, the more likely that

person is to engage in a new behaviour. That means we need to include emotional elements when aiming for behavioural change.

Self-conscious emotions like pride, shame and guilt – which result from self-evaluating our behaviour against internal or external standards – are central to conservation motivations. Feelings of pride may result when we meet a standard, and guilt or shame result from defiance of a standard (Vining & Ebreo 2002). Analysing these self-evaluative emotions offers numerous avenues to promote conservation behaviour. When we feel guilty, we may change our behaviour, deny it or disguise it (Lindsay-Hartz et al. 1995). For example, if someone feels guilty for not recycling, they might seek out ways to relieve this negative emotion by increasing recycling (Vining

& Ebreo 2002). Instilling pride might take the form of feedback on energy use or persuasive messages designed to promote civic or national pride. The conservation organization Rare has launched over 450 behaviour change campaigns in more than 60 countries under the name “Pride”: by creating a sense of pride related to particular species or habitats, this has created numerous lasting conservation solutions.

3.3 Theoretical frameworks when influencing individual behaviours

Behavioural change starts with the individual. This section presents several models and theories which are relevant when influencing individual behaviours.

The **cognitive hierarchy model** (Camerer et al 2004) in Figure 1, which originated

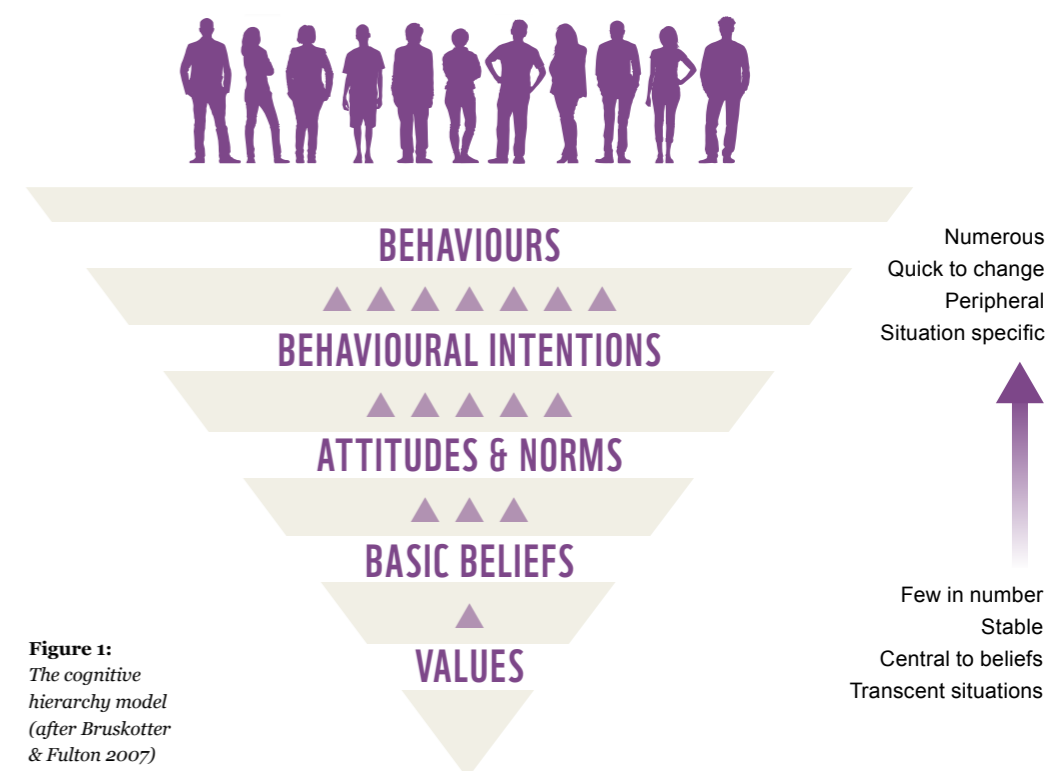


Figure 1:
The cognitive
hierarchy model
(after Bruskotter
& Fulton 2007)

in behavioural economics and game theory, brings together several factors in a hierarchy: values, beliefs, attitudes and norms, behavioural intentions, and behaviours (see Figure 1). The factors at the bottom of the triangle are few and slow to change, while the factors at the top are numerous and change quickly. An individual's worldview and behaviours develop from the interplay between these factors. Exploring how they come together and interact in a target population can help provide insights into people's motivations and behaviour.

