

# Action Area 4: Nurturing the creation of sustainability models for OER and monitoring progress<sup>1</sup>

## 1 Introduction

The Universal Declaration of Human Rights (UDHR) states that all people have inalienable rights and fundamental freedoms that include the right to receive and impart information and ideas through any media, regardless of frontiers (Article 19) and the right to education (Article 26).<sup>2</sup> UNESCO has a constitutional commitment to ‘the free exchange of ideas and knowledge’ and supports sharing of knowledge using technologies. Digital skills and competencies are increasingly important to enable citizens to participate actively in digital transformation that supports sustainable development, to benefit from lifelong learning and employability opportunities, and to respond to global challenges. It is also important for the global community to anticipate future crises that may impact teaching and learning. This is necessary to lay the foundation for the systematic and sustainable integration of good practices for knowledge sharing and learning support in the post-COVID-19 era. It is thus essential that the global community acts to enable universal access to information and knowledge.

In this global context, Open Educational Resources (OER) can be a vehicle for realizing Articles 19 and 26 of the UDHR and for catalysing quality education in a digitized world. OER are defined as ‘learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license, that permit no-cost access, re-use, re-purpose, adaptation and redistribution by others.’ An open license is one that respects the intellectual

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<sup>1</sup> These guides have been prepared by UNESCO, as part of its programme of support to governments and educational institutions in implementation of the UNESCO OER Recommendation. They draw heavily on in-depth background papers prepared by OER experts from around the world in each of the five Action Areas: Prof. Melinda dP. Bandalraia (building the capacity of stakeholders to create, access, re-use, adapt and redistribute OER); Dr Javiera Atenas (developing supportive policy); Dr Ahmed Tlili (encouraging inclusive and equitable quality OER); Dr Tel Amiel (nurturing the creation of sustainability models for OER), and Ms Lisbeth Levey (facilitating international cooperation). We are deeply grateful for their assistance and expert knowledge. Preparation of the text of the final guides was done with support from Neil Butcher and Alison Zimmermann of OER Africa.

The tables of possible actions for governments and institutions are adapted from an OER Recommendation Actions Matrix, which outlines practical activities that governments and educational institutions can consider operationalizing under the five action areas of the Recommendation. The Matrix was first developed in November 2019, using inputs from members of the Network of Open Orgs (NOO). The NOO is coordinated by Open Education Global (OEG) and aims to support the implementation of the UNESCO OER Recommendation. Its membership includes OEG, Community College Consortium for OER-Open Education Global, OER Africa, Open Education Policy Hub-Lab, Creative Commons, Institute for the Study of Knowledge Management in Education, European Network for Catalysing Open Resources in Education (ENCORE+), International Council for Open and Distance Education (ICDE), ICDE OER Advocacy Committee, Scholarly Publishing and Academic Resources Coalition (SPARC), SPARC Europe, European Institute for Learning, Innovation and Cooperation and the International Community for Open Research and Education, Centrum Cyfrowe, Wikimedia Foundation, Multimedia Educational Resource for Learning and Online Teaching (MERLOT)-SkillsCommons, together with representatives from higher education institutions (including University of Barcelona, University of Bonn, and Politecnico di Milano-METID, amongst others) and inter-governmental organizations such as the Commonwealth of Learning and UNESCO.

<sup>2</sup> Universal Declaration of Human Rights. <https://www.ohchr.org/en/human-rights/universal-declaration/translations/english>

property rights of the copyright owner, while granting the public the rights to access, re-use, re-purpose, adapt, and redistribute educational materials.<sup>3</sup>

OER development provides opportunities to enhance the experience of learners and educators, as well as benefit educational communities and broader society by providing access to educational resources and teaching methodologies that can be adapted according to the needs of each context, either cultural or situational. However, operationalizing OER creation, adaptation and use poses a range of challenges to educational decision-makers and stakeholders. UNESCO developed the 2019 Recommendation on Open Educational Resources (referred to as ‘the OER Recommendation’ for brevity in some parts of this document) to respond to the need to drive OER adoption. The Recommendation was adopted by consensus of all 193 Member States at the 40<sup>th</sup> Session of the UNESCO General Conference, following a two-year consultative process. It is the first UNESCO normative instrument for technologies and education and requires Member States to monitor and report on its implementation every four years.

