

Possible Actions to Operationalize the UNESCO OER Recommendation

Areas of Action	Possible Government Initiatives	Possible Institutional Initiatives
(i) Building capacity of stakeholders to create, access, re-use, adapt and redistribute OER		
<p>(a) building awareness among relevant stakeholder communities on how OER can increase access to educational and research resources, improve learning outcomes, maximize the impact of public funding, and empower educators and learners to become co-creators of knowledge.</p>	<ul style="list-style-type: none"> • Establish a dedicated OER unit within the relevant government department (s) to support planning, implementation, and evaluation of identified OER activities • Develop and distribute suitable advocacy materials amongst identified stakeholder communities (drawing on existing, openly licensed advocacy materials where possible and including translation into relevant local languages to widen reach and understanding) • Establish dedicated space/s on relevant government websites to distribute and share OER advocacy information and resources and post all relevant resources and updates on those spaces • Aggregate and share information on existing government OER initiatives, with information on financial investments made, reasons why government has supported the initiative, the form it has taken, and the impact it has had • Host national 'Open Education/OER Summit' to raise awareness, announce national commitments of support, and celebrate in-country / regional practitioners, and engage educational leaders to share and discuss the OER value proposition • Organize workshops, webinars, barcamps, roadshows, and other live engagements to raise awareness and facilitate communication • Use online platforms to share national and international OER success stories • Install OER Awards, which give early adopters the chance to showcase their work and receive public praise 	<ul style="list-style-type: none"> • Establish a dedicated OER unit within the relevant department to support planning, implementation, and evaluation of identified OER activities • Develop and distribute suitable advocacy materials amongst institutional stakeholder communities (drawing on existing, openly licensed advocacy materials where possible and including translation into relevant local languages to widen reach and understanding) • Establish dedicated space/s on institutional website to distribute and share OER advocacy information and resources and post all relevant resources and updates on that space • Aggregate information on existing institutional OER initiatives, their focus, and the effect they have had • Organize workshops, webinars, barcamps, roadshows, and other live engagements to raise awareness and facilitate communication • Use website and other institutional communication channels to share OER success stories, from within institution and from other institutions • Install OER Awards, which give early adopters the chance to showcase their work and receive public praise
<p>(b) providing systematic and continuous capacity building (in-service and pre-service) on how to create, access, make available, re-use, adapt, and redistribute OER as an integral part of training programmes at all levels of education, including assistance in initial</p>	<ul style="list-style-type: none"> • Define, and continuously review/update as appropriate, suitable and flexible learning frameworks and outcomes (which cover relevant skills, competences, values and aptitudes) that can be integrated into pre-service and in-service programmes targeting educators, public officials, educational managers, etc at all levels 	<ul style="list-style-type: none"> • Ensure that suitable professional development activities on OER, open licensing, and open educational practices are available for all institutional staff and receive official recognition in terms of HR policies when completed by staff members

Areas of Action	Possible Government Initiatives	Possible Institutional Initiatives
<p>training programmes for educators. This should include improving the capacity of public authorities, policy makers, as well as quality development and assurance professionals to understand OER and support their integration into learning, teaching, research and everyday life.</p>	<ul style="list-style-type: none"> • Where relevant, incorporate defined learning outcomes into policies/regulations defining minimum standards for programmes targeting different kinds of education personnel • Make available (in full range of relevant languages) core educational materials (building on existing, openly licensed resources already available) that training providers can further adapt and integrate into programmes that are aligned with defined learning outcomes • Compile and maintain catalogue of existing openly licensed professional development offerings and identify opportunities for their adaptation/use and potential to be incorporated into a comprehensive learning path or program of offerings • Provide dedicated funding to training providers to facilitate programme adaptation to incorporate coverage of defined learning outcomes • Fund development of locally relevant short courses (in locally relevant languages) that focus specifically on OER, to be made available either as MOOCs, online courses, blended courses, or face-to-face courses as appropriate (ensuring that course development harnesses and adapts existing course materials where suitable) • Provide funding for public educational officials in key positions to complete relevant short courses on OER and open licensing 	<ul style="list-style-type: none"> • Compile and maintain catalogue of existing openly licensed professional development offerings for staff • Where needed to supplement what is already available or to contextualize these to specific institutional context, invest in institutionally relevant short courses (in locally relevant languages) that focus specifically on OER, to be made available either as MOOCs, online courses, blended courses, or face-to-face courses as appropriate (ensuring that course development harnesses and adapts existing course materials where suitable). • To complement short courses, develop/adapt and make available relevant self-learning resources for access by institutional staff, students, and more widely • Provide funding for educators, managers, and administrators in key positions to complete relevant short courses on OER and open licensing, noting possible need for different staff types to participate in different types of courses • Provide funding for staff to attend and present their work at relevant conferences
<p>(c) raising awareness concerning exceptions and limitations for the use of copyrighted works for educational and research purposes. This should be enacted to facilitate the integration of a wide range of works in OER, recognizing that the fulfilment of educational goals as well as the development of OER requires engagement with existing copyright protected works.</p>	<ul style="list-style-type: none"> • Conduct research to define specific national parameters of exceptions and limitations • Building on research conducted (where required), develop and distribute suitable advocacy materials amongst identified stakeholder communities (including contextualization and translation into relevant local languages to widen reach and understanding) • Integrate coverage of these issues in learning standards, educational materials, and short courses mentioned under (i)(b) above 	<ul style="list-style-type: none"> • Participate in national processes to conduct research to define specific national parameters of exceptions and limitations • Building on research conducted (where required), develop and distribute suitable advocacy materials on exceptions and limitations amongst institutional stakeholder communities (including contextualization and translation into relevant local languages to widen reach and understanding)
<p>(d) leveraging open licensed tools, platforms with interoperation of metadata, and standards (including national and international) to help ensure OER can be easily found, accessed, re-used, adapted and</p>	<ul style="list-style-type: none"> • Identify reputable online catalogues/curated lists from which to identify and recommend suitable openly licensed tools/platforms and interoperable metadata and standards that can be deployed nationally in support of OER use 	<ul style="list-style-type: none"> • Identify reputable online catalogues, curated lists, and Libguides from which to identify and recommend suitable openly licensed tools/platforms and interoperable metadata and standards that can be deployed institutionally in support