The theory of **cognitive dissonance** (Festinger 1957) posits that our worldview is composed of cognitive elements: bits of information about our emotions, attitudes, values, behaviours, perceived norms and so on. People need coherence between their cognitive elements. If there is a mismatch, or dissonance, between one element and another, for example between a value and a behaviour, we need to change either one or the other or both to regain consistency. Dissonance occurs most often in situations where an individual must choose between two incompatible beliefs or actions. The greatest

dissonance is created when the two alternatives are equally attractive (Brehm & Cohen 1962, Festinger 1957). A typical case of cognitive dissonance is to eat **meat** while also thinking of oneself as an animal lover who dislikes the thought of killing animals. This has become known as the meat paradox (Bastian & Loughnan 2016).

Cognitive dissonance is an important component in Lewin's **attitude change model** (1947, see Figure 2), which outlines the process of long-term attitude shifting. The model is especially relevant in relation to habitual behaviours. There are four stages: establishing rapport, unfreezing, moving, re-freezing. We can establish rapport by using the same language as our target audience, finding shared values, praising them on their past successes and increasing resonance with them. Unfreezing the system is about bringing cognitive dissonance to a person's attention. Techniques often used are showing the audience the problems with an existing behaviour and the benefits of a preferred alternative behaviour, showing how barriers can be overcome, and highlighting the advantages of

adopting the new behaviour compared to staying unchanged.

Moving is about persuading audiences who are uncertain, reducing their objections to change and helping them to regain cognitive coherence by adopting desirable new behaviours. Common objections to change include costs, false beliefs about benefits, doubts about claims, and social norms. Consider using narratives, framing, and staying consistent to the audience's sense of self. Re-freezing seeks to maintain the change by rewarding the audience through feedback or praise, for example by follow-ups or other means of retained contact (O'Shaughnessy 2013).

The oldest models of pro-environmental or pro-conservation behaviour are rationalist, linear models which assume that educating people about environmental issues will automatically result in more pro-environmental behaviour (Kollmuss & Agyeman 2002). Although it was already shown in the 1970s that the models were wrong, many NGOs still develop campaigns and strategies based on the simplistic assumption that more knowledge will lead to more conservation. While more information might indeed lead to more environmental awareness, this does not necessarily mean that the behaviour changes. Similarly, people may act in a way that fails to support their values, or in a way that contradicts those values entirely.

This **value action gap** is evident when, for example,

people say that they favour organic food but end up buying conventional stuff. Why do value-action gaps occur? Research has shown that someone needs to go through four stages before actually modifying behaviour: (1) acquire knowledge on a certain subject, (2) process this knowledge in a manner that leads to the forming of appropriate values, (3) translate these values into an intention to take action, and (4) based on the intention, perform the desired behaviour. A common reason why these four stages are often not completed is the occurrence of **attribute trade-offs** – the behaviour that is in line with our values and attitudes may have unwelcome side-effects (Shatz 2018). In the case of organic food, for example, it's because it's usually more expensive.

Reducing value-action gaps often involves a modification of the decision-making environment to increase the likelihood that people will take action that is consistent with their values (Shatz 2018). If this is done at the right time, it will increase the likelihood that they make the "right" choice. Timing has an significant influence on the success of all behaviour change approaches (Pink 2018).

The gap between values and attitudes such as environmental concern and pro-environmental behaviour has driven the development of several so-called attitude theories. **Self-efficacy theory** (Bandura 1977) argues that people's beliefs about their capability of making a change are key to successful behaviour change.

