National Desired Adaptation Outcome Questionnaire

Training Manual V1

South Africa is projected to face a higher frequency of climate related disasters that are increasing in intensity, and these events are likely to be associated with impacts that are on par with, if not worse than those already experienced (Engelbrecht et al. 2018 Third National Communication to UNFCCC).

This user manual was designed to walk users through the National Desired Adaptation Outcome Questionnaire and is intended as a resource to inform anyone interested in evaluating their climate change adaptation approach of DEAs current monitoring and evaluation approach and to submit an evaluation questionnaire to DEA.

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

science & technology
Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

NRF National Research Foundation
SAEON South African Environmental Observation Network

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Acronyms

CSIR	Council for Scientific and Industrial Research
DAO	Desired Adaptation Outcome
DEA	Department of Environmental Affairs
IDP	Integrated Development Plan
IPCC	Intergovernmental Panel on Climate Change
IRP	Integrated Resource Plan
MHEWS	Multi-Hazard Early Warning System
NCCIS	National Climate Change Information System
NCCRD	National Climate Change Response Database
SAEON	South African Environmental Observation Network
SARVA	South African Risk and Vulnerability Atlas
SAWS	South African Weather Service
SDBIP	Service Delivery and Budget Implementation Plan
SDG	Sustainable Development Goal
SPLUMA	Spatial Planning and Land Use Management Act

The NDAO Questionnaire: A Training Manual

Overview

The National Desired Adaptation Outcome questionnaire is a component of the larger NCCIS designed as a monitoring and evaluation framework for climate change resilience by a variety of stakeholders through progress towards a series of goals. Figure 1 shows the inputs considered to inform the NDAO questionnaire goals. The essential building blocks of the system are composed of monitoring and evaluation of high level climate information and conceptual frameworks. These form the foundation of the 'Key Elements for Climate Resilience M&E' which indicate the specific variables which can be monitored in order to determine the strengths and weaknesses of a program. This approach is meant to be both retrospective (What do we know and where do we currently stand?) and preemptive (What is likely to happen and what can be done about it?).

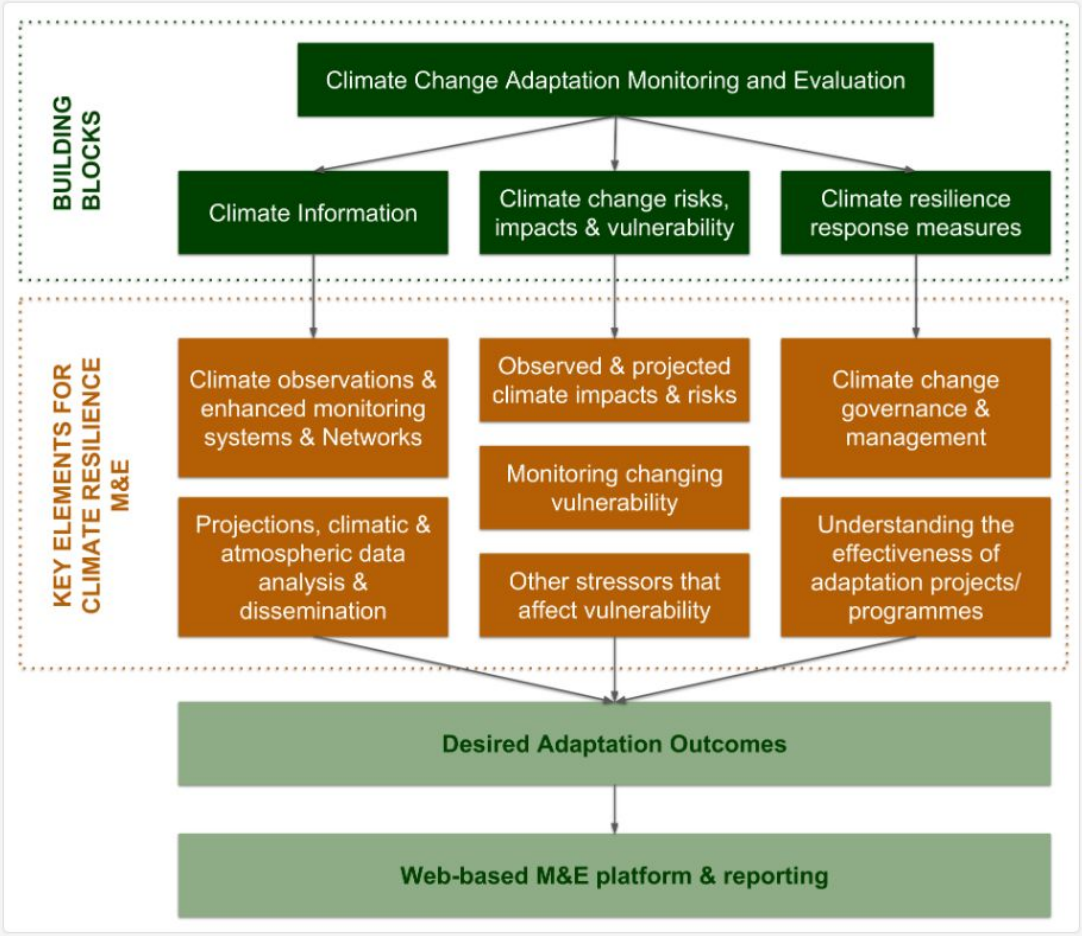

Figure 1: The backbone and inputs into the NDAOs

From this structure, nine goals were derived. Goals one through six were designed to monitor and evaluate the inputs needed (e.g. processes, resources and capacities) to enable effective climate change adaptation. Goals seven through nine monitor and evaluate the key impacts desired of adaptation interventions and associated measures (e.g. reductions in vulnerability of human- and natural-systems).

Goal	*'Inputs' to enable effective adaptation*
G1	Robust/integrated plans, policies and actions for effective delivery of climate change adaptation, together with monitoring, evaluation and review over the short, medium and longer-term.
G2	Appropriate resources (including current and past financial investments), capacity and processes (human, legal and regulatory) and support mechanisms (institutional and governance structures) to facilitate climate change adaptation.
G3	Accurate climate information (e.g. historical trend data, seasonal predictions, future projections, and early warning of extreme weather and other climate-related events) provided by existing and new monitoring and forecasting facilities/networks (including their maintenance and enhancement) to inform adaptation planning and disaster risk reduction.
G4	Capacity development, education and awareness programmes (formal and informal) for climate change adaptation (e.g. informed by adaptation research and with the tools to utilise data/outputs).
G5	New and adapted technologies/knowledge and other cost-effective measures (e.g. nature-based solutions) used in climate change adaptation.
G6	Climate change risks, impacts and vulnerabilities identified and addressed.
Goal	***'Impacts' of adaptation interventions and associated measures***
G7	Systems, infrastructure, communities and sectors less vulnerable to climate change impacts (e.g. through effectiveness of adaptation interventions/response measures).
G8	Non-climate pressures and threats to human and natural systems reduced (particularly where these compound climate change impacts).
G9	Secure food, water and energy supplies for all citizens (within the context of sustainable development).

Table 1: The nine goals of the NDAO Questionnaire

Monitoring and evaluation

A simple pragmatic approach has been developed to monitor and evaluate the progress being made in achieving individual DAOs. The approach uses traffic light colours as a scoring system to summarise progress, for example:

- Legal frameworks, plans/strategies, policies, programmes and projects not informed by risk and vulnerability profiles **(red)**.

- Legal frameworks, plans/strategies, policies, programmes and projects informed by risk and vulnerability profiles **(amber)**.

- Implementation of legal frameworks, plans/strategies, policies, programmes and projects informed by risk and vulnerability profiles – and contributing to reducing vulnerability and enhancing capacity to respond to climate change impacts **(green)**.

Responsibility for delivering individual adaptation outcomes will rest with a range of stakeholders operating at different spatial scales (i.e. national and/or provincial and/or municipal). Whilst some stakeholder groups may have systems and indicators in place to monitor their activities (NBI, 2017), others will not. This approach will enable all stakeholders to gather basic data and information, from which a cumulative 'score' of progress can be derived. Stakeholder groups will be informed of specific data/information needs and of the time period for which these are required. The data/information collected from individual groups will be aggregated to provide a total 'indication' of progress for that DAO. A summary of progress for the specified time period will then be presented graphically.

Figure 2: NDAO Stoplight indicator.

A component within a system

Together, these define the NDAOs which are structured into a web-based climate change adaptation monitoring and evaluation component within the larger NCCIS. The NDAO serves as an entry point for monitoring and evaluation from the bottom up and from the top down on South Africa's efforts towards combating climate change and its impacts. The NDAO can be accessed from the NCCIS website https://ccis.environment.gov.za or from its own website https://ccis.environment.gov.za/ndao. The NDAO is a fully integrated component in the NCCIS's ecosystem of services which means that its entries are based on common vocabularies shared across the system and that can be accessed via a common login.

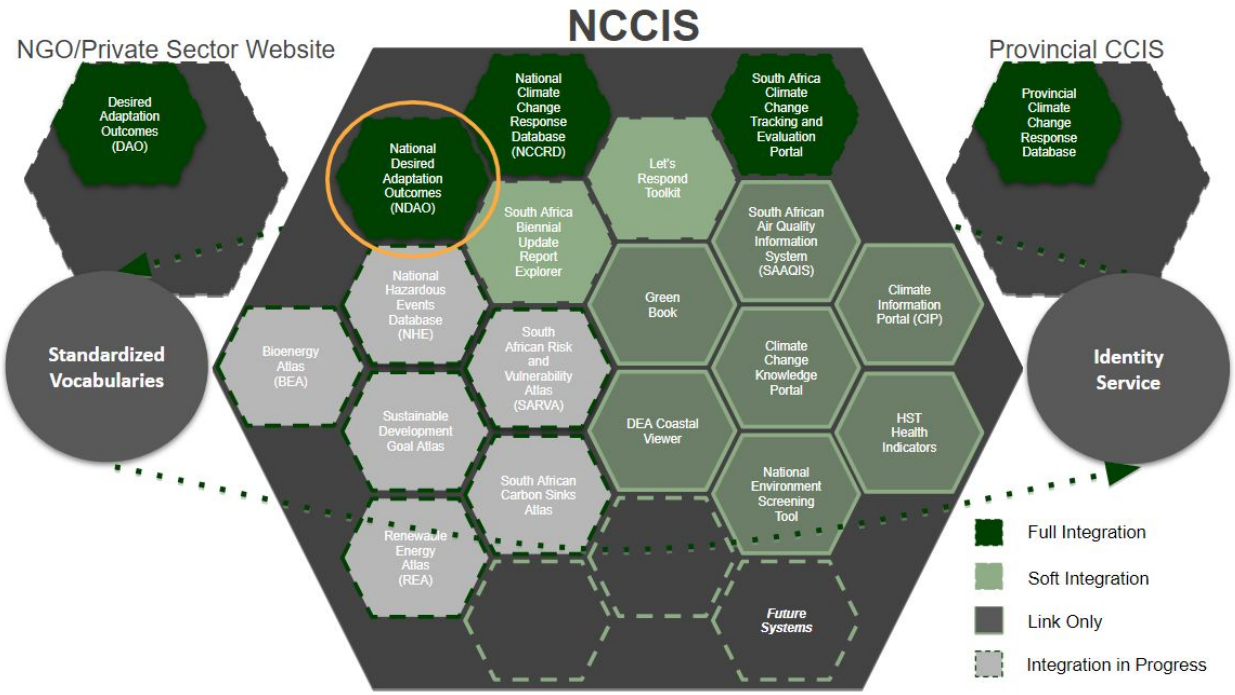

Figure 1: Expandable, interoperable NCCIS system of systems.

By the end of this section you should be able to:

A. Submit a desired adaptation outcome questionnaire
B. Search and locate desired adaptation outcome questionnaires by location, sector, and/or date
C. Download DAO questionnaire entries

To begin the training and for the latest release of the NDAO questionnaire, the user should navigate to the NDAO website at https://ccis.environment.gov.za/ndao or to additional training materials hosted here http://elearning.ccis.saeon.ac.za.

1. Login or Register

To enter data the user must start by first logging in and new users must register. Links to the SAEON identity service for login and registration can be found in the upper right corner of the NDAO dashboard page.

Image 42: Login or register

Registration through the SAEON identity server will grant access to all NCCIS systems including the NCCRD.

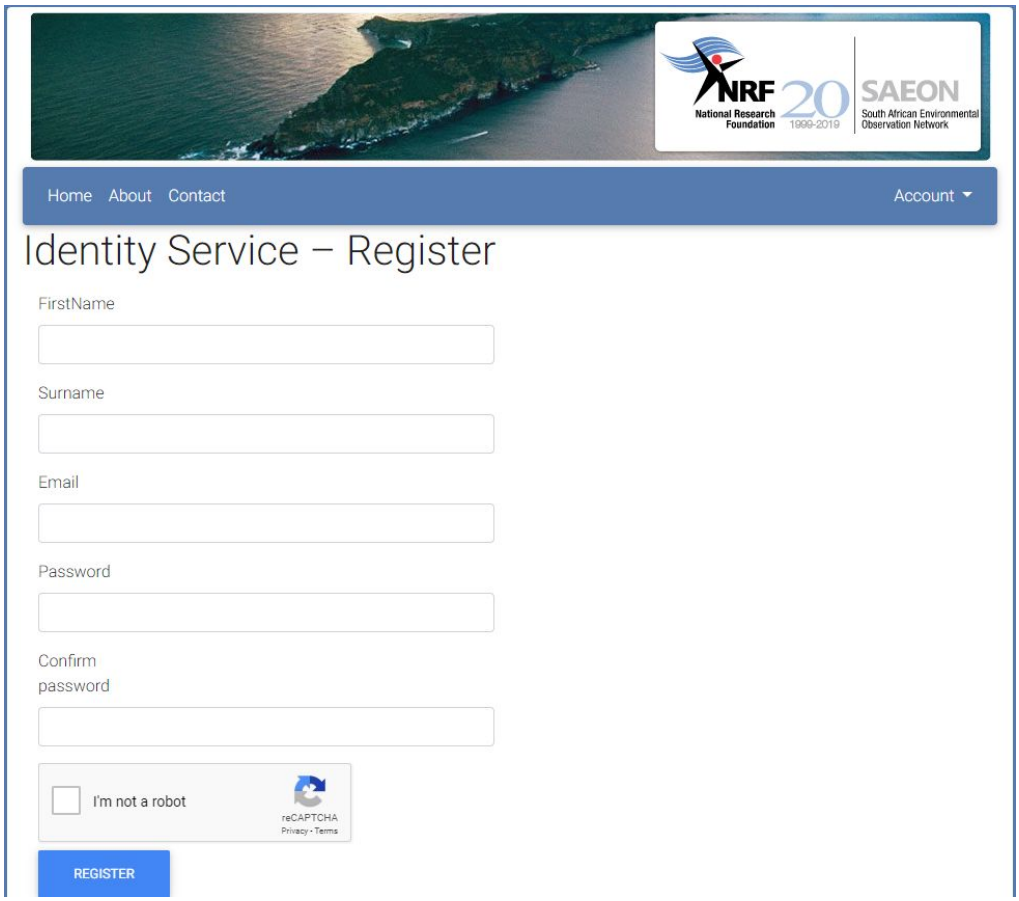

Image 43: Identity service registration

2. Add New Questionnaire Entry

Initiating the NDAO questionnaire

The NDAO questionnaire can be accessed once a user is logged into the SAEON identity service. The user can then navigate to the questionnaire through a variety of links on the NDAO dashboard page including the yellow 'SUBMIT YOUR CONTRIBUTION' button or the 'Submit your Contribution' link in the Monitoring and Evaluation of Climate Change Adaptation text box as shown below.

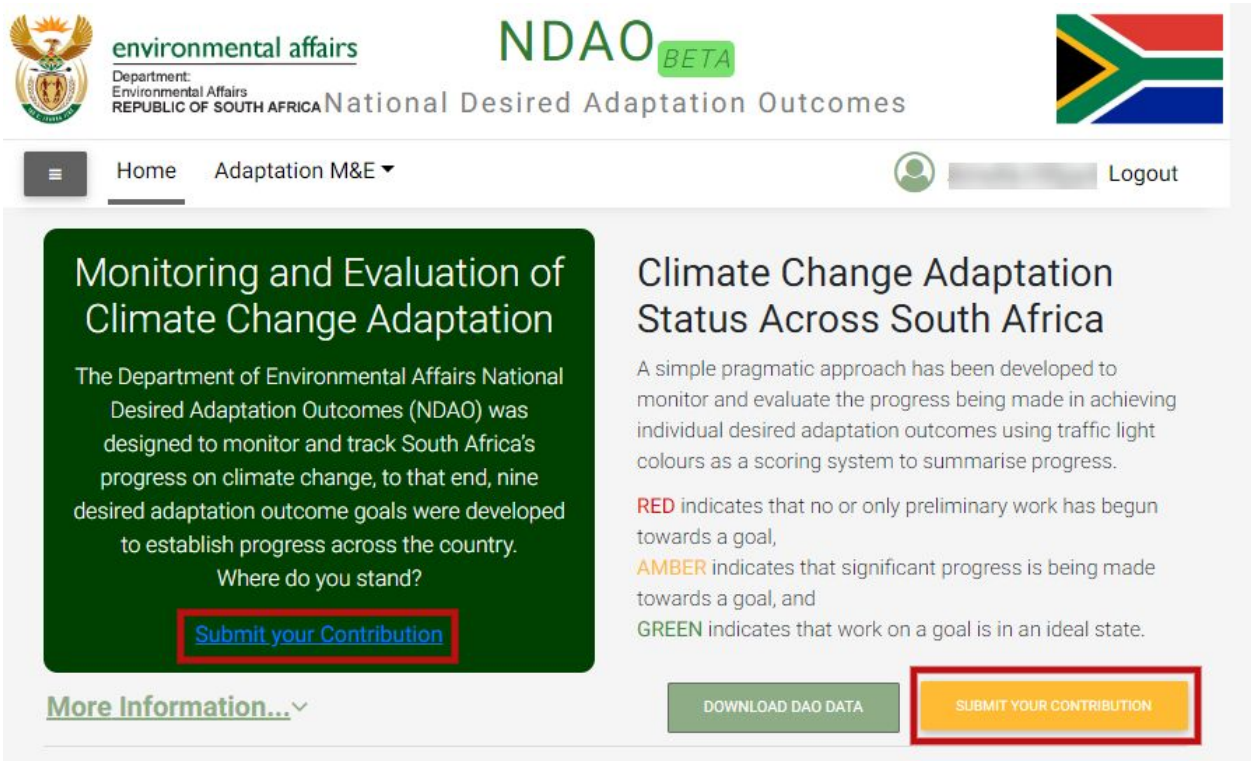

Image 44: Entry points for NDAO questionnaire

A link to the questionnaire can also be found in the Adaptation M&E dropdown in the NDAO dashboard toolbar as shown below.