Areas of Action	Possible Government Initiatives	Possible Institutional Initiatives
<p>redistributed in a safe, secure and privacy-protected mode. This could include free and open source authoring tools, libraries and other repositories and search engines, systems for long-term preservation and frontier technologies for automatic OER processing and translation of languages (where appropriate or needed), such as artificial intelligence methods and tools.</p>	<ul style="list-style-type: none"> • Share links to above sources with key educational stakeholders to encourage development of open technological architectures in support of OER and related open government initiatives (e.g. open access, open data, etc) • Consider appropriate policies to leverage use of openly licensed tools/platforms and require use of interoperable metadata and standards by all key stakeholders in education and training, during creation, adaptation, translation, and sharing of OER • Ensure that all government portals, websites, and repositories sharing OER and related information leverage use of openly licensed tools/platforms and use interoperable metadata and standards • Ensure that authors can upload openly licensed material created by them to a publicly managed repository or platform 	<p>of OER use, ideally in cooperation with national initiatives where these are being implemented</p> <ul style="list-style-type: none"> • Share links to above sources with institutional stakeholders to encourage development and maintenance of open technological architectures in support of OER and related open initiatives (e.g. open access, open data, etc) within the institution • Consider appropriate institutional policies to leverage use of openly licensed tools/platforms and require use of interoperable metadata and standards during creation, adaptation, translation, and sharing of OER • Ensure that all institutional portals, websites, and repositories sharing OER and related information leverage use of openly licensed tools/platforms and use interoperable metadata and standards • Ensure that institutional staff can upload openly licensed material created by them to a publicly managed repository or platform
<p>(e) making available easily accessible resources that provide information and assistance to all OER stakeholders on OER-related topics, including copyright and open licensing of educational material.</p>	<ul style="list-style-type: none"> • Establish dedicated space/s on relevant government websites to distribute and share advocacy information and resources and post all relevant resources and updates on those spaces • Ensure availability of websites, communications, and resources in all locally relevant languages to ensure widespread access and understanding • Consider implementation of a search index for locally developed materials • See initiatives mentioned under (1) (a) above 	<ul style="list-style-type: none"> • Establish dedicated space/s on relevant institutional website to distribute and share advocacy information and resources and post all relevant resources and updates on those spaces • Ensure availability of websites, communications, and resources in all relevant languages for institution to ensure widespread access and understanding • Establish and provide transversal support services (innovation departments, libraries, technologists, legal units, etc) to offer tailored assistance to institutional stakeholders • See initiatives mentioned under (1) (a) above
<p>(f) promoting digital literacy skills in order to master technical use of software, codes and open licenses with a view to encouraging the development and use of OER.</p>	<ul style="list-style-type: none"> • Define what digital literacy skills related to OER are and identify means of acquiring those skills • Integrate relevant focus on digital literacy skills into learning standards, educational materials, and short courses mentioned under (i) (b) above • Review national curricula at primary and secondary levels to ensure adequate coverage of digital literacy skills • Integrate digital literacy skills into education programs that teach ICT • Consider policy provisions to require coverage of digital literacy skills as appropriate in technical and vocational 	<ul style="list-style-type: none"> • Define what digital literacy skills related to OER are and identify means for institutional staff to acquire those skills • Integrate relevant focus on digital literacy skills into learning standards, educational materials, and short courses mentioned under (i) (b) above • Review institutional curricula to ensure adequate coverage of digital literacy skills for all students as appropriate • Explore provision of additional extra-curricular student support services to develop digital literacy skills as appropriate

