



NovaLabs

Functional Requirement Document

For

Qatar Climate Change Knowledge Portal Project

Prepared by: Nova Labs

Date: May 6, 2025

Version 2



Table of Contents

1.	Introduction	3
1.1	Document Purpose	3
1.2	Intended Audience	3
1.3	Project Overview	4
2.	Scope of Work	4
2.1	UI/UX Design	5
2.2	Data Visualization	5
2.3	Collaboration Features	5
2.4	Content Management System (CMS)	5
2.5	Testing and Quality Assurance	5
3.	Functional Requirements	6
3.1	User-End Features and Functionalities	6
3.2	Admin Features and Functionalities	25
3.3	Deferred Features and Functionalities	27



1. Introduction

This document outlines the functional specifications for the **Qatar Climate Change Knowledge Portal (QCKKP)**, a centralized hub for climate change-related information, resources, and collaboration tools aimed at educating users, promoting actionable steps, enhancing user engagement, and fostering collaboration. The platform will be designed to support various stakeholders such as citizens, researchers, students, and international organizations in addressing climate change challenges and promoting sustainability in Qatar.

1.1 Document Purpose

The purpose of this Functional Specification Document is to outline the detailed functional and non-functional requirements for the development of the **Qatar Climate Change Knowledge Portal (QCKKP)**. This document serves as a comprehensive guide for stakeholders, including project managers, developers, designers, and content administrators, to ensure a clear understanding of the features, capabilities, and objectives of the portal.

It provides specific guidelines for the design, user interface (UI), user experience (UX), data visualizations, API integrations, content management, and collaboration tools necessary to meet the goals of educating users, promoting action, fostering engagement, and encouraging collaboration on climate change issues. This document will act as a reference for all stages of development, from initial planning to final implementation, ensuring that the platform meets the agreed-upon requirements and delivers a high-quality, user-centric solution.

1.2 Intended Audience

This document is intended for the following key audiences, each of whom will utilize it to fulfill their specific responsibilities in the project:

- **Designers and Technical Architects:** This document serves as a foundation for designing and developing the website's user interface, ensuring alignment with business goals and technical constraints.
- **Business Analysts and Project Managers:** This document ensures alignment with business objectives; tracks progress and keeps the project on scope and schedule. The FRS serves as a reference to verify functional requirements that are properly implemented while managing changes or risks effectively.
- **Quality Assurance (QA) and Quality Control (QC):** This document will serve as a reference to ensure that the developed solution meets the defined functional requirements and quality standards.

1.3 Project Overview

The **Qatar Climate Change Knowledge Portal** will serve as a user-friendly, interactive platform providing up-to-date information on climate change, including data visualizations, educational resources, and collaboration features.

The portal will be built with modern web technologies to ensure an accessible, user-friendly, and functional experience. Key features include interactive data visualizations, responsive web design, an integrated content management system (CMS), API integration for data exchange, and collaboration tools for users to engage in climate change discussions and actions.

2. Scope of Work

This project will focus on the design, development, and implementation of the **Qatar Climate Change Knowledge Portal (QCKP)**, a platform designed to offer comprehensive and user-friendly access to climate change information and resources. The scope of the project includes the following key areas:



2.1 UI/UX Design

- Creation of a visually appealing and interactive user interface (UI) and user experience (UX) that enhances navigation and engagement with climate-related content.
- The design will emphasize accessibility and responsiveness across various devices (desktop, tablet, and television) to deliver a seamless user experience.

2.2 Data Visualization

- Integration of interactive, dynamic, and visually appealing data visualizations to enable users to explore complex climate change data in an intuitive manner.
- Features such as drill-down capabilities will allow users to interact with data points, view detailed insights, and understand climate change trends specific to Qatar.

2.3 Collaboration Features

- Integration of collaboration tools including a survey portal, forums, and events to encourage user interaction, policy development, and knowledge sharing.

2.4 Content Management System (CMS)

- The CMS will support scalable and flexible content updates and integrations, ensuring that the portal can grow and evolve over time to meet emerging needs.

2.5 Testing and Quality Assurance

- Comprehensive testing of the portal will be conducted to ensure that all features, including UI/UX design, data visualizations, API integrations, and collaboration tools, function as intended.



NovaLabs

By focusing on these key areas, the scope of the project ensures that the **Qatar Climate Change Knowledge Portal** will provide an accessible, informative, and engaging platform to support climate change awareness, action, and collaboration across a wide range of users and stakeholders.

3. Functional Requirements

This section outlines the core features and capabilities of the platform. It defines the functionalities needed to meet the goals of the system, including how users interact with the platform and how administrators manage it. This section ensures that both user access control, user-end features, and administrative functionalities are clearly defined, providing a comprehensive blueprint for system development.

3.1 User-End Features and Functionalities

The user-end features of the **Qatar Climate Change Knowledge Portal (QCKP)** will focus on delivering a user-friendly, educational, and engaging experience for a diverse audience, including the public, registered users, researchers, and international stakeholders, focusing on knowledge dissemination, engagement, and collaboration on climate change issues.

3.1.1 Home Page & Navigation

The platform will feature an interactive homepage designed to welcome users with an engaging introduction to the website's purpose—serving as a comprehensive knowledge portal on climate change in Qatar. When users land on the homepage, they will be presented with a visually dynamic and user-friendly interface, offering intuitive navigation and clear access to key areas of the portal.

