



هيئة الاتصالات والفضاء والتقنية
Communications, Space &
Technology Commission



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



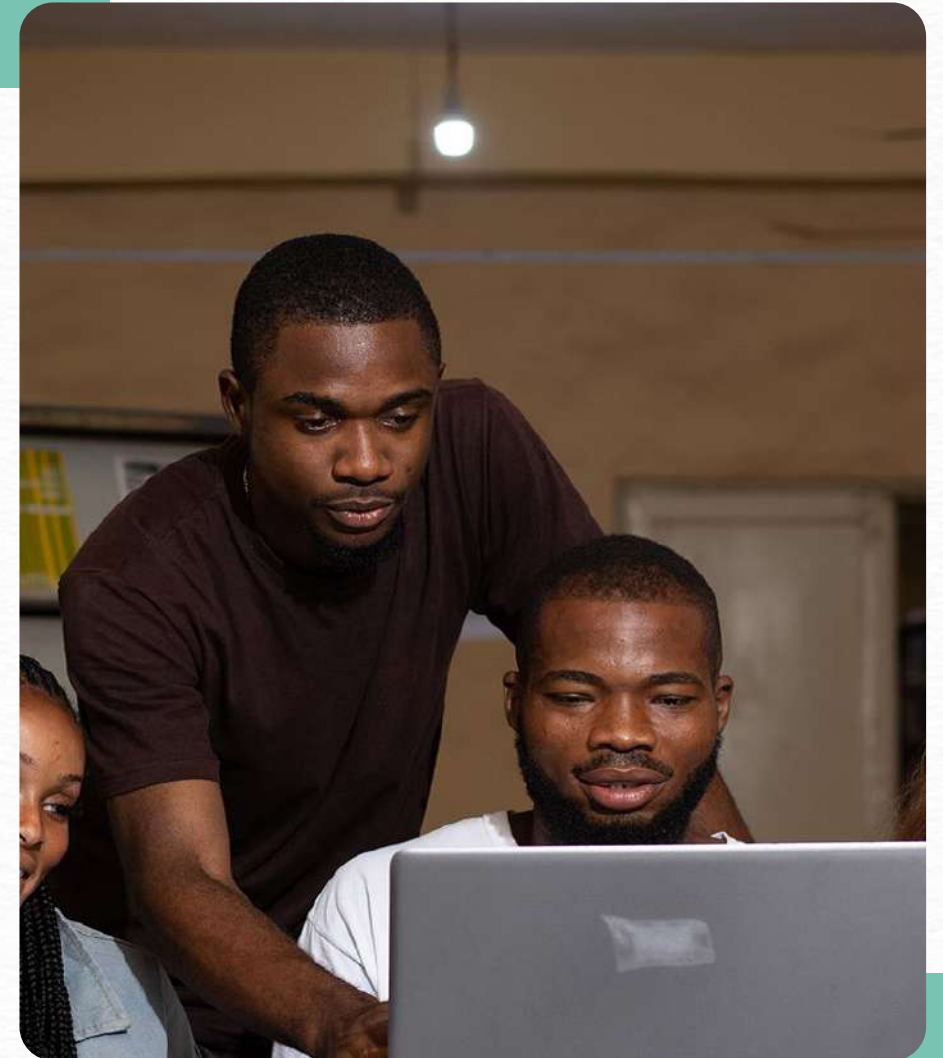
The DCO Strategic Roadmap for 2030 is also centered to foster an inclusive, human-centric, and sustainable digital economy using digital technologies



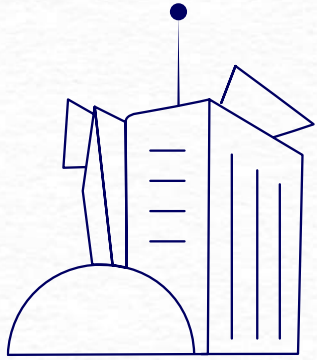
The DCO also aims to enable women, people with disabilities, the youth, and entrepreneurs by giving them the access, skills to benefit from internet and digital technologies



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



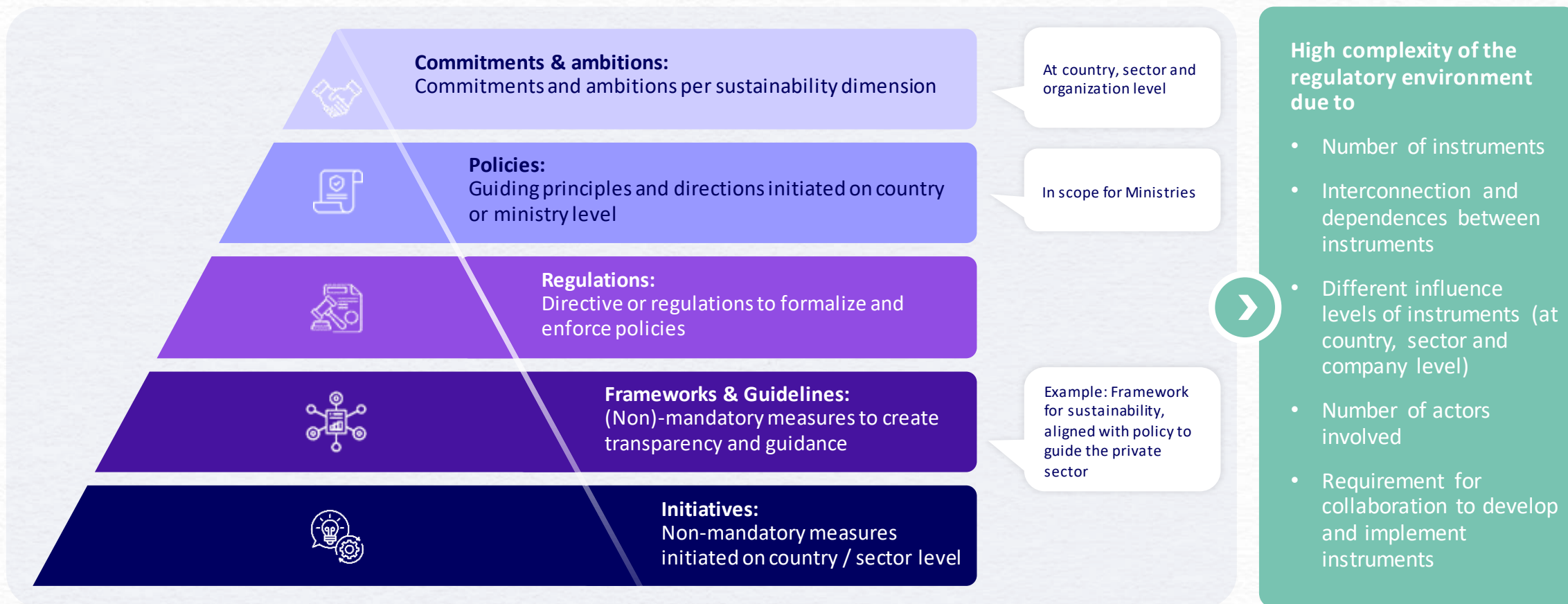
OBJECTIVES OF THE TOOLKIT

- **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



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



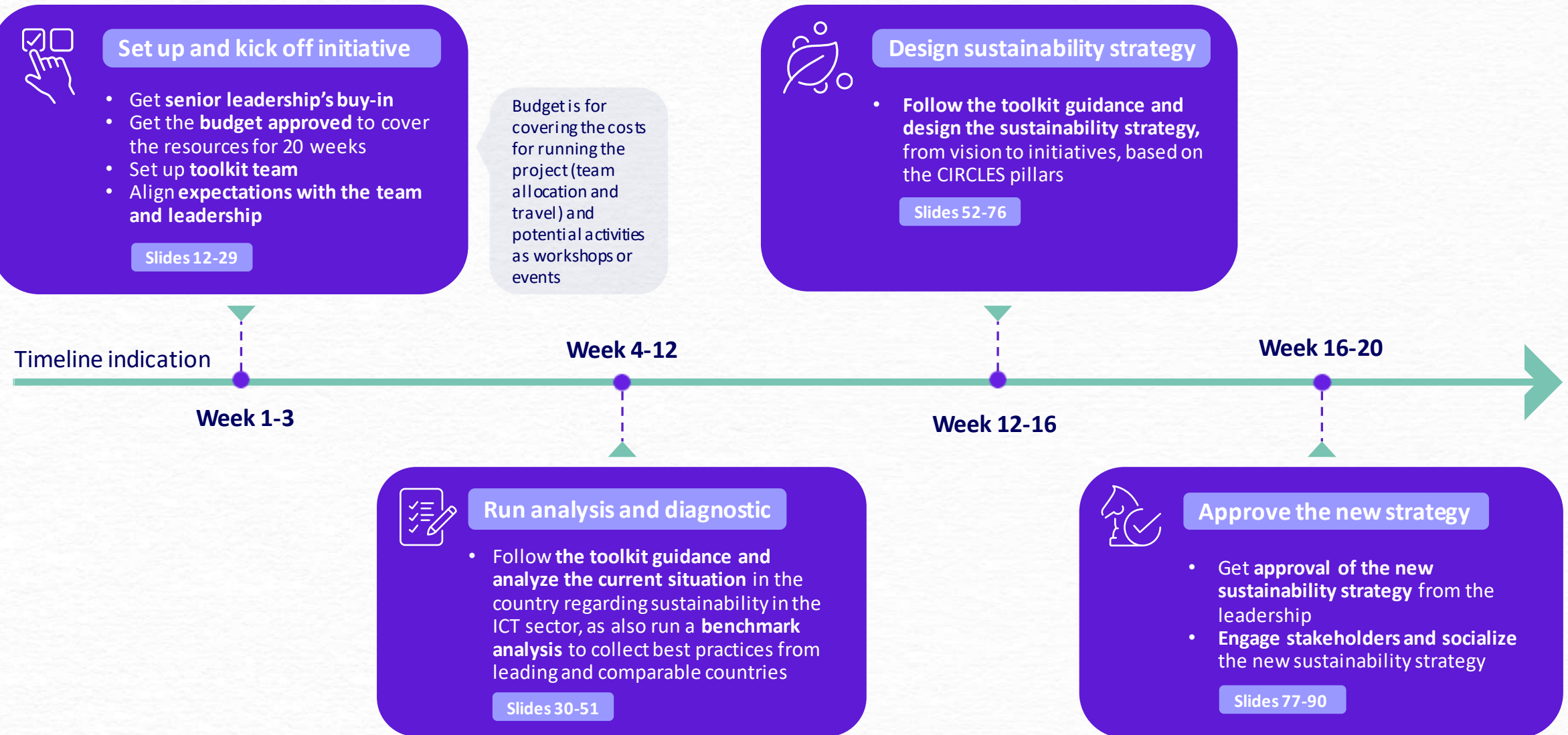
Case study for
inspiration



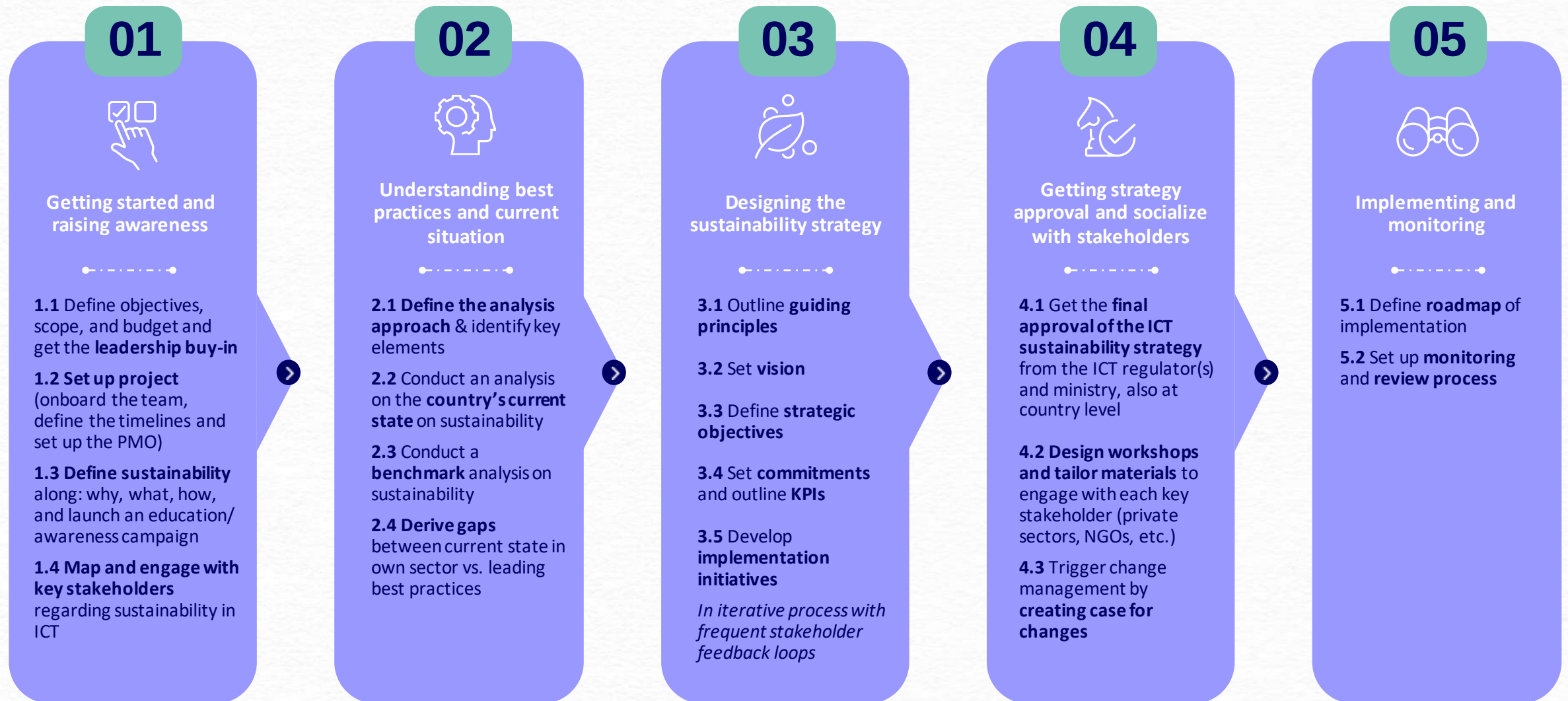
POSITIVE IMPACTS OF THE SECTOR'S SUSTAINABILITY STRATEGY

- ✓ 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

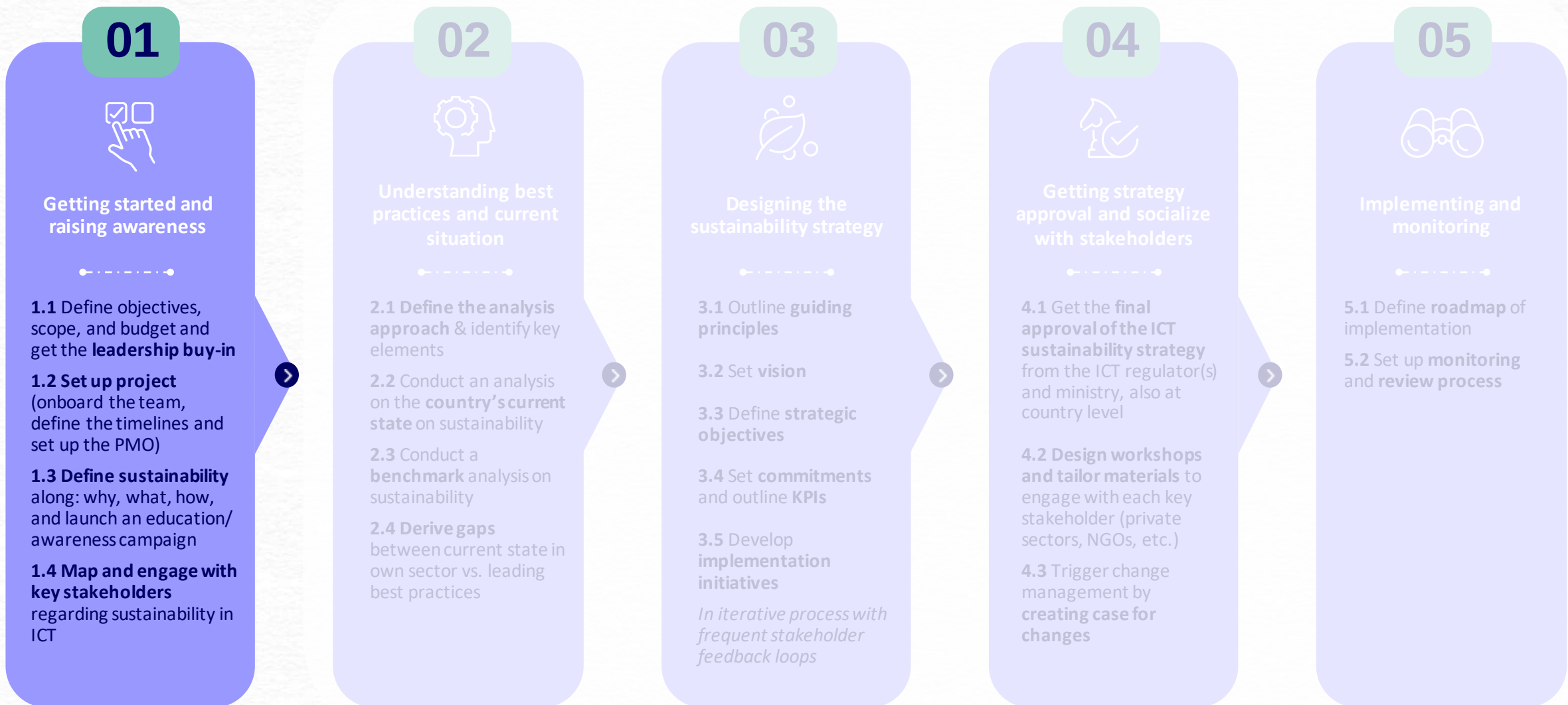
The toolkit's application can be articulated into four steps across 20 weeks



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



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



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*)

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

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



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)

Local stakeholder

International stakeholder

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

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

Why
Who
How
What



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 stakeholders, 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

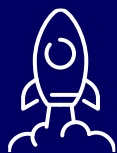
Some countries might delay the leadership approval AFTER step 2, i.e., when the baseline current state analysis and the benchmark study is completed.



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 regulator's 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 are involved
- 3 Adoption of project management tools, and continuously improve the PMO's performance, accessible by across the entities involved

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...

DIFFERENT SUSTAINABILITY FRAMEWORKS



Environmental, Social & Governance (ESG) Framework



Triple Bottom Line: Economic, Social & Environmental



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

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



SUSTAINABILITY FRAMEWORK



Corporate 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)

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



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



SELECTED FRAMEWORK



 Corporate Governance

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**



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

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

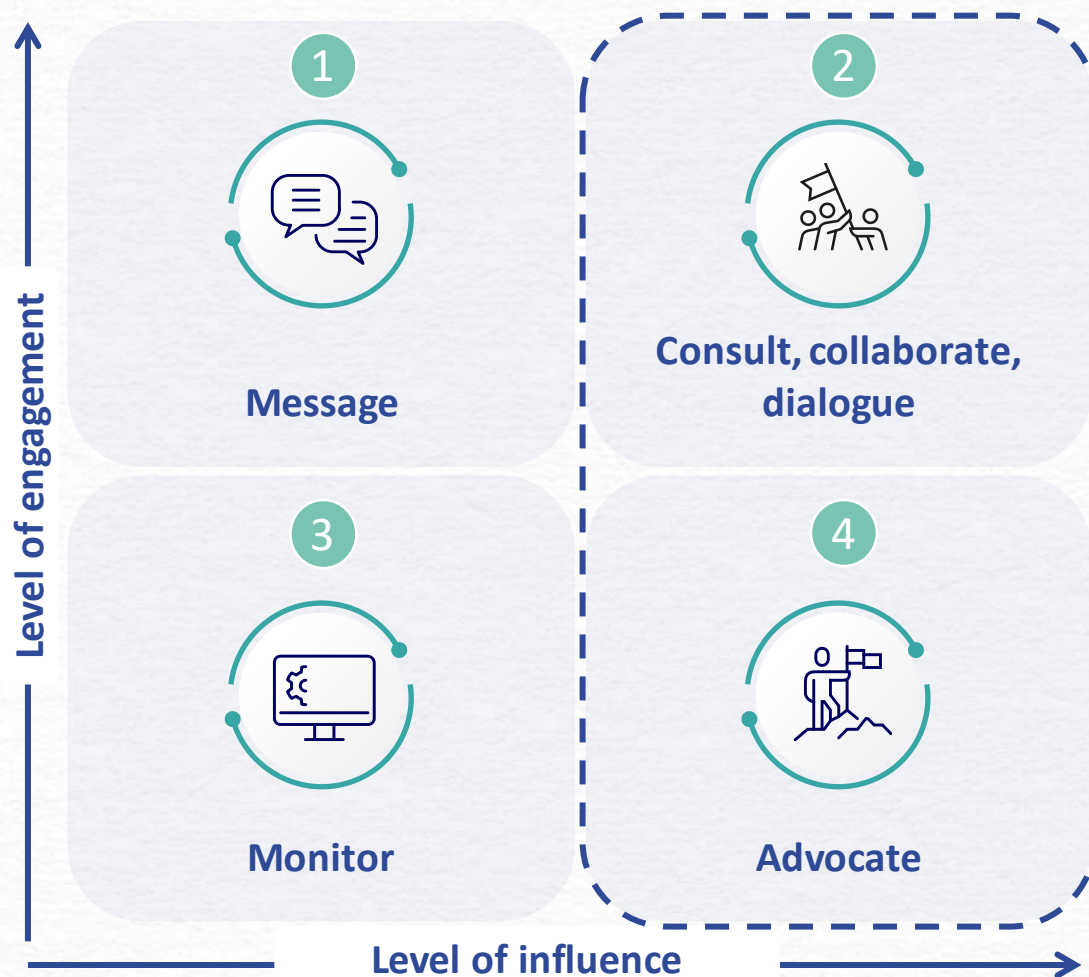
HOW – 1.4 Tailor your approach based on influence and level of engagement

1 2 3 4 5

1.1 1.2 1.3 1.4

Why
Who
How
What

Approaches to stakeholder engagement

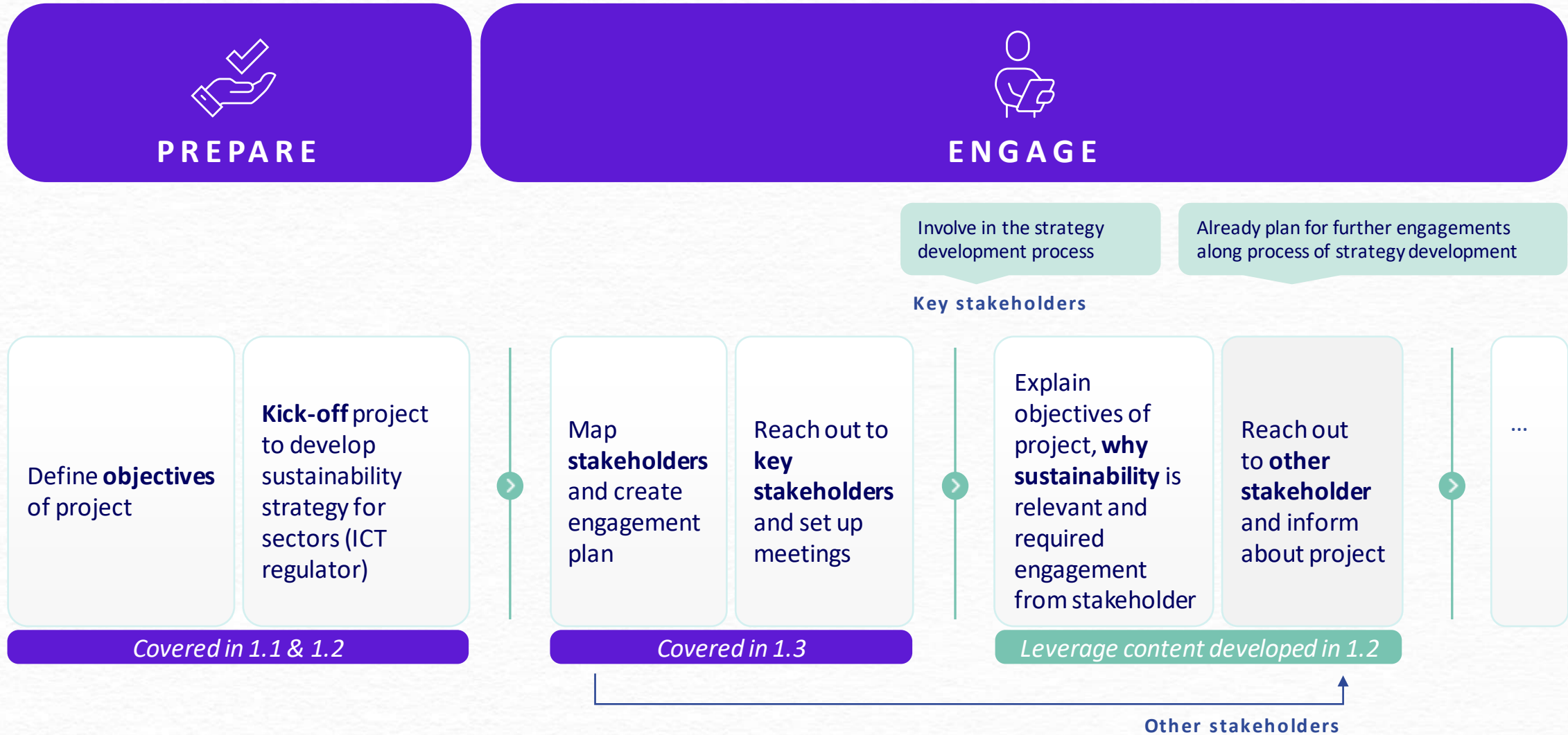


- 1 Message:** Communicate with stakeholders through messages that are specific and strategically targeted. Use these messages to share information rather than to elicit a response.
- 2 Consult:** Consult stakeholders extensively on projects.
Dialogue: Ensure that dialogues are two-sided and promote 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.