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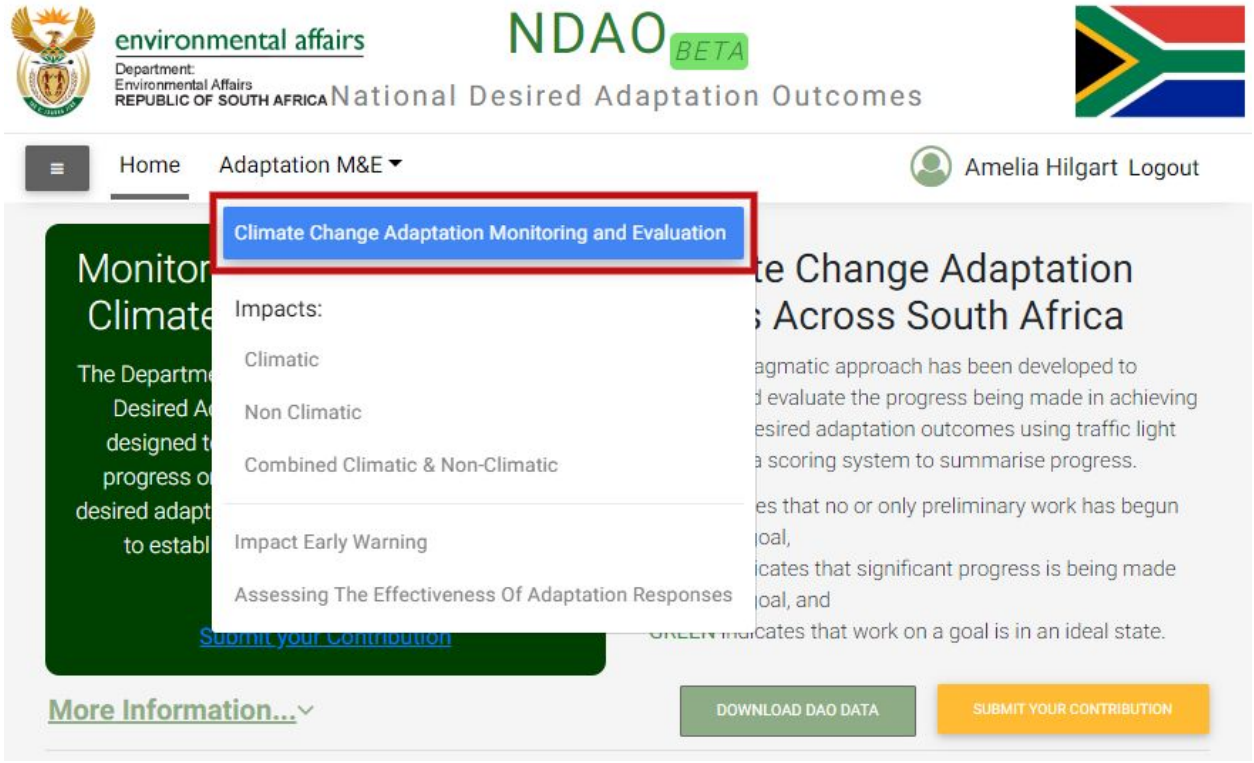

age 45: Additional entry point for NDAO questionnaire

Goal 1 Entry

Selection of the entry points mentioned above results the opening of questionnaire to the Goal 1 entry. The purpose of Goal 1 is to evaluate climate change planning, policies and actions for effective delivery of climate change adaptation. As can be seen below, each goal entry opens to a description of the what aspect of climate change adaptation is being monitored and how that aspect is being evaluated within the context of the questionnaire.

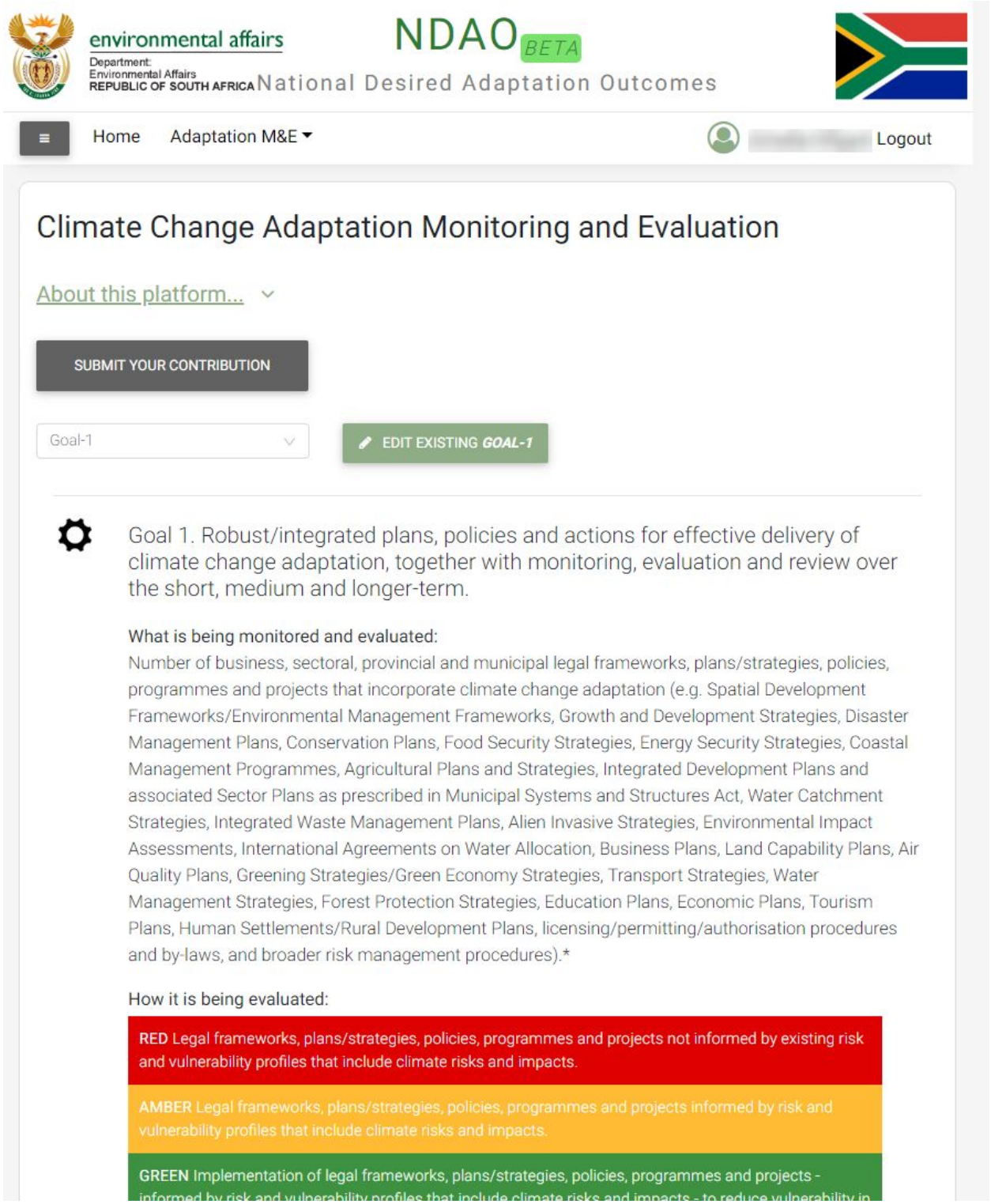

Image 46: Goal 1

Part A. Climate change plan, policy, or action details

The Goal 1 entry has been divided into two parts, Part A and Part B. In Part A the user will enter the details of their climate change plan, policy or action. This will start with the upload

of the document itself.

Image 47: Goal 1 - Document upload

There are two ways to upload documents into Goal 1. The first is to click on the grey box above which will engage a desktop search box for a user to select a document from their computer as shown below. Once the appropriate file has been selected the 'Open' button should be selected to initiate the upload. A single document or folder of documents can be added where needed.

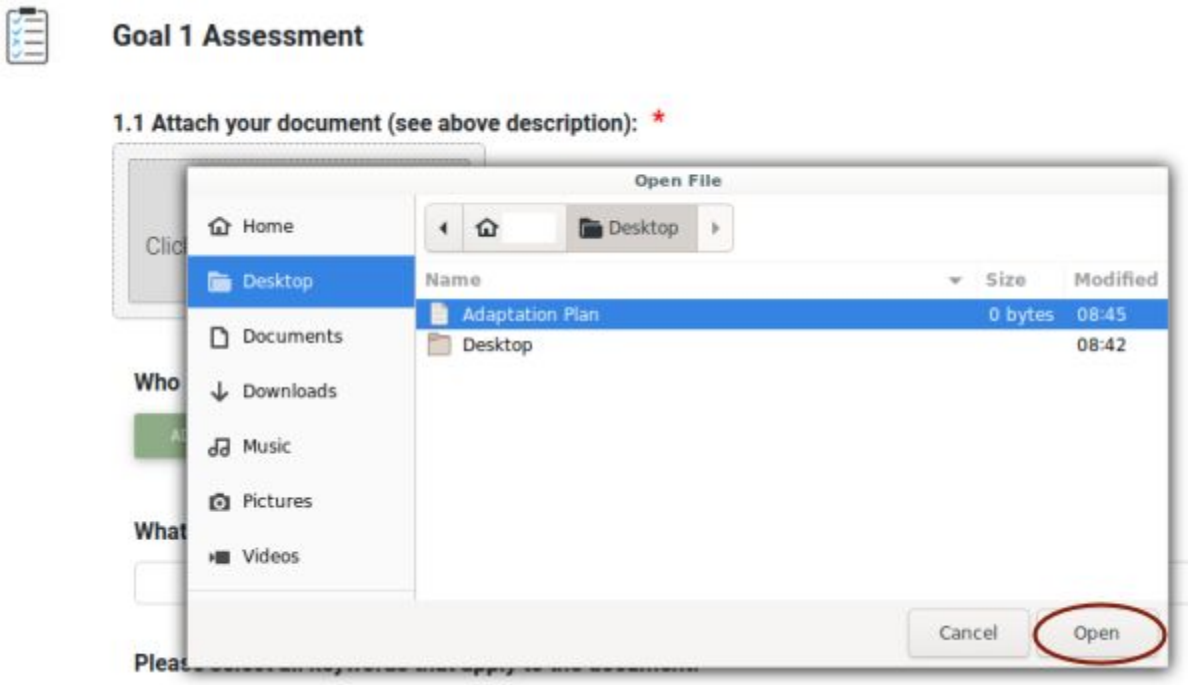

Image 48: Goal 1 - Document selection

Successful uploads will be be visible in the upload area as shown below. Should a document have been uploaded in error, the 'x' below the attached file name can be selected to remove the uploaded document from the entry.

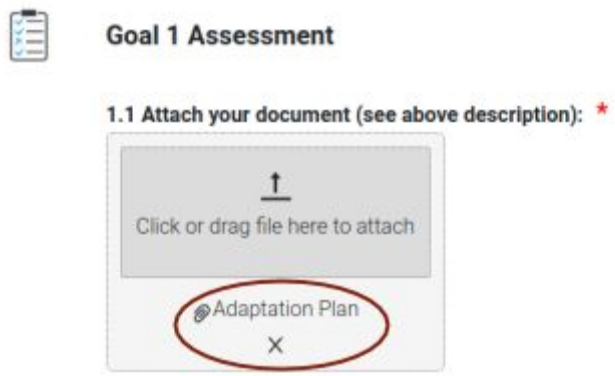

Image 49: Goal 1 - Document confirmation and removal

The rest of the fields in section 1.1 address metadata needs to make the materials submitted easy to search and access and to licence them so that they are publicly available. This process begins with the addition of author details. To add details about the author or authors, the 'ADD AUTHOR DETAILS' button should be selected as shown below.

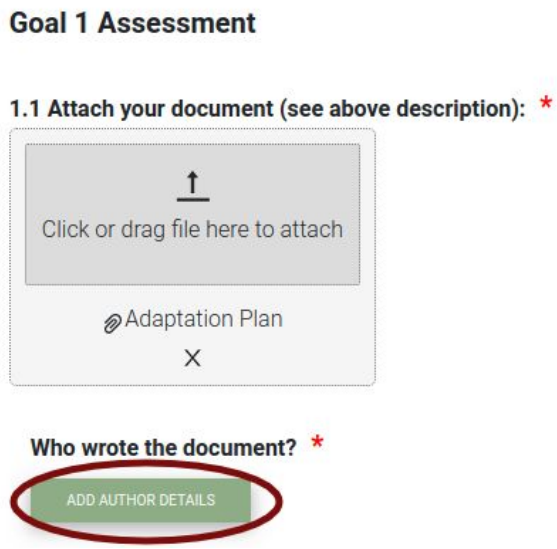

Image 50: Goal 1 - Author details

This will initiate the 'Add author details:' popup. When all of the details have been added the user should select the 'ADD' button to add the author details the Goal 1 entry as shown below.

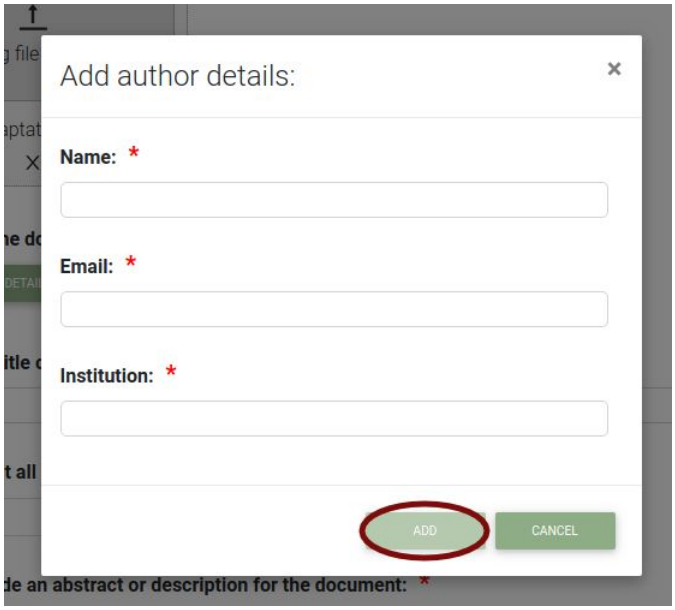

Image 51: Goal 1 - Author details popup

As many authors can be added as needed by selecting the 'ADD AUTHOR DETAILS' button again and filling in the additional details. If an entry has been made in error it can be removed by selecting the bin icon as shown below.

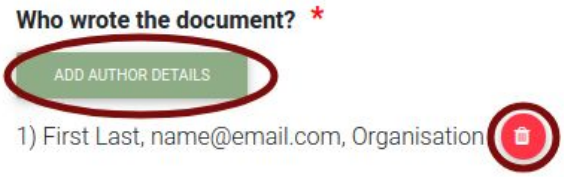

Image 52: Goal 1 - Add or remove an author

All applicable key words should be added to describe the uploaded document. This can be done by selecting words from the dropdown list or by entering words into the entry field to search for keywords of interest as demonstrated below. If a keyword has been added in error it can be removed by selecting the 'x' next to the relevant word.

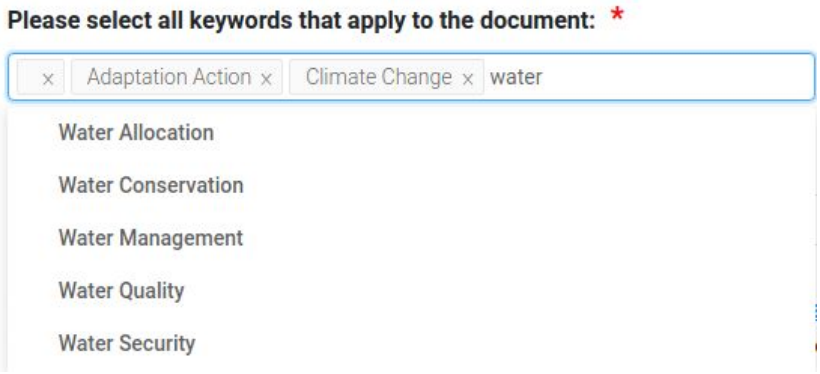

Image 53: Goal 1 - Add keywords

All documents provided in the NDAO questionnaire are free and open to the public with no restrictions on their use provided that the materials are properly cited. To accept this and the legal framework

provided by the Creative Commons CC_BY licence, users should select the 'I accept this agreement' tick box as shown below.

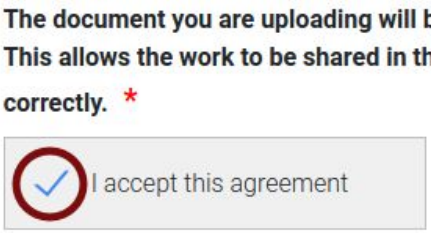

Image 54: Goal 1 - Licence agreement

Additional Goal 1 Questions

Question 1.3 asks climate change adaptation document includes a risk and vulnerability assessment as part of the analysis for the plan, policy, or action. The button representing the case should be selected by the user as demonstrated below.

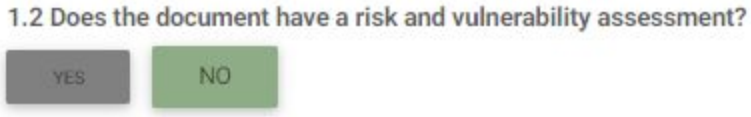

Image 56: Goal 1 - Risk and vulnerability buttons

The date for Question 1.4 automatically defaults to the date of the Goal 1 entry, to change it, the date can be added manually in a yyyy-mm-dd format or by selecting a date from the calendar drop down provided. To change the month select the single arrow to the right of the 'April 2019' date and to change the year select the double arrow as demonstrated on the left of the 'April 2019' date and demonstrated below.

