هيئة الاتصالات والفضاء والتقنية
Communications, Space & Technology Commission

Digital Cooperation Organization

SUSTAINABILITY TOOLKIT

for the ICT sector

MAY 2024

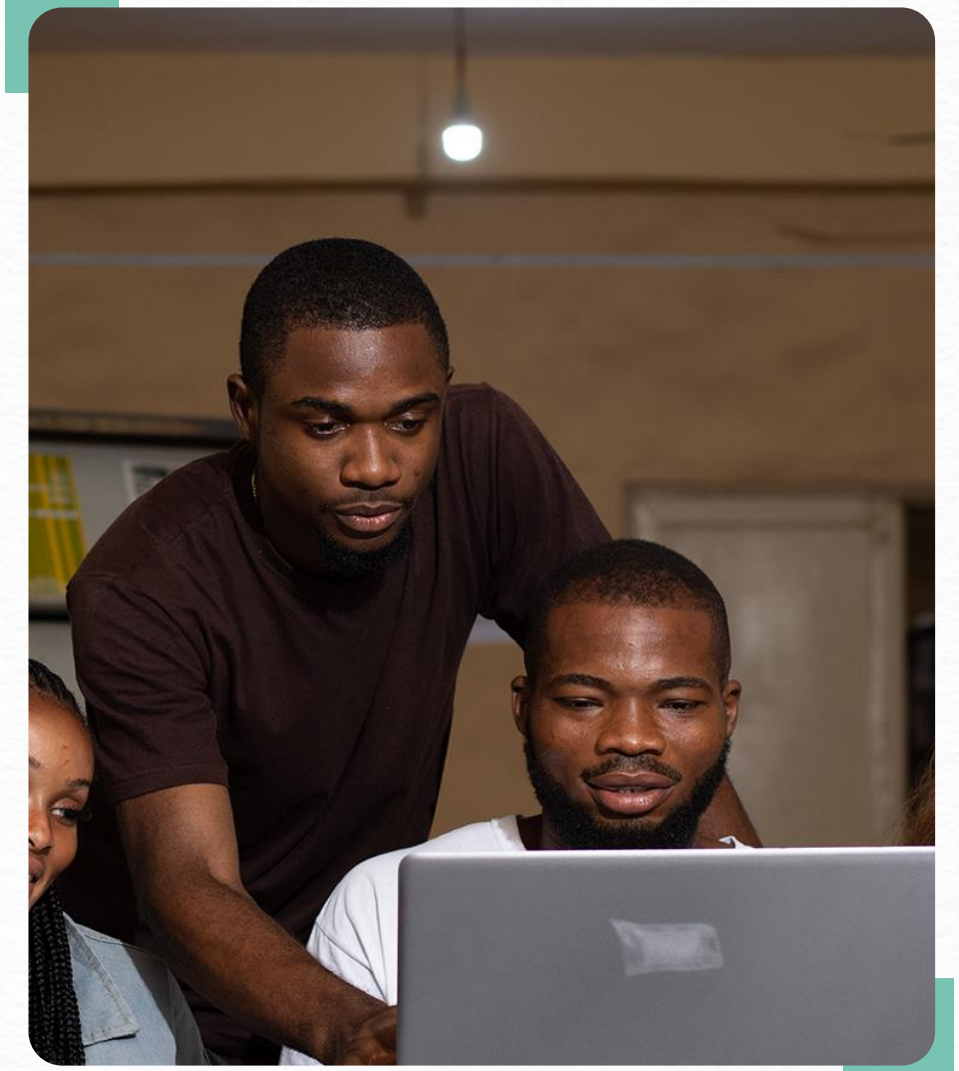
The DCO is an enabler for a sustainable and inclusive digital economy for its Member States

The DCO supports Member States achieve social prosperity and growing the digital economy

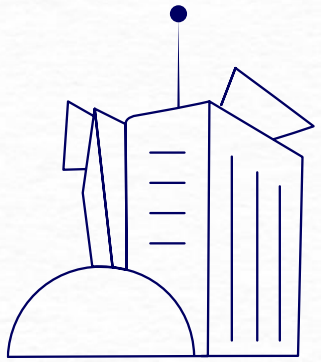
The DCO Strategic Roadmap for 2030 is also centered to foster an inclusive, human-centric, and sustainable digital economy using digital technologies

The DCO also aims to enable women, people with disabilities, the youth, and entrepreneurs by giving them the access, skills to benefit from internet and digital technologies

The DCO accelerates collaboration, innovation and cooperation in the digital economies bringing together Member States



The Kingdom of Saudi Arabia, a DCO Member State, is working to advance sustainable development through various initiatives, including the development of a Sustainability strategy for the ICT sector



CST's sustainability journey

Developed the sustainability strategy based on C.I.R.C.L.E.S. pillars, to guide the ICT and Space sectors on their sustainability journey in the Kingdom of Saudi Arabia.

CST aims to amplify the impact by sharing insights and publishing a comprehensive toolkit

CST and the DCO partnered together to promote and share a sustainability toolkit for the ICT sector that will enable other countries to progress in their Sustainability journey

CST AND the DCO COLLABORATION

OBJECTIVE

Promote sustainability
in the ICT sector worldwide

SCOPE of the Toolkit

The objective of the toolkit is to guide stakeholders, including regulators, of a country to **define the Sustainability strategy for the ICT sector.**

The toolkit will guide the reader from the **definition of sustainability, current status analysis and benchmark, to the sustainability strategy design based on C.I.R.C.L.E.S. pillars**.

The **scope of the toolkit** covers the **guidance to the development of the Sustainability strategy**, incl. actionable elements such as templates and examples (with further details in the Toolkit's Annexure). However, detailed implementation guidance is not in scope.

It is **not intended** to provide guidance on the **operating model** of the Sustainability Strategy.

The toolkit aims to boost sustainability efforts of stakeholders, including regulators in the ICT sector

TARGET AUDIENCE

Regulators / Ministries for ICT sector (Comms & Technology)

Please note, that the **mandate** to design the sustainability strategy **might fall under the ICT ministry, or the ICT regulator** – based on a country's governance around the ICT Sustainability Agenda.

It is **important to define the respective entity that is ultimately accountable** for the agenda

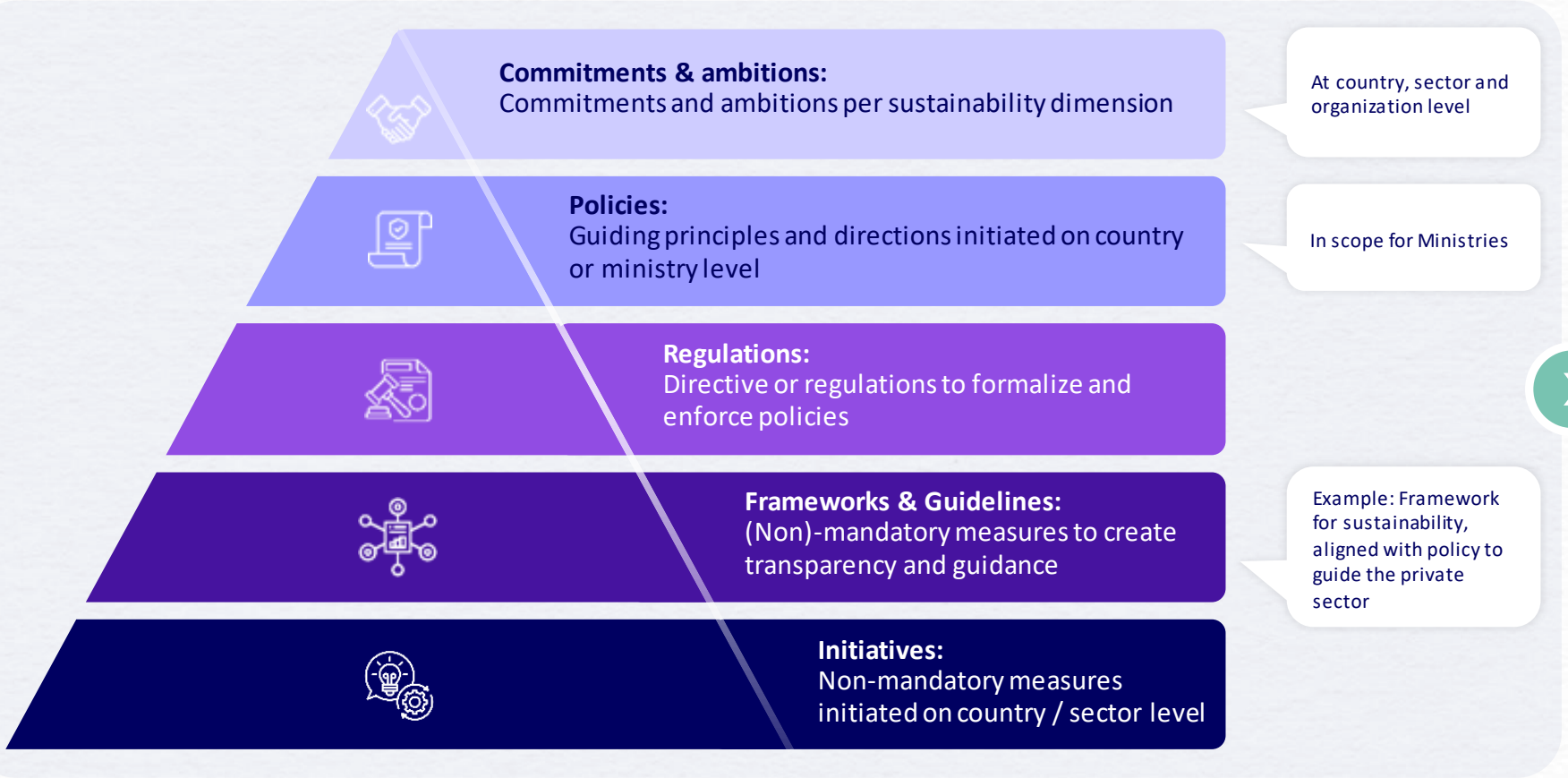
OBJECTIVES OF THE TOOLKIT

- **Give a modular introductory guide** on how to develop a sustainability strategy in the ICT sector
- **Provide guidance on the process** to create a tailored Sustainability strategy based on the specific country needs
- **Share lessons learned and best practices**, in defining sustainability vision, targets and initiatives
- **Share material to increase knowledge on sustainability** and potential template to be leveraged in the strategy design

The complex regulatory environment is driven by establishment of various instruments that help driving actions and impact in the sectors

Outcomes of the toolkit application

Hierarchy of instruments



High complexity of the regulatory environment due to

- Number of instruments
- Interconnection and dependences between instruments
- Different influence levels of instruments (at country, sector and company level)
- Number of actors involved
- Requirement for collaboration to develop and implement instruments

The toolkit enables stakeholders, including regulators and ministries, to drive sustainability in the ICT sector through a step-by-step approach

DRIVE SUSTAINABILITY EFFORTS

Build knowledge and lead sustainability efforts as regulators in the ICT sector, leveraging the crucial role as enabler of sustainability for other sectors

SHAPE THE ICT sector

Drive changes in the ICT sector through a structured sustainability agenda that is based on the latest best practices and tailored to your needs

LEVERAGE AN STEP-BY-STEP APPROACH

Follow a structured and step-by-step or ready-to-implement approach for developing a tailored sustainability strategy and apply best practices and the materials shared

Countries that will apply this toolkit will *easily and fast* define their Sustainability strategy, commitments and roadmap, *leveraging existing material and lessons learned*

BENEFITS OF THE TOOLKIT

Well-defined **process**

Template ready to use

Material to leverage

Case study for inspiration

POSITIVE IMPACTS OF THE SECTOR'S SUSTAINABILITY STRATEGY

- ✓ Drive social impact in the sector
- ✓ Decrease sector footprint
- ✓ Strengthen sector's economic growth
- ✓ Contribute to the country's sustainability agenda (e.g. UN Sustainable Development Goals)
- ✓ Enable other sectors
- ✓ Promote governance and transparency

The toolkit's application can be articulated into four steps across 20 weeks

Set up and kick off initiative

- Get **senior leadership's buy-in**
- Get the **budget approved** to cover the resources for 20 weeks
- Set up **toolkit team**
- Align **expectations with the team and leadership**

Slides 12-29

Budget is for covering the costs for running the project (team allocation and travel) and potential activities as workshops or events

Design sustainability strategy

- **Follow the toolkit guidance and design the sustainability strategy,** from vision to initiatives, based on the CIRCLES pillars

Slides 52-76

Timeline indication

Week 1-3

Week 4-12

Week 12-16

Week 16-20

Run analysis and diagnostic

- Follow **the toolkit guidance and analyze the current situation** in the country regarding sustainability in the ICT sector, as also run a **benchmark analysis** to collect best practices from leading and comparable countries

Slides 30-51

Approve the new strategy

- Get **approval of the new sustainability strategy** from the leadership
- **Engage stakeholders and socialize** the new sustainability strategy

Slides 77-90

Five chapters describe how to define the sustainability strategy and kick off implementation

01

Getting started and raising awareness

1.1 Define objectives, scope, and budget and get the **leadership buy-in**

1.2 Set up project (onboard the team, define the timelines and set up the PMO)

1.3 Define sustainability along: why, what, how, and launch an education/ awareness campaign

1.4 Map and engage with key stakeholders regarding sustainability in ICT

02

Understanding best practices and current situation

2.1 Define the analysis approach & identify key elements

2.2 Conduct an analysis on the **country's current state** on sustainability

2.3 Conduct a **benchmark** analysis on sustainability

2.4 Derive gaps between current state in own sector vs. leading best practices

03

Designing the sustainability strategy

3.1 Outline **guiding principles**

3.2 Set **vision**

3.3 Define **strategic objectives**

3.4 Set **commitments** and outline **KPIs**

3.5 Develop **implementation initiatives**

In iterative process with frequent stakeholder feedback loops

04

Getting strategy approval and socialize with stakeholders

4.1 Get the **final approval of the ICT sustainability strategy** from the ICT regulator(s) and ministry, also at country level

4.2 Design workshops and tailor materials to engage with each key stakeholder (private sectors, NGOs, etc.)

4.3 Trigger change management by **creating case for changes**

05

Implementing and monitoring

5.1 Define **roadmap** of implementation

5.2 Set up **monitoring** and **review process**

In step 1, leadership is onboarded, project set, sustainability defined, & stakeholders engaged

01

Getting started and raising awareness

1.1 Define objectives, scope, and budget and get the **leadership buy-in**

1.2 Set up project (onboard the team, define the timelines and set up the PMO)

1.3 Define sustainability along: why, what, how, and launch an education/ awareness campaign

1.4 Map and engage with key stakeholders regarding sustainability in ICT

02

Understanding best practices and current situation

2.1 Define the analysis approach & identify key elements

2.2 Conduct an analysis on the **country's current state** on sustainability

2.3 Conduct a **benchmark** analysis on sustainability

2.4 Derive gaps between current state in own sector vs. leading best practices

03

Designing the sustainability strategy

3.1 Outline **guiding principles**

3.2 Set **vision**

3.3 Define **strategic objectives**

3.4 Set **commitments** and outline **KPIs**

3.5 Develop **implementation initiatives**

In iterative process with frequent stakeholder feedback loops

04

Getting strategy approval and socialize with stakeholders

4.1 Get the **final approval of the ICT sustainability strategy** from the ICT regulator(s) and ministry, also at country level

4.2 Design workshops and tailor materials to engage with each key stakeholder (private sectors, NGOs, etc.)

4.3 Trigger change management by **creating case for changes**

05

Implementing and monitoring

5.1 Define **roadmap** of implementation

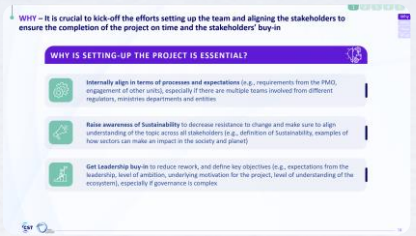
5.2 Set up **monitoring** and **review process**

Approach – Starting the project requires development of stakeholder ecosystem, project plan and definition of sustainability

APPROACH TO GET STARTED

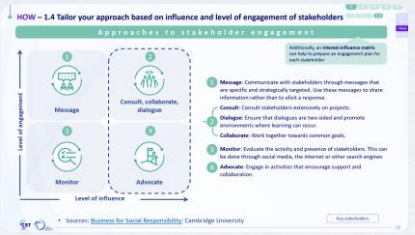
- Explain the **rationale behind setting up the project and have the stakeholders buy in** (see **WHY**)
- Create a **stakeholder ecosystem** including all the stakeholders that need to be involved in the project and process (see **WHO**)
- **Conduct three main actions** (see **HOW**)
  - Get the **leadership buy-in**
  - Set up of **project structure and plan** to guide the sustainability strategy development process
  - Define **sustainability framework for analysis (benchmark and current state)**
  - **Categorize and engage stakeholders** based on **interest** and **influence**
- Summarize **outcomes of step 1** and **content** repository to leverage (see **WHAT**)

WHY

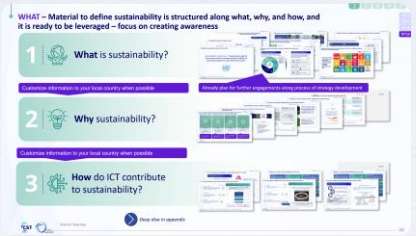


WHO

HOW



WHAT



WHY – It is crucial to kick-off the efforts setting up the team and aligning the stakeholders to ensure the completion of the project on time and the stakeholders' buy-in

WHY IS SETTING-UP THE PROJECT IS ESSENTIAL?

Internally align in terms of processes and expectations (e.g., requirements from the PMO, engagement of other units), especially if there are multiple teams involved from different regulators, ministries departments and entities

Raise awareness of Sustainability to decrease resistance to change and make sure to align understanding of the topic across all stakeholders (e.g., definition of Sustainability, examples of how sectors can make an impact in the society and planet)

Get Leadership buy-in to reduce rework, and define key objectives (e.g., expectations from the leadership, level of ambition, underlying motivation for the project, level of understanding of the ecosystem), especially if governance is complex

WHO – A prerequisite for an effective ecosystem's map is the identification of relevant external stakeholders that need to be involved

Identify individuals, groups and organizations who

- Have **influence** and need to be involved in process of development
- Are **impacted** by the sustainability strategy and its policies, initiatives, commitments

Relevant stakeholder groups when creating an initial stakeholder long-list and mapping

- National Government (Ministries, Departments, and Agencies)
- International Organizations and Coalitions (e.g. DCO, UN, ITU, CDP, …)
- Private Sector (ICT companies)
- Non-Governmental Organizations (Academia, Consumers, Society, Non-Profit Organizations, …)

Best practice

Start stakeholder engagement early

- Define **early** on which **stakeholders** and entities need to be **involved and onboarded and what they role is**
- Start to engage in kickoff process to **ensure engagement** throughout process
- Be aware of **risk for delay** later in process due to lack of engagement and understanding for the topic

In some countries, the ministry / regulator will need to engage early on with minority groups as people with disabilities, organizations focus on equality across genders, races and ethnicities, religions, cultures etc. (e.g., Ghana should engage disabilities groups)

WHO – The initial step is the creation of a longlist of key stakeholders and their key roles

Exemplary template for stakeholder list

Group	Key roles
National government	• Develops and implements sustainability policies, regulations, initiatives and commitments by establishing the legal and policy frameworks necessary to promote sustainable practices on a country level (sector overarching) • Sets the overall (sustainability) ambition and strategy for the country

Ministries on government level	• Formulates policies, strategies, and action plans that promote sustainable practices across various sectors, e.g. in
	  • Energy
	  • Science
	  • Technology & IT
	  • Digital
	  • Environment
	  • Education
	• Acts as central coordinating body, fostering collaboration and engagement among different government agencies, departments, and stakeholders involved

Regulators for ICT	• Develops specific rules, standards, and guidelines that operationalize broader sustainability policies • Monitors and evaluates the performance and progress of businesses and industries in meeting sustainability regulations
Academia	• Supports capacity building and the adoption of best practices and developments in the sector internationally • Conducts local and national research to ensure a science-based approach is taken for determining policy decisions
Non-governmental organizations	…
Private sector companies in ICT (local vs. international)	…
Society	…

WHO – Stakeholders within the organization, the sector, and the country need to be identified, along with international institutions, for each step

Regulator internally

GOVERNMENT

Other governmental entities *(e.g. other sector's ministries)*

SECTOR'S MINISTRY

REGULATOR

Leadership team within regulator / ministry / entity

Other departments within regulator / ministry /entity

Project team

PMO

The regulator is not always the responsible entity (ownership might be at ministry level); i.e., the regulator can also be a stakeholder, and there might be more than one regulator

Ensure relatability of content to stakeholders engaged to reduce **risk of lacking engagement and buy-in**

Int'l organizations and coalitions *(e.g. international industry associations)*

Int'l non-gov't / social / private sector *(e.g. Multi-national corporations)*

Local non-governmental / social and private sector (incl. society, academia, private sector companies)

COMMENT

- **Visualize the mapped stakeholders** by developing an ecosystem with the main stakeholder groups
- **Include stakeholders**
  - **Within** the organization
  - **Outside** the organization covering local gov't, private and public sector
  - **International** organizations

Local stakeholder

International stakeholder

WHO – Start mapping key stakeholders into an ecosystem to highlight the roles and show who is involved in each step

Interaction ★ Actively involved stakeholders in step ⬚ Regulator internally

GOVERNMENT

★ Other governmental entities *(e.g. other sector's ministries)*

SECTOR'S MINISTRY

REGULATOR

Leadership team within regulator ★

Provide guidance on process & project

Update on project & content

Other departments within regulator / ministry / entity ★

★ Project team

Update on project and content

Inform about project

Provide feedback

★ PMO

International (gov't) organizations (e.g. international industry associations)

International non-governmental / social / private sector (e.g. Multi-national corporations)

Local non-governmental / social / private sector (incl. society, academia, private sector companies)

COMMENT

- **Project team leads the process,** conducts the actions (e.g. creates proposal of project plan and objectives)
- **PMO is in constant exchange with project team** to monitor progress and sets up required meetings and organize meetings with **other departments and the leadership**

Local stakeholder

International stakeholder

HOW – Step 1: Set up project structure, define sustainability and engage stakeholder

Step 1

Getting started and raising awareness

Actions

1.1 Define objectives, scope, and budget and get the **leadership buy-in**

1.2 Set up project (onboard the team, define the timelines and set up the PMO)

1.3 Define sustainability along: why, what, how, and launch an education/ awareness campaign

1.4 Map and engage with key stakeholders regarding sustainability in ICT

Material to leverage

- **Guidance** to **develop stakeholder map** to identify most relevant stakeholders for sustainability in ICT
- **Guideline** on how to best **engage with selected stakeholders**
- **Materials to define sustainability**, applicable for identified stakeholdes, including
  - **What** is sustainability?
  - **Why** sustainability?
  - **How** do ICT contribute to sustainability?

HOW – 1.1 First, define objectives, scope, and budget and get the leadership buy-in

Leadership buy-in is crucial to have a successful implementation

Is the objective to review the whole sustainability of the sector? Is it to align to the country's sustainability strategy?

Define objectives to have a clear target

Which sectors will be part of the analysis? Only Telecoms, ICT or also others?

Define scope to ensure clear boundaries

For how many weeks will the project run? Who will be involved? Is budget required to engage external experts and run workshops?

Define budget to sponsor the strategy

Some countries might delay the leadership approval AFTER step 2, i.e., when the baseline current state analysis and the benchmark study is completed.

Get leadership buy-in to enable implementation of the sustainability strategy

Leadership buy-in and kick start of the project was one of the biggest challenges that pilot DCO Member States highlighted

HOW – 1.2 Second, set up the team, lay down a plan that will guide the project execution, and ensure strong PMO oversight

Trigger:
Decision to engage with sustainability and design the strategy for the ICT sector, aligned with the country's one

Set up team that will drive the sustainability project – if applicable, it will be composed of representatives of different entities (e.g. all the regulators, and ministry's departments)

Develop project plan, incl. timeline along the proposed 5 step approach, milestones, interim targets

Ensure strong PMO oversight to maintain alignment with overall commitments, under the entity that owns the sustainability strategy (e.g. a ministry's or regulator0s department)

The team can consist of people from multiple entities, but it should be owned by one!

Ideally allocate resources with already sustainability background and strong motivation

If external organizations are involved in the project, it is important to agree on a common plan and to have escalation processes and mitigation to ensure no delay

PMO oversight is crucial when multiple stakeholders are involved

Additional Best Practices

1. Definition of the role of the PMO vs role of the project manager within this initiative, especially if multiple entities are involved
2. Establishment of a governance structure, standardized processes, and reporting mechanisms, especially if multiple entities ar e involved
3. Adoption of project management tools, and continuously improve the PMO's performance, accessible by across the entities invol ved

The toolkit does not provide any guidance on the operating model for the strategy

HOW – In step 1.3, define WHAT is sustainability, introduce the framework…

ESEG is a framework and should not be used interchangeably with generic concept of Sustainability

DIFFERENT SUSTAINABILITY FRAMEWORKS

Environmental, Social & Governance (ESG) Framework

Triple Bottom Line: Economic, Social & Environmental

SUSTAINABLE DEVELOPMENT GOALS

UN Sustainable Development Goals (SDGs)

There are multiple Sustainability frameworks: governments usually adopt the SDGs, while companies follow the ESG framework and the triple bottom line

SUSTAINABILITY FRAMEWORK

Corporate **Governance**

This is the Sustainability framework of analysis for a regulator, that oversee both the public and private sector and has a crucial role in the sector governance

- The **framework** followed in this **toolkit** as it covers **sustainability** comprehensively the **environmental, social, economic and governance** dimensions
- Additionally, the "Governance" is a **key dimension to ensure best practices are implemented** (e.g. through standards, regulations, policies)
- Can be **mapped against the SDGs** (see appendix)

Deep dive in appendix

HOW – 1.3 …and derive sub-dimensions for the analysis aligned with global, local, and sector trends

SUSTAINABILITY FRAMEWORK THAT IS USED FOR THE ANALYSIS

DERIVATION OF RELEVANT SUSTAINABILITY DIMENSIONS

Derive **relevant sub-categories** within the chosen sustainability dimensions to **structure the analysis** by:

1. Create **long-list of sustainability topics**
2. Define **filter criteria for selection**, example:
   - **A. Global trends**
     - Capture key trends and material issues on sustainability, e.g. WEF Global Risk Report, …
   - **B. Sector relevance, e.g. ICT**
     - Capture key trends and material issues in ICT sector e.g. ITU Connect 2030 Agenda, GSMA…
   - **C. Local perspective** (country needs, strategies and priorities)
3. **Short-list sub-dimensions** per Sustainability pillar based on **relevance in each criteria**

Deep dive in appendix

HOW – 1.3 Countries can take inspiration from the KSA case study, with 13 sub-dimensions of sustainability

ENVIRONMENTAL	Carbon footprint
	Energy consumption
	Circular design & model
	Waste (e-waste, debris)
	Water
SOCIAL	Gender equality
	Education & Upskilling
	Digital inclusion (connectivity)
ECONOMIC	Sector development
	Employment
GOVERNANCE	ESG reporting & Transparency
	Certification & Standards
	Data privacy and protection

Case Study

The choice of sub-dimensions should be aligned with stakeholders and a light benchmarking (via SGD goals) can be done to identify the most impactful dimensions

E.g. digital skills development for persons with disabilities and elderly on basic knowledge of ICT, assistive technology, and accessibility standards, opportunities offered by technology

BEST PRACTICE

Focus on the relevant dimensions for your context

- **Adapt the sustainability framework** and its dimensions to **your specific context** and focus area of framework
- **Reduce the complexity** to manage the broadness of topics included in sustainability

Align sub-dimensions of benchmark & current state analysis

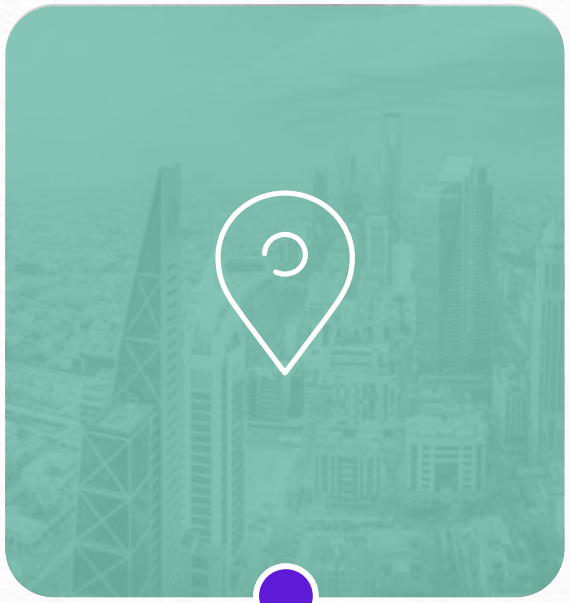
- Conduct the current state and benchmark analysis along the same framework and sub-dimensions to **ensure comparability**
- **Align on relevant dimensions early in analysis process** and adapt if necessary to reduce risk of inefficiencies

Deep dive in appendix

HOW – 1.3 Raise awareness not only on the definition of Sustainability, but also on WHY Sustainability is important at both global, local, and sector levels, especially *now*

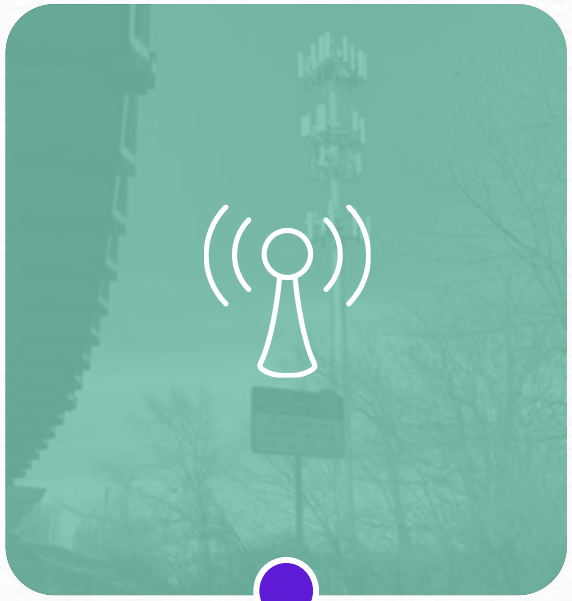
WHY SUSTAINABILITY?

