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ANNEX IV

to the Commission Implementing Decision on the financing of the 2023 action plan part II in favour of the Regional South Neighbourhood

Action Document for Enhanced Digital Connectivity in the Southern Neighbourhood

ANNUAL ACTION PLAN

This document constitutes the annual work programme in the sense of Article 110(2) of the Financial Regulation, and action plan/measure in the sense of Article 23(2) of NDICI-Global Europe Regulation.

1. SYNOPSIS

1.1. Action Summary Table

| | |
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| 1. Title OPSYS Basic Act | Enhanced Digital Connectivity in the Southern Neighbourhood 2023 annual action plan part II in favour of the Regional South Neighbourhood OPSYS business reference: ACT-61716 ABAC Commitment level 1 number: JAD.1158394 Financed under the Neighbourhood, Development and International Cooperation Instrument (NDICI-Global Europe) |
| 2. Economic and Investment Plan (EIP) | Yes |
| EIP Flagship | Yes (Flagship 7 – Digital transformation, research and innovation) |
| 3. Team Europe Initiative | No |
| 4. Beneficiar(y)/(ies) of the action | The action shall be carried out in the Southern Neighbourhood countries: Algeria, Egypt, Israel ⁽¹⁾ , Jordan, Lebanon, Libya, Morocco, Palestine ⁽²⁾ , Syria ⁽³⁾ and Tunisia. As per Article 43(1) of NDICI-Global Europe Regulation, for reasons of efficiency and effectiveness, and upon explicit justified request, some activities may be extended to countries from the Union for the |

¹ See Guidelines on the eligibility of Israeli entities and their activities in the territories occupied by Israel since June 1967 for grants, prizes and financial instruments funded by the EU from 2014 onwards on [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013XC0719\(03\)&from=en](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013XC0719(03)&from=en).

² This designation shall not be construed as recognition of a State of Palestine and is without prejudice to the individual positions of the Member States on this issue.

³ Co-operation with the Government of Syria suspended since 2011.

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| | <p>Mediterranean (UfM) (Albania, Bosnia and Herzegovina, Mauritania, Montenegro, North Macedonia, Türkiye) and two countries neighbouring Neighbourhood South countries: Saudi Arabia and Iraq.</p> <p>This is justified because the action aims to support the strategic developments on digital in the framework of the UfM as well as in the context of cross-regional initiatives under the Global Gateway strategy. This may include cooperation with the above-mentioned countries and is in line with the multiannual indicative programme for the Southern Neighbourhood for 2021-2027, which makes reference, under priority 5 (specific objective 2) to the importance of cross regional cooperation.⁴</p> |
| 5. Programming document | Commission Implementing Decision adopting a multiannual indicative programme for the Southern Neighbourhood Region for the period 2021-2027 ⁵ |
| 6. Link with relevant MIP(s) objectives/expected results | <p>Priority Area 2: Strengthen resilience, build prosperity and seize the digital transition</p> <p>SO1: Strengthen economic governance and enhance entrepreneurship through research, innovation, and digitalisation</p> <p>Expected results:</p> <ul style="list-style-type: none"> - The capacity of the Arab States Research and Education Network (ASREN) and National Research and Education Networks (NREN) in managing and benefitting from enhanced digital connectivity is reinforced. |
| PRIORITY AREAS AND SECTOR INFORMATION | |
| 7. Priority Area(s), sectors | <p>110 – Education</p> <p>220 – Communications</p> <p>430 – Other multisector</p> |
| 8. Sustainable Development Goals (SDGs) | <p>Main SDG: 9. Industry, innovation and infrastructure</p> <p>Secondary SDGs:</p> <p>4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</p> <p>5. Gender equality</p> <p>8. Decent work and economic growth</p> |
| 9. DAC code(s) | <p>Main DAC Code :</p> <ul style="list-style-type: none"> - 43082 Research/Scientific Institutions (60%) <p>Secondary DAC Codes:</p> <ul style="list-style-type: none"> - 22040 Information and communication technology (ICT) (30%) - 11110 Education policy and administrative management (10%) |
| 10. Main Delivery Channel @ | 20000 Non-Governmental Organisations and Civil society |

⁴ ‘The future regional cooperation should have a flexible geographical and thematic scope, also allowing for interlinkages with other regions, where necessary and appropriate as highlighted in the Joint Communication on a Renewed partnership with the Southern Neighbourhood.’

⁵ Commission Implementing Decision adopting a multiannual indicative programme for the Southern Neighbourhood Region for the period 2021-2027 C(2021) 9399

| | | | | |
|--------------------------------------|--|--|-------------------------------------|---|
| 11. Targets | <input type="checkbox"/> Migration <input type="checkbox"/> Climate <input checked="" type="checkbox"/> Social inclusion and Human Development <input checked="" type="checkbox"/> Gender <input type="checkbox"/> Biodiversity <input type="checkbox"/> Human Rights, Democracy and Governance | | | |
| 12. Markers (from DAC form) | General policy objective @ | Not targeted | Significant objective | Principal objective |
| | Participation development/good governance | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| | Aid to environment @ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Gender equality and women's and girl's empowerment | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| | Reproductive, maternal, new-born and child health | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Disaster Risk Reduction @ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Inclusion of persons with Disabilities | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Nutrition @ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | RIO Convention markers @ | Not targeted | Significant objective | Principal objective |
| | Biological diversity @ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Combat desertification @ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Climate change mitigation @ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Climate change adaptation @ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 13. Internal markers and Tags | Policy objectives | Not targeted | Significant objective | Principal objective |
| | EIP | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| | EIP Flagship | YES <input checked="" type="checkbox"/> | | NO <input type="checkbox"/> |
| | Tags transport | YES <input type="checkbox"/> | | NO <input checked="" type="checkbox"/> |

| | | | |
|--|-------------------------------------|-------------------------------------|-------------------------------------|
| energy | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| environment, climate resilience | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| digital | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| economic development (incl. private sector, trade and macroeconomic support) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| human development (incl. human capital and youth) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| health resilience | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| migration and mobility | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| agriculture, food security and rural development | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| rule of law, governance and public administration reform | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| other | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| Digitalisation @ | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Tags | YES | NO | |
| digital connectivity | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| digital governance | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| digital entrepreneurship | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| digital skills/literacy | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| digital services | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| Connectivity @ | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Tags | YES | NO | |
| digital connectivity | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| energy transport | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| health | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| education and research | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| Migration @ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| | | | |
|-----------------------------|-------------------------------------|--------------------------|--------------------------|
| Reduction of Inequalities @ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| COVID-19 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