Areas of Action	Possible Government Initiatives	Possible Institutional Initiatives
	education and training (TVET) and post-secondary education programmes	
(ii) Developing supportive policy		
<p>(a) developing and implementing policies and/or regulatory frameworks which encourage educational resources developed with public funds that are openly licensed or dedicated to the public domain as appropriate, and allocating financial and human resources for the implementation and evaluation of policies.</p>	<ul style="list-style-type: none"> • Define clear goals associated with implementation of OER (e.g. increase of access or quality, reduction of cost, fostering of innovation) that can serve to support development of new policies and revision of existing policies • Review existing national education policies to learn from what other governments are doing • Ensure that copyright and intellectual property policies and legislation of the country enables and supports use of open licences generally • Create, adopt, and implement open licensing policies that require publicly funded educational resources created with public funds be openly licensed. • Conduct detailed reviews of all existing educational policies and regulations and accompanying stakeholder consultations to assess the extent to which they support and/or impede the implementation of the UNESCO OER Recommendation and outline proposed revisions to policies to ensure stronger alignment • Where feasible and as policies/regulations come up for revision, revise existing policies and regulations in line with outcomes of above the policy review process • Ensure that OER considerations are taken into account in development of any new policies and regulations affecting education, including those devised as part of the adaptation of education provision in response to COVID-19, regardless of their focus area 	<ul style="list-style-type: none"> • Define clear institutional goals associated with implementation of OER (e.g. increase of access or quality, reduction of cost, fostering of innovation) that can serve to support development of new policies and revision of existing policies • Review existing institutional policies and strategies globally to learn from what other institutions are doing • Ensure that copyright and intellectual property policies of the institution enable and support use of open licences generally • Conduct detailed reviews of all existing institutional policies and accompanying stakeholder consultations to assess the extent to which they support and/or impede the implementation of the UNESCO OER Recommendation and outline proposed revisions to policies to ensure stronger alignment • Where feasible and as policies come up for revision, revise existing policies in line with outcomes of above the policy review process • Ensure that OER considerations are taken into account in development of any new policies and regulations affecting education, including those devised as part of the adaptation of education provision in response to COVID-19, regardless of their focus area
<p>(b) encouraging and supporting institutions to develop or update legal or policy frameworks to stimulate the creation, access, re-use, re-purpose, adaptation and redistribution of quality OER by educators and learners in a manner consistent with national copyright legislation and international obligations; and to develop and integrate a quality assurance mechanism for OER into the existing quality</p>	<ul style="list-style-type: none"> • Prepare national policy development guidelines (drawing, as appropriate, on existing, openly licensed materials already produced) to guide institutions in development of supportive legal and policy frameworks • Run capacity-building sessions with institutional senior management and/or OER champions to support implementation and use of guidelines • Consider introduction of national policies to mandate incorporation, as appropriate, of specific provisions around OER and open licensing by educational institutions 	<ul style="list-style-type: none"> • Support institutional departments in revising promotion and tenure policies to give credit to sharing one's educational resources as OER, and publishing one's research in open access journals • Consider introduction of institutional policies to mandate incorporation, as appropriate, of specific provisions around OER and open licensing by educators and educational departments • Consider provision of financial, promotional, and other relevant incentives for educational departments adopting

Areas of Action	Possible Government Initiatives	Possible Institutional Initiatives
assurance strategies for teaching and learning materials.	<ul style="list-style-type: none"> Consider provision of financial or other relevant incentives for institutions adopting policies that are conducive to using and sharing educationally effective OER 	policies that are conducive to using and sharing educationally effective OER
(c) developing mechanisms to create communities of practice, promote teacher professional development using OER, create networks of experts of OER and properly recognize OER creation as a professional or academic merit.	<ul style="list-style-type: none"> Establish and facilitate national communities of practice for teachers and other kinds of educators around OER Establish a community of practice for leaders and decision makers tasked with implementing OER Establish government funded capacity charged with building an open education culture of collaboration and sharing through communities of practice Establish, alongside communities of practice, the role of a clearing house supporting those seeking existing OER to find it Identify suitable international communities of practice in OER and encourage stakeholders in the education system to join and participate in those communities Review job descriptions for employees under direct control of government to assess the possibility of including specific responsibilities associated with OER creation, adaptation, and use Review government human resource (HR) incentives to assess the extent to which they encourage and/or impede shifts in practice towards educationally effective OER practices. Based on the HR assessment, adjust government HR incentives as needed to encourage the adoption of OER and effective OER practices. 	<ul style="list-style-type: none"> Establish and facilitate institutional communities of practice for staff around OER Identify suitable national and international communities of practice in OER and encourage staff to join and participate in those communities Establish institutional capacity charged with building an open education culture of collaboration and sharing through communities of practice Review job descriptions for staff to assess the possibility of including specific responsibilities associated with OER creation, adaptation, and use Review institutional HR incentives to assess the extent to which they encourage and/or impede shifts in practice towards educationally effective OER practices. Based on the HR assessment, adjust institutional HR incentives as needed to encourage the adoption of OER and effective OER practices.
(e) embedding OER policies into national policy frameworks and strategies and aligning them with other open policies and guiding principles such as those for Open Access, Open Data, Open Source Software and Open Science.	<ul style="list-style-type: none"> As part of policy review and development processes outlined in (ii) (a), incorporate references to other key 'open' concepts Build strong working relations with other government Ministries and departments to enable formulation of clear policy linkages in policies covering different aspects of government openness Consider existing policies for other areas of open (Open Access, Open Science, etc.), assess the extent to which the rationale for these policies is the same or similar to that for OER, and, where appropriate, reuse that same rationale and language for OER 	<ul style="list-style-type: none"> As part of policy review and development processes outlined in (ii) (a), incorporate references to other key 'open' concepts Where relevant, consider existing institutional policies for other areas of open (Open Access, Open Science, etc.), assess the extent to which the rationale for these policies is the same or similar to that for OER, and, where appropriate, reuse that same rationale and language for OER (or propose that all be integrated into global open policies if appropriate)
(f) addressing the inclusion of OER in transforming education, adjusting, enriching or reforming curricula and all forms of learning so	<ul style="list-style-type: none"> Through suitable consultative processes, define clear national metrics for tracking OER use and effectiveness, with particular emphasis on measuring the extent to which take-up and use 	<ul style="list-style-type: none"> Through suitable consultative processes, define clear institutional metrics for tracking OER use and effectiveness, with particular emphasis on measuring the extent to which