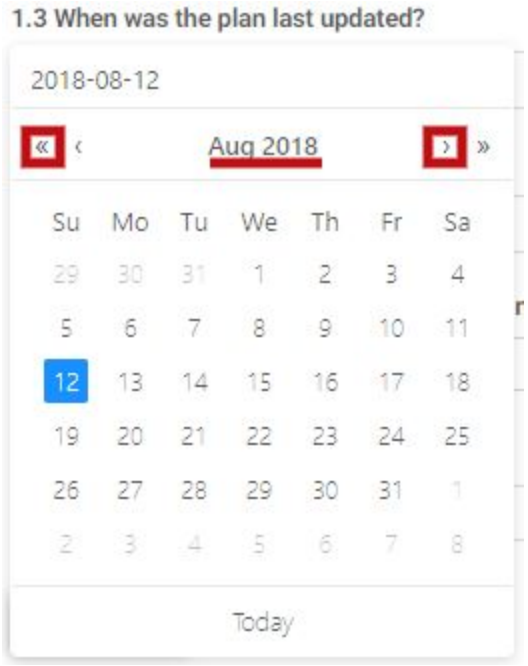

Image 57: Goal 1 - Date selector

The region for Question 1.4 can be selected down to the local municipal level. This selection can be made by selecting from the dropdown list a province, then district municipality and then local municipality (as needed) as demonstrated below. This also applies to sector selection in Question 1.6. Sectors are derived from the Standard Industrial Classification (SIC) sector definitions.

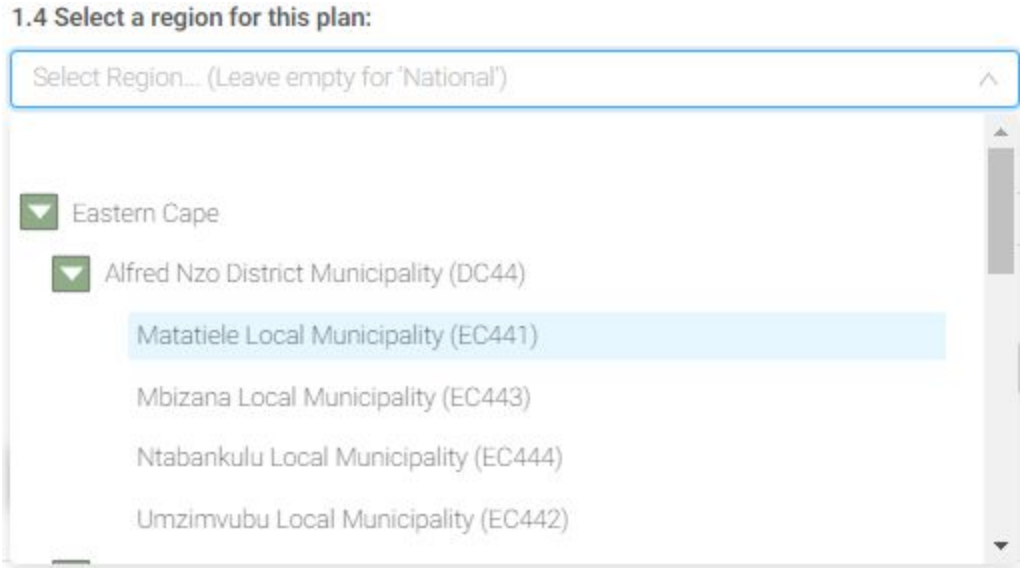

Image 58: Goal 1 - Region selection

Part B. Link climate change adaptation projects to the National Climate Change Response Database (NCCRD)

PTo link the Goal 1 response to the NCCRD, users should select the 'NCCRD' button as shown below.

Image 55: Goal 1 - NCCRD link

If the user is unfamiliar with the NCCRD, project upload information can be found in the NCCRD training manual or in Appendix A below.

Save Entry and View Status

Each goal is guided by a series of rules which then impact the goal status. The change in the goal status can be monitored as indicated below. To save the entry select the ‘SAVE’ button at the bottom of the entry page. To move on to the next Goal the user should then select the ‘NEXT’ button as indicated below.

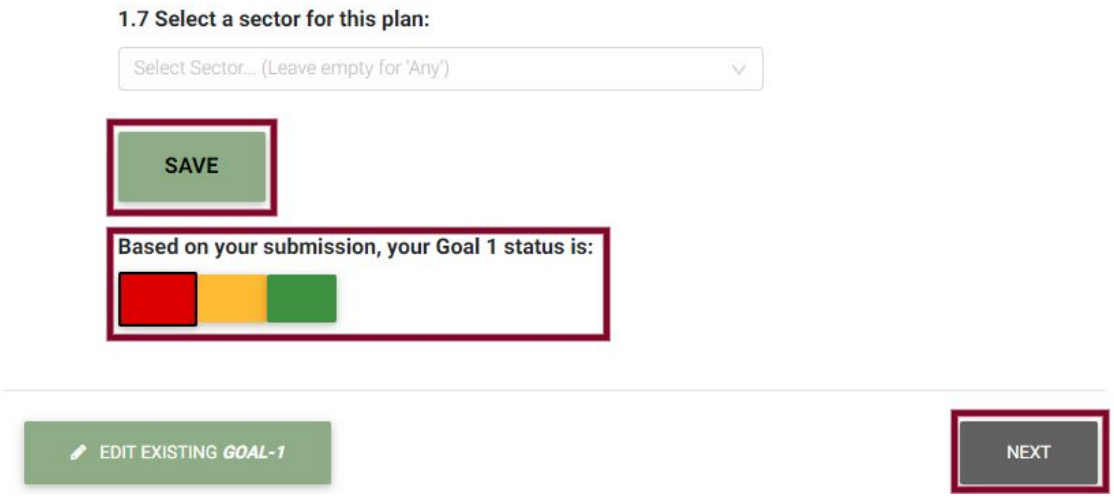

Image 59: Goal 1 - Save entry

The entry details for all of the subsequent goals follow processes as described in the steps above and can be selected in order by selecting the ‘NEXT’ button after completing each goal’s entry or through the goal dropdown menu at the top of each entry page.

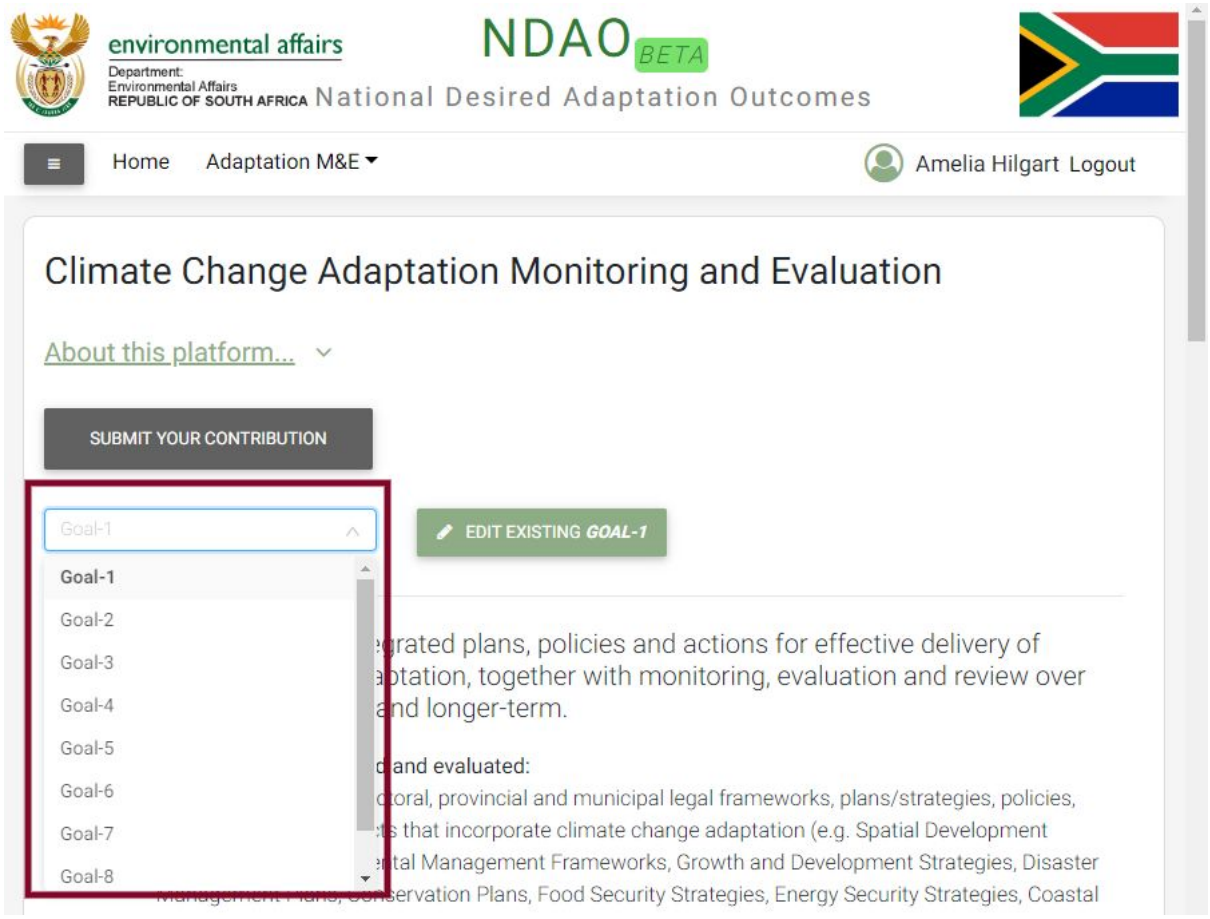

Image 60: Goal 1 - Select a goal

If the user is returning to the system and would like to update a previous goal entry, they should first navigate to that Goal's page and then select the 'EDIT EXISTING *GOAL-X*' from either the top or bottom of the goal entry page as shown below.

3. Research, Review and Report

The research, review and reporting functions of the NDAO can all be accessed from the NDAO dashboard where users will be automatically redirected after their goal submissions. To find information about a particular entry from the database the user should select the particulars of the entry from the 'Region', 'Sector', or 'Organization/Institution', 'Goal' or 'Year' filters presented as below. Currently, only data for district and local municipalities is available on the map.

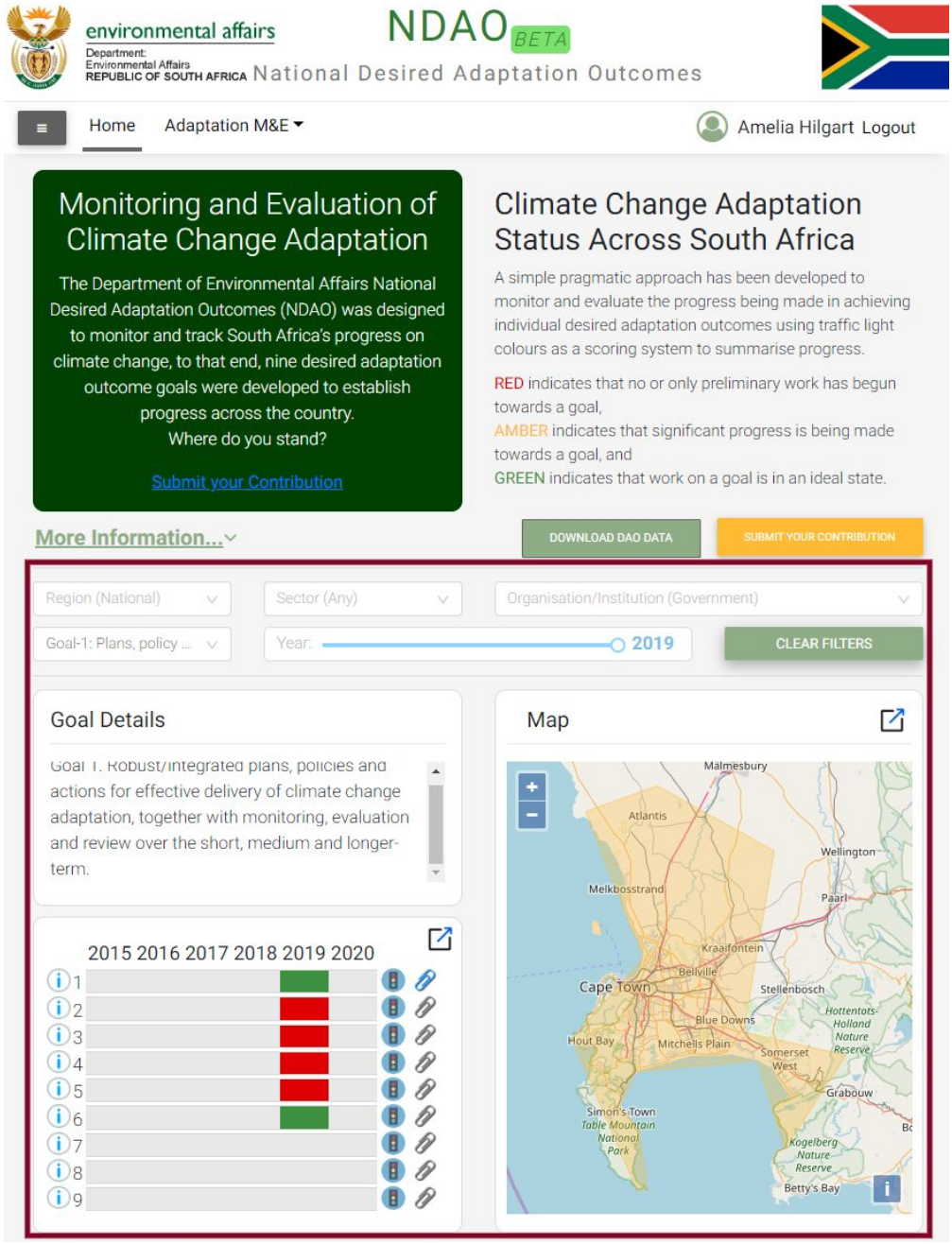

Image 61: Goal 1 - Select a goal

To find a specific entry the user should apply relevant filters starting with the region, sector and organisation, some dummy data has been entered into the database for demonstration purposes as shown above. Dummy data is presented for the City of Cape Town Metropolitan Municipality. As shown below, this dummy entry has entries for Goals 1, 2, 3, 5, 6, 7, 8 and 9 for 2018 and an entry for Goal 9 for 2019.

Finally, the data can be downloaded by selecting the download button.

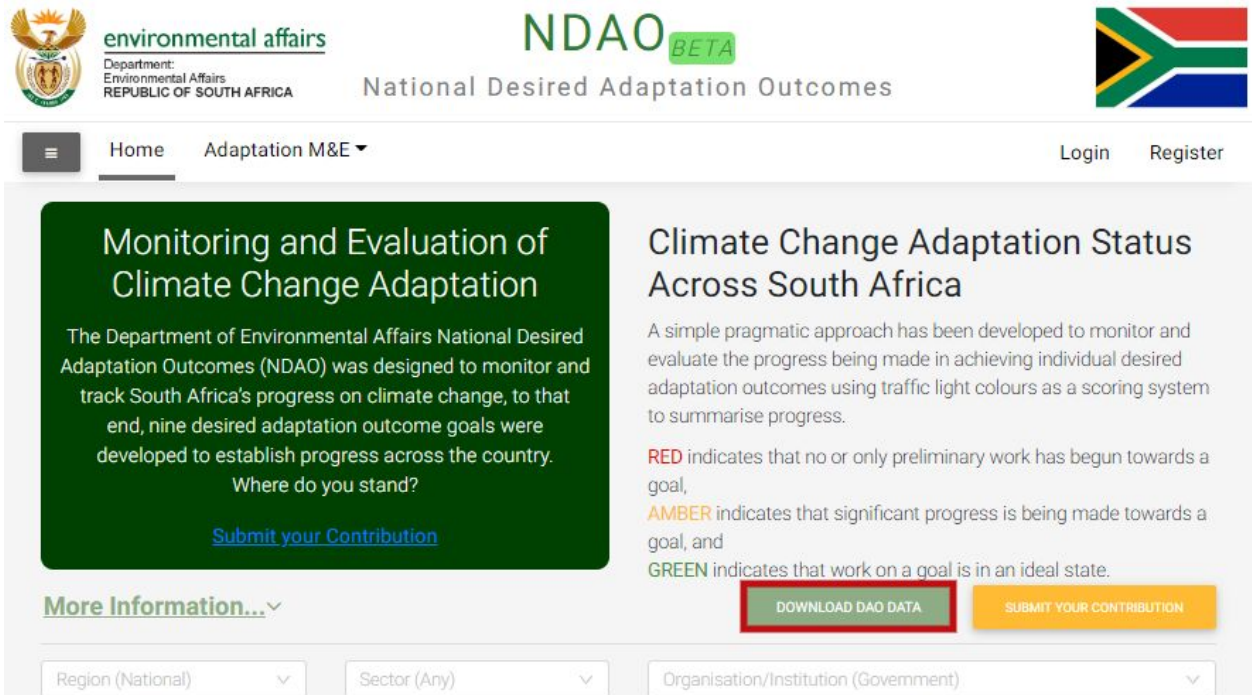

Figure : NDAO download button

Selecting the download option engages the 'Save As' popup and will allow the user to select where on their computer they would like to save the project details. The project can be saved by selecting the 'Save' button in the bottom right corner.