- *Launch an education / awareness campaign to facilitate easy adoption of the whole toolkit by stakeholders*



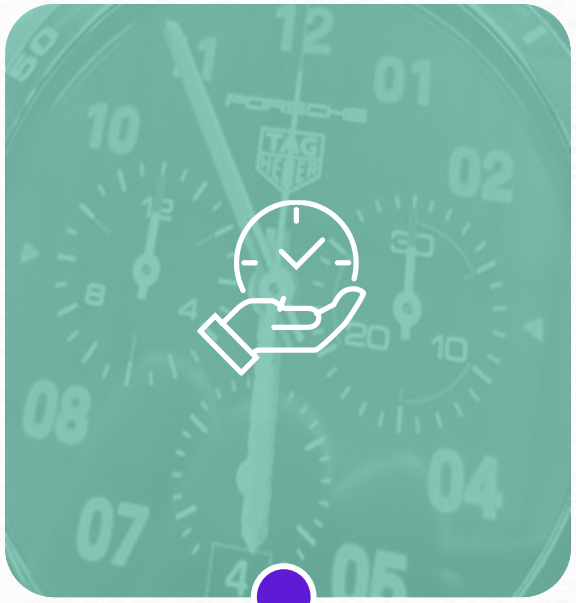
WHY IN THE COUNTRY?

- *Make the **definition of sustainability and its content as applicable** as possible to regional needs and context*
- *Add **data and challenges that are country specific** to create link to local stakeholders involved*



WHY ICT?

Be aware that **sustainability is a very broad topic** (covering environmental, social, economic and governance dimensions), hence the **key issues** for the sectors need to **be highlighted**

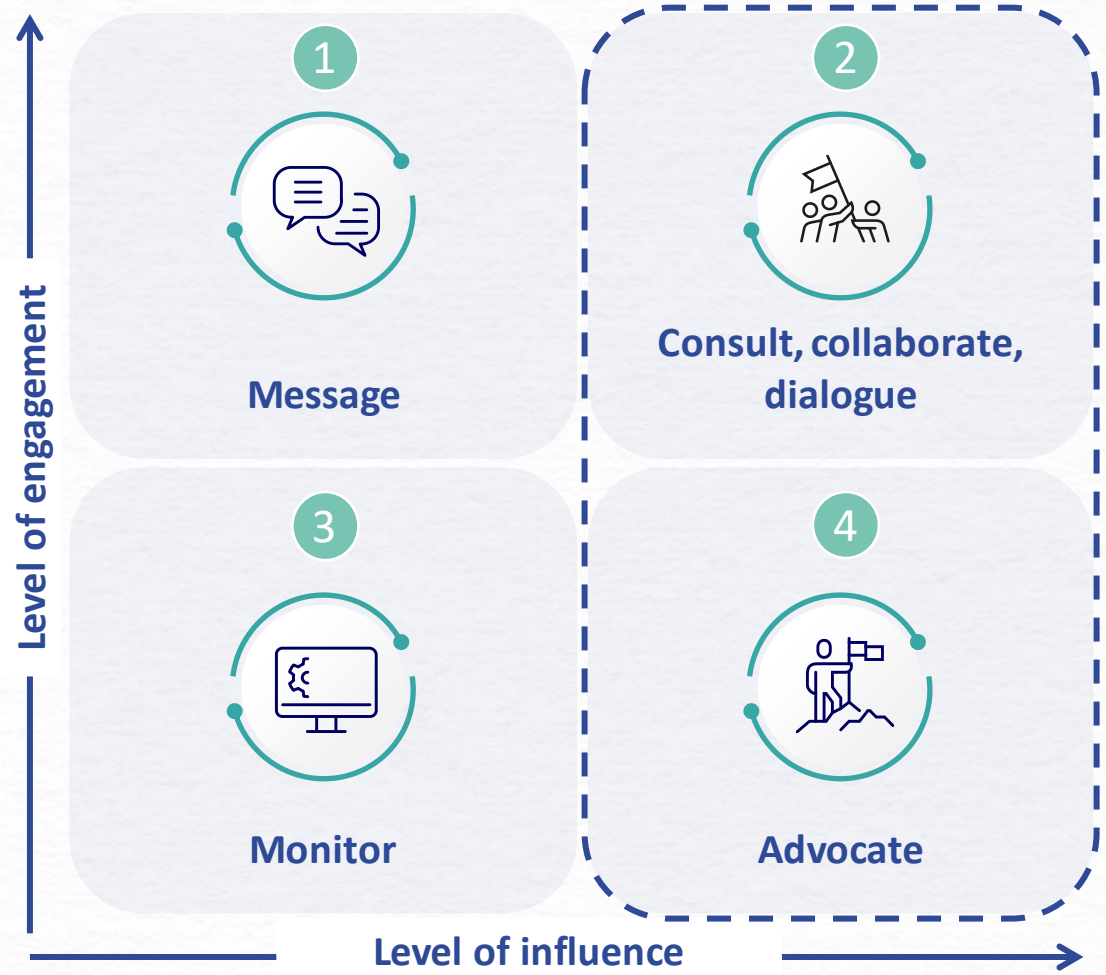


WHY NOW?

Include a **call to action** to tackle the (negative) impacts the sectors have e.g. on environment but also the **opportunity to enable other sectors** to be more sustainable by leveraging ICT technologies

HOW – 1.4 Tailor your approach based on influence and level of engagement of stakeholders

Approaches to stakeholder engagement



Additionally, an **interest-influence matrix** can help to prepare an engagement plan for each stakeholder

1. **Message**: Communicate with stakeholders through messages that are specific and strategically targeted. Use these messages to share information rather than to elicit a response.
2. **Consult**: Consult stakeholders extensively on projects.
   Dialogue: Ensure that dialogues are two-sided and promote environments where learning can occur.
   Collaborate: Work together towards common goals.
3. **Monitor**: Evaluate the activity and presence of stakeholders. This can be done through social media, the internet or other search engines
4. **Advocate**: Engage in activities that encourage support and collaboration.

Key stakeholders

- Sources: Business for Social Responsibility; Cambridge University

HOW – 1.4 Finally, map and engage with stakeholders to ensure alignment

PREPARE

ENGAGE

Involve in the strategy development process

Already plan for further engagements along process of strategy development

Key stakeholders

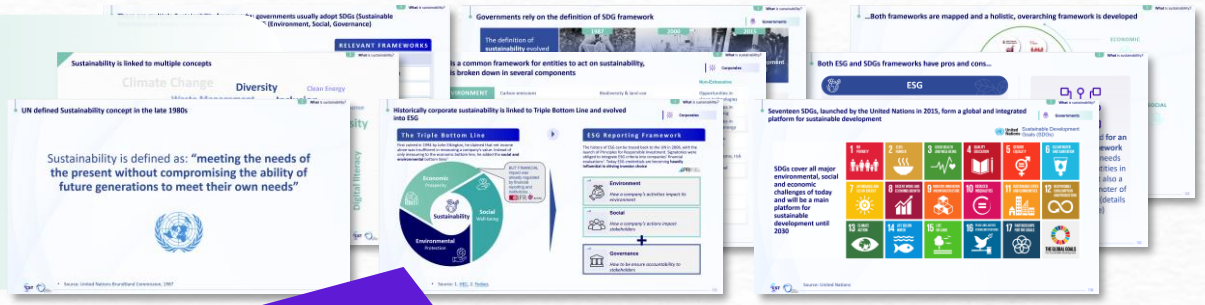
Define **objectives** of project	**Kick-off** project to develop sustainability strategy for sectors (ICT regulator)	Map **stakeholders** and create engagement plan	Reach out to **key stakeholders** and set up meetings	Explain objectives of project, **why sustainability** is relevant and required engagement from stakeholder	Reach out to **other stakeholder** and inform about project	…
Covered in 1.1 & 1.2		*Covered in 1.3*		*Leverage content developed in 1.2*		

Other stakeholders

Time

WHAT – Material to define sustainability is structured along what, why, and how, and it is ready to be leveraged – focus on creating awareness

1 What is sustainability?



Customize information to your local country when possible

Already plan for further engagements along process of strategy development

2 Why sustainability?

Customize information to your local country when possible

3 How do ICT contribute to sustainability?

Deep dive in appendix

WHAT – You have achieved these outcomes when closing step 1!

- **Project set up** – incl. PMO, project plan and defined objectives of project
- **Definition of sustainability** in the specific regulator context
- **Stakeholder longlist**
- **Map of stakeholders** along level of engagement and influence
- **Engagement plan**, incl. materials to kickoff sustainability journey of regulator

In step 2 the current state and benchmark analysis is conducted

01

Getting started and raising awareness

1.1 Define objectives, scope, and budget and get the **leadership buy-in**

1.2 Set up project (onboard the team, define the timelines and set up the PMO)

1.3 Define sustainability along: why, what, how, and launch an education/ awareness campaign

1.4 Map and engage with key stakeholders regarding sustainability in ICT

02

Understanding best practices and current situation

2.1 Define the analysis approach & identify key elements

2.2 Conduct an analysis on the **country's current state** on sustainability

2.3 Conduct a **benchmark** analysis on sustainability

2.4 Derive gaps between current state in own sector vs. leading best practices

03

Designing the sustainability strategy

3.1 Outline **guiding principles**

3.2 Set **vision**

3.3 Define **strategic objectives**

3.4 Set **commitments** and outline **KPIs**

3.5 Develop **implementation initiatives**

In iterative process with frequent stakeholder feedback loops

04

Getting strategy approval and socialize with stakeholders

4.1 Get the **final approval of the ICT sustainability strategy** from the ICT regulator(s) and ministry, also at country level

4.2 Design workshops and tailor materials to engage with each key stakeholder (private sectors, NGOs, etc.)

4.3 Trigger change management by **creating case for changes**

05

Implementing and monitoring

5.1 Define **roadmap** of implementation

5.2 Set up **monitoring** and **review process**

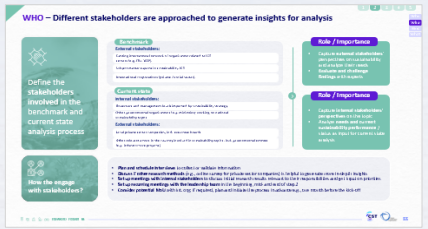
Approach – The benchmark and current state analysis are conducted along a tailored framework and conclude with a gap analysis

APPROACH TO BENCHMARK AND CURRENT STATE ANALYSIS

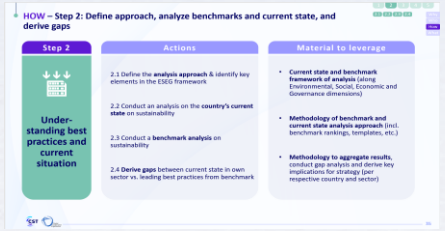
- Explain the **rationale behind the benchmark studies and current state** (see **WHY**)
- Define **stakeholders** that **need to be involved** in studies and engagement process (see **WHO**)
- **Conduct four main actions** (see **HOW**)
  - Develop the **current state and benchmark framework** for analysis
  - Conduct the **benchmark analyses** along the framework
  - Conduct an analysis of the **current state** along the framework
  - Derive **conclusions and gaps** between current state and benchmark
- Summarize **outcomes of step 2** and **content** repository to leverage (see **WHAT**)

WHY

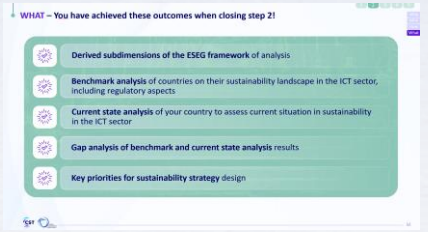
WHO



HOW



WHAT



WHY – It is important to define the current maturity of sustainability efforts through a current state and benchmark analysis and learn from best practices

WHY IS CONDUCTING A COMPREHENSIVE ANALYSIS CRUCIAL?

Understand starting point and current maturity in Sustainability in the country and sectors the framework is developed for

Extract and analyze international best practices in the sustainability landscape in other countries through benchmark analysis

Identify potential options, inspirations, and justifications for each element (e.g., north star, initiatives, KPIs)

WHO – Different stakeholders are approached to generate insights for analysis

Define the **stakeholders involved** in the benchmark and current state analysis process

Benchmark

External stakeholders:

- Existing international network of organization related to ICT sectors (e.g. ITU, WEF)
- Subject matter experts in sustainability, ICT
- International corporations (private / social sector)

Current state

Internal stakeholders:

- Governors and management levels impacted by sustainability strategy
- Other governmental organizations (e.g. ministries) working on national sustainability topics

External stakeholders:

- Local private sector companies, incl. executive boards
- Other relevant actors in the country involved in sustainability topics, incl. governmental entities (e.g. infrastructure projects)

Role / Importance

- Capture **external stakeholders'** perspectives on sustainability and analyze their needs
- **Evaluate and challenge findings** with experts

Role / Importance

- Capture **internal stakeholders' perspectives** on the topic
- Analyze **needs and current sustainability performance** / status as input for current state analysis

How the engage with stakeholders?

- **Plan and schedule interviews** to collect or validate information
- **Discuss** if **other research methods** (e.g., online survey for private sector companies) is helpful to generate more in-depth insights
- **Set up meetings with internal stakeholders** to discuss initial research results relevant to their responsibilities and get input on priorities
- **Set up recurring meetings with the leadership team** in the beginning, mid- and end of step 2
- **Consider potential MoU** with int. org; if required, plan and initiate the process in advance e.g., one month before the kick-off

WHO – In step 2, stakeholders outside the organizations are involved to collect insights and discuss interim results

Actively involved stakeholders in step

Regulator internally

GOVERNMENT

Other governmental entities (e.g. other sector's ministries)

Interview other gov't entities on relevant efforts and strategies to assess current state in country

SECTOR'S MINISTRY

REGULATOR

Leadership team within regulator / ministry / entity

Feedback on interim results

Other departments within regulator / ministry / entity

Feedback on interim results

Project team
Conducts interviews with external stakeholders

PMO
Monitors progress

Local non-governmental / social / private sector (incl. society, academia, private sector companies)

Interview private sector companies to assess their sustainability maturity and capture needs from regulator

Local stakeholder

International (gov't) organizations (e.g. international industry associations)

Interview international organizations and companies to get best practice insights and expert input

International non-governmental / social / private sector (e.g. Multi-national corporations)

International stakeholder

COMMENT

- Project team to conduct the analysis of current state and benchmark
- Project team to **present interim results** to leadership and deputy governors to get feedback

HOW – Step 2: Define approach, analyze benchmarks and current state, and derive gaps

Step 2

Under-standing best practices and current situation

Actions

2.1 Define the **analysis approach** & identify key elements

2.2 Conduct an analysis on the **country's current state** on sustainability

2.3 Conduct a **benchmark analysis** on sustainability

2.4 **Derive gaps** between current state in own sector vs. leading best practices from benchmark

Material to leverage

- **Current state and benchmark framework of analysis** (along Environmental, Social, Economic and Governance dimensions)
- **Methodology of benchmark and current state analysis approach** (incl. benchmark rankings, templates, etc.)
- **Methodology to aggregate results**, conduct gap analysis and derive key implications for strategy (per respective country and sector)

HOW – 2.1 First, identify the sectors under analysis and the elements to be analyzed

The toolkit focuses on ICT sector + enabling of other sectors through usage of respective technologies developed in the sectors

The sectors under analysis depend on the scope of the entity, that might be responsible for multiple sectors, or a specific market

IDENTIFY SECTORS FOR BENCHMARK AND CURRENT STATE ANALYSIS

Comms

TECHNOLOGY

ENABLED SECTORS

- **Identify the sectors to analyze**
- Base it on **project objectives** and the sectors overseen, regulated and / or empowered by regulator
- **Include potentially other sector** where the ICT industry can enable more sustainability

The elements to be analyzed depend on the mandate of the entity (e.g. if a regulator, the analysis will focus more on policies and regulations)

DEFINE STRUCTURE, SCOPE AND CONTENT ELEMENTS THAT SHOULD BE CAPTURED IN ANALYSIS

Validate the content to research, e.g. sustainability vision, ambitions, policies, regulations and initiatives

- Discuss **which elements to analyze** based on project objectives and stakeholders engaged, e.g. potentially split between regulations, policies, initiatives
- **Recommendation is to analyze the following elements** (*see next pages for more details*)
  1) vision / ambitions for sustainability in sector
  2) Sustainability targets and commitments
  3) Policies / Regulations and Initiatives
  4) Selected corporate examples

HOW – 2.1 Derive the framework of analysis, consistent for both the benchmark and the current state analysis

ICT

Enabled sectors

Framework

SUSTAINABILITY FRAMEWORK

Commitments / Targets

- Environmental
- Social
- Economic
- Governance

Policies / Regulations Initiatives

- Environmental
- Social
- Economic
- Governance

Recommended framework of analysis (see details on next page)

The sub-dimensions for each of the dimension were identified in step 1 and will guide the detailing / scope of the analysis

Corporate example: Example of a leader in Sustainability in ICT (e.g., analysis of ESG reporting, Sust. initiatives, etc.)

HOW – 2.1 Ensure that the framework takes a holistic view to analyze sustainability…

ICT

ENABLED SECTORS

VISION & STRATEGY: Sustainability vision and strategy for the ICT sector

Commitments / Targets

Environmental	**Commitments / Targets on** Net Zero, carbon footprint, circularity, energy consumption, e-waste, etc.
Social	**Commitments / Targets on** diversity, human rights, access to services, social justice etc.
Economic	**Commitments / Targets on** investments, taxes / fees, jobs, unemployment, start-ups
Governance	**Commitments / Targets on** partnerships, boards and regulatory bodies, certifications, standards

***EXTERNAL targets** for the sectors & overarching in benchmarked countries*

Policies / Regulations / Initiatives

Environmental	**Policies / Regulations / Initiatives on** Climate Change, minimum recycled material, e-waste, etc.
Social	**Policies / Regulations / Initiatives on** women employment, services for people with disabilities, etc.
Economic	**Policies / Regulations / Initiatives on** labor ICT market, incentives for satellite businesses, etc.
Governance	**Policies / Regulations / Initiatives on** new Sustainability bodies, ICT Sustainability certifications

***Mandatory & non-mandatory** policies & initiatives in the sectors overarching in benchmarked countries*

Corporate example: analysis of a business leader in Sustainability in the ICT sector *(ESG reporting, Sust. initiatives, etc.)*

HOW – 2.1 … and review the key elements relevant for a regulator / ministry (e.g. non- and mandatory standards)

ICT

ENABLED SECTORS

VISION & STRATEGY

Commitments / Targets

- Environmental
- Social
- Economic
- Governance

- Research sustainability **visions, strategies, ambition at the country level,** etc. to provide direction to the sectors

- Research sustainability **commitments and targets per dimensions** in the sectors
- Additionally, capture **overarching country targets** (e.g. Nez zero ambitions) that influence the sector's sustainability trajectory

Policies / Regulations Initiatives

- Environmental
- Social
- Economic
- Governance

- Research **policies, regulations and initiatives per dimension** in the sectors / applicable for the sectors
- Differentiate between **non- and mandatory initiatives**
- Discuss beforehand if necessary to **split results** in policies vs. initiatives or if results can be captured undifferentiated
- Add the **entity that published it and the sector** it is applicable for (e.g. federal gov't, ministry, regulator)
- Additionally, capture initiatives from non-gov't entities (e.g. non-profit or industry associations)

- Entails the **ICT sector**, which **can be adapted** based on your mandate and project objectives
- Target to **capture all framework elements for each sector**
- Additionally, **examine which policies, regulations**, etc. are **in common** between the ICT sector to enable sustainability in other sectors

Corporate example: Example of a business leader in Sustainability in the ICT sector

HOW – 2.2 Conduct the current state analysis along these three steps

2.2.1 WHERE ARE WE TODAY?

Derive the **overall sustainability effort** in the ICT sector evaluating:

A. Country's position in indexes (e.g. SDG index) and progress towards targets

B. Private sector's efforts

2.2.2 WHAT ARE WE DOING TODAY?

Analyze **current ICT sector** looking at:

C. Targets and ambitions

D. Initiatives and policies

2.2.3 WHERE DO WE NEED TO FOCUS TOMORROW *(current state perspective)*?

Identify the **Sustainability priorities based on the current state in the country** to be addressed in the ICT sector considering:

- Outcome from step 1
- Outcome from step 2

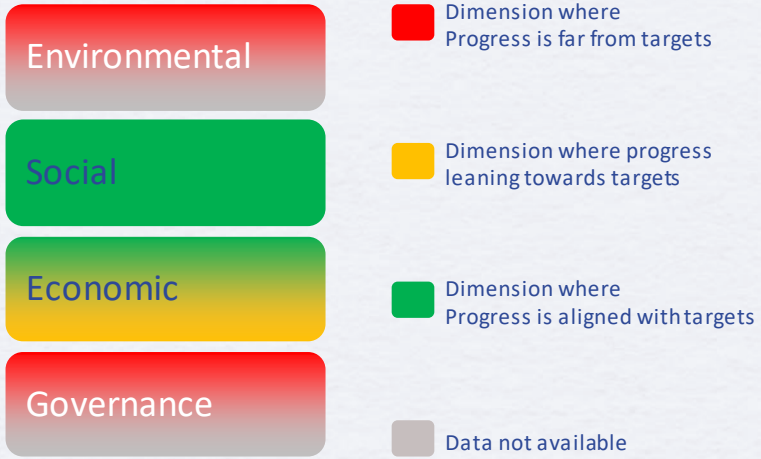
HOW – 2.2.1 Where are we today? – Analyze your current situation

A Indexes & progress

Identify key Sustainability Country Indexes (e.g., SDG Index) and assess country position

Identify key sustainability indicators and targets at your country / local level and compare the progress in the last years

When possible, compare results with sector ambitions and data



B Private sector's efforts

Company selection
Selection of local companies for ICT based on size and leadership guidance

ESG Evaluation
Evaluation across the ESG framework (environmental, social and governance) by identifying targets and key initiatives

Company ESG Level of Maturity
Classify each subdimension across three categories, based on high / medium / low targets and the number of initiatives, and calculate a final score

Low corporate efforts
Medium corporate efforts
High corporate efforts

Outcome

Derive the key takeaways based on private sector efforts and progress towards targets along the dimensions and sub-dimensions

NO MAJOR GAP:
Where there is good progress towards targets

MEDIUM GAP:
Where either there is no data or there is medium progress or efforts

BIG GAP:
Where there is either minimal progress or low corporate efforts

HOW – 2.2.2 What are we looking at? – Define current focus areas

GAP IN AMBITIONS AND TARGETS C

- Research and collect ambitions and targets of your country and regulated sectors based on dimensions (analysis framework)
- Map the outcomes in an x-ray and assess maturity and ambition level

GAP IN INITIATIVES AND POLICIES D

- Research and collect policies and initiatives of your country and regulated sectors based on dimensions (analysis framework)
- Map the outcomes in an x-ray and assess maturity and ambition level

Exemplary outcomes based on A & B

		Ambitions & targets gap C	Initiatives & policies gaps D	2. What are we doing today?
ENVIRONMENTAL	Carbon footpring			Medium gap
	Energy consumption			Big gap
	Circular design & model			Big gap
	Waste (e-waste, debris)			Medium gap
	Water			Big gap
SOCIAL	Gender equality			*No major gap*
	Education & Upskilling			Medium gap
	Digital inclusion (connectivity)			*No major gap*
ECONOMIC	Sector development			*No major gap*
	Employment			*No major gap*
GOVERNANCE	ESG reporting & Transparency			Big gap
	Certification & Standards			Big gap
	Data privacy and protection			Big gap

High targets set, main policies published, initiatives planned

Medium targets, policies and Initiatives partially set and planned

Low / Limited targets, policies and initiatives set

BIG GAP:
Where there is either minimal progress or corporate efforts

MEDIUM GAP:
Where there is medium progress or efforts

NO MAJOR GAP:
Where there is good progress toward targets

HOW – 2.2.3 Where do we need to focus tomorrow? - Identify key priorities

Exemplary (sub-) dimensions		1. Where are we today?	2. What are we doing today?	3. Where do we need to focus tomorrow?
ENVIRONMENTAL	Carbon footprint			Medium priority
	Energy consumption			Medium priority
	Circular design & model			High priority
	Waste (e-waste, debris)			High priority
	Water			High priority
SOCIAL	Gender equality			Medium priority
	Education & Upskilling			High priority
	Digital inclusion (connectivity)			High priority
ECONOMIC	Sector development			Medium priority
	Employment			Medium priority
GOVERNANCE	ESG reporting & Transparency			High priority
	Certification & Standards			Medium priority
	Data privacy and protection			Medium priority

HIGH PRIORITY
Where there is a big gap either in sectors' sustainability progress in, or in gov't intervention

STRONGER ATTENTION required to bring transparency, set up sectorial sustainability targets and define enabling initiatives

MEDIUM PRIORITY
Where there are only medium or minor gaps

CONTINUE AND DOUBLE DOWN on existing initiatives to accelerate progress

APPROACH

- **Compare key takeaways and results** from step 1 and step 2 on sub-dimension level
- **Assess priority levels** per sub-dimensions and derive final priorities per dimension
- **Priorities will function as input for gap analysis** between current state analysis and benchmark

HOW – 2.3 Conduct benchmark analysis along these three steps

2.3.1 SELECT COUNTRIES FOR BENCHMARKS

- Define the selection methodology and identify relevant rankings
- Derive top leaders in sustainability and ICT
- Add regional leaders
- Evaluate proximity to local context

Exemplary selection of benchmark countries in appendix

2.3.2 CONDUCT BENCHMARK ANALYSES & INTERVIEWS

- Conduct research and collect data on key dimensions of sustainability ecosystem
- Analyze data for each sustainability subdimension
- Conduct interviews with experts to enrich and challenge findings

Exemplary insights from the benchmark conducted by KSA in appendix

2.3.3 DERIVE IMPLICATIONS AND CONCLUSIONS *(benchmark perspective)*

- Derive key implications per analysis framework dimensions
- Derive conclusions and priorities

HOW – 2.3.1 Follow a three-step approach to select best practice countries for the benchmark

Identify the leaders across relevant criteria based on official rankings

Determine the **purpose for selecting benchmark countries** (e.g. global leaders in sustainability, regional comparison, etc.)

Define **relevant criteria for selection**
A: Economic power (GDP)
B: Sustainability performance
C: Digital fitness
D: Scope of sector's activities

Research **suitable rankings** covering criteria to compare performance of countries

Derive top leaders per ranking / criteria (if wanted, select top global leaders and top regional leaders to reflect local specifics as well)

Shortlist the top global leaders and regional leaders

Consolidate the leading countries from each ranking

Clean duplicates and summarize similar countries based on # of countries that should be benchmarked (e.g. consolidate all European countries under European Union (EU) entity to reflect joint policy umbrella)

Make initial selection of best in-class based on rankings chosen

Select top countries (globally & regionally) based on best-in-class per topic & closeness to your context

Deep dive in appendix

Select the top best-in-class leaders in selected criteria based on the shortlisted and streamlined countries

Consider unique characteristics and context of the respective country and ensure that the selection reflects **closeness** based on **comparable parameters** (e.g. role in region (leading economic force), size, population, etc.)