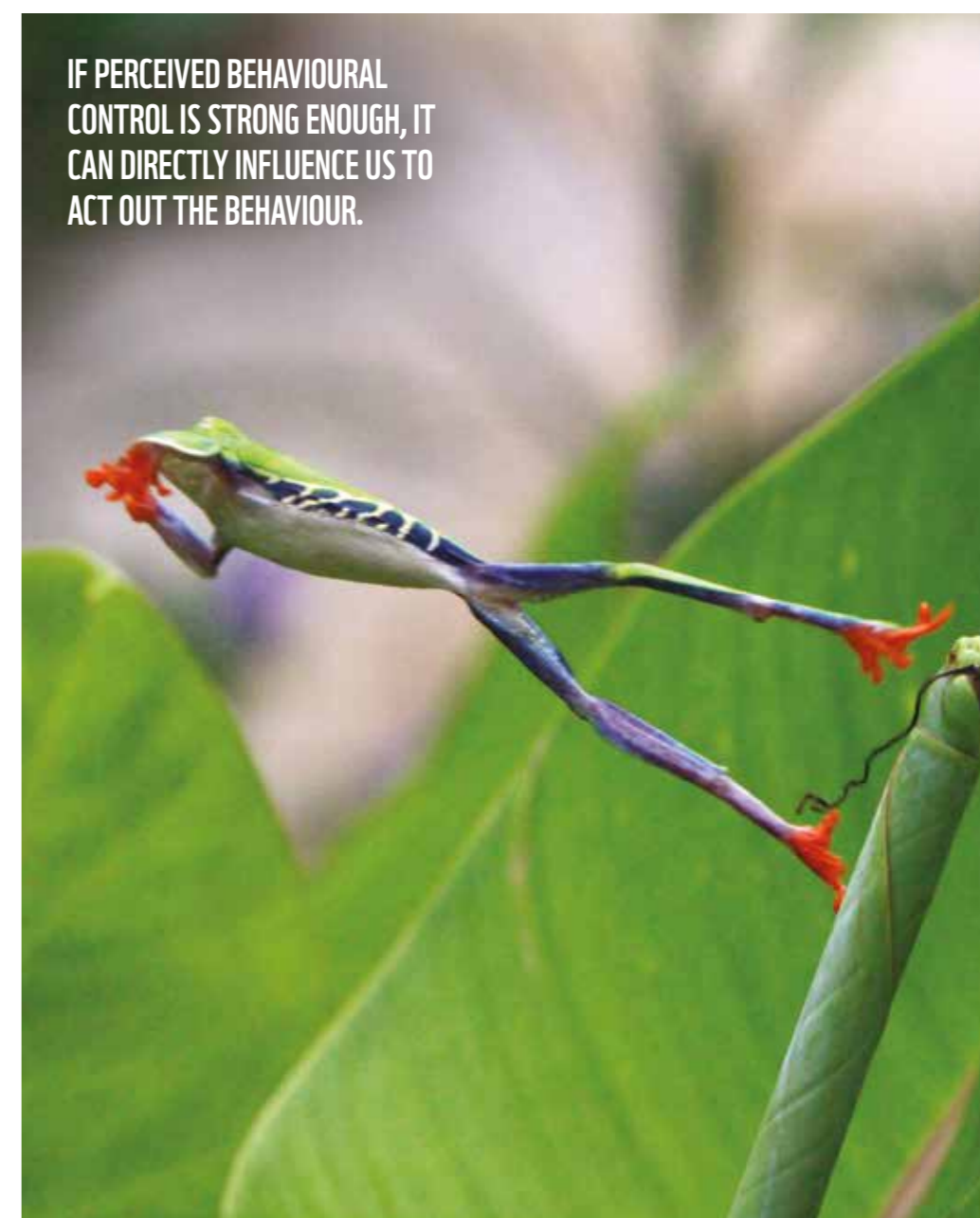
Self-efficacy may be a result of previous success, vicarious experience, or persuasion by others.

The **theory of planned behaviour** (Figure 3; Ajzen 1991) below, posits that intention is the direct precursor of a behaviour. Intention is formed based on beliefs: behavioural beliefs about the pros and cons of a behaviour, normative beliefs about what action is expected by others, and control beliefs about the existence of helpful or hindering environmental factors. These beliefs lead to a certain attitude based on outcome evaluations, subjective norms about the willingness to conform to others' expectations, and perceived behavioural control based on environmental factors and self-efficacy. If perceived behavioural control is strong enough, it can directly influence us to act out the behaviour.

3.4 Theories for understanding collective behaviours

Humans are social beings. Our identity, our way of being in the world, is deeply influenced by the people around us. From our early childhood years, we develop in interaction with others. This section presents theories that consider individual behaviour as part of a collective action, or that look at how changing social norms or restructuring the environment change collective behaviour.