BUDGET INFORMATION

| | |
|------------------------------|--|
| 14. Amounts concerned | Budget line(s) (article, item): 14.020110 Southern Neighbourhood Total estimated cost: EUR 13 334 000 Total amount of EU budget contribution: EUR 12 000 000 |
|------------------------------|--|

MANAGEMENT AND IMPLEMENTATION

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|---|---|
| 15. Implementation modalities (management mode and delivery methods) | Direct management through: - Grants |
|---|---|

1.2. Summary of the Action

The present action reflects the EU priorities under the Joint Communication on a Renewed Partnership with the Southern Neighbourhood⁶ and its Economic and Investment Plan (EIP)⁷. The objectives of the action are also aligned with the Union for the Mediterranean (UfM) political framework. This action implements the Multi-Annual Indicative Programme for the Southern Neighbourhood (2021-2027)⁸ under its Priority Area 2 “Strengthen resilience, build prosperity and seize the digital transition”. It contributes to the EIP flagship 7 “Digital transformation, research and innovation”.

This action aims at reinforcing the role and capacities of universities and research and education centres in the Southern Neighbourhood through specific support measures at technical, institutional and policy levels. Their potential shall be enhanced through a better access to modern digital infrastructures and technologies. This shall ultimately trigger a significant upgrade of the scientific collaboration between both shores of the Mediterranean. By 2026, public institutions in charge of education and research in Morocco, Algeria, Tunisia and Egypt will indeed fully benefit from a new high speed digital submarine cable (called MEDUSA, co-financed by EIB with a contribution from the Neighbourhood Investment Platform). This flagship digital infrastructure project will secure direct high-speed connectivity between the North African countries and the EU (up to 200 Gigabits per second for each North African country, i.e. exponentially bigger than what is available today). The EU contribution to MEDUSA will secure the connectivity needs (at best commercial conditions) for the next 25 years to a growing number of (currently) 500 universities, and research and education centres across the North African region. Other Southern Neighbourhood countries might be connected to MEDUSA at a later stage.

In Jordan, Lebanon and Palestine (not benefitting from MEDUSA connectivity during the current phase), this action will allow for ensuring continuous access to high speed and secure broadband connectivity for universities and research and education centres.

The action therefore aims at incentivizing researchers and students in the Southern Neighbourhood to become contributors of world class research and innovation. By facilitating access to: educational and research resources and enabling research collaboration, the project will support the digital

⁶ JOIN (2021) 2 final of 09.02.2021

⁷ SWD(2021) 23 final

⁸ C(2021) 9399 final

transformation and related skills development, in numerous research domains including climate adaptation (as a key priority in the region, being the second most affected region in the world affected by climate change). This will also consolidate the gradual region's integration into EU's essential terabit R&D network.

Moreover, to provide access to research and educational resources and ultimately to the development of skills, there is also a need to foster **a high-quality, inclusive and accessible digital education ecosystem**, as outlined in the Commission Digital Education Action Plan⁹. The digital education ecosystem includes equipment, institutional planning and capacity building, teacher training, content development and dissemination.

This action has the potential of reaching a broader range of beneficiaries in public institutions (public libraries, basic education institutions, public research institutes, teaching hospitals, innovation centres at universities or research centres, etc) which are, or could be, connected to the NRENs, depending on the structure and mandate of the NRENs in their respective countries (subject to specific national policies).

Throughout the action, the gender equality dimension will be fully embedded in line with EU's Gender Action Plan III¹⁰, the Paris Agreement and the 2030 Agenda's provisions. This programme is relevant for the United Nations 2030 Agenda for Sustainable Development. It contributes primarily to the progressive achievement of Goals 9 ("Industry, Innovation and Infrastructure"), 4 ("Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all"), but also promotes progress towards Goals 5 ("Gender equality") and 8 ("Decent work and economic growth").

1.3. Beneficiar(y)/ies of the action

The final beneficiaries of this action are the education and research communities in Southern Neighbourhood countries, and in particular their end users (students and staff of tertiary education institutions, researchers...) who will benefit from the connectivity and services provided to their institutions by the National Research and Education Networks (NRENs), as well as from increased access to collaboration opportunities with their peers around the world.

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The implementing entities (and therefore direct beneficiaries) of the action (in the Southern Neighbourhood countries listed in Section 1.1.4, and in Europe) are the following:

- The Arab States Research and Education Network (ASREN). This non-profit international organisation (registered in Germany) gathers the National Research and Education Networks (NRENs) of its Member countries. It aims to implement, manage and extend sustainable pan-Arab e-infrastructures dedicated for the research and education communities, and to boost scientific research and cooperation through the provision of world-class e-infrastructures and e-services. ASREN has been coordinating e-Infrastructure services mainly in the Arab Mediterranean countries and has established a Point of Presence (PoP) in London to interconnect with the pan-European research and education network GÉANT.

⁹ <https://education.ec.europa.eu/focus-topics/digital-education/action-plan>

¹⁰ https://ec.europa.eu/international-partnerships/system/files/join-2020-17-final_en.pdf

- The GEANT Association, the pan-European research and education network organisation that interconnects Europe’s national research and education networking (NREN) organisations, connecting over 50 million users at 10,000 institutions across Europe and supporting all scientific disciplines. GEANT peers with sister organisations across the globe in support of global research and education collaborations. The GEANT association will support NRENs in the Southern Neighbourhood in having access to this high speed, secure and resilient network that allows for productive exchange of information and mutual development opportunities for digital partnerships.
- National Research and Education Networks (NRENs) are high-performance communications networks, operated for the research and education (R&E) community of a country. It is also the name given to the organisations that operate those networks and provide non-commercial services to the R&E users for the advancement of knowledge.