## **1.1 The Aim of the OER Recommendation**

The OER Recommendation aims to assist Member States at the national level by supporting the development and sharing of openly licensed learning and teaching materials, benefiting students, teachers and researchers worldwide. It supports the creation, use and adaptation of inclusive and quality OER, and facilitates international cooperation in this field through five Action Areas, namely (i) building the capacity of stakeholders to create, access, re-use, adapt and redistribute OER; (ii) developing supportive policy; (iii) encouraging inclusive and equitable quality OER; (iv) nurturing the creation of sustainability models for OER, and (v) facilitating international cooperation. In addition, it contributes to the building of open and inclusive knowledge societies, and to the achievement of the 2030 Agenda for Sustainable Development, namely SDG 4 (Quality education), SDG 5 (Gender equality), SDG 9 (Industry, innovation, and infrastructure), SDG 10 (Reduced inequalities within and among countries), SDG 16 (Peace, justice and strong institutions) and SDG 17 (Partnerships for the goals). Operationalizing the Recommendation remains a challenge for governments and institutions, as it requires a range of policies, capacity-building, and strategies to fully realize its potential in facilitating the achievement of these SDGs.

## **1.2 Objective of these Guidelines**

In essence, governments and institutions are concerned with key skill areas for OER implementation: (1) project management skills for OER content acquisition (that is, finding, adapting and creating materials, with clear and rigorous policies and strategies for procurement); (2) applying quality management criteria to be confident that the quality of OER is high, relevant and suitable to context; and (3) ensuring that users (such as teachers/educators, learners and community development initiatives) have the capacity to find and use resources that are located online. These key issues can be tackled when policy and decision makers unpack the Recommendation and put into process concrete actions. The overall objective of these Guidelines is to support governments and institutions in their implementation of the Recommendation, by providing concrete recommended actions, which will enable governments and institutions to overcome these three key challenges.

The targeted stakeholders for these Guidelines are those responsible for learning, which includes ministries responsible for education (K–12 and tertiary), information and communication technology (ICT), human resources development, and youth. Institutions include those that provide education in

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<sup>3</sup> Recommendation on Open Educational Resources (OER). UNESCO. <https://www.unesco.org/en/legal-affairs/recommendation-open-educational-resources-oer>

the formal and informal sectors, in urban and rural contexts. Specific stakeholders *impacted* by strategies to implement include teachers, educators, learners, governmental bodies, parents, educational providers and (ICT) infrastructure providers, researchers, research institutions, civil society organizations (including institutions, education support personnel, teacher trainers, educational policy makers, cultural institutions [such as libraries, archives and museums] and their users, ICT professional and student associations), publishers, the public and private sectors, intergovernmental organizations, copyright holders and authors, media and broadcasting groups and funding bodies. The range is extensive; thus, it is critical to identify practical ways in which they can act to promote and use OER.

These Guidelines cover Action Area 4 of the Recommendation: *nurturing the creation of sustainability models for OER*. They provide: a description/overview of the recommendations; an introduction to the specificities addressed in the implementation of Action Area 4; a matrix of actions recommended for governments and institutions to implement each point of Action Area 4; a discussion on the specificities related to Action Area 4; and examples of good practice (from different regions and contexts) in the implementation of Action Area 4.

The Guidelines offer advice on how to operationalize Action Area 4 of the Recommendation. They are not prescriptive, but aim to offer suggestions for activities, as well as background on the specificities for the Action Area. Users are encouraged to contextualize the elements of these Guidelines as appropriate for their specific national and institutional contexts.