The **collective action theory** (Olson 1965) states that a group of individuals attempting to provide a public good (such as conservation) has trouble doing so efficiently



IF PERCEIVED BEHAVIOURAL CONTROL IS STRONG ENOUGH, IT CAN DIRECTLY INFLUENCE US TO ACT OUT THE BEHAVIOUR.

Figure 2: Lewin's attitude change model

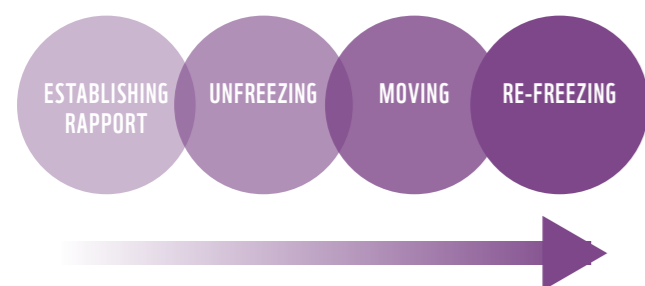
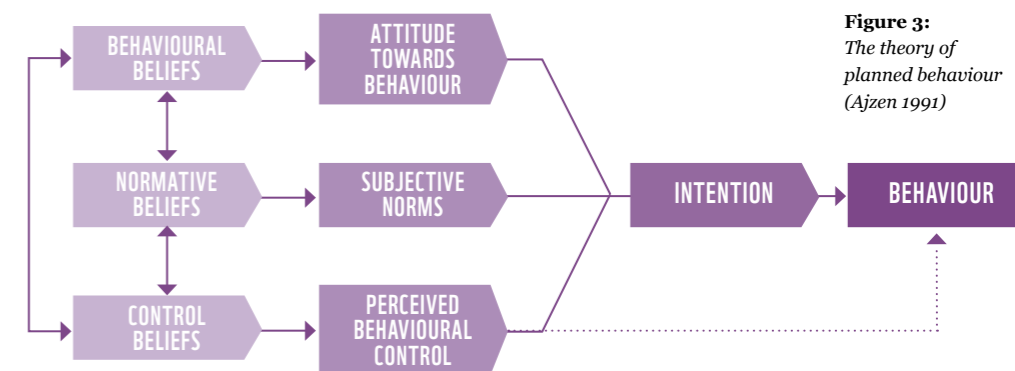


Figure 3: The theory of planned behaviour (Ajzen 1991)



because the personal benefit to each individual is small in relation to the cost of action; people are tempted to free-ride on others' contributions. In the end, a smaller gain is realized (Gram et al. 2019).

In her famous book *Governing the Commons* (1990), Elinor Ostrom analysed how people organize themselves in order to provide and manage commonly owned resources, also known as common property or common pool resources. Challenging conventional thinking about political and market-based solutions by using case studies on successful common property management from all over the world, Ostrom identified a number of "design principles" of stable local common pool resource management. These include, for example, a clear definition of the resource, the possibility to exclude outsiders, cheap and accessible conflict resolution, mechanisms and graduated sanctions for everyone who breaks the rules.

An important concept for collective behaviour is the idea of a critical mass. **Critical mass theory** in social movements refers loosely to

any formal theory about how interdependent decisions accumulate into collective action. The term "critical mass" originates in nuclear physics, as only the smallest amount of fissile material is needed to sustain a nuclear chain reaction, and it is now widely used to refer to any context in which things change after a certain number of people get together or enter a setting (Oliver 2013). Highly interested and resourceful people are crucial in the first phase of social mobilization, forming the "critical mass" (Oliver & Marwell 2001). Their contribution increases the incentives for other individuals to join in, creating the bandwagon effect of mass participation (Centola 2013). According to the theory, achieving collective action is not about getting the whole population to act but getting enough people to provide resources and benefits to reach the tipping point for the bandwagon effect.

The **diffusion of innovation theory** (Rogers 1983) is perhaps the most important framework for understanding how ideas spread through a population over time. It explains how

new technologies are adopted through a five-stage process. The first step is to gain knowledge, which is followed by the persuasion to accept the new item, the decision to accept or reject it, trying it out, and finally deciding whether to continue using it.