ASREN closely collaborates with the two Sub-Sahara African Regional Research and Education Networks (RRENs): WACREN, which aims to provide world class infrastructure and services for the West and Central African research and education community, and UbuntuNet Alliance, the regional association of NRENs for the Eastern and Southern Africa region. WACREN and UbuntuNet Alliance manage their regional network backbones interconnecting NRENs and connecting them to other regional networks, such as its pan-European counterpart GEANT. In order to ensure smooth exchange and collaboration between ASREN, WACREN and UbuntuNet Alliance, it is envisioned that the Action will seek associate status given to the SSA RRENs.

2. RATIONALE

2.1. Context

The February 2021 Joint Communication “Renewed partnership with the Southern Neighbourhood” identifies digitalisation as a key area for cooperation. The new Agenda aims for a green, digital, resilient and just recovery, guided by the 2030 Agenda for Sustainable Development, the Paris Agreement and the European Green Deal. The Multi-Annual Indicative Programme for the Southern Neighbourhood (2021-2027) sets the key priority areas of EU's cooperation with the region, including cooperation actions to strengthen resilience, build prosperity and seize the digital transition.

Moreover, as outlined in the EU Global Gateway, the European Union aims at fostering digital partnerships with third countries by promoting access to affordable and secure broadband connectivity and digital infrastructure, supporting the set-up of viable policy frameworks, fostering digital skills and entrepreneurship, which shall generate massive jobs creation. One of the key objectives is to support the strengthening of health, research and education systems worldwide and to establish strong links between Europe and partners in these sectors. It aims to do so by working closely with European Union Member States, financial institutions, European private sector players (in a Team Europe approach) and local public, private sector and civil society stakeholders.

The Southern Mediterranean is also among the priority international regions in the Digital Education Action Plan 2021-2027¹¹, which supports digital education and training systems in their effective, inclusive, and resilient digital transformation, based on the development of a high-performing digital education and ecosystem and enhancing digital skills and competences for the digital transition.

The Global Gateway strategy requires, in its essence, a good level of security, and in that respect the EU designed a dedicated 5G Toolbox¹² to raise this level of security and trust between all partners involved in digital exchange and economy. This set of comprehensive measures for an EU

¹¹ <https://education.ec.europa.eu/focus-topics/digital-education/action-plan>

¹² <https://digital-strategy.ec.europa.eu/en/library/eu-toolbox-5g-security>

coordinated approach to secure 5G networks can be extremely valuable both for academics, entrepreneurs and digital exchange in general. This is all the more important as some countries like North African ones (as well as sub-Saharan Africa) still suffer from low level of trust with external partners in digital field. This trust dimension was also a cross-cutting issue clearly identified by the African Union's Digital Transformation Strategy 2020-2030¹³ adopted in 2020 by African Union members. When it comes to job creation and trade, (especially at SME/Start-ups level), the concept of "trusted vendor" is at the core of this strategy to support long-lasting trusted partnership at global level.

As highlighted by numerous studies, among which the EESC Opinion 'Digital transition in the Euro-Mediterranean region'¹⁴, digitalisation is a key enabler of improvements in productivity, sustainable growth and a prerequisite for economic and social development. However, digital transformation requires a robust underlying digital infrastructure. To this effect, in the Mediterranean, submarine cables constitute the backbone of the first mile to enable worldwide internet access, carrying a significant part of the international world's data traffic.

Within the last 5 years, submarine fibre capacity has increased at a Compounded Annual Growth Rate (CAGR) of 32%. In particular, Southern Neighbourhood's data traffic volume has grown at an average 30 % CAGR over the last 10 years. The North African region alone accounted for 45% of Africa's traffic.

Through its Neighbourhood Investment Platform (NIP), the EU has committed in 2022 a grant contribution of EUR 40 million to the MEDUSA Submarine Cable Project¹⁵ co-financed by the European Investment Bank (EIB). This infrastructure will help securing direct high-speed connectivity between North African countries and the EU. This will result in a significant upgrade of the connectivity of universities and research and education centres of Morocco, Algeria, Tunisia and Egypt, with each other and with EU peer organisations. It will therefore foster the exchange of information and scientific contributions, thus stimulating innovation and research in the region.

This action also aims at reinforcing the role, capacities and deliverables of these universities and research and education centres through specific capacity building, training programs and exchanges of experiences that will in particular promote gender equality. Throughout the action, the gender equality dimension will be fully embedded in line with EU's Gender Action Plan III¹⁶, the Paris Agreement and the 2030 Agenda's provisions. Sex-disaggregated data could possibly be delivered.

The action will also pay particular attention to seeking synergies with the work done in the framework of Union for the Mediterranean, in the area of Higher Education and Research in particular following the adoption of the 3 priorities roadmaps on Renewable energy, Climate change and Health at the occasion of the UfM Ministerial Conference on research and innovation in June 2022.

The deployment of the MEDUSA Submarine cable needs to be accompanied by support measures to the National Research and Education Networks (NREN), which are as follows:

- In Algeria, the Algerian Research Network (ARN) provides national and international connectivity to about 50 universities, 14 college campuses, and 31 high schools, serving more than 1.6 million students, staff, and faculty.