- Sources: [Business for Social Responsibility](#); Cambridge University

Key stakeholders

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



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

Why
Who
How
What

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



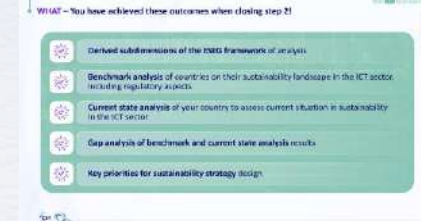
WHO



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

Why
Who
How
What

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



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)



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

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 stakeholder

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

Step 2	Actions	Material to leverage
 Under- standing 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 from benchmark	• 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

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

Comms



TECHNOLOGY



ENABLED SECTORS



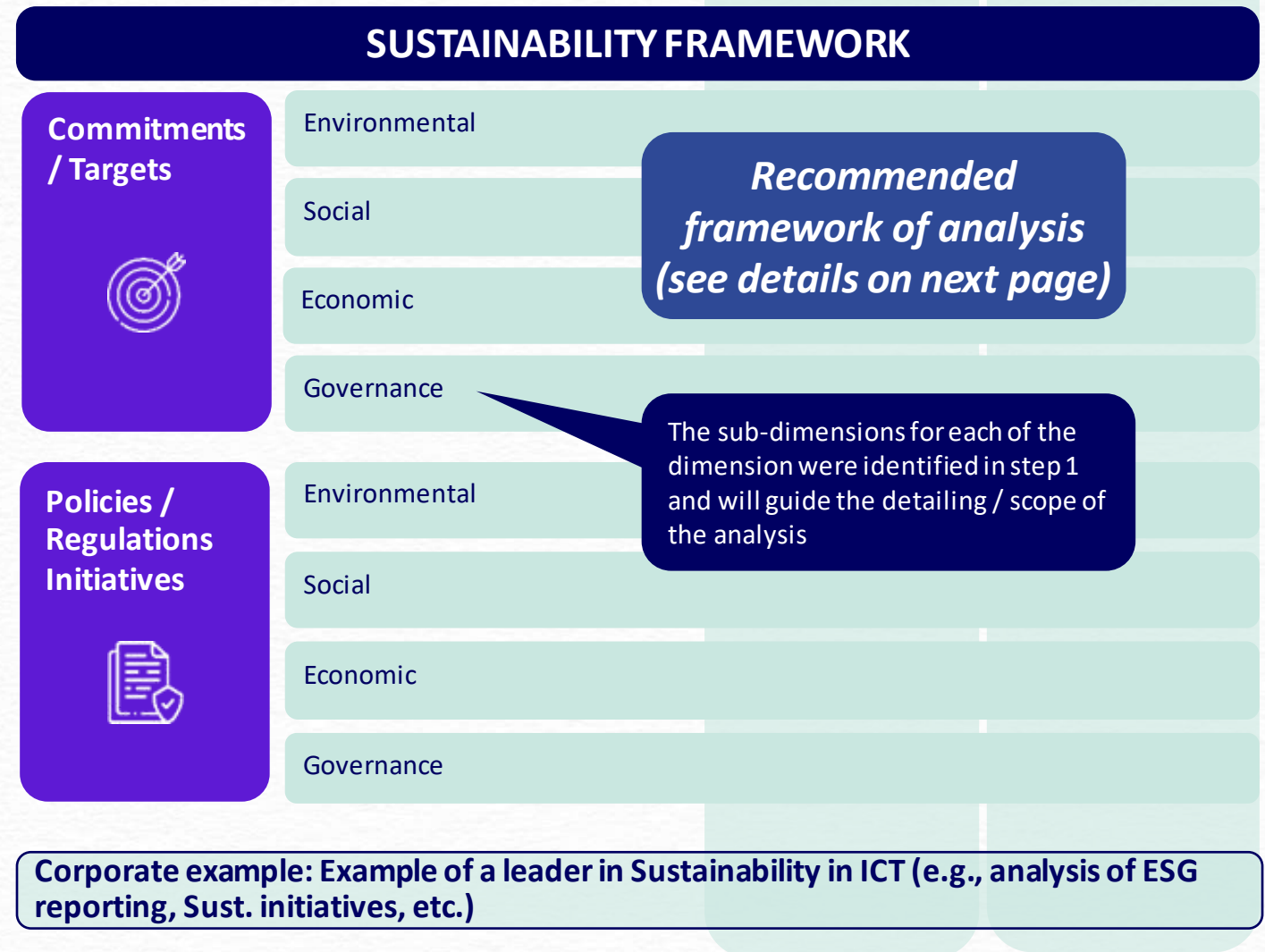
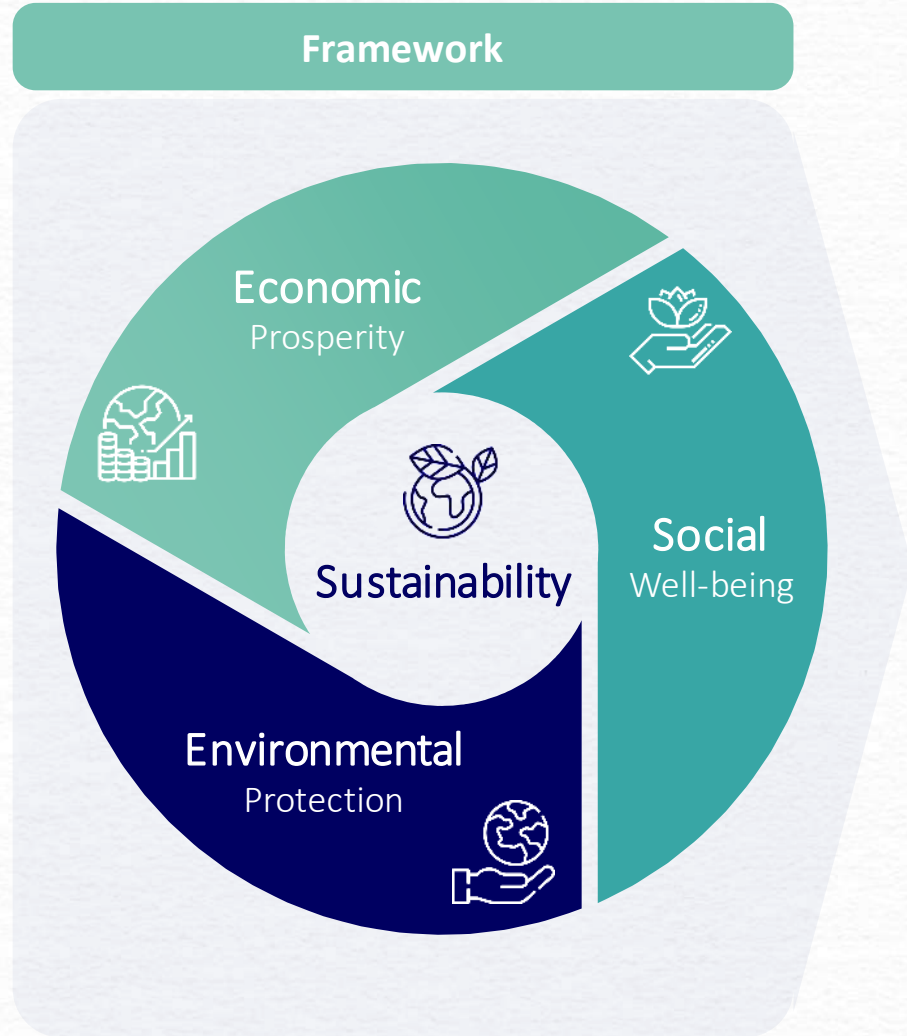
- **Identify the sectors to analyze**
- Base it on **project objectives** and the sectors overseen, regulated and / or empowered by regulator
- **Include potentially other sector** where the ICT industry can enable more sustainability

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



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

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

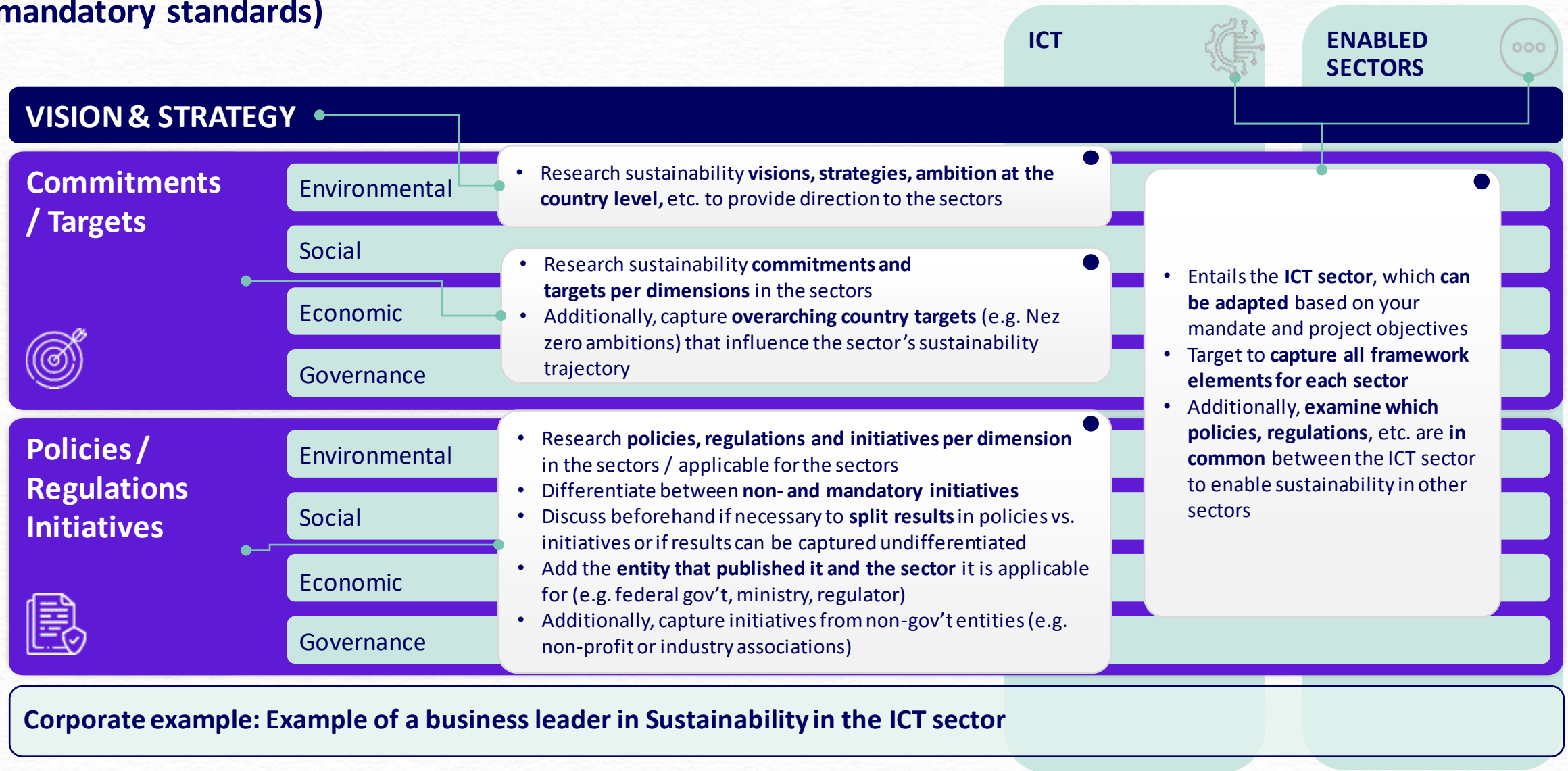


Environmental	Policies / Regulations / Initiatives on Climate Change, minimum recycled material, e-waste, etc.
Social	Policies / Regulations / Initiatives on women employment, services for people with disabilities, etc.
Economic	Policies / Regulations / Initiatives on labor ICT market, incentives for 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)



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

1 2 3 4 5

2.1 2.2 2.3 2.4

Why
Who
How
What

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



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 footprinting			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



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



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

Recommended framework

These sub-dimensions will help targeting sustainability key topics relevant for the project

Selected Subcategories	Selected Subcategories
Environmental	Climate Change
Social	Human Rights
Governance	Anti-Corruption

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**

Template available

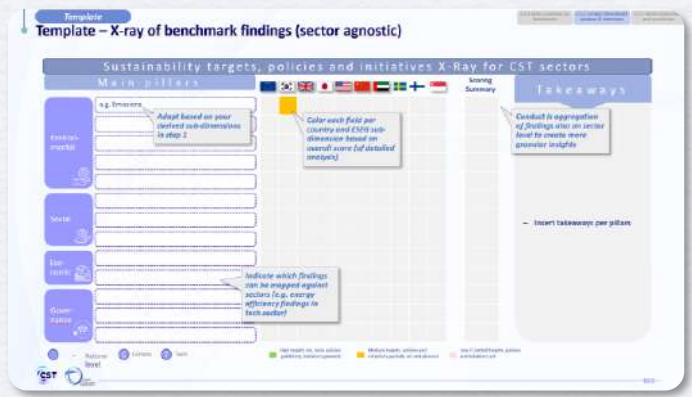
EXPANDED TOOLKIT

CST Digital Cooperation Organization

46

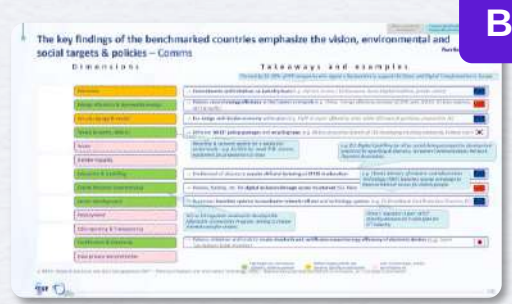
HOW – 2.3.3 Organize the findings first looking at the cross-sector targets, policies and initiatives, and then a summarizing them by sector

KEY FINDINGS ACROSS SECTORS ON TARGETS, POLICIES AND INITIATIVES



A

KEY FINDINGS OF COMMS SECTOR



B

KEY FINDINGS OF TECH SECTOR



C

AGGREGATED SUMMARY OF BEST PRACTICES



D

+ SELECTED CORPORATE BEST PRACTICES

E

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

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

BertelsmannStiftung

SUSTAINABLE DEVELOPMENT REPORT 2022
From Crisis to Sustainable Development: the SDGs as Roadmap to 2030 and Beyond
Includes the SDG Index and Dashboards

ITU

ITU Publications
International Telecommunication Union
Development Sector

Global Digital Regulatory Outlook 2023
Policy and regulation to spur digital transformation

Connect 2030 Agenda

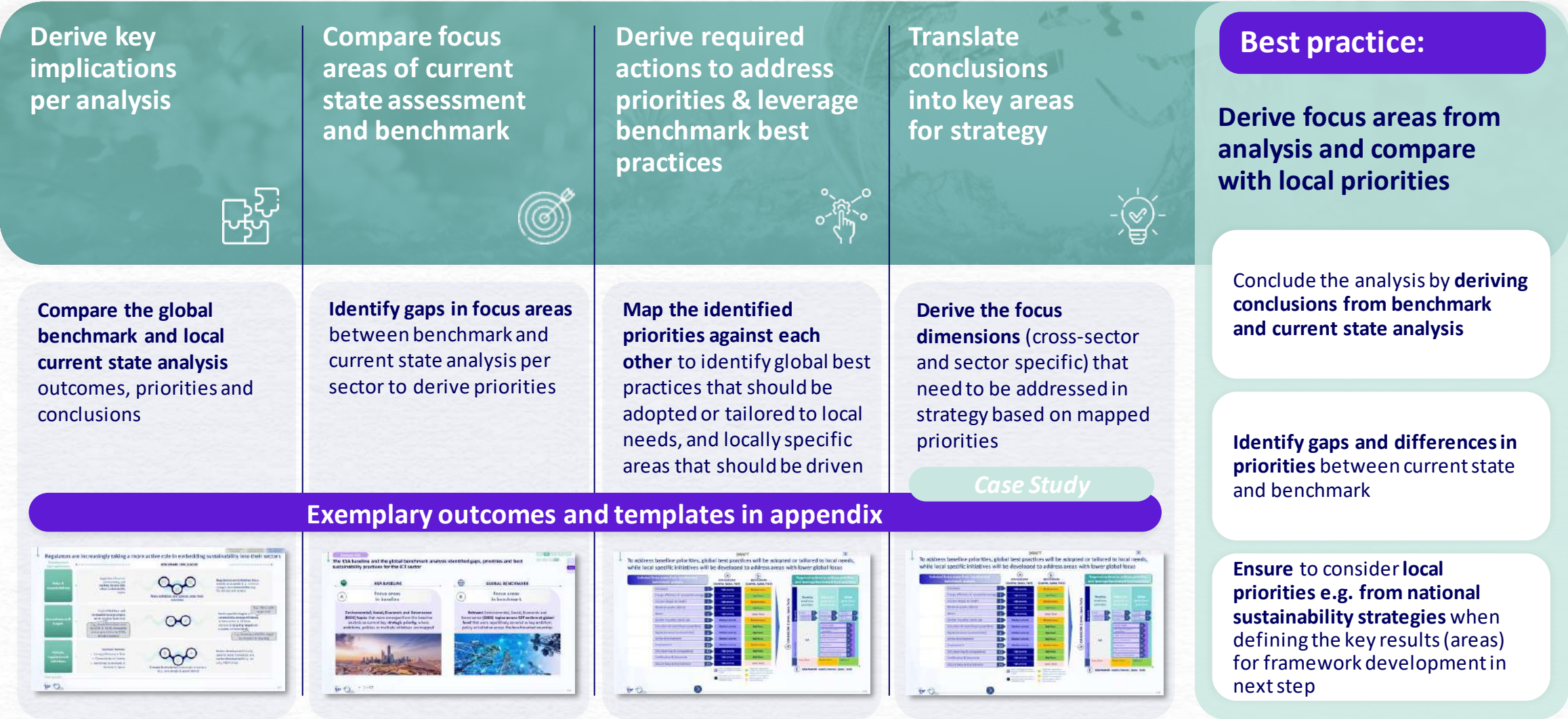
The “**Connect 2030 Agenda for Global Communication / ICT Development**” focuses on how technological advances will contribute to accelerate the achievement of the United Nations Sustainable Development Goals (SDGs) by 2030

Connect 2030 Agenda

Goal 1	Goal 2	Goal 3	Goal 4	Goal 5
Growth	Inclusiveness	Sustainability	Innovation	Partnership

• Sources: SDG Report, ITU

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



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



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

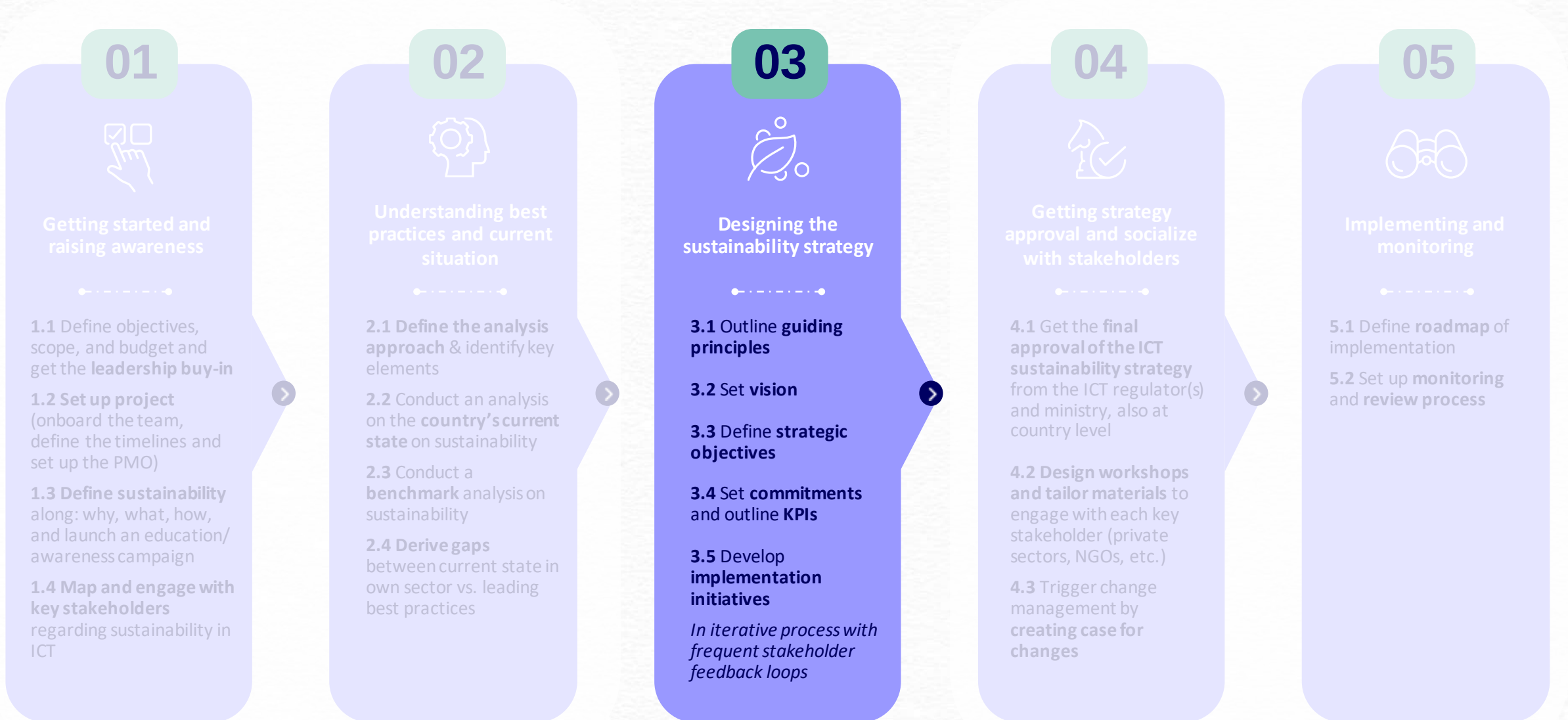


Gap analysis of benchmark and current state analysis results



Key priorities for sustainability strategy design

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



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

Why
Who
How
What



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



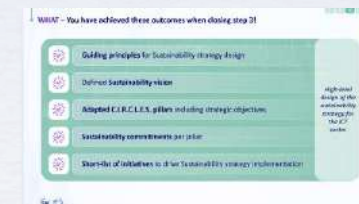
WHO



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)



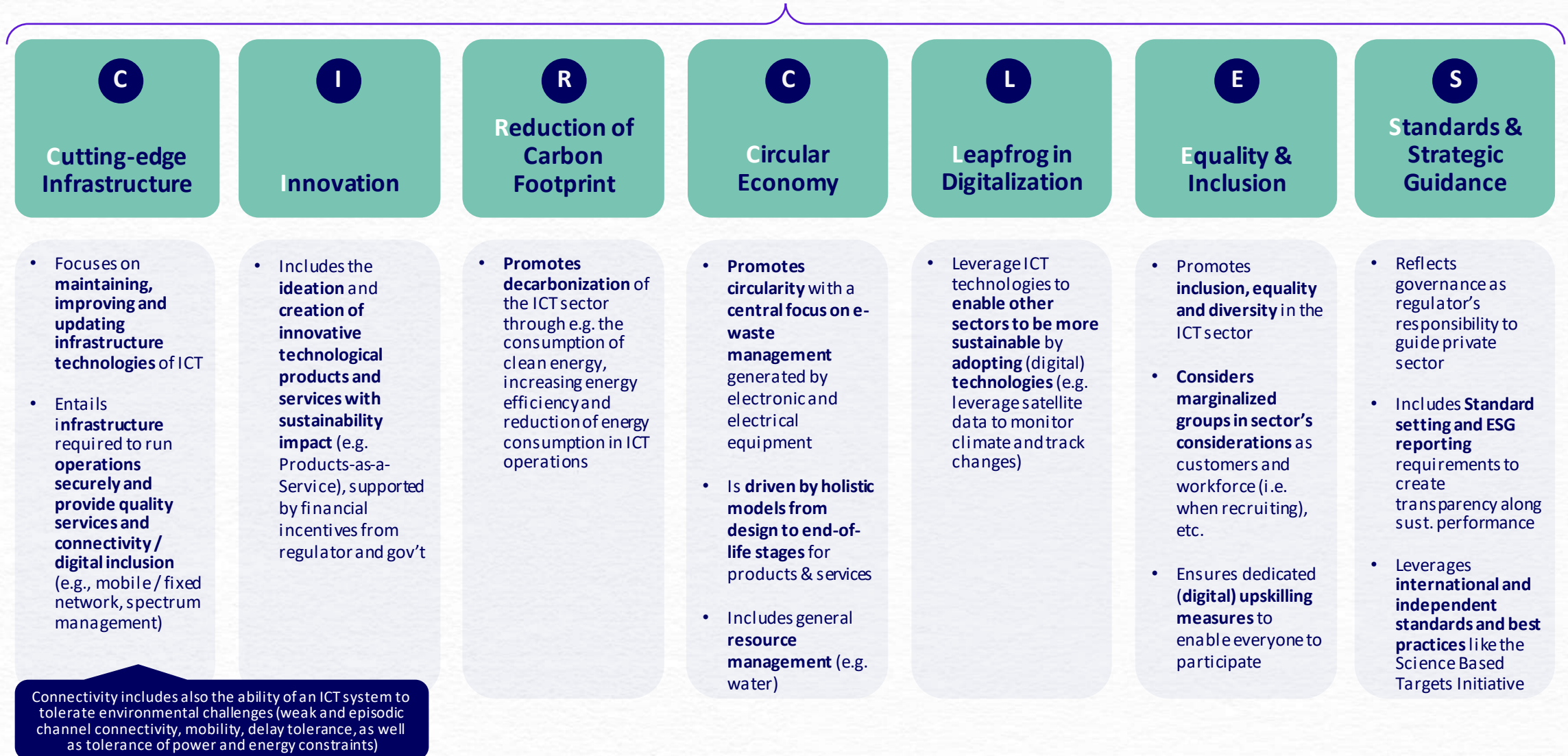
Develop a North Star that guides the strategy design and serves as reference point for aspirations and ambition level



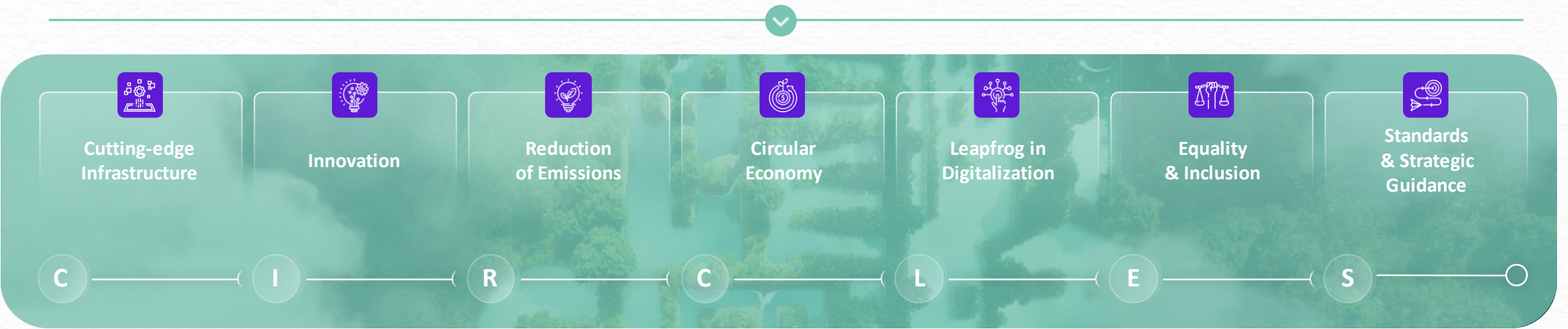
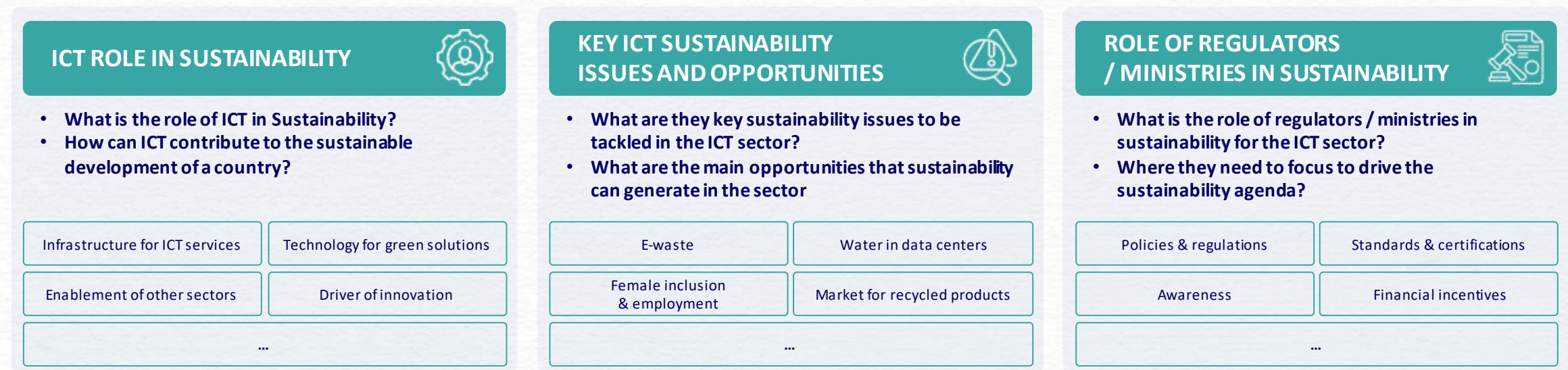
Set clear strategic objectives and commitments to ensure alignment and that everyone is working towards a shared purpose

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



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



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

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?