Areas of Action	Possible Government Initiatives	Possible Institutional Initiatives
<p>as to exploit OER potentials and opportunities, and encouraging the integration of different teaching methods and forms of assessment to motivate the active use, creation and sharing of OER; and assessing the impact of OER on inclusive and equitable quality education.</p>	<p>of OER and open licensing leads to positive, transformative educational improvements for students</p> <ul style="list-style-type: none"> Establish targets for education providers to transform existing curricula and teaching practices into OER and open pedagogy Ensure that metrics for tracking OER use and effectiveness include clear disaggregation to track extent of impact with respect to diversity and inclusion across the education system Commission research and evaluation projects to investigate the extent to which OER practices have a positive transformation impact on educational experiences and learning outcomes for students, which clear disaggregated focus on diversity and inclusion Issue calls for and/or commission OER initiatives that tackle global or local challenges as stipulated in the UN SDGs and consider implementing special OER Awards in this category 	<p>take-up and use of OER and open licensing leads to positive, transformative educational improvements for students</p> <ul style="list-style-type: none"> Establish targets for educators and educational departments to transform existing curricula and teaching practices into OER and open pedagogy For tertiary institutions' schools of education, encourage postgraduate students to experiment with integrating OER into their teaching and instructional design practices. Ensure that metrics for tracking OER use and effectiveness include clear disaggregation to track extent of impact with respect to diversity and inclusion across the institution Run institutional research and evaluation projects to investigate the extent to which OER practices have a positive transformation impact on educational experiences and learning outcomes for students, which clear disaggregated focus on diversity and inclusion
<p>(g) encouraging and supporting research on OER, through relevant research programmes on OER development, sharing and evaluating, including the support of digital technologies (such as artificial intelligence).</p>	<ul style="list-style-type: none"> Assess existing barriers to national education goals and research how broad adoption of OER and open education practices might remove (some of) those barriers. Establish and, where feasible, fund specific research programmes on different aspects of OER practices Collaborate with universities to encourage postgraduate and postdoctoral research activities focused on OER practices Identify key government research questions related to OER and support evidence-based decision-making that answers those questions either using existing research or by commissioning new research 	<ul style="list-style-type: none"> Assess existing barriers to institutional education goals and research how broad adoption of OER and open education practices might remove (some of) those barriers. Establish and, where feasible, fund specific research project on different aspects of OER practices For tertiary education institutions, encourage postgraduate and postdoctoral research activities focused on OER practices Identify key institutional research questions related to OER and support evidence-based decision-making that answers those questions either using existing research or by commissioning new research
<p>(h) developing and implementing policies that apply the highest standards to privacy and data protection during the production and use of OER, OER infrastructure and related services.</p>	<ul style="list-style-type: none"> Ensure that policy review and development processes outlined in (ii) (a) include issues of privacy and data protection and that resulting policies apply the highest standards in this regard 	<ul style="list-style-type: none"> Ensure that policy review and development processes outlined in (ii) (a) include issues of privacy and data protection and that resulting policies apply the highest standards in this regard
<p>(iii) Encouraging effective, inclusive and equitable access to quality OER</p>		
<p>(a) ensuring access to OER that most suitably meets both the needs and material circumstances of target learners and the educational objectives of the courses or subjects for which they are being provided. This would include offline (including printed)</p>	<ul style="list-style-type: none"> Prepare national roadmap for investments in OER development, adaptation, and translation that targets providing comprehensive coverage of openly licensed materials to meet educational needs of students at different levels of education, and organizing investment priorities in 	<ul style="list-style-type: none"> Prepare institutional roadmap for investments in OER development, adaptation, and translation that targets providing comprehensive coverage of openly licensed materials to meet educational needs of students and organizing investment priorities in line with key policy