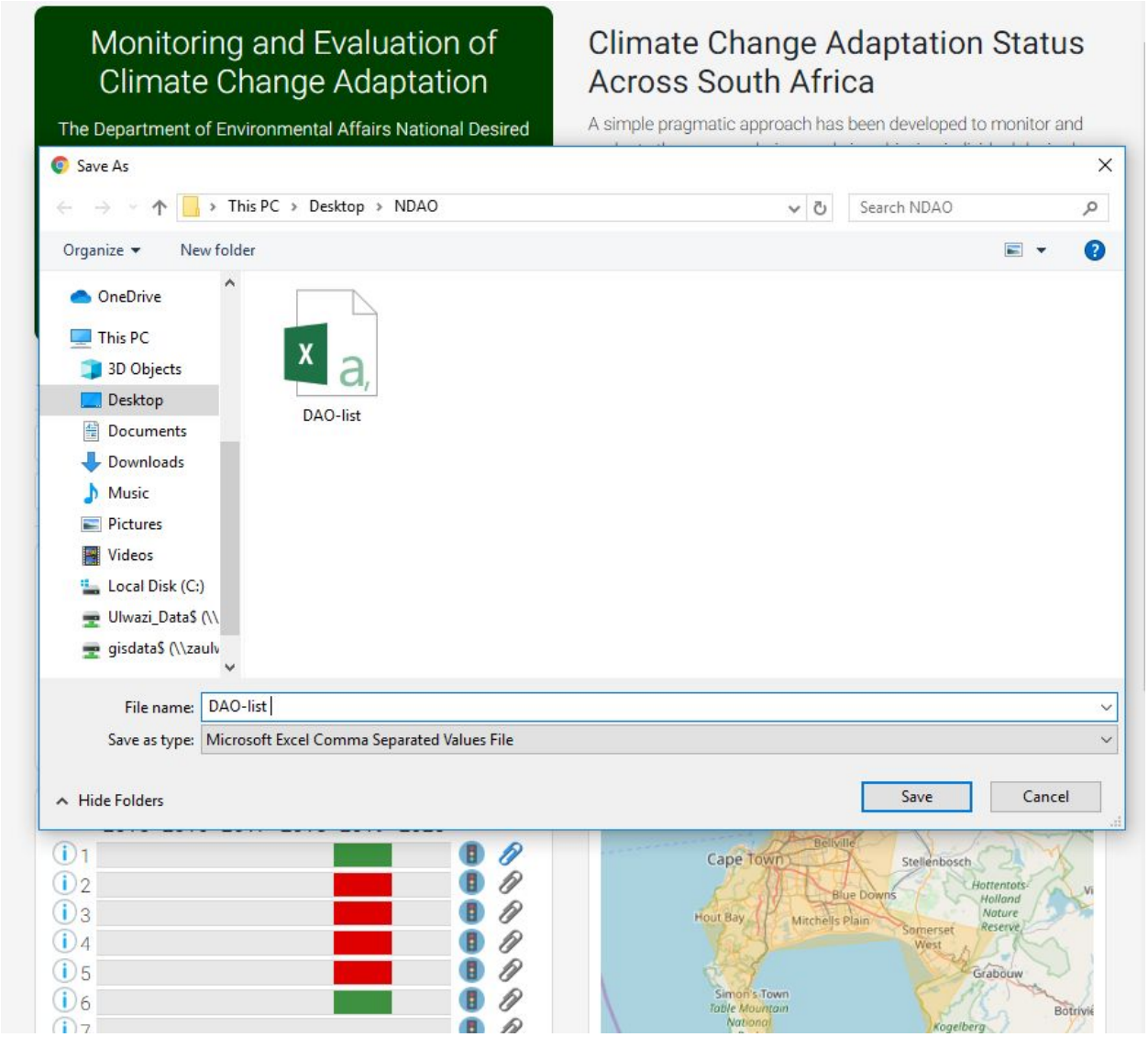

Figure : Save As popup

This file can now be viewed in Microsoft Excel, Office Libre, or saved to Google Drive and viewed as a Google Sheet.

Glossary of Terms

Adaptation is a means of responding to the impacts of climate change. It is "the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate harm or exploit beneficial opportunities. In natural systems, human intervention may facilitate adjustment to expected climate and its effects" (Field et al. 2014).It aims to moderate the impacts as well as to take advantage of new opportunities or to cope with the consequences of new conditions.

Adaptive capacity refers to the varying characteristics that determine how a climate event is experienced. It refers to the ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences (IPCC, 2014). The capacity to adapt is dependent on a region's socio-economic and environmental situation as well as the availability of information and technology. Adaptive capacity can reflect the status of poverty, health, knowledge/education, and governance.

An **early warning system (EWS)** refers to "the set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss" (UNIDSR, 2007).

An **extreme (weather or climate) event** is the unusual, severe or unseasonal occurrence of a weather or climate variable at the extremes of the historically observed values; the range that has been observed in the past.

Climate change refers to a change in the average weather experienced in a particular region or location. The change may occur over periods ranging from decades to millennia. It may affect one or more seasons (e.g. summer, winter or the whole year) and involve changes in one or more aspects of the weather, e.g. rainfall, temperature or winds. Its causes may be natural (e.g. due to periodic changes in the earth's orbit, volcanoes and solar variability) or attributable to human activities, e.g. increasing emissions of greenhouse gases such as CO2, land use change and/or emissions of aerosols. Commonly, the term 'climate change' often refers to changes due to anthropogenic causes.

Climate refers to the average of individual weather conditions in an area, taken over sufficiently long periods of time.

Climate-smart disaster risk reduction (CSDRM) has been borne out the need to integrate disaster risk reduction and climate change adaptation. CSDRM is considered as the initial step to adapting to climate change and variability, providing policymakers with practical measures to allocate resources to reduce current and future risks at all levels (Mitchell et al. 2010; Davis-Reddy & Vincent 2018).

Climate variability refers to variations in climate on all spatial and temporal scales beyond that of individual weather events. This variability may be caused by natural internal processes within the climate system. One of the most important (and widely known) examples of

natural climate variability is the El Niño-Southern Oscillation (ENSO). Variations may also be caused by external influences which may be due to naturally-occurring phenomena (such as periodic changes in the earth's orbit around the sun).

A disaster is a serious disruption of the functioning of a community or society due to a physical event resulting in widespread human, material, economic or environmental losses that require immediate emergency response. A disaster is a negative outcome brought about by high vulnerability (or low adaptive capacity) in the face of exposure to an often sudden event. It is for this reason that an event of similar magnitude in one place may translate into a disaster, but in another may not, depending on the capacity of the population to cope.

Disaster risk management (DRM) refers to the "integrated multisectoral and multidisciplinary administrative, organisational and operational planning processes and capacities aimed at lessening the impacts of natural hazards and related environmental, technological and biological disasters" (Republic of South Africa 2015). Disaster risk management includes all forms of activities to avoid (prevention) or to limit (mitigation and preparedness) the adverse effects of hazards.

Disaster risk reduction (DRR) is defined as the process of "reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events" (UNIDSR, 2007). DRR includes all forms of activities to avoid (prevention) or to limit (mitigation and preparedness) the adverse effects of hazards.

Droughts may refer to "meteorological drought (below average precipitation), hydrological drought (low river flows and water levels in rivers, lakes and groundwater), agricultural drought (low soil moisture), and environmental drought (a combination of the above)" (Stocker et al. 2013). In this report, drought refers to the extended period of unusually low precipitation that produces a shortage of water (CRED 2015).

Exposure refers to the presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected (IPCC, 2014).

Extreme temperature refers to both cold waves and heat waves (CRED 2015).

Floods refer to riverine, flash and coastal flood events and in South Africa are the result of tropical cyclones, cut-off lows, and thunderstorms which cause heavy rainfall and high runoff volumes (CRED 2015).

Global warming refers only to the overall warming of the Earth, based on average increases in temperature over the entire land and ocean surface. Climate change is more than simply an increase in global temperatures; it encompasses changes in regional climate characteristics, including temperature, humidity, rainfall, wind, and extreme weather events, which have economic and social dimensions.

A hazard refers to the physical parameters (e.g. rainfall or temperature) that may cause property damage, loss of livelihoods and services, economic disruption, or environmental

damage. A hazard can be incremental temperature or precipitation change, which unfolds gradually over a long time, or it can refer to weather-related hazards, such as droughts, floods and heat waves.

Impacts, in the context of this website, refer to the effects of climate change on natural and human systems (IPCC 2012).

Mitigation refers to the measures taken to reduce the emission of greenhouse gases and to enhance sinks (i.e. ways of reducing) of greenhouse gases.

Projection is a statement of a possible (hopefully likely) future state of the climate system dependent on the evolution of a set of key factors over time (e.g. carbon dioxide emissions).

Radiative forcing is a measure of the energy absorbed and retained in the lower atmosphere.

Representative Concentration Pathways (RCPs) are four greenhouse gas concentration trajectories adopted by the IPCC Fifth Assessment Report and describe four possible climate futures. The RCP's are named according to their 2100 radiative forcing level. There are four pathways - RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

Resilience is defined as the capacity for a socio-ecological system to (a) absorb stresses and maintain normal functioning in the face of external stress and (b) to adapt in order to be better prepared to future impacts (Folke 2006).

Risk refers to the likelihood of an adverse impact from an event. Risk is often represented as the probability of occurrence of hazardous events or trends multiplied by the impacts if these events or trends occur. Risk results from the interaction of vulnerability, exposure, and hazard (Field et al. 2014).

Sensitivity is the degree to which a system or species is affected, either adversely or beneficially, by climate variability or change. The effect may be direct (e.g., a change in crop yield in response to a change in the mean, range, or variability of temperature) or indirect (e.g., damages caused by an increase in the frequency of coastal flooding due to sea level rise) (Field et al. 2014).

Storms refer to tropical, extra-tropical and convective storm events as well as coastal storm surges (CRED 2015).

The **El Niño-Southern Oscillation** (ENSO) is a recurring natural climate phenomenon that is caused by abnormal warming in sea surface temperatures across the Equatorial Pacific is usually associated with high temperatures and below normal rainfall in the southern hemisphere.

Vulnerability is the "propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt" (Field et al. 2014).

Weather describes the set of meteorological phenomena we experience on a daily basis. Weather conditions might be sunny and hot, or cloudy and rainy. We expect changes in weather to occur from day to day.

Wildfires refer to any uncontrolled and non-prescribed burning of plants in a natural setting (CRED 2015). The occurrence of fires is closely linked with high temperatures and dry spells and are generally the result of deliberate or accidental actions of people (Forsyth et al. 2010).

Appendix A Adding a Project to the NCCRD

Once the registration process is complete and the user is logged in, data can then be added to the system. To begin, the user should select the '+ ADD NEW PROJECT' button.

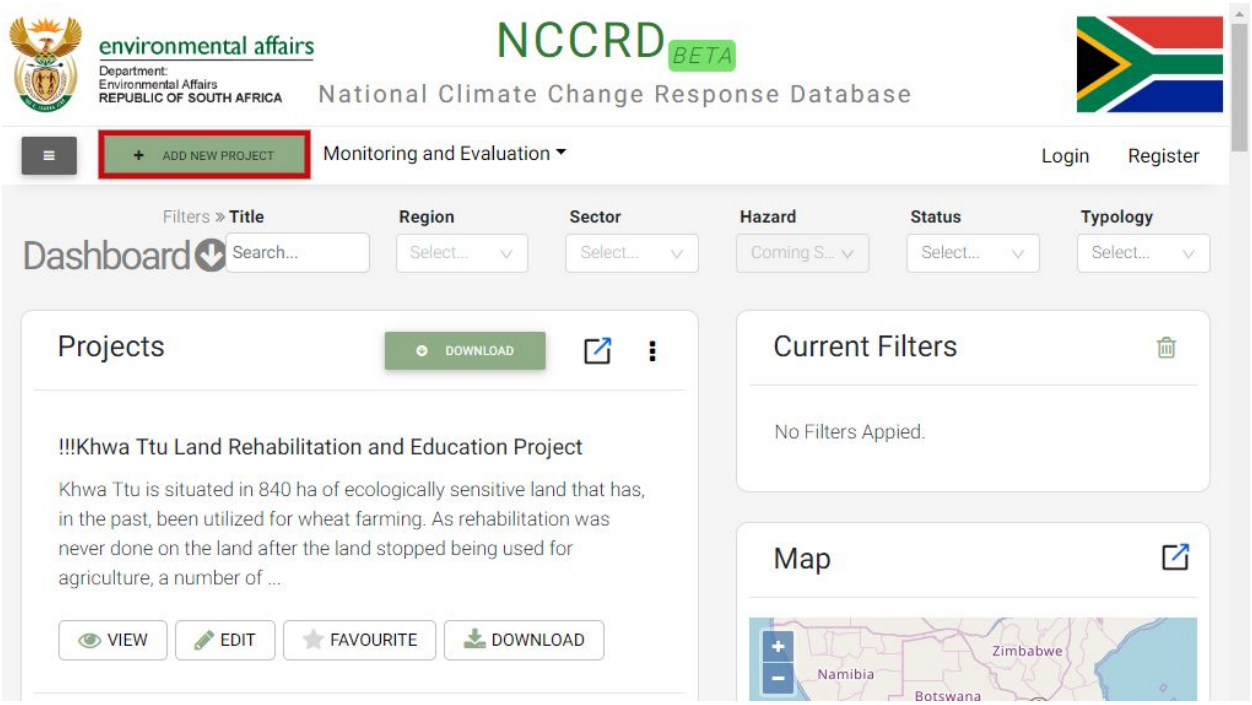

Figure 1: Add a new project

Project Details

This initiates the NCCRD project input wizard where project details can then be entered. The first panel is for a general description of the project details. For each field a tooltip has been generated to prompt the user should a field entry title be unclear. When the user has completed the data entry on the first page, the 'NEXT' button on the bottom right corner should be selected to continue.

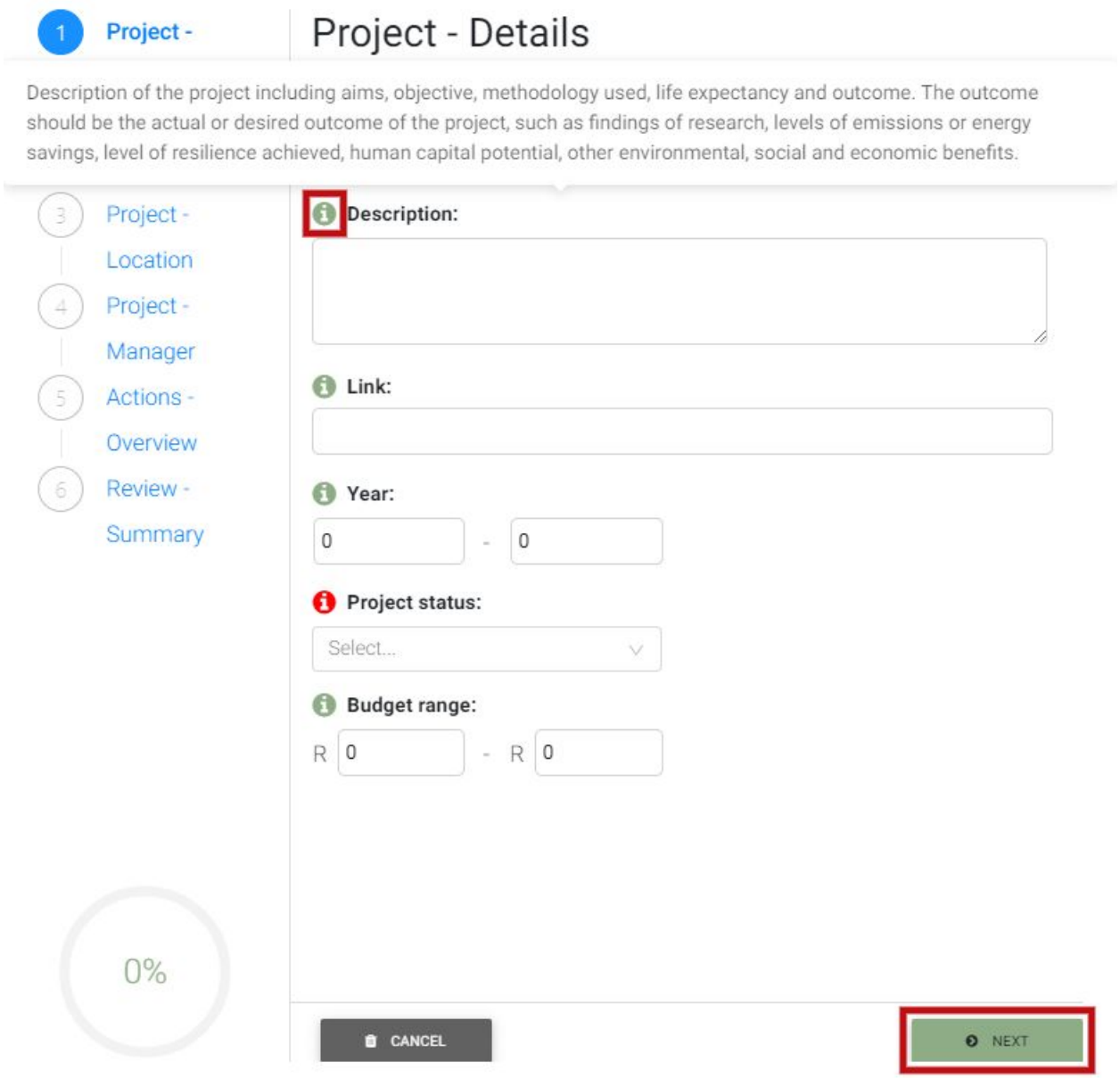

Figure 2: Wizard page 1 - Project details

Link project to NDAO questionnaire

The second page is meant to link a project to NDAO Goal 1 entry. In order for a climate change plan to receive a green status within the NDAO questionnaire, the climate change projects within the plan must be added to the NCCRD (see NDAO training materials for additional details). The wizard automatically pushes the most recent NDAO entries to the top of the page for ease of reference. To link a NDAO Goal entry to a project description within the NCCRD the user should select the 'LINK' button as shown below. If

the user does not have a NDAO Goal 1 entry or has linked the entry to a NCCRD project, the ‘NEXT button at the bottom right corner will advance them to the next step.