Additional validation with experts is recommended to ensure coverage of globally relevant countries

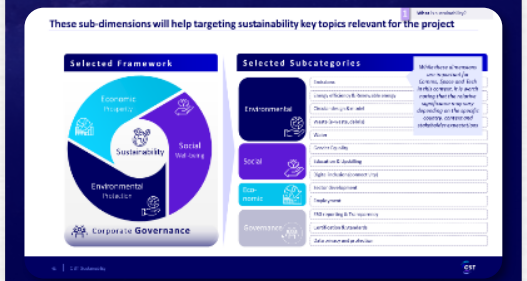
HOW – 2.3.2 Summarize the findings per country, following the framework of analysis

- **STAKEHOLDER**
- **VISION & STRATEGY**
- **COMMITMENTS / TARGETS**
- **POLICIES / REGULATIONS**
- **INITIATIVES**
- **DEEP DIVES**
- **IMPLICATIONS**

Template available

Analyze each dimension of the defined Sustainability framework per country and summarize findings - leverage template and examples provided

Recommended framework



BEST PRACTICE

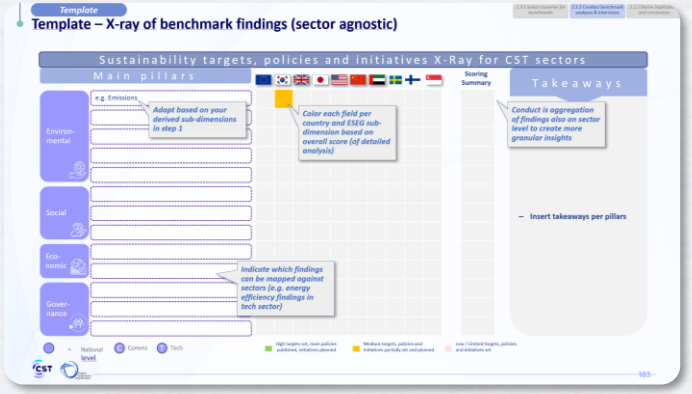
Note to structure benchmark outcomes already from the beginning

- Highlight if initiatives / commitments are driven on **country vs. sector level**
- Ensure to emphasize who **was the responsible entity to publish and drive** captured policies, regulations, etc.
- Capture the **responsibilities of regulators** in the sustainability dimensions, to define the scope of responsibility
- **Deep dive in corporate best practices** to incorporate the private sector efforts and maturity
- **Align sub-dimensions** of benchmark analysis and current state analysis to **ensure comparability**

HOW – 2.3.3 Organize the findings first looking at the cross-sector targets, policies and initiatives, and then a summarizing them by sector

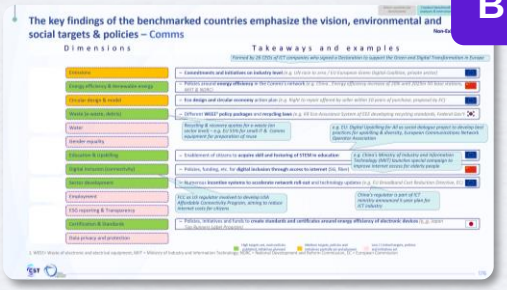
A

KEY FINDINGS ACROSS SECTORS ON TARGETS, POLICIES AND INITIATIVES



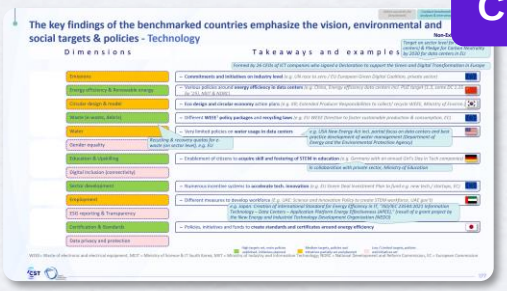
B

KEY FINDINGS OF COMMS SECTOR



C

KEY FINDINGS OF TECH SECTOR



D

AGGREGATED SUMMARY OF BEST PRACTICES

E

+ SELECTED CORPORATE BEST PRACTICES

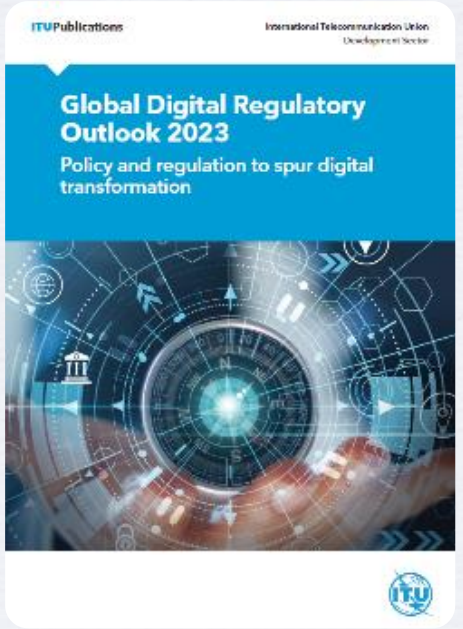
HOW – 2.3 International reports and trends in the sectors on sustainability should be considered as sources of data and best practices

Consider publications of international organizations about development in sustainability and in the sectors as additional source for guidance and best practices
(e.g. ITU Connect 2030, …)

EXEMPLARY INTERNATIONAL REPORTS AND PUBLICATIONS

CAMBRIDGE UNIVERSITY PRESS

BertelsmannStiftung



Connect 2030 Agenda

The "**Connect 2030 Agenda for Global Communication / ICT Development**" focuses on how technological advances will contribute to accelerate the achievement of the United Nations Sustainable Development Goals (SDGs) by 2030

- Sources: SDG Report, ITU

HOW – 2.4 Derive implications and conduct gap analysis between benchmark and current state analysis

Derive key implications per analysis

Compare the global benchmark and local current state analysis outcomes, priorities and conclusions

Compare focus areas of current state assessment and benchmark

Identify gaps in focus areas between benchmark and current state analysis per sector to derive priorities

Derive required actions to address priorities & leverage benchmark best practices

Map the identified priorities against each other to identify global best practices that should be adopted or tailored to local needs, and locally specific areas that should be driven

Translate conclusions into key areas for strategy

Derive the focus dimensions (cross-sector and sector specific) that need to be addressed in strategy based on mapped priorities

Case Study

Exemplary outcomes and templates in appendix

Best practice:

Derive focus areas from analysis and compare with local priorities

Conclude the analysis by **deriving conclusions from benchmark and current state analysis**

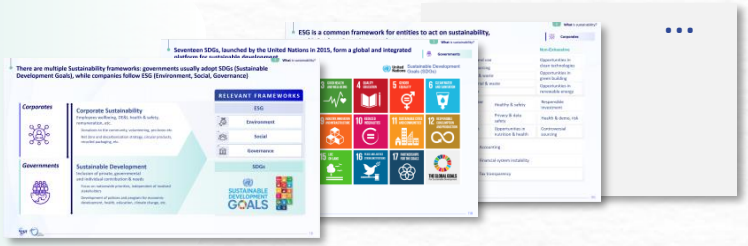
Identify gaps and differences in priorities between current state and benchmark

Ensure to consider **local priorities e.g. from national sustainability strategies** when defining the key results (areas) for framework development in next step

Template available

WHAT – Materials to conduct the benchmark and current state analyses

1 Framework of analysis



2 Current state & Benchmark

3 Gap analysis and derivation Of conclusion

Deep dive in appendix

WHAT – You have achieved these outcomes when closing step 2!

- **Derived subdimensions of the Sustainability framework** of analysis
- **Benchmark analysis** of countries on their sustainability landscape in the ICT sector, including regulatory aspects
- **Current state analysis** of your country to assess current situation in sustainability in the ICT sector
- **Gap analysis of benchmark and current state analysis** results
- **Key priorities for sustainability strategy** design

In step 3 the Sustainability strategy is designed, following a comprehensive approach

01

Getting started and raising awareness

1.1 Define objectives, scope, and budget and get the **leadership buy-in**

1.2 Set up project (onboard the team, define the timelines and set up the PMO)

1.3 Define sustainability along: why, what, how, and launch an education/ awareness campaign

1.4 Map and engage with key stakeholders regarding sustainability in ICT

02

Understanding best practices and current situation

2.1 Define the analysis approach & identify key elements

2.2 Conduct an analysis on the **country's current state** on sustainability

2.3 Conduct a **benchmark** analysis on sustainability

2.4 Derive gaps between current state in own sector vs. leading best practices

03

Designing the sustainability strategy

3.1 Outline **guiding principles**

3.2 Set **vision**

3.3 Define **strategic objectives**

3.4 Set **commitments** and outline **KPIs**

3.5 Develop **implementation initiatives**

In iterative process with frequent stakeholder feedback loops

04

Getting strategy approval and socialize with stakeholders

4.1 Get the **final approval of the ICT sustainability strategy** from the ICT regulator(s) and ministry, also at country level

4.2 Design workshops and tailor materials to engage with each key stakeholder (private sectors, NGOs, etc.)

4.3 Trigger change management by **creating case for changes**

05

Implementing and monitoring

5.1 Define **roadmap** of implementation

5.2 Set up **monitoring** and **review process**

Approach – Designing the sustainability strategy follows a five-step approach and includes the definition of the vision, strategic objectives, commitments and initiatives

APPROACH TO DESIGN THE SUSTAINABILITY STRATEGY

- Explain the **rationale behind the strategy design** (see **WHY**)
- Define **stakeholders** that **need to be involved** in studies and engagement process (see **WHO**)
- **Guide the sustainability strategy design process** along **5 steps**, leveraging C.I.R.C.L.E.S. pillars as strategic foundation (see **HOW**)
- Develop **tailored sustainability strategy** and **content** repository to leverage in design process (see **WHAT**)

WHY

WHO

HOW

WHAT

WHY – A comprehensive approach enables a successful design of the strategy and the definition of the North Star

WHY IS A STRUCTURED DESIGN PROCESS NEEDED?

Follow a comprehensive structure and clear guidance to empower teams and regulators / ministries to create a tailored and actionable sustainability strategy (e.g. by providing tools and templates)

Develop a North Star that guides the strategy design and serves as reference point for aspirations and ambition level

Set clear strategic objectives and commitments to ensure alignment and that everyone is working towards a shared purpose

WHY – We designed C.I.R.C.L.E.S. pillars to create an action-driven sustainability roadmap

C.I.R.C.L.E.S. pillars

C – Cutting-edge Infrastructure

- Focuses on **maintaining, improving and updating infrastructure technologies** of ICT
- Entails **infrastructure** required to run **operations securely and provide quality services and connectivity / digital inclusion** (e.g., mobile / fixed network, spectrum management)

Connectivity includes also the ability of an ICT system to tolerate environmental challenges (weak and episodic channel connectivity, mobility, delay tolerance, as well as tolerance of power and energy constraints)

I – Innovation

- Includes the **ideation** and **creation of innovative technological products and services with sustainability impact** (e.g. Products-as-a-Service), supported by financial incentives from regulator and gov't

R – Reduction of Carbon Footprint

- **Promotes decarbonization** of the ICT sector through e.g. the consumption of clean energy, increasing energy efficiency and reduction of energy consumption in ICT operations

C – Circular Economy

- **Promotes circularity** with a **central focus on e-waste management** generated by electronic and electrical equipment
- Is **driven by holistic models from design to end-of-life stages** for products & services
- Includes general **resource management** (e.g. water)

L – Leapfrog in Digitalization

- Leverage ICT technologies to **enable other sectors to be more sustainable** by **adopting** (digital) **technologies** (e.g. leverage satellite data to monitor climate and track changes)

E – Equality & Inclusion

- Promotes **inclusion, equality and diversity** in the ICT sector
- **Considers marginalized groups in sector's considerations** as customers and workforce (i.e. when recruiting), etc.
- Ensures dedicated **(digital) upskilling measures** to enable everyone to participate

S – Standards & Strategic Guidance

- Reflects governance as regulator's responsibility to guide private sector
- Includes **Standard setting and ESG reporting** requirements to create transparency along sust. performance
- Leverages **international and independent standards and best practices** like the Science Based Targets Initiative

WHY – The C.I.R.C.L.E.S. framework was derived based on benchmark of the key issues of ICT in sustainability but also linking it to the role of regulators and ministries in the sector

ICT ROLE IN SUSTAINABILITY

- What is the role of ICT in Sustainability?
- How can ICT contribute to the sustainable development of a country?

Infrastructure for ICT services	Technology for green solutions
Enablement of other sectors	Driver of innovation
...	

KEY ICT SUSTAINABILITY ISSUES AND OPPORTUNITIES

- What are they key sustainability issues to be tackled in the ICT sector?
- What are the main opportunities that sustainability can generate in the sector

E-waste	Water in data centers
Female inclusion & employment	Market for recycled products
...	

ROLE OF REGULATORS / MINISTRIES IN SUSTAINABILITY

- What is the role of regulators / ministries in sustainability for the ICT sector?
- Where they need to focus to drive the sustainability agenda?

Policies & regulations	Standards & certifications
Awareness	Financial incentives
...	

C	I	R	C	L	E	S
Cutting-edge Infrastructure	Innovation	Reduction of Emissions	Circular Economy	Leapfrog in Digitalization	Equality & Inclusion	Standards & Strategic Guidance

WHO – Stakeholder engagement is essential to ensure alignment in the design process

Define the **stakeholders involved** in the **Sustainability strategy design process**

Design

Internal stakeholders:

- Working team
- Experts
- Challenger

How can they help?

- Design the strategy with **working team**
- Evaluate and challenge interim results with **experts**
- Leverage **experts** for inputs on strategy elements (e.g. initiatives)

Evaluation

Internal stakeholders:

- Other governmental (e.g. ministries) & private (e.g., technology companies, universities) organizations working on national sustainability topics
- Ministers / governors > leadership within own organization

How can they help?

- **Collect feedback** on strategy elements developed from other entities
- Incorporate input and **ensure sign-off** of Sustainability strategy from the **leadership**

How to engage stakeholders?

- Set up **recurring working group meetings**
- **Set up meetings with the leadership team** in the beginning, mid- and end of step 2 to get feedback and direction
- Plan ahead and schedule **interviews with experts and challengers** to get input on the different elements of the strategy and review content developed
- **Set up meetings with internal stakeholders to discuss designed strategy** and get their feedback (for each part of the strategy)
- Ensure **sign-off of strategy by continuously involving them in the design process**

WHO – In step 3, the strategy is designed and validated and improved with feedback from internal stakeholders and experts

★ Actively involved stakeholders in step ▭ Regulator internally

GOVERNMENT

Other governmental entities (e.g. other sector's ministries)

SECTOR'S MINISTRY ★

REGULATOR

Leadership team within regulator / ministry / entity ★

Other departments within regulator / ministry / entity ★

Leadership provide continuous feedback to the project team

Leadership signs off the strategy

Project team ★
Designs and improves the sustainability strategy

PMO ★
Monitors progress

Local non-governmental / social / private sector
(incl. society, academia, private sector companies)

Local stakeholder

International (gov't) organizations (e.g. international industry associations) ★

Leverage expert insights in design process and evaluate results through interviews

International non-governmental / social / private sector (e.g. Multi-national corporations)

International stakeholder

COMMENT

- Project team to design the strategy, leveraging C.I.R.C.L.E.S. pillars as strategic foundations
- Project team to **present** interim results and adapted strategy (based on feedback) to internal stakeholders to get feedback and final sign-off at the end of the design process

HOW – Step 3: Design the Sustainability Strategy, from the guiding principles to initiatives

Step 3

Designing the sustainability strategy

Actions

3.1 Outline **guiding principles**

3.2 Set **vision**

3.3 Define **strategic objectives**

3.4 Set **commitments** and outline **KPIs**

3.5 Develop **implementation initiatives**

Material to leverage

Strategy development covers (incl. templates and sample selection):

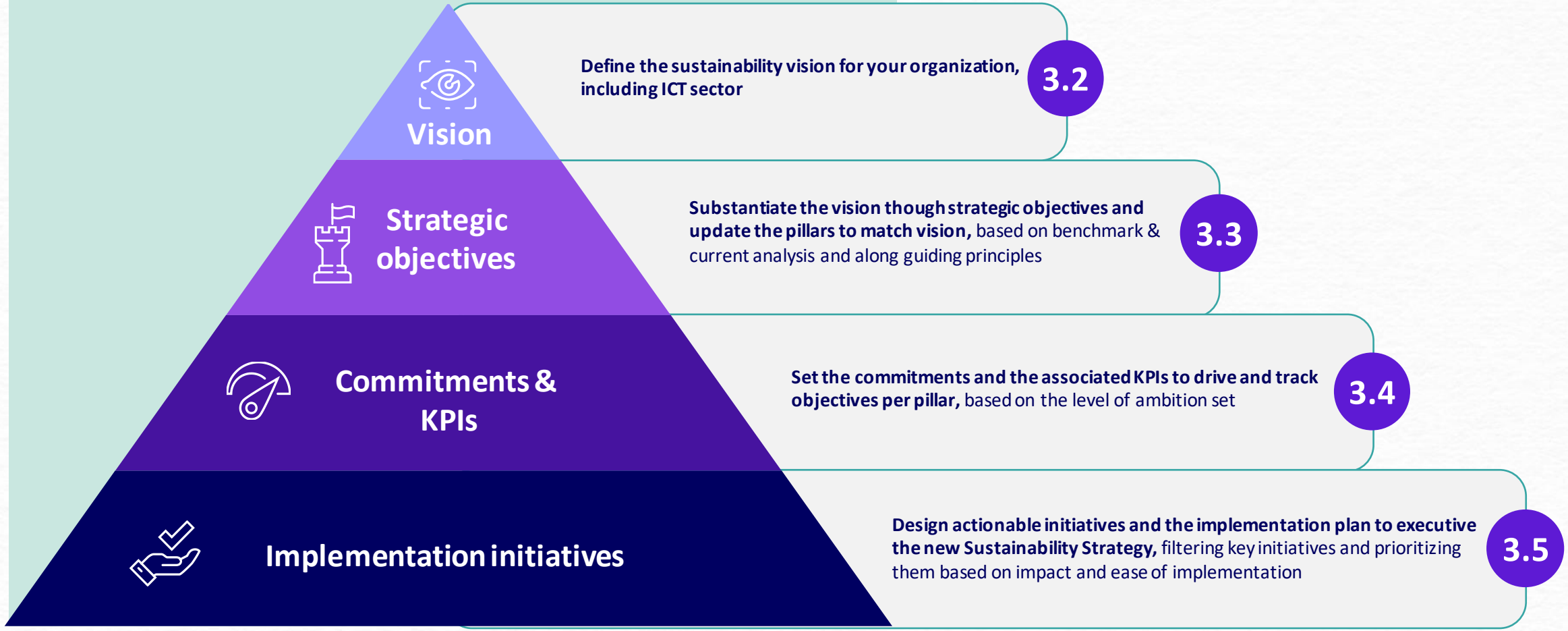
- Guiding Principles
- Visioning guidelines
- CST's C.I.R.C.L.E.S. pillars for ICT as strategic foundation
- KPI set per commitment and long-list of KPIs
- List of exemplary commitments and different level of ambitions
- Long-list of initiatives with high level guidance of implementation and examples from best practices

HOW – The sustainability strategy can be articulated along 5 steps

Guiding Principles

5 guiding principles to ensure the new Sustainability strategy for the ICT sector and meets the requirements identified internally (current state analysis) and externally (benchmark)

3.1



Define the sustainability vision for your organization, including ICT sector 3.2

Substantiate the vision though strategic objectives and update the pillars to match vision, based on benchmark & current analysis and along guiding principles 3.3

Set the commitments and the associated KPIs to drive and track objectives per pillar, based on the level of ambition set 3.4

Design actionable initiatives and the implementation plan to executive the new Sustainability Strategy, filtering key initiatives and prioritizing them based on impact and ease of implementation 3.5

HOW – 3.1 Guiding principles define the requirements that should be considered in each step of the strategy development process

METHODOLOGY TO DERIVE THE STRATEGY AND ASSESS VISION, AMBITION, KPIS AND INITIATIVE OPTIONS

- Define and evaluate **internal and external requirements based on current state analysis and benchmark** that the strategy should meet
- Create principles that **guide the sustainability strategy development**

The principles should ensure to:

1) **Integrate sustainability in the "business-as-usual"**: Embedding sustainability into the (regulatory) operations and decision-making processes of the organization, not only as add-on
2) **Collaborate to increase impact**: Encouraging partnerships and collaborations with stakeholders, including private sector, international organizations and other government entities
3) **Focus on the long-term**: Adopting a forward-thinking approach that prioritizes long-term environmental, social, economic, and governance outcomes over short-term wins

GUIDING PRINCIPLES

A	B	C	D	E
Ambitious	Local	Sector-specific	Regulator-focused	Enabling

Exemplary

Template available

HOW – 3.2 The vision functions as sustainability north star for the sectors and is designed to be aspirational and easy to communicate

Visioning guidelines

- Clearly articulate the purpose and overarching mission of the entity and align the design of the strategy with its core values
- Take a long-term perspective when envisioning impact and outcomes
- Engage with stakeholders to include different perspectives and needs
- Be bold and aspirational to challenge the status quo

There is a need to align sustainability strategies across different gov. entities

- Ensure simplicity to make vision clear and understandable

Step 1: Create different versions of the vision

Step 2: Discuss pros and cons

Embed digitalization of other sectors and evaluate what are the options for enablement

Step 3: Ensure compliance with guiding principles

Step 4: Select vision in collaboration with key stakeholders and use as North Star for strategy development to envision sector's future

HOW – 3.3 The Sustainability C.I.R.C.L.E.S. pillars are the strategic foundation to create a tailored sustainability strategy, including all critical topics for an ICT sustainability Strategy

C.I.R.C.L.E.S. pillars

C – Cutting-edge Infrastructure

- Focuses on **maintaining, improving and updating infrastructure technologies** of ICT
- Entails i**nfrastructure** required to run **operations securely and provide quality services and connectivity / digital inclusion** (e.g., mobile / fixed network, spectrum management)

I – Innovation

- Includes the **ideation** and **creation of innovative technological products and services with sustainability impact** (e.g. Products-as-a-Service), supported by financial incentives from regulator and gov't

R – Reduction of Carbon Footprint

- **Promotes decarbonization** of the ICT sector through e.g. the consumption of clean energy, increasing energy efficiency and reduction of energy consumption in ICT operations

C – Circular Economy

- **Promotes circularity** with a **central focus on e-waste management** generated by electronic and electrical equipment
- Is **driven by holistic models from design to end-of-life stages** for products & services
- Includes general **resource management** (e.g. water)

L – Leapfrog in Digitalization

- Leverage ICT technologies to **enable other sectors to be more sustainable** by **adopting** (digital) **technologies** (e.g. leverage satellite data to monitor climate and track changes)

E – Equality & Inclusion

- Promotes **inclusion, equality and diversity** in the ICT sector
- **Considers marginalized groups in sector's considerations** as customers and workforce (i.e. when recruiting), etc.
- Ensures dedicated **(digital) upskilling measures** to enable everyone to participate

S – Standards & Strategic Guidance

- Reflects governance as regulator's responsibility to guide private sector
- Includes **Standard setting and ESG reporting** requirements to create transparency along sust. performance
- Leverages **international and independent standards and best practices** like the Science Based Targets Initiative

The 7 pillars help countries structuring the strategy, while strategic objectives for each pillar will be customized to the countries' needs, ambitions and priorities

Make sure that other strategies are aligned with the pillars, to ensure that the strategies are coherent across governmental entities

HOW – 3.3 Strategic objectives are set per pillar to give an overarching direction for commitments and initiatives

Set the ambition level per C.I.R.C.L.E.S. pillar to guide progress of the ICT sector

Step 1

Adapt the C.I.R.C.L.E.S. pillars (see template next slide) –and tailor them to your context and needs based on identified priorities and gaps from current state analysis and benchmark

Step 2

Set the strategic objective per pillar and define included focus areas and examples

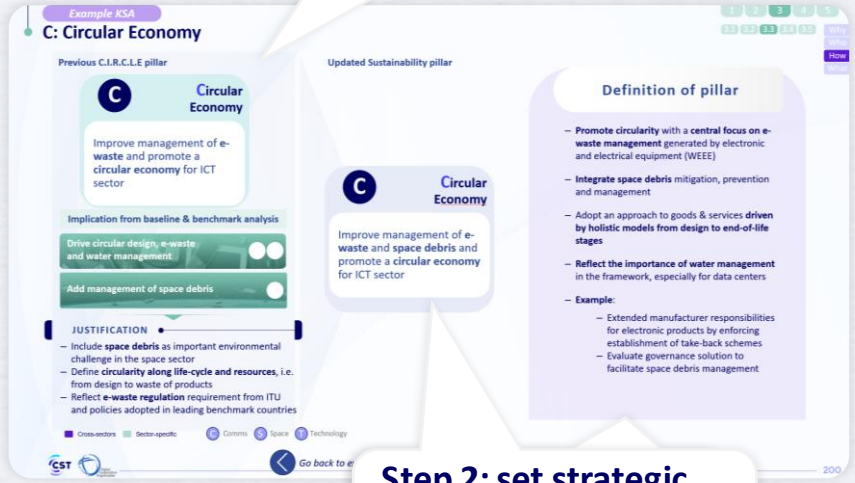
Step 3

Cross-check and review if pillars cover all relevant sectors, global best practices and local priorities

Template available

Example

Step 1: make adaptions



Step 2: set strategic objective and refine definition

HOW – 3.3 The template helps define pillars and strategic objectives of sustainability strategy

Exemplary CST Pillar

C **Cutting-edge infrastructure**

Maintain an **accessible, reliable, resilient, and secure ICT infrastructure**

Implication from current state & benchmark analysis

Map here the identified key areas from current state & benchmark analysis C

JUSTIFICATION

- *Insert conclusions from current state and benchmark analysis*

Tailored Pillar

An exemplary filled-out pillar is presented in appendix

C **Name of pillar**

Strategic objectives per pillar

Definition of pillar

- Insert definition of pillar, including
  - Topics covered
  - Objectives of pillar
  - Examples of topics & initiatives (based on current state analysis and benchmark)

Cross-sectors Sector-specific C Comms T Technology

Template available

HOW – 3.4 KPIs – A long-list of KPIs should cover all strategy pillars and relevant sectors to increase transparency and monitoring of sustainability progress

Create a long-list of sustainability KPIs per pillar

The collected KPIs for the sustainability strategy can originate from several sources

- Benchmark
- \+ Current state
- \+ Expert inputs
- \+ Literature

KPIs that are already being tracked in the ICT sector
(e.g. Comms – 5G PoP coverage)

New sector KPIs based on benchmark insights and global standards
(e.g. ITU e-waste directive)

Working on the KPIs in the sustainability strategy will help to improve overall transparency on sustainability performance

Template available

See Appendix for long-list of KPIs organized by strategic objectives

	C	I
Comms	• Population who use internet (%) • FBB speed (Mbps) • MBB speed (Mbps) • FTTH penetration (%HHs) • UN Comms infrastructure index score • …	• Total funds in SAR for innovation • # new businesses / SMEs growth • # people studying stem • # new courses in relevant topics • # new publications per sector
Technology	• # of data centers • Total size of data centers **(sq m)**	• Amount of funds in SAR raised by KSA IT / ET players • Total funds in SAR for innovation • # new businesses / SMEs growth • # people studying stem • # new courses in relevant topics • # new publications per sector

HOW – 3.4 Commitments need to be SMART – Specific, measurable, achievable, relevant and timebound

SPECIFIC

KPIs are defined for each department and cascade down to individuals in order to drive the right behaviors

KPIs include clear explanation of what they measure, as well as their link to the goals

ACHIEVABLE

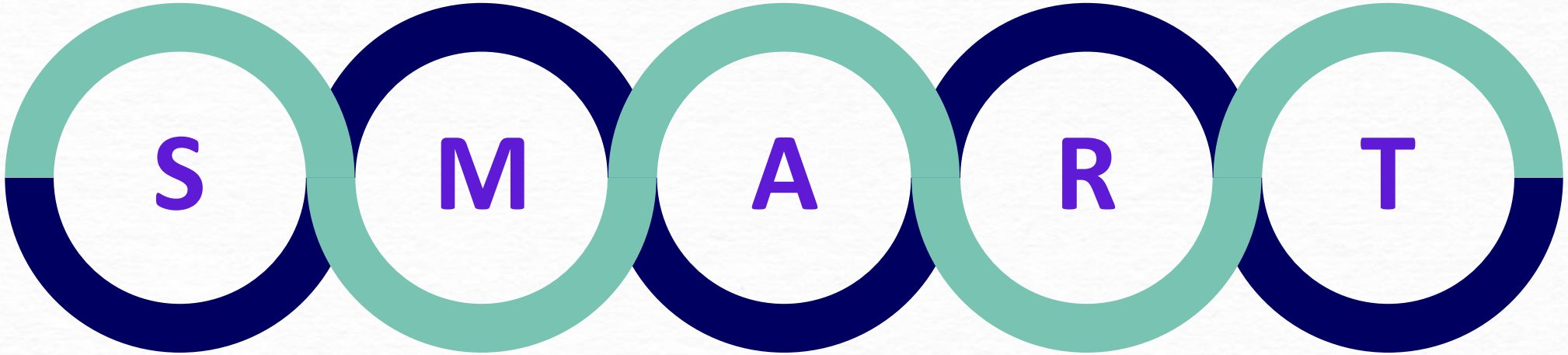
KPIs are being **validated with multiple stakeholders** to ensure realistic and achievable targets are set (e.g. there are or there will be systems in place to measure them)

TIME-BOUND

Objectives will be set for 2030

KPIs are measured **monthly, quarterly, yearly**

An **implementation plan** has been devised for KPIs based on impact, ease of implementation and maturity of the function / process



MEASURABLE

KPIs are measurable and inclusive of **description / calculation method**

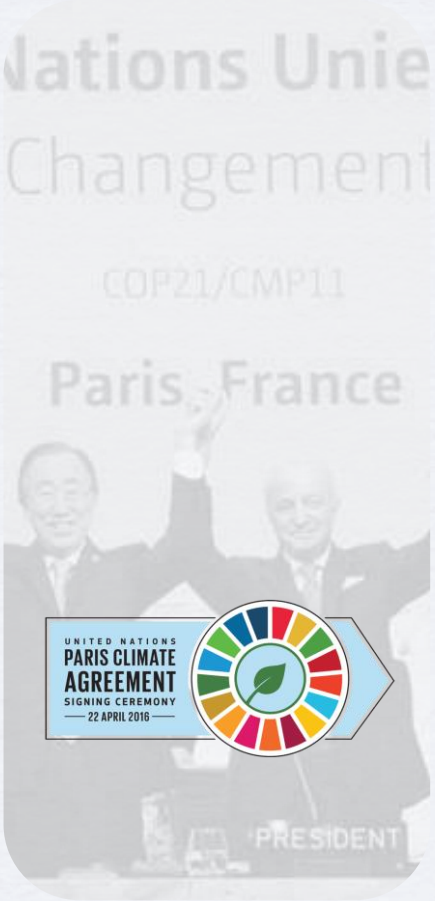
KPIs are categorized into **input** (effort to achieve an objective) and **output** (directly related to performance)

RELEVANT

The **number of KPIs** per function have been kept to a minimum (**2 per pillar on average**)

HOW – 3.4 Set commitments per pillar to contribute to progress towards strategic objectives

Look at previous & current country's commitments…



…then add global, national & sectorial considerations

Global standards derived from benchmark, ITU, etc..