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

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

Why
Who
How
What

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)

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)

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

Local stakeholder

International stakeholder

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

Step 3	Actions	Material to leverage
 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	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



Vision

Define the sustainability vision for your organization, including ICT sector

3.2



Strategic objectives

Substantiate the vision through 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 execute 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



Ambitious

B



Local

C



Sector-specific

D



Regulator-focused

E



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



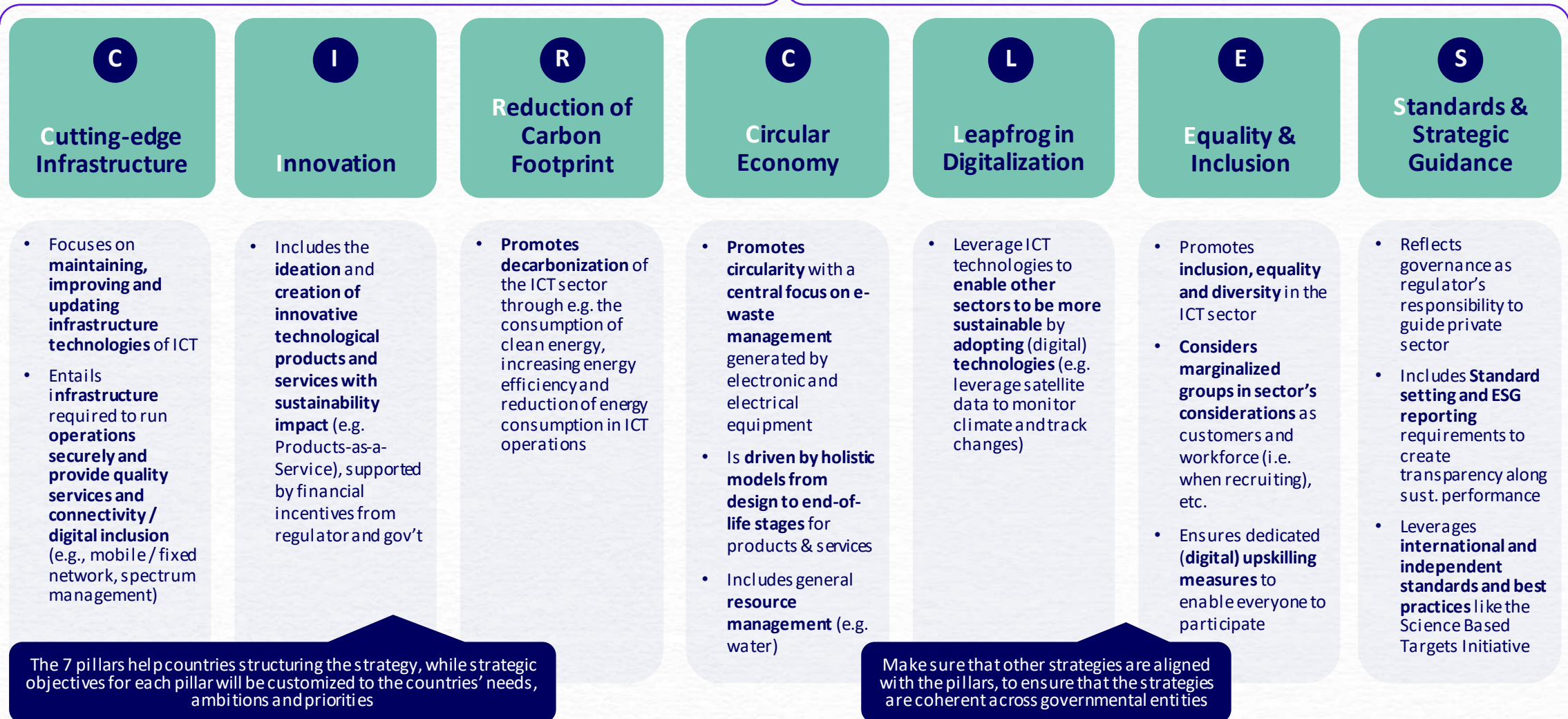
Step 3: Ensure compliance with guiding principles



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



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

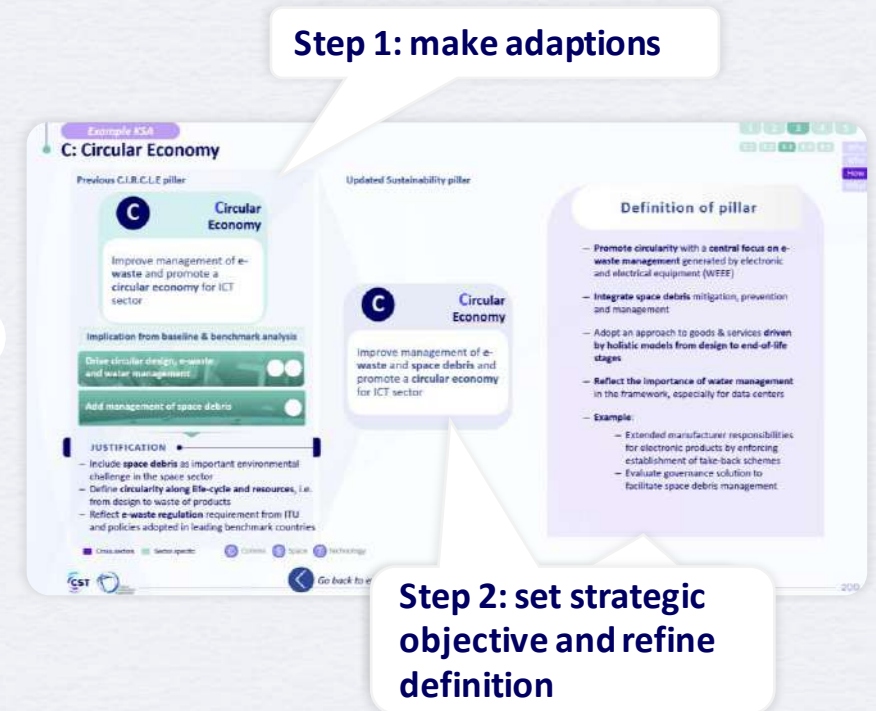


Step 3

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



Example



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

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

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

	C	I
Comms	- Population who use internet (%) - FTTB speed (Mbps) - FTTH 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

Template available

EXPANDED TOOLKIT

66

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

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

SPECIFIC

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)

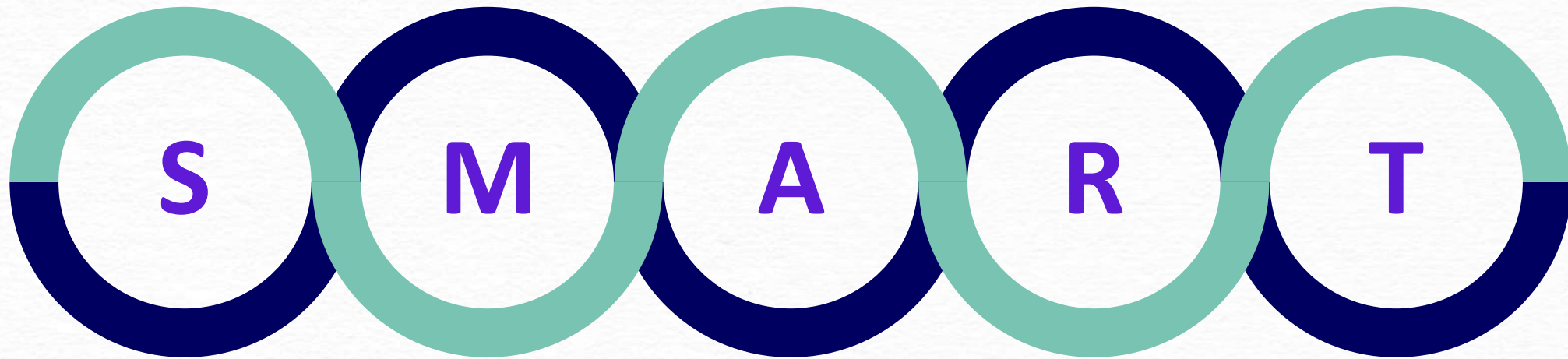
ACHIEVABLE

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

TIME-BOUND



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



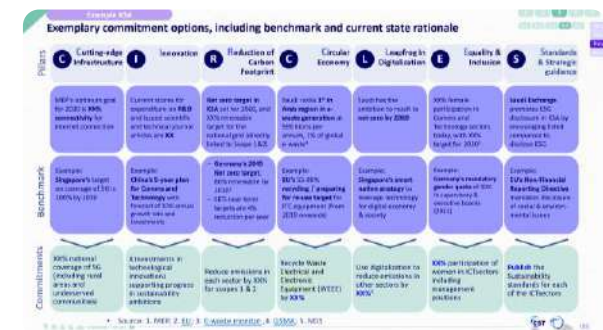
Applied through a sustainability lens

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

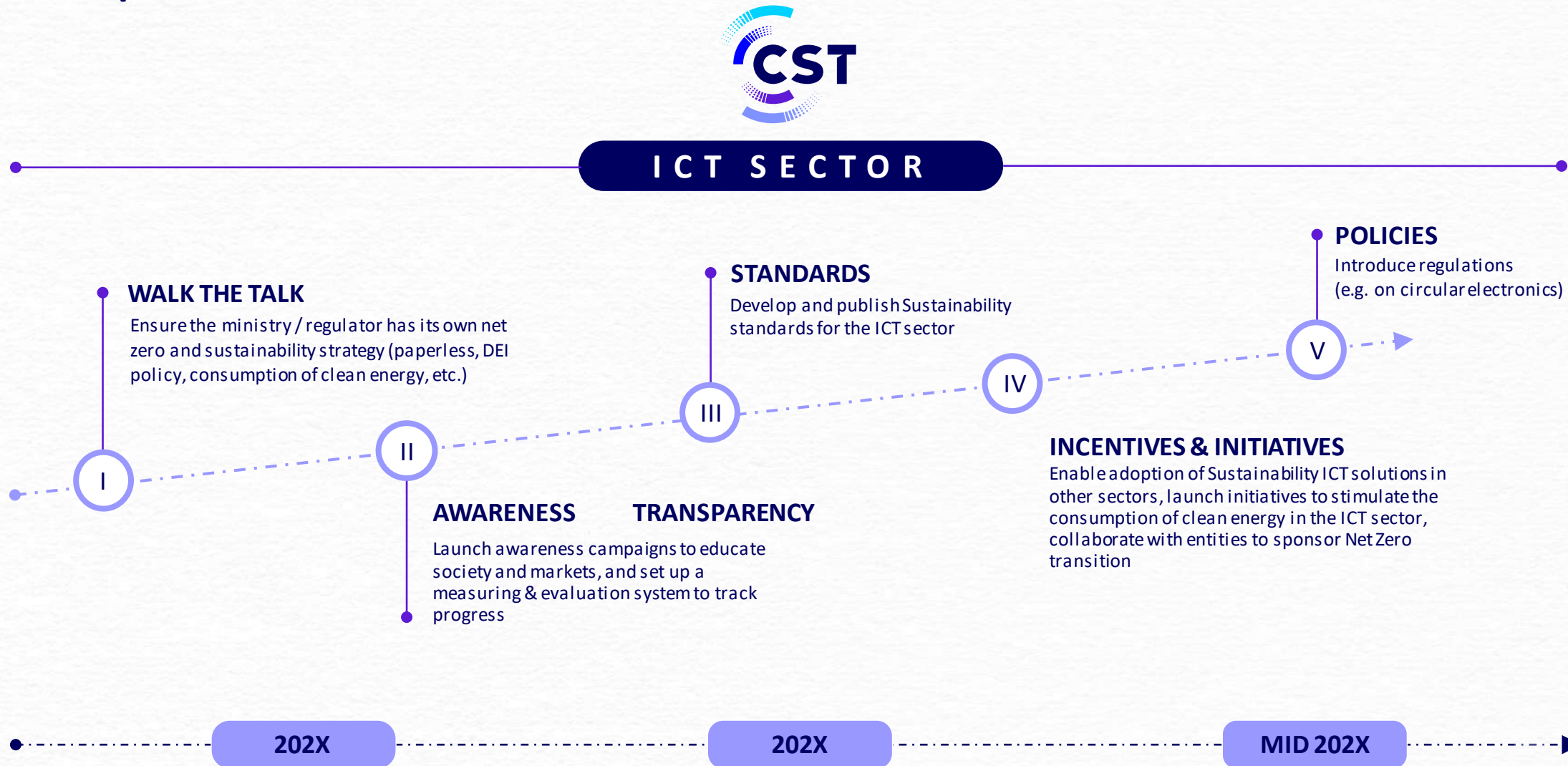
Identify different options per pillar...



...and align on set of commitments that will be published



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



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



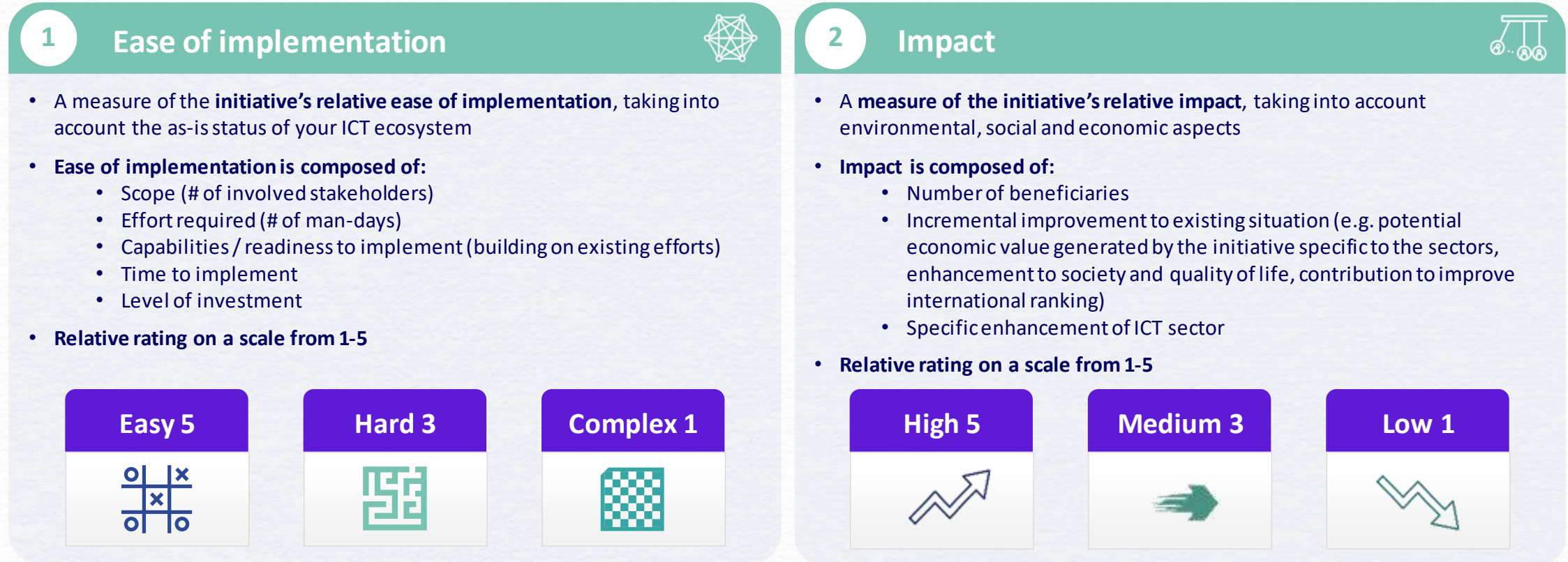
HOW – 3.5 Exemplary initiatives along C.I.R.C.L.E.S.: Cutting-edge Infrastructure

#	Pillar	New Initiatives Recommended	Sector	Sustainability	CST Role	Initiative Type
1	Cutting-edge Infrastructure Maintain an accessible, reliable, resilient, and secure ICT infrastructure	<i>Adopt</i> 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	<i>Work with education</i> programs to include sustainability innovations in ICT sector	ICT	Social Economic	Responsible	Awareness & Capabilities
3		<i>Integrate</i> 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

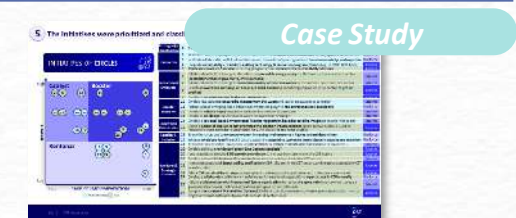


Outcome:
Prioritization of initiatives in matrix and classification into waves of implementation

Wave 1:
High impact,
high ease of
implementation

Wave 2:
High impact,
low ease of
implementation

Wave 3:
Low impact,
low ease of
implementation



HOW – 3.5 Short-listed initiatives can be analyzed along four different aspects...

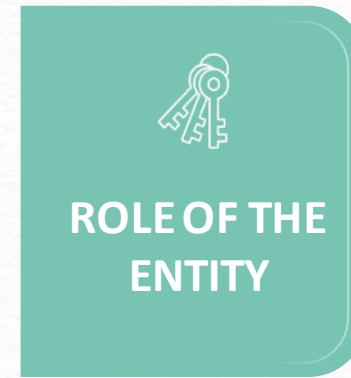


Comms



Others

Technology



Accountable



Responsible



Consulted / Informed



Comprehensively cover all relevant sectors within the initiatives

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



Environmental



Economic



Social



Governance



Infrastructure & Solutions



Financial Incentive



Awareness & Capabilities



Regulation & Transparency



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

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)

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
CST (R)(A)

Role of the entity
Responsible for project

Supporting Entities
MCIT (I)
KAUST (C)

Potential Partners

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 NA	Timeline 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 action¹

Risks and Mitigation

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

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	Q2	Q3	Q4
Conduct research and preparation 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

Guiding Principles
templates

2

Visioning templates

3

Strategic
objective template &
KSA example

4

KPI long-list
& commitment
options

5

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



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

Why
Who
How
What



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



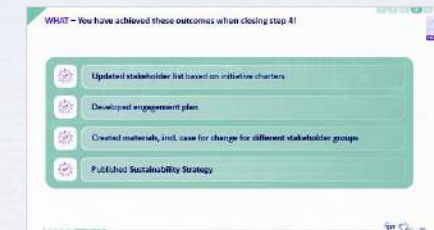
WHO



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

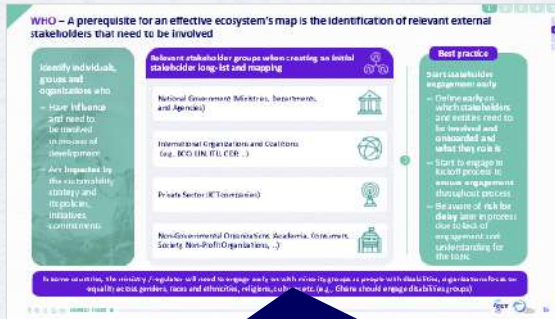
03

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

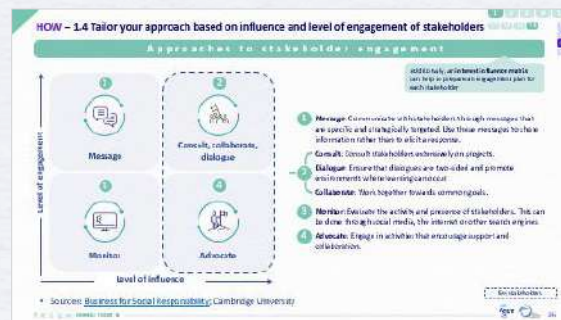
Exemplary template for stakeholder engagement list

RECAP of stakeholder mapping



Potentially revise and update stakeholder mapping and engagement approach

...and identification of engagement strategies

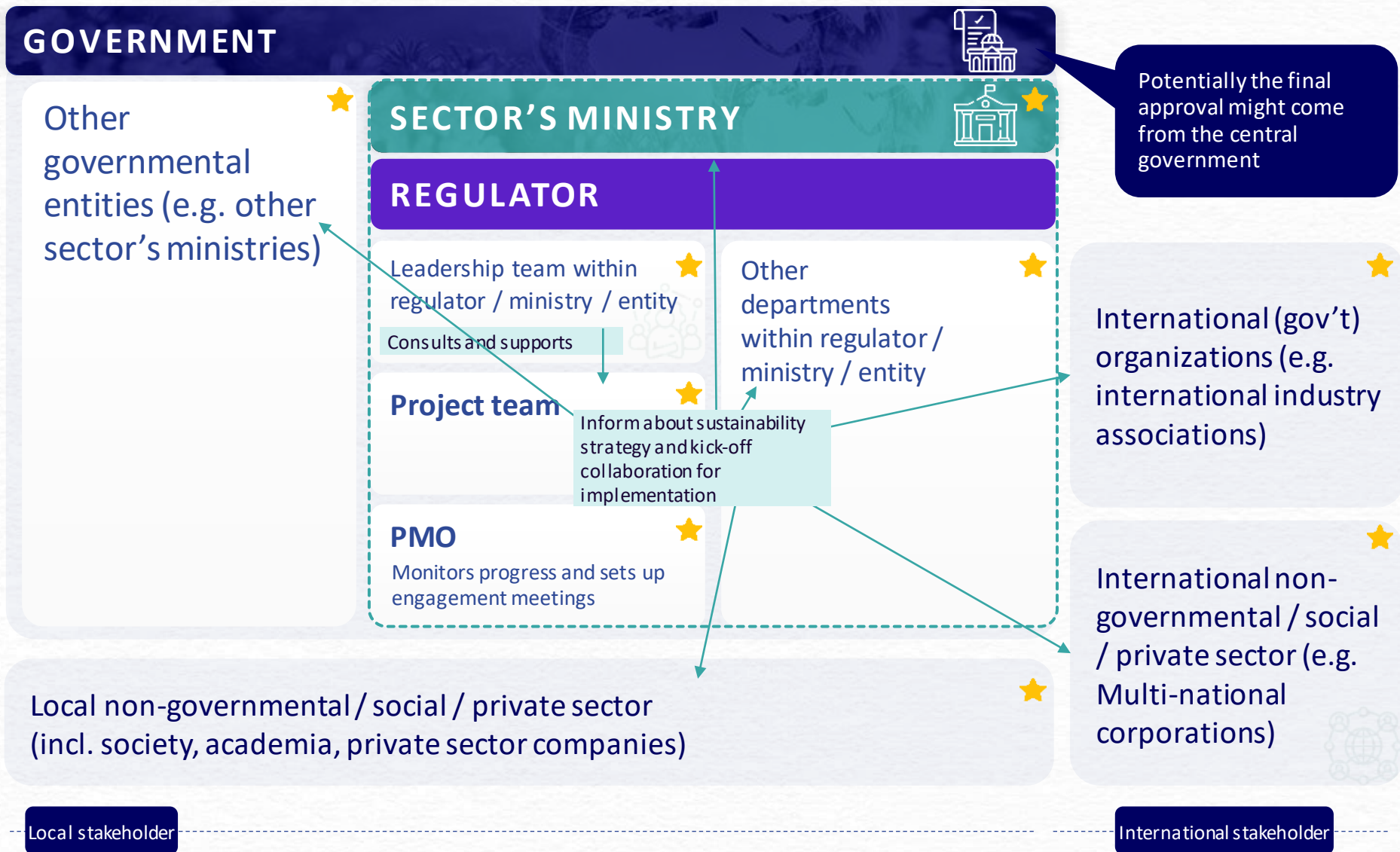


Group	Identified external key stakeholders needed to implement sustainability strategy initiatives
National Government	– National innovation funds
Ministries on government level	– Ministry of Energy – Ministry of Environment
Academia	– Science departments of leading universities
Private sector companies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



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

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

1 2 3 4 5

4.1 4.2 4.3

Why
Who
How
What

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

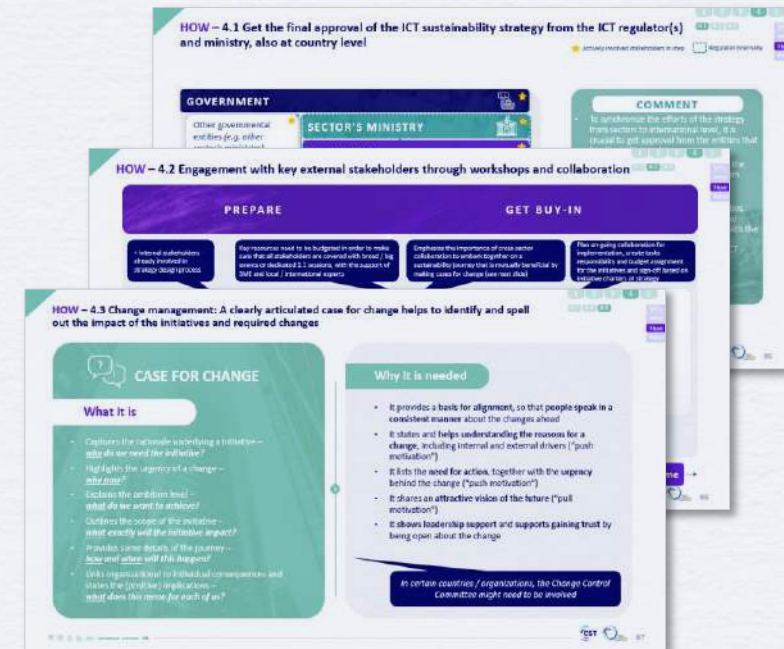


4.3 Case for change

- **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



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 – *why do we need the initiative?*
- Highlights the urgency of a change – *why now?*
- Explains the ambition level – *what do we want to achieve?*
- Outlines the scope of the initiative – *what exactly will the initiative impact?*
- Provides some details of the journey – *how and when will this happen?*
- Links organizational to individual consequences and states the (positive) implications – *what 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? <i>"Sustainability touches all sectors and has international momentum – if we start acting now, we can actively contribute rather than only react later"</i>
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? <i>"Sustainability yields business opportunities – pursue them from a position of strength by starting the transformation yourself"</i>
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? <i>"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"</i>

WHAT – Materials to leverage when seeking stakeholder buy-in

The material shared includes:

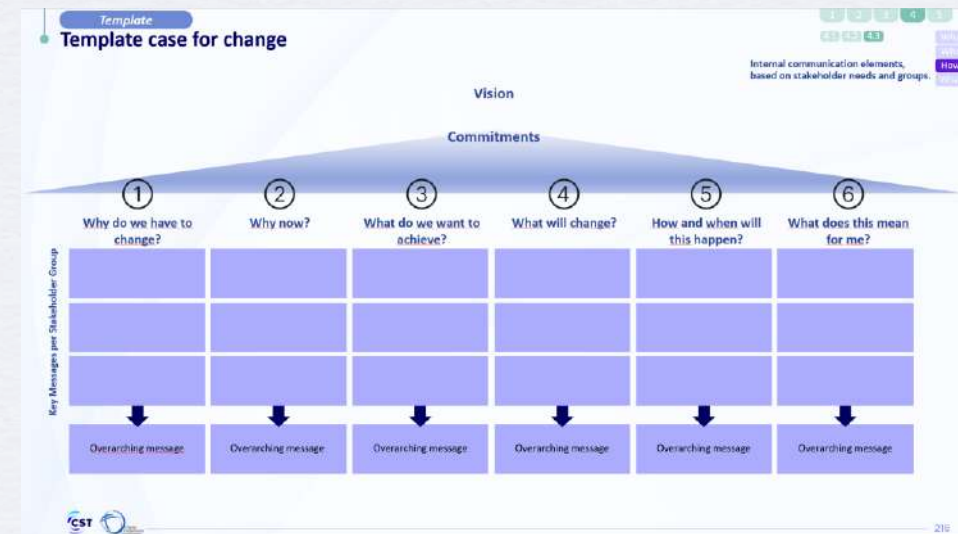
Stakeholder list
add-on

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



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



Updated **stakeholder list** based on initiative charters



Developed **engagement plan**

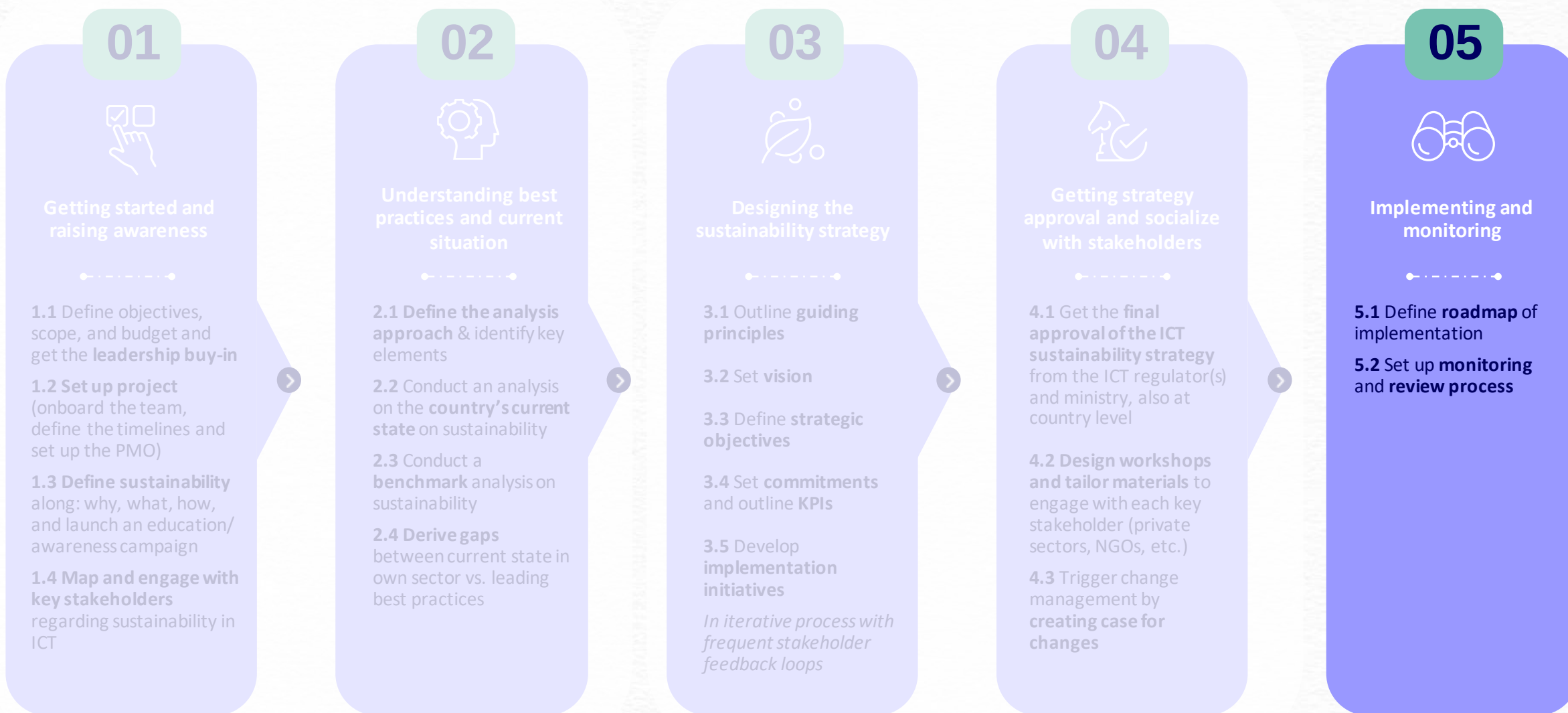


Created **materials**, incl. case for change for different stakeholder groups



Published **Sustainability Strategy**

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



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**)



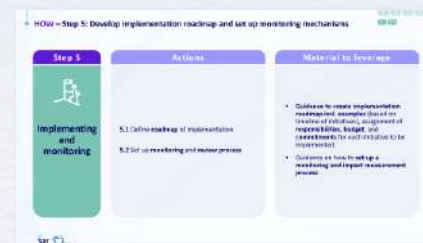
WHY



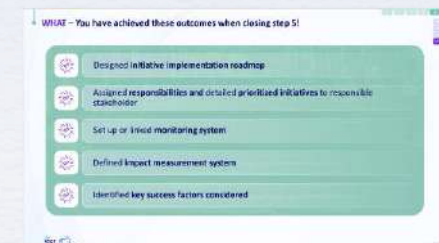
WHO



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



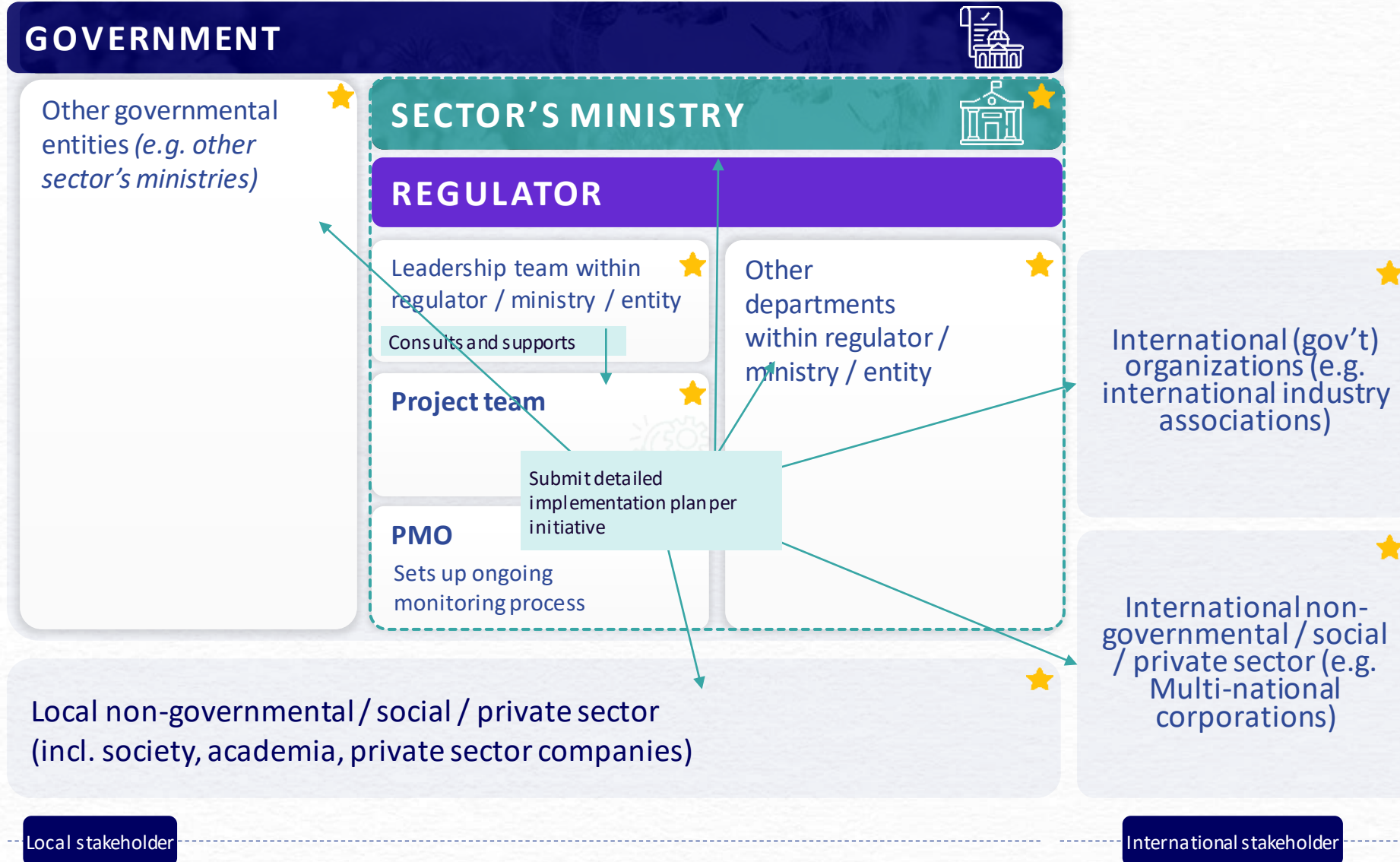
Ensure accountability and efficiency by defining roles, responsibilities, and timelines, enabling effective coordination and collaboration within and across sectors



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



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

1 2 3 4 5
5.1 5.2

Why
Who
How
What

Step 5



Implementing and monitoring

Actions

- 5.1 Define **roadmap** of implementation
- 5.2 Set up **monitoring** and **review process**

Material to leverage

- **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

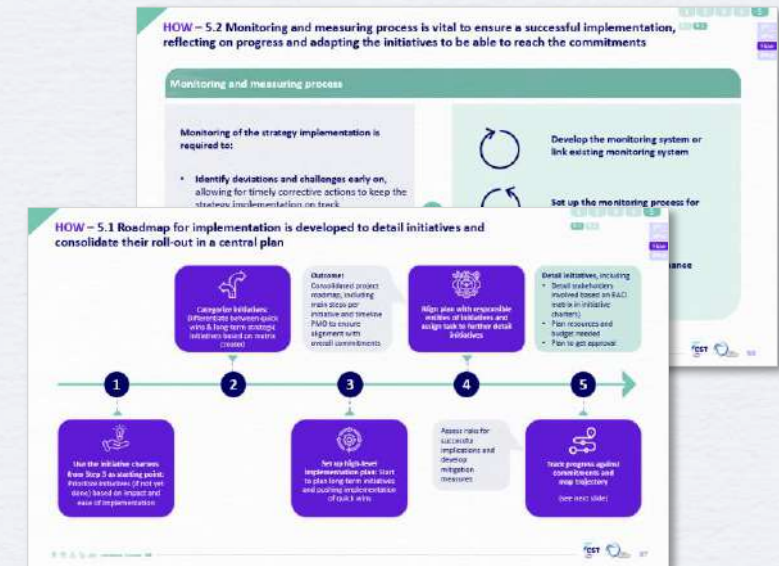
5.1 Roadmap

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

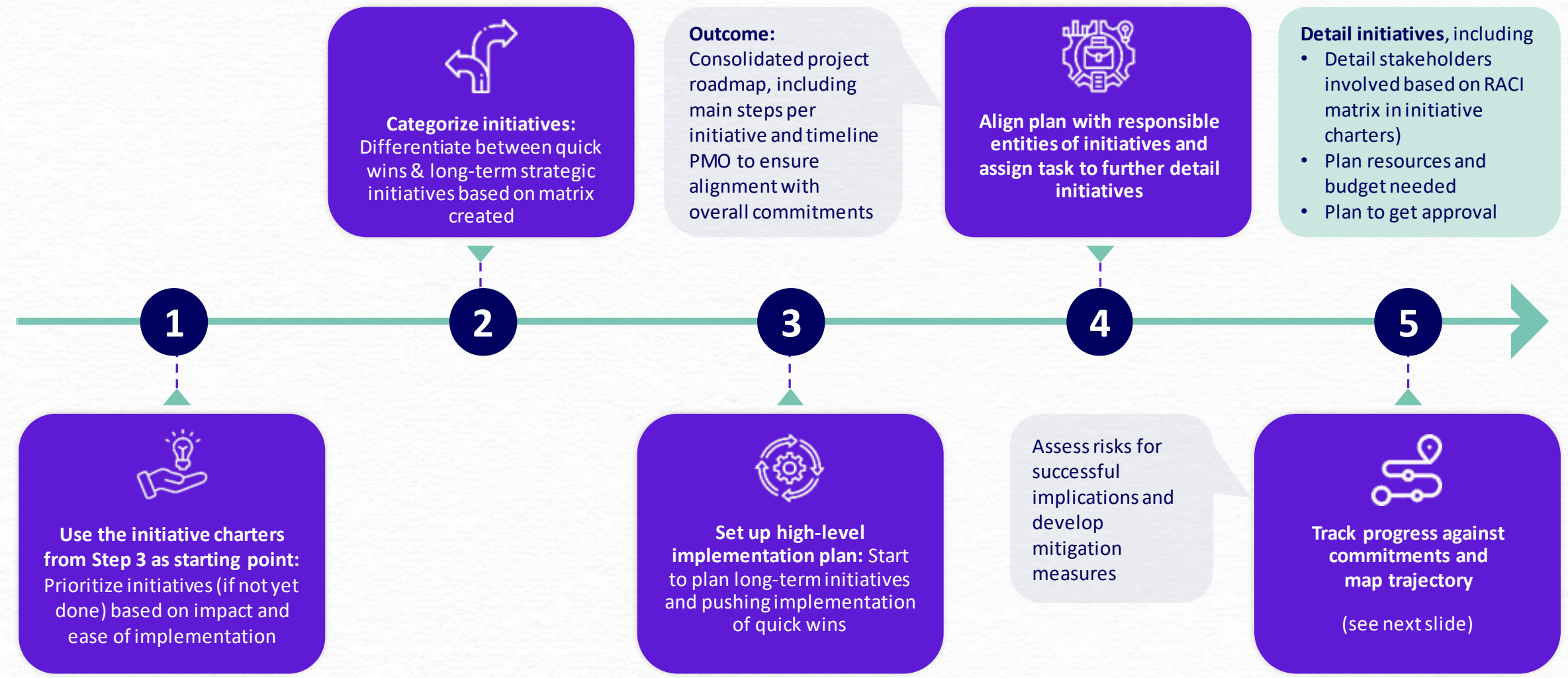


5.2 Monitoring

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



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

	2024				2025			
KEY ACTIVITIES	Q1	Q2	Q3	Q4	Q1	Q2	Q3	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

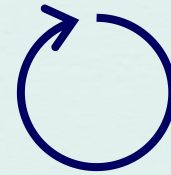
5.1 5.2

Why
Who
How
What

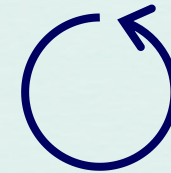
Monitoring and measuring process

Monitoring of the strategy implementation is required to:

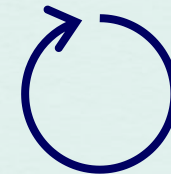
- **Identify deviations and challenges early on**, allowing for timely corrective actions to keep the strategy implementation on track
- **Provide valuable insights into the effectiveness** of the strategy, and allow for refinement and adaptations to optimize outcomes
- **Promote transparency and accountability** 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



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



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

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



TABLE OF CONTENTS — APPENDIX

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

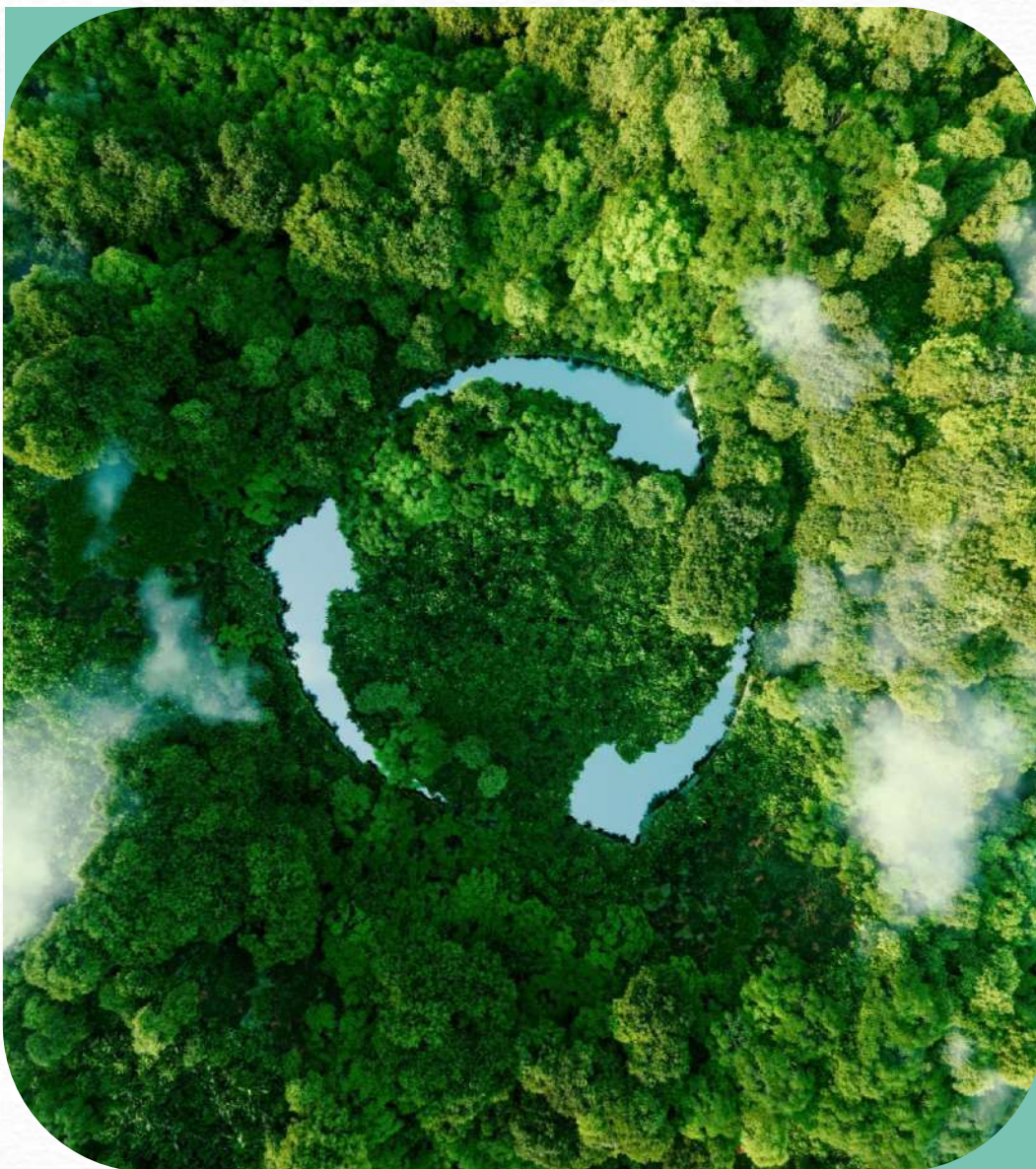


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STEP 1

WHAT, WHY AND HOW OF SUSTAINABILITY

Sustainability ANALYSIS FRAMEWORK – SUB-DIMENSIONS

STAKEHOLDER LONG-LIST

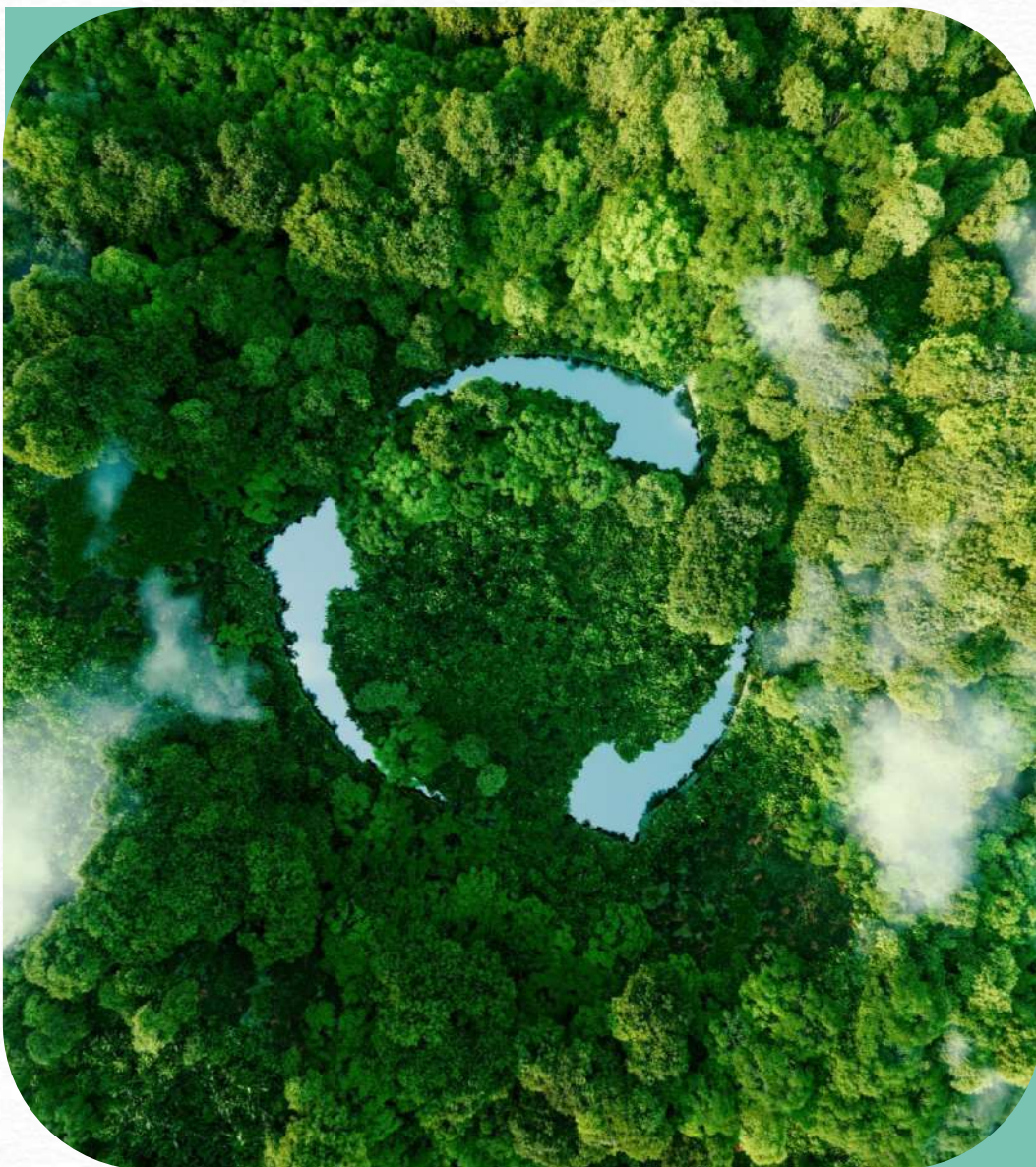


TABLE OF CONTENTS – APPENDIX

STEP 1

WHAT, WHY AND HOW OF SUSTAINABILITY

Sustainability ANALYSIS FRAMEWORK – SUB-DIMENSIONS

STAKEHOLDER LONG-LIST

“What, Why and How” of Sustainability



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)



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

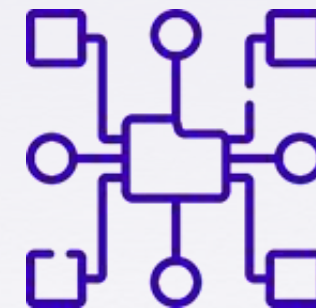


SDGs

- ✓ 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.



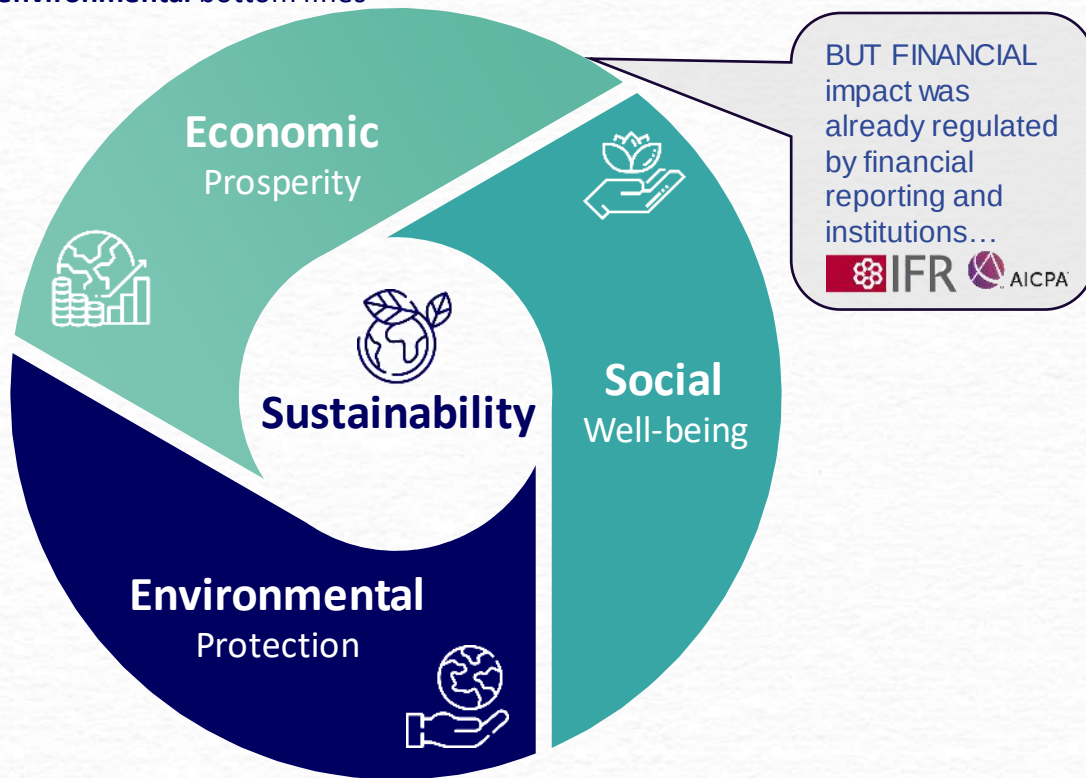
Historically corporate sustainability is linked to Triple Bottom Line and evolved into ESG



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 lines¹



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 evaluations². Today ESG credentials are becoming **heavily influential in driving investor choice**



• 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		
	Financing environmental impact		Toxic emissions & waste		
	Climate change vulnerability		Packaging material & waste		Opportunities in green building
	Water stress		Electronic waste		Opportunities in renewable energy
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

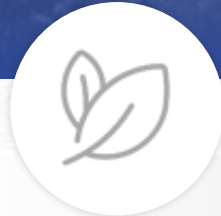


Governments

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



Both ESG and SDGs frameworks have pros and cons...