The homepage will include the following sections and navigation menu items and their corresponding content:



1. Knowledge Portal logo (Homepage)

This will serve as the primary gateway to the website providing a clear overview of Climate Change. This will be structured into the following key sections:

- **Hero Section**

This will feature a video on climate change, embedded directly from YouTube.

Link: <https://www.youtube.com/watch?v=xtf1eHBlh14>

- **Welcome to Climate Change Knowledge Portal**

This section will include Vision, Mission and Objectives of Climate Change Knowledge Portal.

Content:

Vision

To become a leading platform for knowledge exchange, critical dialogue, and collaborative action on climate change, with a special focus on the Middle East and other climate-vulnerable regions through bridging science, policy, and community to drive sustainable transformation.

Mission

The Climate Change Knowledge Portal aims to curate, generate, and disseminate high-quality, interdisciplinary knowledge on the causes, impacts, and responses to climate change. It seeks to connect researchers, practitioners, policymakers, and activists in order to inform decision-making, inspire action, and support evidence-based solutions that promote environmental resilience, social justice, and sustainability.

Objectives

- ✓ **Knowledge Sharing:**

Facilitate the exchange of research, data, case studies, and practical experiences

related to climate change, especially in the context of food and water security, socio-political stability, and regional sustainability.

✓ **Regional Relevance:**

Highlight climate change challenges and innovations in the Middle East and similar high-risk regions, emphasizing local solutions and culturally relevant approaches.

✓ **Interdisciplinary Dialogue:**

Promote collaboration across scientific, policy, academic, and grassroots communities to foster integrated and innovative responses to climate change.

✓ **Capacity Building:**

Support education, training, and awareness-raising initiatives aimed at empowering stakeholders—especially youth and marginalized communities—to engage in climate action.

✓ **Policy and Practice Impact:**

Provide actionable insights and policy-relevant knowledge to inform climate governance, adaptation planning, and sustainable development strategies at local, national, and regional levels.

✓ **Platform for Voices:**

Amplify underrepresented voices in climate discourse, including those of frontline communities, Indigenous peoples, and young leaders, to ensure inclusive and equitable climate narratives.

• **Introduction to Climate Change**

This section will provide an overview of Climate Change with a graphical representation of the Global Mean Surface Temperature from 1901 – 2000. It should be designed with scalability in mind to allow for future enhancements, such as the integration of a live, dynamically updated chart.

Content:

Climate change refers to long-term alterations in temperature, precipitation patterns, sea levels, and extreme weather events caused primarily by human activities. The burning of fossil fuels, deforestation, and unsustainable land use have dramatically increased greenhouse gas (GHG) concentrations in the atmosphere—particularly carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). These gases trap heat, intensifying the natural greenhouse effect and leading to global warming.

The impacts of climate change are already being felt across the globe: rising sea levels, prolonged droughts, more frequent and intense storms, biodiversity loss, and shifting agricultural productivity. In vulnerable regions such as the Middle East, climate change exacerbates existing stressors—particularly in the areas of water scarcity, food security, and public health—posing significant threats to environmental and human security.

Addressing climate change requires urgent global cooperation, ambitious emission reduction targets, and locally grounded adaptation strategies. It is both a scientific and societal challenge that demands integrated responses across disciplines and sectors.

- **Global Climate Change Indicators**

This section will showcase an interactive visualization of key global climate change indicators, including Temperature, Ice & Glaciers, Greenhouse Gases, and Oceans. These indicators will be presented in a tile-based layout, with each tile revealing detailed information when clicked.

- **Global Climate Agreements**

This section will feature a **tile-based layout**, with each tile representing a key international climate agreement. Users can click on individual tiles to view detailed information presented in a pop-up format.

- UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)
- KYOTO PROTOCOL
- PARIS AGREEMENT

- **Renown Climate Organizations**

The section will present global climate agreements in a **tile format**, with clickable elements that trigger pop-ups displaying comprehensive details.

- THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)
- WORLD METEOROLOGICAL ORGANIZATION (WMO)
- UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)
- WORLD RESOURCES INSTITUTE (WRI)
- CLIMATE ACTION NETWORK (CAN)
- INTERNATIONAL UNION FOR CONSERVATION OF NATURE (IUCN)

2. Qatar's Climate Action

This page will highlight Qatar's climate initiatives and contributions to global efforts in combating climate change. The content will be organized into four key sections, each showcasing a specific aspect of Qatar's commitment to sustainability and international cooperation:

- **Timeline of Qatar's Effort Towards combating Climate Change**

A visually engaging **horizontal timeline** illustrating Qatar's key milestones and initiatives in addressing climate change. It will be presented as a dynamic carousel with side buttons navigation controls for user exploration. Hovering over each date will display an image related to the corresponding event. Additionally, the timeline will be arranged in descending order, with the most recent event displayed first.

Content:

Timeline of Qatar's efforts towards combatting climate change

Qatar has demonstrated a consistent commitment to global climate action through a series of significant milestones. From ratifying the UNFCCC in 1996 to launching its National Climate Change Plan in 2021, Qatar has taken steps to align with international agreements, support vulnerable nations, and advance sustainable development. Hosting major climate events and contributing to global funds further highlight its active role in addressing the climate crisis.

