Ecosystem-Based Adaptation (EbA)

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CONSERVATION SOUTH AFRICA
Member of the CI Network

Training Contents

Climate Change

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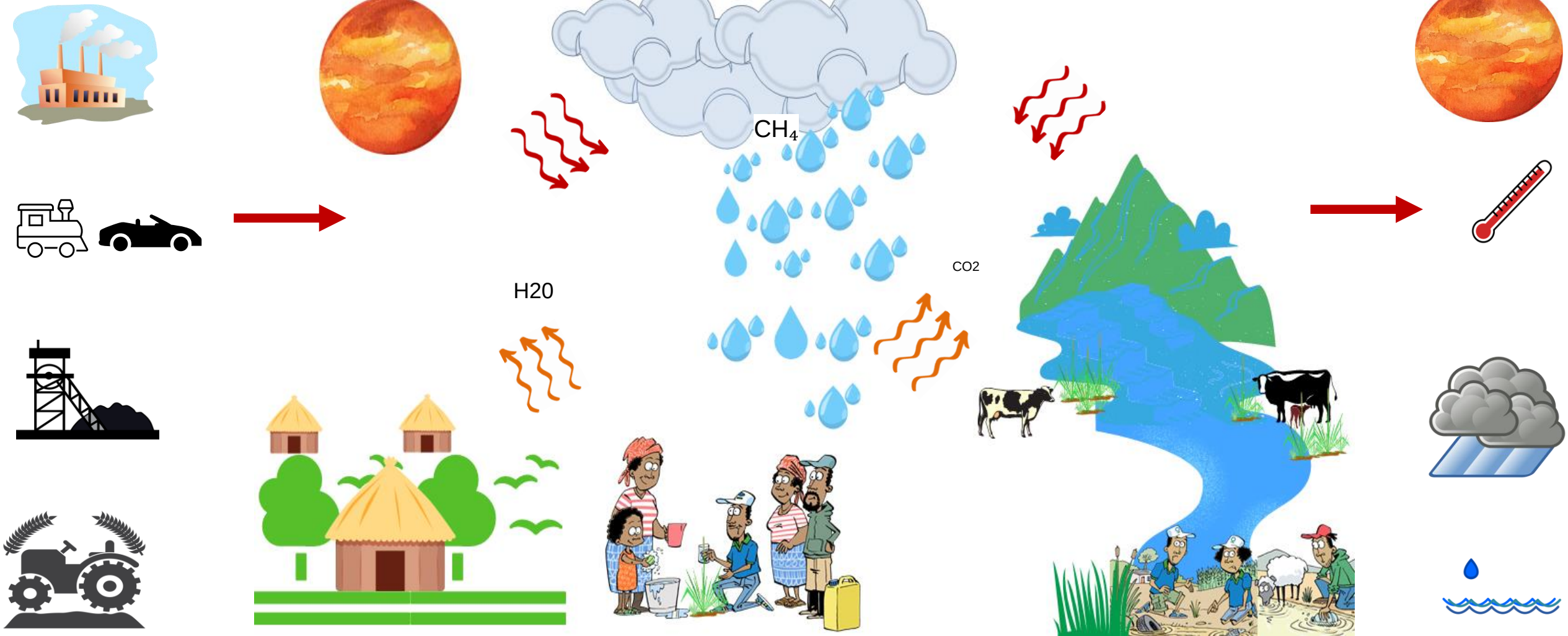
The Greenhouse Effect

Causes

Direct Impacts

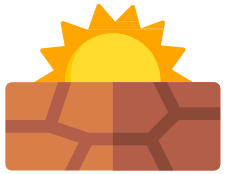


Warmer temperatures

More hot days and more heat waves

Fewer cold days and frost days

More unpredictable rainfall



Longer dry periods

More intense rainfall

What are the impacts of climate change on people and nature?