## 2 Description of Action Area 4

Action Area 4 of the OER Recommendation focuses on nurturing sustainability models for OER creation, implementation, and maintenance, and in particular:

- **Reviewing provisions, procurement policies and regulations** to simplify the procurement process for goods and services to facilitate OER processes, and, where appropriate, develop the capacity of OER stakeholders to participate in these processes.
- Ensuring that the costs of learning materials are not shifted by learners and teachers, by also **catalyzing non-traditional funding models** (e.g. reciprocity-based resource mobilization, through partnerships and networking); revenue generation through donations, memberships, and crowdfunding.
- **Promoting and raising awareness of OER collaboration models** where the focus is on participation, co-creation, generating value collectively, community partnerships, spurring innovation, and bringing people together for a common cause.
- **Enacting regulatory frameworks that support the development of OER products and related services** that align with national and international standards as well as the interest and values of the OER stakeholders.
- **Developing and adapting existing evidence-based standards, benchmarks and related criteria for OER** which emphasise reviewing educational resources (both openly and not openly licensed) for quality assurance.

The OER Recommendation supports the idea that OER can be a key component in improving education for all. To do so, it recommends that governmental and institutional initiatives on OER must nurture sustainability models. Considering the possibility that OER can help promote significant improvement and or/changes to education, these models must provide for long-term thinking, which will allow for change to take place; and they must be implemented *systemically*, considering many elements of the educational system in tandem.

This section focuses on what sustainable implementation requires and looks like. A key driver is sustainability in the funding and procurement models that support ongoing development, and

maintenance of OER, as well as monitoring and benchmarks for ensuring that quality (as outlined in Action Area 3: Encouraging effective, inclusive, and equitable access to quality OER) is consistent. This also requires that regulatory frameworks and standards be developed and evaluated.

### 3 Implementing Action Area 4

It is common for OER initiatives to focus on technical aspects of implementation. Many national and institutional OER initiatives begin through the creation or adaptation of existing content repositories. In many cases, these initiatives are set up based on their ease of implementation – providing funding to create and organize the resources can be easily assessed and immediately made available on the web. While an OER repository is a visible and tangible initiative that can be an important part of an OER strategy, sustainability raises issues that governments and institutions must address. These include: maintaining the repository continuously (technical support, infrastructure upgrades, expanding to provide new resources; appointing appropriately skilled staff to update, curate and evaluate resources; building and maintaining the community of creators and users (community building, networks and feedback); evaluating and maintaining licensing; mobilizing resources in the most cost-effective ways through networks and collaborations; and reviewing and identifying funding and procurement models that enable all of this to happen sustainably.

Quality assurance and sustainability both rely on effective monitoring of OER implementation, and this is dealt with as an element of the Recommendation on OER, following the five Action Areas of the Recommendation.

Table 1 below presents suggested actions that governments and institutions can consider to ensure sustainability of OER initiatives.

*Table 1 Suggested Action Area 4 activities for governments and institutions*

Governments	Institutions
<p><b>Action: (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.</b></p>	
<ul style="list-style-type: none"> <li>• 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</li> <li>• 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.</li> <li>• Use the above two initiatives to review existing procurement policies and legislation to assess requirements for change to facilitate more efficient procurement of relevant goods and services</li> </ul>	<ul style="list-style-type: none"> <li>• 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</li> <li>• 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.</li> <li>• Use the above two initiatives to review existing institutional procurement policies to assess requirements for change to facilitate more efficient procurement of relevant goods and services</li> <li>• Engage with relevant government counterparts to determine the feasibility of making changes to</li> </ul>