- **1996:** Qatar ratifies the UN Framework Convention on Climate Change (UNFCCC), in accordance with its long-standing commitment to addressing global environmental challenges.
- **2005:** Qatar signed the Kyoto Protocol, which was an international treaty extended from the 1992 UNFCCC that commits its partners to reduce their greenhouse gas emissions.
- **2012:** Doha hosted the Eighteenth session of the Conference of States Parties to the United Nations Framework Convention on Climate Change, with more than 20,000 delegates including government officials, UN organizations and civil society members
- **2016:** Qatar signed the Paris Protocol for Climate Change Agreement, which was then ratified in **2017**.
- **2019:** The emir of Qatar, HH Sheikh Tamim bin Hamad Al Thani, announced Qatar's contribution of \$100 million to support small developing states to address climate change and their environmental challenges.
- **2021:** Qatar's Council of Ministers approved the National Climate Change Plan, where the Qatar National Environment and Climate Change Strategy was launched. This entailed a strategic framework reflecting Qatar's long-term

sustainability goals, and the urgent need to respond effectively to the international climate crisis.

- **2021:** The state of Qatar attended the COP26 conference in Glasgow, where it discussed its plans to reduce greenhouse gas emissions.
- **2022:** Qatar hosted the 20th edition of the Doha Forum, under the theme “Transforming for a New Era,” with a core focus on Climate Change and Sustainability.

- **Qatar’s National Climate Strategy**

A tile-based overview of the country's strategic framework for climate change mitigation and adaptation.

Content:

Sustainable Cities

Qatar has successfully designed two sustainable smart cities, Lusail City and Msheireb downtown, which were designed to optimize sustainable urban planning through the application of world-class environmental standards, to promote environmental stewardship and research. A successful example of this is Msheireb Downtown which is the world’s first successful downtown regeneration project.

Environmental Research

The State of Qatar is highly committed to producing the most innovative and organic research projects, which is why the country has invested in world-renowned environmental institutions such as the Qatar Science and Technology Park, Qatar Environment and Energy Research Institute (QEERI), etc. Such research institutions ensure constant innovation and development in the fields of environmental preservation, sustainability, and technology.

Transportation

Qatar has launched significant green public transportation and infrastructure projects in the past few years. The biggest project to launch has been the Doha

Metro, which has gained significant appraisals as one of the most multimodal transportation systems in the world that is reliable and eco-friendly.

- **Sustainability Targets in Qatar National Vision (QNV-2030)**

A breakdown of the climate-related goals outlined in Qatar’s long-term national development vision.

Content:

Part of Qatar’s 2030 vision aims to tackle climate change is the diversification of Qatar’s economy, enhancing building capabilities, and optimizing the use of the country’s natural resources sustainably, in line with the UN Sustainable Development Goals.

On October 28, 2021, Qatar launched a national climate change action plan which aims to reduce 25% of its greenhouse gas emissions by 2030

By 2027, Qatar aims to expand its LNG production to 127 million tons annually by 2027, which will combat towards climate change since modern technology has allowed natural gas to be a somewhat renewable source of energy, that will replace high-polluting fuels like oil and coal.

- **Sector-Wise Research and Projects**

This section will showcase key sustainability projects and research initiatives across multiple sectors, presented in a **tile-based layout**. Each tile will **link** to a dedicated page with detailed information.

- ✓ Renewable Energy
- ✓ Industrial Decarbonization
- ✓ Water Conservation & Management
- ✓ Agriculture & Food Security
- ✓ Coastal & Urban Resilience
- ✓ Circular Economy

- ✓ Carbon Capture & Sequestration
- ✓ Biodiversity
- ✓ Sustainable Transportation
- ✓ Sustainable Cities

- **Qatar Organizations Working on Climate Change**

This section will display the logos of these organizations in Qatar actively involved in addressing climate change. Clicking on a logo will show a pop-up with detailed information about each institution and its initiatives.

- ✓ Qatar Energy
- ✓ Earthna _ Centre for a Sustainable Future
- ✓ HBKU & Qatar Environment and Energy Research Institute (QEERI)
- ✓ Qatar University (QU)
- ✓ Qatar Fund for Development (QFFD)
- ✓ Qatar Investment Authority (QIA)
- ✓ Qatar Free Zone Authority (QFZA)
- ✓ Qatar Research Development and Innovation Council (QRDI)
- ✓ Abdullah Bin Hamad Al-Attiyah International Foundation

- **Research Reports & Policy Briefs**

This section will feature a curated collection of research studies, official reports, and both ongoing and completed projects related to climate change. Snapshot images of the reports will be clickable, opening as PDFs in a new browser tab for convenient viewing and download. Additionally, a link to Scientific Research & Reports and Projects will be provided, directing users to an external page where authorized individuals can log in with their credentials to access and download restricted materials.

Link to the external page: <https://innolight.qrdi.org.qa/account/login>

3. Knowledge & Resources

This page will display a comprehensive collection of educational materials, research and engagement opportunities for climate awareness divided into five sections.

- **Climate Science Basics**

This section will feature a curated collection of educational videos explaining key topics such as climate change, greenhouse gases, and global warming. Videos will be embedded from YouTube for convenient viewing.

Content:

A curated collection of introductory videos embedded from YouTube designed to demystify the fundamentals of climate change. Here, you'll explore the science behind global warming, understand its drivers, and learn about its wide-ranging impacts on our planet.