National ambitions and country-level ambitions

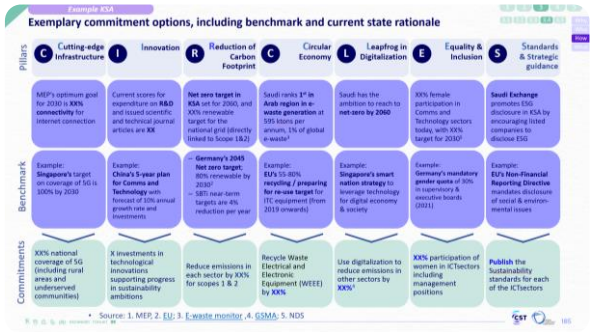
Sector ambitions based on strategies and policies e.g. National Digital Strategy

Applied through a sustainability lens

"Regulators must make 'digital' responsible and fit for the future"[1]

Identify different options per pillar…

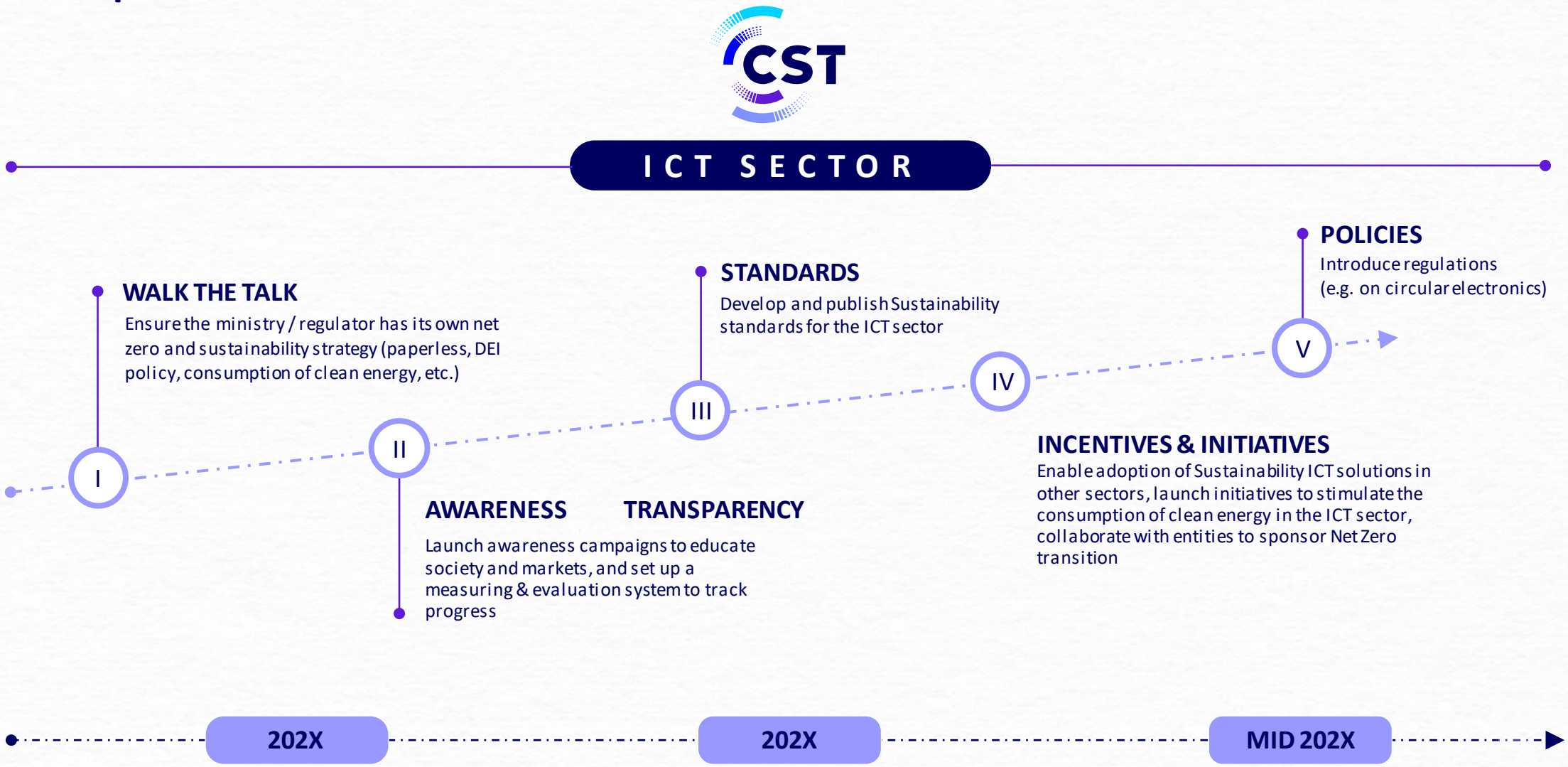
…and align on set of commitments that will be published



Source: 1. ITU

Template available

HOW – 3.5 Initiatives will spam across the Sustainability Journey, from “walk the talk” to policies

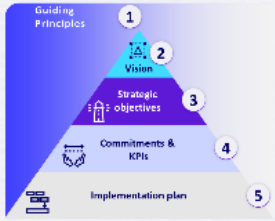


HOW – 3.5 Implementation initiatives are short-listed through a filtering process

Vision, Strategic Objectives & Commitments including KPIs

Top-Down

Drive initiatives for each pillar based on experts and internal stakeholders' inputs



Benchmark and Current state analysis

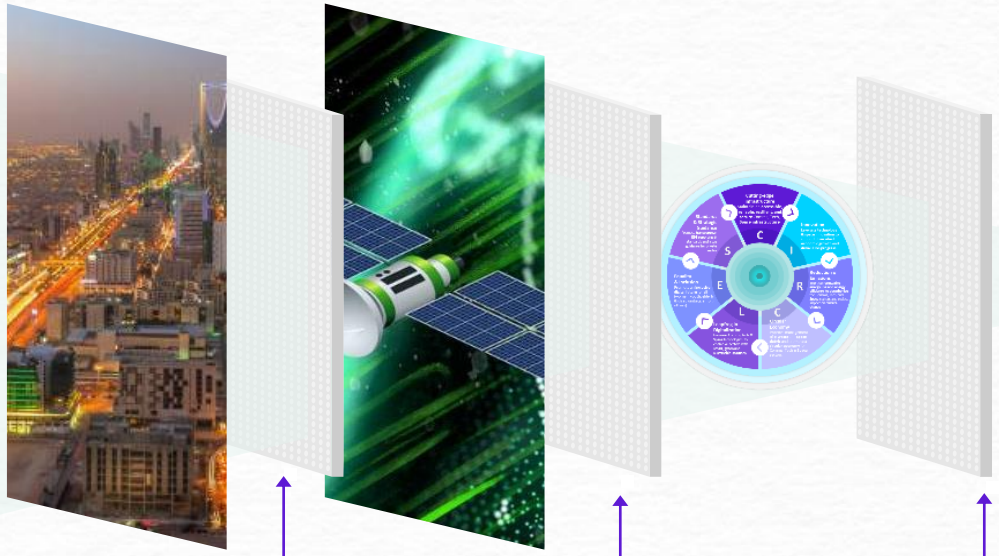
Bottom-Up

Collect initiatives to drive Sustainability in the ICT sector based on benchmark and current state analysis

Benchmark analysis

Current state analysis

Long list of initiatives



1st Filter:

Relevance in your context

Is it addressing a key gap area?

2nd Filter:

Relevance for new Sustainability Strategy

Is it aligned with the Sustainability vision, strategic objectives and commitments defined?

3rd Filter:

New and Enhanced initiatives

Which initiatives are already in place?

Which initiatives are new or enhancing existing efforts?

Short-list of Initiatives

HOW – 3.5 Exemplary initiatives along C.I.R.C.L.E.S.: Cutting-edge Infrastructure

#	Pillar	New Initiatives Recommended	Sector	Sustainability	CST Role	Initiative Type
1	**Cutting-edge Infrastructure** Maintain an **accessible, reliable, resilient, and secure** ICT **infrastructure**	*Adopt* Sustainability (Environmental and Social impact) as **additional criteria to manage spectrum,** enhancing current processes	ICT	Environmental Social	Accountable	Infrastructure & Solution
2	**Innovation** Leverage **technology and space innovation** to support **diversified economic growth, employment** and **drive SDGs progress**	*Work with education* programs to include **sustainability innovations in ICT sector**	ICT	Social Economic	Responsible	Awareness & Capabilities
3		*Integrate* **sustainability criteria in existing technology and innovation programs / funds** to empower and selectively favor start-ups and SMEs who implemented sustainable business practices	ICT	Economic	Responsible	Financial Incentive
4		***Create* new products / services** (incentives, subsidies, etc.) in existing programs / funds sustainability fund –to be established to **incentivize sustainability solutions** in ICT sector	ICT	Economic Social Environment	Responsible	Financial Incentive

To be enhanced New

HOW – 3.5 Further prioritization assessment of initiatives is required to prepare the implementation cadence

Prioritization assessment is focused on two dimensions

1 Ease of implementation

- A measure of the **initiative's relative ease of implementation**, taking into account the as-is status of your ICT ecosystem
- **Ease of implementation is composed of:**
  - Scope (# of involved stakeholders)
  - Effort required (# of man-days)
  - Capabilities / readiness to implement (building on existing efforts)
  - Time to implement
  - Level of investment
- **Relative rating on a scale from 1-5**

Easy 5 | **Hard 3** | **Complex 1**

2 Impact

- A **measure of the initiative's relative impact**, taking into account environmental, social and economic aspects
- **Impact is composed of:**
  - Number of beneficiaries
  - Incremental improvement to existing situation (e.g. potential economic value generated by the initiative specific to the sectors, enhancement to society and quality of life, contribution to improve international ranking)
  - Specific enhancement of ICT sector
- **Relative rating on a scale from 1-5**

High 5 | **Medium 3** | **Low 1**

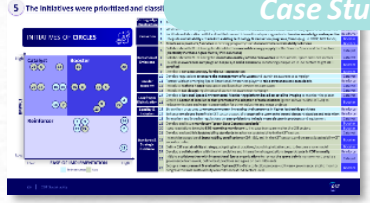
Outcome:
Prioritization of initiatives in matrix and classification into waves of implementation

Wave 1: High impact, high ease of implementation

Wave 2: High impact, low ease of implementation

Wave 3: Low impact, low ease of implementation

Case Study



Template available
EXPANDED TOOLKIT

HOW – 3.5 Short-listed initiatives can be anaylzed along four different aspects…

SECTOR

- Comms
- Others
- Technology

Comprehensively cover all relevant sectors within the initiatives

ROLE OF THE ENTITY

- Accountable
- Responsible
- Consulted / Informed

Target to center initiatives around the scope of influence of your organization

Sustainability

- Environmental
- Economic
- Social
- Governance

Set the focus on Sustainability consistent with the priorities covered in the strategy

INITIATIVE TYPE

- Infrastructure & Solutions
- Financial Incentive
- Awareness & Capabilities
- Regulation & Transparency

Consider to focus on regulations & transparency initiatives, which are complimentary to a regulator's role

HOW – 3.5 …and detailed in initiative charters covering description, example & roadmap (1/2)

Case Study

R Reduction of Carbon Footprint

Launch an awareness campaign on carbon footprint and set up a mentorship program for Net Zero strategies

Initiative category: **E** S E G

Initiative Owner	Role of the entity	Supporting Entities	Potential Partners
CST **(R)(A)**	Responsible for project	MCIT **(I)** KAUST **(C)**	

New | Booster | To be enhanced | Catalyst | Reinforcer

Complexity 2

Description and Overview

Objective

Improve awareness in the CST sectors on carbon footprint, from target setting to mitigation actions. Additionally, a mentorship program will be set up to enable companies in the CST sectors to set up Net Zero strategies, building a set of technology solutions and guidance for the private sector to reach net zero.

Overview

The communication campaign will target all entities within the CST sectors with information on emissions setting, best practice for emission mitigation and guidance for applying Net Zero strategies.

Sector

Comms | **Technology**

Budget	Timeline
NA	2023

Benchmark examples

UK Government public engagement
After finding evidence of a lack of understanding of what how net zero will impact people's and businesses' lives, the National Audit Office stressed on the importance of made these recommendations:

1. Establish a public engagement strategy that sets out how the government will ensure ongoing buy-in to the changes required for net zero, including tailoring messages to different audience groups
2. Ensure data that enables monitoring of cumulative social and economic impact on different individuals and communities is readily available so that the government can consider different courses of action[1]

Risks and Mitigation

- RISK 1: Low decarbonization efforts in the private sector
- MITIGATION 1: Provide mentorship and guidance for Net Zero strategies

Template available

HOW – 3.5 …and detailed in initiative charters covering description, example & roadmap (2/2)

KPIs & Impact

KPI	Description
# Net Zero commitments	Number of companies committed to Net Zero targets
# Net Zero by 2050	Number of companies committed to Net Zero by 2050

Guidance on how to measure KPIs and impact

- Continuously track local companies that are committing to Net Zero
- Ensure that proper training and awareness is spread on methodologies to measure emissions accurately and report on it
- Follow which companies are committing to all scopes

Activities Roadmap

Key activities	2024 Q1	2024 Q2	2024 Q3	2024 Q4
Conduct research and preperation to understand total emissions				
Identify key stakeholders and potential participants in campaign				
Develop communication materials and channels including brochures, videos, online content, etc.				
Promote awareness campaign through various channels				
Organize informational sessions, workshops and training programs to educated private sector				

WHAT – Materials to design the sustainability strategy

5-step approach to design sustainability strategy, including:

1	2	3	4	5
Guiding Principles templates	Visioning templates	Strategic objective template & KSA example	KPI long-list & commitment options	Initiative charter & templates to detail initiatives

Deep dive in appendix

WHAT – You have achieved these outcomes when closing step 3!

- **Guiding principles** for Sustainability strategy design
- Defined **Sustainability vision**
- **Adapted C.I.R.C.L.E.S. pillars** including strategic objectives
- **Sustainability commitments** per pillar
- **Short-list of initiatives** to drive Sustainability strategy implementation

High-level design of the sustainability strategy for the ICT sector

In step 4 approval and buy-in of key stakeholders for the strategy implementation is achieved

01

Getting started and raising awareness

1.1 Define objectives, scope, and budget and get the **leadership buy-in**

1.2 Set up project (onboard the team, define the timelines and set up the PMO)

1.3 Define sustainability along: why, what, how, and launch an education/ awareness campaign

1.4 Map and engage with key stakeholders regarding sustainability in ICT

02

Understanding best practices and current situation

2.1 Define the analysis approach & identify key elements

2.2 Conduct an analysis on the **country's current state** on sustainability

2.3 Conduct a **benchmark** analysis on sustainability

2.4 Derive gaps between current state in own sector vs. leading best practices

03

Designing the sustainability strategy

3.1 Outline **guiding principles**

3.2 Set **vision**

3.3 Define **strategic objectives**

3.4 Set **commitments** and outline **KPIs**

3.5 Develop **implementation initiatives**

In iterative process with frequent stakeholder feedback loops

04

Getting strategy approval and socialize with stakeholders

4.1 Get the **final approval of the ICT sustainability strategy** from the ICT regulator(s) and ministry, also at country level

4.2 Design workshops and tailor materials to engage with each key stakeholder (private sectors, NGOs, etc.)

4.3 Trigger change management by **creating case for changes**

05

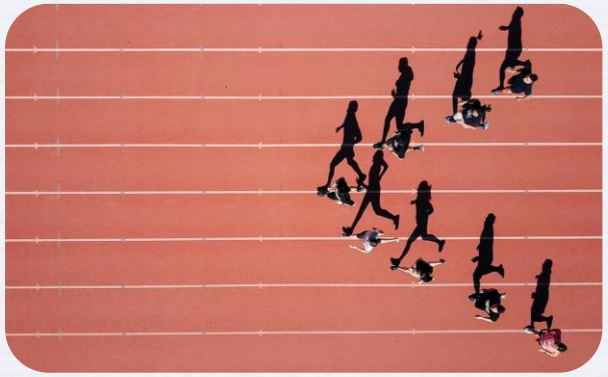
Implementing and monitoring

5.1 Define **roadmap** of implementation

5.2 Set up **monitoring** and **review process**

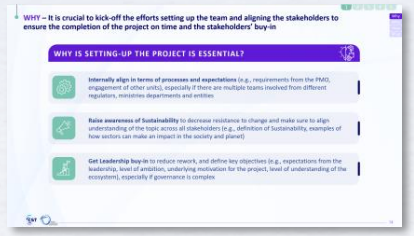
Approach – To get stakeholder buy-in for the implementation of the Sustainability strategy workshops and change management are required

Approach to get buy-in of stakeholders

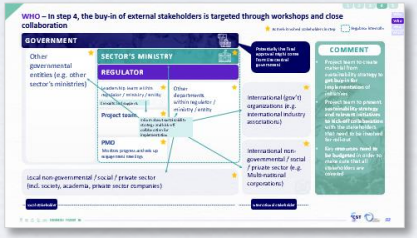


- Explain the rationale behind the **stakeholder buy-in** (see **WHY**)
- Define **stakeholders** that **need to be engaged** (see **WHO**)
- **Conduct two main actions** (see **HOW**)
  - **Get the final approval** of the sustainability strategy from the leadership team
  - **Conduct workshops** and **tailor material** for engaging with each key stakeholder
  - Trigger change management by **creating case for changes**
- Summarize **outcomes of step 4** and **checklist** to achieve buy-in (see **WHAT**)

WHY

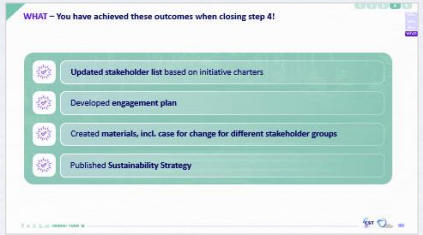


WHO



HOW

WHAT



WHY – Stakeholder buy-in is a prerequisite for a successful implementation, ensuring collaboration, credibility and influence

Critical success factors for successful implementation of the sustainability strategy through buy-in from stakeholders:

Critical success factors for successful implementation of the sustainability strategy through buy-in from stakeholders:

01 **Support and Collaboration:** Ensure alignment, synergies and collaboration between entities needed to implement initiatives (e.g. other ministries and sector regulators)

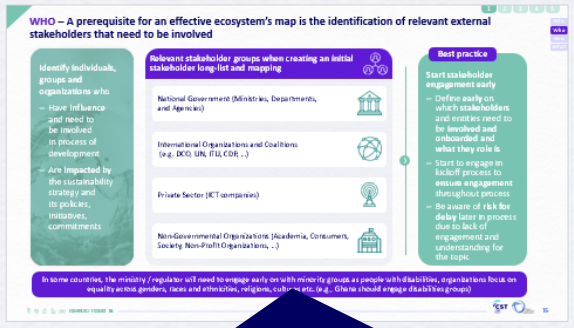
02 **Credibility and Reputation:** Demonstrate commitment to sustainable practices, build credibility and reputation through the buy-in of external stakeholders

03 **Influence and Enablers:** Distribute responsibilities and unlock access to further expertise, fundings and networks to ensure successful implementation of the sustainability strategy

WHO – The stakeholders from step 1 needed to implement initiatives are identified

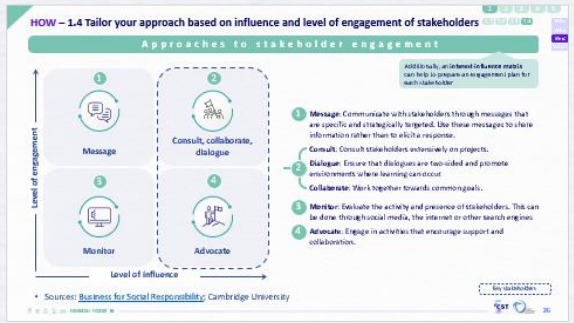
Exemplary template for stakeholder engagement list

RECAP of stakeholder mapping



Potentially revise and update stakeholder mapping and engagement approach

…and identification of engagement strategies



Group	Identified external key stakeholders needed to implement sustainability strategy initiatives
National Government	– National innovation funds
Ministries on government level	– Ministry of Energy – Ministry of Environment
Academia	– Science departments of leading universities
Private sector companies in ICT	– …

Identify the key external stakeholders that were identified in the initiatives as *initiative owner, supporting entities or potential partners*

WHO – In step 4, the buy-in of external stakeholders is targeted through workshops and close collaboration

Actively involved stakeholders in step

Regulator internally

GOVERNMENT

Potentially the final approval might come from the central government

Other governmental entities (e.g. other sector's ministries)

SECTOR'S MINISTRY

REGULATOR

Leadership team within regulator / ministry / entity

Consults and supports

Project team

Inform about sustainability strategy and kick-off collaboration for implementation

PMO

Monitors progress and sets up engagement meetings

Other departments within regulator / ministry / entity

International (gov't) organizations (e.g. international industry associations)

International non-governmental / social / private sector (e.g. Multi-national corporations)

Local non-governmental / social / private sector (incl. society, academia, private sector companies)

COMMENT

- Project team to create material from sustainability strategy to **get buy-in for implementation** of initiatives
- Project team to **present sustainability strategy and relevant initiatives to kick-off collaboration** with the stakeholders that need to be involved for roll-out
- Key **resources need to be budgeted** in order to make sure that all stakeholders are covered

Local stakeholder

International stakeholder

HOW – Step 4: Get stakeholder buy-in through collaborative workshop and cases for change

Step 4

Getting strategy approval and socialize with stakeholders

Actions

4.1 Get the **final approval of the ICT sustainability strategy** from the ICT regulator(s) and ministry, also at country level

4.2 Design workshops and tailor materials to engage with each key stakeholder (private sectors, NGOs, etc.)

4.3 Trigger change management by **creating case for changes**

Material to leverage

- **Guideline to approach stakeholders** identified in Step 1
- Introduction to the **case for change approach**
- **Guidance on how to create a case for changes**

HOW – Follow three steps to engage with stakeholders, triggering change management by creating cases for change

Set the ambition level per C.I.R.C.L.E.S. pillar to guide progress of the ICT sector

4.1 Final approval

Get the final approval of the ICT sustainability strategy from the relevant entity that holds the mandate

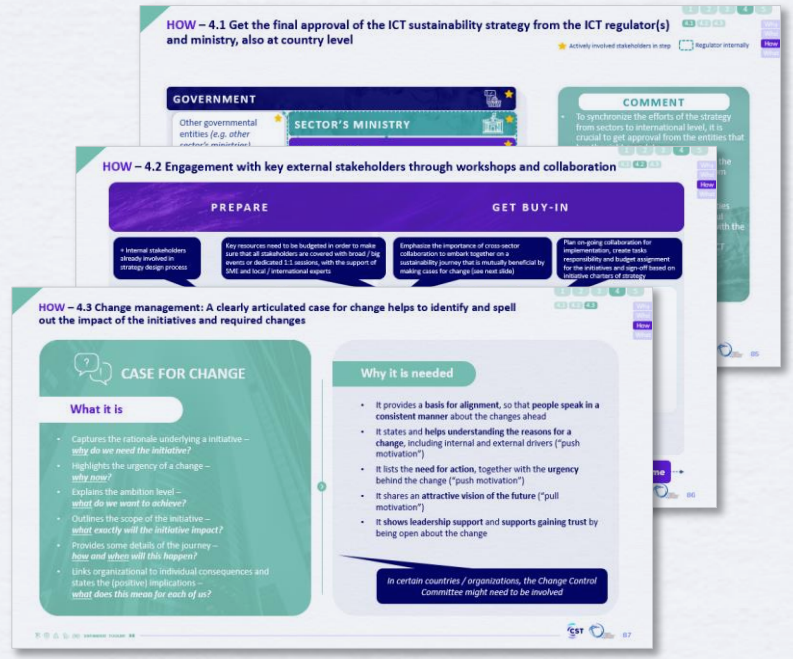
4.2 Engagement plan

Set the strategic objective per pillar and define included focus areas and examples

4.3 Case for change

- **Leverage cases for change** to align on objectives, navigate collaboration for implementation, explain rationales behind initiatives and get buy-in for the initiatives
- **Create awareness** in society, public sector and gov't entities

Leverage Sustainability strategy, initiative charters, and case studies from best practices



HOW – 4.1 Get the final approval of the ICT sustainability strategy from the ICT regulator(s) and ministry, also at country level

Actively involved stakeholders in step

Regulator internally

COMMENT

- To synchronize the efforts of the strategy from sectors to international level, it is crucial to get approval from the entities that has the right mandate
- Depending on who has the mandate, the final approval might have to come from Regulators, Ministry, or even the Government
- Buy-in from other governmental entities might be required to ensure successful implementation (e.g., collaboration with the Ministry of Energy to promote the consumption of clean energy in the ICT sector)

HOW – 4.2 Engagement with key external stakeholders through workshops and collaboration

PREPARE

GET BUY-IN

+ Internal stakeholders already involved in strategy design process

Key resources need to be budgeted in order to make sure that all stakeholders are covered with broad / big events or dedicated 1:1 sessions, with the support of SME and local / international experts

Emphasize the importance of cross-sector collaboration to embark together on a sustainability journey that is mutually beneficial by making cases for change (see next slide)

Plan on-going collaboration for implementation, create tasks responsibility and budget assignment for the initiatives and sign-off based on initiative charters of strategy

Recap

Covered in 1.3

Update stakeholder mapping and create engagement plan (see 4 - WHO)

Create tailored documents, highlighting the relevant strategy parts and short-listed initiative per stakeholder

Key external stakeholders

Set up **initial meetings** to discuss created Sustainability strategy and relevant initiatives

Organize follow-up workshops and working meetings to **discuss initiative charters**

Publish developed **sustainability strategy**

...

Ensure to emphasize benefits and opportunities of collaboration

Explain objectives of initiatives, why their support is required, and show collaboration options and required resources, actions, etc.

Other stakeholders

Time

HOW – 4.3 Change management: A clearly articulated case for change helps to identify and spell out the impact of the initiatives and required changes

CASE FOR CHANGE

What it is

- Captures the rationale underlying a initiative – ***<u>why</u> do we need the initiative?***
- Highlights the urgency of a change – ***<u>why now</u>?***
- Explains the ambition level – ***<u>what</u> do we want to achieve?***
- Outlines the scope of the initiative – ***<u>what</u> exactly will the initiative impact?***
- Provides some details of the journey – ***<u>how</u> and <u>when</u> will this happen?***
- Links organizational to individual consequences and states the (positive) implications – ***<u>what</u> does this mean for each of us?***

Why it is needed

- It provides a **basis for alignment**, so that **people speak in a consistent manner** about the changes ahead
- It states and **helps understanding the reasons for a change**, including internal and external drivers (“push motivation”)
- It lists the **need for action**, together with the **urgency** behind the change (“push motivation”)
- It shares an **attractive vision of the future** (“pull motivation”)
- It **shows leadership support** and **supports gaining trust** by being open about the change

In certain countries / organizations, the Change Control Committee might need to be involved

HOW – 4.3 Leverage cases for change to create awareness and buy-in from public sector, private companies and the society

Stakeholder group	Approach and rational	Exemplary communication elements in cases for change

Public sector (gov't entities, ministries)	• Foster **broader awareness and communication** on sustainability
	• Emphasize **impact on (international) reputation**
	• **Activity**:
	  • Cross-sector collaboration to strengthen efforts in sustainability
	  • Knowledge sharing and exchange
		What do we want to achieve?
		"Sustainability touches all sectors and has international momentum – if we start acting now, we can actively contribute rather than only react later"

Private sector	• **Support private sector's efforts** on sustainability by giving guidance and overarching sector direction (e.g. through strategy vision) • Create **awareness and foster exchange** with companies • **Activity:** • Workshops, trainings, round tables, panel discussions, …	**Why now?** *"Sustainability yields business opportunities – pursue them from a position of strength by starting the transformation yourself"*
Society	• Create **general awareness and knowledge** about sustainability within the society • **Collaborate** with academia and other organizations to maximize reach • **Activity:** • Marketing campaigns, information material, …	**What does this mean for each of us?** *"Climate change will be a threat to the prosperity and peace for our children – contribute to make the world a better place for future generations"*

WHAT – Materials to leverage when seeking stakeholder buy-in

The material shared includes:

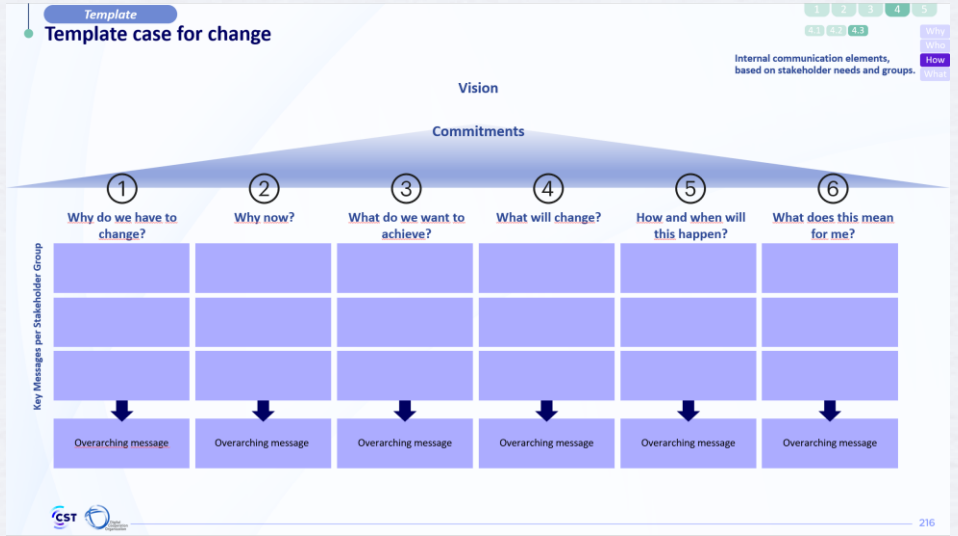
Stakeholder list add-on

Template to create cases for change


Template
Stakeholder list

Group	Identified external key stakeholders needed to implement sustainability strategy initiatives
National Government	– National innovation funds
Ministries on government level	– Ministry of Energy – Ministry of Environment
Academia	– Science departments of leading universities
Private sector companies in ICT	– ...
...	

214



Deep dive in appendix

WHAT – You have achieved these outcomes when closing step 4!

- **Updated stakeholder list** based on initiative charters
- Developed **engagement plan**
- Created **materials, incl. case for change for different stakeholder groups**
- Published **Sustainability Strategy**

In step 5 the implementation roadmap and monitoring process is set up

01

Getting started and raising awareness

1.1 Define objectives, scope, and budget and get the **leadership buy-in**

1.2 Set up project (onboard the team, define the timelines and set up the PMO)

1.3 Define sustainability along: why, what, how, and launch an education/ awareness campaign

1.4 Map and engage with key stakeholders regarding sustainability in ICT

02

Understanding best practices and current situation

2.1 Define the analysis approach & identify key elements

2.2 Conduct an analysis on the **country's current state** on sustainability

2.3 Conduct a **benchmark** analysis on sustainability

2.4 Derive gaps between current state in own sector vs. leading best practices

03

Designing the sustainability strategy

3.1 Outline **guiding principles**

3.2 Set **vision**

3.3 Define **strategic objectives**

3.4 Set **commitments** and outline **KPIs**

3.5 Develop **implementation initiatives**

In iterative process with frequent stakeholder feedback loops

04

Getting strategy approval and socialize with stakeholders

4.1 Get the **final approval of the ICT sustainability strategy** from the ICT regulator(s) and ministry, also at country level

4.2 Design workshops and tailor materials to engage with each key stakeholder (private sectors, NGOs, etc.)

4.3 Trigger change management by **creating case for changes**

05

Implementing and monitoring

5.1 Define **roadmap** of implementation

5.2 Set up **monitoring** and **review process**

Approach – To start the strategy implementation, a roadmap and monitoring process are designed

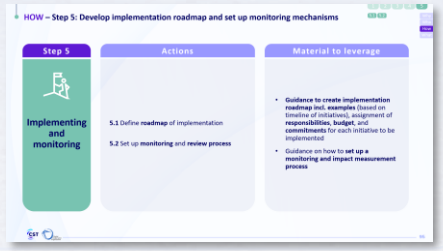
APPROACH TO IMPLEMENT STRATEGY AND MONITOR PROGRESS

- Explain rationale of **roadmap design and monitoring** (see **WHY**)
- Continue engaging **stakeholders,** expanding to those relevant for the implementation (see **WHO**)
- **Conduct three main actions** (see **HOW**)
  - Set up an **implementation roadmap,** incl. assignment of **responsibilities**, **budget** and **targets**
  - Design **monitoring and reporting mechanisms**
  - Plan **continuous refinement** and improvement measures
- Summarize **outcomes of step 5** and **checklist** of implantation and monitoring (see **WHAT**)

WHY

WHO

HOW



WHAT

WHY – Bringing the sustainability strategy to life requires a structured implementation and progress monitoring process

WHY IS A STRUCTURED IMPLEMENTATION CRUCIAL?