Areas of Action	Possible Government Initiatives	Possible Institutional Initiatives
modalities for accessing resources where appropriate.	<p>line with key policy priorities of government and educational demands of students</p> <ul style="list-style-type: none"> • Establish regular budget lines focused on investment in development, adaptation, and translation of OER, including potential migration of funds used to purchase proprietary resources into these budget lines over time, as high quality OER become reliably available to educators and students in ways that can support successful attainment of required learning outcomes • Working with international networks and local institutions, establish OER repositories that provide access to high quality OER relevant to national educational programmes • Develop policy and financial incentives and mechanisms to encourage institutions to invest in contextually relevant OER development, adaptation, and translation 	<p>priorities of government (where applicable) and the institution, as well as educational demands of students</p> <ul style="list-style-type: none"> • Establish regular budget lines focused on investment in development, adaptation, and translation of OER, including potential migration of funds used to purchase proprietary resources into these budget lines over time, as high quality OER become reliably available to educators and students in ways that can support successful attainment of required learning outcomes • Working with other institutions, consortia, and government (where feasible), establish and/or contribute to OER repositories that provide access to high quality OER • Develop policy and financial incentives and mechanisms to encourage educational staff and departments to develop, adapt, and translate contextually relevant OER
(b) supporting OER stakeholders to develop gender-sensitive, culturally and linguistically relevant OER, and to create local language OER, particularly in indigenous languages which are less used, under-resourced and endangered.	<ul style="list-style-type: none"> • Ensure that government programmes focused on OER development, adaptation, and translation include specific requirements to ensure availability of gender-sensitive, culturally, and linguistically relevant OER • Incorporate specific references and criteria to support creation of gender-sensitive, culturally, and linguistically relevant OER in all government programmes investing in OER • Establish dedicated streams of funding to facilitate development and/or translation of OER in multiple languages, with particular emphasis on lesser-used and endangered indigenous languages • Ensure that all government policies referencing OER include specific references to and targets for gender-sensitive, culturally, and linguistically relevant OER 	<ul style="list-style-type: none"> • Ensure that institutional initiatives focused on OER development, adaptation, and translation include specific requirements to ensure availability of gender-sensitive, culturally, and linguistically relevant OER • Incorporate specific references and criteria to support creation of gender-sensitive, culturally, and linguistically relevant OER in all institutional programmes investing in OER • Where appropriate, establish dedicated streams of funding to facilitate development and/or translation of OER in multiple languages, with particular emphasis on lesser-used and endangered indigenous languages • Ensure that all institutional policies referencing OER include specific references to and targets for gender-sensitive, culturally, and linguistically relevant OER
(c) ensuring that the principle of gender equality, non-discrimination, accessibility and inclusiveness is reflected in strategies and programmes for creating, accessing, re-using, adapting, and redistributing OER.	<ul style="list-style-type: none"> • Ensure that all government policies, regulations, strategies, programme plans, and capacity-building activities incorporate principles of gender equality, non-discrimination, accessibility, and inclusiveness • Establish metrics for monitoring effectiveness of implementation of principles of gender equality, non-discrimination, accessibility, and inclusiveness as part of government monitoring and evaluation processes 	<ul style="list-style-type: none"> • Ensure that all institutional policies, strategies, programme plans, and capacity-building activities incorporate principles of gender equality, non-discrimination, accessibility, and inclusiveness • Establish metrics for monitoring effectiveness of implementation of principles of gender equality, non-discrimination, accessibility, and inclusiveness as part of institutional monitoring and evaluation processes
(d) ensuring public investments and incentivizing private investments in ICT	<ul style="list-style-type: none"> • Negotiate with cellular providers to zero-rate data costs for key educational websites, including OER repositories 	<ul style="list-style-type: none"> • Negotiate with cellular providers to zero-rate data costs for institutional websites and OER repositories