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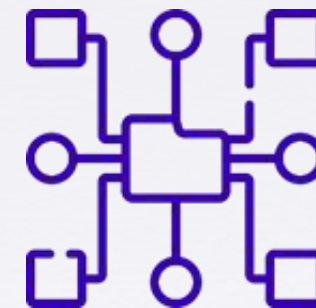


SDGs

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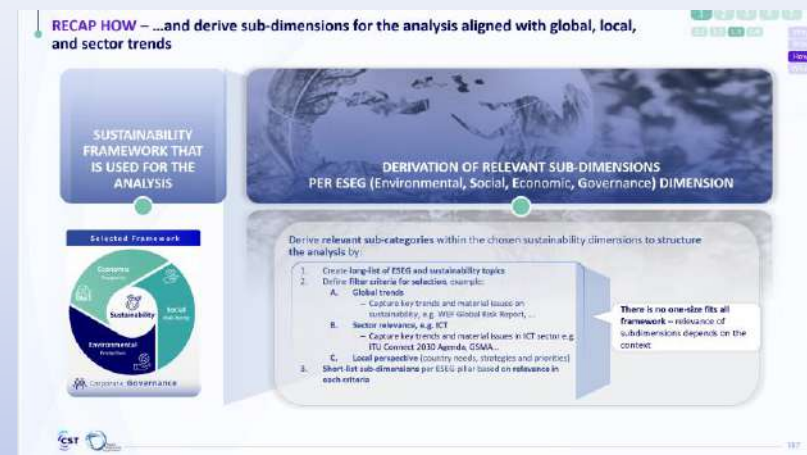


This raises the need for an **overarching framework** that address the needs of the public sector entities in the ICT sector but also a regulator and promoter of the private sector (details on next page)

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

“What, Why and How” of Sustainability



01

What is sustainability?



02

Why sustainability?

Customize
information to
your local
country when
possible



03

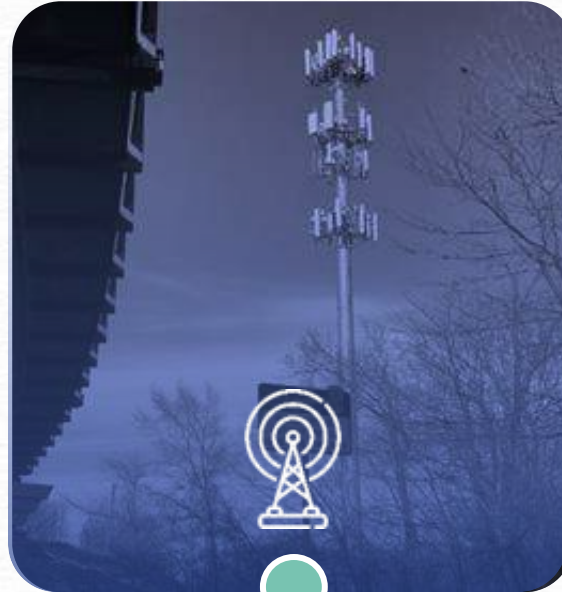
How do ICT
contribute to sustainability?



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 – ‘20²
- 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 <i>The ICT sector globally emits 1-1.7 bn tons of CO₂e/year¹, or 1.8-2.9% of global GHG emissions, and are expected to keep growing because of growth trends in big data & AI, blockchain, IoT activity²</i> 	E-Waste – reduce electronic waste and promote circular business models <i>A record 57.4 million tons of e-waste was generated in 2021, worth \$50bn³. Emissions from e-waste will reach 14% of total emissions by 2040⁴, up from 1% in 2017</i> 	Enabling sustainability – deliver next-generation solutions through technology innovation <i>Democratization of data enables action, such as going from supporting aid in natural disasters towards preventing them⁸</i> 
YOUR COUNTRY 	Footprint – decrease and manage GHG footprint <i>Insert information on your country</i> 	E-Waste – reduce electronic waste and promote circular business models <i>Insert information on your country</i> 	Enabling sustainability – deliver next-generation solutions through technology innovation <i>“Insert information on your country</i> 

- 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 CO₂e/year¹, or 1.8-2.9% of global GHG emissions, and are expected to keep growing because of growth trends in big data & AI, blockchain, IoT activity²



A record 57.4 million tons of e-waste was generated in 2021, worth \$50bn³. Emissions from e-waste will reach 14% of total emissions by 2040⁴, up from 1% in 2017



Democratization of data enables action, such as going from supporting aid in natural disasters towards preventing them⁵



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 home⁴



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** footprint⁵

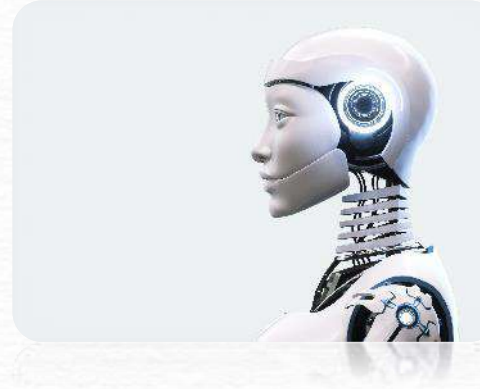
• Source: 1. [Cyberbullying.org](https://www.cyberbullying.org) 2. [PSA](https://www.psa.org), 3. [ITU](https://www.itu.int), 4. [UNICEF](https://www.unicef.org), 5. [Andrae and Edler](https://www.andraeandedler.com), [GSMA](https://www.gsma.com),

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 supplied¹



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

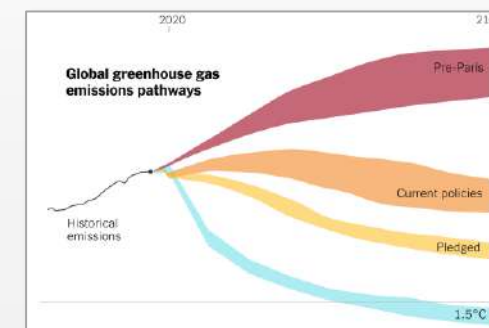
- Climate change can **reduce annual global GDP growth**
- Cost of global inaction **\$178 trillion** by 2070²

Change in annual GDP from impact of 2°C warming³



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](#)

“What, Why and How” of Sustainability



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**

45%

Required reduction of greenhouse gas emissions between 2020 and 2030 for the ICT sector²

- Source: 1. [Andrae and Edler](#), 2. [ITU](#)

Comms lower financial services' costs and carbon footprint across sectors

Financial Services

Mobile payments can lower the cost of providing financial services by 80-90%, enabling providers to serve lower income customers profitably¹

Environment

The use of IoT has the potential of reducing emissions by ~63.5 Gtons by 2030 across all sectors³

Education

IoT will provide 180 million children, 8% of all children, with the opportunity to stay in school in developing regions⁴

Selection only

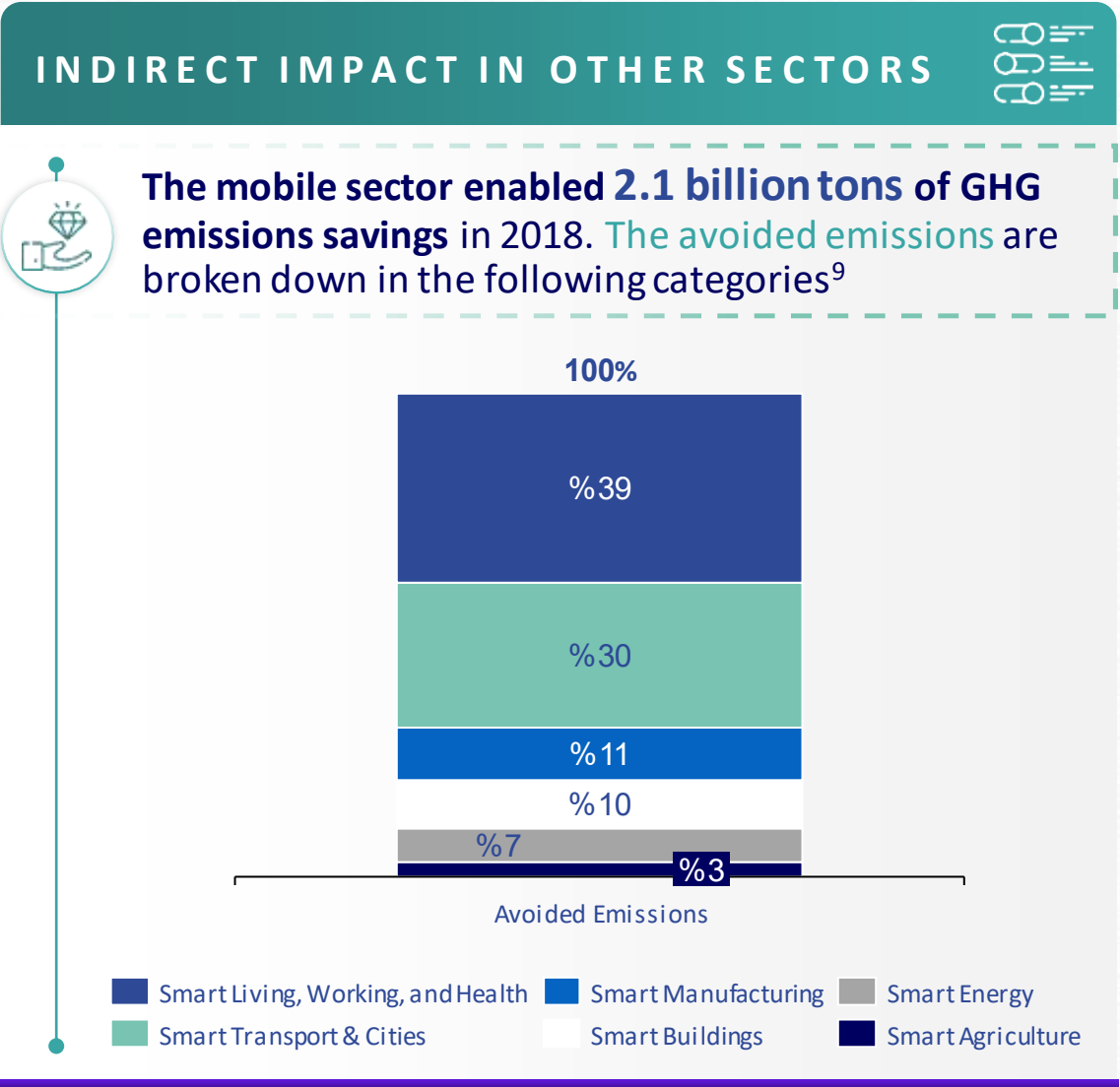
8 INCREASED WATER AND ECONOMIC GROWTH

6 CLEAN WATER AND SANITATION

7 SUSTAINABLE CITIES AND COMMUNITIES

13 CLIMATE ACTION

4 QUALITY EDUCATION



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 year¹



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



Today **347 Mt of unrecycled e-waste** is present on earth in 2023¹

BIG OPPORTUNITY: e-waste recycling market was valued at **\$50 Bn** in 2020¹

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 2032²

... 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 rises³



• 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 records¹



Environment

79-93% emissions reduction for data centers through cloud computing³



Industry 5.0 - AI

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



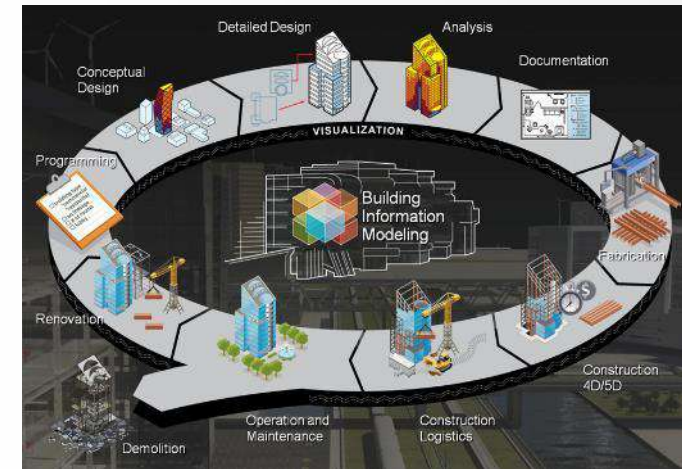
Farmers in India achieved a 30 percent larger harvest by using AI technology⁷

INDIRECT IMPACT IN OTHER SECTORS



15-20% of potential CO₂ savings in other industries through the enablement of digital technologies⁶

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 stage⁸**

• 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 CO₂ 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 AI software, is to control environmental conditions within the megacity.

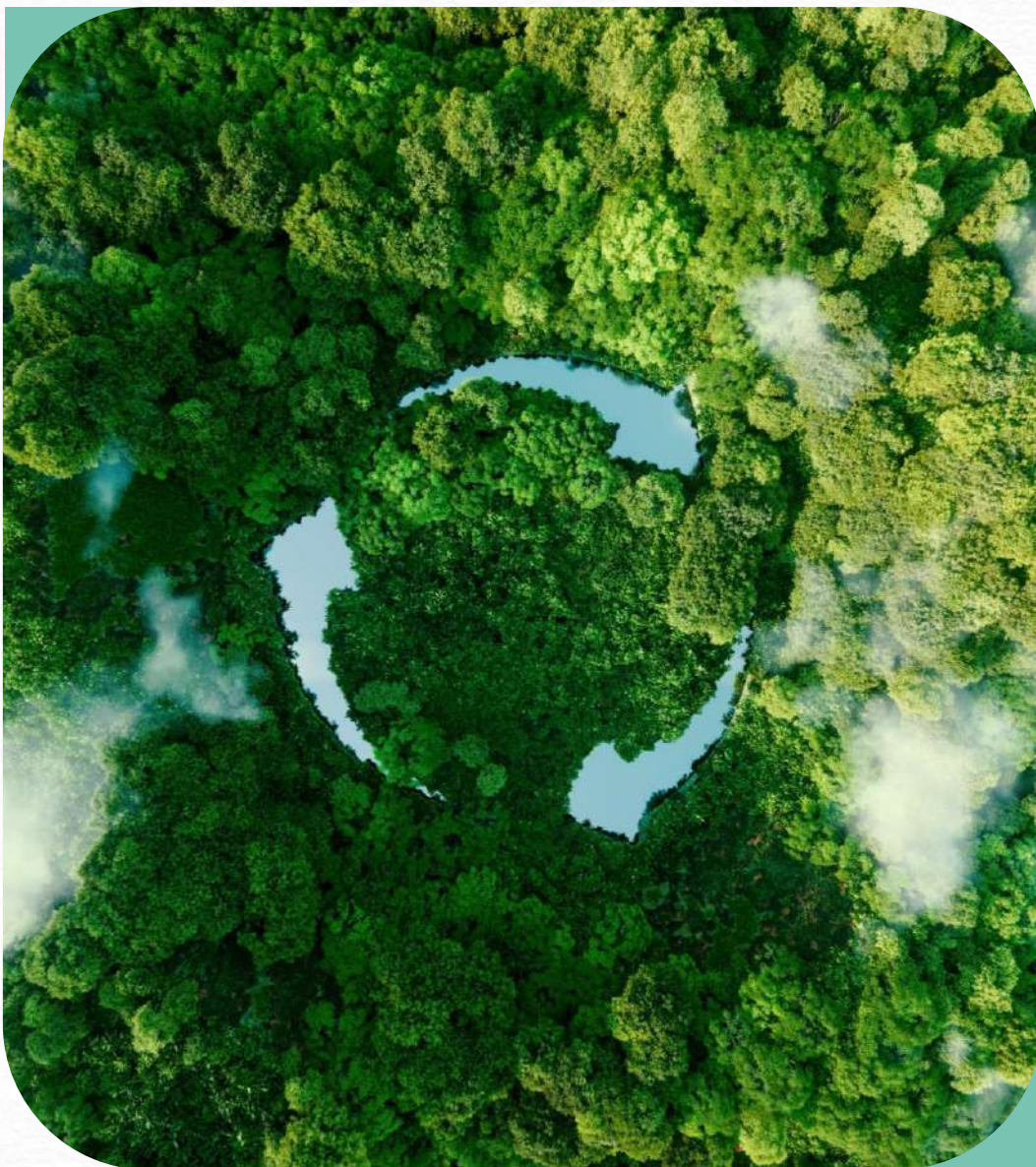


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STEP 1

WHAT, WHY AND HOW OF SUSTAINABILITY

Sustainability ANALYSIS FRAMEWORK – SUB-DIMENSIONS

STAKEHOLDER LONG-LIST

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

SUSTAINABILITY FRAMEWORK THAT IS USED FOR THE ANALYSIS



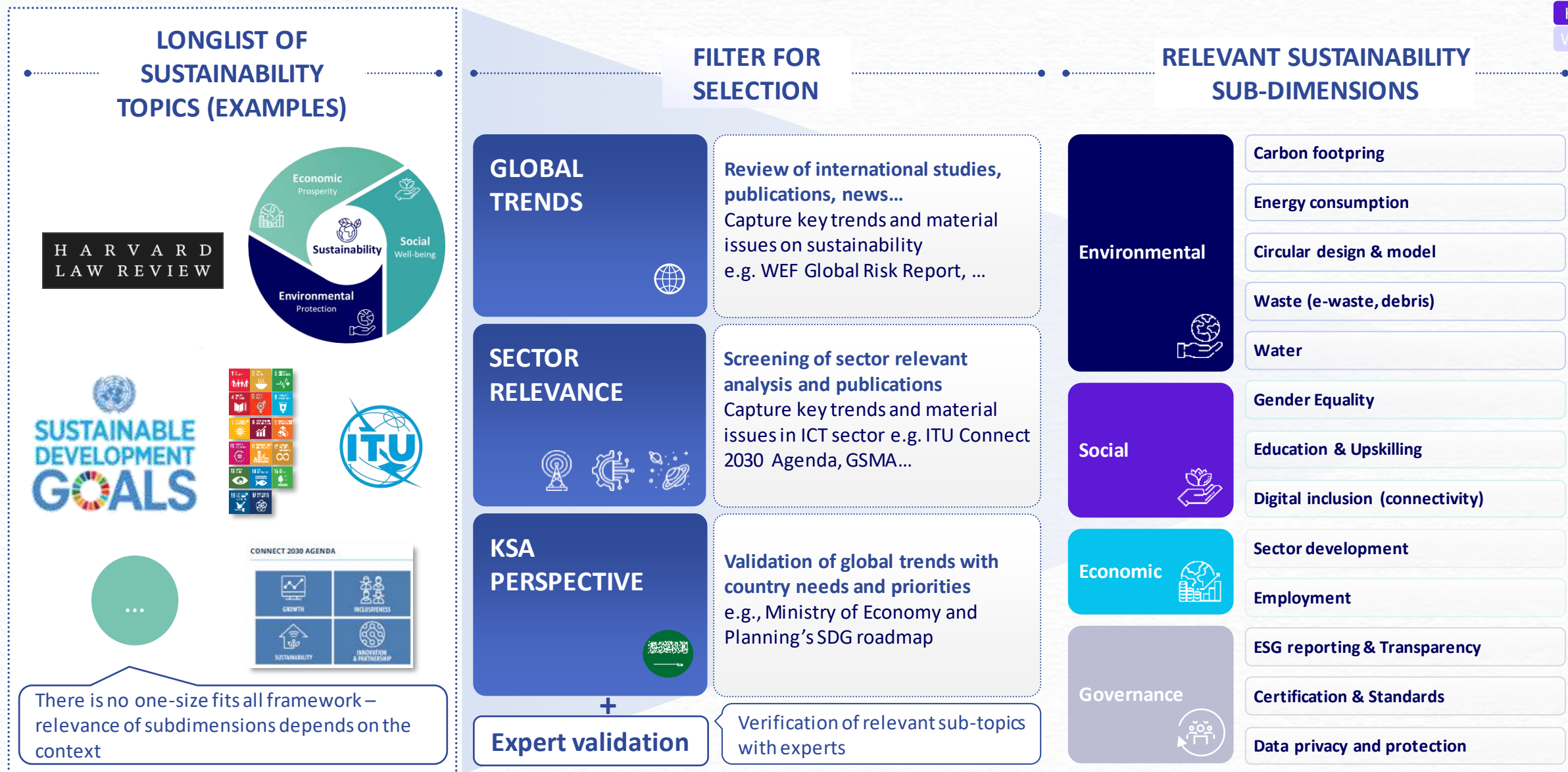
DERIVATION OF RELEVANT SUB-DIMENSIONS PER SUSTAINABILITY DIMENSION

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



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

1.1 1.2 1.3 1.4

Why
Who
How
What

Sub-dimensions Long List¹

Filter for selection



Carbon footprint	☒	☐	☒
Energy consumption	☒	☒	☐
Biodiversity - Land	☒	☐	☐
Biodiversity –Sea / Ocean	☒	☐	☐
Circular design & model	☒	☒	☐
Waste (e-waste, debris)	☒	☒	☐
Water	☒	☒	☒
Community engagement	☒	☐	☐
Diversity of race, disabilities, etc.	☒	☐	☐
Employees benefits	☒	☐	☐
Wages	☒	☐	☐
Executive pay	☒	☐	☐

☒ Captured as relevant trend ☐ Not captured as relevant trend

Rationale of selection

Global relevance Sector relevance National relev.



Environmental



Social



Economic



Governance



Carbon footprint

Energy consumption

Circular design & model

Waste (e-waste, debris)

Water

Gender Equality

Education & Upskilling

Digital inclusion (connectivity)

Sector development

Employment

ESG reporting & Transparency

Certification & Standards

Data privacy and protection

Crucial focus
for a regulator

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

	1.1	1.2	1.3	1.4
Environmental 				
Social 				
Eco- nomic 				
Governance 				

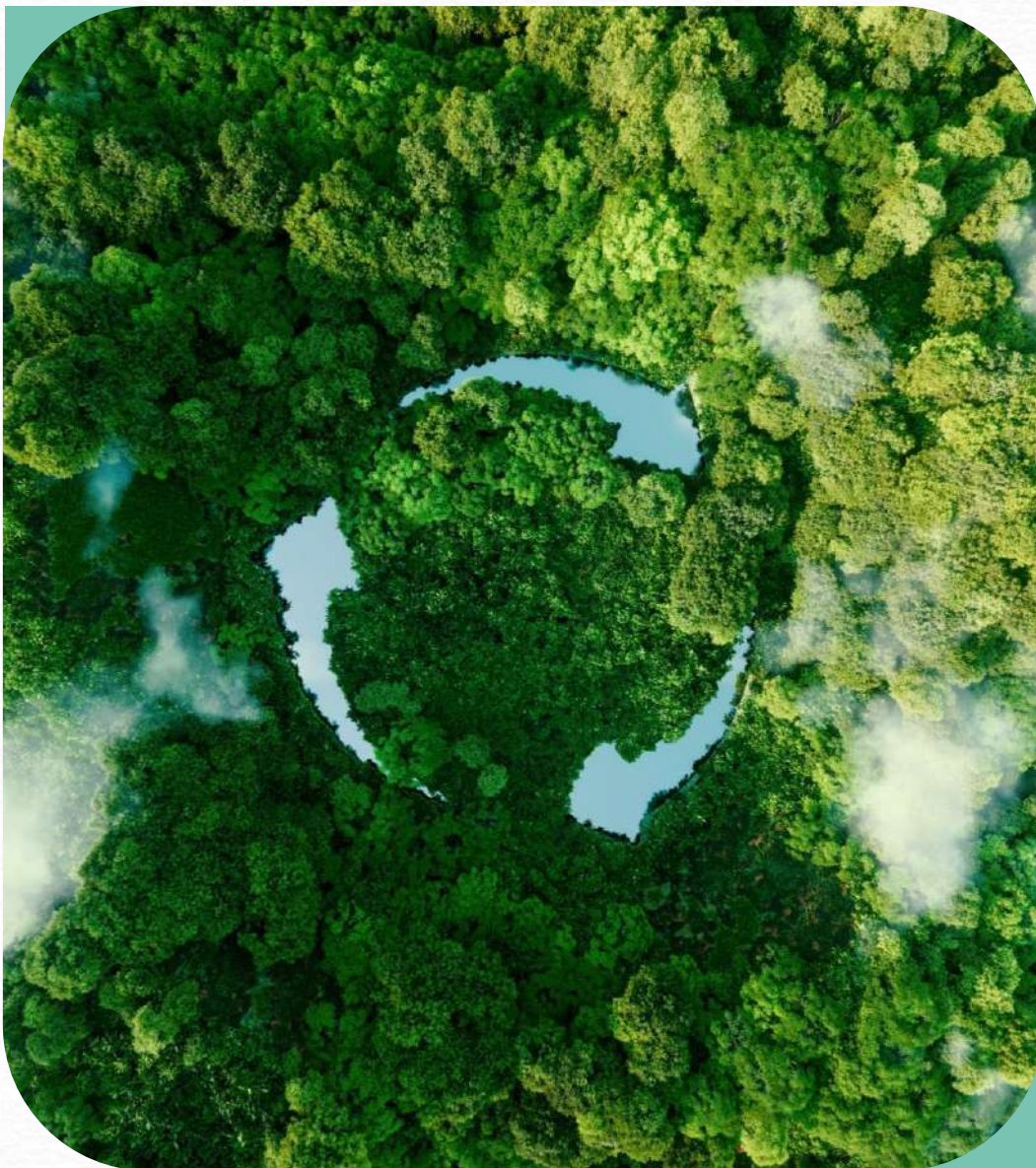


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STEP 1

WHAT, WHY AND HOW OF SUSTAINABILITY

Sustainability ANALYSIS FRAMEWORK – SUB-DIMENSIONS

STAKEHOLDER LONG-LIST

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	...