Develop clear roadmap for achieving strategic objectives and commitments, ensuring alignment and focus across different stakeholders

Ensure accountability and efficiency by defining roles, responsibilities, and timelines, enabling effective coordination and collaboration within and across sectors

Facilitate monitoring and evaluation of progress, allowing for timely adjustments and improvements to the strategy, increasing successful achievement of ambitions

WHO – In step 5, implementation plans are detailed by involved stakeholders

Actively involved stakeholders in step
Regulator internally

GOVERNMENT

Other governmental entities *(e.g. other sector's ministries)*

SECTOR'S MINISTRY

REGULATOR

Leadership team within regulator / ministry / entity

Consults and supports

Project team

PMO

Sets up ongoing monitoring process

Other departments within regulator / ministry / entity

Submit detailed implementation plan per initiative

International (gov't) organizations (e.g. international industry associations)

International non-governmental / social / private sector (e.g. Multi-national corporations)

Local non-governmental / social / private sector (incl. society, academia, private sector companies)

Local stakeholder

International stakeholder

COMMENT

- PMO and project team to consolidate implementation plans per initiative into an overarching Sustainability strategy implementation plan
- PMO to set up governance and monitoring mechanisms to track progress of implementation

HOW – Step 5: Develop implementation roadmap and set up monitoring mechanisms

Step 5	Actions	Material to leverage
Implementing and monitoring	**5.1** Define **roadmap** of implementation **5.2** Set up **monitoring** and **review process**	• **Guidance to create implementation roadmap incl. examples** (based on timeline of initiatives), assignment of **responsibilities**, **budget**, and **commitments** for each initiative to be implemented • Guidance on how to **set up a monitoring and impact measurement process**

HOW – Developing a roadmap and monitoring progress are essential to ensure a successful implementation of the sustainability strategy

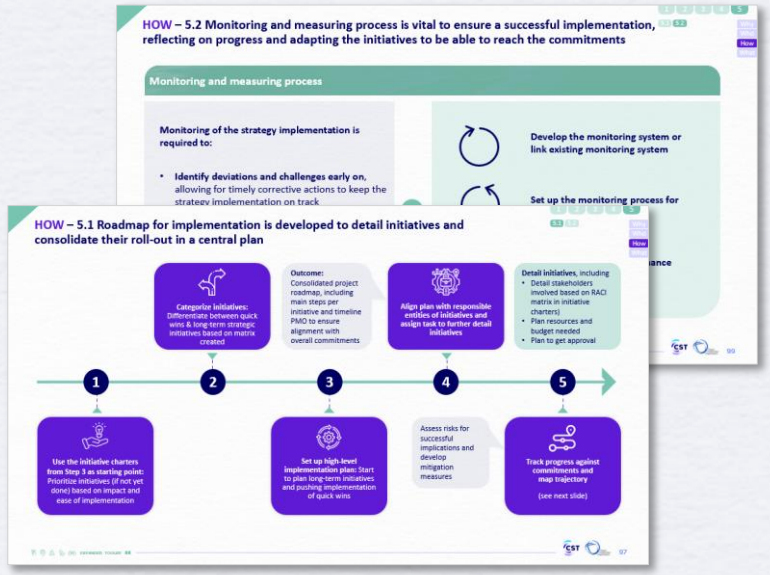
Steps of a successful implementation and monitoring process

5.1 Roadmap

Design implementation roadmap including the initiatives of the strategy, time-span for initiating roll-out and alignment with responsible stakeholders

5.2 Monitoring

Set up mechanisms to **monitor and measure impact** to track progress and impact against strategic objectives and commitment



HOW – 5.1 Roadmap for implementation is developed to detail initiatives and consolidate their roll-out in a central plan

1

Use the initiative charters from Step 3 as starting point: Prioritize initiatives (if not yet done) based on impact and ease of implementation

2

Categorize initiatives: Differentiate between quick wins & long-term strategic initiatives based on matrix created

3

Set up high-level implementation plan: Start to plan long-term initiatives and pushing implementation of quick wins

Outcome: Consolidated project roadmap, including main steps per initiative and timeline PMO to ensure alignment with overall commitments

4

Align plan with responsible entities of initiatives and assign task to further detail initiatives

Assess risks for successful implications and develop mitigation measures

5

Track progress against commitments and map trajectory

(see next slide)

Detail initiatives, including
- Detail stakeholders involved based on RACI matrix in initiative charters)
- Plan resources and budget needed
- Plan to get approval

HOW – 5.1 Exemplary timeline for initiative implementation that can be used as blueprint for consolidated plan

KEY ACTIVITIES	2024 Q1	2024 Q2	2024 Q3	2024 Q4	2025 Q1	2025 Q2	2025 Q3	2025 Q4
A. Collaborate with ministries to stimulate the consumption of clean energy in CST sectors								
6. Stimulation of clean energy consumption for the Comms, Space and Tech sectors								
7. Incentivization of investment to consume clean energy in the Comms, Space and Tech sectors								
B. Introduce circularity regulations to manage e-waste and introduce circular business models								
10. Regulations on management of e-waste								
12. Right to Repair regulation								
13. Eco-design regulation								
18. Broadened regulation of energy labels and inclusion of more electronic products / equipment								
C. Enable adoption of Sustainability Tech/Comms solutions in other industries								
4. Sustainability criteria in existing technology and innovation programs/ funds								
5. New products / services in existing programs / funds to incentivize sustainability solutions								
15. Sustainability Center of Excellence that promotes adoption of tech solutions								
D. Develop and publish Sustainability standards for the CST sectors								
19. Mandatory Green Data Centers standards								
21. Introduction of Sustainability standards for the Comms, Space and Tech sectors								
E. Initiate discussions with Space international entities to address space debris management								
14. National Space Environmental Monitoring platform								
25. Collaboration with international Space organizations for review of space debris management								
F. Launch awareness campaign and set up a measuring & evaluation system								
8. Awareness campaign and mentoring on Net Zero decarbonization strategies								
20. Mandatory ESG reporting mandatory for the Comms, Space and Tech sectors								
22. Sustainability certifications (CDP, ISO, etc) with sustainability index / award								
26. Set up a measurement and evaluation system								
G. Define CST Sustainability and Net Zero Strategy								
9. Develop CST net zero								

Initiative design phase

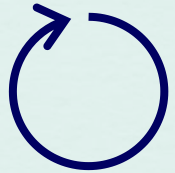
Initiative implementation And monitoring phase

HOW – 5.2 Monitoring and measuring process is vital to ensure a successful implementation, reflecting on progress and adapting the initiatives to be able to reach the commitments

Monitoring and measuring process

Monitoring of the strategy implementation is required to:

- **Identify deviations and challenges early on**, allowing for timely corrective actions to keep the strategy implementation on track
- **Provide valuable insights into the effectiveness** of the strategy, and allow for refinement and adaptions to optimize outcomes
- **Promote transparency and accountability** for performance and progress towards strategic goals of initiative roll-out and responsible actors involved



Develop the monitoring system or link existing monitoring system

Set up the monitoring process for sustainability initiatives

Set up or adjust the governance structure

HOW – 5.2 Impact measurement is needed to assess not only output but outcomes as well

Impact measurement

Definition

Impact measurement refers to the process of quantifying and assessing the positive or negative effects of an initiative or investment on specific areas such as the environment, society, or the economy

	1 Activities	2 OUTPUT	2 OUTCOMES	3 KEY INDICATORS
Definition	Refers to the task and action taken to implement an initiative	Refers to the immediate and direct results of an initiative	Refers to the end results of an intervention, such as changes in attitudes, behaviors, or conditions	Measures financial performance and sustainability to assess the impact of an intervention
Examples	Tasks and activities conducted to execute the skill development program	Number of people trained in a skill development program	Increased employment rates among the people who received training	Additional revenue from new business generated by the trained individuals

PURPOSE OF IMPACT MEASUREMENT:

1. *To **assess the effectiveness of an initiative** in achieving its intended goals and objectives*
2. *To **quantify the real-world impact** of initiatives and programs*
3. *To **ensure** that interventions are **making a positive difference** in the lives of people, communities, and the planet as a whole*

HOW – 5.2 There are multiple benefits for measuring impact, as informed decision making and streamlined and transparent execution support

GUIDES DECISION MAKING

Provides data-driven insights and evidence that inform strategic choices and ensures alignment with desired ambitions

BOOSTS BRANDING AND AWARENESS

Demonstrates commitment to social and environmental impact by showing impact

IMPACT EVALUATION

ENHANCES EFFICIENCY

Enables stakeholders to identify and prioritize areas for improvement when implementing the initiatives

DEFINES ACCOUNTABILITY

Provides tangible evidence and metrics that hold stakeholders responsible for the effects of actions

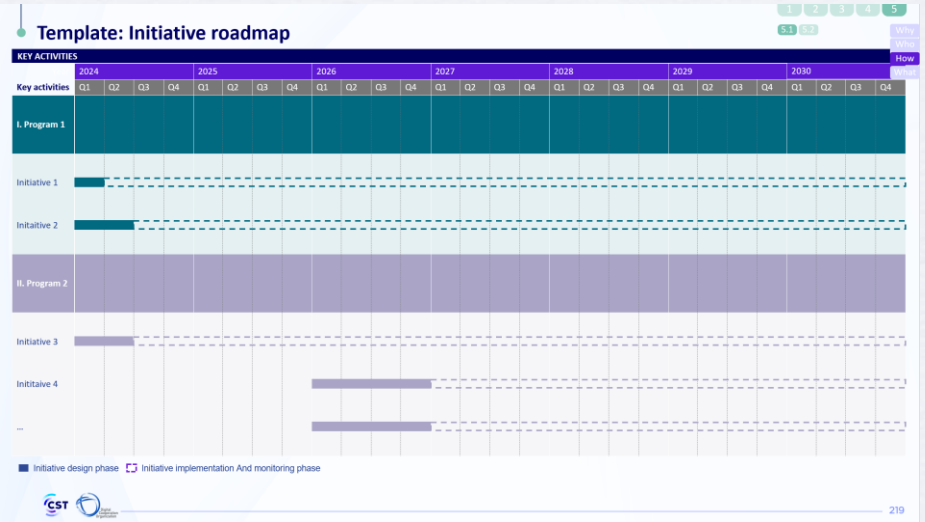
ENSURES TRANSPARENCY

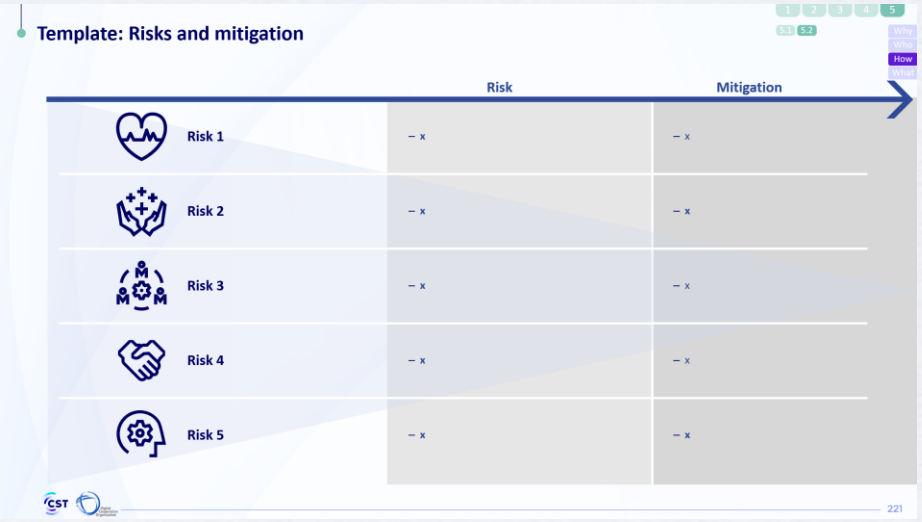
Creates clear and objective information about the outcomes and effects of actions, and enabling accountability

WHAT – Materials to leverage when implementing and monitoring the process

The material shared includes:

- Template for initiative roadmap
- Template to capture risks and mitigation measures





WHAT – You have achieved these outcomes when closing step 5!

- Designed **initiative implementation roadmap**
- Assigned **responsibilities and** detailed **prioritized initiatives** to responsible stakeholder
- Set up or linked **monitoring system**
- Defined **impact measurement system**
- Identified **key success factors considered**

Thank You

هيئة الاتصالات والفضاء والتقنية
Communications, Space & Technology Commission

Digital Cooperation Organization

TABLE OF CONTENTS – APPENDIX

Includes KSA examples and templates
(incorporated into structure of toolkit and connected to KSA examples)

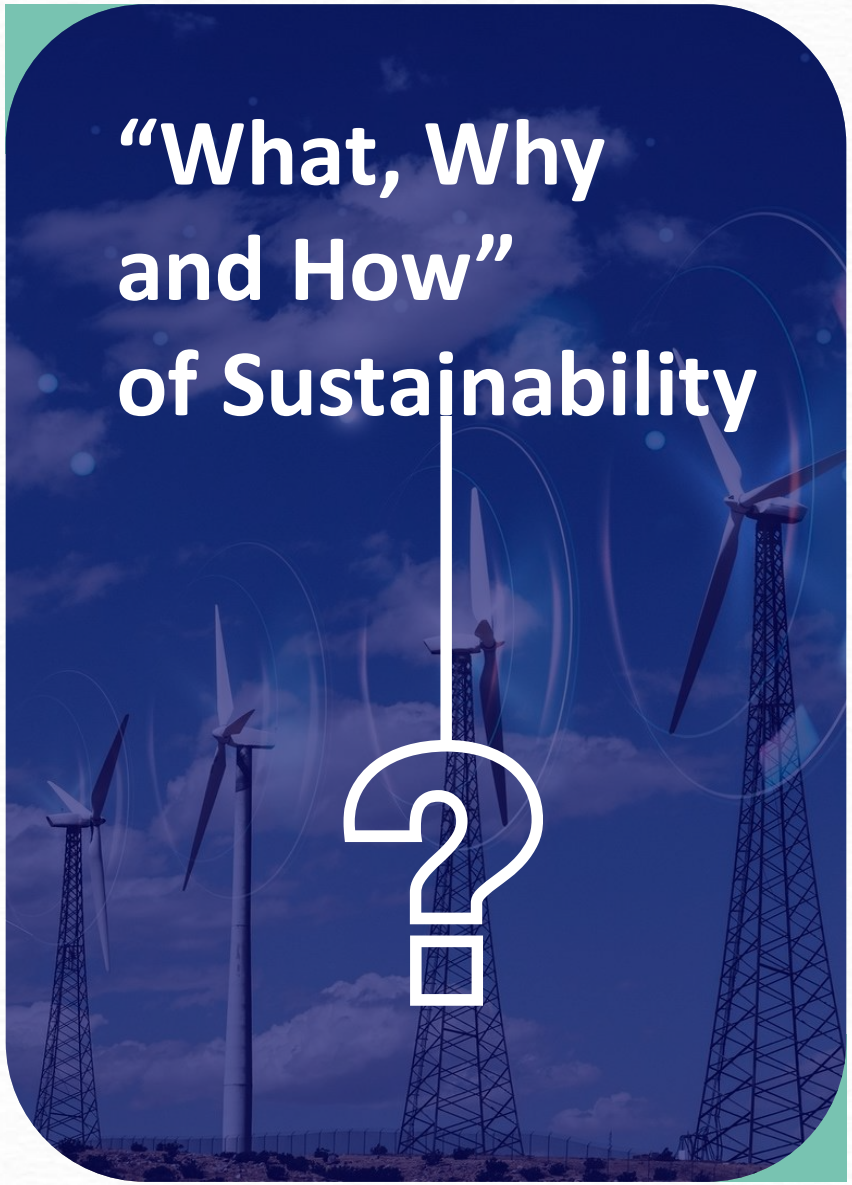
Source: Kearney

TABLE OF CONTENTS – APPENDIX

STEP 1

TABLE OF CONTENTS – APPENDIX

STEP 1



01 **What** is sustainability?

02 **Why** sustainability?

03 **How** do ICT contribute to sustainability?

UN defined Sustainability concept in the late 1980s

Sustainability is defined as: **"meeting the needs of the present without compromising the ability of future generations to meet their own needs"**

- Source: United Nations Brundtland Commission, 1987

Sustainability is linked to multiple concepts

There are multiple Sustainability frameworks: governments usually adopt SDGs (Sustainable Development Goals), while companies follow ESG (Environment, Social, Governance)

Corporates

Governments

Corporate Sustainability

Employees wellbeing, DE&I, health & safety, remuneration, etc.

- Donations to the community, volunteering, pro-bono etc.
- Net Zero strategy, products and emissions circularity, recycled packaging, etc.

Sustainable Development

Inclusion of private, governmental and individual contribution & needs

- Focus on nationwide priorities, independent of involved stakeholders
- Development of policies and program for economic development, health, education, climate change, etc.

RELEVANT FRAMEWORKS

ESG

- Environment
- Social
- Governance

SDGs

Both ESG and SDGs frameworks have pros and cons…

ESG

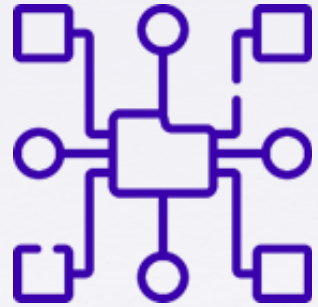
- ✔ Broad & flexible
- ✔ Not only evaluates impact but also governance
- ✔ Simple
- ✔ Widely adopted in private sector

- ✖ Doesn't consider Economic impact
- ✖ More focused on private sector

SDGs

- ✔ Fits public sector well
- ✔ Visual
- ✔ Broadly adopted in both government sector and CSR context

- ✖ Doesn't include area outside planetary boundaries
- ✖ Complex and targets not exclusive to one pillar
- ✖ Difficult to quantify



This raises the need **for an overarching framework** that address the needs of public sector entities in the ICT sector but also a regulator and promoter of the private sector (details on next page)

…Both frameworks are mapped and a holistic, overarching framework is developed

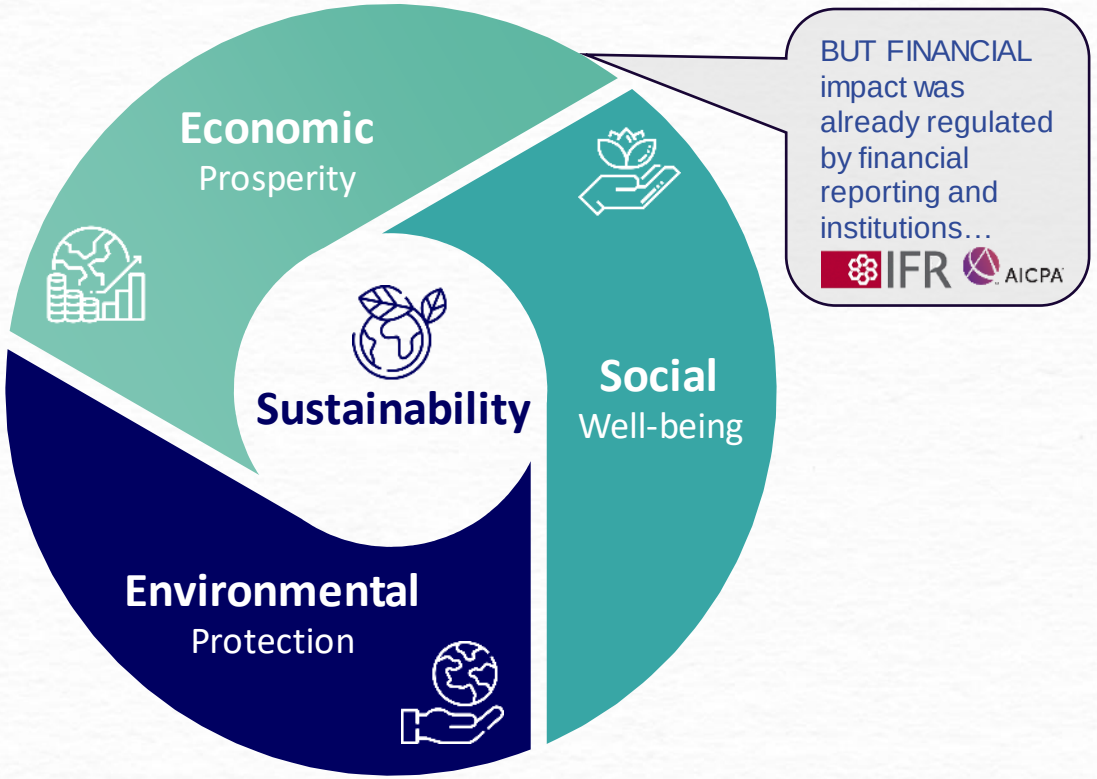
The selected framework covers Environment, Social, Economic and Governance dimensions, while subdimensions are country and sector related.

Historically corporate sustainability is linked to Triple Bottom Line and evolved into ESG

Corporates

The Triple Bottom Line

First coined in 1994 by John Elkington, he claimed that net income alone was insufficient in measuring a company's value. Instead of only measuring to the economic bottom line, he added the **social and environmental** bottom lines[1]



ESG Reporting Framework

The history of ESG can be traced back to the UN in 2006, with the launch of Principles for Responsible Investment. Signatories were obliged to integrate ESG criteria into companies' financial evaluations[2]. Today ESG credentials are becoming **heavily influential in driving investor choice**

PRI

Environment

How a company's activities impact its environment

Social

How a company's actions impact stakeholders

+

Governance

How to be ensure accountability to stakeholders

- Source: 1. HEC, 2. Forbes

ESG is a common framework for entities to act on sustainability, and is broken down in several components

Corporates

Non-Exhaustive

ENVIRONMENT *How a company's activities impact its environment*	Carbon emissions	Biodiversity & land use	Opportunities in clean technologies	
	Product carbon footprint	Raw material sourcing	Opportunities in green building	
	Financing environmental impact	Toxic emissions & waste	Opportunities in renewable energy	
	Climate change vulnerability	Packaging material & waste		
	Water stress	Electronic waste		
SOCIAL *How a company's actions impact stakeholders*	Labor management	Human capital development	Supply chain labor standards	Healthy & safety	Responsible investment
	Product safety & quality	Chemical safety	Financial safety	Privacy & data safety	Health & demo, risk
	Access to communication	Access to finance	Access to health care	Opportunities in nutrition & health	Controversial sourcing
GOVERNANCE *How to be ensure accountability to stakeholders*	Board diversity	Anti-competitive practices	Ownership	Accounting	
	Business ethics	Executive pay	Corruption & instability	Financial system instability	
				Tax transparency	

- Source: Harvard Law Review, Kearney

Governments rely on the definition of SDG framework

Governments

The definition of **sustainability** evolved from solely environmental to the SDGs definition of environmental, social, governance and economical sustainability

1987 Brundtland Commission

Definition of sustainable development: Meeting the present needs without compromising the ability of future generations to meet their own needs

2000 Millennium Development Goals

- **UN's program** focused on poverty, hunger, health, education, gender, environment, partnerships in the developing world
- **Debt relief and governmental funding** of developed world as major drivers

2015 Sustainable Development Goals (SDGs)

UN's consensus of 193 countries, a set of 17 goals and 169 targets aiming to transform the world as we know it by 2030

Source: United Nations

Seventeen SDGs, launched by the United Nations in 2015, form a global and integrated platform for sustainable development

Governments

United Nations Sustainable Development Goals (SDGs)

SDGs cover all major environmental, social and economic challenges of today and will be a main platform for sustainable development until 2030

Source: United Nations

Both ESG and SDGs frameworks have pros and cons…

ESG

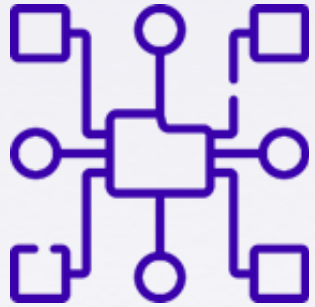
- ✔ Broad & flexible
- ✔ Not only evaluates impact but also governance
- ✔ Simple
- ✔ Widely adopted in private sector

- ✖ Doesn't consider Economic impact
- ✖ More focused on private sector

SDGs

- ✔ Fits public sector well
- ✔ Visual
- ✔ Broadly adopted in both government sector and CSR context

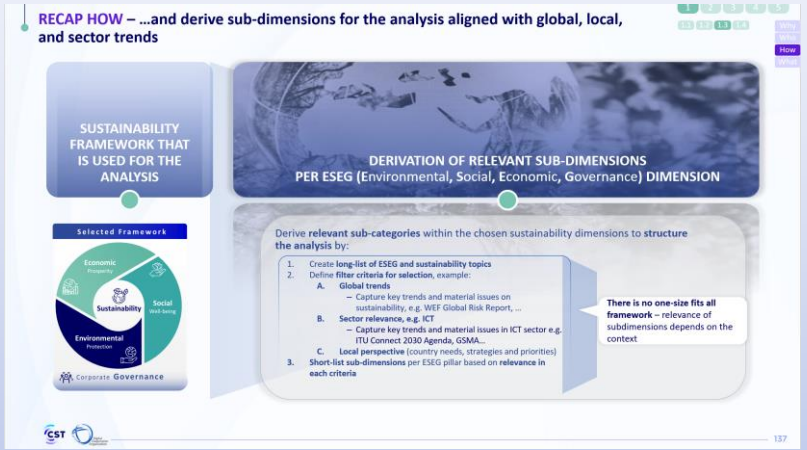
- ✖ Doesn't include area outside planetary boundaries
- ✖ Complex and targets not exclusive to one pillar
- ✖ Difficult to quantify



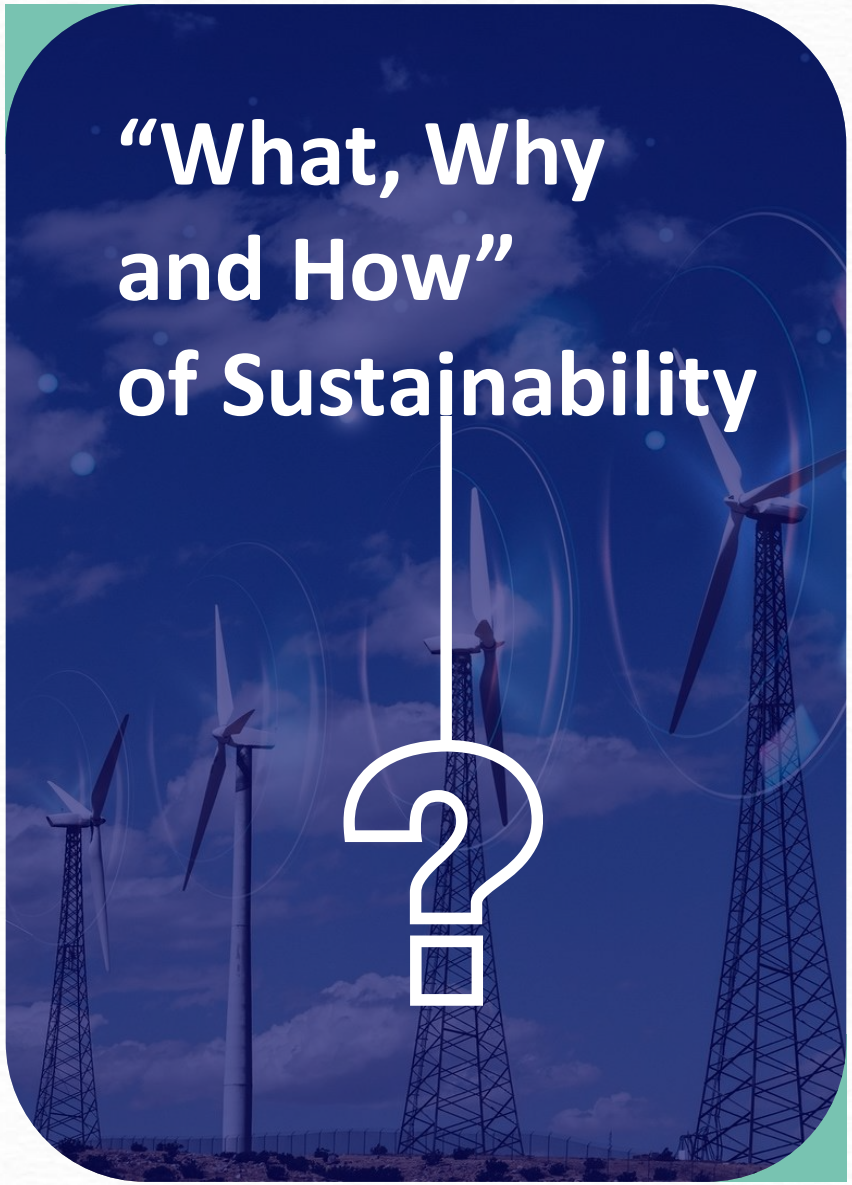
This raises the need **for an overarching framework** that address the needs of the public sector entities in the ICT sector but also a regulator and promoter of the private sector (details on next page)

The selected framework covers Environment, Social, Economic and Governance dimensions…

Framework's **subdimensions** will be defined in the **1st phase of the *toolkit's* application**



During the *pilot*, the methodology will be explained to the selected DCO Member States



01 **What** is sustainability?