Video Links:

1. The basics of climate science
<https://www.youtube.com/watch?v=RYXsxERa4iE>
2. Creators for Nature by Sir David Attenborough:
<https://www.youtube.com/watch?v=7WknYmUQ5DY>

- **Publications**

This section will feature a curated collection of publications with download features.

- **Surveys**

This section will include a discussion board where researchers, policymakers, and citizens can exchange insights and ideas on climate change. It will feature links to surveys, which will redirect users to external platforms for participation.

Remarks: The validity (date from and to) should be visible.

- **Glossary**

This will be a separate page which will provide definitions and explanations of key terms and concepts related to climate change.

Content:

Climate change is a complex topic that spans multiple scientific, economic, and social fields. Understanding its mechanisms and impacts requires acquiring a precise and rigorous vocabulary. This glossary aims to provide clear and accessible definitions of key climate-related terms, based on the latest scientific knowledge.

- **FAQs**

This section will present frequently asked questions about the portal and climate change, each accompanied by clear and concise answers.

4. Climate Tools

This page will showcase a collection of interactive tools and resources to assist users in analyzing and tracking climate data. Each tool will include a "**View the Tool**" call-to-action (CTA), redirecting users to the relevant resources.

Content:

The following tools are freely available software based models, datasets, and platforms that support climate research, analysis, and decision-making. These tools allow users to simulate

climate scenarios, assess risks and vulnerabilities, track emissions, model energy systems, and develop adaptation or mitigation strategies.

Why They Are Important in Climate Research ?

➤ **Accessibility and Equity**

Open-source tools remove financial and institutional barriers, enabling researchers, students, practitioners and policy makers—especially in developing countries—to access high-quality data and models.

➤ **Transparency and Trust**

Open code and methods ensure transparency, reproducibility, and peer review, which are critical for scientific integrity and building trust in climate findings.

➤ **Collaboration and Innovation**

Open platforms encourage global collaboration and continuous improvement through shared development, feedback, and customization to local contexts.

➤ **Policy Support**

They provide evidence-based insights to inform policies on adaptation, mitigation, land use, energy planning, and disaster risk reduction.

1. **GHG Country Wise Tracker**

<https://climatetrace.org/explore/#admin=&gas=co2e&year=2023&timeframe=100§or=&asset=>

2. **Climate Pathways :**

<https://www.climatewatchdata.org/pathways/models?category=10¤tLocation=267&indicator=388&model=3&scenario=182%2C181%2C180%2C183&subcategory=36>

3. **Gapminder**



NovaLabs

<https://www.gapminder.org/>

4. **Coastal Risk Screening (Climate Central)**

<https://coastal.climatecentral.org/>

5. **Climate Action Tracker**

<https://climateactiontracker.org/>

6. **Climate Vulnerability Monitor**

<https://climatevulnerabilitymonitor.org/biophysical/>

7. **Climate Risk Dashboard**

<https://climate-risk-dashboard.iiasa.ac.at/>

8. **Climate Watch NDC Tracker**

<https://www.climatewatchdata.org/ndc-tracker>

9. **Climate Impact Explorer**

<https://climate-impact-explorer.climateanalytics.org/>

10. **Climate Trace**

<https://climatetrace.org/>

11. **Global Forest Map**

<https://www.globalforestwatch.org/>

12. **Climate Projections**

<https://climate.copernicus.eu/climate-projections>

13. **Climate Reanalysis**

<https://climate.copernicus.eu/climate-reanalysis>

14. My Climate Future Mapping

<https://myclimatefuture.info/>

5. Events & News

This page will showcase the latest updates, upcoming events, and key announcements related to climate change initiatives at both local and global levels. The content will be organized into the following sections:

- **Engagements, Forums, Campaigns & Community Events**

This section will present a list of links, each accompanied by a brief introduction and an identifier indicating whether it pertains to a campaign, event, or forum. The links will redirect users to external pages.

- **For events:** The event **date** & venue should be visible.
- **Navigation:** An arrow icon will be included to allow users to explore additional items in the list.

- **Summits & Conferences (Global & Regional)**

This section will cover major climate events, including global gatherings such as COP meetings, regional climate dialogues, and New York Climate Week. It will also highlight significant regional events such as the Qatar CSR Summit, QNDCC 2025, Oman Climate Week, and Abu Dhabi Sustainability Week. The content will be presented in a tile format, with each tile featuring a call-to-actions:

- **Register** – directs users to a customized registration form for the specific event.
- **Learn More** – navigates to a dedicated page with comprehensive details about the event.

Previous events will also be displayed in a dedicated area below the current and upcoming events, presented in a **list format** with redirection links to the topic.

Pagination will be implemented for both current and previous events.

- **Climate Change News – Regional & Global**

This section will be presented in a tile format, each displaying a title, a brief description, the date it was posted, and the author's name, providing users with a quick and organized overview of the latest updates.

Pagination will be implemented.

- **Conference of Parties (COP) Updates**

This section will be presented in a **card-based layout**, with each card featuring a call-to-action linking to detailed content. Each post will include the following elements:

- **Thumbnail image**
- **Date of publication**
- **Title or headline**
- **Content type identifier, such as *Article*, *UN Climate Speech*, or *External Press Release***

Pagination will be implemented.

6. Partners Network

This page will highlight a list of key partners actively contributing to climate initiatives. To further promote community involvement, a “**Call for Donation**” section will also be included to encourage public support and engagement.

Content:

Our Partners

Each partner will be represented with their distinctive **logo** for easy recognition and visual impact.