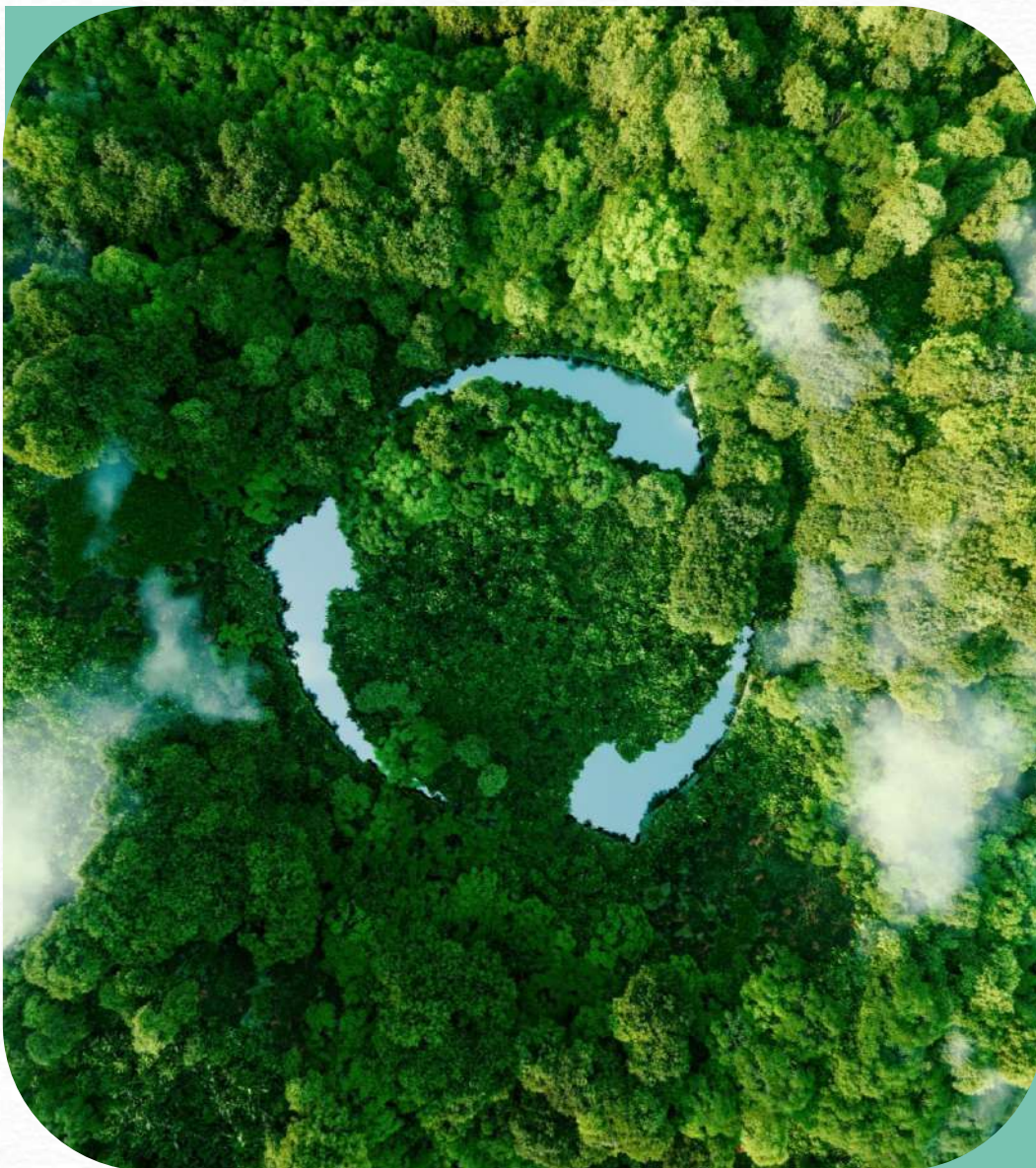


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CURRENT STATE ANALYSIS

BENCHMARK ANALYSIS

GAP ANALYSIS

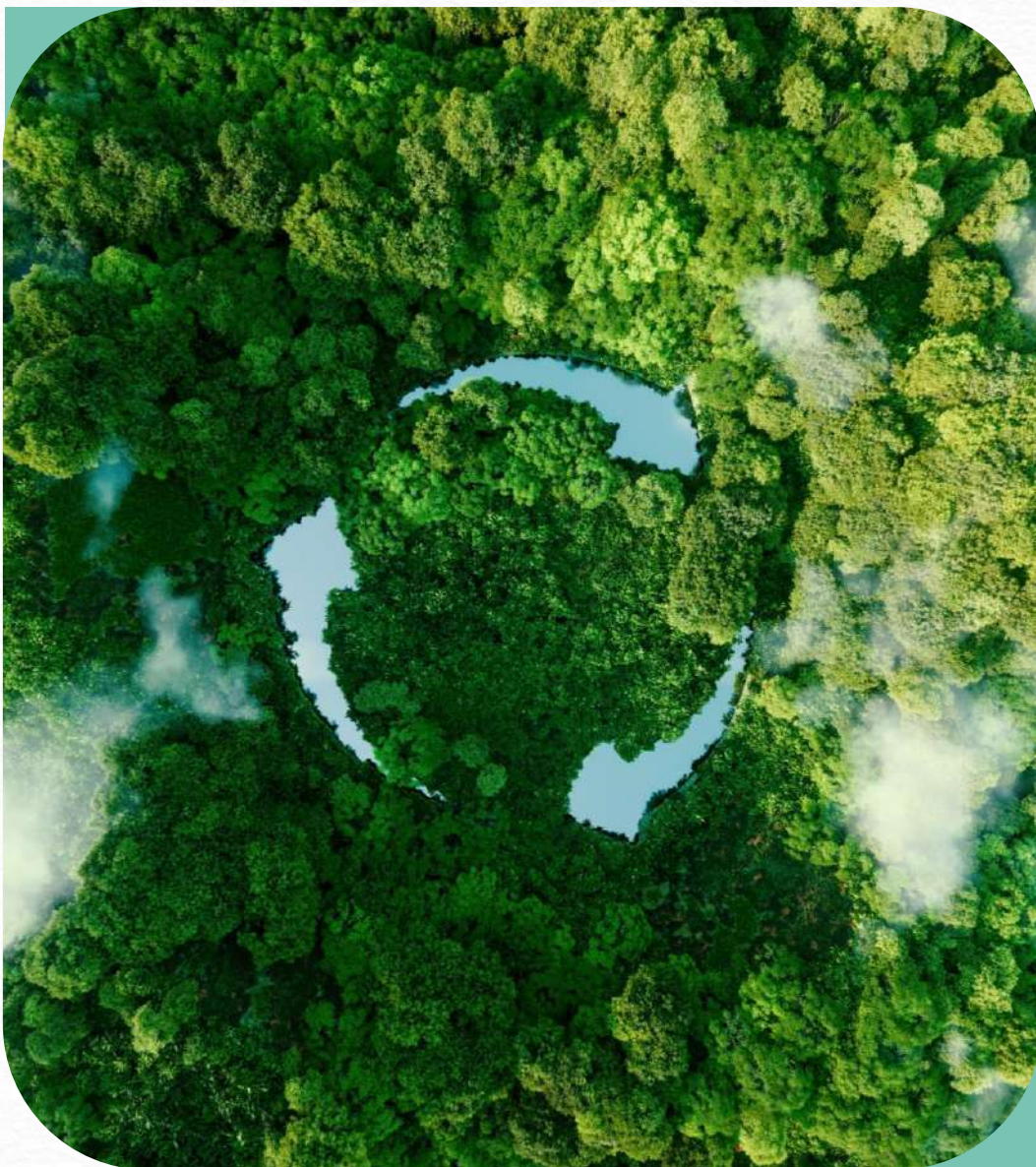


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CURRENT STATE ANALYSIS

BENCHMARK ANALYSIS

GAP ANALYSIS

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 context 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 monetary 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

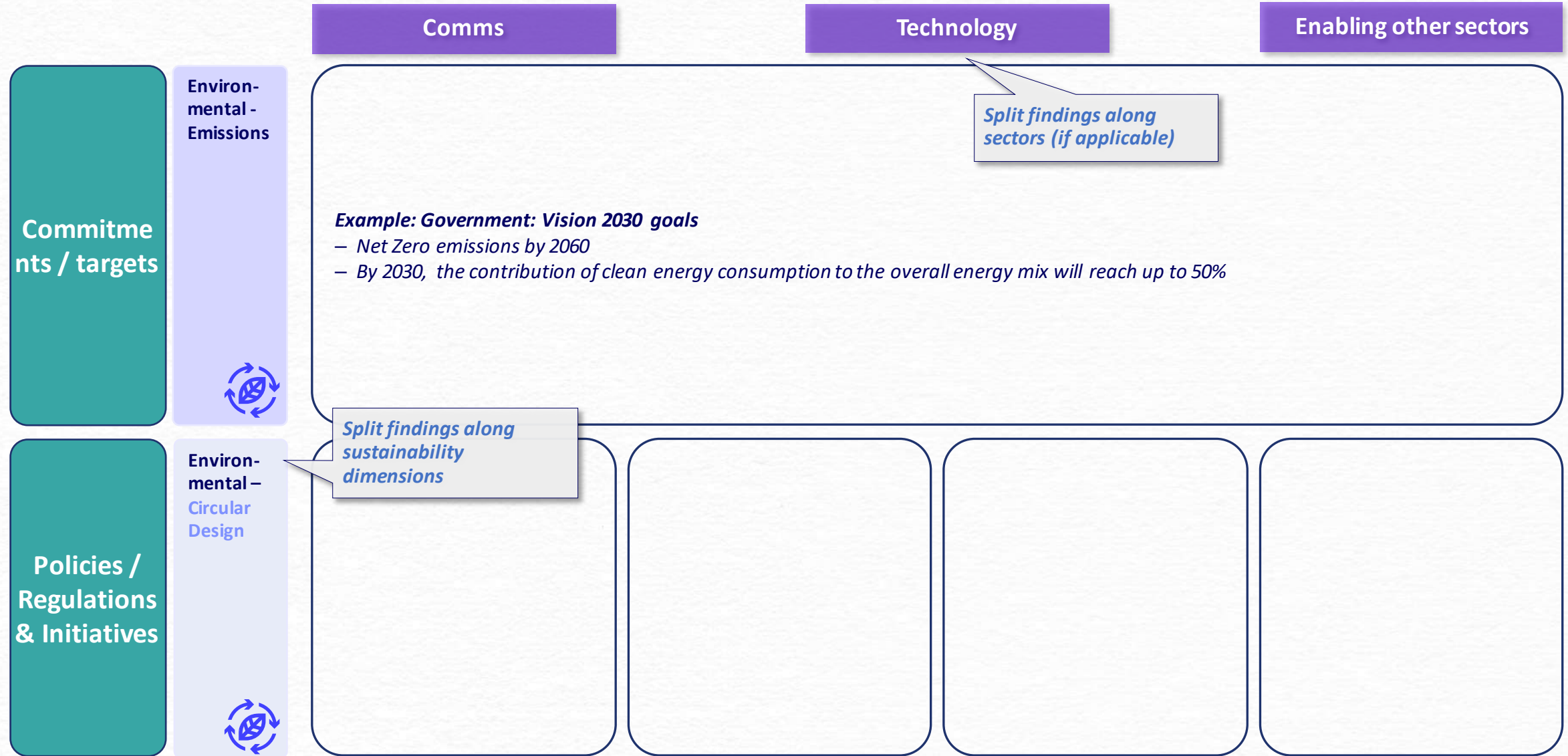
Include pictures and examples to make more tangible

Strategy / Initiatives

Initiatives on sustainability dimensions

Targets

Current state – Commitments, targets, policies, and initiatives



• Source: 1. [SEEC](#), Vision 20230, MCIT, CST, MGI, Desk research, Kearney

Template – Key takeaways > Current state analysis

Summary and key implications

Vision / Strategy



Current state KEY TAKEAWAYS

Takeaway 1



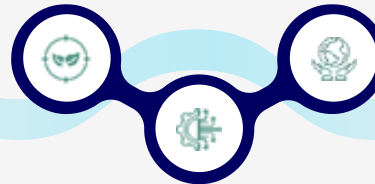
Takeaway 3

Takeaway 2

Commitments / Targets



Takeaway 1



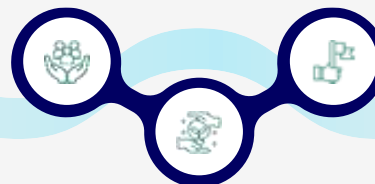
Takeaway 3

Takeaway 2

Policies / Regulations & Initiatives



Takeaway 1



Takeaway 3

Takeaway 2

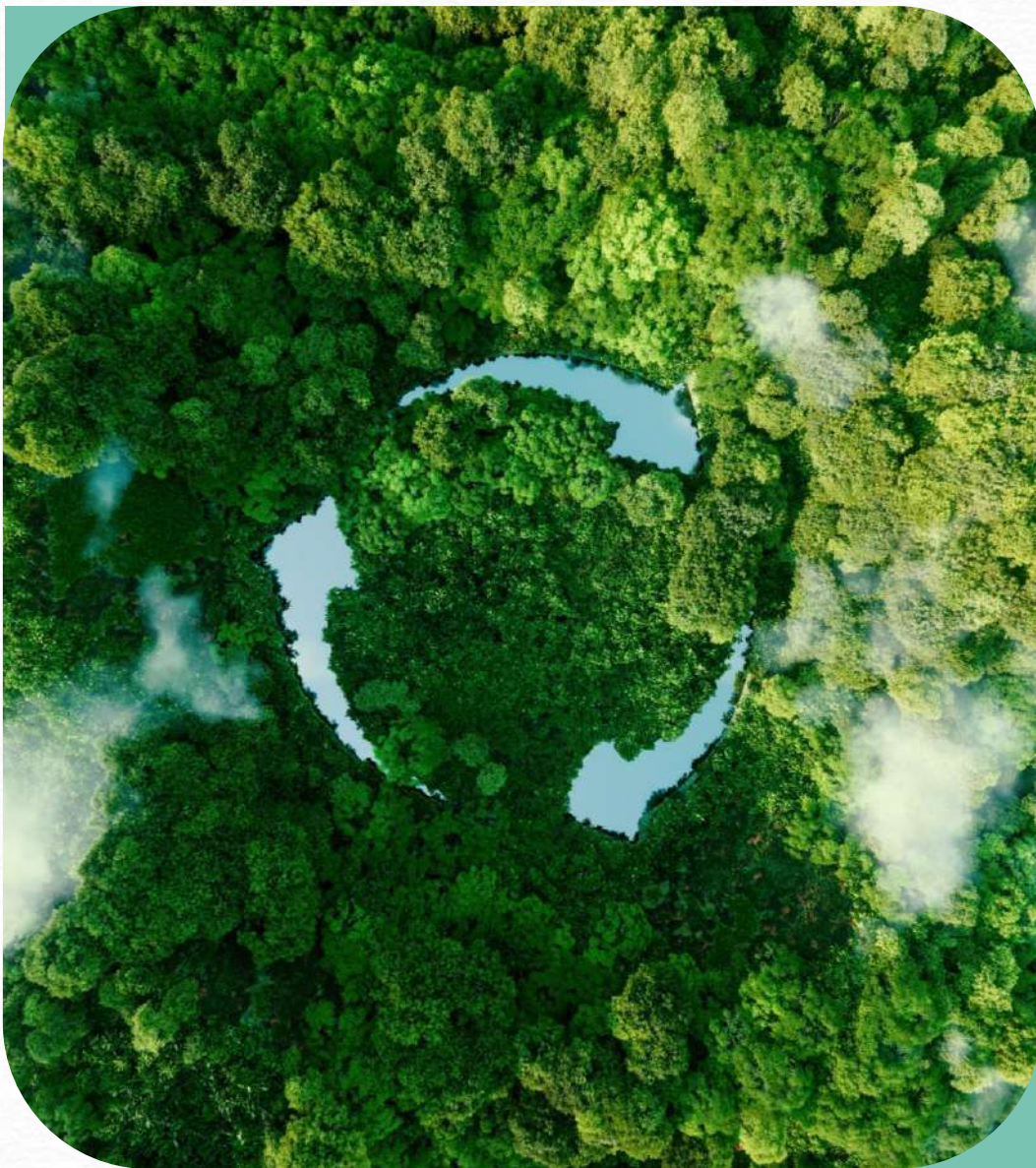


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CURRENT STATE ANALYSIS

BENCHMARK ANALYSIS

GAP ANALYSIS

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*)

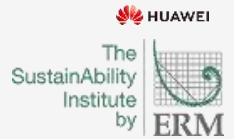
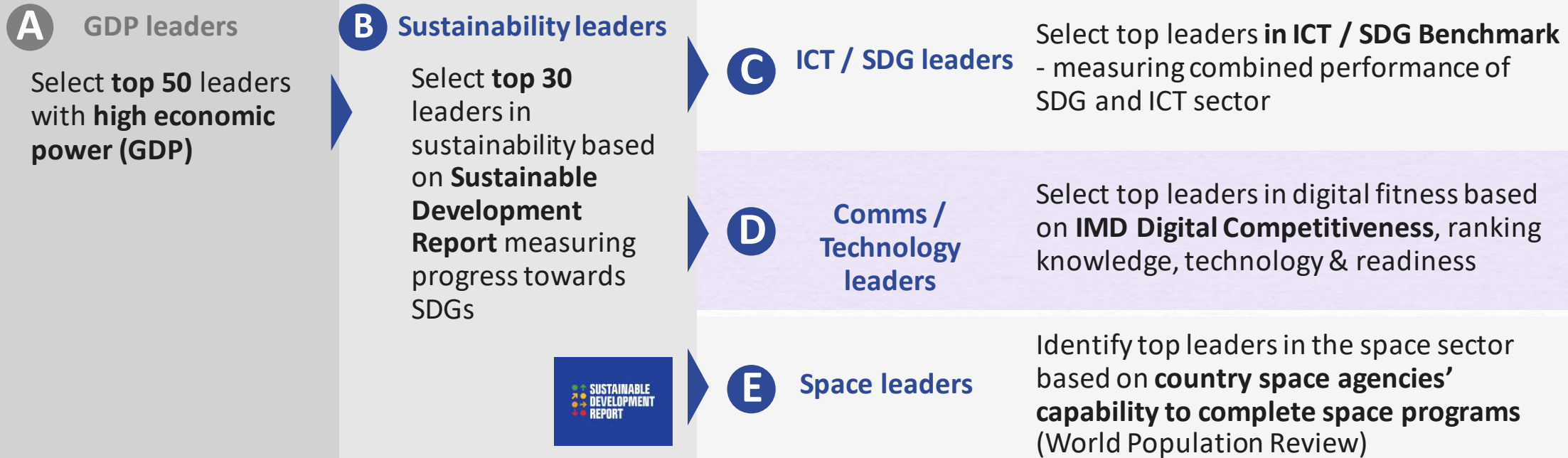
- Derive key implications per analysis framework dimensions
- Derive conclusions and priorities



Five criteria were applied to select the benchmark countries

Countries selected based on
absolute ranks

STEP 1: Identify the leaders across five topics



World Population Review

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

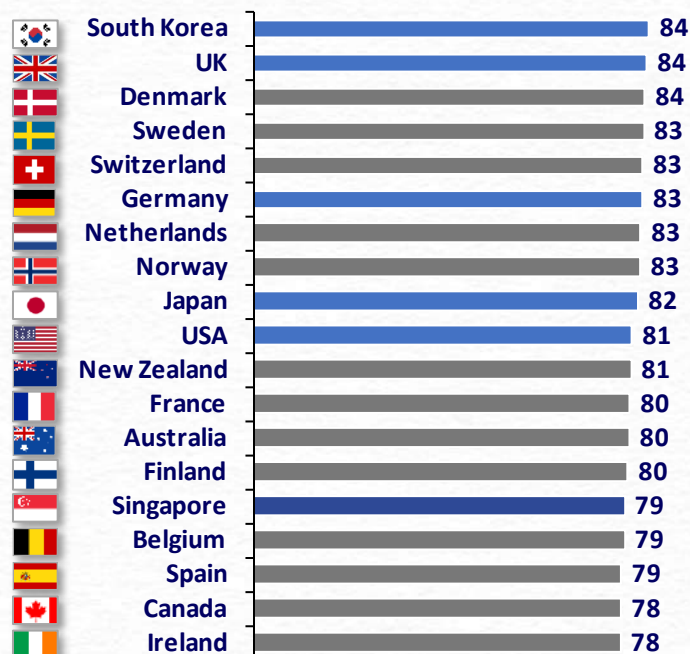
- Consolidate all European countries under European Union (EU) entity to reflect joint policy umbrella
- Add Germany as specific EU country example based on GDP

Additional validation
with experts to
ensure coverage of
globally relevant
countries

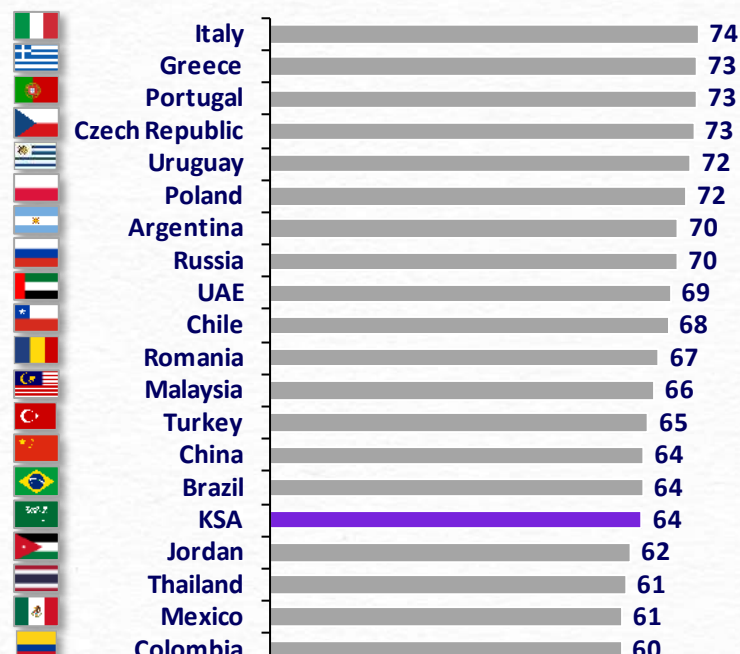
Source: World Bank 2022, ICT, Sustainable Development Goals Benchmark, Huawei (2019), Sustainable Development Report (2022), IMD Digital Competitive Ranking (2021), World Population Review (2022)

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

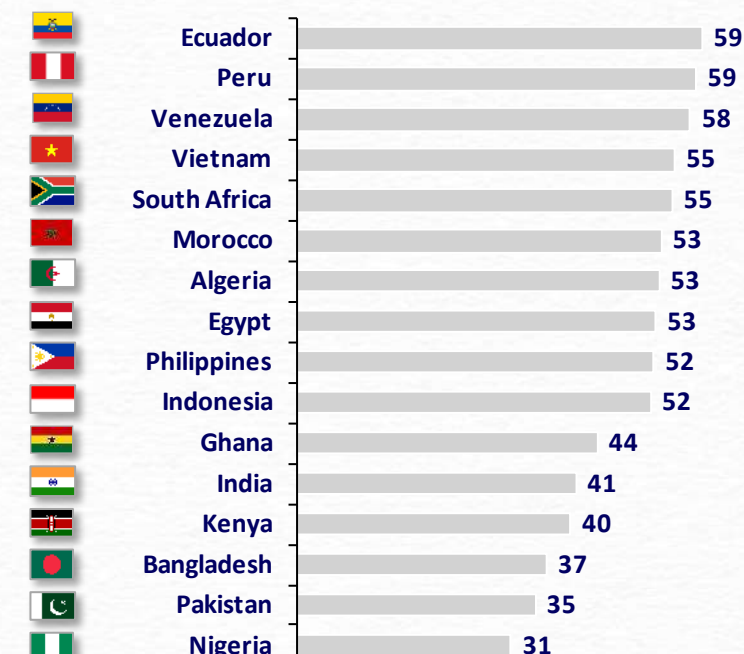
The 2019 ICT, SDGs Benchmark indicates a country's combined performance on ICT, development & sustainable development



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

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

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 WEEE¹ policy packages and recycling laws (e.g. KR Eco-Assurance System of EEE developing recycling standards, Federal Gov’ 	
Water	Recycling & recovery quotas for e-waste (on sector level) – e.g. EU 55% for small IT & Comms equipment for preparation of reuse	
Gender equality	e.g. EU: Digital Upskilling for All as social dialogue project to develop best practices for upskilling & diversity, European Communications Network Operator Association	
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	FCC as US regulator involved to develop USA Affordable Connectivity Program, aiming to reduce internet costs for citizens	
ESG reporting & Transparency	China’s regulator is part of ICT ministry announced 5-year plan for ICT industry	
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		

 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

Dimensions

Takeaways and examples

Non-Exhaustive

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

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 WEEE¹ 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	Recycling & recovery quotas for e-waste (on sector level), e.g. EU	
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)	In collaboration with private sector, Ministry of Education	
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	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)	
Certification & Standards	Policies, initiatives and funds to create standards and certificates around energy efficiency	
Data privacy and protection		

High targets set, main policies published, initiatives planned

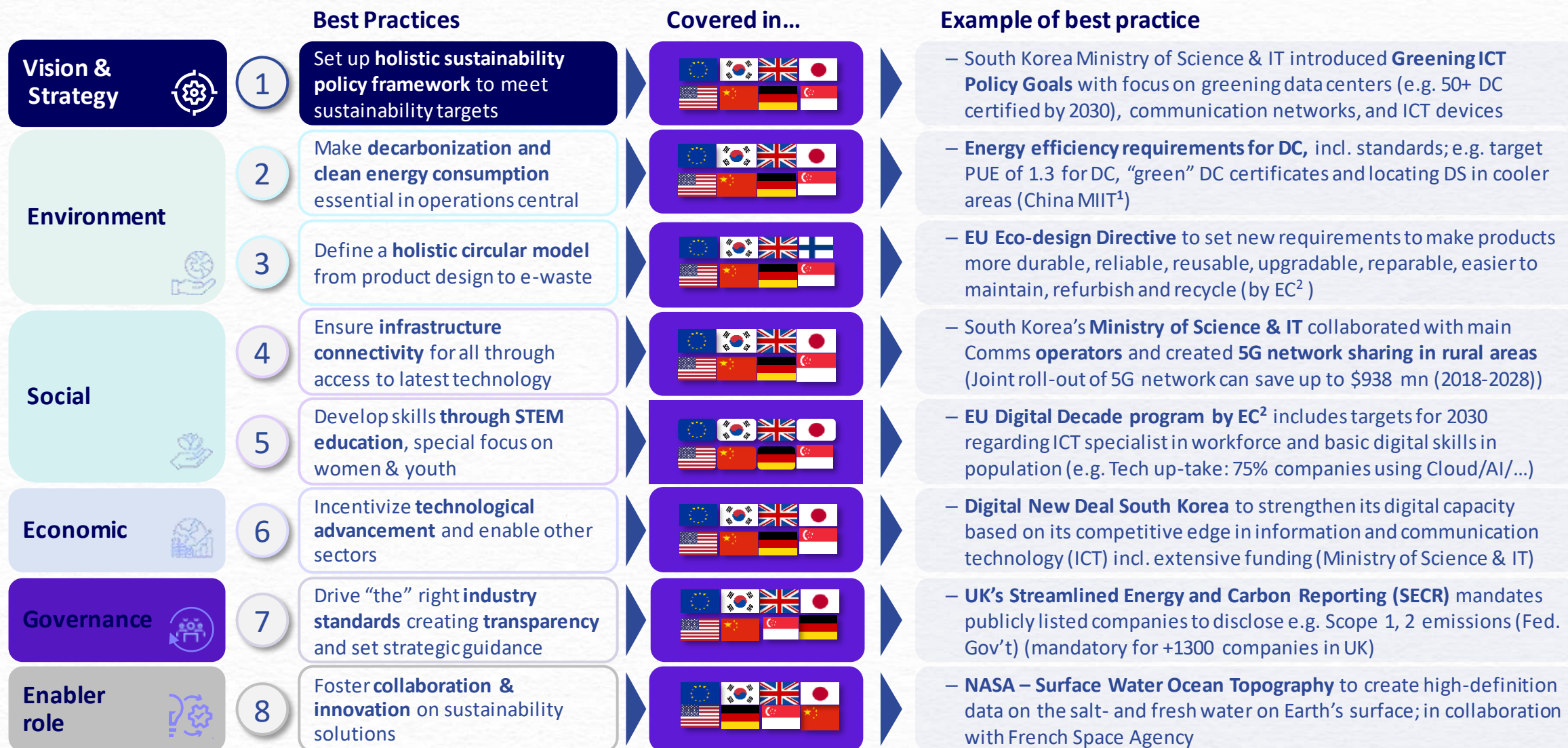
Medium targets, policies and Initiatives partially set and planned