¹³ <https://au.int/en/documents/20200518/digital-transformation-strategy-africa-2020-2030>

¹⁴ <https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/digital-transition-euro-mediterranean-region>

¹⁵ The project consists of the design, manufacturing and deployment of a submarine cable system based on the most recent technological advancements in fibre optics communications for submarine cables. It will connect the two shores of the Mediterranean sea with a length of 7,100 km, it will be the longest submarine fibre optic cable in the Mediterranean (cost around € 342 million). https://neighbourhood-enlargement.ec.europa.eu/medusa-submarine-cable-system-factsheet_en and <https://www.eib.org/en/projects/pipelines/all/20210166>

¹⁶ https://ec.europa.eu/international-partnerships/system/files/join-2020-17-final_en.pdf

- In Egypt, the Egyptian University Network (EUN) in coordination with ESTINET (Egyptian National Scientific and Technology Information Network) provides national and international connectivity to about 39 universities, 13 research centres and 51 colleges, serving more than 3.5 million students and staff.
- In Morocco, the Centre National pour la Recherche Scientifique et Technique (CNRST) operates the Moroccan Academic and Research Network (MARWAN) to connect 18 universities 7 institutes of further education, 6 research institutes, 3 hospitals, and 2 government departments, serving over 1,000,000 students and 30,000 scientists and staff.
- In Tunisia, Computing Centre Al Khwarizmi (CCK) operates the Research National Universities Network (RNU) that connects 13 universities, 38 research centres and 263 institutes, serving more than 300,000 students and staff.
- Palestine was connected between 2004 and 2011 thanks to government's support, which subsequently suffered due to the high cost of connectivity and when the responsibility was delegated fully to the universities. With renewed ministry's interest it is again ready to be re-connected and re-establish PalREN as an NREN organisation. Efforts are currently ongoing to re-connect 2 universities to 1 Gbps. PalREN looks forward to connecting 34 universities and colleges in the West Bank and 17 universities and colleges in Gaza.
- Lebanon has been connected since 2016 with GEANT in London and, subsequently, a regional EU-funded project (EUMEDCONNECT3) has upgraded the connectivity to currently 5.26 Gbps in order to meet the growing needs for traffic exchange with the European and global R&E community. Ten universities are currently served. This has also catalysed the formation of a local NREN organisation called TechCARE.
- Jordan's public universities were connected during 2004-2011, and then again during 2016-2018, supported by EUMEDCONNECT3 through the national NREN partner JUNET. Jordan remains connected to GEANT through ASREN's network hub in Amman and a 1 Gbps link to London (primarily in support of the inter-governmental SESAME synchrotron project, whose main facility is located in Jordan). Seamless continuation of the connectivity and potential upgrades for this strategic science hub in the Middle East will be essential to handle the 'data deluge' expected from SESAME's beamline experiments. ASREN will also continue to work to reconnect the public universities as well as Jordan's private universities. The action provides another opportunity for JUNET to engage and reconnect.

ASREN members and GEANT have recognised the unique opportunities of the MEDUSA project in support of their respective research and education (R&E) communities and R&E collaborations at national and regional level and with Europe. To this effect the parties have signed on 22 July 2022 the 'Declaration of Support for EU MEDUSA Project'.

ASREN together with the NRENs have initiated bilateral discussions with relevant funding ministries to underline MEDUSA's opportunities and secure their support and endorsement.

In addition to regional and bilateral EU-funded initiatives supporting the digital transition in the Mediterranean, the European Commission is currently deploying financial instruments in the framework of the European Fund for Sustainable Development Plus (EFSD+). Guarantees schemes targeting digital transformation in the Southern Neighbourhood region will be signed with International Financial Institutions in the course of 2023. These will help de-risking the business environment and crowd-in private investors.

The action builds on the achievements of the EU-funded AfricaConnect and EUMEDCONNECT programmes. EUMEDCONNECT has supported the digital transformation of the research and education sector in the Eastern Mediterranean region. The AfricaConnect project, since 2011, has been supporting the work and collaboration of the Regional Research and Education Networks (RRENs) ASREN (Arab States), UbuntuNet Alliance (Southern and Eastern Africa) and WACREN (West and Central Africa), who have jointly facilitated the expansion of access to educational and research resources by their R&E communities. Over the years, AfricaConnect has achieved

significant progress, connecting over 1700 institutions and 4.5 million users, overall fostering pan-African, Europe-Africa and global research, education and science collaboration.

In terms of environmental impact and carbon footprint, international experts recognise that ICT (and particularly data centres proliferation) shall generate a steep increase in energy demand (and therefore increased CO2 emissions, in particular in countries with limited/insufficiently greened energy mix). Despite the fact that this Action will not finance any such equipment, reducing the environmental impact and energy efficiency will remain high in the policy dialogue and the set of activities being implemented.

2.2. Problem Analysis

Investing in young people and children is at the core of EU cooperation worldwide. Better matching youth's skills with the manpower needs of economic actors ensures more jobs creation and increased prosperity, both currently under serious strains in the Southern Neighbourhood region. The EU aims at better addressing skills mismatches, lack of opportunities, youth unemployment and brain drain. Support to education and research centres therefore features among the key priorities.

North African countries are fully aware of these issues and have recently strongly reinforced their regulatory frameworks and improved their investment climate around their own digital eco-systems: Tunisia's Start-up Act¹⁷ of 2018 is often put forward as an inspirational example for the whole region. Moreover, data protection legislations have been more and more frequently designed in North African countries (Egypt's Resolution No. 151 of 2020, Morocco's Data protection law and creation of the CNDP Agency on Data Protection, etc.), with a view to reinforcing end-users' protection and trust, but also, more recently, to reinforce digital sovereignty of these countries in an increasingly instable world, and growing threats regarding outsourced data storage, processing and utilisation (Morocco banned the storage and processing of sensitive data outside the Kingdom in June 2022¹⁸). The notion of sensitive data will cover many fields, including the research/academic ones since it is expected to work on sensitive topics (health being a classic example).

This eco-system and regulatory dimensions have been constantly mentioned as pre-requisites for a truly sustainable growth and job creation in digital field, especially for young entrepreneurs, but also a secure development of digital industry and activities, including academic activities, in a globalised environment.