- Herders are exposed to extreme temperatures, and at times have limited water access.
- Small-scale fishers make less income because fish migration patterns are changing, resulting in less fishing days, and shorter fishing times.
- Unpredictable weather has also made small-scale fishing dangerous, sometimes resulting in fatalities.
- Livestock are weakened by drought, and lambs succumb to extreme cold temperatures.
- More intense storms erode away productive topsoil, and crop seedlings perish in high temperatures and strong winds.

Now that you know what climate change is, let's have a look at what it means for people and nature.

Climate-smart

Rangeland Management

1. Assess vulnerability to climate change
2. Determine the potential impact of Climate Change
3. Map priorities for ecosystem-based adaptation
4. Build the capacity of farmers and business owners to respond
5. Formulate policy to regulate government's climate change response
6. Fund ecosystems-based adaptation from government and the private sector
7. Develop supply chains and businesses that incentive good rangeland management

Revived Rangelands
With greater resilience to drought and flood

Better Plant Cover
Means more efficient water absorption, less soil erosion, fewer alien plants and more water

Well managed Rangelands store more carbon

Access to skills and technology

People with access to a range of goods and services cope better in extreme weather.

Better Access to food, water and ecosystem services

Income from sale of livestock

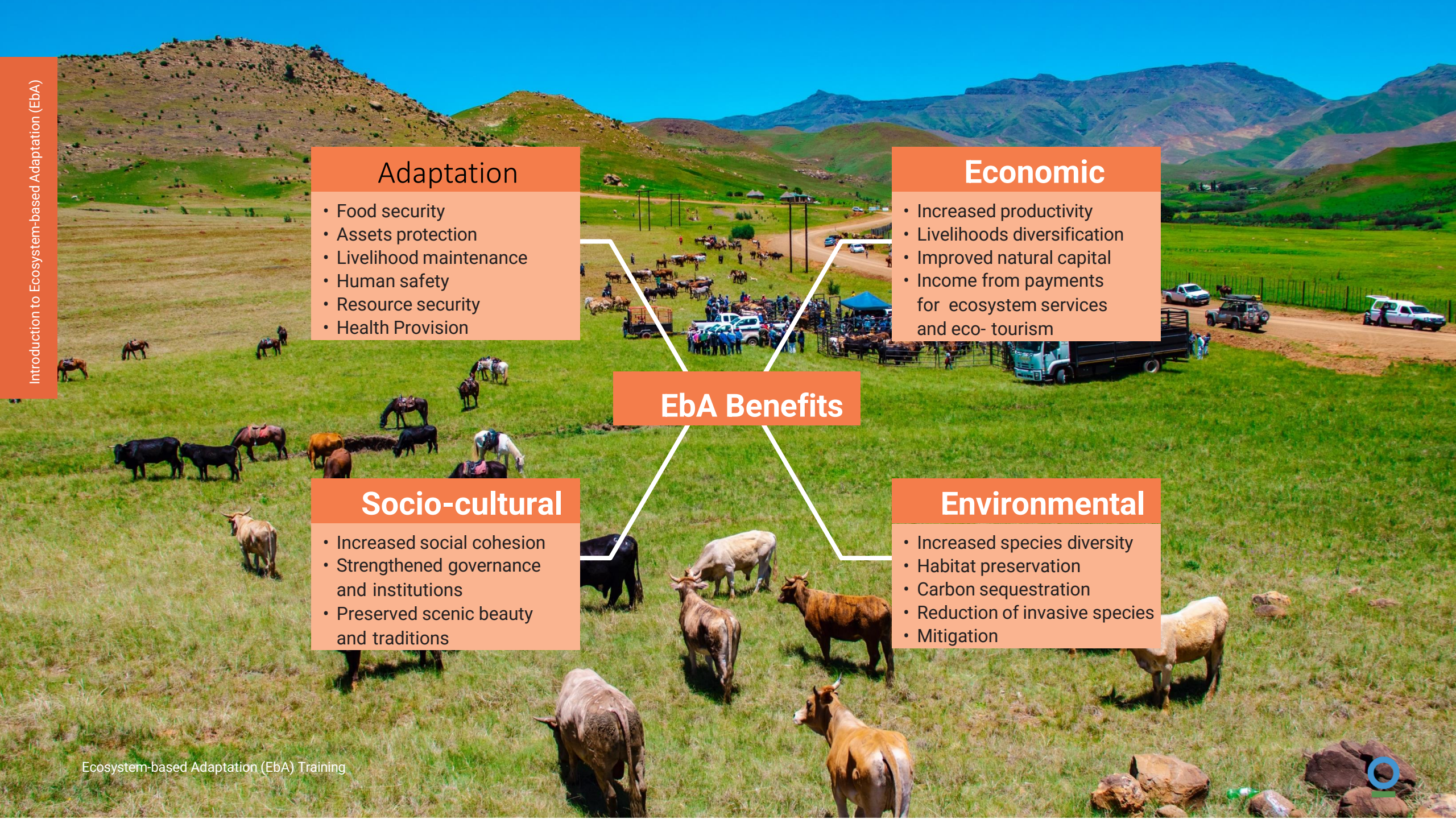
Climate-smart small business

People have greater capacity to save money and cope with adverse conditions

Greater Resilienc
e to climate for people and nature

Benefits

For People and Nature



EbA Benefits

Adaptation

- Food security
- Assets protection
- Livelihood maintenance
- Human safety
- Resource security
- Health Provision

Economic

- Increased productivity
- Livelihoods diversification
- Improved natural capital
- Income from payments for ecosystem services and eco- tourism