Later, Rogers also categorized the population into five categories by their readiness to adopt change (Figure 4). "Innovators" account for about 2.5% of the total population and are motivated by their affinity to novelty. "Early adopters" make up about 13.5% of the group and react to the modelling of the innovators. The "early majority" and "late majority" account for some 68% of the population. They are motivated by the subjective norms for change as well as vicarious experiences. The remaining 16% are called "laggards". They are resistant to change and may never adopt a change or innovation. We can model and predict when and why these groups will make a change through their positions in their social network, so mapping out these networks for our target audience helps design an effective campaign.

Closely related to the diffusion of innovation theory is the concept of **opinion leaders**. Research indicates that there are audiences who prefer gathering information about the environment through communication with their family, friends and opinion leaders in their social networks (Keller and Berry 2003). Opinion leaders are learning about innovations and new developments, and later pass this information on to their friends or colleagues. They do not need to hold formal positions of power but tend to be more persuasive in convincing others within their social networks whether to adopt certain opinions and behaviours. It's essential to identify opinion leaders within these networks and the role they may play in encouraging more positive environmental behaviours (Dalrymple et al. 2013).

Both these concepts highlight the importance of social networks. **Social network theory** is one of the best-developed sociological methods for studying social relations. It focuses on relationships among individual actors, and the patterns and implications of these relations, including how resources, goods and information flow through configurations of social ties. Social networks are visualized as nodes (the individual actors within them) and ties (the relationships linking them). These can be defined and systematically analysed using empirical data, which allows for the quantification of rather fuzzy concepts such as social cohesiveness and social prestige (Bodin et al. 2011).

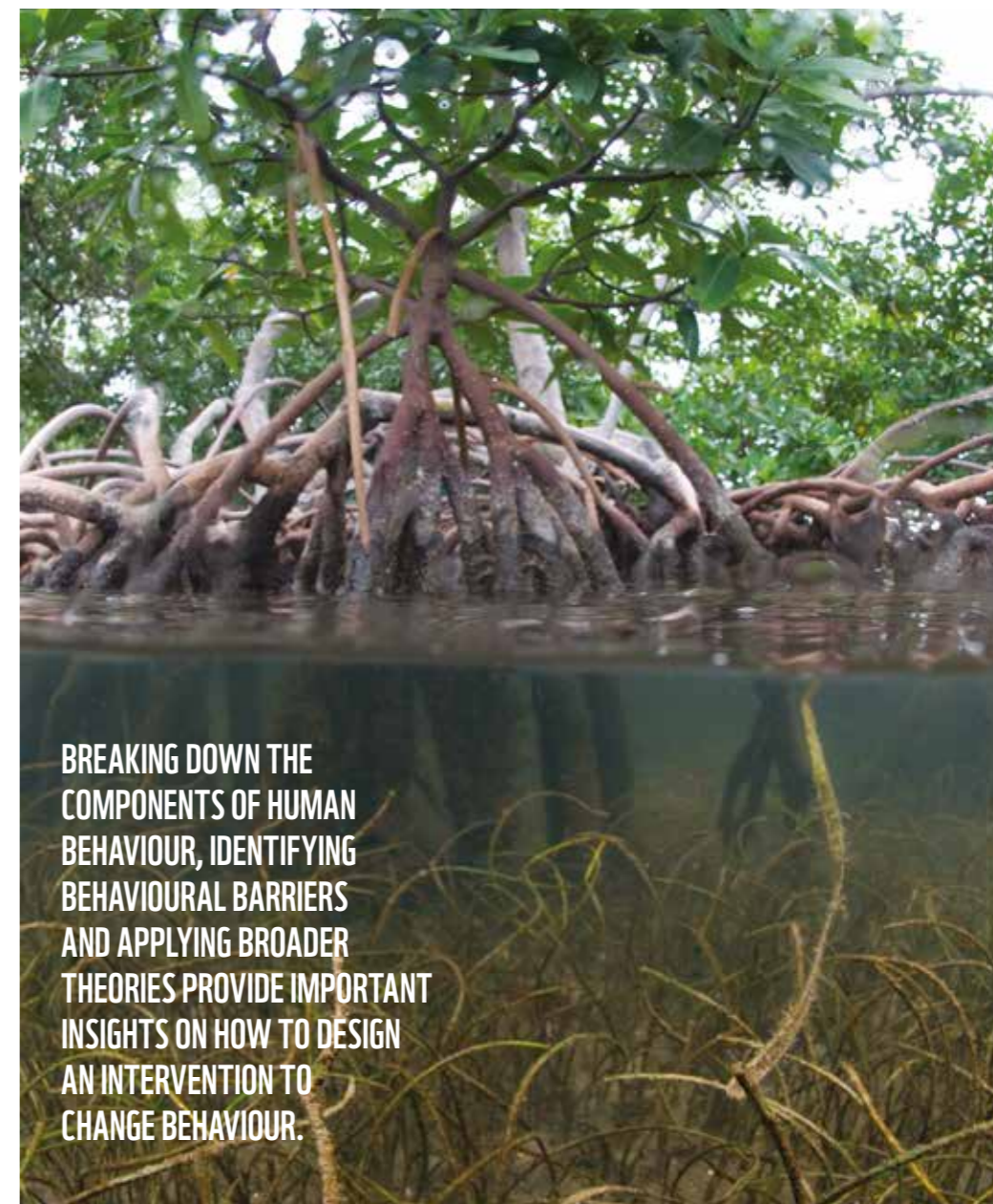
4. INFLUENCING BEHAVIOUR CHANGE: LEVERS FOR INTERVENTIONS