Call for Contributions

We are facing unprecedented times, marked not only by accelerating climate breakdown, but also by its far-reaching impacts on the Middle East—one of the World’s most vulnerable regions to rising temperatures, prolonged droughts, and water scarcity. These climate stressors are exacerbating existing challenges, threatening food and water security, deepening social and economic vulnerabilities, and amplifying the risk of conflict and displacement. As environmental pressures intensify, they intersect with and magnify regional inequalities, governance gaps, and institutional fragility.

In response to these intersecting challenges, we invite researchers, practitioners, activists, and policymakers to submit proposals for contributions to this Portal, centered on the theme of Climate Change. We are particularly interested in insights that explore the complex dynamics of climate vulnerability in the Middle East—ranging from the impacts of water scarcity and extreme heat to the socio-political consequences of resource stress. Contributions may address adaptation and resilience strategies, governance innovations, sustainable agriculture, transboundary water cooperation, or the role of climate action in fostering peace and regional stability. By bringing together diverse perspectives and grounded expertise, this Portal aims to deepen understanding, foster dialogue, and inspire action in one of the world’s most climate-affected and geopolitically sensitive regions.

Submission Guidelines

We welcome your proposals, articles, and ideas. Submissions should include the following:

- a) Title of the proposal;
- b) Thematic field, with a clear focus on Climate Change, accompanied by five relevant keywords;
- c) A summary statement (up to 300 words) outlining the proposal. This should include:
 - The theoretical and methodological approach.
 - The Research question or the Topic of the Policy.
 - Key findings or potential conclusions.



NovaLabs

- Implications for Research, Project or Policy-making;

Please send in your submissions to Sustainability@qf.org.qa.

We encourage contributions that are interdisciplinary, regionally grounded, and aimed at fostering critical dialogue and practical solutions.

Remarks: The email address is dynamic and should match the contact email maintained in the CMS.

7. Search Functionality

The platform will provide **search** functionality with the following capabilities:

- **Snippet Previews:** Provide a brief excerpt from the document containing the search term, highlighting a few sentences where the keyword appears. This allows users to quickly determine if the result is relevant.
- **Pagination or Infinite Scroll:** For ease of navigation, pagination will be implemented. A limit of displaying 20 results will be set to ensure the content remains manageable and not overwhelming to users.
- **Filter:** To enhance content discovery, users will be able to filter search results by **page** and **content type(articles, reports, videos, datasets, survey, events)**, enabling them to quickly navigate to specific pages or topics within the content.
- **Scalability:** The search functionality will be designed with scalability to accommodate future enhancements, including AI-powered result filtering and chatbot integration.

8. Language Toggle

This feature will allow users to switch the website language between Arabic and English. The client will be providing Arabic Translation.

9. Marquee Tool

This feature will display a scrolling, clickable titles for the latest news and surveys, directing users to the specific posts, whether they are news articles or surveys.

- **Check for Active Survey:** Before displaying, first check if there's an active survey. If no active survey exists, only show the latest news.
- **Get Latest News:** Always fetch the top news item from the latest posts.

10. Footer

This section features the website and partner logos along with Quick Links to key internal pages, contact details, social media, and newsletter subscription options.

- **Quick Links** section includes:
 - **Home** – If the user is already on the homepage, clicking this link will scroll up to the hero section. If the user is on a different page, it will redirect them to the homepage.
 - **Qatar's Climate Actions** – redirect users to **Qatar's Climate Actions** page
 - **Knowledge & Resources** – redirect users to **Knowledge & Resources** page
 - **Climate Tools** – redirect users to **Useful Climate Tools** page
 - **Events & News** – redirects users to **Events & News** page
 - **Partners Network** – redirect users to **Partners Network** page.
 - **Learning Materials** - redirect users to the **Learning Materials** page.
 - This page will display various learning materials designed to inform users about Climate Change and other related initiatives.
 - The content will be displayed in a list format, where each item either redirects the user to a detailed information page or triggers an automatic download if the resource is available as a PDF

- **Contact Us** – redirect users to the **Contact Us** page.
 - The page will feature a contact form with the following required fields:
 - **Full Name** – Text box for the user’s full name
 - **Company** – Text box for the user’s company name
 - **Email Address** – Text box for the user’s email address
 - **Phone Number** – Text box for the user’s phone number
 - **Message** – Text area for the user’s message or inquiry
 - **Submit** – Button to submit the completed form
- **Contact Information** - The following contact details will be displayed and can be managed through the CMS:
 - **Email**
 - **Contact number**
- **Follow Us** – This will display the logos of the following social media platforms:
 - **Facebook**
 - **X**
 - **Instagram**
 - **Linkedin**
 - **Whatsapp**

Clicking on any logo will redirect the user to the corresponding social media page. These links will be configurable and managed through the CMS.

- **Newsletter Feature**
 - **Email** – A text box will be provided for users to enter their email address.

- **Subscribe** – A button will be available to initiate the subscription process. Upon clicking, the entered email address will be saved, and the user will begin receiving newsletters.
- These will be downloadable links that automatically start a download when clicked. They will be managed through the CMS.
 - **Privacy Policy**
 - **Terms and Conditions**

3.2 Admin Features and Functionalities

This section will highlight the administrative capabilities of the portal, which are crucial for content management, user activity monitoring, and ensuring the platform runs efficiently. These capabilities will allow administrators to manage the entire content lifecycle, oversee user management, and integrate with external data sources.