However, to yield benefits from this improved environment in the Southern Neighbourhood, the digital infrastructure needs to be reinforced and access to internet needs to become more widespread across the geographies and the different socioeconomic layers of societies. Cost-effective and affordable access to internet connectivity, as well as safe, secure storage and transmission of data has become a fundamental requirement for sustainable development. Such connectivity allows for improved national competitiveness and a smooth transition towards a knowledge-based and more sustainable economy. Investing in such high-speed connectivity is essential, both on the backbone and the last-mile that underpins the delivery of digital services.

In addition, the COVID-19 pandemic has shed light on the urgent requirement for countries to accelerate the digitalisation, not only to mitigate impacts from the pandemic but also to enable a transition to innovative and inclusive economies. A wider digital ecosystem must develop, including in the context of education and training.

¹⁷ <https://startup.gov.tn/fr/home>

¹⁸ <https://en.cybersecuritymag.africa/index.php/maroc-interdit-hebergement-des-donnees-sensibles-etranger>

Moreover, in most countries of the Southern Neighbourhood, commercial operators sometimes experience difficulties in identifying business cases where to invest in digital infrastructure. In particular in areas outside the main urban centres where less dense population can give rise to higher costs, less certain demand, too high investment risk and therefore uncertain business returns. This is even truer for economic sectors where the return on investments is far from being secured, such as the education and research domains. As already mentioned above, regarding job creation and trade, (especially at SME/Start-ups level), the concept of “trusted vendor” is at the core of this strategy to support long-lasting trusted partnership at global level.

Finally, the overall quality of e-services delivery requires some improvement. In the education and research sector specifically, insufficient services are developed and rolled out to end users. The organisational capacity and strategic planning of NRENs must be reinforced.

In summary, the current action will be instrumental in supporting EU priorities and interests in the region, and it is also perfectly aligned with these countries’ recent initiatives and priorities in digital. This initiative shall optimally contribute to long-standing and solid development of Southern Neighbourhood’s digital involvement.

2.3. Lessons Learned

- Recent EU-funded regional projects on digital in Africa have proven the immediate benefits of digitalisation in sectors such as e-education, e-health, e-government, agri-business, e-justice and e-banking. Provision of infrastructure and capacity building to support these technologies is therefore crucial, also as it acts as a mean to mitigate the strong divide in terms of access and usage to digital infrastructure (in particular between rural and remote areas).
- Regional cooperation facilitates the relations between neighbouring countries, and sub-regional cooperation approaches may prove effective in certain sectors or as demonstration cases.
- Building synergies between ASREN and similar existing entities in Sub Saharan Africa (UbuntuNet Alliance, WACREN) has proven successful in terms of exchange of good practices and capacity building, for the benefit of quality education, science and technology and innovation capacity, promoted open science policies and practices. It did spur meaningful multi-stakeholder dialogue and community engagement, within the region and beyond.

3. DESCRIPTION OF THE ACTION

3.1. Objectives and Expected Outputs

The overall objective of the action is enhanced connectivity in the Southern Neighbourhood as a vector of human capacity development.

The **Specific Objective (outcomes)** of this action are:

- Reinforced role, capacities and deliverables of ASREN and national research and education networks, through specific actions that promote gender equality;
- Increased access to high-speed digital technologies (including MEDUSA) by research and education institutions in the Southern Neighbourhood;

The **Outputs** to be delivered by this action contributing to the corresponding Specific Objectives (Outcomes) are:

- ASREN’s/NRENs’ organisational capacity in managing enhanced connectivity by research and education communities (Component I “Non-connectivity” output) is expanded;

- Ensuring affordable, high-speed connectivity infrastructures to NRENs and research and education communities ("Connectivity" output) are ensured;
- The ability of research and education communities to better manage, use and exchange education, research and scientific data is increased.

3.2. Indicative Activities

This action is composed of four (indicative and non-exhausting) sets of activities structured in four components:

Component 0. Preparatory Activities 'Getting ready for MEDUSA'

- Market analysis to map current and potential users
- Qualifying and costing of NREN needs

Component I. Non-connectivity - Expand ASREN's/NRENs' organisational capacity in managing/enhancing connectivity by R&E communities.

- Training and capacity building for ASREN (on networks inter-connectivity, security, traffic optimisation and estimation and support to NRENs, planning, monitoring and reporting...), enhancement of business development for service expansion, review of the current governance structure and model, and benchmark against the set-up of other regional RENs;
- (Similar) training and capacity building for existing NRENs and new NRENs (where possible), with a focus on supporting NRENs to act as centers of excellence/expertise/support for the region including to enhance the participation of the Research institutes, centers etc. to Research and innovation framework programme (e.g. Horizon Europe);
- Capacity building of NRENs and ASREN on policy development and advocacy
- All capacity building and training activities will integrate the gender dimension.

Component II. Connectivity – NRENs and R&E communities are given access to affordable, high-speed connectivity infrastructures by RENs

The North Africa connectivity budget will be fully covered by the MEDUSA's investment, however this action will foresee some contingency budgetary envelope in case of unexpected delay that would be detrimental to their connectivity capacities.

For Jordan, Lebanon and Palestine (not benefitting from MEDUSA connectivity during the course of this action), a dedicated budget will be earmarked to allow for getting access to other high speed and secure broadband connectivity.

- Technical and financial advisory support to develop and maintain international/regional connectivity networks for the benefit of R&E institutions, by strengthening ASREN's Regional R&E network, enhance its Regional Network Security, establishing the ASREN's Regional Network Support Center, upgrading ASREN's NOC (Network Operating Center).
- Support to specifying means for enhancing the connectivity networks of benefitting R&E institutions in a financially sustainable way.