02 **Why** sustainability?

Customize information to your local country when possible

03 **How** do ICT contribute to sustainability?

Sustainability is one of the most important issue to address both globally and in KSA

WHY SUSTAINABILITY?

WHY ICT?

WHY NOW?

Sustainability is a key imperative for all stakeholders as it addresses challenges, but it also creates opportunities

GOVERNMENTS

- The Paris Agreement aims to pursue efforts to "**limit the temperature** increase to 1.5°C above pre-industrial levels."[1]
- New **bold sustainability regulations** are being issued to push growth strategy based on sustainability

COMPANIES

- Companies ranked higher in **ESG outperformed** companies with lower ESG ratings **by 2.5% a year** in company valuation from '13 – '20[2]
- Share of total ESG assets globally is projected to increase from **14% in 2021 to 21% in 2026**[3]

CITIZENS

- According to a survey of 17 countries, **72%** of people **see climate change as a personal threat**[4]
- **65%** of people around the world **want to work** for an organization with a **powerful social conscience**[5]

- Source: 1. UNCC, 2. MSCI, 3. Harvard, 4. Pew, 5. Gartner

Sustainability in ICT sector is critical both at global and KSA level

SELECTIVE HIGHLIGHTS	Comms	TECHNOLOGY	ENABLED SECTORS
GLOBAL	**Footprint** – decrease and manage GHG footprint	**E-Waste** – reduce electronic waste and promote circular business models	**Enabling sustainability** – deliver next-generation solutions through technology innovation
	The ICT sector globally emits 1-1.7 bn tons of CO_2e/year[1], or 1.8-2.9% of global GHG emissions, and are expected to keep growing because if growth trends in big data & AI, blockchain, IoT activity[2]	*A record 57.4 million tons of e-waste was generated in 2021, worth $50bn[3]. Emissions from e-waste will reach 14% of total emissions by 2040[4], up from 1% in 2017*	*Democratization of data enables action, such as going from supporting aid in natural disasters towards preventing them[8]*
YOUR COUN-TRY	**Footprint** – decrease and manage GHG footprint	**E-Waste** – reduce electronic waste and promote circular business models	**Enabling sustainability** – deliver next-generation solutions through technology innovation
	Insert information on your country	*Insert information on your country*	*"Insert information on your country*

- Source: 1. Andrae and Edler, 2. Forbes, 3. TheRoundup.org, 4. WEF, 5. Beijing Institute of Technology, 6. NASA, 7. Euroconsult, 8. PSA, 9. Statista,

Sustainability in ICT sector is critical at a global level

SELECTIVE HIGHLIGHTS

GLOBAL

Comms	TECHNOLOGY	ENABLED SECTORS
Carbon and GHG footprint Reduce harm on environment and decrease GHG footprint	**E-Waste** Reduce electronic waste and promote circular business models	**Enabling sustainability** Deliver next-generation solutions through technology innovation
The ICT sector globally emits 1-1.7 bn tons of CO_2e/year[1], or 1.8-2.9% of global GHG emissions, and are expected to keep growing because if growth trends in big data & AI, blockchain, IoT activity[2]	*A record 57.4 million tons of e-waste was generated in 2021, worth $50bn[3]. Emissions from e-waste will reach 14% of total emissions by 2040[4], up from 1% in 2017*	*Democratization of data enables action, such as going from supporting aid in natural disasters towards preventing them[5]*

Source: 1. Andrae and Edler, 2. Forbes, 3. TheRoundup.org, 4. WEF 5. PSA

Comms sector needs still to address gaps of connectivity and carbon footprint

Comms sector should drive economic growth and social impact, tackling the environmental challenges

- Prioritize network and data security
- Ensure comm's infrastructure quality & reliability
- Unlock potential in other industries
- Take responsibility for e-waste and carbon footprint

Why is it urgent?

More than 2.9 billion people (36% of global population) are still **disconnected to the internet**[3], and **two out of three school-aged children** in the world do not have access to internet at home[4]

Operators are responsible for **~1-1.7 bn tons** of carbon dioxide equivalent (Mt CO2e) per year, or **approximately 1.8-2.9% of total global carbon** footprint[5]

- Source: 1. Cyberbullying.org 2. PSA, 3. ITU, 4. UNICEF, 5. Andrae and Edler, GSMA,

Technology sector's intense growth comes with significant environmental and social risks

Technology sector should have a fair and accountable management for various stakeholders and promote green solutions

- Increase productivity through advancements of technological capabilities
- Improve resilience of economies through digitalization
- Provide job opportunities and reduce unemployment
- Improve E-governance capabilities
- Ensure ethical use of technology
- Safeguard personal data and manage it responsibly

Why is it urgent?

According to OpenAI, creators of ChatGPT, the computing required to train the average model **increases by a factor of 10** each year. It is believed that machine learning is on track to consume all the energy that can be supplied[1]

AI poses dangerous privacy risks, for example in 2020 a group of 17 criminals **defrauded $35 million** from a bank in UAE using AI "deep voice"[2]

45-60% of Europeans agree that AI will lead to more **abuse of personal data**[3]

- Source: 1. WEF, 2. procon.org, 3. WEF

Acting now is critical to become a leader, mitigate risks and address urgency

ICT ENABLES SUSTAINABILITY

– **Information and communication technologies** (ICTs) can help **accelerate progress** towards every single one of the **17 United Nations Sustainable Development Goals** (SDGs)[1]

ECONOMIC RISK

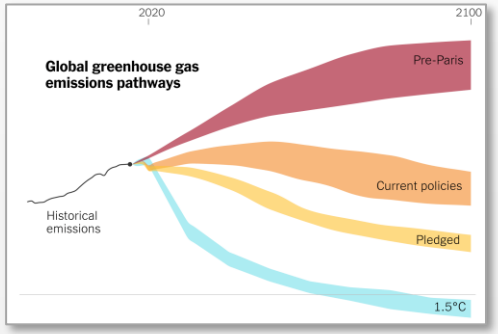
– Climate change can **reduce annual global GDP growth**

– Cost of global inaction **$178 trillion** by 2070[2]

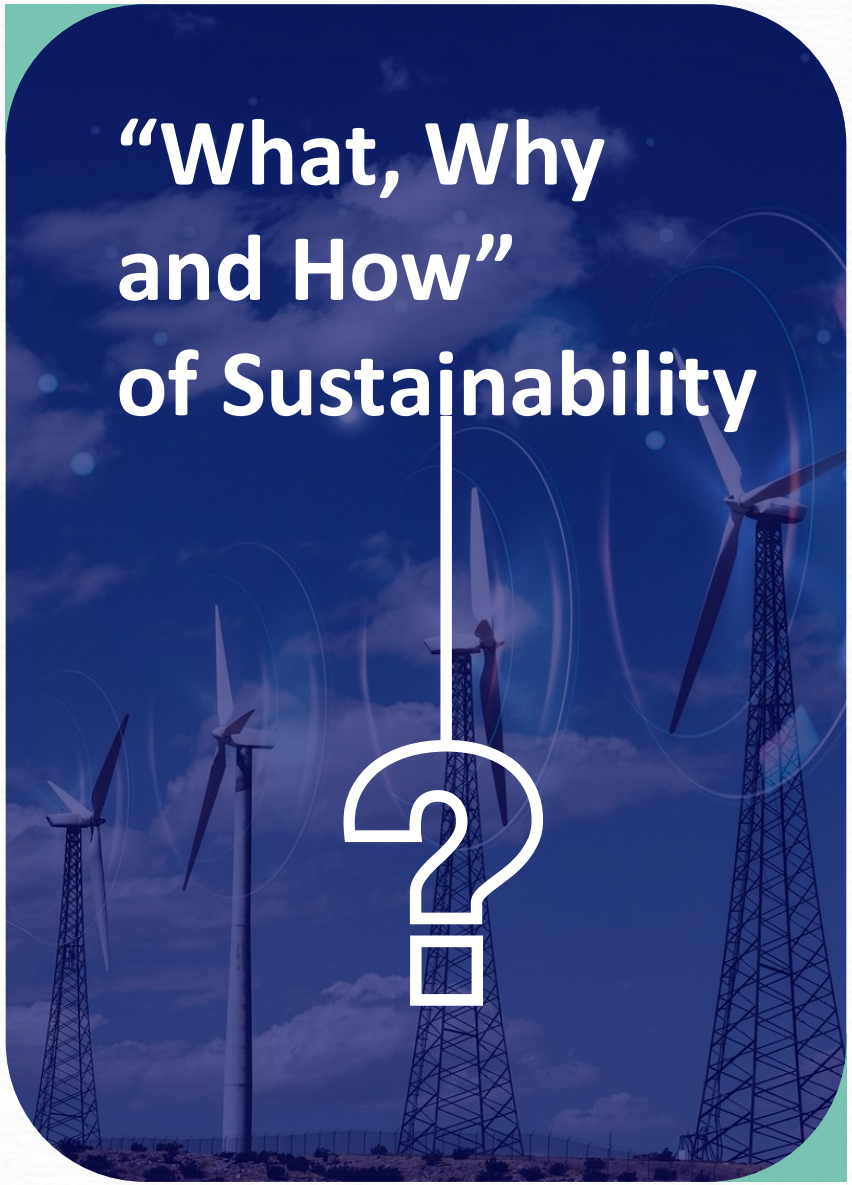
Change in annual GDP from impact of 2°C warming[3]

URGENCY

– Based on IPCC report, we have until 2030 to reverse the Climate change trend of 1.5 degrees, and based on **2022 emissions** data, it remains on an **unsustainable growth trajectory**[4]



- Source: 1. ITU, 2. Deloitte, 3. SDGIndex , 4. IEA



01 **What** is sustainability?

02 **Why** sustainability?

03 **How** do ICT contribute to sustainability?

Customize information to your local country when possible

The ICT sector can ***both*** directly impact sustainability within the sectors ***and*** indirectly enable other industries

DIRECT IMPACT WITHIN ICT

It is crucial to set policies and launch initiatives ***within*** ICT sector to address sustainability issues

- GHG emissions of ICT companies
- Electronic waste
- Energy efficiency of ICT infrastructure
- Recycling / upcycling rate of satellites, mobile, hardware, etc.
- Coverage of Internet in rural areas
- Gender diversity in ICT workforce
- …

INDIRECT IMPACT IN OTHER SECTORS

ICT is powerful enabler to achieve sustainability in other sectors, for example:

- Enablement of **E-learning** during COVID-19
- Forecast of **weather and climate disasters** due to satellite data
- Reduction in travel due to **video conferencing**
- **Efficiency** in resource mgt. via IoT solutions (e.g., smart metering)
- Increasing **transparency** and media literacy due to social initiatives
- Improving **e-Agriculture** effectiveness and increasing economic development

Comms companies are committing to cutting emissions, before it is too late

DIRECT IMPACT WITHIN ICT

Mobile operators representing **62% of the industry by revenue** have now committed to **rapidly cutting emissions over the next decade**, more than doubling the number from 2020

Emissions of the ICT sector will **become material** if we don't address sustainability within the sector **NOW**

Required reduction of greenhouse gas emissions between 2020 and 2030 for the ICT sector[2]

- Source: 1. Andrae and Edler, 2. ITU

Comms lower financial services' costs and carbon footprint across sectors

Selection only

Financial Services

Mobile payments can lower the cost of providing financial services by 80-90%, enabling providers to serve lower income customers profitably[1]

Environment

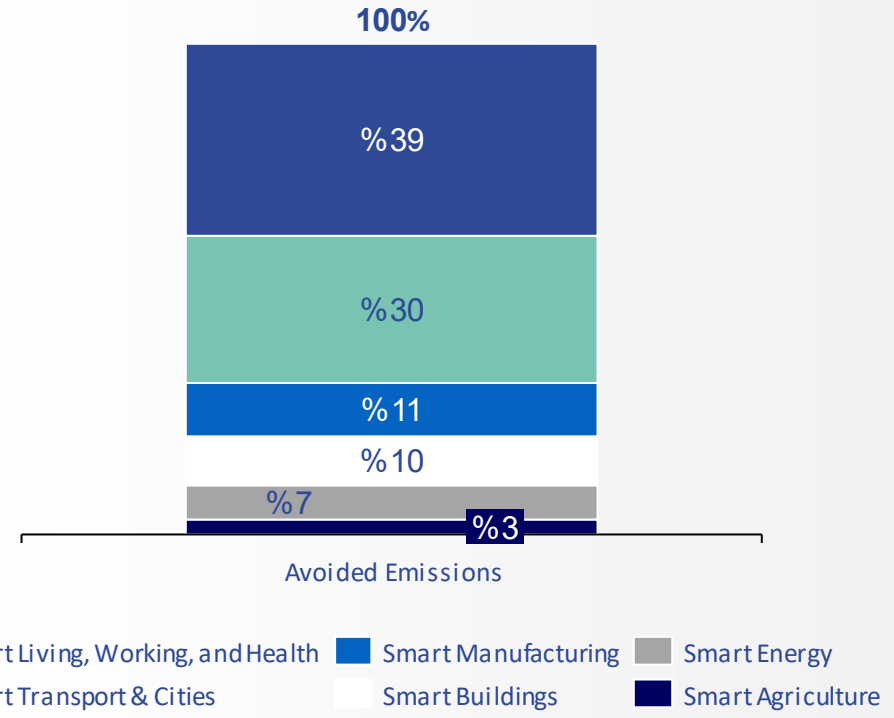
The use of **IoT** has the potential of **reducing emissions by ~63.5 Gtons** by 2030 across all sectors[3]

Education

IoT will provide **180 million children, 8% of all children,** with the opportunity to stay in school in developing regions[4]

INDIRECT IMPACT IN OTHER SECTORS

The mobile sector enabled 2.1 billion tons of GHG emissions savings in 2018. The avoided emissions are broken down in the following categories[9]



- Source: 1. McKinsey, 2. TBC, 3.Solumesl, 4. GSMA, 5. Arab News, 6. MIT , 7. cfr, 8. DigitalEurope, 9. GSMA

Technology companies have the big opportunity to recycle e-waste

DIRECT IMPACT WITHIN TECHNOLOGY

57 Mt of e-waste was generated in 2021, growing on average 2Mt a year[1]

Only **17% of e-waste** has been collected and properly **recycled**[1]

Today ***347 Mt of unrecycled e-waste*** is present on earth in 2023[1]

BIG OPPORTUNITY: e-waste recycling market was valued at **$50 Bn** in 2020[1]

The market is growing…

E.g., opportunity for the technology giants is the **digital health market**— estimated at $260 Bn in 2022, projected to reach $940 Bn by 2032[2]

… but still gender gap needs to be addressed

- Only about **25% of** technology job **applicants are females**[3]
- The **employment gender gap grows** wider as the seniority of a technology job rises[3]

- Source: 1. Theroundup, 2. Skyquestt, 3. datapeople.io

Technology enables multiple sectors that contribute to the SDG achievement

Selection only

Health

€11 billion in healthcare cost savings in the EU from digitalizing health records[1]

Environment

79-93% emissions reduction for data centers through cloud computing[3]

Industry 5.0 - AI

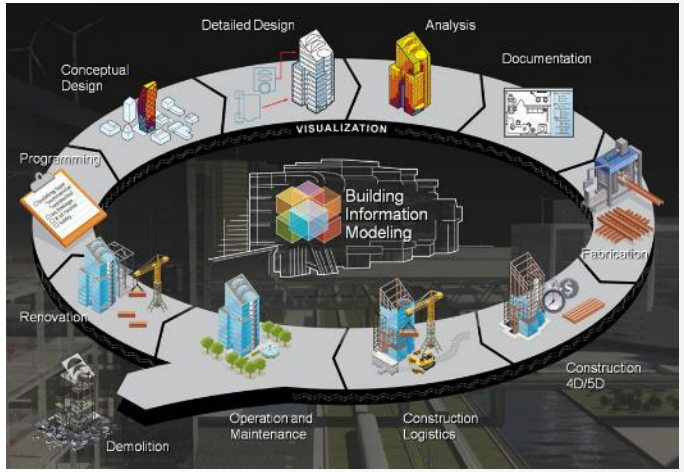
AI self-driving vehicles can reduce emissions by 25% while boosting travel speeds by 20%[4]

Farmers in India achieved a 30 percent larger harvest by using AI technology[7]

INDIRECT IMPACT IN OTHER SECTORS

15-20% of potential CO_2 savings in other industries through the enablement of digital technologies[6]

Building Information modeling (BIM)[7]



***BIM usage** to tailor pavement maintenance is globally positive for the climate. **Life-cycle greenhouse gas emissions reduction can reach up to 30%, and up to 65% for maintenance stage**[8]*

- Source: 1. EU, 2. TBC, 3. WSP, 4. MIT , 5. cfr, 6. DigitalEurope, 7. Kaizen; 8. Sciencedirect

Finally, ICT is crucial to drive sustainability in other sectors

BUILDINGS

E.g., Building Information Modeling (BIM) enables architects, engineers, and contractors to generate more efficient and environmentally responsible structures.

E-Health

E.g., Teladoc provides Telehealth services, that reduce emergency room visits and lower costs for patients and providers.

E-AGRICULTURE

E.g., self-manned drone for pollinating crops equipped with cameras and sensors detect agricultural problems and get more sufficient control over the Walmart food supply chain, minimizing food waste.

E-RETAIL AND LOGISTICS

E.g., Walmart e-retailer provides efficient online services, like Mobile Express Returns and QR code scanning that enable customers to shop staying at home thus diminishes transport usage and CO_2 emissions.

DATA FOR CLIMATE AND BIODIVERSITY MONITORING

E.g., Microsoft uses artificial intelligence to create a complete directory of US forests.

E-EDUCATION

E.g., UNESCO partners with Spacecom to bring digital learning to rural schools in Côte d'Ivoire, increasing access to school and decreasing drop-out rate.

WATER MANAGEMENT

E.g., Patagonia has an AI central workstation that automatically controls all operational systems from an indoor environment to outdoor irrigation, diminishing water usage.

OPTIMIZING ENERGY SECTOR

E.g., Ørsted owns offshore wind turbines equipped with sensors generating data that are used to save time and resources thanks to Microsoft advanced predictive analytics and AI technology.

SMART CITIES

E.g., Neom's implementation of ambiguous digital transformations, like IoT and AL software, is to control environmental conditions within the megacity.

TABLE OF CONTENTS – APPENDIX

STEP 1

RECAP HOW – …and derive sub-dimensions for the analysis aligned with global, local, and sector trends

SUSTAINABILITY FRAMEWORK THAT IS USED FOR THE ANALYSIS

DERIVATION OF RELEVANT SUB-DIMENSIONS PER SUSTAINABILITY DIMENSION

Derive **relevant sub-categories** within the chosen sustainability dimensions to **structure the analysis** by:

1. Create **long-list of sustainability topics**
2. Define **filter criteria for selection**, example:
   - **A. Global trends**
     - Capture key trends and material issues on sustainability, e.g. WEF Global Risk Report, …
   - **B. Sector relevance, e.g. ICT**
     - Capture key trends and material issues in ICT sector e.g. ITU Connect 2030 Agenda, GSMA…
   - **C. Local perspective** (country needs, strategies and priorities)
3. **Short-list sub-dimensions** per sustainability pillar based on **relevance in each criteria**

There is no one-size fits all framework – relevance of subdimensions depends on the context

The framework can be broken down in sub dimensions, relevant for ICT sector

LONGLIST OF SUSTAINABILITY TOPICS (EXAMPLES)

HARVARD LAW REVIEW

SUSTAINABLE DEVELOPMENT GOALS

ITU

...

There is no one-size fits all framework – relevance of subdimensions depends on the context

FILTER FOR SELECTION

GLOBAL TRENDS

Review of international studies, publications, news…
Capture key trends and material issues on sustainability
e.g. WEF Global Risk Report, …

SECTOR RELEVANCE

Screening of sector relevant analysis and publications
Capture key trends and material issues in ICT sector e.g. ITU Connect 2030 Agenda, GSMA…

KSA PERSPECTIVE

Validation of global trends with country needs and priorities
e.g., Ministry of Economy and Planning's SDG roadmap

+

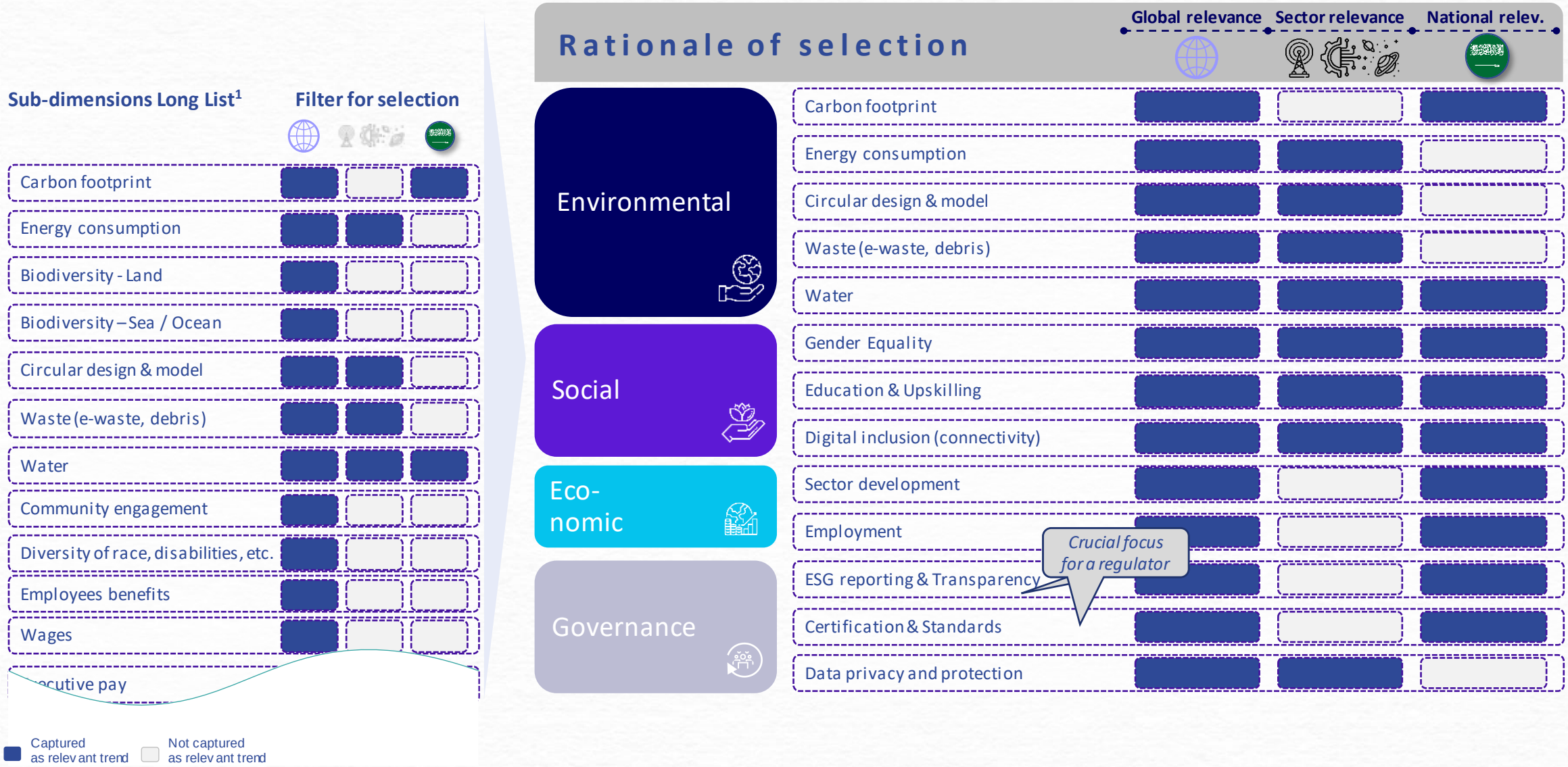
Expert validation

Verification of relevant sub-topics with experts

RELEVANT SUSTAINABILITY SUB-DIMENSIONS

Environmental	Carbon footpring
	Energy consumption
	Circular design & model
	Waste (e-waste, debris)
	Water
Social	Gender Equality
	Education & Upskilling
	Digital inclusion (connectivity)
Economic	Sector development
	Employment
Governance	ESG reporting & Transparency
	Certification & Standards
	Data privacy and protection

Subdimensions that were not relevant for at least two assessing criteria were not shortlisted



- Source: 1- collection of 100+ dimensions based on multiple sources as ESG ranking systems, SDGs, Harvard Business Review, etc.

Template for Sustainability framework and selected sub-dimensions

Environmental

Social

Eco-
nomic

Governance

TABLE OF CONTENTS – APPENDIX

STEP 1

WHO – The initial step is the creation of a longlist of key stakeholders and their key roles

Exemplary template for stakeholder list

Group	Key roles
National Government	– Develops and implements sustainability policies, regulations, initiatives and commitments by establishing the legal and policy frameworks necessary to promote sustainable practices on a country level (sector overarching) – Sets the overall (sustainability) ambition and strategy for the country

Ministries on government level	– Formulates policies, strategies, and action plans that promote sustainable practices across various sectors, e.g. in
	  – Energy
	  – Science
	  – Technology & IT
	  – Digital
	  – Environment
	  – Education
	– Acts as central coordinating body, fostering collaboration and engagement among different government agencies, departments, and stakeholders involved

Regulators for ICT	– Develops specific rules, standards, and guidelines that operationalize broader sustainability policies – Monitors and evaluates the performance and progress of businesses and industries in meeting sustainability regulations
Academia	– Supports capacity building and the adoption of best practices and developments in the sector internationally – Conducts local and national research to ensure a science-based approach is taken for determining policy decisions
Non-governmental Organization	…
Private sector companies in ICT (local vs. international)	…
Society	…

TABLE OF CONTENTS – APPENDIX

STEP 2

TABLE OF CONTENTS – APPENDIX

STEP 2

The framework for the current state analysis takes this holistic view to analyze countries

COMMS

TECHNOLOGY

ENABLED SECTORS

VISION & STRATEGY: Sustainability vision and strategy for the ICT sector

Commitments / Targets

Environmental	**Targets on** Net Zero, carbon footprint, circularity, clean energy, e-waste, etc.
Social	**Targets on** diversity, human rights, access to services, social justice etc.
Economic	**Targets on** investments, taxes / fees, jobs, unemployment, start-ups
Governance	**Targets on** partnerships, boards and regulatory bodies, certifications, standards

EXTERNAL targets *for the sectors & overarching in benchmarked countries*

Policies / Regulations Initiatives

Environmental	**Initiatives / policies on** Climate Change, minimum recycled material, e-waste, etc.
Social	**Initiatives / policies on** women employment, access to services in rural areas, etc.
Economic	**Initiatives / policies on** labor ICT market, incentives for satellite businesses, etc.
Governance	**Initiatives / policies on** new Sustainability bodies, ICT Sustainability certifications

Mandatory & non-mandatory *policies & initiatives in the sectors overarching in benchmarked countries*

Corporate example: Example of a business leader in Sustainability in the ICT sector

HOW – 2.2 Conduct the current state analysis along these three steps

2.2.1 WHERE ARE WE TODAY?

Derive the **overall sustainability effort** in the ICT sector evaluating:

- Country's position in indexes (e.g. SDG index) and progress towards targets
- Private sector's efforts

2.2.2 WHAT ARE WE DOING TODAY?

Analyze **current ICT sector** looking at:

- Targets and ambitions
- Initiatives and policies

2.2.3 WHERE DO WE NEED TO FOCUS TOMORROW *(current state perspective)*?

Identify the **Sustainability priorities based on the current state in the country** to be addressed in the ICT sector considering:

- Outcome from step 1
- Outcome from step 2

Template: Potential questions for interviews to local entities (private or gov't) (1/2)

It needs to be customized for each stakeholder

TOPIC	QUESTION
Entity specific questions	Before going into the questions, ENTITY INTERVIEWED is working on the National Sustainability Strategy. Could you provide us an update / overview of the status?
Sustainability Targets and Ambitions	What are your sustainability targets and ambitions for 2030 and beyond? (Likely in context of National Sustainability Strategy, previous question) - Climate emissions target - Waste and circularity targets - ESG / what are your S and G targets like inclusivity
Initiatives / Regulations	What are your current initiatives and actions being in context of sustainability? - Development programs - Economic policies - Financial mechanisms
	How are you planning to become a "key enabler of sustainable growth"? (Likely in contect of National Sustainability Strategy) - Development programs - Economic policies - Financial mechanisms
	What are the largest gaps which you currently see in the ecosystem

Template: Potential questions for interviews to local entities (private or gov't) (2/2)

It needs to be customized for each stakeholder

TOPIC	QUESTION
Progress	How is your progress towards those ambitions - Are you on track to meet targets? (example 50% increase in female labor) - Have you achieved any milestones? - Where are your key gaps?
Current trends / on the horizon	What sustainability trends do you currently see taking place? Do you have any specific examples?
Challenges	What are your main challenges towards achieving your sustainability goals? - What have you found most challenging? - Where do you think the issue is? (Targets, lack of funding, lack of ambition, etc.) - Is it coming at a cost? (not only monitory but maybe more headaches) - Is there enough buy in from the stakeholders?
Role	Do you see a specific role of the ICT sector in progressing sustainability in the Kingdom?
Type of entity	What role does your organization play in the ICT sector?
Partnership	Are there any partnerships established with sector players / industry associations?
Role	What is your role in the organization?