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

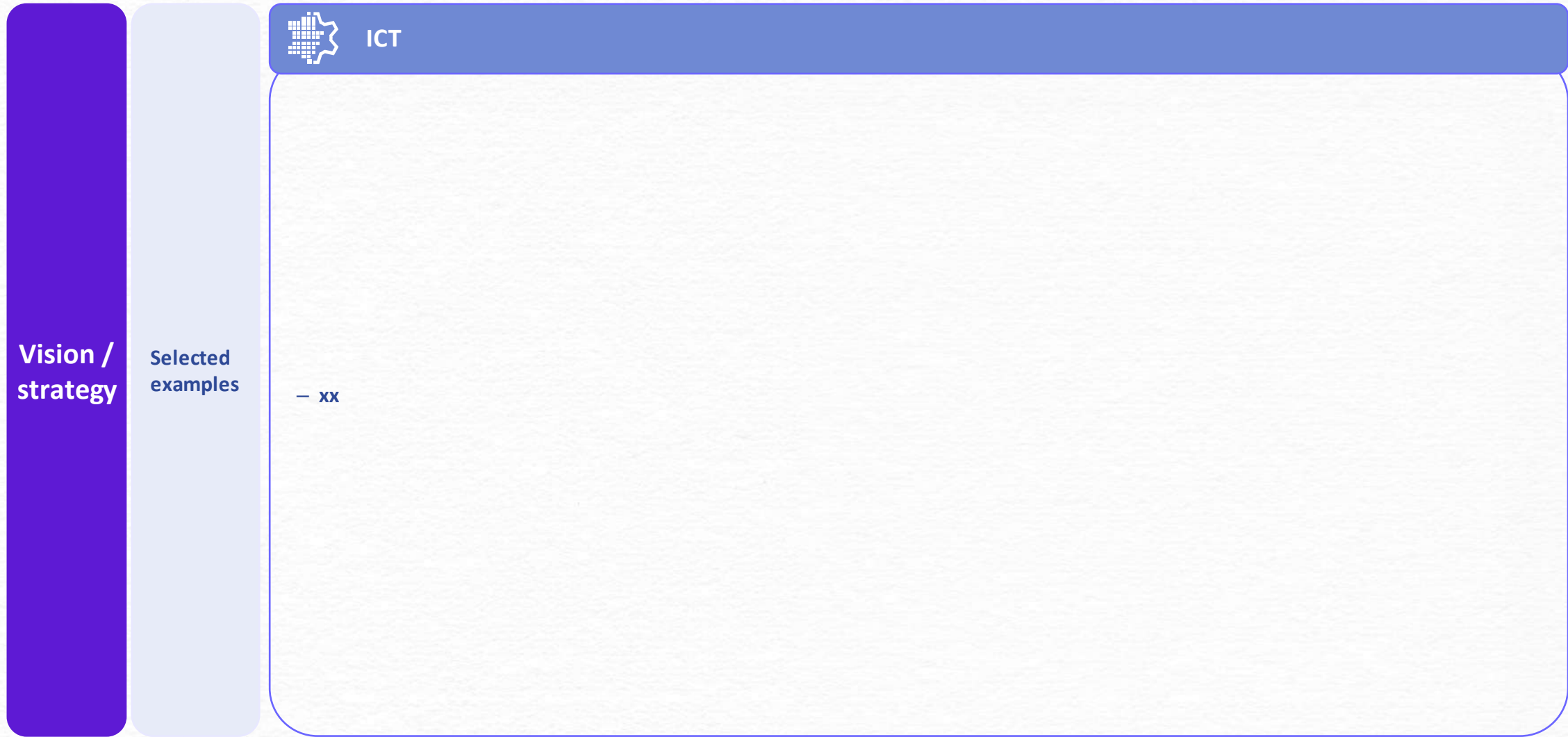


1. MIIT = Ministry of Industry and Information Technology, 2. EC = European Commission

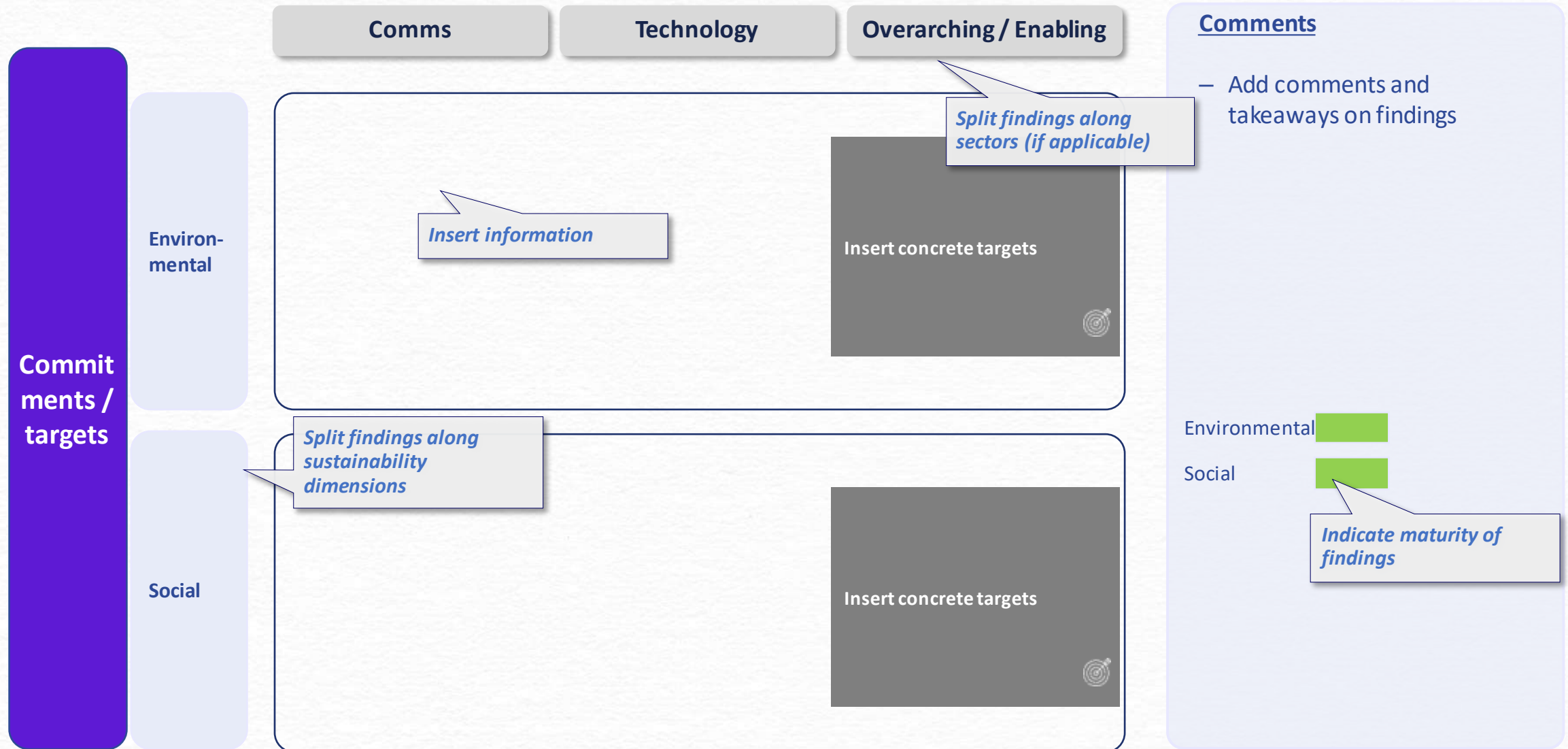
Template Stakeholder analysis

Stakeholder	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)
	Key takeaways in the context of sustainability — XX Flag country	

Source: EU websites



Template Commitment / targets



Sources_

Template Policies / initiatives



Policies / initiatives

Comms

Technology

Overarching / Enabling

Environmental

Insert information

Split findings along sectors (if applicable)

Economic

Split findings along sustainability dimensions

Comments

– Add comments and takeaways on findings

Environmental

Social

Indicate maturity of findings

Sources_

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	<i>Adapt based on your derived sub-dimensions in step 1</i>	 <i>Color each field per country and sub-dimension based on overall score (of detailed analysis)</i>								
Social 											
Economic 		<i>Indicate which findings can be mapped against sectors (e.g. energy efficiency findings in tech sector)</i>									
Governance 											

Takeaways

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

– Insert takeaways per pillars

 National level
  Comms
  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

Non-Exhaustive

2.3.2

Dimensions

Takeaways and examples

Dimensions	Takeaways and examples
Environmental 	
Social 	
Economic 	
Governance 	

Adapt based on your derived sub-dimensions in step 1

e.g. Education & Upskilling

Add color coding based on analysis outcome

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

– Enablement of citizens to acquire skill and fostering of STEM in education

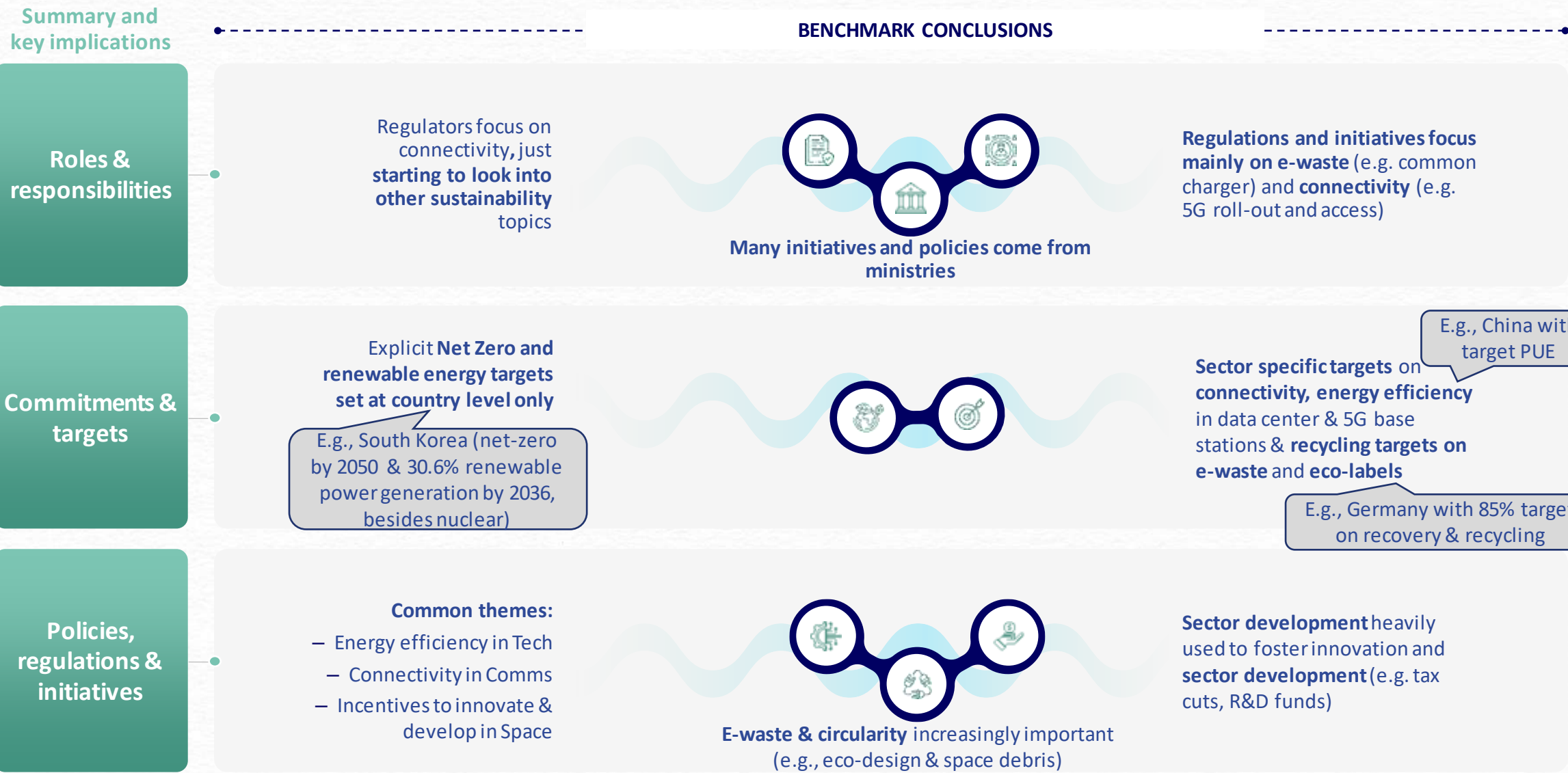
Insert examples, including entity responsible

High targets set, main policies published, initiatives planned

Medium targets, policies and Initiatives partially set and planned

Low / Limited targets, policies and initiatives set

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



Template – key takeaways > Benchmark analysis

2.3.3

Summary and key implications

Vision / Strategy



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

Commitments / Targets



Policies / Regulations & Initiatives



Current state KEY TAKEAWAYS

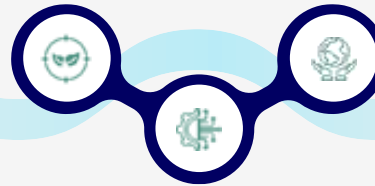
Takeaway 1



Takeaway 3

Takeaway 2

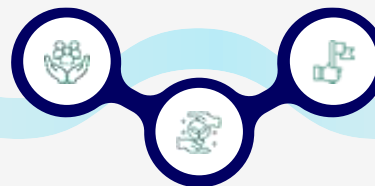
Takeaway 1



Takeaway 3

Takeaway 2

Takeaway 1



Takeaway 3

Takeaway 2



TABLE OF CONTENTS – APPENDIX STEP 2

CURRENT STATE ANALYSIS

BENCHMARK ANALYSIS

GAP ANALYSIS

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

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



Technology

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

Vision / Strategy



A CURRENT STATE ANALYSIS CONCLUSIONS

Takeaways



Takeaways

Takeaways

B BENCHMARK CONCLUSIONS

Takeaways



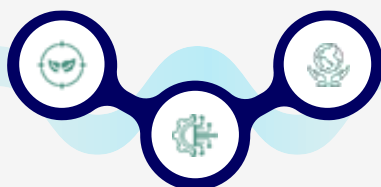
Takeaways

Many initiatives and policies come from ministries

Commitments / Targets



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

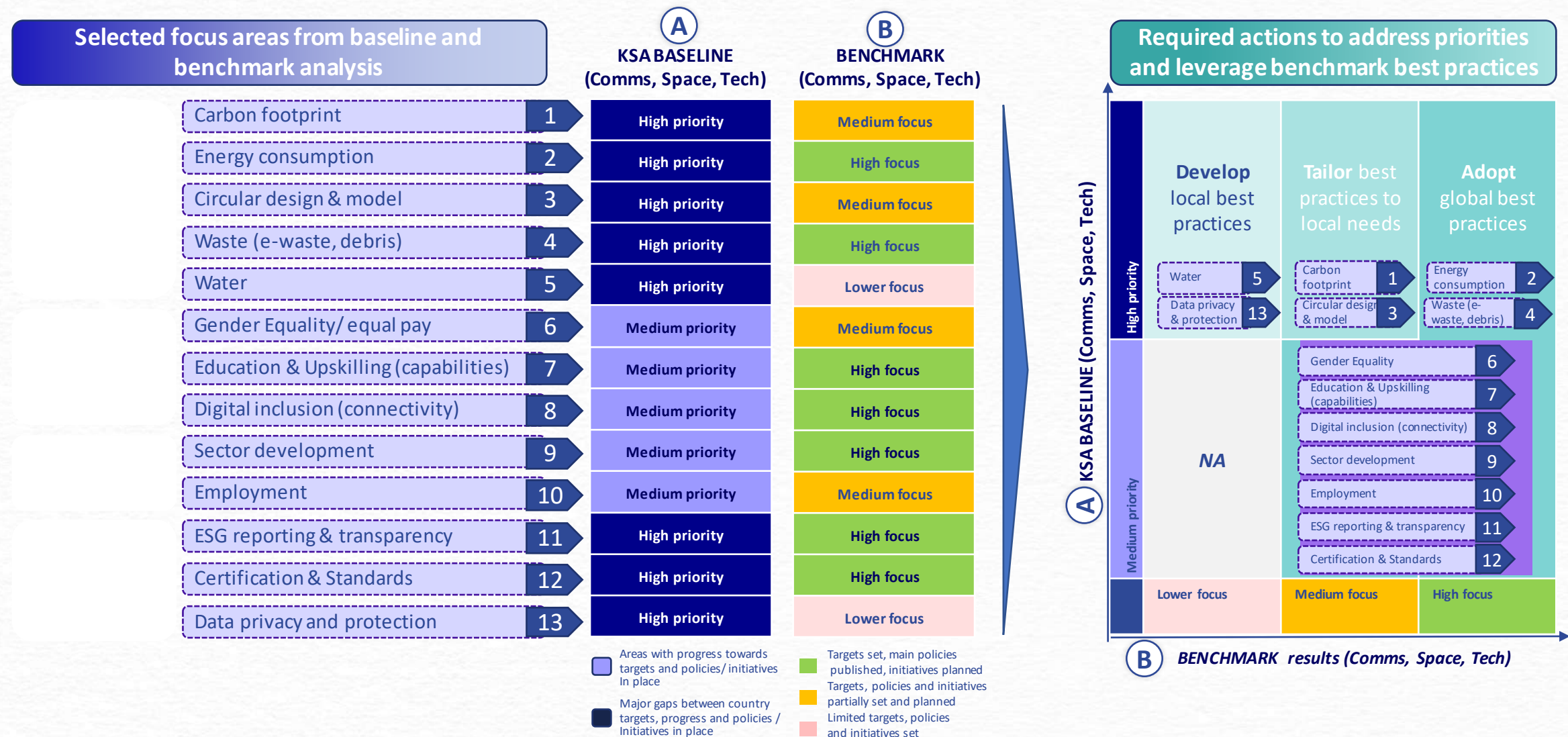
- Common themes:**
- Energy efficiency in Technology
 - Connectivity in Comms
 - Incentives to innovate & develop in Space



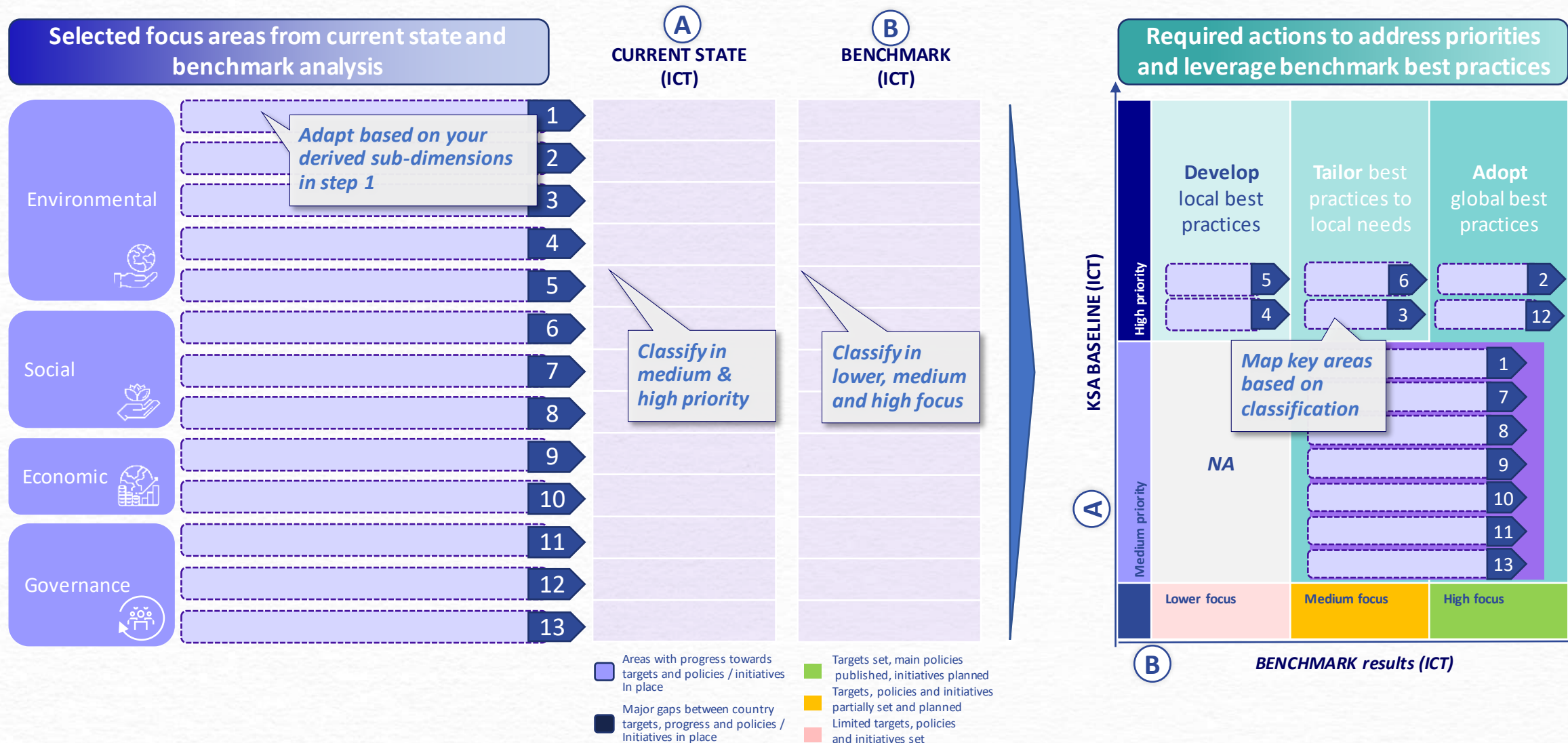
Takeaways

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



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



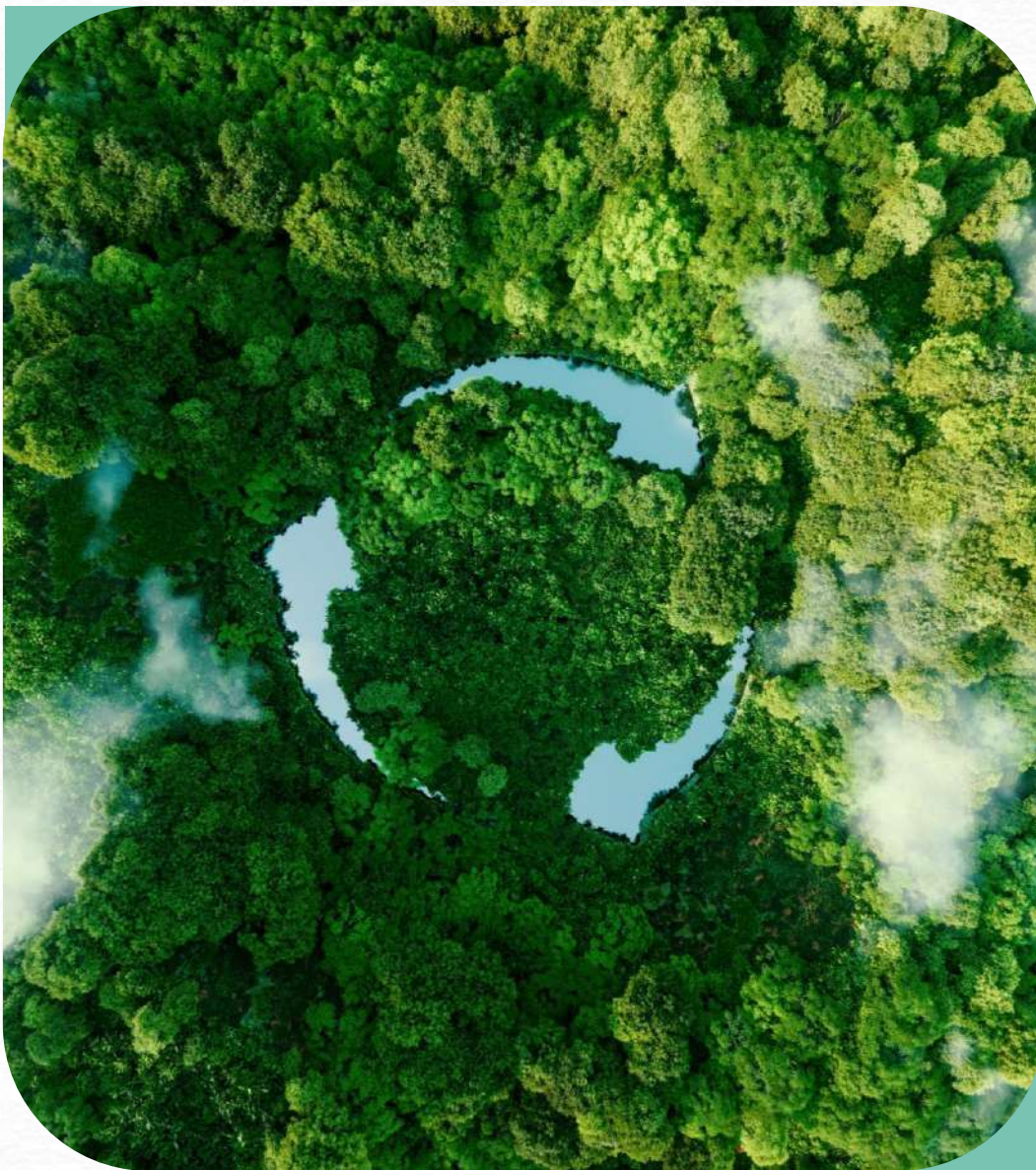


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STEP 3

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

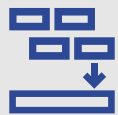
3.3



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 execute the new Sustainability Strategy, filtering key initiatives and prioritizing them based on impact and ease of implementation

3.5

Template for guiding principles

A

Ambitious



Add explanation

B

Local



Add explanation

C

Sector-specific



Add explanation

D

Regulator-focused



Add explanation

E

Enabling



Add explanation

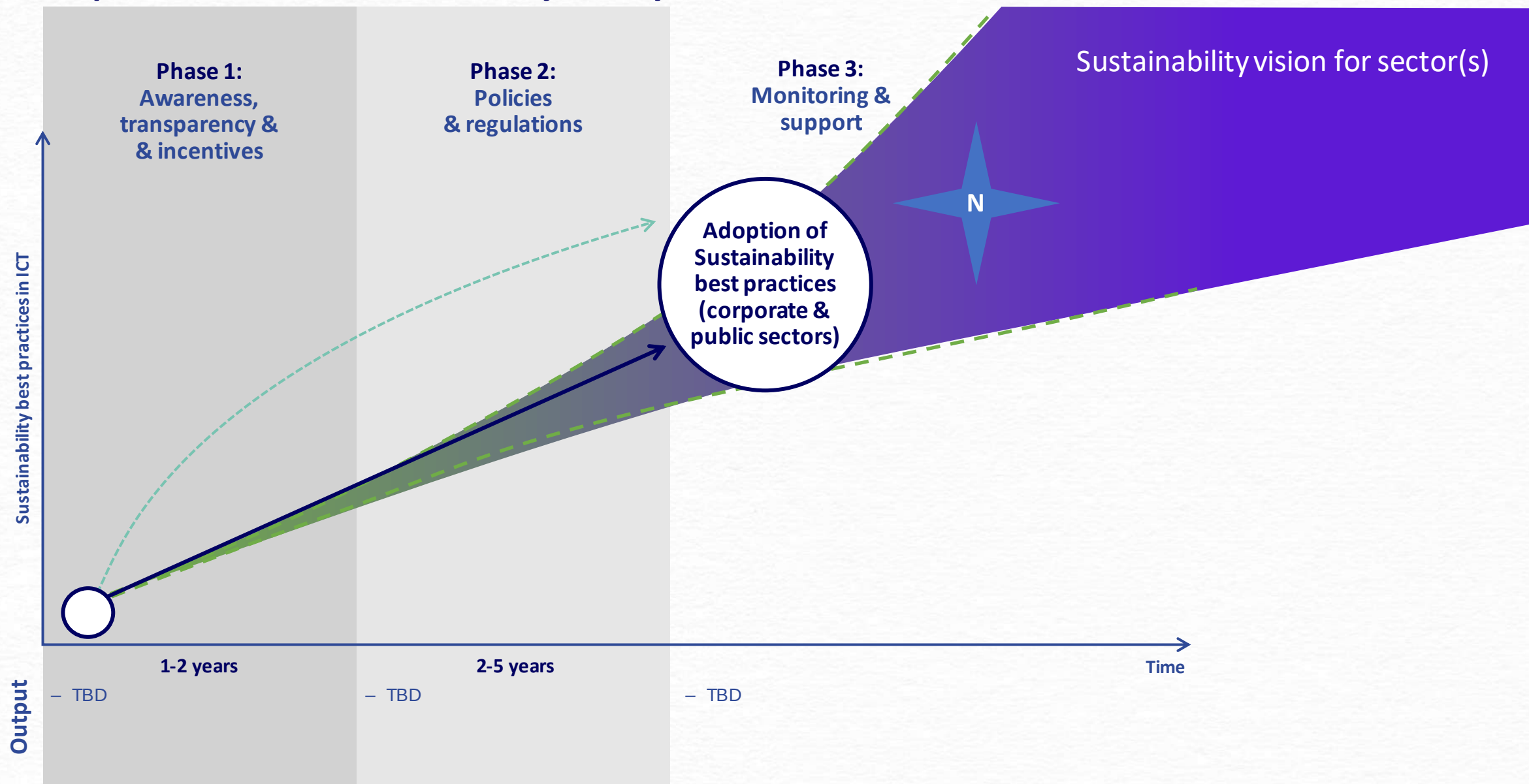
Exemplary

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



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

■ Cross-sectors ■ Sector-specific

■ C Comms ■ S Space ■ T Technology

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



The template helps define pillars and strategic objectives of sustainability strategy