Component III. R&E communities' ability to collect, use, manage and exchange education, research and scientific data is increased

- Development of data infrastructure and tools for the benefit of R&E communities (such as establishing ASREN's Public and Private Cloud technological infrastructure, supporting the development of cloud services at NREN level, promoting e-services and applications for cross-cutting or sector-specific use cases

- Organisation of national conferences and targeted science engagement workshops in beneficiary countries to raise awareness of ASREN/NREN offering, further expanding the user base for MEDUSA (and other available) connectivity, promoting Open science practices and policies (within NRENs, academic library communities and data providers)

3.3. Mainstreaming

Environmental Protection, Climate Change and Biodiversity

According to Article 25.5 of NDICI-Global Europe Regulation: “Appropriate environmental screening, including for climate change and biodiversity impacts, shall be undertaken at the level of actions, in accordance with the applicable legislative acts of the Union, [...], comprising, where applicable, an environmental impact assessment, including the impact on climate change, ecosystems and biodiversity, for environmentally sensitive actions, in particular for major new infrastructure”.

The EIA (Environmental Impact Assessment) and CRA (Climate Risk Assessment) screening classified the action as Category C (no need for further assessment). This relates to the fact that this action will only entail measures that do not present any risk in terms of environment/biodiversity degradation nor climate negative impact. Moreover, this Action will support the digital transformation and related skills development in numerous research domains including climate adaptation (as a key priority in the region, being the second most affected region in the world affected by climate change).

The forecast for ICT massive deployment (and particularly data centres) projects a steep increase in energy demand. The Action however will not finance any such equipment. Reducing the environmental impact and energy efficiency however remains a top priority for achieving the twin (green and digital) transition, especially against the backdrop of steeply increasing internet traffic.

Gender equality and empowerment of women and girls

As per OECD Gender DAC codes identified in section 1.1, this action is labelled as G1. This implies that gender equality and empowerment of women and girls will be mainstreamed and integrated in the design of individual actions, whenever relevant, and will be included in the set of indicators accompanying each action.

Disability

As per OECD Disability DAC codes identified in section 1.1, this action is labelled as D0. This implies that disabilities will be mainstreamed where relevant in the design of individual actions but will not be included in the sets of indicators accompanying these actions.

Other considerations

Human Rights, democracy, conflict sensitivity, peace and resilience and disaster risk reduction will be integrated in the design of individual actions, whenever relevant, and will be included in the set of indicators accompanying these actions.

3.4. Risks and Assumptions

| Category | Risks | Likelihood (High/ Medium/ Low) | Impact (High/ Medium/ Low) | Mitigating measures |
|----------|-------|---|-------------------------------------|---------------------|
| | | | | |

| | | | | |
|---|---|------------------|------------------|---|
| 1 | Political instability within some of the partner countries, preventing a regional focus on digital transformation actions | Moderate to High | Moderate to High | Adoption of a progressive or variable projects' approach |
| 3 | Limited willingness of partner countries to cooperate | Moderate | Moderate | Dedicated awareness means and collaborative actions to promote the importance and interest of regional cooperation, and support to policy dialogue |
| 3 | Limited involvement and uneven interest from programme's key stakeholders | Low | Moderate | Flexibility to keep in all components of the programme, in order to allow partner countries to choose between different levels of partnerships without jeopardising the overall programme's implementation. |
| 1 | External factors delaying the implementation of the MEDUSA submarine cable system | Moderate | Low | NRENs connectivity would need to be reoriented towards other existing digital connectivity cables. |

The following external assumptions apply:

- MEDUSA submarine cable infrastructure is operational as scheduled.
- This action receives partner countries' political support.
- GEANT/ASREN/NRENs establish a close working partnership with DG NEAR and EU Delegations and agree to participate co-operatively in a Task Group that secures the successful implementation of the action.

3.5. Intervention Logic

The underlying intervention logic for this action is as follows:

Research and education centres in the partner countries need reinforcement in their means and capacities to execute their mandate. Gender-balanced dedicated thematic training, supply of critical equipment, exchange of experience with peer institutions in the Mediterranean will add on to NREN's improved organisational capacities in managing and using the increased connectivity being provided.

This will contribute to improving the quality and market-relevance of research and innovation activities as well as education curricula, which will overall serve human capacity development. Climate adaptation will feature among the priority domains of research and education being supported.

Direct grants will be awarded to the associations GEANT and ASREN that present a high degree of specialisation and specific technical competence at regional level.

This programme will be designed and implemented in full complementarity with bilateral programmes in the digital sector (in particular in Annual Action Programmes 2023 for Egypt, Tunisia

and Palestine) and initiatives from other donors in the Southern Mediterranean region. The action will seek to encourage first direct data exchange between the regional research and education networks, for instance through the long planned Open Exchange Point in Egypt.

The action will also seek complementarity with the AfricaConnect project funded by NDICI, which also supports the provision of high-speed connectivity networks, R&E e-services and data infrastructures as well as the strengthening of RENs' capacity, ensuring continued cooperation between ASREN, WACREN and UbuntuNet Alliance. Previously funded by the Pan African Programme under the previous MFF, close coordination between this action and the next phase of AfricaConnect covering the SSA region expected to be funded under the SSA Regional MIP will be ensured, in particular through the setup of a Joint Steering Committee. The Arab research and education communities will remain closely associated with the AfricaConnect project.