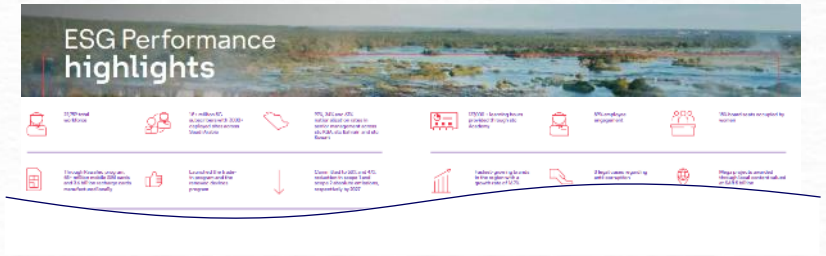
Case study: STC has committed to net zero by 2050, and has started progressing with environmental initiatives; still has work on social front

"Digital and telco leader, enabling society and economy to thrive, in KSA and beyond"

Initiatives

Renewable Energy Pilot Project
- Aim is to install solar PV systems within existing infrastructure of the KSA
- Scheduled for completion in 2024, 58% completed so far
- Pave the way for new energy models within critical infrastructure
- Reduce carbon emissions by an estimated 8,000 tons annually

Waste Recycling and Certification
- TAWAL formed a recycling & certification service agreement
- Collect, recycle and reuse disposed materials with certification services
- In 2022, a total weight of 984.5 metric tons was generated
- 15k out of 19k network assets were recycled



Mission and targets

Environmental
- **Net zero by 2050**
- Reduce scopes 1&2 by **47%** by 2030
- **100,000 devices** to be collected, and recycled or refurbished in 2023
- **100% recyclable** sim cards
- Target to **recycle 66%** of total network waste in 2023

Social
- **Empower people** by investing in the development of the national workforce
- **Improve digital access** through world class communications infrastructure

Economic
- **Contribute to Saudi vision** through direct economic activities
- **Foster economic growth** through Comms / digital infrastructure & services

Governance
- Commitment to **SBTi targets**
- **Elevate standards and best practices** for transparency, integrity, trust and good governance
- Align with national priorities and **SDGs**

The Science Based Targets initiative helps companies to set emission reduction targets in line with climate science & Paris Agreement goals

- Source: Zain

Template: Case study of corporates

Logo

Sustainability vision

Include pictures and examples to make more tangible

Strategy / Initiatives

Initiatives on sustainability dimensions

Targets

Current state – Commitments, targets, policies, and initiatives

		Comms	Technology	Enabling other sectors
Commitments / targets	Environ-mental - Emissions	***Example: Government: Vision 2030 goals*** – *Net Zero emissions by 2060* – *By 2030, the contribution of clean energy consumption to the overall energy mix will reach up to 50%*		
Policies / Regulations & Initiatives	Environ-mental – Circular Design			

Split findings along sectors (if applicable)

Split findings along sustainability dimensions

- Source: 1 .SEEC, Vision 20230, MCIT, CST, MGI, Desk research, Kearney

Template – Key takeaways > Current state analysis

Summary and key implications	Current state KEY TAKEAWAYS
Vision / Strategy	Takeaway 1, Takeaway 2, Takeaway 3
Commitments / Targets	Takeaway 1, Takeaway 2, Takeaway 3
Policies / Regulations & Initiatives	Takeaway 1, Takeaway 2, Takeaway 3

TABLE OF CONTENTS – APPENDIX

STEP 2

HOW – 2.3 Conduct benchmark analysis along these three steps

2.3.1 SELECT COUNTRIES FOR BENCHMARKS

- Define the selection methodology and identify relevant rankings
- Derive top leaders in sustainability, ICT
- Add regional leaders
- Evaluate proximity to local context

2.3.2 CONDUCT BENCHMARK ANALYSES & INTERVIEWS

- Conduct research and collect data on key dimensions of sustainability ecosystem
- Analyze data for each framework dimension
- Conduct interviews with experts to enrich and challenge findings

2.3.3 DERIVE IMPLICATIONS AND CONCLUSIONS (*benchmark perspective*)

- Derive key implications per analysis framework dimensions
- Derive conclusions and priorities

Five criteria were applied to select the benchmark countries

Countries selected based on absolute ranks

STEP 1: Identify the leaders across five topics

A GDP leaders

Select **top 50** leaders with **high economic power (GDP)**

B Sustainability leaders

Select **top 30** leaders in sustainability based on **Sustainable Development Report** measuring progress towards SDGs

C ICT / SDG leaders

Select top leaders **in ICT / SDG Benchmark** - measuring combined performance of SDG and ICT sector

D Comms / Technology leaders

Select top leaders in digital fitness based on **IMD Digital Competitiveness**, ranking knowledge, technology & readiness

E Space leaders

Identify top leaders in the space sector based on **country space agencies' capability to complete space programs** (World Population Review)

STEP 2: Shortlist the top 20 global leaders and 4 regional leaders

Additional validation with experts to ensure coverage of globally relevant countries

– Consolidate all European countries under European Union (EU) entity to reflect joint policy umbrella

– Add Germany as specific EU country example based on GDP

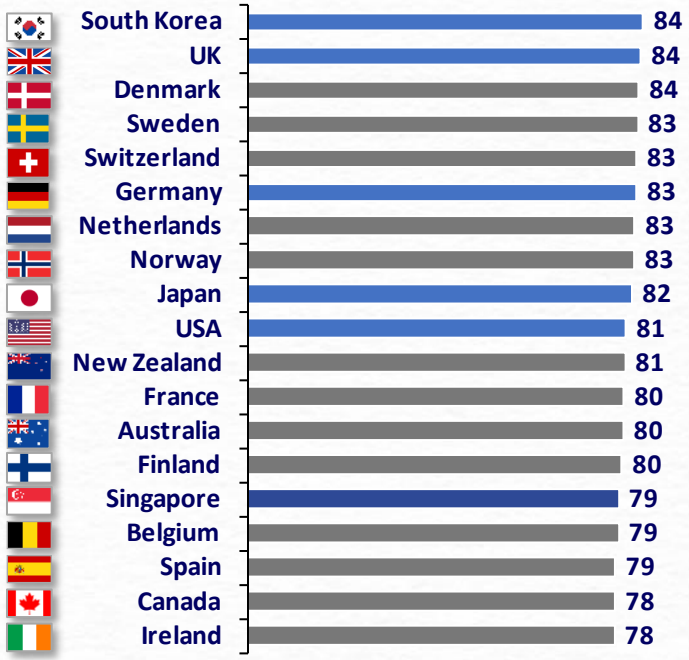
Source: World Bank 2022, ICT, Sustainable Development Goals Benchmark, Huawei (2019), Sustainable Development Report (2022), IMD Digital Competitive Ranking (2021), World Population Review (2022)

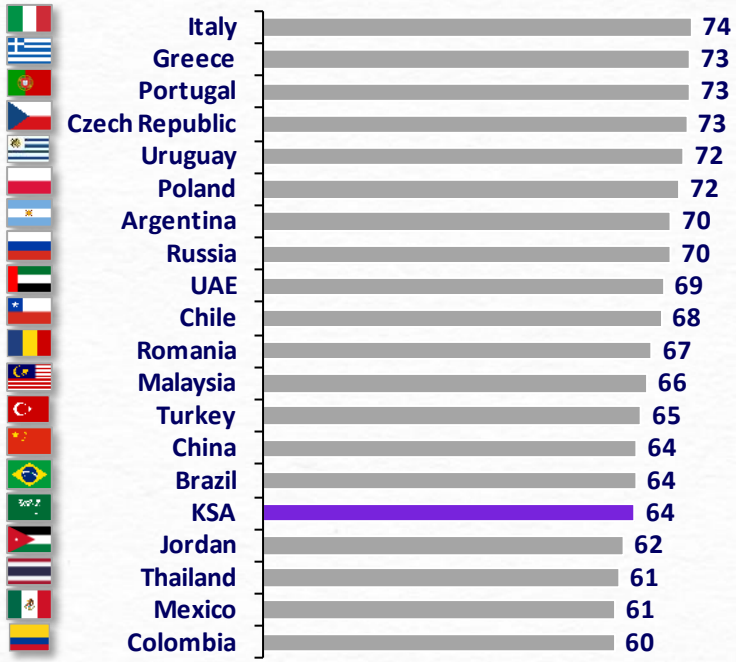
A Huawei study which identified leaders in ICT, and sustainability was analyzed

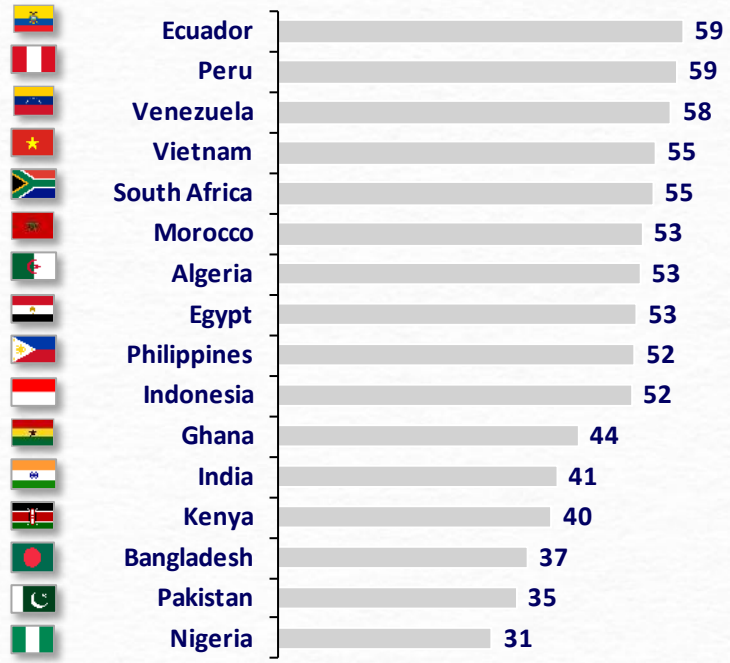
The 2019 ICT, SDGs Benchmark indicates a country's combined performance on ICT, development & sustainable development

The SustainAbility Institute by ERM

HUAWEI







Developed economies *that are* ***advanced in terms of both SDGs and ICT,****. They currently* ***lead the world*** *in* ***implementing targeted ICT, solutions*** *to develop a* ***smarter and more equitable society****.*

Represent the ***medium range of SDG and ICT,*** *achievements and are* ***seeing economic development*** *along with* ***growing ICT, infrastructure investments****, though targeted solutions on the* ***SDGs are less mature****.*

Countries in the ***early stages of ICT, infrastructure build-out****, having* ***lower levels of targeted ICT, investments relevant to the SDGs****. Their* ***focus*** *is on* ***increasing ICT, supply*** *to give more people* ***access to the Digital Economy****.*

Source: ICT, Sustainable Development Goals Benchmark, Huawei (2019)

The key findings of the benchmarked countries emphasize the vision, environmental and social targets & policies – Comms

Non-Exhaustive

Dimensions	Takeaways and examples
Carbon footprint	– **Commitments and initiatives on industry level** *(e.g. UN race to zero / EU European Green Digital Coalition, private sector)*
Energy consumption	– Policies around **energy efficiency** in the Comms's network *(e.g. China , Energy efficiency increase of 20% until 2025 in 5G base stations, MIIT & NDRC)*
Circular design & model	– **Eco design and circular economy** action plan *(e.g. Right to repair offered by seller within 10 years of purchase, proposal by EC)*
Waste (e-waste, debris)	– Different **WEEE[1] policy packages** and **recycling laws** *(e.g. KR Eco-Assurance System of EEE developing recycling standards, Federal Gov')*
Water	
Gender equality	
Education & Upskilling	– Enablement of citizens to **acquire skill and fostering of STEM in education**
Digital inclusion (connectivity)	– Policies, funding, etc. for **digital inclusion through access to internet** (5G, fiber)
Sector development	– Numerous **incentive systems to accelerate network roll-out** and technology updates *(e.g. EU Broadband Cost Reduction Directive, EC)*
Employment	
ESG reporting & Transparency	
Certification & Standards	– Policies, initiatives and funds to **create standards and certificates around energy efficiency of electronic devices** *(e..g. Japan Top Runners Label Program)*
Data privacy and protection	

Formed by 26 CEOs of ICT companies who signed a Declaration to support the Green and Digital Transformation in Europe

Recycling & recovery quotas for e-waste (on sector level) – e.g. EU 55% for small IT & Comms equipment for preparation of reuse

e.g. EU: Digital Upskilling for All as social dialogue project to develop best practices for upskilling & diversity, European Communications Network Operator Association

e.g. China's Ministry of Industry and Information Technology (MIIT) launches special campaign to improve internet access for elderly people

FCC as US regulator involved to develop USA Affordable Connectivity Program, aiming to reduce internet costs for citizens

China's regulator is part of ICT ministry announced 5-year plan for ICT industry

High targets set, main policies published, initiatives planned | Medium targets, policies and Initiatives partially set and planned | Low / Limited targets, policies and initiatives set

1. WEEE= Waste of electronic and electrical equipment, MIIT = Ministry of Industry and Information Technology; NDRC = National Development and Reform Commission, EC = European Commission

The key findings of the benchmarked countries emphasize the vision, environmental and social targets & policies - Technology

Non-Exhaustive

Dimensions	Takeaways and examples
Carbon footprint	– **Commitments and initiatives on industry level** *(e.g. UN race to zero / EU European Green Digital Coalition, private sector)*
Energy consumption	– Various policies around **energy efficiency in data centers** *(e.g. China, Energy efficiency data centers incl. PUE target (1.3, some DC 1.25 by '25), MIIT & NDRC)*
Circular design & model	– **Eco design and circular economy** action plans *(e.g. KR; Extended Producer Responsibilities to collect/ recycle WEEE, Ministry of Environ*
Waste (e-waste, debris)	– Different **WEEE**[1] **policy packages** and **recycling laws** *(e.g. EU WEEE Directive to foster sustainable production & consumption, EC)*
Water	– Very limited policies on **water usage in data centers**
Gender equality	
Education & Upskilling	– Enablement of citizens to **acquire skill and fostering of STEM in education** *(e.g. Germany with an annual Girl's Day in Tech companies)*
Digital inclusion (connectivity)	
Sector development	– Numerous incentive systems to **accelerate tech. innovation** *(e.g. EU Green Deal Investment Plan to fund e.g. new tech./ startups, EC)*
Employment	– Different measures to develop workforce *(E.g. UAE: Science and Innovation Policy to create STEM workforce, UAE gov't)*
ESG reporting & Transparency	
Certification & Standards	– Policies, initiatives and funds to **create standards and certificates around energy efficiency**
Data privacy and protection	

Target on sector level for PUE in data centers) & Pledge for Carbon Neutrality by 2030 for data centers in EU

Formed by 26 CEOs of ICT companies who signed a Declaration to support the Green and Digital Transformation in Europe

Recycling & recovery quotas for e-waste (on sector level), e.g. EU

e.g. USA New Energy Act incl. partial focus on data centers and best practice development of water management (Department of Energy and the Environmental Protection Agency)

In collaboration with private sector, Ministry of Education

e.g. Japan: Creation of international Standard for Energy Efficiency in IT, "ISO/IEC 23544:2021 Information Technology – Data Centers – Application Platform Energy Effectiveness (APEE)," (result of a grant project by the New Energy and Industrial Technology Development Organization (NEDO)

High targets set, main policies published, initiatives planned | Medium targets, policies and Initiatives partially set and planned | Low / Limited targets, policies and initiatives set

WEEE= Waste of electronic and electrical equipment, MCIT = Ministry of Science & IT South Korea, MIIT = Ministry of Industry and Information Technology; NDRC = National Development and Reform Commission, EC = European Commission

Eight takeaways and best practices were derived

Non-Exhaustive

		Best Practices	Covered in…	Example of best practice
Vision & Strategy	1	Set up **holistic sustainability policy framework** to meet sustainability targets		– South Korea Ministry of Science & IT introduced **Greening ICT Policy Goals** with focus on greening data centers (e.g. 50+ DC certified by 2030), communication networks, and ICT devices
Environment	2	Make **decarbonization and clean energy consumption** essential in operations central		– **Energy efficiency requirements for DC,** incl. standards; e.g. target PUE of 1.3 for DC, "green" DC certificates and locating DS in cooler areas (China MIIT[1])
	3	Define a **holistic circular model** from product design to e-waste		– **EU Eco-design Directive** to set new requirements to make products more durable, reliable, reusable, upgradable, reparable, easier to maintain, refurbish and recycle (by EC[2])
Social	4	Ensure **infrastructure connectivity** for all through access to latest technology		– South Korea's **Ministry of Science & IT** collaborated with main Comms **operators** and created **5G network sharing in rural areas** (Joint roll-out of 5G network can save up to $938 mn (2018-2028))
	5	Develop skills **through STEM education**, special focus on women & youth		– **EU Digital Decade program by EC[2]** includes targets for 2030 regarding ICT specialist in workforce and basic digital skills in population (e.g. Tech up-take: 75% companies using Cloud/AI/…)
Economic	6	Incentivize **technological advancement** and enable other sectors		– **Digital New Deal South Korea** to strengthen its digital capacity based on its competitive edge in information and communication technology (ICT) incl. extensive funding (Ministry of Science & IT)
Governance	7	Drive "the" right **industry standards** creating **transparency** and set strategic guidance		– **UK's Streamlined Energy and Carbon Reporting (SECR)** mandates publicly listed companies to disclose e.g. Scope 1, 2 emissions (Fed. Gov't) (mandatory for +1300 companies in UK)
Enabler role	8	Foster **collaboration & innovation** on sustainability solutions		– **NASA – Surface Water Ocean Topography** to create high-definition data on the salt- and fresh water on Earth's surface; in collaboration with French Space Agency

1. MIIT = Ministry of Industry and Information Technology, 2. EC = European Commission

Template Stakeholder analysis

Stake holder

ICT sector regulators

Logo Regulator

Insert Information

Other relevant entities (non-exhaustive)

Other relevant entities within ICT regulatory ecosystem are:

- xx

Add comment (if applicable)

Country takeaways

Key takeaways in the context of sustainability

- **xx**

Flag country

Source: EU websites

Template vision

Vision / strategy	Selected examples	ICT
		– xx

Template Commitment / targets

Commitments / targets

Environ-mental

Social

Comms	Technology	Overarching / Enabling

Split findings along sectors (if applicable)

Insert information

Insert concrete targets

Split findings along sustainability dimensions

Insert concrete targets

Comments

– Add comments and takeaways on findings

Environmental

Social

Indicate maturity of findings

Sources_

Targets set, main policies published, initiatives planned

Targets, policies and initiatives Partially set and planned

Limited targets, policies and initiatives set

Template Policies / initiatives

Policies / initiatives	Comms	Technology	Overarching / Enabling
Environ-mental	*Insert information*		
Economic			

Split findings along sectors (if applicable)

Split findings along sustainability dimensions

Comments

- Add comments and takeaways on findings

Environmental

Social

Indicate maturity of findings

Sources_

Targets set, main policies published, initiatives planned

Targets, policies and initiatives Partially set and planned

Limited targets, policies and initiatives set

Template Summary

Summary and key implications

Country key takeaways

Vision / Strategy

Commitments / Targets

Policies / Regulations & Initiatives

Template key implication

Summary and key implications

Key takeaways

Add overarching theme 1

Add overarching theme 2

Add overarching theme 3

Add overarching theme 4

Template – X-ray of benchmark findings (sector agnostic)

Sustainability targets, policies and initiatives X-Ray for CST sectors

Main pillars		Scoring Summary
Environmental	e.g. Emissions	
Social		
Economic		
Governance		

Adapt based on your derived sub-dimensions in step 1

Color each field per country and sub-dimension based on overall score (of detailed analysis)

Indicate which findings can be mapped against sectors (e.g. energy efficiency findings in tech sector)

Conduct is aggregation of findings also on sector level to create more granular insights

Takeaways

– **Insert takeaways per pillars**

National level | C Comms | T Tech

High targets set, main policies published, initiatives planned

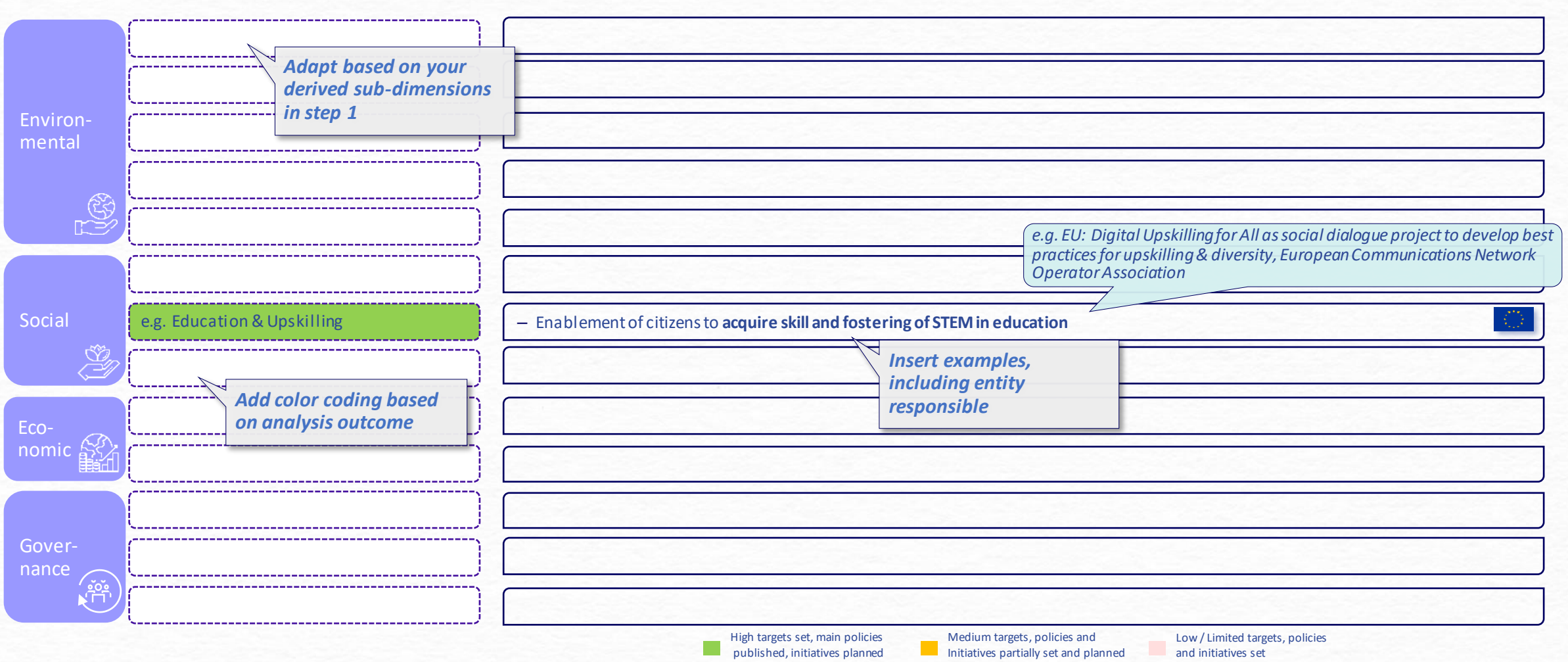
Medium targets, policies and Initiatives partially set and planned

Low / Limited targets, policies and initiatives set

Template – Sector-level findings

2.3.2

Non-Exhaustive



Regulators are increasingly taking a more active role in embedding sustainability into their sectors

Summary and key implications

BENCHMARK CONCLUSIONS

Roles & responsibilities

Regulators focus on connectivity, just **starting to look into other sustainability** topics

Many initiatives and policies come from ministries

Regulations and initiatives focus mainly on e-waste (e.g. common charger) and **connectivity** (e.g. 5G roll-out and access)

Commitments & targets

Explicit **Net Zero and renewable energy targets set at country level only**

E.g., South Korea (net-zero by 2050 & 30.6% renewable power generation by 2036, besides nuclear)

Sector specific targets on **connectivity, energy efficiency** in data center & 5G base stations & **recycling targets on e-waste** and **eco-labels**

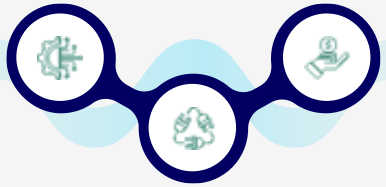
E.g., China with target PUE

E.g., Germany with 85% target on recovery & recycling

Policies, regulations & initiatives

Common themes:

- Energy efficiency in Tech
- Connectivity in Comms
- Incentives to innovate & develop in Space



E-waste & circularity increasingly important (e.g., eco-design & space debris)

Sector development heavily used to foster innovation and **sector development** (e.g. tax cuts, R&D funds)

Template – key takeaways > Benchmark analysis

2.3.3

Summary and key implications

Current state KEY TAKEAWAYS

Vision / Strategy

Takeaway 1

Takeaway 2

Takeaway 3

Can be exchanged through other implication dimensions, e.g. Roles & responsibilities in sustainability regulations

Commitments / Targets

Takeaway 1

Takeaway 2

Takeaway 3

Policies / Regulations & Initiatives

Takeaway 1

Takeaway 2

Takeaway 3

TABLE OF CONTENTS – APPENDIX

STEP 2

The KSA baseline and the global benchmark analysis identified gaps, priorities and best sustainability practices for the ICT sector

KSA BASELINE

A

Focus areas in baseline

Environmental, Social, Economic and Governance topics that were emerged from the baseline analysis as current key **strategic priority,** where ambitions, policies or multiple initiatives are mapped

GLOBAL BENCHMARK

B

Focus areas in benchmark

Relevant Environmental, Social, Economic and Governance **topics across CST sectors at global level** that were repetitively covered as key ambition, policy or initiative across the benchmarked countries

KSA will need to focus on both cross-sectors and sector specific dimensions

Comms

Continuously drive connectivity (& digital inclusion)

Drive circular design, e-waste and water management

Focus on carbon footprint and clean energy consumption

Continuously promote education & upskilling with focus on gender

Technology

Enable **sector development and employment** through Financial incentives and initiatives for innovations fostering sustainable solutions

Promote transparency and sustainability awareness through **ESG reporting & standards enforcement**

Uphold **Data privacy and protection** to mitigate security risks

ENABLED SECTORS

Enable sustainability solutions across sectors as e.g., e-Health, e-Agriculture, Smart Cities, etc.