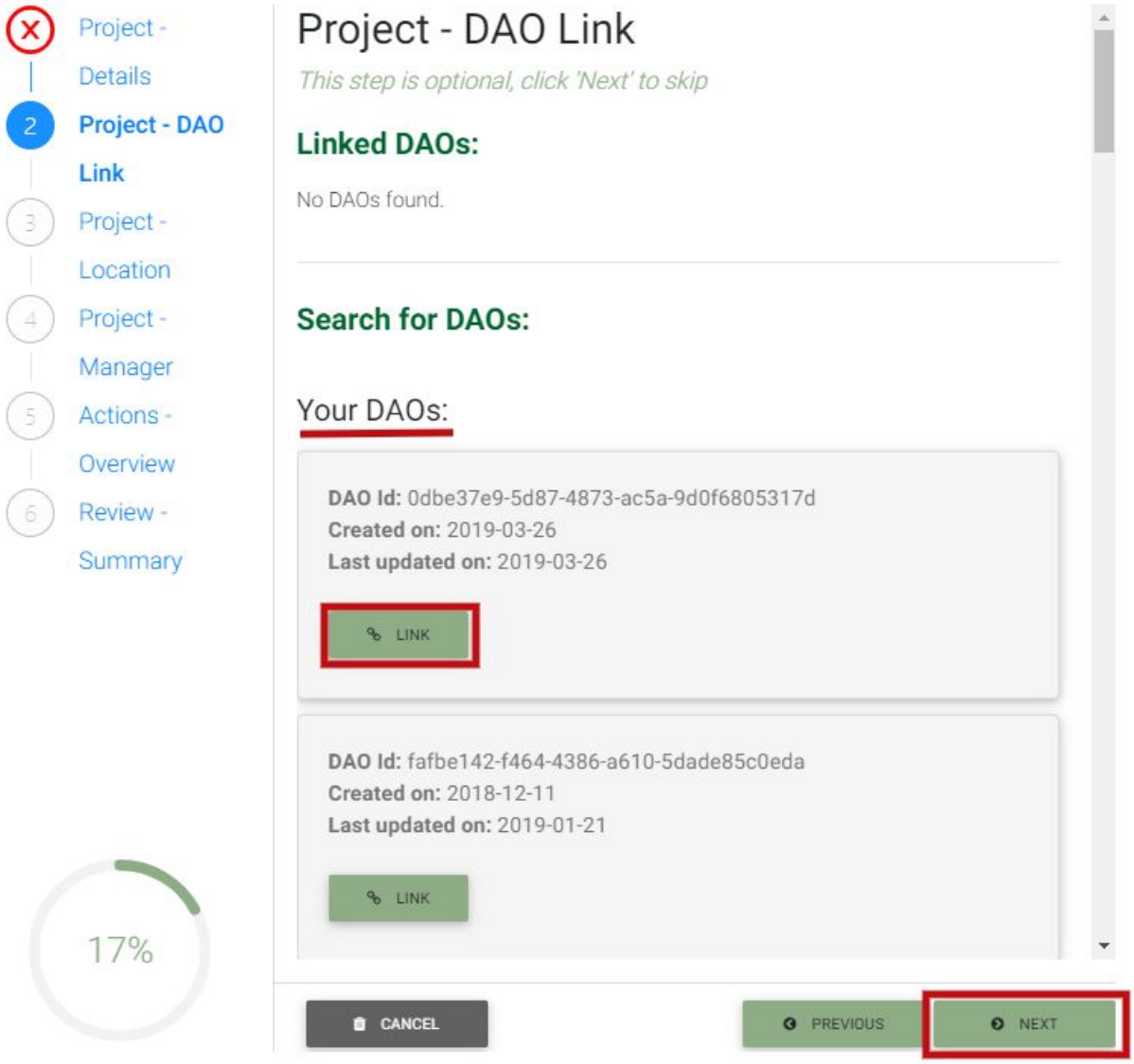

Figure 3: Wizard page 2 - NDAO project link

The fourth page deals with the locations where specific projects will take take place. The region or regions where the project are to take place can be selected at the local municipal level. In either case, multiple regions can be selected. If a region has been selected in error it can be removed by selecting the 'x' next to the name as shown below.

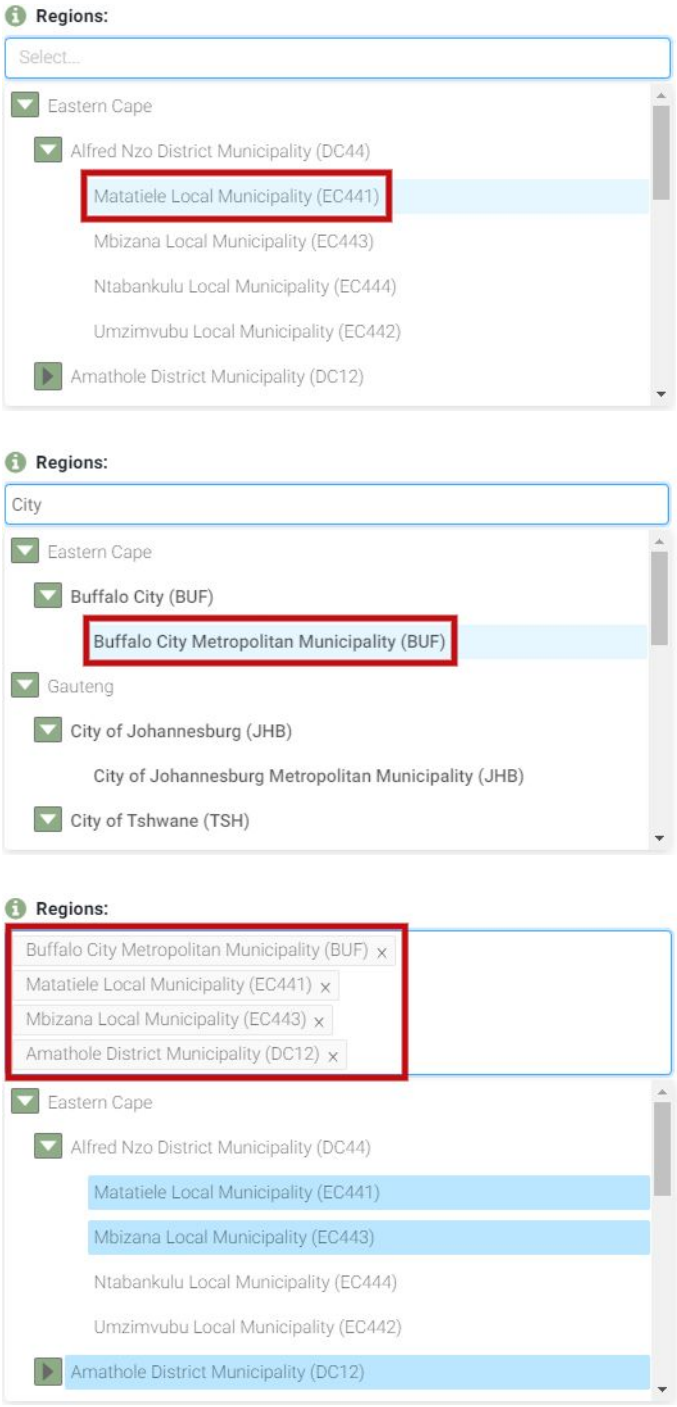

Figure 4: Add general locations to a project.

To add GPS pins and coordinates to describe individual actions select the '+ ADD LOCATION' button as indicated below.

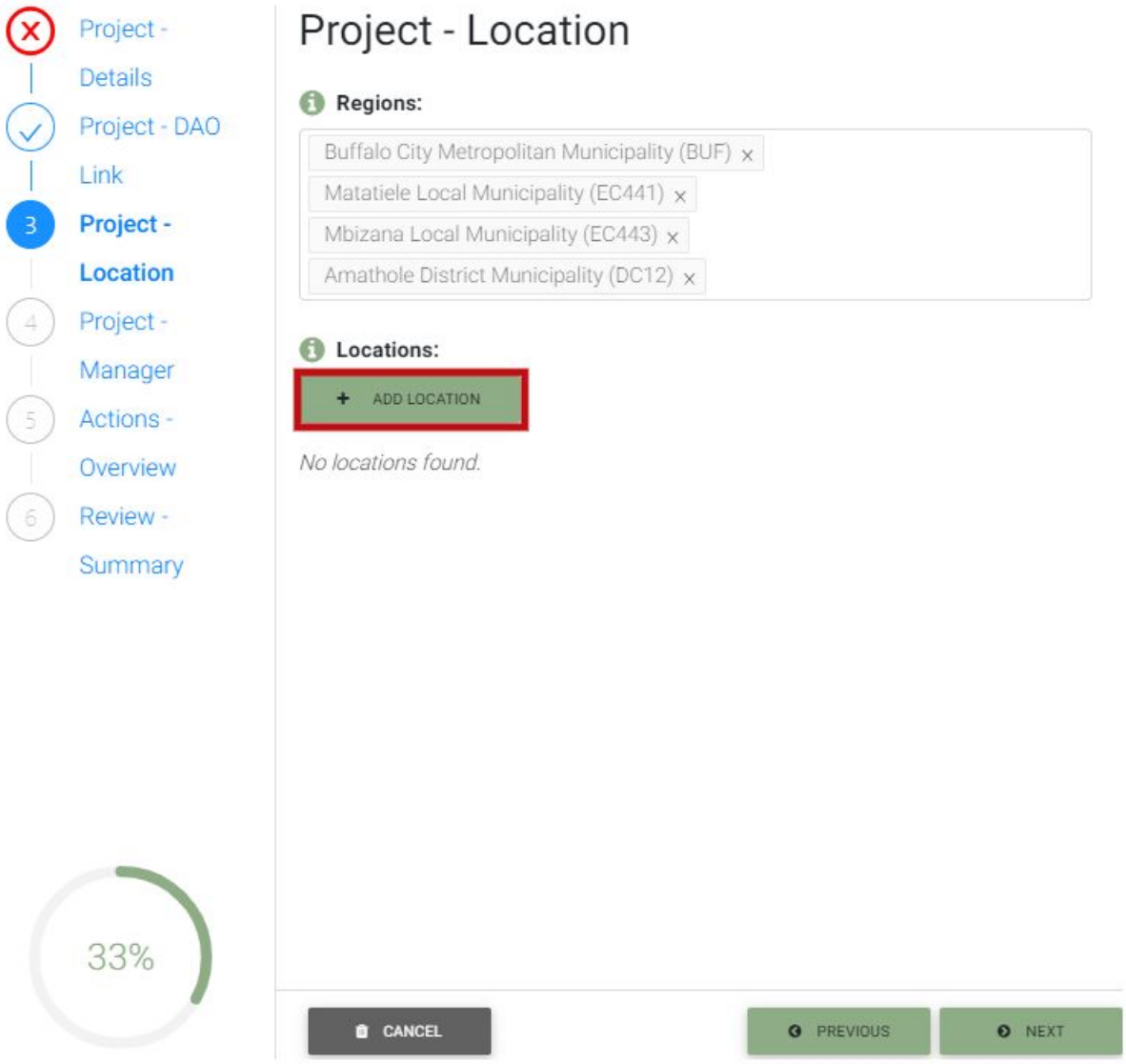

Image 5: Project location

When the location picker first appears on the screen, the view is of the entire country.

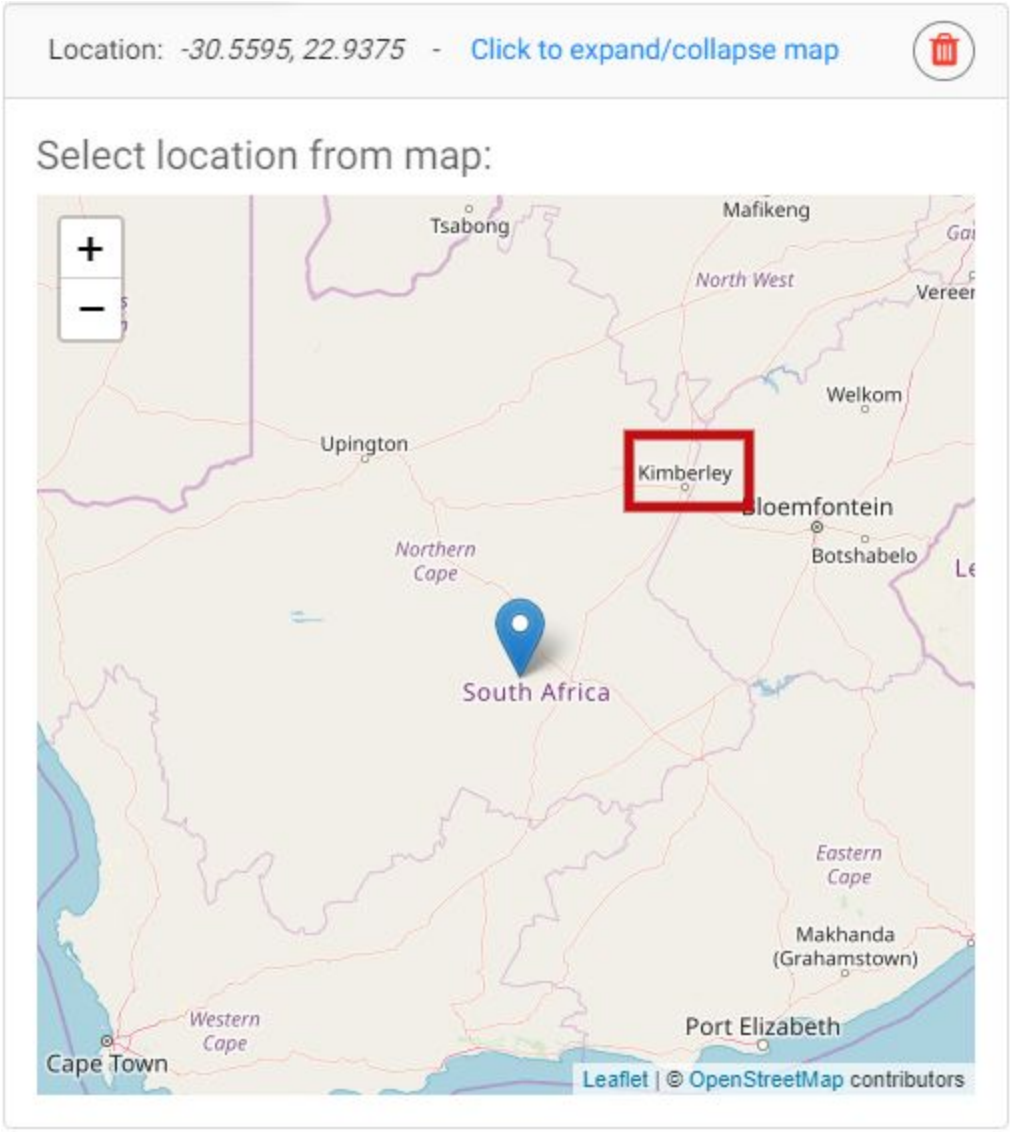

Figure 6: Action location and GPS pin

To add a project location to a specific area of the map and change the latitude and longitude coordinates described, for example to a street in Kimberly, zoom into that location and click and drag to the appropriate area. To move the location icon, click on the appropriate point on the map.

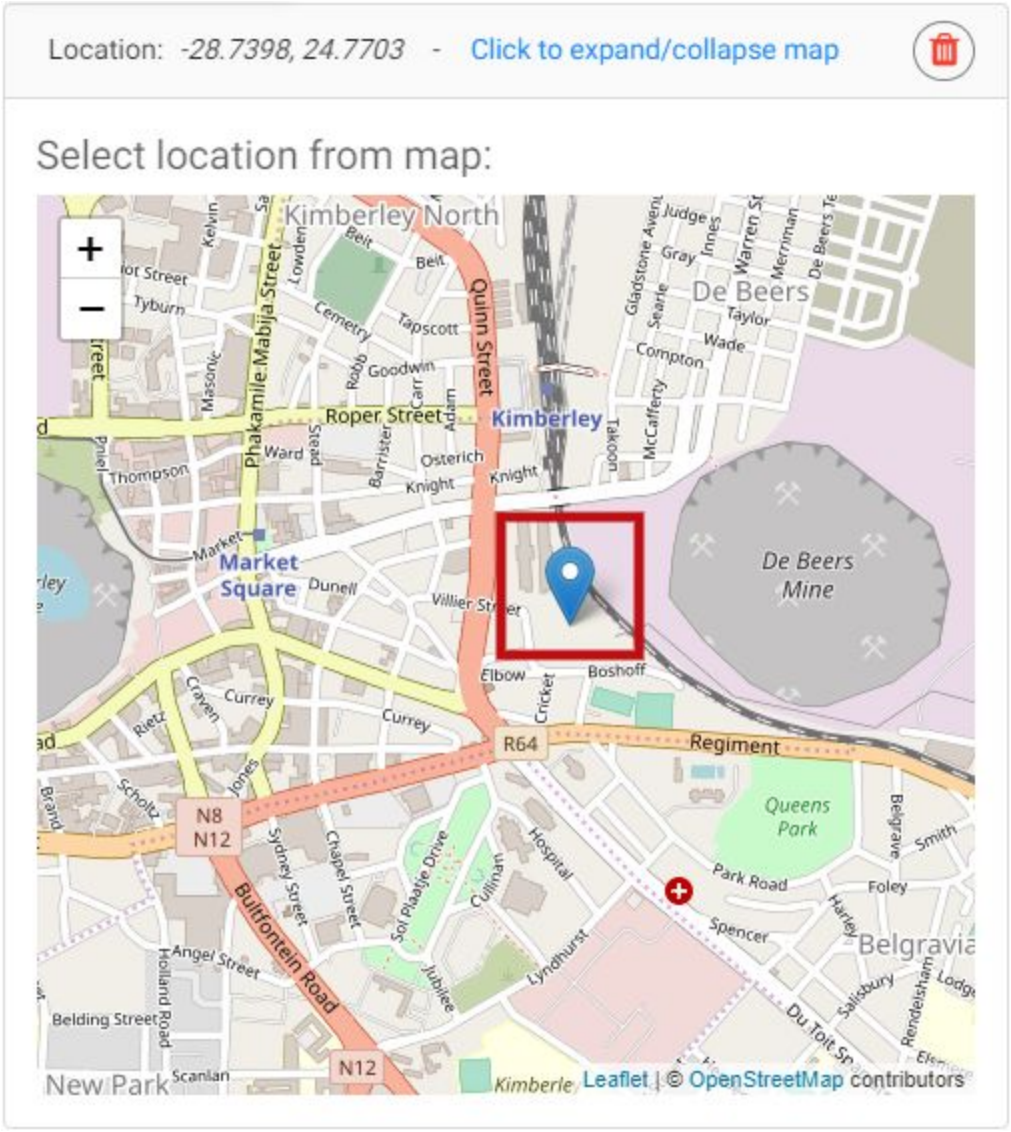

Figure 7: Select a project action location

To add additional project locations to the form, select the '+ ADD LOCATION' button as indicated below and follow the above steps. If a location has been added in error, it can be removed by selecting the rubbish bin icon to the right of the GPS coordinates. Once all of the project locations have been added, proceed by selecting the 'NEXT' button in the bottom right corner.