Exemplary CST Pillar



Cutting-edge infrastructure

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

Implication from current state & benchmark analysis

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

JUSTIFICATION

– Insert conclusions from current state and benchmark analysis

Tailored Pillar



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

Comms

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 ICT sectors
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 ktms 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 & environmental 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 ICT sectors including management positions	Publish the Sustainability standards for each of the ICT sectors

• 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

Pillar	#	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

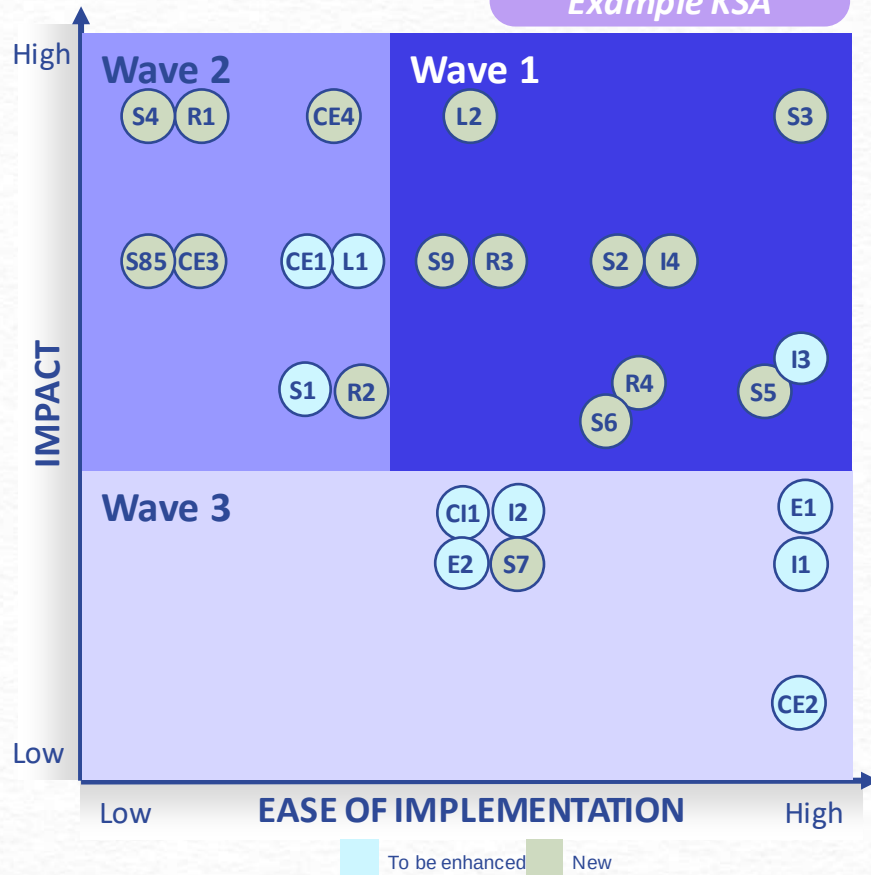
Type of initiatives might be Infrastructure & solution, Awareness & capabilities, policies & regulations, financial incentive, but each entity can customize this classification based on their needs

Template: Prioritization of initiatives

INITIATIVES OF CIRCLES

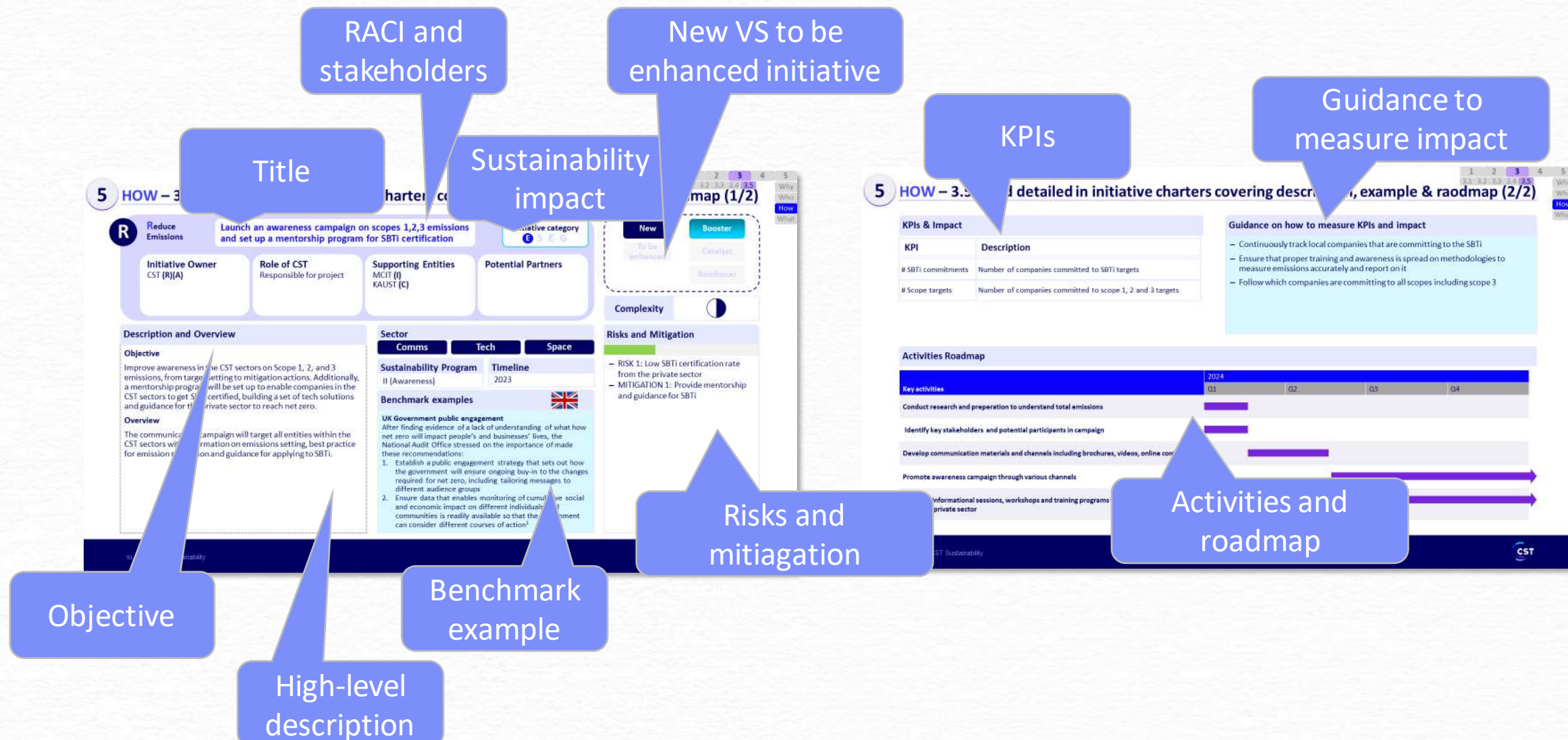


Example KSA



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

RACI - Matrix				
	Xx 1	Xx 2	Xx 3	Xx 4
Task 1	R			
Task 2		A		
Task 3			C	
Task 4				I
	Responsible	Accountable	Consulted	Informed

...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.

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STEP 4

STAKEHOLDER LING LIST (RECAP)

TEMPLATE CASES FOR CHANGE



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STEP 4

STAKEHOLDER LING LIST (RECAP)

TEMPLATE CASES FOR CHANGE

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	– ...
...	

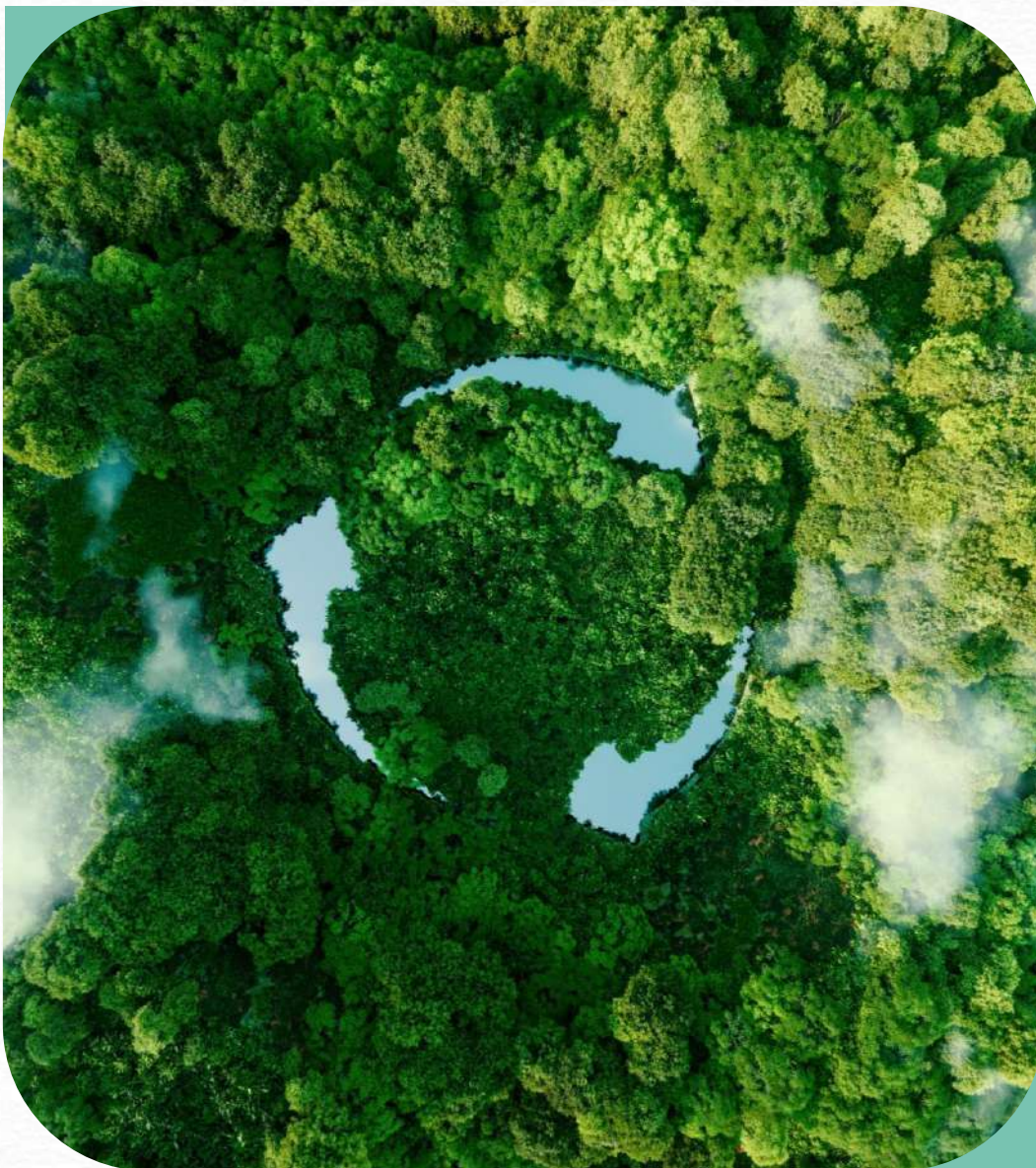


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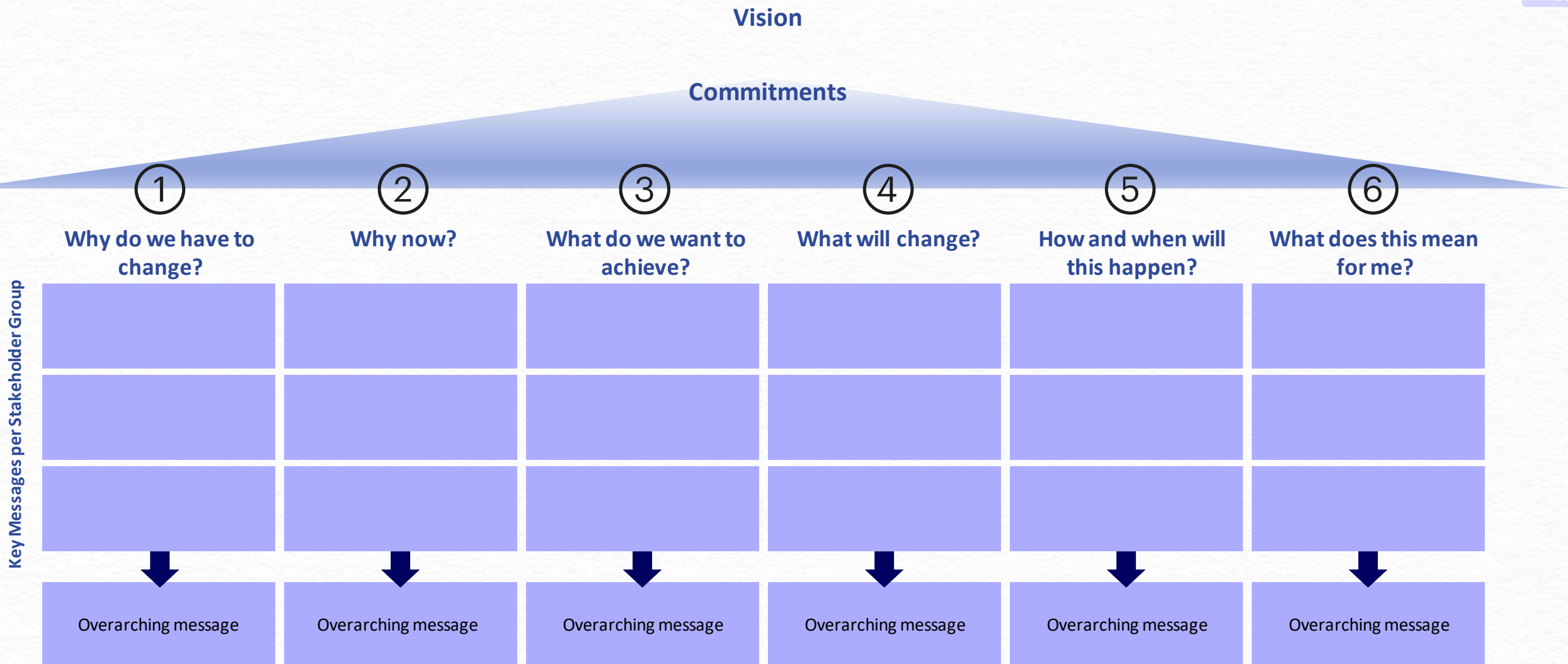
STEP 4

STAKEHOLDER LING LIST (RECAP)

TEMPLATE CASES FOR CHANGE

Template case for change

Internal communication elements,
based on stakeholder needs and groups.



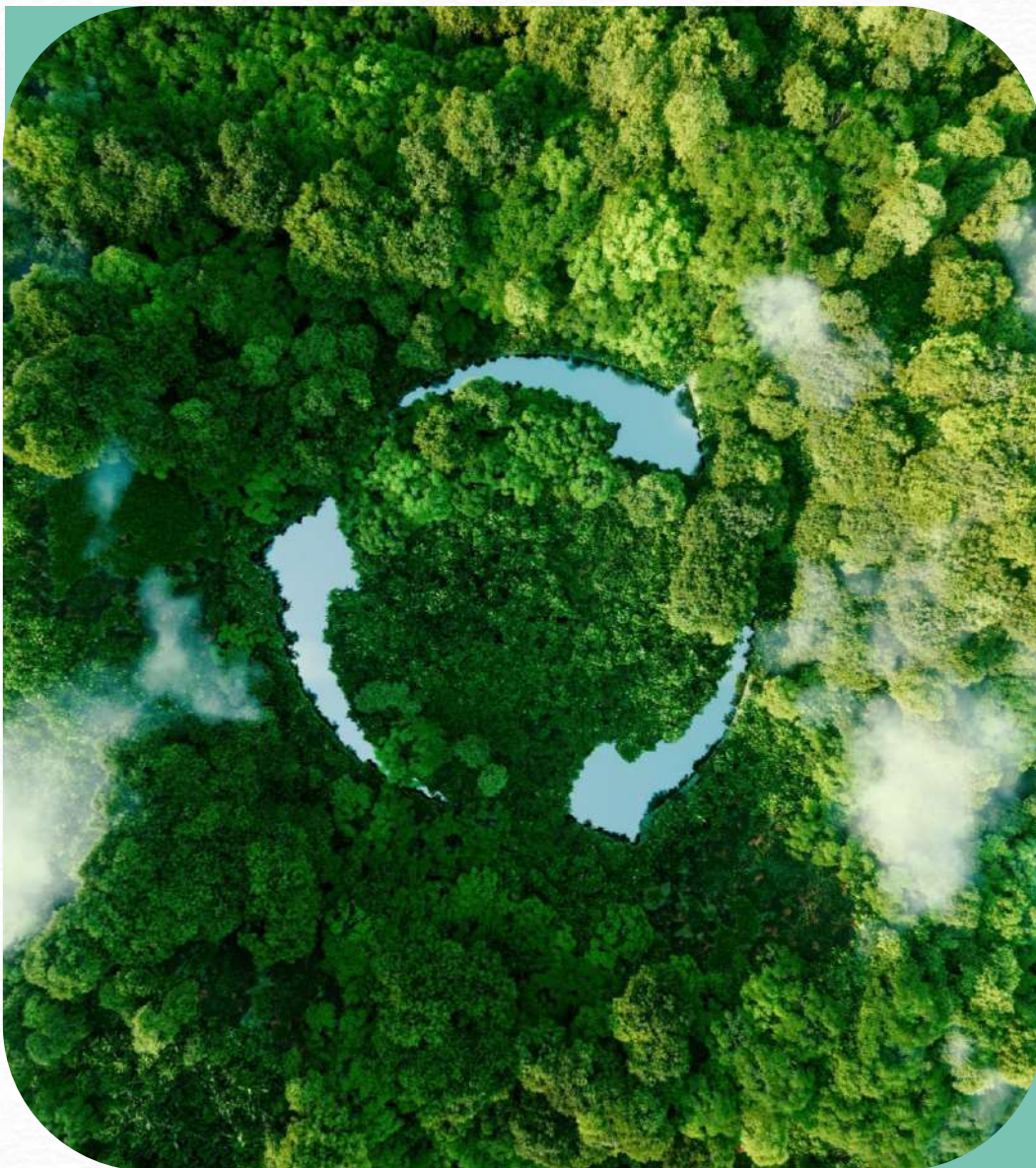


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STEP 5

ROADMAP TEMPLATE

TEMPLATE RISK & MITIGATIONS

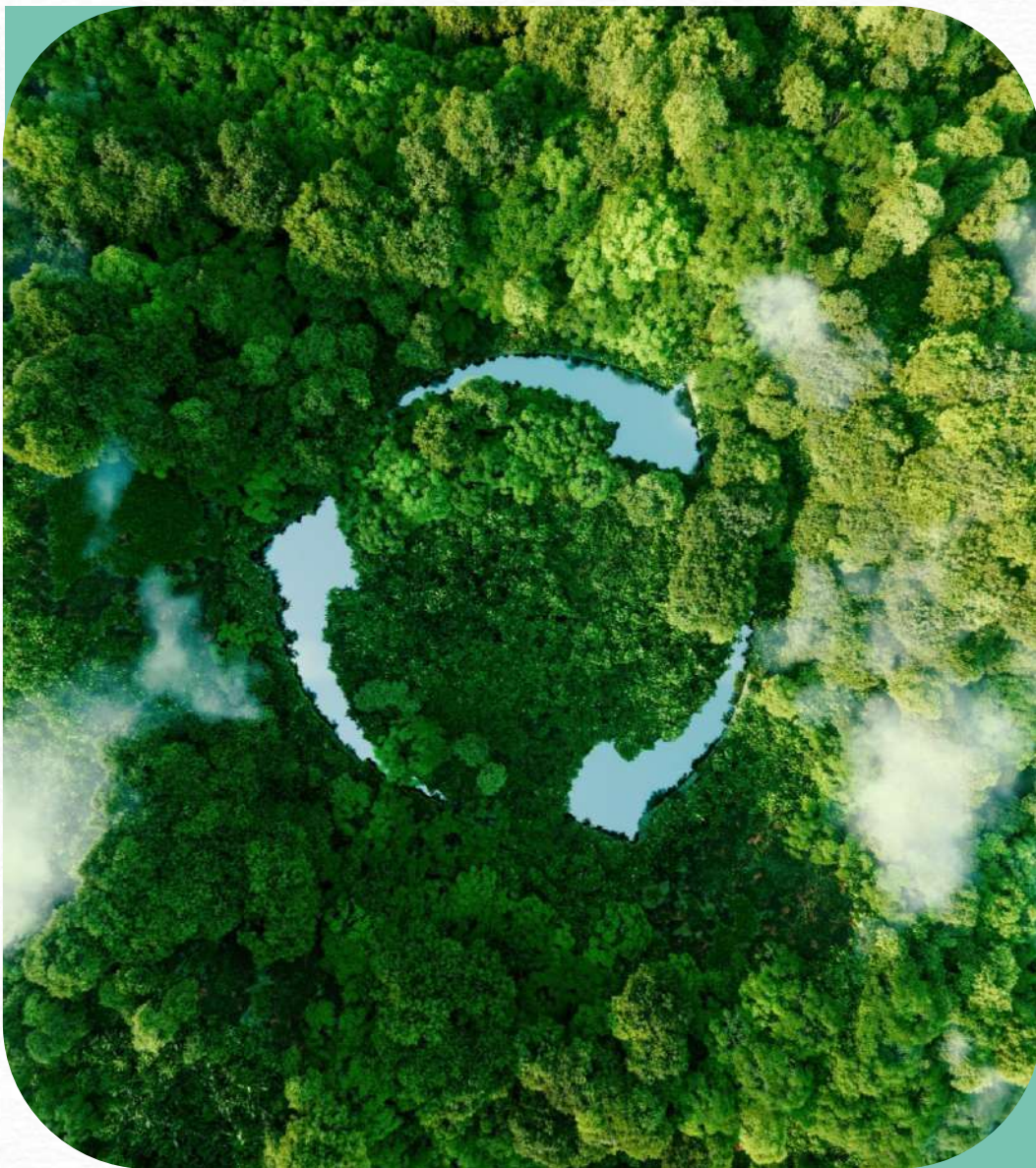


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STEP 5

ROADMAP TEMPLATE

TEMPLATE RISK & MITIGATIONS

Template: Initiative roadmap

5.1 5.2

Why
Who
How
What

KEY ACTIVITIES

Key activities	2024				2025				2026				2027				2028				2029				2030			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
I. Program 1																												
Initiative 1																												
Initiative 2																												
II. Program 2																												
Initiative 3																												
Initiative 4																												
...																												

■ Initiative design phase ■ Initiative implementation ■ And monitoring phase

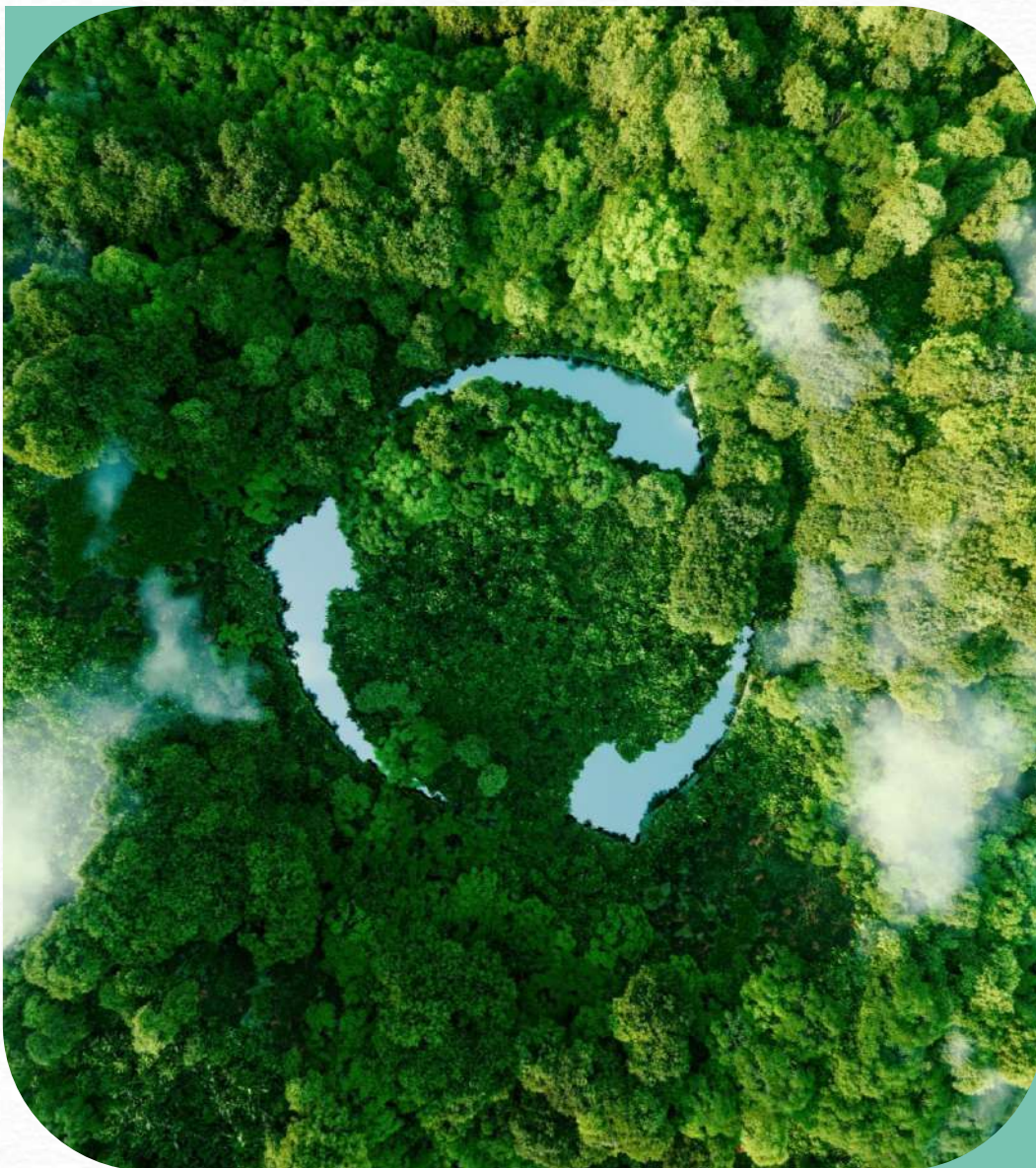


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STEP 5

ROADMAP TEMPLATE

TEMPLATE RISK & MITIGATIONS

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