3.2.1 Content Management

Pages and sections that will be dynamically generated and maintained through the Content Management System (CMS) for easier updates and content management.

1. Homepage

- **Hero Section**
The link for the embedded videos featured in the hero section.
- **Introduction to Climate Change**
The image can be replaced by the admin.

2. Qatar's Climate Actions

- **Sustainability Targets in the Qatar's National Vision – 2030**
The image can be replaced by the admin.
- **Sector Wise Research and Projects**

The layout will remain static, while the content of each item will be dynamically managed through the CMS to allow for easy updates and scalability.

3. Knowledge & Resources

- **Climate Science Basics**

The admin should be able to manage the content of this section including the title, brief description and the link for “Watch Video” CTA button.

- **Publications**

The admin should be able to add, modify and delete publications.

- **Glossary**

The admin should be able to add, modify and delete information to this section.

- **Survey**

The admin should be able to create and add content to the discussion board.

This section will display a list of active surveys, with availability controlled by the admin through defined date ranges. Survey links will be managed directly within the CMS for easy updates.

- **FAQs**

The admin should be able to add, modify and delete information to this section.

4. Events & News

The admin should be able to create, modify and remove entries from the list for these sections.

- **Engagement Forums, Campaigns & Community Events**

- **Summits & Conferences**

- **Climate Change News – Global**

- **Conference of Parties (COP) Updates**

5. Footer

The admin should be able to manage the content of these pages:

- Contact Information including the email address and phone number
- Learning Materials



- Follow us (social media) links

Administrators will have the ability to manage listings and set submission or registration deadlines for activities like workshops, and webinars, ensuring that all initiatives are accurately listed and stay on schedule.

3.3 Deferred Features and Functionalities

This section lists the features and requirements that are intentionally deferred from the first phase as per client's direction. The system should be designed with scalability and flexibility to support the future implementation of these functionalities without requiring significant structural changes.

3.3.1 User Access Control Management

The system will incorporate role-based access control (RBAC) to ensure that different types of users have access to appropriate features and content based on their specific roles. This approach helps distinguish key user categories: public (unauthenticated) users, registered (authenticated) users and administrators (authenticated).

3.3.2 User Registration

The user registration process for a knowledge portal allows new users to create an account, gain access to personalized content, and interact with various features of the platform. The link will be shared internally and will not be publicly visible to the website.

Below are the functional requirements for the registration page:

1. User Information Fields

Field Name	Description	Is Required	Datatype	Input type
------------	-------------	-------------	----------	------------

Name	The full name of the user.	Yes	String	Text
Email	The email address of the user.	Yes	String	Email
Password	<p>A secure password set by the user to protect their account. It should the meet the minimum security criteria:</p> <ul style="list-style-type: none"> • Minimum length (e.g., 8 characters). • Must include at least one uppercase letter, one lowercase letter, one number, and one special character (e.g., !, @, #, \$). • Password strength indicator (optional) to help users choose a strong password. 	Yes	String	Password (obscured text)

Confirm Password	This field requires the user to re-enter the same password they set in the Password field, confirming the password is correct.	Yes	String	Password (obscured text)
Consent to Terms	A checkbox to agree to terms and conditions	Yes	Boolean	Checkbox
Submit Button	The button to submit the registration	Yes	N/A	Button

Table 1: Registration Form Fields

2. Error Handling and Validation

Field Name	Validation Rules	Error Message	Action on Error
Name	<ul style="list-style-type: none"> Cannot be empty. 	<ul style="list-style-type: none"> "Full name is required." 	<ul style="list-style-type: none"> Highlight the field in red Prevent form submission until corrected.
Email	<ul style="list-style-type: none"> Cannot be empty. 	<ul style="list-style-type: none"> "Email address is required." Please enter a valid email address. 	<ul style="list-style-type: none"> Highlight the field in red. Prevent form submission until corrected.

Password	<ul style="list-style-type: none"> Minimum length: 8 characters 	<ul style="list-style-type: none"> "Password must be at least 8 characters long." 	<ul style="list-style-type: none"> Highlight the field in red Prevent form submission until corrected.
	<ul style="list-style-type: none"> Maximum length: 20 characters 	<ul style="list-style-type: none"> "Password cannot exceed 20 characters." 	<ul style="list-style-type: none"> Highlight the field in red Prevent form submission until corrected.
	<ul style="list-style-type: none"> Must contain at least one uppercase letter (A-Z). 	<ul style="list-style-type: none"> "Password must contain at least one uppercase letter." 	<ul style="list-style-type: none"> Highlight the field in red Prevent form submission until corrected.
	<ul style="list-style-type: none"> Must contain at least one lowercase letter (a-z). 	<ul style="list-style-type: none"> "Password must contain at least one lowercase letter." 	<ul style="list-style-type: none"> Highlight the field in red Prevent form submission until corrected.
	<ul style="list-style-type: none"> Must contain at least one digit (0-9). 	<ul style="list-style-type: none"> "Password must contain at least one number." 	<ul style="list-style-type: none"> Highlight the field in red