Areas of Action	Possible Government Initiatives	Possible Institutional Initiatives
infrastructure and broadband, as well as other mechanisms, to provide increased access to OER, particularly for low-income, rural and urban communities.	<ul style="list-style-type: none"> Identify additional needs for ICT infrastructure to enable/support identified innovative educational practices Analyse existing or planned OER initiatives and define use-cases, which can be used as a starting point for the development of ICT infrastructure and online platforms (or to improve/overhaul existing platform) 	<ul style="list-style-type: none"> Identify additional needs for ICT infrastructure to enable/support identified innovative educational practices Analyse existing or planned OER initiatives and define use-cases, which can be used as a starting point for the development of ICT infrastructure and online platforms (or to improve/overhaul existing platforms)
(e) incentivizing the development and research of OER.	<ul style="list-style-type: none"> See (ii) (f) and (g) above 	<ul style="list-style-type: none"> See (ii) (f) and (g) above
(f) developing and adapting existing evidence-based standards, benchmarks and related criteria for the quality assurance of OER, as appropriate, which emphasize reviewing educational resources (both openly licensed and not openly licensed) under regular quality assurance mechanisms.	<ul style="list-style-type: none"> Identify and share relevant national and/or international documents/resources and accompanying research reports that present suitable standards, benchmarks, and criteria for educational resource development and which include coverage of issues associated with development, adaptation, and sharing of openly licensed resources Convene discussions with relevant educational quality assurance agencies at national and institutional levels to review existing standards, benchmarks, and criteria for quality assurance of educational resources to review their appropriateness for development, adaptation, and sharing of openly licensed resources Support national quality assurance agencies to adapt existing quality assurance mechanisms for educational resources, based on results of discussions, to include suitable coverage for OER (or develop new quality assurance mechanisms should these not already exist) 	<ul style="list-style-type: none"> Identify and share relevant institutional, national and/or international documents/resources and accompanying research reports that present suitable standards, benchmarks, and criteria for educational resource development and which include coverage of issues associated with development, adaptation, and sharing of openly licensed resources Convene discussions with educational and quality assurance staff to review existing standards, benchmarks, and criteria for quality assurance of educational resources to review their appropriateness for development, adaptation, and sharing of openly licensed resources within the institution Support institutional quality assurance unit to adapt existing quality assurance mechanisms for educational resources, based on results of discussions, to include suitable coverage for OER (or develop new quality assurance mechanisms should these not already exist)
(iv) Nurturing the creation of sustainability models for OER		
(a) reviewing current provisions, procurement policies and regulations to expand and simplify the process of procuring quality goods and services to facilitate the creation, ownership, translation, adaptation, curation, sharing, archiving and preservation of OER, where appropriate, as well as to develop the capacity of all OER stakeholders to participate in these activities.	<ul style="list-style-type: none"> Develop clear, standardized lists and definitions, as well as generic terms of reference and simple selection criteria, for procurement of goods and services to facilitate the creation, ownership, translation, adaptation, curation, sharing, archiving and preservation of OER Consider new provisioning approaches to fund the ways in which OER are developed internally by educators/academics and others rather than externally procured as a static off-the-shelf resource, including ongoing management of OER created including curation, iteration, updating, storing, distributing, etc Use the above two initiatives to review existing procurement policies and legislation to assess requirements for change to 	<ul style="list-style-type: none"> Develop clear, standardized lists and definitions, as well as generic terms of reference and simple selection criteria, for procurement of goods and services to facilitate the creation, ownership, translation, adaptation, curation, sharing, archiving and preservation of OER Consider new provisioning approaches to fund the ways in which OER are developed internally by educators/academics and others rather than externally procured as a static off-the-shelf resource, including ongoing management of OER created including curation, iteration, updating, storing, distributing, etc Use the above two initiatives to review existing institutional procurement policies to assess requirements for change to

Areas of Action	Possible Government Initiatives	Possible Institutional Initiatives
	<p>facilitate more efficient procurement of relevant goods and services</p> <ul style="list-style-type: none"> Engage with relevant government counterparts to determine feasibility of making changes to procurement policies and legislation should this be needed Develop and implement capacity-building programmes to train procurement officers in managing procurement of required goods and services and repeat capacity-building where required due to staff turnover 	<p>facilitate more efficient procurement of relevant goods and services</p> <ul style="list-style-type: none"> Engage with relevant government counterparts to determine feasibility of making changes to institutional procurement policies should concerns arise about their legality in terms of broader national procurement policies (particularly for publicly-funded institutions) Develop and implement capacity-building programmes to train procurement staff in managing procurement of required goods and services and repeat capacity-building where required due to staff turnover
<p>(b) catalyzing sustainability models, not only through traditional funding sources, but also through non-traditional reciprocity-based resource mobilization, through partnerships, networking, and revenue generation such as donations, memberships, pay what you want, and crowdfunding that may provide revenues and sustainability to OER provision while ensuring that costs for accessing essential materials for teaching and learning are not shifted to individual educators or students;</p>	<ul style="list-style-type: none"> Research and evaluate contextually relevant sustainability models for OER, taking into account distinct sustainability requirements at government/national level and separately for public and private educational institutions, as well as educational materials creation organizations Compile and share available national and international research on sustainability models widely amongst educational stakeholders to raise awareness around possible financial and other mechanisms to establish long-term sustainability of OER practices Integrate structured spending on OER practices as outlined in this document into annual government budgets where feasible to ensure sustainability ensuring that this goes beyond procurement and authoring of OER to include ongoing maintenance, adaption, improvement, and curation Enhance sustainability by establishing new terms of employment, job roles, and incentives that emphasize and reward OER activities and value co-creation 	<ul style="list-style-type: none"> Research and evaluate institutionally relevant sustainability models for OER Compile and share available research on sustainability models widely amongst institutional stakeholders to raise awareness around possible financial and other mechanisms to establish long-term sustainability of OER practices within the institution Integrate structured spending on OER practices as outlined in this document into annual institutional budgets where feasible to ensure sustainability ensuring that these go beyond procurement and authoring of OER to include ongoing maintenance, adaption, improvement, and curation Enhance sustainability by establishing new terms of employment, job roles, and incentives that emphasize and reward OER activities and value co-creation
<p>(c) promoting and raising awareness of other value-added models using OER across institutions and countries where the focus is on participation, co-creation, generating value collectively, community partnerships, spurring innovation, and bringing people together for a common cause.</p>	<ul style="list-style-type: none"> Enhance sustainability by establishing new forms of international collaboration, new terms of employment and defined job roles that emphasize and reward value co-creation 	<ul style="list-style-type: none"> Enhance sustainability by establishing new forms of inter-institutional collaboration, new terms of employment and defined job roles that emphasize and reward value co-creation Build sustainability approaches collectively in collaboration with other institutions within a region, nationally or internationally where each participating entity takes on a specific function and value is co-created
<p>(d) enacting regulatory frameworks that support the development of OER products and</p>	<ul style="list-style-type: none"> See (ii) above 	<ul style="list-style-type: none"> See (ii) above