Governments	Institutions
<ul style="list-style-type: none"> <li>Engage with relevant government counterparts to determine the feasibility of making changes to procurement policies and legislation should this be needed</li> <li>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</li> </ul>	<p>institutional procurement policies should concerns arise about their legality in terms of broader national procurement policies (particularly for publicly-funded institutions)</p> <ul style="list-style-type: none"> <li>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</li> </ul>
<p><b>Action: (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</b></p>	
<ul style="list-style-type: none"> <li>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</li> <li>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</li> <li>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</li> <li>Enhance sustainability by establishing new terms of employment, job roles, and incentives that emphasize and reward OER activities and value co-creation</li> <li>Implement open publishing models to secure publisher support for materials creation, free and open access to digital versions while publishers provide print and delivery models</li> </ul>	<ul style="list-style-type: none"> <li>Research and evaluate institutionally relevant sustainability models for OER</li> <li>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</li> <li>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</li> <li>Enhance sustainability by establishing new terms of employment, job roles, and incentives that emphasize and reward OER activities and value co-creation</li> <li>Implement open publishing models to secure publisher support for materials creation, free and open access to digital versions while publishers provide print and delivery models</li> </ul>
<p><b>Action: (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.</b></p>	
<ul style="list-style-type: none"> <li>Enhance sustainability by establishing new forms of international collaboration, new terms of employment and defined job roles that emphasize and reward value co-creation</li> </ul>	<ul style="list-style-type: none"> <li>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</li> <li>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</li> </ul>

Governments	Institutions
<b>Action: (d) enacting regulatory frameworks that support the development of OER products and related services that align with national and international standards as well as the interest and values of the OER stakeholders.</b>	
<ul style="list-style-type: none"> <li>Same actions for developing supportive policy (Action Area 3)</li> </ul>	<ul style="list-style-type: none"> <li>Same actions for developing supportive policy (Action Area 3)</li> </ul>
<b>Action: (e) fostering the faithful linguistic translation of open licences as defined in this Recommendation to ensure their proper implementation.</b>	
<ul style="list-style-type: none"> <li>Collaborate with organizations stewarding standard, international open licences (particularly Creative Commons) proposed for use in country to commission professionally completed translations and ensure that these are lodged on the relevant websites of those organizations</li> </ul>	<ul style="list-style-type: none"> <li>Not Applicable</li> </ul>
<b>Action: (f) providing mechanisms for the implementation and application of OER, as well as encouraging the feedback from stakeholders and constant improvement of OER.</b>	
<p>Links to all proposed initiatives already presented for Action Areas 1 to 3</p>	<ul style="list-style-type: none"> <li>Define a set of end-to-end OER operational processes (OER creation, OER sharing, OER use, retention, remixing, adaptation, sharing, 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</li> </ul>
<b>Action: (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.</b>	
<p>[As for policy development – Action Area 2]</p> <ul style="list-style-type: none"> <li>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 of OER and open licensing leads to positive, transformative educational improvements for students</li> <li>Establish targets for education providers to transform existing curricula and teaching practices into OER and open pedagogy</li> <li>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</li> <li>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</li> <li>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</li> <li>Assess existing barriers to national education goals and research how broad adoption of OER</li> </ul>	<p>[As for policy development – Action Area 2]</p> <ul style="list-style-type: none"> <li>Through suitable consultative processes, define clear institutional metrics for tracking OER use and effectiveness, with particular emphasis on measuring the extent to which take-up and use of OER and open licensing leads to positive, transformative educational improvements for students</li> <li>Establish targets for educators and educational departments to transform existing curricula and teaching practices into OER and open pedagogy</li> <li>For tertiary institutions' schools of education, encourage postgraduate students to experiment with integrating OER into their teaching and instructional design practices</li> <li>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</li> <li>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, with clear disaggregated focus on diversity and inclusion, as well as to explore possible unintended negative impacts</li> <li>Identify and share relevant institutional, national and/or international documents/resources and</li> </ul>

Governments	Institutions
<p>and open education practices might remove (some of) those barriers</p> <ul style="list-style-type: none"> <li>• Establish and, where feasible, fund specific research programmes on different aspects of OER practices</li> <li>• Collaborate with universities to encourage postgraduate and postdoctoral research activities focused on OER practices</li> <li>• 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</li> <li>• 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</li> <li>• 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</li> <li>• 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)</li> <li>• [See also Action Area 3 – actions for Quality]</li> </ul>	<p>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</p> <ul style="list-style-type: none"> <li>• 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</li> <li>• Support institutional quality assurance units 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)</li> <li>• [See also Action Area 3 – actions for Quality]</li> </ul>