			<ul style="list-style-type: none"> Prevent form submission until corrected.
	<ul style="list-style-type: none"> Must contain at least one special character (e.g., !, @, #, \$, %, etc.). 	<ul style="list-style-type: none"> "Password must contain at least one special character." 	<ul style="list-style-type: none"> Highlight the field in red Prevent form submission until corrected.
	<ul style="list-style-type: none"> Password must not be the same as the username or email address. 	<ul style="list-style-type: none"> "Password cannot be the same as your username or email." 	<ul style="list-style-type: none"> Highlight the field in red Prevent form submission until corrected.
Confirm Password	<ul style="list-style-type: none"> Cannot be empty. 	<ul style="list-style-type: none"> "Passwords do not match. Please try again." 	<ul style="list-style-type: none"> Highlight the field in red. Prevent form submission until corrected.
Consent to Terms	<ul style="list-style-type: none"> Must be checked (checkbox). 	<ul style="list-style-type: none"> "You must agree to the terms and conditions." 	<ul style="list-style-type: none"> Prevent form submission until the checkbox is checked.
Submit Button	<ul style="list-style-type: none"> No validation required. 	N/A	<ul style="list-style-type: none"> If all fields pass validation, form

	<ul style="list-style-type: none"> The form will only submit when all validation is successful. 		submission proceeds.
--	--	--	----------------------

Table 2: Registration Form’s Error Handling and Validation

3. Email Verification

- After submitting the registration form, users should receive an email with a verification link to confirm their email address before accessing the portal.
- The system should validate that the email provided is not associated with an existing account.

4. Redirect After Registration

- Once registration is complete and the email is verified, users should be redirected to a welcome page or the login page to sign in and begin using the portal.

3.3.3 User Login

The User Login allows registered users to:

- Authenticate using their credentials (email and password).
- Access personalized content and features.
- Participate in community activities, discussions, and other portal-specific functionalities.
- Maintain security by ensuring only authorized users can access sensitive areas of the portal.

1. User Login Form will include these components:

Field Name	Description	Is Required	Datatype	Input type
Email	<ul style="list-style-type: none"> The email address used by the user during registration. 	Yes	String	Email
Password	<ul style="list-style-type: none"> A secure password set by the user during registration. It is case-sensitive. 	Yes	String	Password (obscured text)
Forgot Password Link	<ul style="list-style-type: none"> A link that allows users to recover their password if they forget it. 	No	String (Text)	Link
Login Button	<ul style="list-style-type: none"> The button to Login 	Yes	N/A	Button

Table 3: Login Form Fields

2. Error Handling and Validation

Field Name	Validation Rules	Error Message	Action on Error
Name	<ul style="list-style-type: none"> Cannot be empty. 	<ul style="list-style-type: none"> "Name is required." 	<ul style="list-style-type: none"> Highlight the field in red Prevent form submission until corrected.

Username/Email	<ul style="list-style-type: none"> Must match the format of the registered email/username. 	<ul style="list-style-type: none"> "Please enter a valid email or username." 	<ul style="list-style-type: none"> Field will be highlighted, and form won't submit.
Password	Password must match the one used during registration.	<ul style="list-style-type: none"> "Incorrect username/email or password." 	<ul style="list-style-type: none"> Highlight the field and prevent form submission.
Remember Me	<ul style="list-style-type: none"> Optional. No validation required. 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Login Button	<ul style="list-style-type: none"> Ensure username/email and password are entered before submission. 	<ul style="list-style-type: none"> "Please enter both username/email and password." 	<ul style="list-style-type: none"> Prevent form submission until all fields are filled.

Table 4 : Login Form's Error Handling and Validation

3. Action Flow After Login

- **Successful Login:**
 - The user is redirected to the dashboard or personalized homepage, where they can access their content and other portal features.
- **Login Failed:**
 - The user is presented with an error message prompting them to check their username/email and password.
 - Option to recover the password via the **Forgot Password** link.



- **Security Lockout (Optional):** After a certain number of failed login attempts, temporarily lock the account or require additional verification to prevent unauthorized access.

4. Forgot Password

The **Forgot Password** functionality allows users to recover access by resetting a forgotten password. The process involves the following steps:

- User Clicks on "Forgot Password" Link
 - The user clicks the **Forgot Password** link on the login page, which redirects them to a page or pop-up requesting information for resetting the password.
- Enter Email Address
 - The user is prompted to enter their **email address** associated with their account.
 - The form includes:
 - **Email Address:** This is the email address of the user used upon registration.
 - **Submit** button to request a password reset
- Validate Input
 - The system validates the email entered:
 - Check if the email is in a valid format.
 - Ensure the email or username exists in the system's database.
- Send Reset Link
 - If the input is valid and the account exists, the system generates a **password reset link**.

- The link is sent to the **user's registered email address** with instructions for resetting the password.
- **Email Content:**
 - A secure URL, usually valid for a limited time (e.g., 24 hours), to allow the user to reset their password.
 - A message explaining how to reset the password and a warning not to share the link.
- User Receives Email
 - The user receives an email containing the password reset link.
 - The email includes:
 - A confirmation that the reset request was received.
 - Instructions on what to do next, including a button or link to reset the password.
- User Clicks Reset Link
 - The user clicks the **password reset link** within the email.
 - This redirects the user to a page where they can enter a **new password**.
- Enter New Password
 - On the password reset page, the user is prompted to:
 - **Enter a new password** (with validation rules detailed in Table 2: Registration Form's Error Handling and Validation).
 - **Confirm the new password** (with validation rules detailed in Table 2: Registration Form's Error Handling and Validation).
 - **Submit** button to save the new password.
- Validate New Password
 - The system validates:



- The new password meets the required complexity rules.
 - The new password and confirmation password match.
- [Reset Password in Database](#)
 - If the new password passes validation, the system updates the password for the user's account in the database.
 - A success message is displayed, confirming that the password has been successfully reset.
- [Notify User of Successful Reset](#)
 - The user is redirected to the **login page** with a success message:
 - **Message:** "Your password has been successfully reset. You can now log in with your new password."
- [User Logs In](#)
 - The user can now log in to their account using the new password.