Areas of Action	Possible Government Initiatives	Possible Institutional Initiatives
related services that align with national and international standards as well as the interest and values of the OER stakeholders.		
(e) fostering the faithful linguistic translation of open licenses as defined in this Recommendation to ensure their proper implementation.	<ul style="list-style-type: none"> Collaborate with organizations managing open licences proposed for use in country (particularly Creative Commons) to commission translations and ensure that these are lodged on the relevant websites of those organizations 	<ul style="list-style-type: none"> Not Applicable
(f) providing mechanisms for the implementation and application of OER, as well as encouraging the feedback from stakeholders and constant improvement of OER.	<ul style="list-style-type: none"> Links to all proposed initiatives in this Matrix 	<ul style="list-style-type: none"> Links to all proposed initiatives in this Matrix Define a set of end-to-end OER operational processes (OER creation, OER sharing, OER use, OER iteration, etc) and assign budget, people, and infrastructure within the institution to be involved with and responsible for each step, as well as someone with overall responsibility for managing and sustaining the entire process
(g) optimizing existing education and research budgets and funds efficiently to source, develop and continuously improve OER models through inter-institutional, national, regional and international collaborations.	<ul style="list-style-type: none"> See (ii) (f) and (g), (iii) (f), and (iv) above 	<ul style="list-style-type: none"> See (ii) (f) and (g), (iii) (f), and (iv) above
(v) Promoting and reinforcing international cooperation		
(a) promoting and stimulating cross-border collaboration and alliances on OER projects and programmes, leveraging existing transnational, regional and global collaboration mechanisms and organizations. This should include joining efforts on collaborative development and use of OER as well as capacity building, repositories, communities of practice, joint research on OER and solidarity between all countries regardless of their state of OER development.	<ul style="list-style-type: none"> Participate actively in relevant regional and international networks and alliances on OER, starting with collaborative initiatives managed by UNESCO Consider government-to-government partnerships to implement some of the initiatives outlined above as a strategy to share costs and increase cost-effectiveness of investments 	<ul style="list-style-type: none"> Participate actively in relevant regional and international networks and alliances on OER, starting with collaborative initiatives managed by UNESCO Consider inter-institutional partnerships (both within and beyond country) to implement some of the initiatives outlined above as a strategy to share costs and increase cost-effectiveness of investments
(b) establishing regional and international funding mechanisms for promoting and strengthening OER and identifying those mechanisms, including partnerships, that can support international, regional and national efforts.	<ul style="list-style-type: none"> Explore the possibility of establishing joint funding mechanisms with other governments and intergovernmental organizations to support initiatives outlined in (v) (a) above 	<ul style="list-style-type: none"> Not Applicable
(c) supporting the creation and maintenance of effective peer networks that share OER, based	<ul style="list-style-type: none"> Identify suitable peer networks in which educational stakeholders can participate and publicize details within the 	<ul style="list-style-type: none"> Identify suitable peer networks in which educational stakeholders can participate and publicize details within the