### 3.1 Funding and Value-Adding Collaboration

#### Funding and financial sustainability

Funding and resourcing are critical challenges for sustainability in OER procurement and maintenance. In general, models rely on government or non-profit grant funding for initial setting up of OER repositories and resources, but when the funds are no longer available, the initiative becomes unsustainable. Governments and public funds play an exceptionally important part in promoting OER, but these activities should not be an exclusively governmental endeavour – it should involve civil society, businesses, and others. Governments can act to promote change, create incentives (financial and non-financial), develop policies for sustainability and generally promote alternative models *not* based on the traditional provision of educational resources: those that lead to public funds being used to provide ‘closed’ resources. Some countries, in fact, invest in establishing and maintaining major repositories of content for schooling and higher education through government funds (see the example from Argentina below).

As with any other type of educational materials, the creation and provision of OER incurs ongoing financial costs – OER financing can *begin* with seed funds and grants, but there must be a long-term outlook for financial sustainability. Creating and adapting quality educational resources (open or closed) can demand a diverse set of skills and competencies, which include instructional design, pedagogical experience and technical development. In many cases these costs are paid for through direct governmental procurement and contracts.

It is important that governments work to establish a cohesive strategy for a public ecosystem for OER. There are instances where projects, initiatives and potential partnerships can provide novel ways to provide sustainable financial support for OER initiatives. These are of particular interest to institutions but can also be adopted in specific instances by government. This can be done by supporting the development of a commercial OER ecosystem, supporting local and new businesses to the market, or providing grants to establish not-for-profit initiatives. These models can apply both to governments searching for partnerships to sustain particular initiatives and to institutions attempting to identify appropriate sustainability models for their projects.

Strategies for developing sustainable funding and resourcing include:<sup>4</sup>

- **Open procurement:** In many countries around the world, the provision of high-quality educational materials, such as textbooks, are funded by government. There are increasing examples of such initiatives, which demand that the resources produced with these funds be openly available.
- **Open with added value:** While OER are often created in a digital format, in many countries, there is a clear need and demand for resources to be available in print format, such as with printed textbooks for schools. In some cases, this is related to learner preference. But in many contexts, the availability of print material is an imperative to provide access to these resources (be it due to lack of electricity, information technology infrastructure, or to promote accessibility and long-term sustainability of resources). Funding and procurement can be provided to existing groups or institutions, or used to initiate new ventures, based on principles of open business – such as demanding the open/no-cost availability of resources, but allowing for recovery of some costs through added-value. Services, which include analytics and software integration, are made available at a cost. In some cases, these are subscription-based services, which are offered at a set fee (e.g., per month or per user), paid by institutions. The added value model can encourage and assist smaller and local enterprises to enter the market by creating and curating content and providing other valuable services on top of original or existing OER. Government support to businesses who work on an ‘added value’ model can demand, for example, that resources be made available in public repositories for long-term availability. By providing services on top of OER, businesses or not-for-profit organizations can also use incoming funds to also improve, revise and update OER, providing not only avenues for financial sustainability, but also reduced dependency on continuous government funding. On the commercial spectrum, a similar model applies. Institutions or even content creators (authors) can pay to make their content available openly. For governments, this model could be applied when offering grants and public tenders, where a condition is set that all products must be made openly available (as OER).
- **Partnerships and donations:** Funding for major projects can also occur through the support of foundations, institutions and private groups. Donations do not provide long-term financial sustainability to OER projects. These funds are and should be used to help support the initial stages of novel and innovative projects, including those realized by public institutions. Foundations that provide such funds usually demand and expect that proposals and projects present a model for

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<sup>4</sup> For a more thorough review, see: Tlili, A., Nascimbeni, F., Burgos, D., Zhang, X., Huang, R., & Chang, T.-W. (2020). The evolution of sustainability models for Open Educational Resources: Insights from the literature and experts. *Interactive Learning Environments*, 1–16.



financial sustainability and maturity. As such, a reliance on grants and donations to sustain a long-term OER policy or strategy is misguided. Such incentives can be used to support particularly novel and innovative projects, and to provide short-term support for promising initiatives and particularly innovative strategies.