3.6. Indicative Logical Framework Matrix

| Results | Results chain: Main expected results | Indicators | Baselines (values and years) | Targets (values and years) | Sources of data | Assumptions |
|------------------|--|---|---|--|--|--|
| Impact 1 | Enhance connectivity in the Southern Neighbourhood as a vector of human capacity development. | <ol style="list-style-type: none"> 1. Percentage of education and research institutions with high-speed internet connectivity. 2. Number of researchers and students who have access to international scientific databases 3. Number of collaborative research projects between education and research institutions in the Southern Neighbourhood countries and their international partners | <p>End of 2023 :</p> <p>Percentages provided by ASREN and NREN or by national ministries of education and tele-communications</p> | <p>Values to be defined during grant contracts preparation</p> | <ul style="list-style-type: none"> • Annual Reports and surveys conducted by ASREN, GEANT, and NRENs. | |
| Outcome 1 | Reinforce the role, capacities and deliverables of ASREN and national research and education centres, through specific actions | <ol style="list-style-type: none"> 1. Number of gender-sensitive policies and practices adopted | <p>End of 2023: ASREN and GEANT 2023 Annual Reports data</p> | <p>Values to be defined during grant contracts preparation</p> | <ul style="list-style-type: none"> • National reports from Ministries of Education and Telecommunications | <ul style="list-style-type: none"> • The political and economic stability of the Southern Neighbourhood countries remains |

| | | | | | | |
|------------------|--|--|--|---|--|---|
| | that promote gender equality. | <p>2. Percentage of participation of women in research and education activities</p> <p>3. Percentage of participants attending technical trainings disaggregated by sex.</p> | and national research and education centres data | | <ul style="list-style-type: none"> • GEANT and ASREN Annual reports • National research and education centers data • National statistics offices data. | <p>relatively constant over the project period.</p> <ul style="list-style-type: none"> • The initiative receives political support at each national level. • GEANT/ASREN/NRENs work cooperatively (with EU Delegations and DG NEAR), such as participating in a Task Group overseeing the project implementation. • Education and research institutions have the necessary resources and capacity to offer online courses and collaborate on research projects. • International scientific databases are accessible to education and research institutions in Southern Neighbour countries. |
| Outcome 2 | Increase the access to high-speed digital technologies (including MEDUSA) by research and education institutions in the Southern Neighbourhood | <p>1. Percentage increase in the number of research and education institutions using MEDUSA.</p> <p>2. Percentage increase in research and education institutions, in different Southern Neighbourhood</p> | End of 2023: Percentages provided by ASREN, NREN or national ministries of education and tele-communications | Values to be defined during grant contracts preparation | <ul style="list-style-type: none"> • National reports from Ministries of Education and Telecommunications • Annual Reports and surveys conducted by ASREN, GEANT, and NRENs. | <ul style="list-style-type: none"> • Medusa submarine cable infrastructure is operational as scheduled. • The initiative receives political support at each national levels. • The Southern Neighbour countries have the necessary infrastructure to implement high-speed internet connectivity and |

| | | | | | | |
|--|--|---|--|--|--|-------------------------------------|
| | | <p>countries, with access to high-speed Internet</p> <p>3. Percentage increase in education and research institutions with access to cloud computing services</p> <p>4. Percentage increase in number of online courses offered by education and research institutions.</p> <p>5. Percentage increase in number of research and education institutions with access to high-performance computing.</p> | | | | access to cloud computing services. |
|--|--|---|--|--|--|-------------------------------------|

4. IMPLEMENTATION ARRANGEMENTS

4.1. Financing Agreement

In order to implement this action, it is not envisaged to conclude a financing agreement with the partner countries.

4.2. Indicative Implementation Period

The indicative operational implementation period of this action, during which the activities described in section 3 will be carried out and the corresponding contracts and agreements implemented, is 72 months from the date of adoption by the Commission of this financing Decision.

Extensions of the implementation period may be agreed by the Commission's responsible authorising officer in duly justified cases.

4.3. Implementation Modalities

The Commission will ensure that the EU appropriate rules and procedures for providing financing to third parties are respected, including review procedures, where appropriate, and compliance of the action with EU restrictive measures¹⁹.

4.3.1. Direct Management (Grants)

a) Purpose of the grants

- To reinforce the role, capacities and deliverables of ASREN and national research and education networks, through specific actions that promote gender equality;
- To increase the access to high speed digital technologies (including MEDUSA) by research and education institutions in the Southern Neighbourhood.

b) Type of applicants targeted

International associations dealing with digital development.

c) Justification of direct grants

Under the responsibility of the Commission's authorising officer responsible, One or two grants may be awarded without a call for proposals to GEANT and/or ASREN.

With regard to Article 195 (f) of the Financial Regulation and under the responsibility of the Commission's authorising officer responsible, the recourse to an award of a grant without a call for proposals is justified because GEANT and ASREN are the only organisations with the adequate degree of specialisation and technical competence in the area of intervention: GEANT is the unique association in the world gathering such large and most advanced network of research and education centres/actors. GEANT interconnects Europe's national research and education networking organisations with the pan-European backbone – connecting Europe's researchers, academics and students to each other, and linking them to the Southern

¹⁹ [EU Sanctions Map](#). Please note that the sanctions map is an IT tool for identifying the sanctions regimes. The source of the sanctions stems from legal acts published in the Official Journal (OJ). In case of discrepancy between the published legal acts and the updates on the website it is the OJ version that prevails.

Neighbourhood counties and beyond. This unique position, combined with a good track-record and a standing good reputation, makes GEANT the adequate implementing party. In parallel, ASREN is the sole entity in the Arab region ensuring efficient and adequate coordination of e-Infrastructure services, while being interconnected with the pan-European research and education network GEANT.

4.4. Scope of geographical eligibility for procurement and grants

The geographical eligibility in terms of place of establishment for participating in procurement and grant award procedures and in terms of origin of supplies purchased as established in the basic act and set out in the relevant contractual documents shall apply, subject to the following provisions.

The Commission's authorising officer responsible may extend the geographical eligibility on the basis of urgency or of unavailability of services in the markets of the countries or territories concerned, or in other duly substantiated cases where application of the eligibility rules would make the realisation of this action impossible or exceedingly difficult (Article 28(10) NDICI-Global Europe Regulation).

4.5. Indicative Budget

| Indicative Budget components | EU contribution (amount in EUR) | Third-party contribution (amount in EUR) |
|---|--|---|
| Grants – total envelope under section 4.3.1 | 12 000 000 | 1 334 000 |
| Evaluation – cf. section 5.2 Audit – cf. section 5.3 | will be covered by another Decision | N.A. |
| Strategic communication and Public diplomacy – cf. section 6 | will be covered by another Decision | N.A. |
| Contingencies | N.A. | N.A. |
| Totals | 12 000 000 | 1 334 000 |

4.6. Organisational Set-up and Responsibilities

As part of its prerogative of budget implementation and to safeguard the financial interests of the Union, the Commission may participate in the above governance structures set up for governing the implementation of the action.