Successfully engaging behaviour change techniques can be a challenge – there is no standard universal theory or approach.

Many factors need to coalesce to result in a single behaviour in a particular context. Breaking down the components of human behaviour, identifying behavioural barriers and applying broader theories provide important insights on how to design an intervention to change behaviour. It also helps to identify the entry points for interventions

An intervention addresses a specific problem by trying to interrupt ongoing processes and structures in order to support the emergence of new ones. Behavioural levers are the building blocks of policy interventions. Following Mont et al. (2014) and the OECD (2017), seven behavioural levers can be distinguished – although interventions may combine several of these insights.

1. Simplification and framing of information: simplifying complex information can prevent information overload. Frames are related bits of information stored in memory; they include words, images, characters, actions, relationships, emotions and values. Framing refers to presenting information in such a way that it activates certain values and attitudes. The way information is framed can also affect



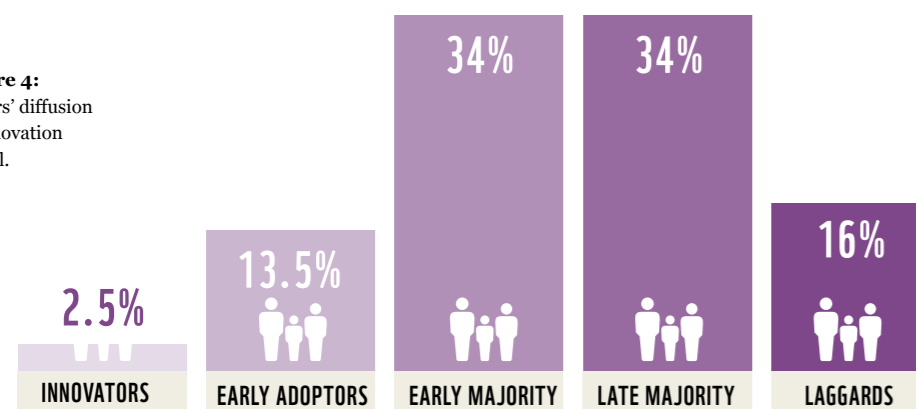
BREAKING DOWN THE COMPONENTS OF HUMAN BEHAVIOUR, IDENTIFYING BEHAVIOURAL BARRIERS AND APPLYING BROADER THEORIES PROVIDE IMPORTANT INSIGHTS ON HOW TO DESIGN AN INTERVENTION TO CHANGE BEHAVIOUR.

how it is processed by its recipients. All words and phrases engage frames, but some are ambiguous or weak, while others

have a strong relationship to one particular frame. For example, energy efficiency labels can be framed to provide a sense of the relative

ranking of an electrical appliance against the best-in-class, and the savings we could enjoy when switching to the latter.

Figure 4: Rogers' diffusion of innovation model.



2. Changes to the physical environment: the physical environment can substantially affect individual decision-making, especially in contexts in which choices are made spontaneously, based on automated mechanisms and habits. An example of such an intervention is the changes in the location and appearance (e.g. colour) of recycling bins. In Germany and Spain, a blue bin is usually associated with paper, while yellow bins or bags are associated with packaging material.