Cross-sectors Sector-specific

Template: Conclusion of current state and benchmark analysis

Summary and key implications

A CURRENT STATE ANALYSIS CONCLUSIONS

B BENCHMARK CONCLUSIONS

Vision / Strategy

Takeaways

Takeaways

Takeaways

Takeaways

Takeaways

Takeaways

Many initiatives and policies come from ministries

Commitments / Targets

Takeaways

Takeaways

Takeaways

Takeaways

Takeaways

Sector specific targets on **connectivity, energy efficiency** in data center & 5G base stations & **recycling targets on e-waste** and **eco-labels**

Examples

Policies / Regulations & Initiatives

Takeaways

Takeaways

Takeaways

Common themes:
- Energy efficiency in Technology
- Connectivity in Comms
- Incentives to innovate & develop in Space

Takeaways

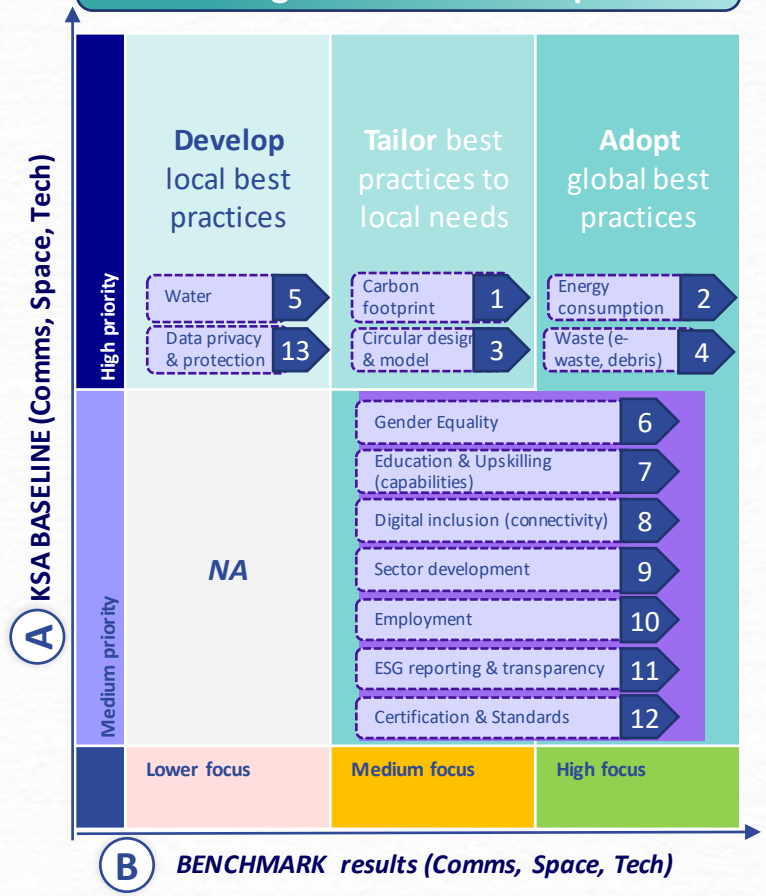
E-waste & circularity increasingly important (e.g., eco-design & space debris)

To address baseline priorities, global best practices will be adopted or tailored to local needs, while local specific initiatives will be developed to address areas with lower global focus

Selected focus areas from baseline and benchmark analysis		A KSA BASELINE (Comms, Space, Tech)	B BENCHMARK (Comms, Space, Tech)
Carbon footprint	1	High priority	Medium focus
Energy consumption	2	High priority	High focus
Circular design & model	3	High priority	Medium focus
Waste (e-waste, debris)	4	High priority	High focus
Water	5	High priority	Lower focus
Gender Equality/ equal pay	6	Medium priority	Medium focus
Education & Upskilling (capabilities)	7	Medium priority	High focus
Digital inclusion (connectivity)	8	Medium priority	High focus
Sector development	9	Medium priority	High focus
Employment	10	Medium priority	Medium focus
ESG reporting & transparency	11	High priority	High focus
Certification & Standards	12	High priority	High focus
Data privacy and protection	13	High priority	Lower focus

- Areas with progress towards targets and policies/ initiatives In place
- Major gaps between country targets, progress and policies / Initiatives in place
- Targets set, main policies published, initiatives planned
- Targets, policies and initiatives partially set and planned
- Limited targets, policies and initiatives set

Required actions to address priorities and leverage benchmark best practices



Template: Derivation of key priorities based on current state and benchmark analysis

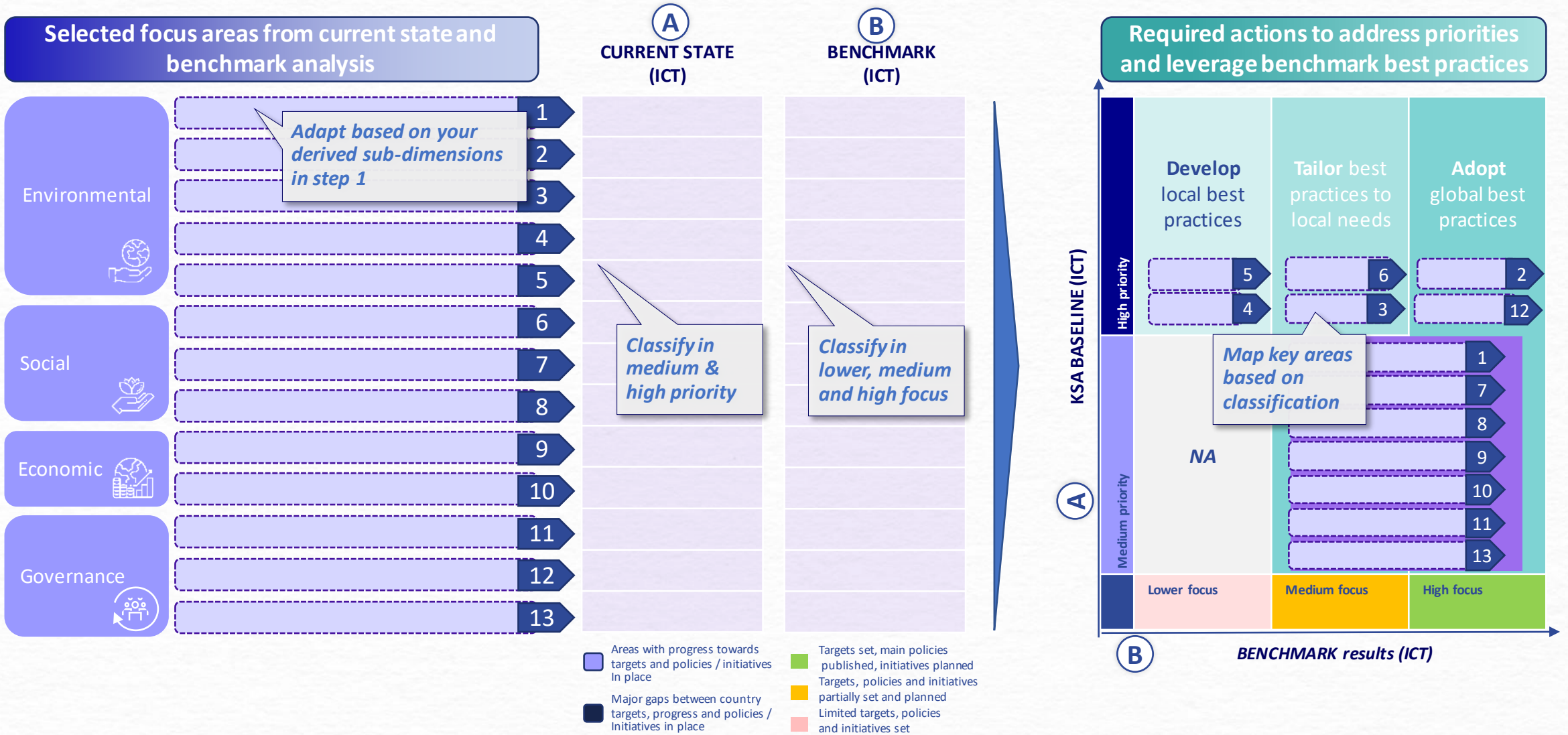


TABLE OF CONTENTS – APPENDIX

STEP 3

TEMPLATES & EXAMPLES TO CREATE SUSTAINABILITY STRATEGY

HOW – The sustainability strategy can be articulated along 5 steps

Guiding Principles

5 guiding principles to ensure the new Sustainability strategy for the ICT sector and meets the requirements identified internally (current state analysis) and externally (benchmark)

3.1

Vision

Define the sustainability vision for your organization, including ICT sector

3.2

Strategic objectives

Substantiate the vision though strategic objectives and update the pillars to match vision, based on benchmark & current analysis and along guiding principles

3.3

Commitments & KPIs

Set the commitments and the associated KPIs to drive and track objectives per pillar, based on the level of ambition set

3.4

Implementation initiatives

Design actionable initiatives and the implementation plan to executive the new Sustainability Strategy, filtering key initiatives and prioritizing them based on impact and ease of implementation

3.5

Template for guiding principles

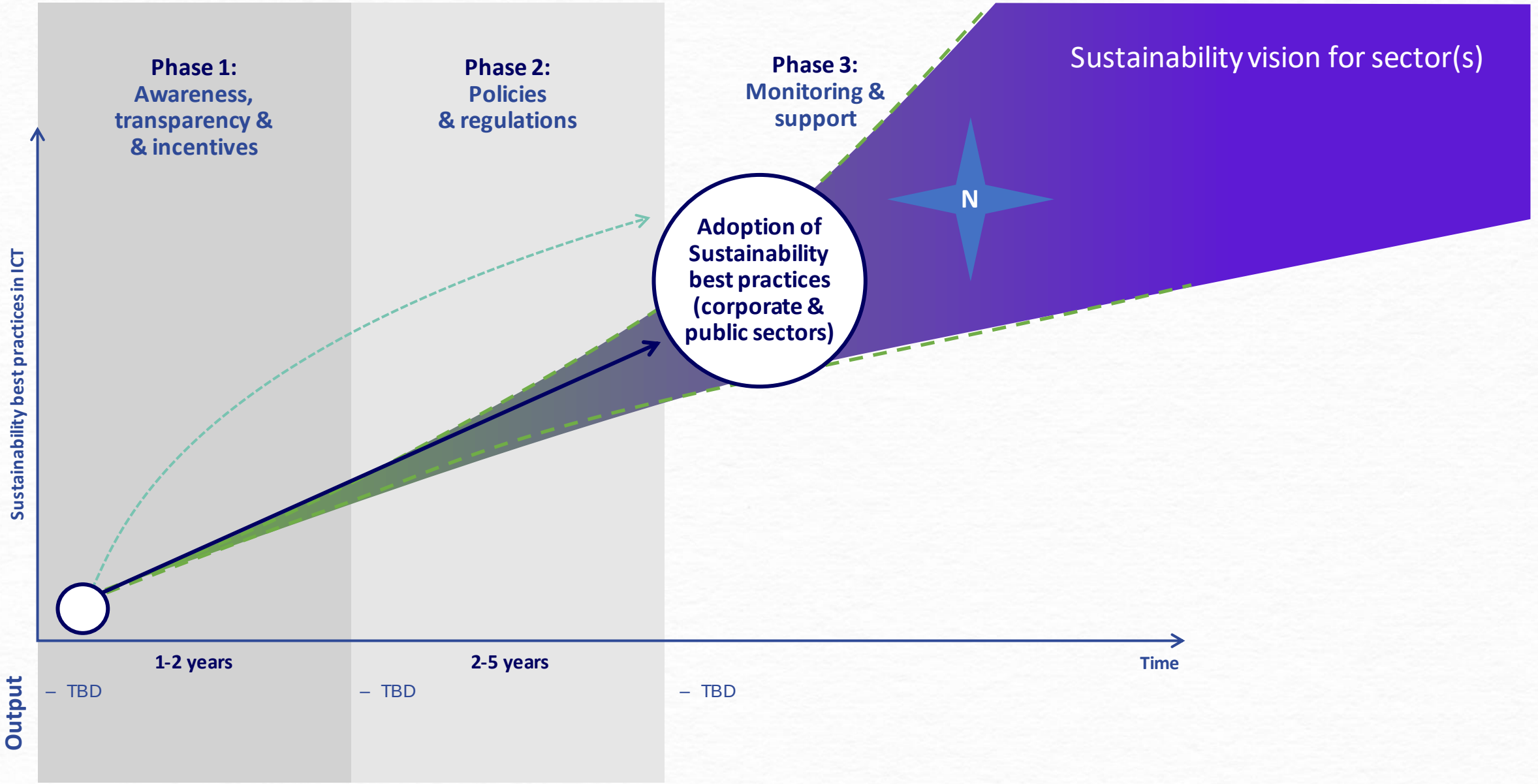
A	B	C	D	E
Ambitious	**Local**	**Sector-specific**	**Regulator-focused**	**Enabling**
Exemplary				
Add explanation	*Add explanation*	*Add explanation*	*Add explanation*	*Add explanation*

Template: Visioning

Assess each vision along the guiding principles as additional validation

		PROS	CONS
1	Vision option 1		
2	Vision option 2		
3	Vision option 3		
4	Vision option 4		

Template: Visualization of vision journey



Source: Kearney

C: Circular Economy

Previous C.I.R.C.L.E pillar

C **Circular Economy**

Improve management of **e-waste** and promote a **circular economy** for ICT sector

Implication from baseline & benchmark analysis

- **Drive circular design, e-waste and water management**
- **Add management of space debris**

JUSTIFICATION

- Include **space debris** as important environmental challenge in the space sector
- Define **circularity along life-cycle and resources**, i.e. from design to waste of products
- Reflect **e-waste regulation** requirement from ITU and policies adopted in leading benchmark countries

Updated Sustainability pillar

C **Circular Economy**

Improve management of **e-waste** and **space debris** and promote a **circular economy** for ICT sector

Definition of pillar

- **Promote circularity** with a **central focus on e-waste management** generated by electronic and electrical equipment (WEEE)
- **Integrate space debris** mitigation, prevention and management
- Adopt an approach to goods & services **driven by holistic models from design to end-of-life stages**
- **Reflect the importance of water management** in the framework, especially for data centers
- **Example**:
  - Extended manufacturer responsibilities for electronic products by enforcing establishment of take-back schemes
  - Evaluate governance solution to facilitate space debris management

Cross-sectors Sector-specific (C) Comms (S) Space (T) Technology

The template helps define pillars and strategic objectives of sustainability strategy

Exemplary CST Pillar

C **Cutting-edge infrastructure**

Maintain an **accessible, reliable, resilient, and secure Comms & Technology infrastructure**

Implication from current state & benchmark analysis

JUSTIFICATION

– *Insert conclusions from current state and benchmark analysis*

Tailored Pillar

C **Name of pillar**

Strategic objectives per pillar

Definition of pillar

– *Insert definition of pillar, including*

  – *Topics covered*

  – *Objectives of pillar*

  – *Examples of topics & initiatives (based on current state analysis and benchmark)*

Cross-sectors Sector-specific C Comms T Technology

Exemplary commitments

	C Cutting-edge infrastructure	**I** Innovation	**R** Reduction of Carbon Footprint	**C** Circular Economy	**L** Leapfrog in Digitalization	**E** Equality & Inclusion	**S** Standards & Strategic Guidance
A	**XX%** national coverage of 5G (including rural areas and underserved communities)	**X** investments in technology innovation, supporting progress toward sustainability ambitions	Reduce carbon footprint in each sector by **XX% by 2030**	Recycle **XX%** of Waste Electrical and Electronic Equipment (WEEE)	Use digitalization to reduce carbon footprint in other sectors by **XX%**	**XX%** participation of women in ICT sector including management positions	**Publish** the Sustainability standards for each of the ICTsectors
B	...	...	...	...	...	...	...
C	...	...	...	...	...	...	...

Exemplary commitment options, including benchmark and current state rationale

Pillars	C Cutting-edge Infrastructure	I Innovation	R Reduction of Carbon Footprint	C Circular Economy	L Leapfrog in Digitalization	E Equality & Inclusion	S Standards & Strategic guidance
	MEP's optimum goal for 2030 is **XX% connectivity** for internet connection	Current scores for expenditure on **R&D** and issued scientific and technical journal articles are **XX**	**Net zero target in KSA** set for 2060, and XX% renewable target for the national grid (directly linked to Scope 1&2)	Saudi ranks **1st in Arab region in e-waste generation** at 595 ktons per annum, 1% of global e-waste[3]	Saudi has the ambition to reach to **net-zero by 2060**	XX% female participation in Comms and Technology sectors today, with XX% target for 2030[5]	**Saudi Exchange** promotes ESG disclosure in KSA by encouraging listed companies to disclose ESG
Benchmark	Example: **Singapore's** target on coverage of 5G is 100% by 2030	Example: **China's 5-year plan for Comms and Technology** with forecast of 10% annual growth rate and investments	– **Germany's 2045 Net zero target**; 80% renewable by 2030[2] – SBTi near-term targets are 4% reduction per year	Example: **EU's** 55-80% **recycling / preparing for re-use target** for ITC equipment (from 2019 onwards)	Example: **Singapore's smart nation strategy** to leverage technology for digital economy & society	Example: **Germany's mandatory gender quota** of 30% in supervisory & executive boards (2021)	Example: **EU's Non-Financial Reporting Directive** mandates disclosure of social & environ-mental issues
Commitments	**XX%** national coverage of 5G (including rural areas and underserved communities)	**X** investments in technological innovations supporting progress in sustainability ambitions	Reduce emissions in each sector by **XX%** for scopes 1 & 2	Recycle Waste Electrical and Electronic Equipment (WEEE) by **XX%**	Use digitalization to reduce emissions in other sectors by **XX%**[4]	**XX%** participation of women in ICTsectors including management positions	**Publish** the Sustainability standards for each of the ICTsectors

- Source: 1. MEP, 2. EU; 3. E-waste monitor ,4. GSMA; 5. NDS

Template: Commitment options

	C Cutting-edge infrastructure	I Innovation	R Reduction of Carbon Footprint	C Circular Economy	L Leapfrog in Digitalization	E Equality & Inclusion	S Standards & Strategic Guidance
A							
B							
C							

Existing in benchmark

Aligned with national / Local strategies

New at global level

Template: list of initiatives

There can be one or multiple for each pillar

Description of the initiative

The main entity is the organization for which the strategy is designed

Pi	#	New Initiatives Recommended	Sector (Comms, Technology or ICT)	Sustainability Dimensions	Main entity Role (RACI)	Initiative Type
Cutting-edge Infrastructure	1	Example	*Comms*	*Environmental Social*	*Accountable*	*Infrastructure & Solution*
Innovation	2					
	3					
	4					
...						

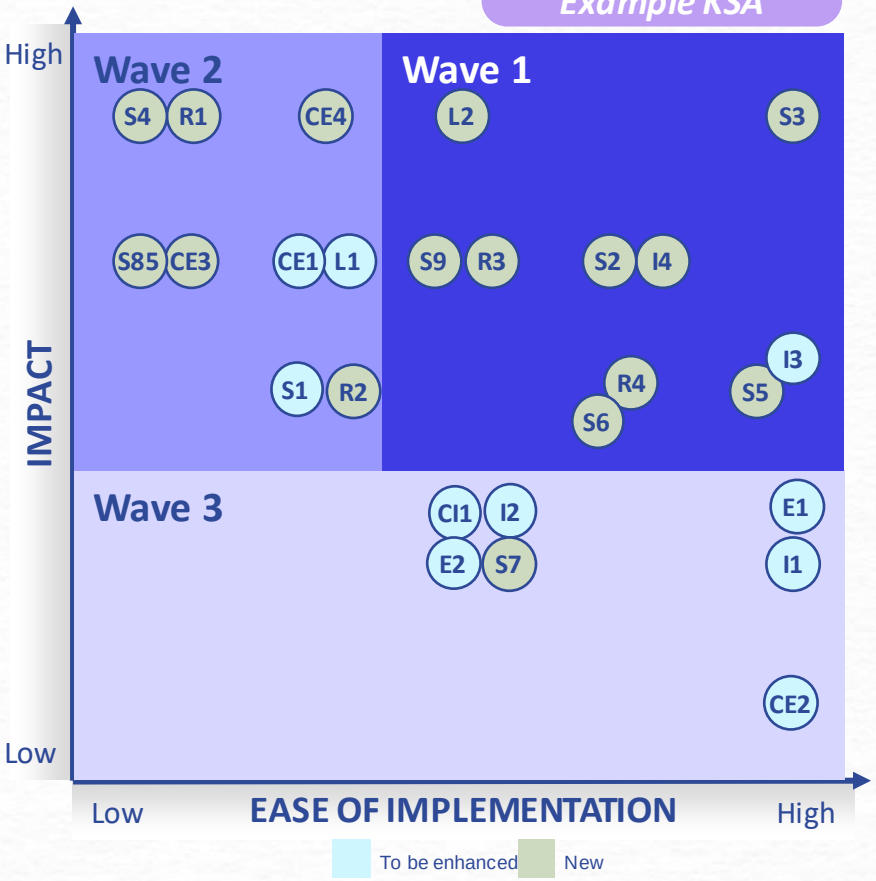
To be enhanced New

Type of initiatives might be Infrastructure & solution, Awareness & capabilities, policies & regulations, financial incentive, but each entity can customize this classification based on their needs

Template: Prioritization of initiatives

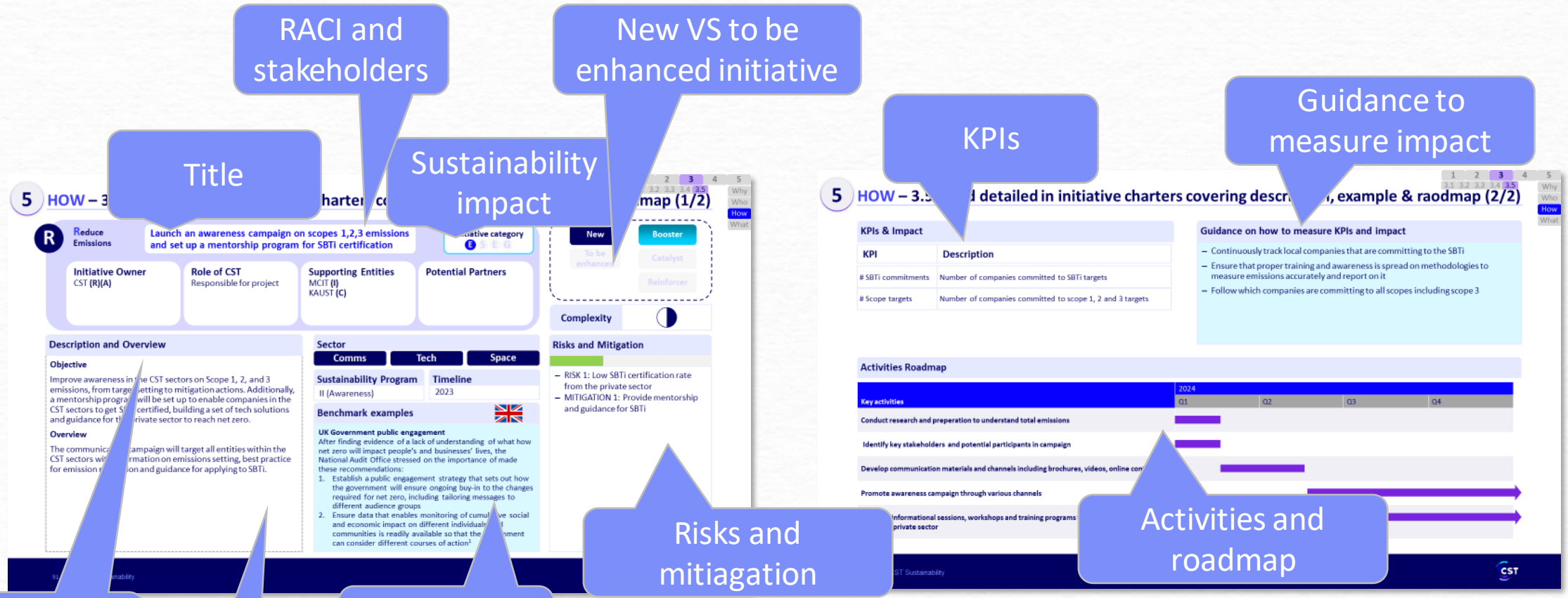
INITIATIVES OF **CIRCLES**

Example KSA



Cutting-edge Infrastructure	*C#*	*Initiative name*	*Wave 1 / 2 / 3*
Innovation	I1		
	...		
Reduction of Carbon footprint	R1		
	...		
Circular Economy	CE1		
	...		
Leapfrog in Digitalization	L1		
	...		
Equality & Inclusion	E1		
	...		
Standards & Strategic Guidance	S1		
	...		

For each of the boosters and catalysts initiatives we have defined a high-level charter, to support the implementation



Template: Initiative charter

R **Reduce Emissions**

Insert text

Initiative category
E S E G

Initiative Owner	Role of CST	Supporting Entities	Potential Partners

New | Booster
To be enhanced | Catalyst
Reinforcer

Complexity 2

Description and Overview

Objective

Insert text

Overview

Insert text

Sector

Comms | Technology

Budget

Timeline

Benchmark examples

Insert text

Risks and Mitigation

- RISK 1: *Insert text*
- MITIGATION 1: *Insert text*

Template: Initiative charter

KPIs & Impact

KPI	Description

Guidance on how to measure KPIs and impact

Insert text

Activities Roadmap

Key activities	2024			
	Q1	Q2	Q3	Q4

Additional guidance to assign responsibilities for initiative implementation

The RACI matrix is a **responsibility assignment chart** that **maps out every task, milestone or key decision involved in completing a project and assigns which roles** are **Responsible** for each action item, which personnel are **Accountable**, and, where appropriate, who needs to be **Consulted** or **Informed**

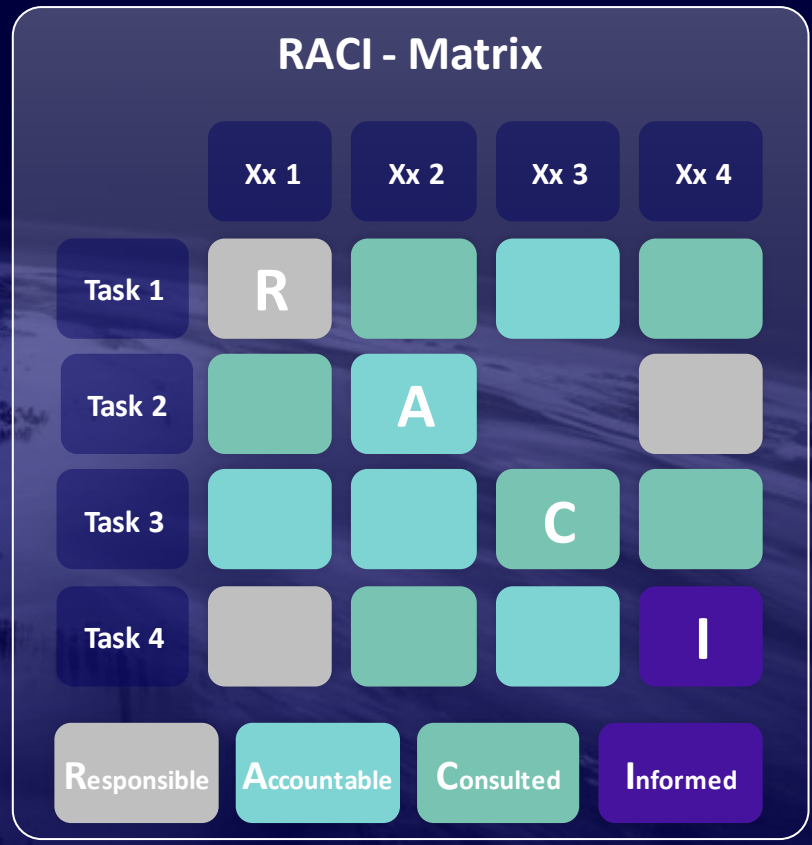
HOW TO CREATE A RACI MATRIX

A simple process for creating a RACI model includes the following six steps:

Include in tasks ongoing collaboration for implementation, responsibility and budget assignment and sign-off

1. Identify all the tasks involved in delivering the initiative and list them on the left-hand side of the chart in completion order
2. Identify all the initiative stakeholders and list them along the top of the chart
3. Complete the cells of the model identifying who has responsibility. Accountability and who will be consulted and informed for each task.
4. Ensure every task has at least one stakeholder Accountable. Resolve any conflicts where there is more than one for a particular task
5. No tasks should have more than one stakeholder Accountable. Resolve any conflicts where the is more than one for a particular task.
6. Share, discuss and agree the RACI model with the stakeholders during a working session. This includes resolving any conflict or ambiguities.

EXEMPLARY RACI STRUCTURE



- Source: CIO

…along RACI matrix

The RACI matrix is a **responsibility assignment chart** that **maps out every task, milestone or key decision involved in completing a project and assigns which roles** are **Responsible** for each action item, which personnel are **Accountable**, and, where appropriate, who needs to be **Consulted** or **Informed**

Responsible: People or stakeholders who do the work. They must complete the task or objective or make the decision. Several people can be jointly *Responsible*.

Accountable: Person or stakeholder who is the "owner" of the work. He or she must sign off or approve when the task, objective or decision is complete. This person must make sure that responsibilities are assigned in the matrix for all related activities. Success requires that there is only one person Accountable, which means that "the buck stops there."

Consulted: People or stakeholders who need to give input before the work can be done and signed-off on. These people are "in the loop" and active participants.

Informed: People or stakeholders who need to be kept "in the picture." They need updates on progress or decisions, but they do not need to be formally consulted, nor do they contribute directly to the task or decision.

- Source: CIO

TABLE OF CONTENTS – APPENDIX

STEP 4

TABLE OF CONTENTS – APPENDIX

STEP 4

Stakeholder list

Group	Identified external key stakeholders needed to implement sustainability strategy initiatives
National Government	– National innovation funds
Ministries on government level	– Ministry of Energy – Ministry of Environment
Academia	– Science departments of leading universities
Private sector companies in ICT	– …
…	

TABLE OF CONTENTS – APPENDIX

STEP 4

Template case for change

Internal communication elements, based on stakeholder needs and groups.

Vision

Commitments

1	2	3	4	5	6
Why do we have to change?	Why now?	What do we want to achieve?	What will change?	How and when will this happen?	What does this mean for me?
Key Messages per Stakeholder Group					
Overarching message	Overarching message	Overarching message	Overarching message	Overarching message	Overarching message

TABLE OF CONTENTS – APPENDIX

STEP 5

TABLE OF CONTENTS – APPENDIX

STEP 5

Template: Initiative roadmap

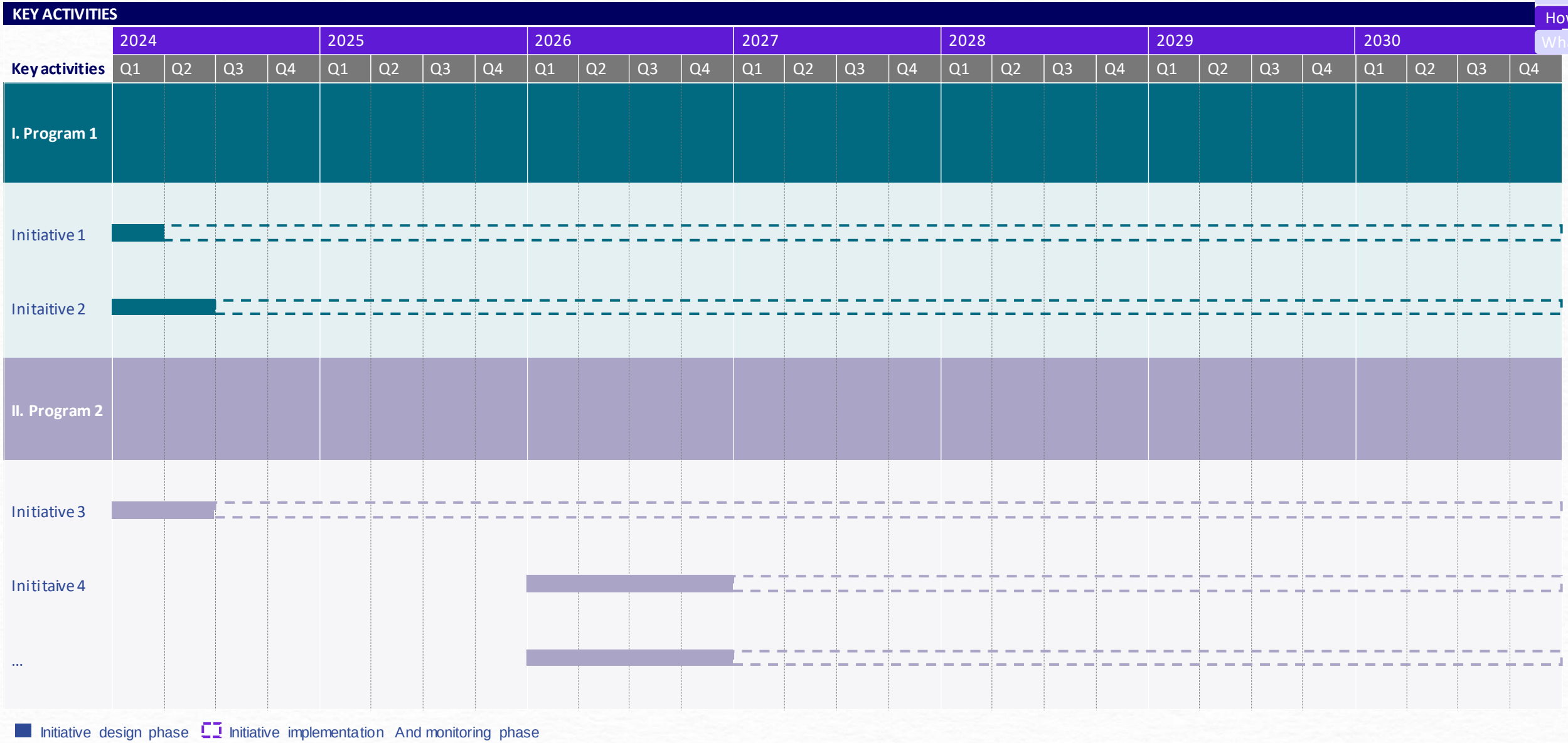


TABLE OF CONTENTS – APPENDIX

STEP 5

Template: Risks and mitigation

	Risk	Mitigation
Risk 1	– x	– x
Risk 2	– x	– x
Risk 3	– x	– x
Risk 4	– x	– x
Risk 5	– x	– x

Thank You

هيئة الاتصالات والفضاء والتقنية
Communications, Space & Technology Commission

Digital Cooperation Organization