Areas of Action	Possible Government Initiatives	Possible Institutional Initiatives
on areas such as subject matter, language, institutions, regions and level of education at local, regional and global levels.	country, using communications mechanisms outlined in (i) above	institution, using communications mechanisms outlined in (i) above
(d) incorporating, where appropriate, specific clauses relating to OER in international agreements concerned with cooperation in the fields of education.	<ul style="list-style-type: none"> Encourage incorporation of suitable clauses during negotiation of relevant international agreements 	<ul style="list-style-type: none"> Not Applicable
(e) exploring the development of an international framework for copyright exceptions and limitations for education and research purposes to facilitate cross-border exchange and cooperation on OER.	<ul style="list-style-type: none"> Participate in any discussions exploring the development of international frameworks 	<ul style="list-style-type: none"> Not Applicable
(f) supporting the contribution of intercultural communication skills, the management of multicultural groups, the design of communities of practice and community adjustment strategies in the local implementation of OER to promote universal values.	<ul style="list-style-type: none"> Needs input on suitable strategies 	<ul style="list-style-type: none"> Needs input on suitable strategies
IV. MONITORING		
(a) deploying appropriate research mechanisms to measure the effectiveness and efficiency of OER policies and incentives against defined objectives.	<ul style="list-style-type: none"> Identify existing metrics that are used to track education effectiveness (linked as appropriate to SDG 4) and modify or add metrics to include benefits attributable to OER Wherever possible integrate collection of data on relevant metrics into existing M&E mechanisms See (ii) (f) and (g) above 	<ul style="list-style-type: none"> Identify existing institutional metrics that are used to track education effectiveness and modify or add metrics to include benefits attributable to OER, preferably aligned with relevant national metrics Wherever possible integrate collection of data on relevant metrics into existing institutional M&E mechanisms See (ii) (f) and (g) above
(b) collecting and disseminating progress, good practices, innovations and research reports on OER and its implications with the support of UNESCO and international open education communities;	<ul style="list-style-type: none"> See (i) above 	<ul style="list-style-type: none"> See (i) above
(c) developing strategies to monitor the educational effectiveness and long-term financial efficiency of OER, which include participation of all relevant stakeholders. Such strategies could focus on improving learning processes and strengthening the connections between findings, decision-making,	<ul style="list-style-type: none"> See (ii) (f) above 	<ul style="list-style-type: none"> See (ii) (f) above

Areas of Action	Possible Government Initiatives	Possible Institutional Initiatives
transparency, and accountability for inclusive and equitable quality education and research.		

Suggestions Made for Incorporation in Additional Columns

- I have one concern, not specifically related to the government column. I'd like to be sure that the matrix also captures the important role that organizations, such as AfLIA can play. AfLIA is the African Library and Information Associations and Institutions, an Africa-wide network of public, national, community, and university libraries. AfLIA is taking on an increasingly important role in support of open licensing. Another important organization that occurs to me is the Association of African Universities (AAU). Also ADEA, the Association for the Development of Education in Africa. There are also a number of African organizations and networks key to open science and open data. I'd be happy to put together a short annotated list, if it would be useful.
- The German OERinfo funding line did concentrate on providing funding to "train the trainers": <https://oerworldmap.org/resource/urn%3Auuid%3A3f11cddb-a74a-4aa4-83b3-b4148bfdbe82>. But it started without given standards and I'm not sure if any standards were developed during the program.
- Define a global interoperable set of meta data that is recommended for use across repositories and also serves as key search terms.
- Link the need for open technological architectures in support of OER to initiatives like Invest In Open <https://investinopen.org/>
- Also consider whether the push for an open architecture should be confined to OER or part of a broader push for open edtech eg. <https://openedtech.global/>
- One service our network of NGOs might provide curated sets of open policies (from the OER Policy Registry) that are useful examples for national governments.
- Thinking about the in-process UNESCO Recommendation on Open Science... (1) I expect there could / will be another Network of Open NGOs working on helping governments implement the UNESCO Recommendation on Open Science. (I have recommended to members of their writing committee that they start thinking about how open science NGOs and UNESCO Science can support national governments' adoption of the open science rec.) (2) Our NGO group should liaise with the open science NGO group. (3) If Open Science also has an "Actions Matrix" - we might think about where there is natural overlap where we can both promote open science and open education... and/or where one action might check implementation boxes on both recommendations.
- [Regarding ICT infrastructure] Link to the UNESCO Global Education Coalition? Many private corporations within ICT infrastructure are partners. And note that UNESCO now includes the right to connectivity in the right to education.
- [On QA mechanisms] There is also the International Network for Quality Assurance Agencies in Higher Education - INQAAHE <https://www.inqaahe.org/>
- Establish an international Centre for Open Education Sustainability and Business Model development.
- OER benefit everyone as opposed to a single nation. An inter-governmental sustainability model that collaborates on generating collective good across countries would collectively leverage investments in ways that strategically ensure countries everywhere benefit.
- Consider adding potential to have countries collaborate on this [(v) (d)] as part of the Open Government Partnership.
- OER is based on value co-creation. Sustainability can be enhanced by establishing new forms of international collaboration, new terms of employment and defined job roles that emphasize and reward value co-creation.

- There are many national and international agencies, associations and networks worldwide on quality assurance. My main concern is that all these formal quality assurance initiatives are not interested in OER and open access: I made this experience during 15 years working as unpaid volunteer for quality standards and I gave up in the end as ISO and all QA associations were mainly interested in making business and profit. Thus, I strongly believe that we need a bottom-up approach for a new quality assurance mechanism that is not yet existing and still need to be developed.