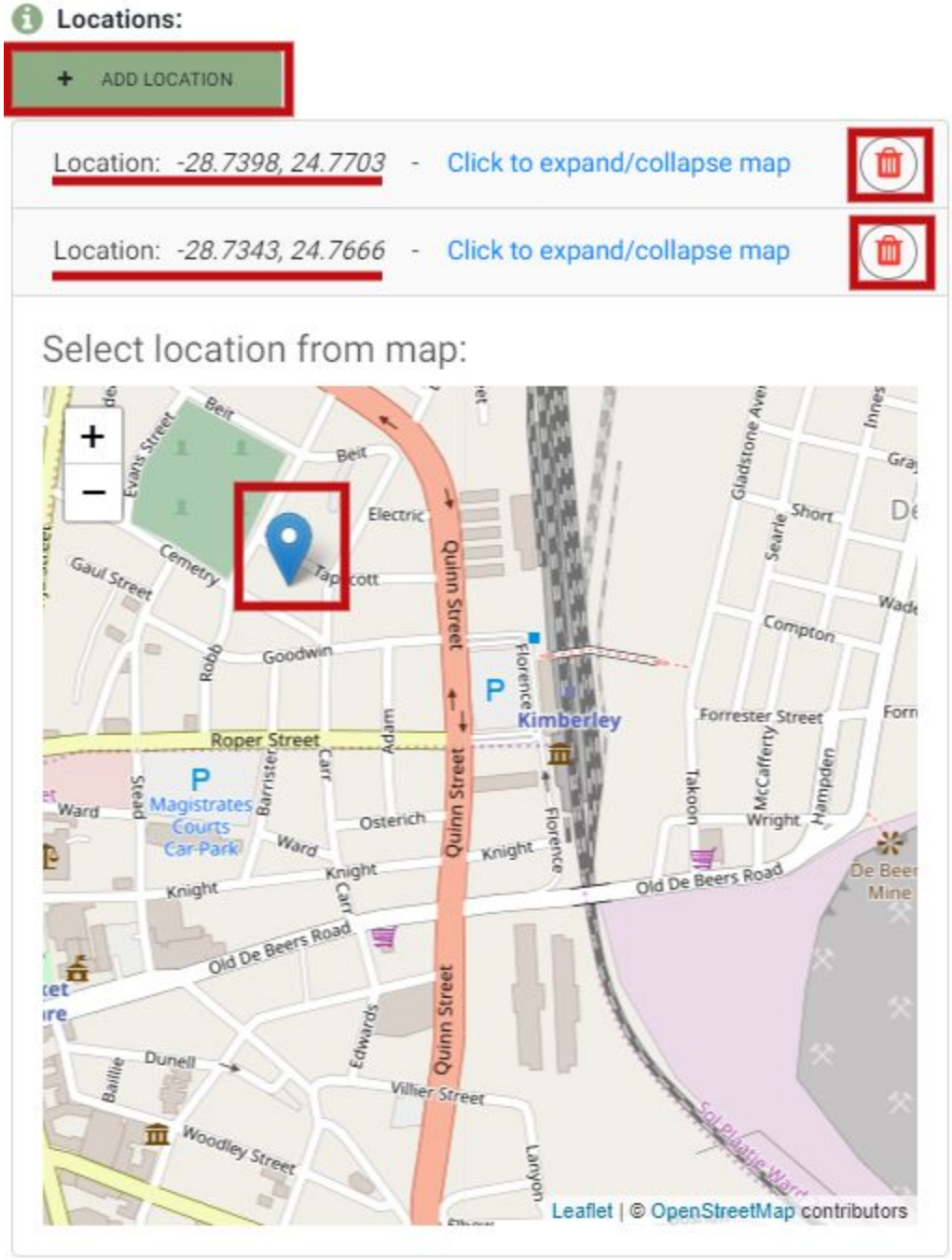

Figure 8: Add additional project locations

Project Management

The fourth page of the wizard is a variety of entry fields describing the management of the project. The 'Project manager' drop down allows for details to be selected from prior entries and should be consulted prior to the addition of new details, however if the

project manager does not appear in the list the list can be amended by selecting the '[Edit list values...]' option from the drop down list as show below.

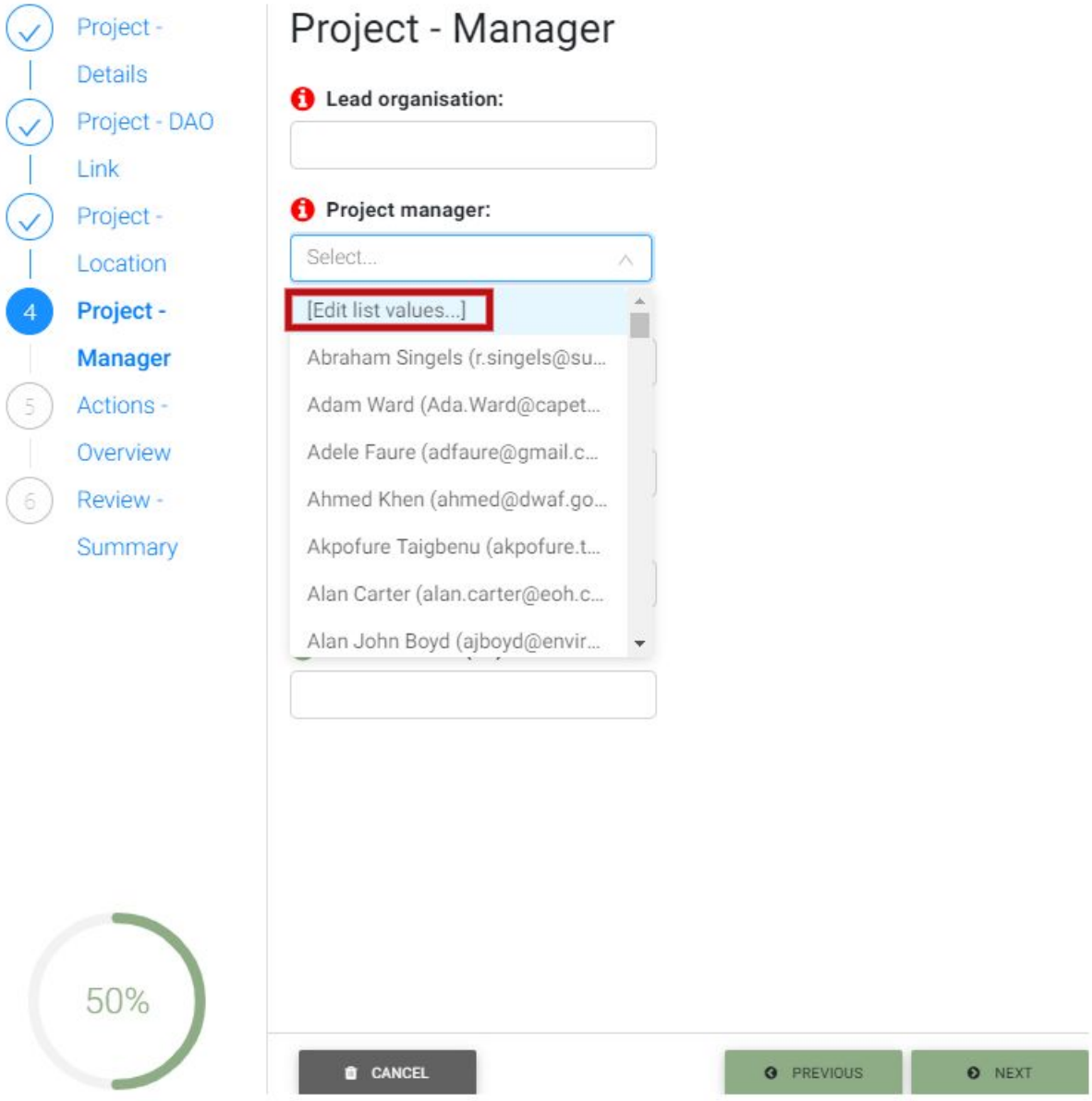

Figure 9: Project manager

This engages the 'Edit values list' popup. To add a new manager and details to the list select the 'ADD' bottom as show below.

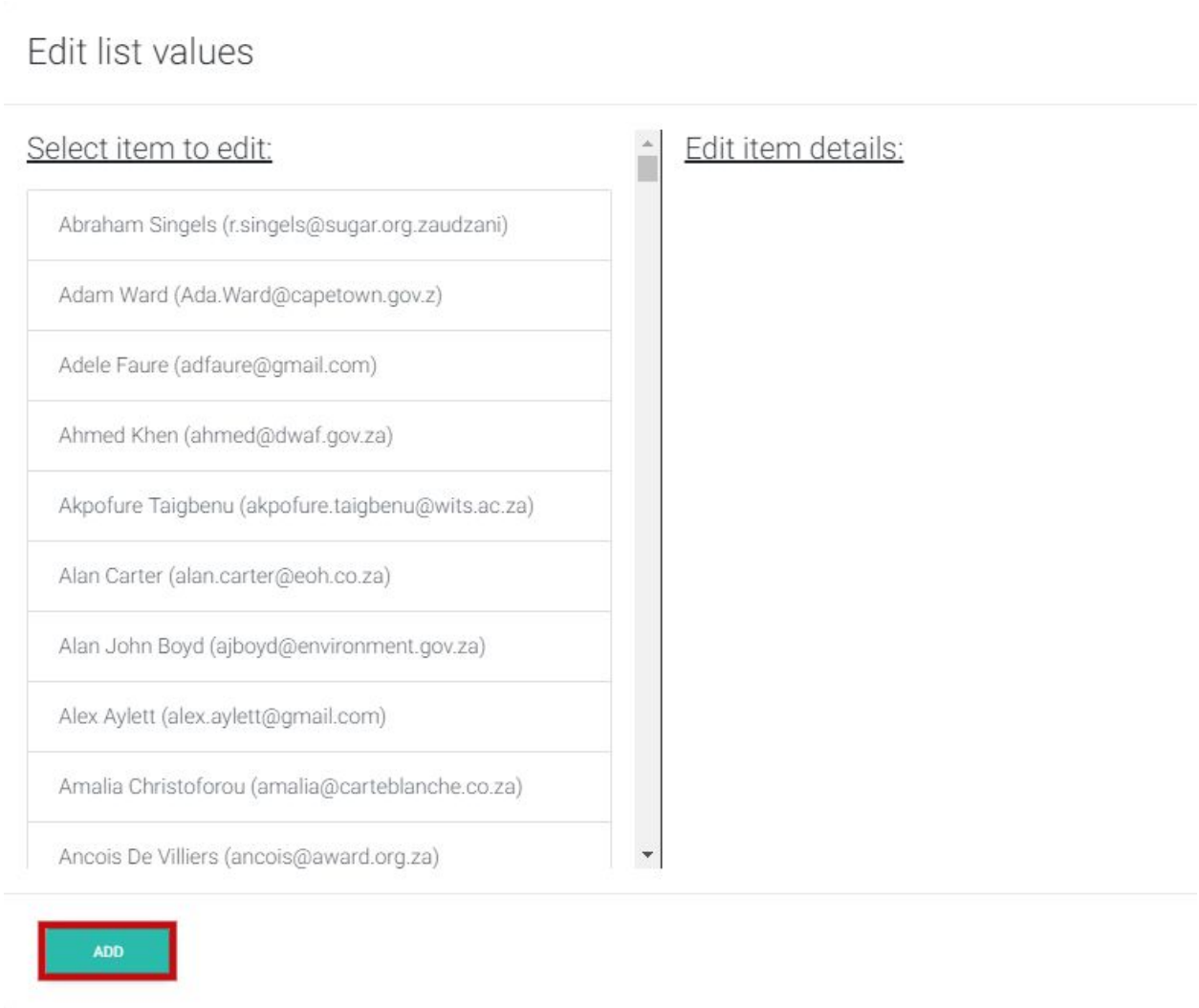

Figure 10: Add a new manager.

Once all of the relevant details have been added select 'save' to continue.

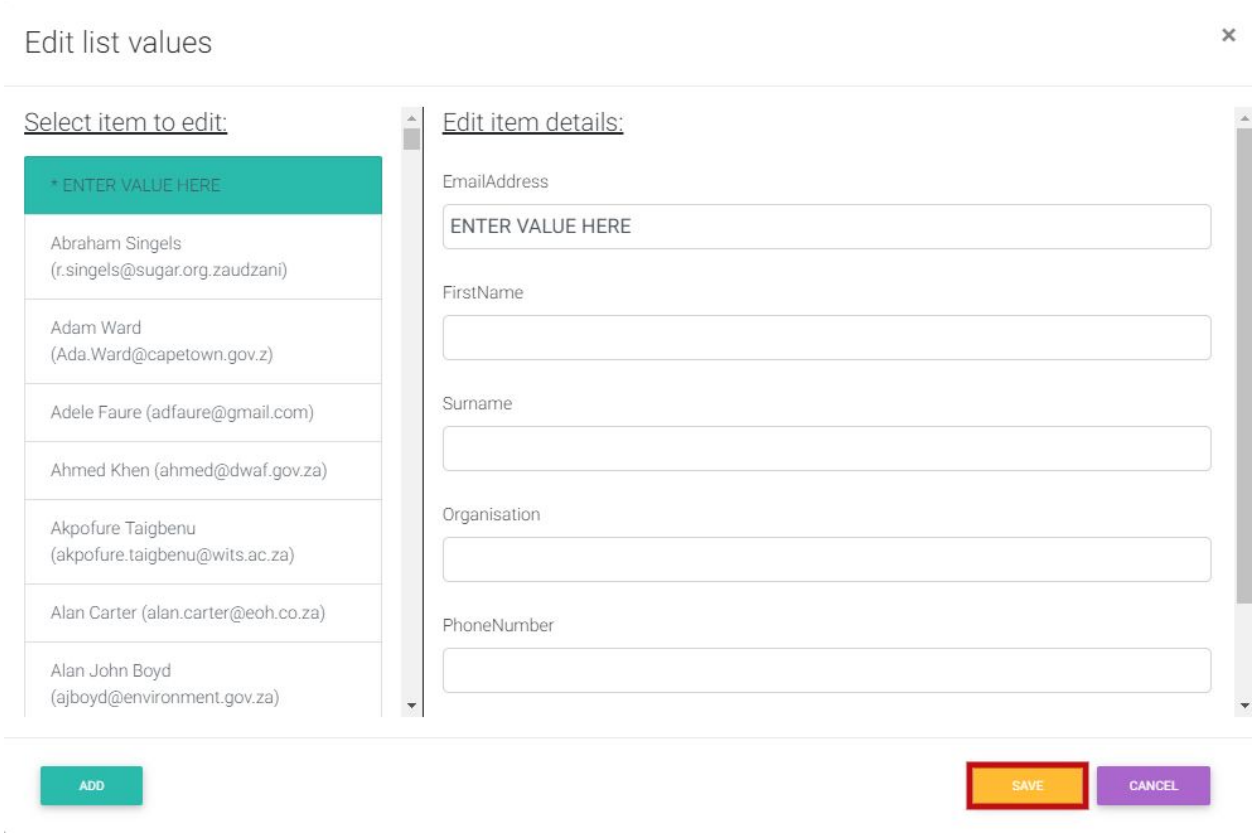

Figure 11: New manager details.

Once all of the management details have been captured, select the 'NEXT' button in the bottom right corner to proceed.

Action Details

Three action types are available for each project; funding, adaptation and mitigation and in each case as many of each action can be added to a project as needed. Funding actions are meant to describe each funding partnership involved in the greater project. Adaptation and Mitigation actions are the specific actions meant to contend with climate change to be taken within the project. Currently, only climate change adaptation options can be described but within the next release mitigation actions and cross cutting actions will also be provisioned for. To begin select the ' + ADD FUNDING' and '+ ADD ADAPTATION' buttons to indicate the number of adaptation and funding actions covered by the project.

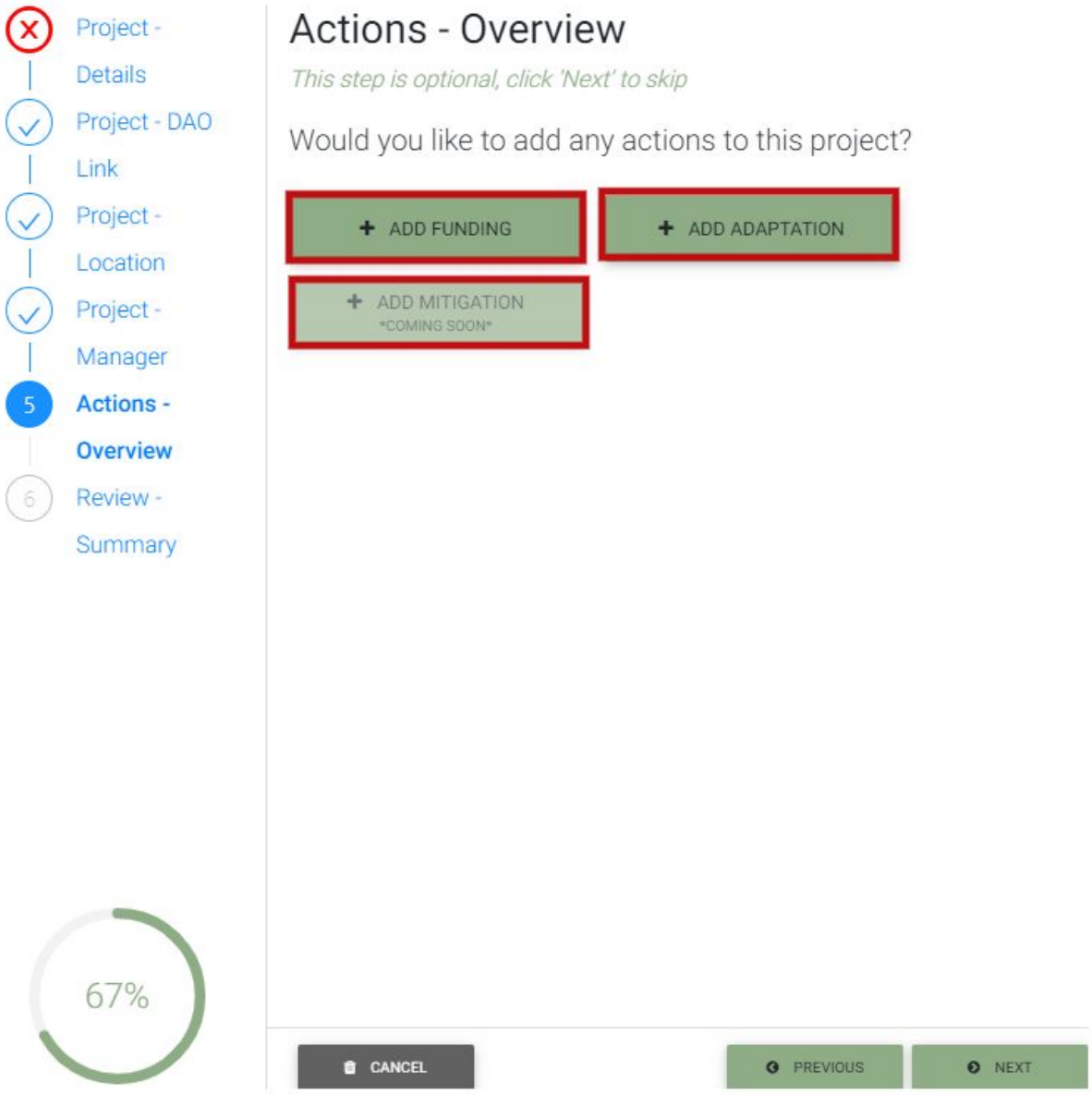

Image 12: Actions overview

Once a funding action has been added an additional page will be added to the wizard to collect the details of the funding partnership described. Within the list of actions table below, space is provided to identify each action. Similarly, the addition of an adaptation action will add pages to the wizard for further action details and basic descriptive information for the action will be added to the 'List of existing actions'. Also from this list the options to 'EDIT' or 'REMOVE' an action are provided. Unlike funding actions adaptation action implementation can follow two approaches, applied or research. Research options are studies designed to test some aspect of action implementation whereas applied projects can be implemented or rolled out directly at a variety of scales.