3.3.3 Admin - User Management

Account Management: Admins can view and manage user profiles, deactivate accounts, and reset passwords if needed.

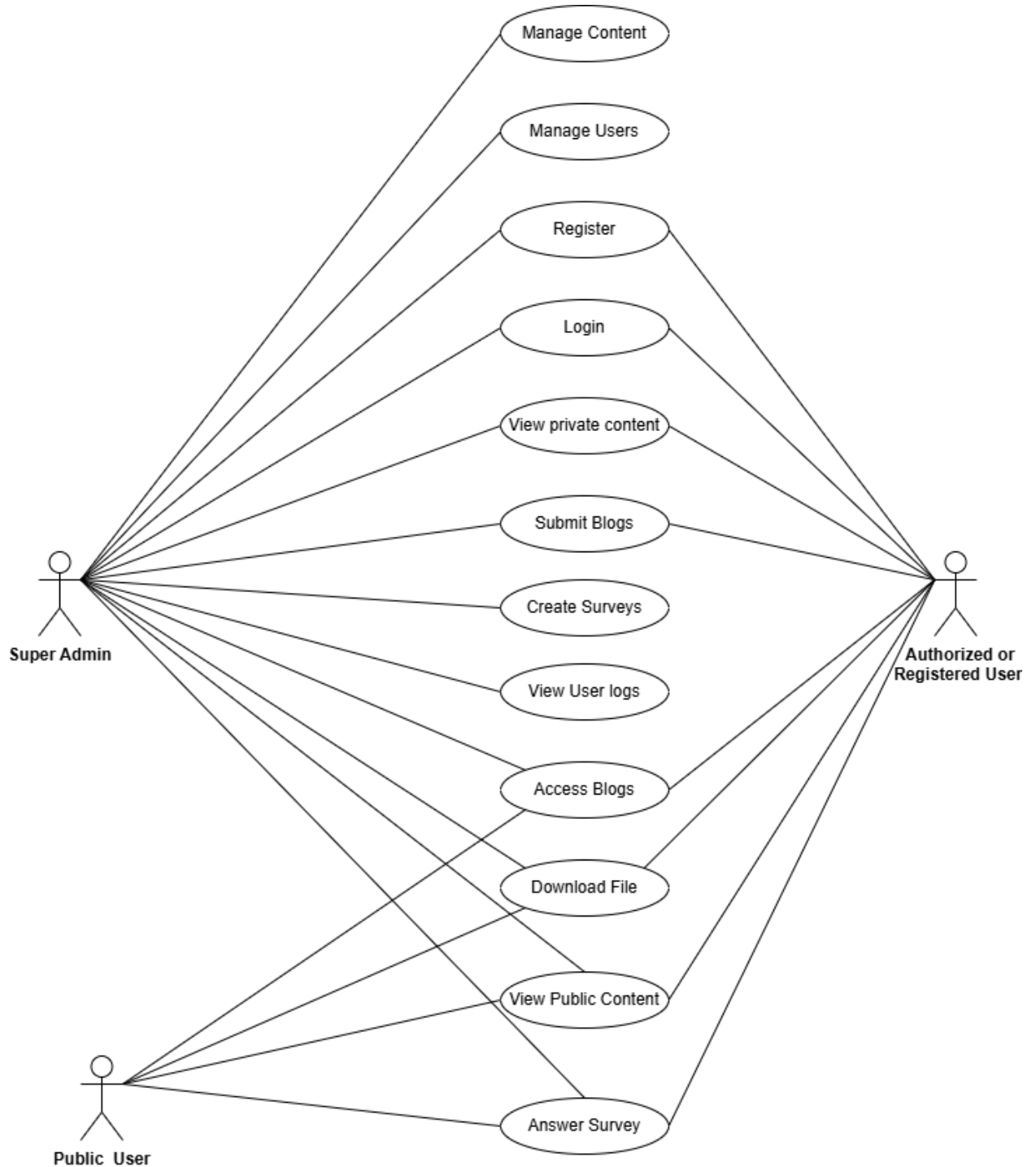


Diagram 1: User Access Control



The diagram above (**Diagram 1**) illustrates the interactions between different access levels within the portal. **Public users**, will only have access to basic or non-sensitive content. These users can browse general pages, articles and blogs that are openly available, but will not have access to personalized features or content that require user authentication. Additionally, they will be able to participate in public surveys and download files available directly from the portal.

For **authorized users**, a private **Registration** and **Login** page will be available, accessible only through internal sharing and not publicly displayed on the portal. Once registered, these users can customize their profiles, participate in community discussions, submit blogs, access exclusive articles, and experience a personalized journey.

For **administrators**, they will have access to both public and private information in the portal. They will also have permission to create surveys, manage content and users, as well as monitor user activity logs.

This access control mechanism ensures that sensitive content and features are only accessible to those with appropriate permissions, protecting data while enhancing the user experience by offering relevant, user-specific functionalities.

End of Document