3. Changes to the default policy: because we are biased toward the status quo, we often postpone making decisions until or unless we have to. This means defaults can have a great impact in contexts in which people are resistant to change. For example, when Rutgers University in the US introduced double-sided printing as the default printer setting, paper consumption was reduced by well over 55 million sheets (the equivalent of 4,650 trees) in the first four years, which amounted to a 44% reduction (cited in Sunstein & Reisch 2014).

4. Use of social norms and comparisons: as social beings, we are affected by the way people surrounding us behave (social norms), by how we compare to our peers (social comparison) as well as by moral injunctions. An example of this type of intervention is the comparison of a household's energy or water consumption with the average consumption for a similar household, which

is typically included in German utility bills.

5. Use of feedback mechanisms: several routine behaviours, such as energy consumption or waste disposal, have considerable environmental impacts, but these may feel too far removed or not sufficiently salient to affect consumer behaviour. Providing timely feedback can make such contexts more transparent, increasing awareness of environmental externalities stemming from daily consumption choices. For example, real-time in-home displays connected to smart energy meters can highlight energy consumption and costs.

6. Reward and punishment schemes: “carrots and sticks” can be used to associate consumer behaviour with a material payoff. For example, rewarding households who have been particularly savvy with water consumption during scarcity periods may generate a positive norm for water conservation.

7. Goal setting and commitment devices: some behaviour changes require effort, which can be encouraged by setting specific and measurable goals and using commitment devices to regularly follow up on progress. For example, an energy saving intervention might focus on a specific objective and follow up on that objective with regular feedback and tips.

5. THE FUTURE OF BEHAVIOURAL SCIENCE FOR CONSERVATION

While the behavioural sciences are developing rapidly, there are several aspects that have so far received little attention.

Among them is the fact that we are being influenced – and influencing others – all the time. Dolan et al. (2010) argue that behavioural science will turn previously invisible influences into explicit choices, and policymakers and professionals into “choice architects”. It is evident that applying behavioural change approaches may raise public concerns. Instead of being able to make their own decisions, people will be knowingly influenced by a “choice environment”. The question of who is involved in the creation of this choice environment is an important one, and has not been well discussed so far.

Another issue is the time-persistence of the effects driven by behavioural interventions, and the assessment of how interventions can interact with more traditional policy instruments (OECD 2017). To address this challenge, monitoring and evaluation needs to be included from the beginning, an aspect that unfortunately has so far

been absent from most behavioural interventions (RARE 2019).

While monitoring and evaluation are required to understand if changed behaviour is indeed the result of interventions, and in order to determine how long-lasting effects are, there is another important feedback link which seems currently not well addressed. While there is an increasing application of findings from the behavioural sciences to conservation, there is a limited uptake of these applied solutions by science. In other words, while the behavioural sciences are developing rapidly and the number of practical solutions increases as well, these developments happen in parallel. There is considerable potential in linking the two, which so far has not been sufficiently exploited. On an organizational level, WWF can address this gap through collaborations with scientific institutions starting in the project preparation phase.

Finally, there seems to be a general segregation between the behavioural sciences. Disciplinary developments are taking

DISCIPLINARY DEVELOPMENTS ARE TAKING PLACE IN PSYCHOLOGY, SOCIAL PSYCHOLOGY AND ENVIRONMENTAL PSYCHOLOGY, WITH ALL OF THEM OFFERING RELEVANT INSIGHTS FOR CONSERVATION

place in psychology, social psychology and environmental psychology, with all of them offering relevant insights for conservation. In addition, behavioural economics enriches its approaches by

adding findings from the psychological disciplines, but this process remains fragmented. While several terms and concepts are quite regularly used – such as “nudging” – others currently

play no role. Ensuring that the potential of the behavioural sciences for conservation is fully exploited requires their systematic application. This report aims to provide a starting point for that.



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An underwater scene with a large school of fish swimming in a circular pattern at the top, and a shark swimming downwards in the center. The water is clear blue with light rays filtering through.

**TO STOP THE DEGRADATION
OF THE PLANET'S NATURAL
ENVIRONMENT AND TO BUILD A
FUTURE IN WHICH HUMANS LIVE
IN HARMONY WITH NATURE.**



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