The implementation approach can be selected from the ‘Implementation’ dropdown in the ‘List of existing actions’ table for each adaptation action.

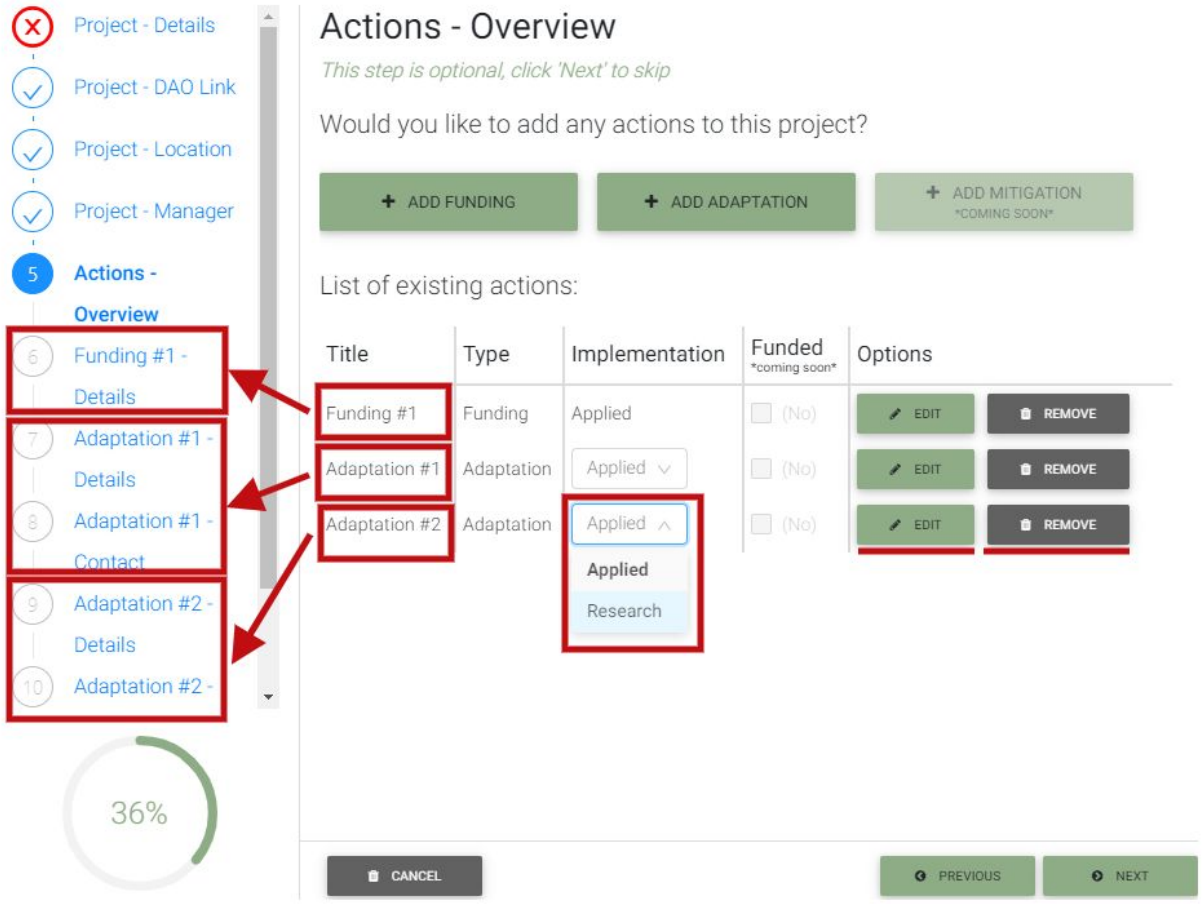

Figure 13: Add funding and adaptation actions

Where research implementations are selected for adaptation actions one more additional page is added to the wizard to capture the additional research details.

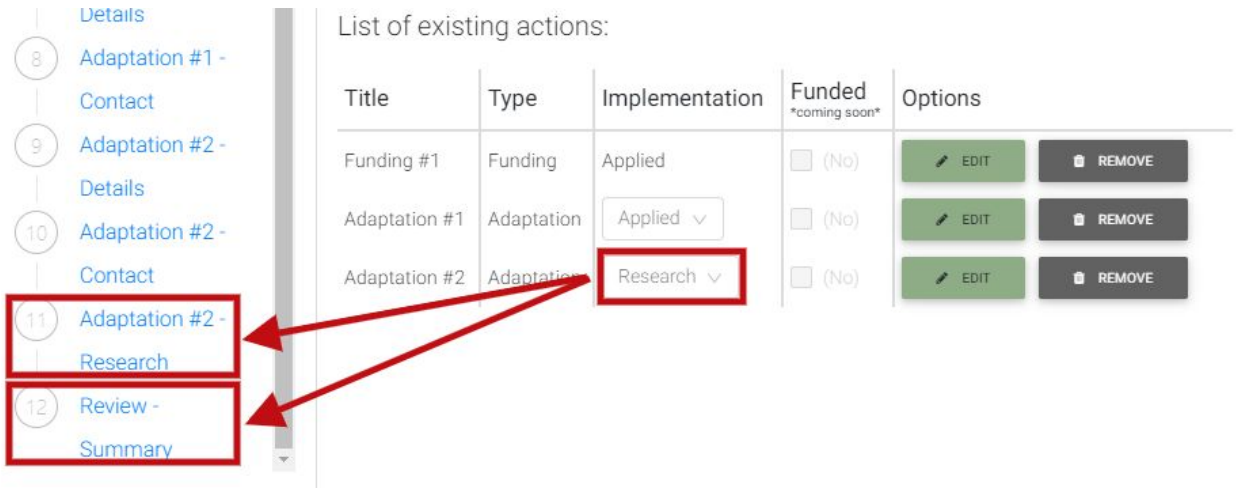

Figure 14: Add research implementation to adaptation action

As many funding and adaptation actions as needed can be added to the project. Once these additions are complete, the 'NEXT' button in the bottom right corner can be selected to proceed.

The following few pages of the wizard deal with content relating to the actions of the project. At any time '< Actions - Overview' button can be selected and user will be taken back to the previous page where an action can be modified or deleted if needed. This option will appear on the first input wizard page for each action. When all of the details have been added, the user can then proceed to the next page by selecting the 'NEXT button in the bottom right corner.

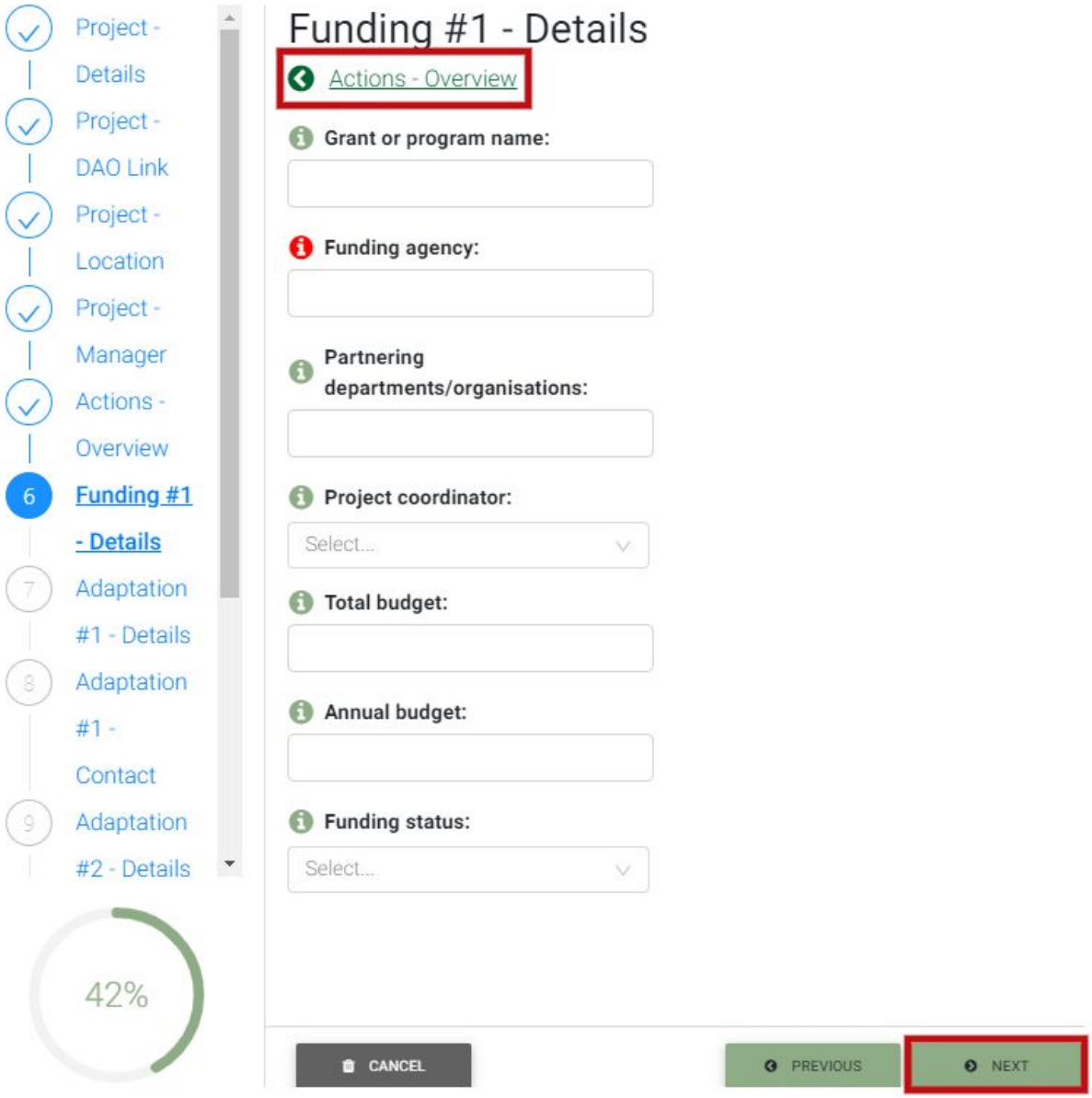

Figure 15: Funding details

Adaptation action details start with a general project description. The '< Actions - Overview' button is again available on the first page of the adaptation action description to take users back to the action overview page to modify or delete an action if needed. The 'Hazard' field will soon be implemented formally where a user will be able to select all of the hazard types a particular adaptation action is designed to address.

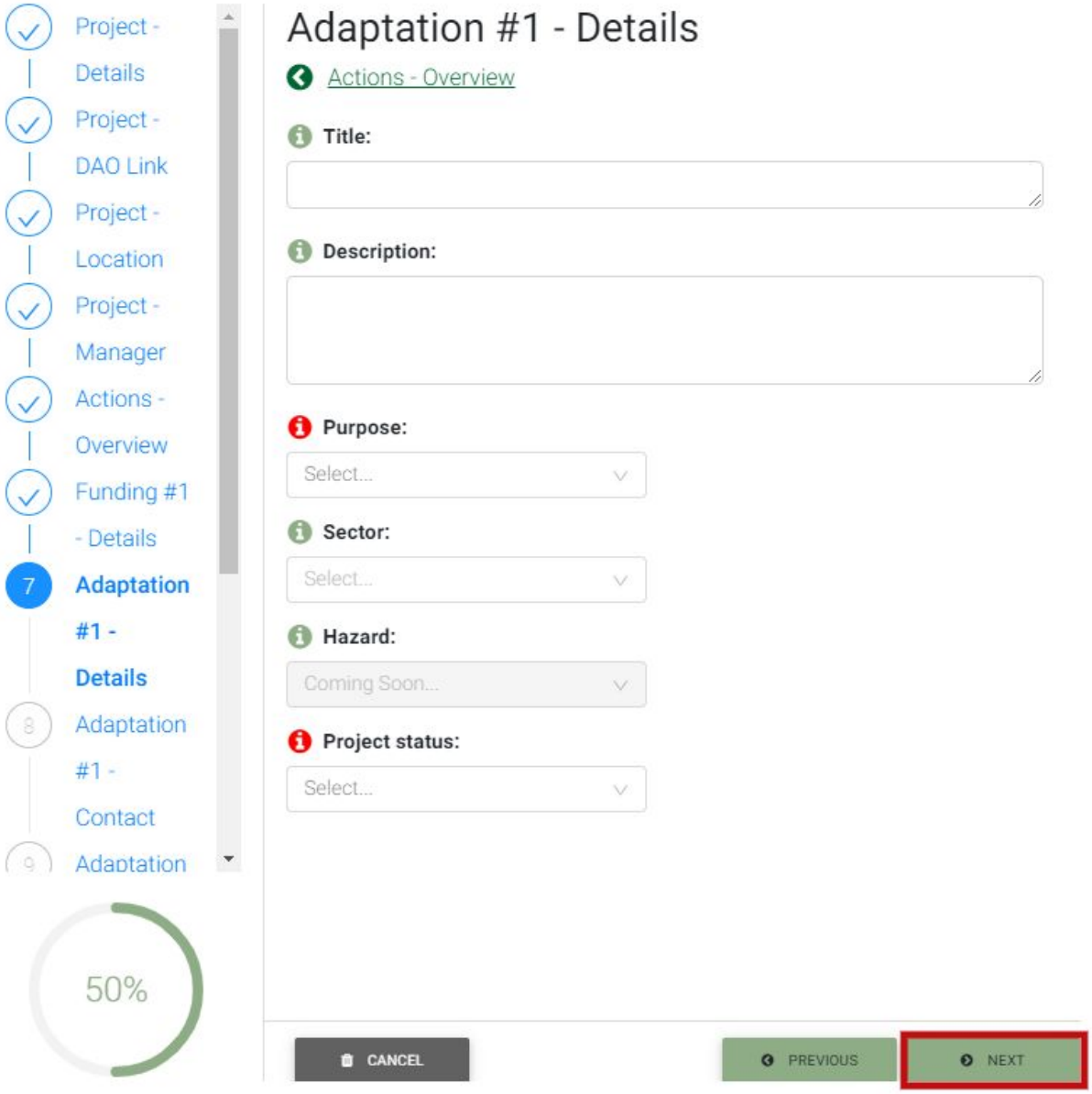

Image 16: Adaptation action details

The contact details for the person responsible of the adaptation action can then be entered in the adaptation action contact page or page 8 as shown below. Once these details have been added the user can select the 'NEXT' button to continue.