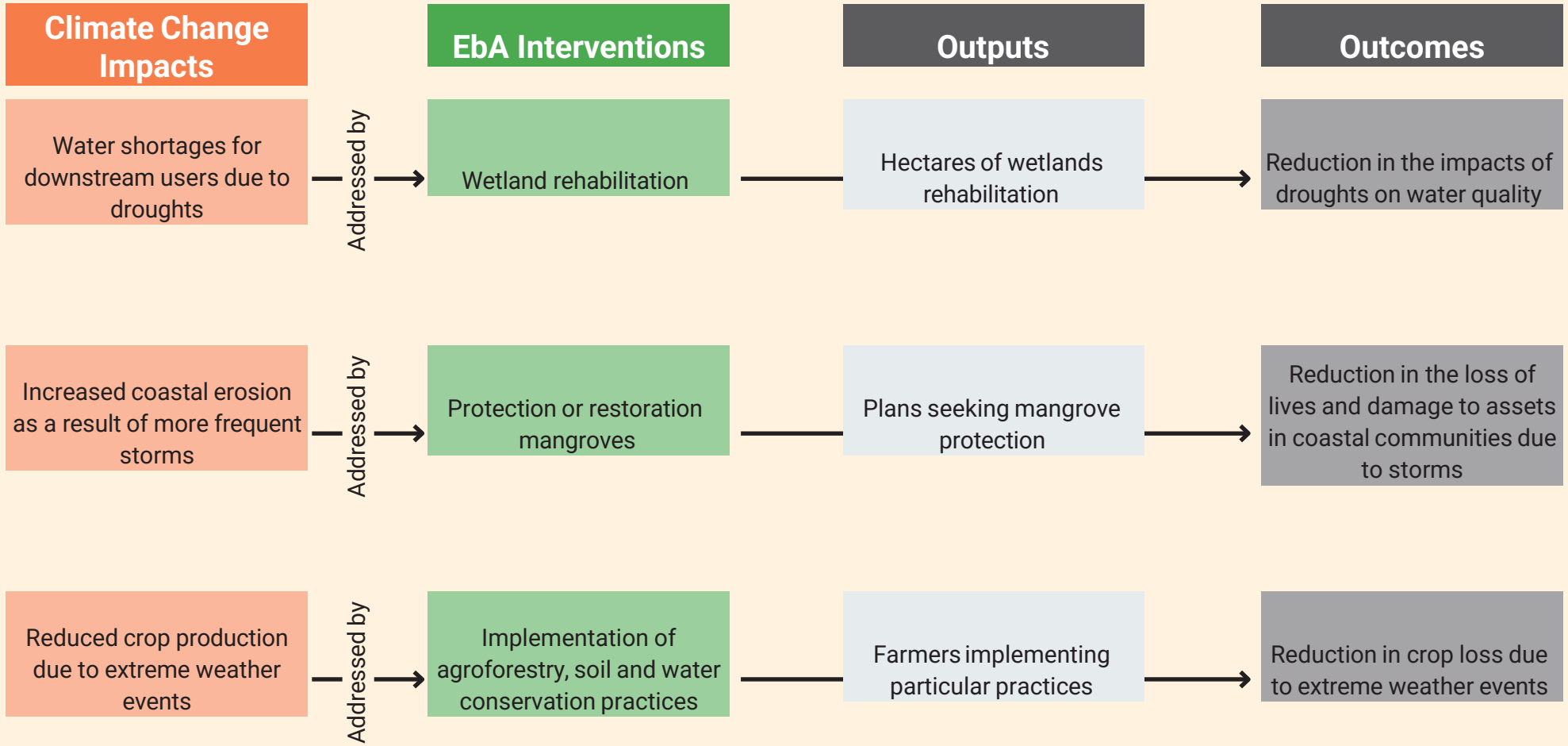
Socio-cultural

- Increased social cohesion
- Strengthened governance and institutions
- Preserved scenic beauty and traditions

Environmental

- Increased species diversity
- Habitat preservation
- Carbon sequestration
- Reduction of invasive species
- Mitigation

Figure 1. Examples of EbA interventions implemented to address specific climate change impacts, and the outputs and outcomes that can be achieved through EbA implementation.



Ecosystem-based Mitigation (EbM)

Carbon storage potential from vegetation offers over 30% of the solution to mitigating climate change.

EbM uses nature to reduce greenhouse gas (GHG) emissions and absorb carbon.

Let's have a look at different options for EbM.

Grassland and rangelands can store more carbon if grazing and herd structures are managed properly. Healthy coastal ecosystems also absorb and store carbon from the atmosphere and oceans.

EbM options include:

- Nutrient management through conservation agriculture, as well as rangeland restoration to optimise grazing and livestock management.
- Improving land stewardship is a successful approach to enhance sequestration from soils and plants while reducing land degradation.
- Appropriate reforestation and activities to reduce deforestation and forest degradation, including natural forest management.
- Grazing management and intensity, animal management and improved feed,
- Grassland fire management.
- Native species restoration.
- Avoiding grassland conversion.
- Controlling woody species encroachment in savanna.

How does Ecosystem-based Adaptation (EbA) and Ecosystem-based Mitigation (EbM) link to policy?

Each policy has a role to play in creating an enabling environment to support EbA and EbM. South Africa's vision for EbA, as expressed in policy and strategy, is to use nature to transition to an economy that is able to withstand climate shocks, and secure the livelihoods of vulnerable people, while making a fair contribution to the global effort to reduce greenhouse gas emissions.

The implementation of EbA in South Africa is supported through policies and strategies, such as:

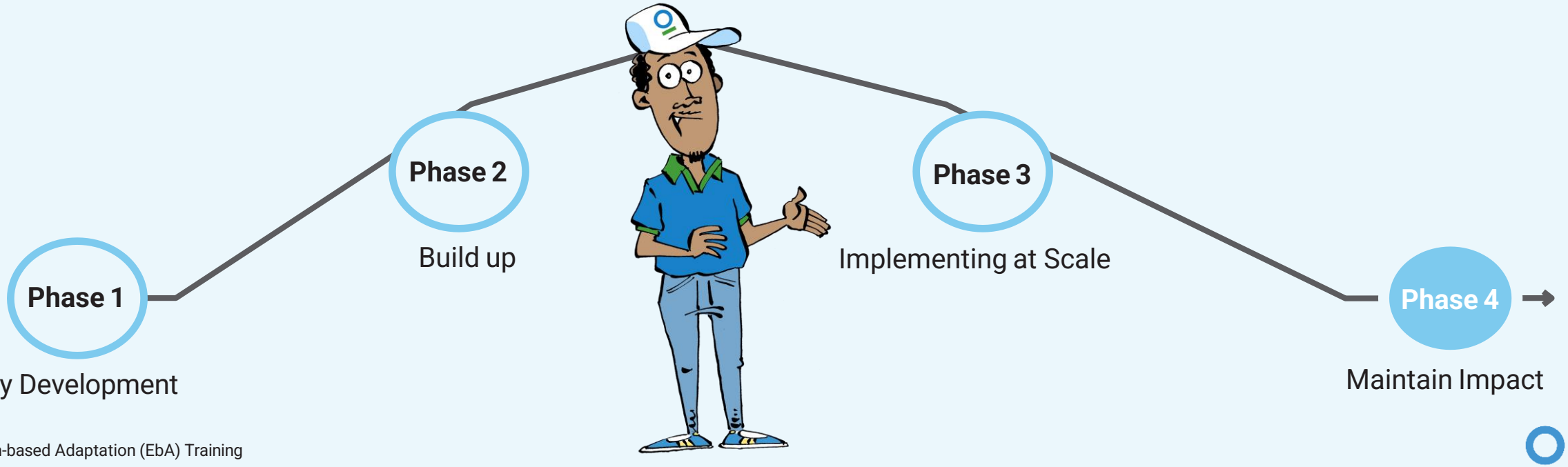
- National Climate Change Response White Paper (2011);
- Strategic Framework and Overarching Implementation Plan for EbA 2016 – 2021;
- Guidelines for EbA (2017);
- National Development Plan 2030;
- Climate Change Sectoral Adaptation Plans;
- National carbon sinks assessment for mitigation;
- Other policies and strategies include:
- Integrated Development Plans (IDPs);
- Vulnerability Assessments;
- Local Economic Development Plans; and
- Spatial Development Frameworks (or other spatial information that can be integrated with EbA maps to determine development priorities).

For example, Namakwa's IDP can be used as a tool for equitable sustainable development in the region by providing strategic development directives and actions as well as sector plans.

Why is it important to monitor EbA into the long term?

EbA monitoring protocols are important to measure the impacts and results of conservation actions. These results will be used to renegotiate Conservation Agreements for example, in order to ensure the sustainability of positive impacts and continuation of projects.

CSA has used a number of monitoring protocols such as Socio-Economic Surveys and Lessons Learned Workshops. These are used to determine what has worked well and what has not. During workshops, CA farmers have the opportunity to put forward recommendations for how things could be improved.

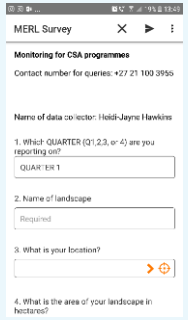


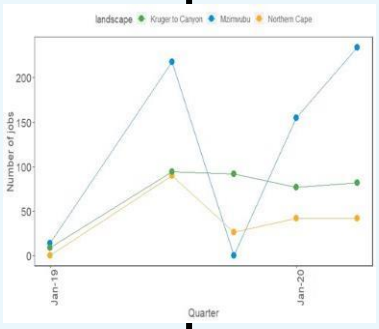
CSA's Process

- Collate the facts from the ground
- Confirm facts with the right people
- Match facts to audiences
- Develop relevant materials for each audience
- Update facts & materials annually

Tools

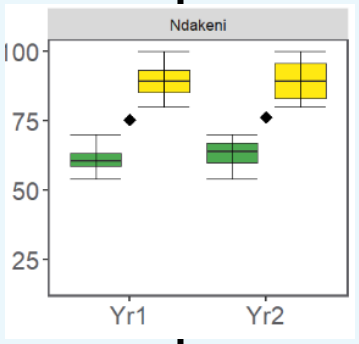
Online survey





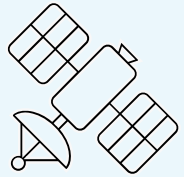
Field survey data:

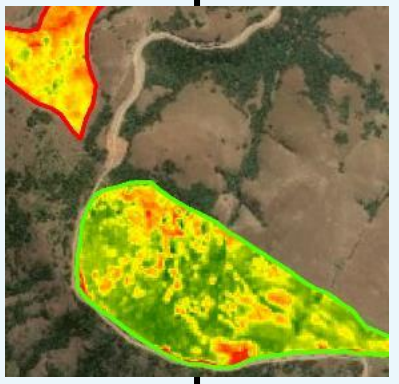
Landscape level data, Veg surveys, livestock counts, compliance monitoring



Analysis of data:

Indicators and Results





MERL Sharepoint

Ecosystem based Adaptation (EbA) indicators

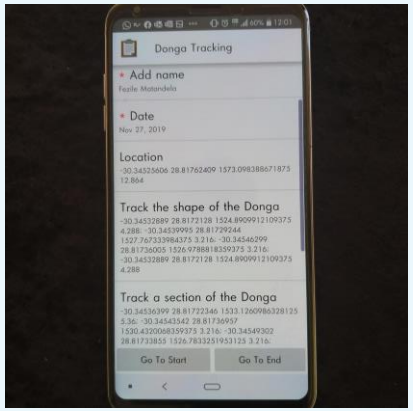
- To show ecosystem changed or did not change during an extreme event or climate impact e.g. soil capture during a flood event and is able to provide services to people to benefit from.
- To show how people are benefitting from services and other benefits and able to adapt to climate events. This benefit may be tangible benefits (fodder, water etc.), or the ability to save, empowerment to make decisions (governance and policy making) or behaviour changes and overall adaptive capacity
- Feed into National M+E system and databases

Umzimvubu community rangeland monitoring programme

The purpose of this rangeland monitoring programme is to empower communities to be able to ‘see’ the changes in their landscape and resources. All monitoring records must be captured on the ‘ODK Collect’ android smartphone application which allows for survey-based data gathering. The application is designed to work well without network connectivity and can therefore be used in the field.

Once the app is downloaded,

To capture monitoring records, open the ODK Collect App and on the main menu select ‘Fill Blank Form’. – Select the relevant form and follow the questions and prompts to capture your details, the date of the monitoring, the measurements, spatial information and photographic evidence. • Once the form is complete, select ‘submit’ and the data will be sent to a central database, where it will be processed and reported on quarterly by Conservation South Africa.



Broad indicators

Impact Indicators

CI's Impact Indicators: quantitative measure of CI's impact in our area-based intervention sites, for calendar year 2018. The metrics are designed to be (a) publicly defensible (b) standardized and scalable across our geographies (c) calculated using science-based methodologies and tools like Trends. Earth.

A… …cted and well-managed (ha)	**Total Conserved**	Total area of CI's on-the-ground, direct implementation site
	New	Area CI helped to newly conserve in the reporting year (ex. protected areas that have been newly gazette)
	Continued	Area that CI is continuing to support in the reporting year (i.e. supporting the management of an existing protected area)
	Under Restoration	Total CI area under restoration (new + supported restoration areas)
Tons of Carbon Dioxide (CO_2) sequestered	**Stored**	Total terrestrial carbon stored within CI's implementation sites; includes above and below ground woody carbon and soil carbon
	Sequestered	Total estimated CO2 sequestered from CI sites that are undergoing restoration + have planted trees (or sequestration has begun)
People Benefiting	**Ecosystem Services**	Total number of people living within CI's direct implementation site polygons (not the # of people living within the entire scape)
	Socio-economic	Total number of people that directly received monetary and non-monetary socioeconomic benefits from a CI activity (ex: conservation agreement beneficiaries)
Species Benefiting	**IUCN Threatened**	Total number of IUCN threatened species whose habitat is within CI direct implementation sites
	CI Targeted	Total number of species that are directly and intentionally benefiting from a CI project (regardless of IUCN category)

National Climate Change Response Database