### 3.2 Fostering Collaborative, Sustained Networks

While financial support is essential to promote OER initiatives, their sustainability is also dependent on continuously engaging with networks of actors and stakeholders. One of the major benefits of OER is that it allows for resources to be openly and freely exchanged, which can lead to wider adoption, use, and improvement over time. A large base of users and authors can lead to substantial improvement of resources through consistent feedback, remixing, and reuse. Moreover, networks of institutions and agencies can optimize the implementation of OER strategies by sharing time and costs, such as those related to technical development or storage of files, for example. This should be of particular interest to governments, as it can optimize the use of disbursed public funds: resources created through funding at one sphere (for example, at the federal level or a specific administrative unit) can then be adopted or adapted for use in other spheres (for example, specific states). In higher education, there are many examples of consortia or networks acting cooperatively to benefit from OER (examples provided at the end of this section).

Governments and funding providers can also support more alternative types of participation and co-creation, such as *hackathons*, *booksprints*, or *camps*. These are events where people come together to create, adapt, or modify content. They can happen both online and face-to-face. They usually begin with some form of capacity building around the concept of OER – a positive outcome in and of itself.

A key element of fostering collaboration and creation of OER is also capacity building for educators, librarians and other users and creators of OER. This is covered in Action Area 1 of the Recommendation but it is a key priority for Action Area 4 and sustainability. Educators/teachers, librarians, and learners need to be skilled in how to find and access OER, how to evaluate OER, how to attribute OER according to different types of open licenses, and how to adapt, remix, and share OER.

#### Licensing

The Recommendation makes it clear that OER not only should have an open license (or be in the public domain) but they should be offered at ‘no-cost’. This is of particular importance when considering the role of governments – educational resources funded in total or part with public funds should be made available at no cost to the public. Beyond this, and of particular interest to institutions, the no-cost provision of resources can also be seen as an essential component of the sustainability of the OER ecosystem. In what has been clearly established in the open access movement, freely available resources are more likely to be accessed, mentioned, used, and potentially revised and remixed.

Different open licenses exist for OER use.<sup>5</sup> These include licences for more traditional educational content (for example, video, textbooks and images), where the prevalence of Creative Commons licences is evident. A variety of other licences are also used for educational content, including licences used for games, software and simulations. A small set of licences is of particular relevance to OER. *Standard* licences make it easier for both creators and users of content to communicate in a common language. Adopting or recommending a suite of licences or a single licence in procurement helps clearly define the demands of government, providing content creators and end users with clear guidance. Making sure that these licences are properly translated to local language(s) and making use of terminology that is appropriate to the legal norms of each country is of utmost importance.

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<sup>5</sup> See <https://opendefinition.org/licenses/> and <https://creativecommons.org/about/ccllicenses/>

## 4 Examples of Good Practice

### Sustainability and OER ‘ambassadorship’

**Coordination for the Improvement of Higher Education Personnel (CAPES) (Brazil):**<sup>6</sup> Since 2016, this initiative has implemented a comprehensive set of actions to implement an OER strategy for the Open University of Brazil (UAB).<sup>7</sup> The UAB was created as a consortium of more than 100 public higher education institutions in Brazil, and is funded by the Ministry of Education to offer distance education courses at the undergraduate and graduate levels, aimed primarily at educators. To make changes to how content is produced and shared at UAB, a large-scale questionnaire was used to understand the perspective of all those involved. CAPES created an online course on OER<sup>8</sup> and offered it to participants in different institutions. There was a follow-up course, with more intensive activities, offered to those who passed the first one. Through this process, university teachers and technical staff became official OER ambassadors, in all regions of the country. An OER policy was enacted, requiring all resources created by those receiving financial support as part of their activity at UAB (teachers, tutors, support staff), to be openly licensed.

**OpenEdInfluencers project at Nelson Mandela University (South Africa):**<sup>9</sup> This project brings participants together to increase awareness, access, adoption and creation of open learning and OER at the university. It includes recognition of participants as ambassadors for OER.