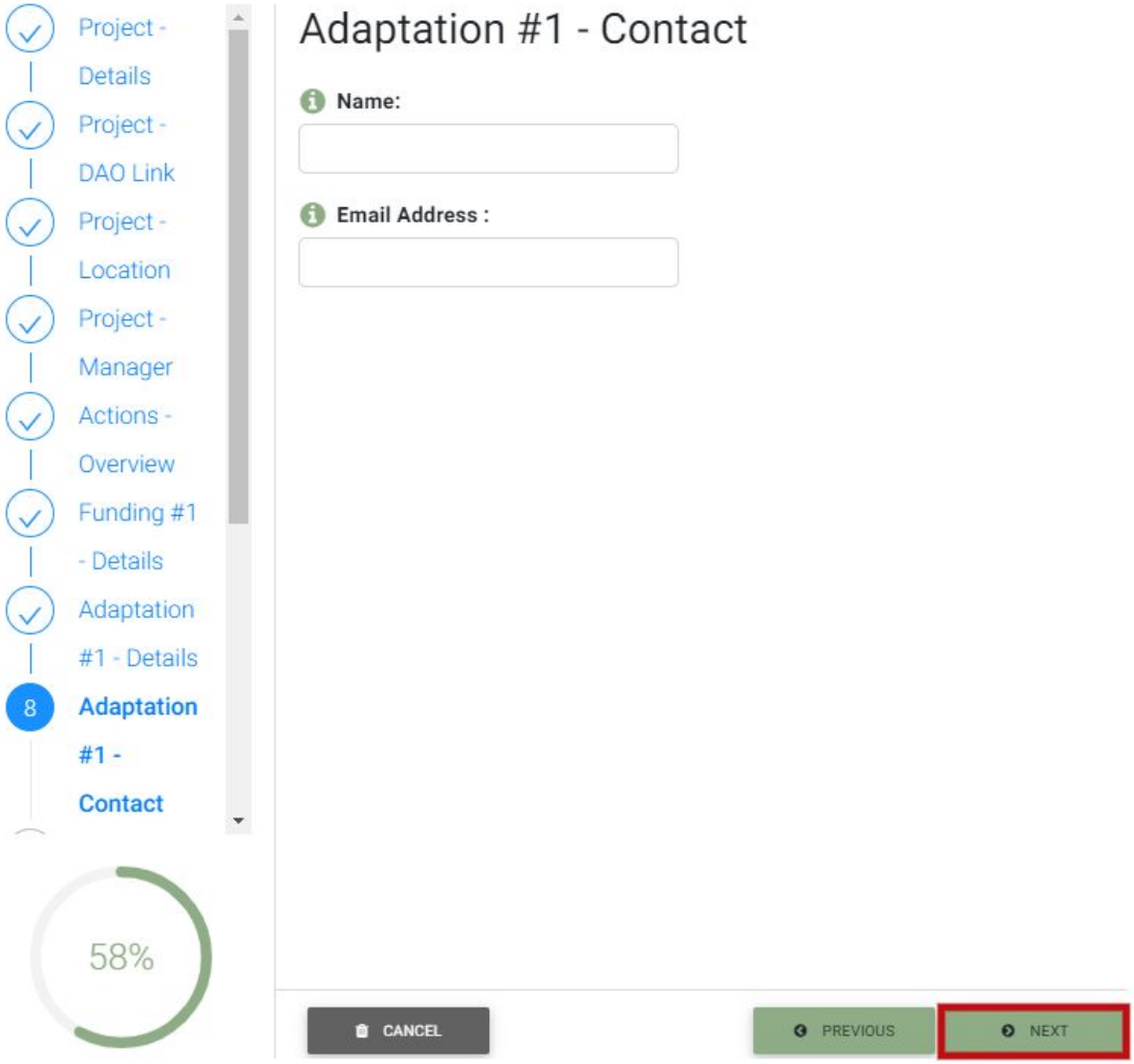

Image 17: Adaptation action contact details

Adaptation research is typically associated with some form of formal output such as a journal article or official report. The adaptation research page, or page 9 in the example below, provides space for the user to provide additional details of the research and its purpose. Once the user has completed the data entry the 'NEXT' button can be selected to continue.

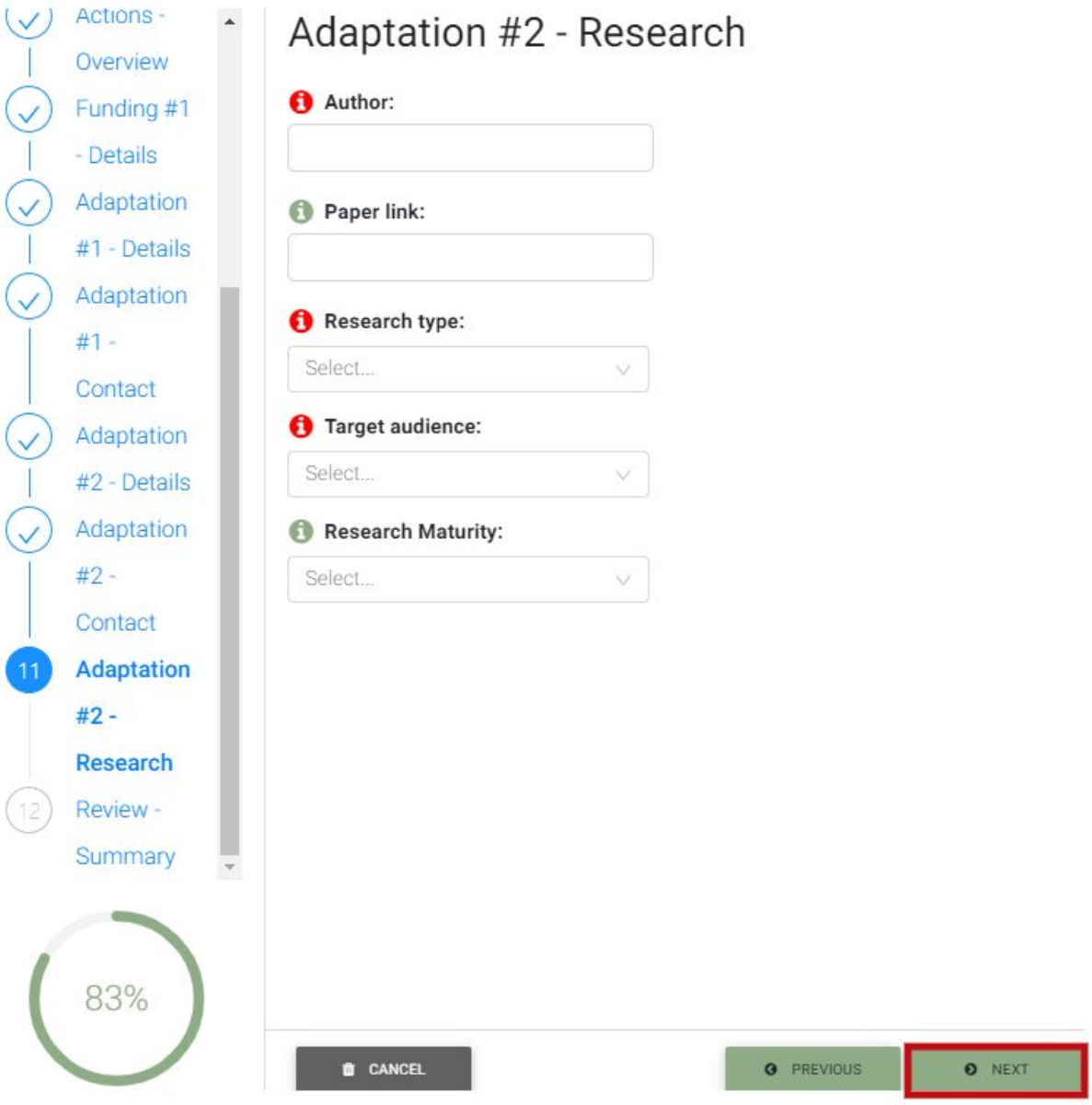

Image 18: Adaptation research details

Review entry details and submit

The final page of the wizard contains a summary accordion where the data entries can be reviewed prior to submission. Each section can be reviewed by selecting the section in the accordion such as " > PROJECT". All of the sections of the entry can be viewed at once by selecting the "Expand all" button in the top right corner. Any or all of the open sections can collapsed again by selecting the "Collapse all" button in the top right corner. Additionally, the entire report can be downloaded and reviewed by selecting the 'Download' option.

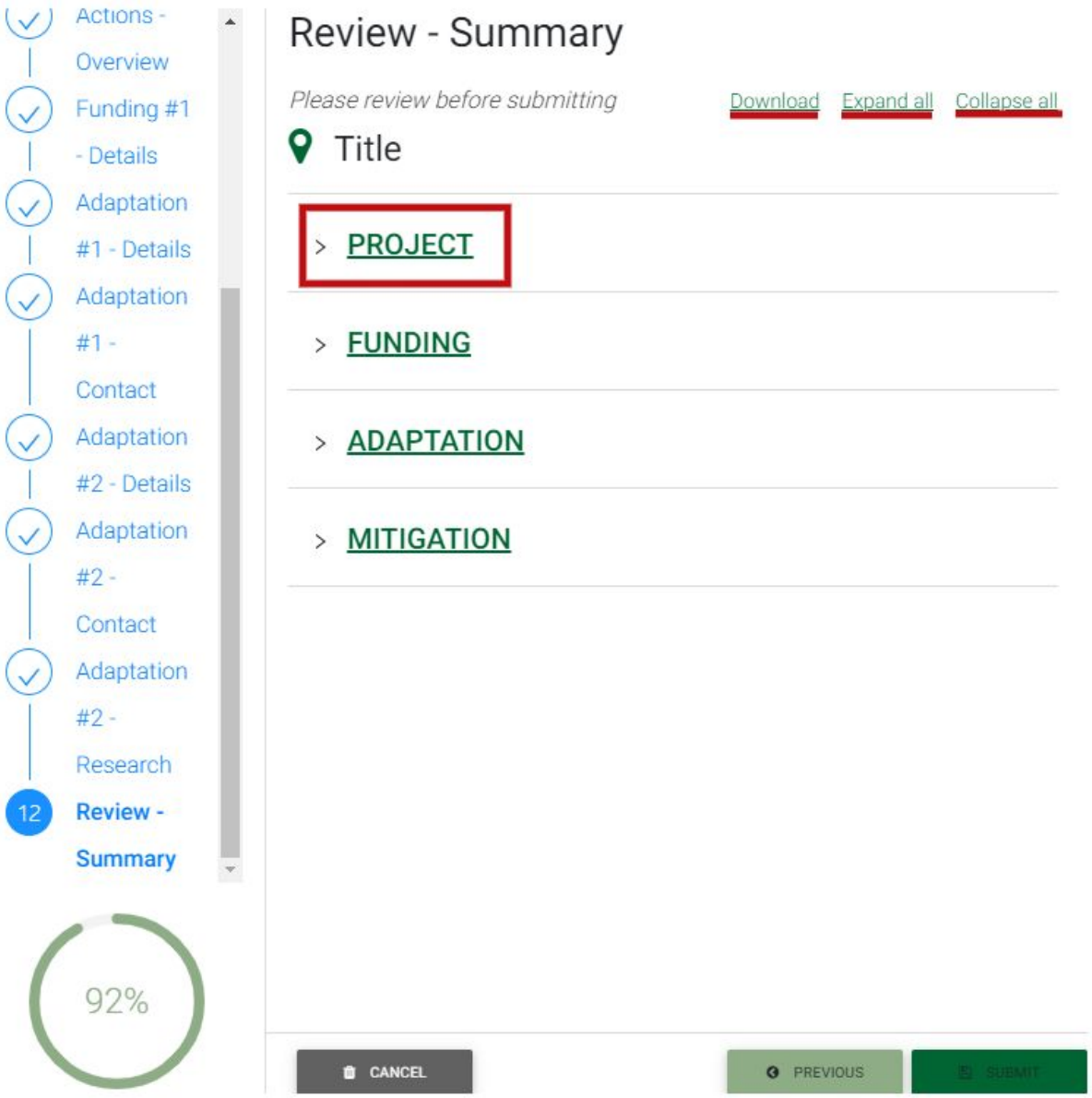

Image 19: Review summary

At this point the text of the entry can be reviewed. To edit the entry, the user must go back to the wizard page where the details were originally entered and modify them in their specific entry fields. Once the user is satisfied with the entry, the “SUBMIT” button can be selected from the bottom right corner as shown below.

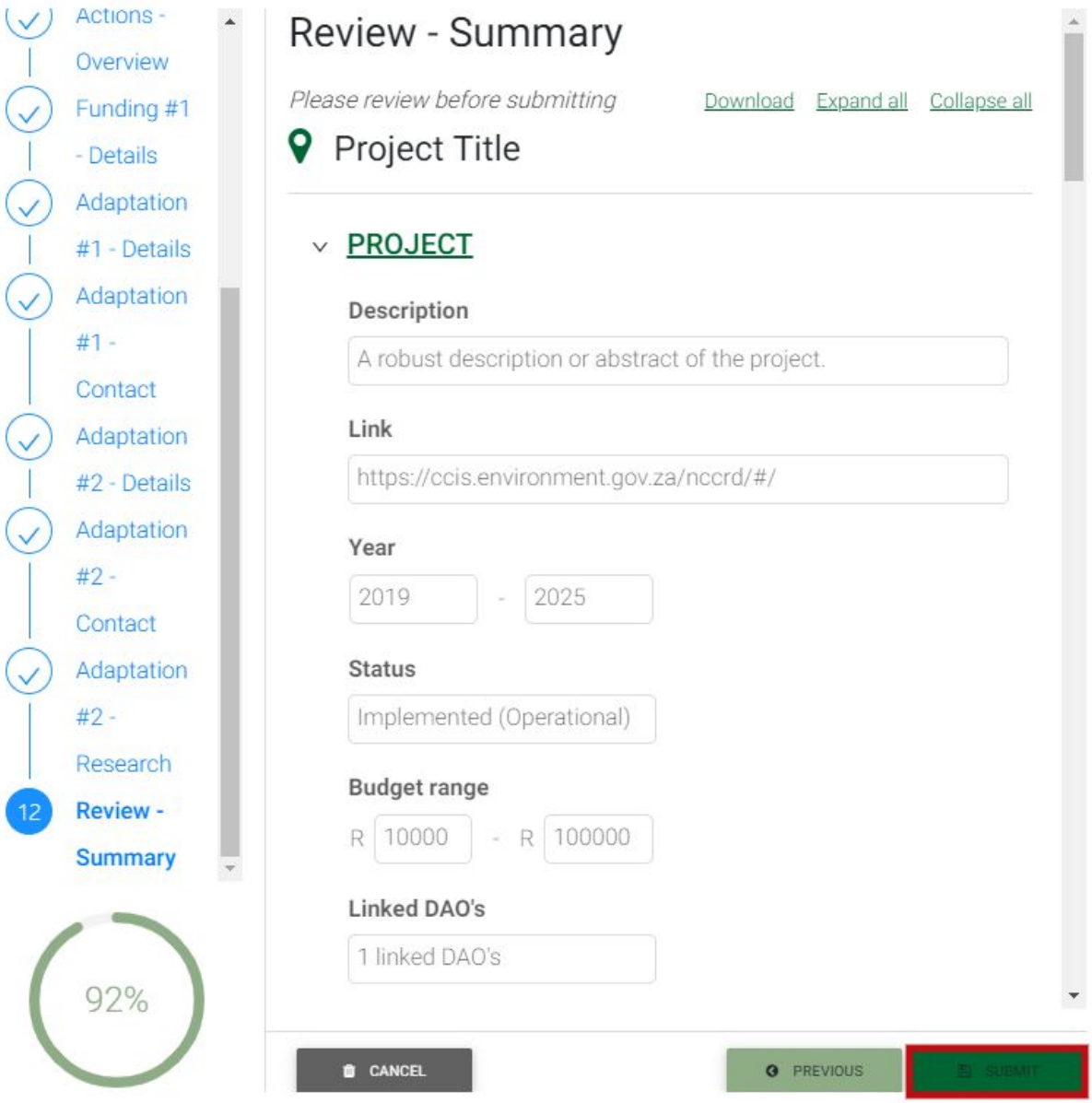

Figure 20: Review summary open

The 'Confirm submission' popup then engages and the user can confirm their submission to the NCCRD by selecting ‘Yes’ as indicated below. This will then return the user to the NCCRD dashboard.

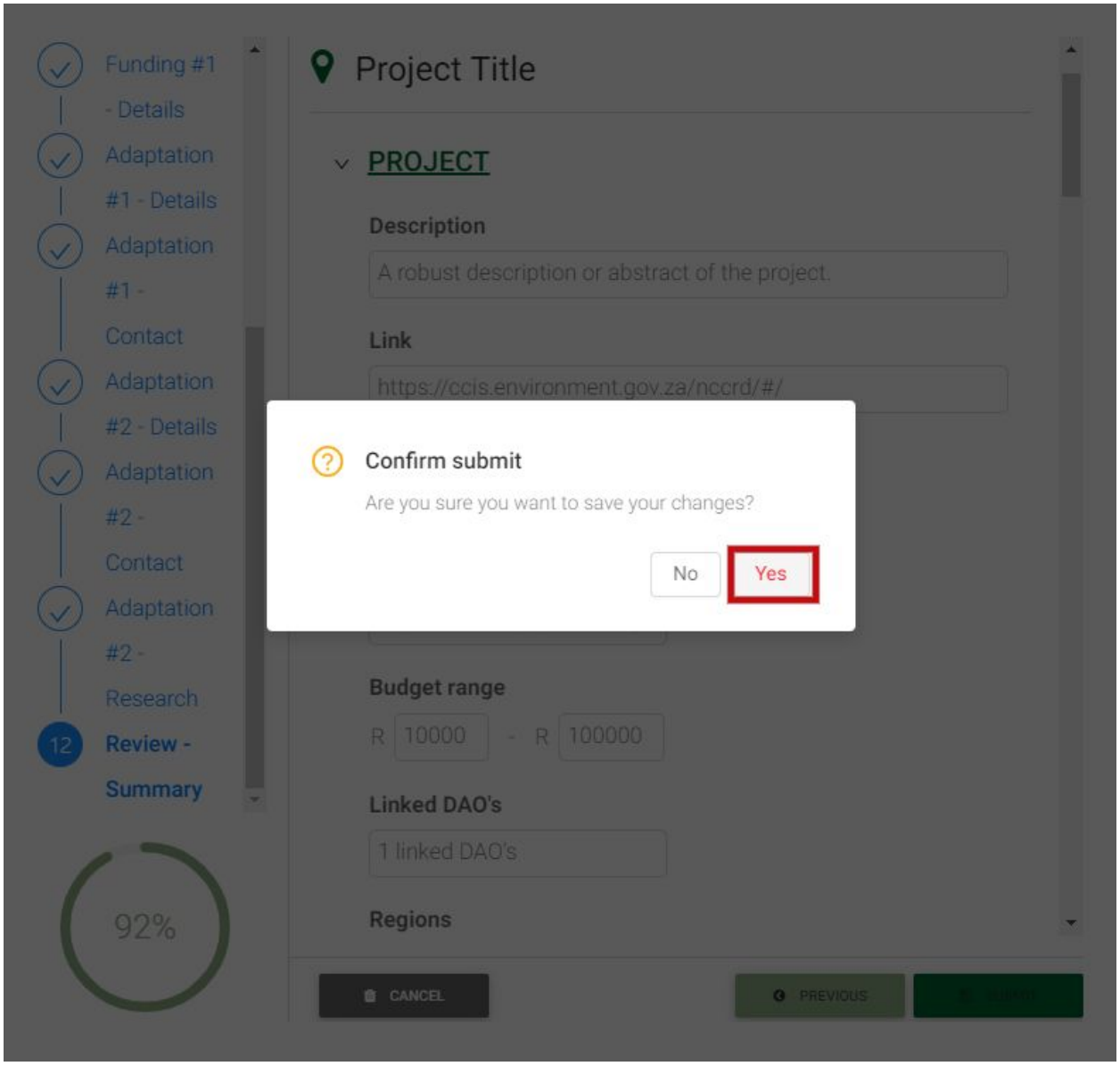

Figure 21: Review summary