5. PERFORMANCE MEASUREMENT

5.1. Monitoring and Reporting

The day-to-day technical and financial monitoring of the implementation of this action will be a continuous process, and part of the implementing partners' responsibilities. To this aim, each implementing partner shall establish a permanent internal, technical and financial monitoring system for the action and elaborate regular progress reports (not less than annual) and final reports. Every report shall provide an accurate account of implementation of the action, difficulties encountered, changes introduced, as well as the degree of

achievement of its Outputs and contribution to the achievement of its Outcomes, and if possible, at the time of reporting, contribution to the achievement of its Impacts, as measured by corresponding indicators, using as reference the logframe matrix.

The Commission may undertake additional project monitoring visits both through its own staff and through independent consultants recruited directly by the Commission for independent monitoring reviews (or recruited by the responsible agent contracted by the Commission for implementing such reviews).

The implementing partners will provide with any requested information within the course of the project monitoring, and he will assist the Commission staff or any responsible agent contracted by the Commission during the implementation of such monitoring exercises.

5.2. Evaluation

Having regard to the nature of the action, a final evaluation will be carried out for this action or its components via independent consultants contracted by the Commission. It will be carried out for accountability and learning purposes at various levels (including for policy revision).

The Commission shall form a Reference Group (RG) composed by representatives from the main stakeholders at both EU and national (representatives from the government, from civil society organisations (private sector, NGOs, etc.), etc.) levels. If deemed necessary, other donors will be invited to join.

The Commission shall inform the implementing partners at least 3 months in advance of the dates envisaged for the evaluation exercise and missions. The implementing partners shall collaborate efficiently and effectively with the evaluation experts, and inter alia provide them with all necessary information and documentation, as well as access to the project premises and activities.

The evaluation reports shall be shared with the partner countries and other key stakeholders following the best practice of evaluation dissemination²⁰. The implementing partners and the Commission shall analyse the conclusions and recommendations of the evaluations and, where appropriate, in agreement with the partner countries, jointly decide on the follow-up actions to be taken and any adjustments necessary, including, if indicated, the reorientation of the project.

The financing of the evaluation shall be covered by another measure constituting a financing Decision.

5.3. Audit and Verifications

Without prejudice to the obligations applicable to contracts concluded for the implementation of this action, the Commission may, on the basis of a risk assessment, contract independent audit or verification assignments for one or several contracts or agreements.

6. STRATEGIC COMMUNICATION AND PUBLIC DIPLOMACY

All entities implementing EU-funded external actions have the contractual obligation to inform the relevant audiences of the Union's support for their work by displaying the EU emblem and a short funding statement as appropriate on all communication materials related to the actions concerned. To that end they must comply with the instructions given in the 2022 guidance document [Communicating and raising EU visibility: Guidance for external actions](#) (or any successor document).

This obligation will apply equally, regardless of whether the actions concerned are implemented by the Commission, the partner country, service providers, grant beneficiaries or entrusted or delegated entities such as UN agencies, international financial institutions and agencies of EU Member States. In each case, a

²⁰ See best practice of evaluation dissemination.

reference to the relevant contractual obligations must be included in the respective financing agreement, procurement and grant contracts, and contribution agreements.

For the purpose of enhancing the visibility of the EU and its contribution to this action, the Commission may sign or enter into joint declarations or statements, as part of its prerogative of budget implementation and to safeguard the financial interests of the Union. Visibility and communication measures should also promote transparency and accountability on the use of funds. Effectiveness of communication activities on awareness about the action and its objectives as well as on EU funding of the action should be measured.

Implementing partners shall keep the Commission and concerned EU Delegation/Office fully informed of the planning and implementation of specific visibility and communication activities before work starts. Implementing partners will ensure adequate visibility of EU financing and will report on visibility and communication actions as well as the results of the overall action to the relevant monitoring committees.

Appendix 1: IDENTIFICATION OF THE PRIMARY INTERVENTION LEVEL FOR REPORTING IN OPSYS

A primary intervention (project/programme) is a coherent set of results structured in a logical framework aiming at delivering development change or progress. Identifying the level of the primary intervention will allow for:

- ✓ Differentiating these actions or contracts from those that do not produce direct reportable development results, defined as support entities (i.e. audits, evaluations);
- ✓ Articulating actions and/or contracts according to an expected common chain of results and therefore allowing them to ensure a more efficient and aggregated monitoring and reporting of performance;
- ✓ Having a complete and exhaustive mapping of all results-bearing actions and contracts.

The present action identifies as :

| | | |
|--|--------------------|---|
| Action level (i.e. budget support, blending) | | |
| <input type="checkbox"/> | Single action | Present action: all contracts in the present action |
| Group of actions level (i.e: i) top-up cases, ii) second, third, etc. phases of a programme) | | |
| <input type="checkbox"/> | Group of actions | Actions reference (CRIS#/OPSYS#): |
| Contract level (i.e. grants, contribution agreements, any case in which foreseen individual legal commitments identified in the budget will have different log frames, even if part of the same action document) | | |
| <input checked="" type="checkbox"/> | Single contract 1 | Grant contract with ASREN |
| <input checked="" type="checkbox"/> | Single contract 2 | Grant contract with GEANT |
| Group of contracts level (i.e: i) series of programme estimates, ii) cases in which an action document foresees many foreseen individual legal commitments (for instance four contracts and one of them being a technical assistance) and two of them, a technical assistance contract and a contribution agreement, aim at the same objectives and complement each other, iii) follow up contracts that share the same log frame of the original contract) | | |
| <input type="checkbox"/> | Group of contracts | |