### Fostering collaborative networks

**OER barcamps:**<sup>10</sup> Barcamps are recommended as a strategy to foster awareness of OER. In Germany, barcamps have been organized to provide opportunities for collaborative activities such as adapting existing resources under open licences (producing derivative works). A particularly interesting application of these ideas is that pertaining to the adaptation of existing resources which for many resources are inappropriate (context, age groups) or inaccessible (technical, linguistic barriers, etc.) to specific groups.

**Asuka Academy (Japan):**<sup>11</sup> This academy enlists volunteers to translate OER materials from courses originally only available in English, making them accessible to Japanese speakers.

### Using public funds to produce OER

**Educ.ar portal (Argentina):**<sup>12</sup> This portal, fully funded by the Ministry of Education in Argentina, provides original resources and curated links to a large selection of OER (lesson plans, courses, and other materials). While the law does not specifically mention OER, it clearly specifies an education portal and ascribes to Educ.ar the role of its development.

### Open procurement

**Trade Adjustment Assistance Community College and Career Training (TAACCCT) (United States):**<sup>13</sup> This programme provides substantial governmental funding, requiring that resources be published with an open licence in a governmental repository.

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<sup>6</sup> <https://www.gov.br/capes/pt-br>

<sup>7</sup> UAB; *Universidade Aberta do Brasil*

<sup>8</sup> Now available to all: <https://cursos.aberta.org.br/>

<sup>9</sup> <http://openedinfluencers.mandela.ac.za/>

<sup>10</sup> <https://www.oercamp.de/about-oercamps-in-english/>

<sup>11</sup> <https://www.asuka-academy.com>

<sup>12</sup> <https://www.educ.ar/>

<sup>13</sup> <https://www.dol.gov/agencies/eta/skills-training-grants/community-colleges/educational-resources>

**PNLD (Brazil):**<sup>14</sup> This is a federally funded, nationwide school textbook and educational resource programme which has partially adopted open licensing. This is a consolidated public policy that focuses on print textbooks but also purchases digital educational resources through annual procurement. These resources, produced by publishing houses that participate in the procurement process, are distributed freely to teachers and learners at all levels of basic education. PNLD has taken a step towards openness by requiring that part of the resources (specifically, digital resources aimed at teachers – including lesson plans and multimedia material), must be made available with open licences online. This incremental change to a large-scale programme has allowed for changes to be made both in how government conducts procurement, but also by pushing the commercial sector into understanding the demands and possibilities of openness.

**Nasjonal Digital Læringsarena (NLDA; Norwegian Digital Learning Arena):**<sup>15</sup> Implemented in 2006, this is an OER portal aimed at the upper-secondary level of education. It receives 20% of the national textbook budget and returns 70% of these funds back to the market in the form of public tenders.

### Open with added value

**African Minds (South Africa):**<sup>16</sup> This not-for-profit book publisher offers open access books for free, which can also be acquired in print format for a fee.

**Ediciones de la Terraza (Argentina):**<sup>17</sup> This organization uses novel crowdfunding models to provide the necessary financial resources to create openly licensed illustrated books, which are printed and distributed. The digital versions of the books are then made available online, for free.

### Partnerships and donations

**OERu:**<sup>18</sup> This platform provides open courses and microcredentials through a network of worldwide partners and has received foundation support.

**World Possible**<sup>19</sup> and **Learning Equality**<sup>20</sup>: Both platforms provide offline access to OER in projects in countries around the world. They are partially supported by grants from different organizations and by donations.

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<sup>14</sup> <https://www.gov.br/fnde/pt-br>

<sup>15</sup> Muller, F. J. (2021). Say no to reinventing the wheel: How other countries can build on the Norwegian model of state-financed OER to create more inclusive upper secondary schools. *Open Praxis*, 13(2), 213–227.

<sup>16</sup> <https://www.africanminds.co.za/books/>

<sup>17</sup> <https://edicioneslaterraza.com.ar/>

<sup>18</sup> <https://oeru.org/>

<sup>19</sup> <https://worldpossible.org/>

<sup>20</sup> <https://learningequality.org/>