

Working document developed by the International Federation of Library Associations and Institutions and Electronic Information for Libraries within the IGF Dynamic Coalition on Public Access in Libraries

# The Role of Libraries in National Broadband Plans and Policies

### **Abstract**

Public internet access in libraries is an important tool to help bring more people online. Including libraries in national broadband plans and policies is a way to support and enable their work towards digital inclusion – and more than 30 national broadband policies today already contain references to libraries.

The aim of this project is to compare how national broadband plans currently engage and implicate libraries, highlight the different roles policymakers envision for libraries in providing broader internet access and the types of support libraries can receive.

Different broadband plans and policies engage libraries to achieve a number of goals: support public internet access; deliver digital literacy and ICT training; promote e-learning and support formal educational institutions; and create local content by digitising heritage materials.

Many plans contain measures to support libraries in fulfilling these tasks: connecting libraries to broadband infrastructure, equipping them with ICT hardware and software, or helping them bear internet subscription costs. A number of plans rely on private-public partnerships and Universal Service Funds to deliver this support; and various soft instruments can be employed to encourage digitisation efforts.

#### Introduction

## **Public Access to Connect the Next Billion(s)**

The often-cited milestone of having more than half of the world population online has been passed,<sup>1</sup> yet stark differences in connectivity rates between different world regions remain,<sup>2</sup> and the rate at which more people come online has slowed in the recent years.<sup>3</sup> Connecting the next billions is an urgent and crucial task, but the world may be decades away from universal and affordable internet access.<sup>4</sup>

An important solution for bringing more people online in the meantime is public internet access – shared connections available in public or community organisations,<sup>5</sup> which are low-cost or free of charge.

The importance of public access today has gained recognition – for example, the UNESCO Internet Universality Indicators suggest measuring the number of available public access facilities in proportion to how many people lack individual access. Another suggested indicator is whether public access is included in a universal access strategy in a given country. Similarly, the Broadband Commission for Sustainable Development has recommended that public access programmes be included in universal access initiatives and national broadband plans.

These two examples highlight that it is important for public access solutions to be codified in national policy frameworks that set out internet, ICT and broadband strategies. In both cases – and elsewhere – libraries are mentioned as one of the key public access facilities.

# The case of libraries

Libraries often offer free or low-cost internet access to those who cannot afford an individual connection; they can help reach marginalised and underserved populations. Given the right support from the government for connectivity, hardware and personnel training, libraries are particularly well-positioned to offer internet access alongside basic ICT skills training and individual support for people who are less confident in their internet use.

As many people only have the possibility to get online via handheld devices, the availability of ICT workstations in libraries also remains crucial. Compared to mobile connectivity, public computers in libraries offer a wider range of opportunities: using the internet for educational, creative, productive or entertainment purposes, which would be less effective or more costly through mobile access. The Alliance for Affordable Internet's (A4AI) Meaningful Connectivity standard, for example, sets a requirement for online access through at least one device with a keyboard - and, notably, underlines that these devices can also be shared or public. 10

There are examples of libraries in different parts of the world fulfilling these roles – from public access, to ICT skills training, to helping users take advantage of digital opportunities – whether in employment,

<sup>&</sup>lt;sup>1</sup> For example, as announced in https://news.itu.int/itu-statistics-leaving-no-one-offline/

<sup>&</sup>lt;sup>2</sup> https://internethealthreport.org/2019/more-than-half-of-the-world-is-online-but/

<sup>&</sup>lt;sup>3</sup> See, for example, http://webfoundation.org/docs/2018/11/The-Case-For-The-Web-Report.pdf and https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2019.pdf

<sup>4</sup> https://a4ai.org/affordability-report/report/2019/

<sup>&</sup>lt;sup>5</sup> The impacts of public access in such venues as libraries, cybercafés and telecentres are explored, for example, in the 2013 Global Impact Study by the Technology & Social Change Group, University of Washington Information School; the benefits of public access include digital inclusion and developing ICT skills of users: https://tascha.uw.edu/publications/connecting-people-for-development

 $<sup>^6\</sup> https://en.unesco.org/sites/default/files/internet\_universality\_indicators\_print.pdf$ 

 $<sup>^7\</sup> https://www.itu.int/dms\_pub/itu-s/opb/pol/S-POL-BROADBAND.20-2019-PDF-E.pdf$ 

<sup>8</sup> https://www.pewresearch.org/internet/2019/03/07/mobile-connectivity-in-emerging-economies/

<sup>9</sup> https://www.apc.org/sites/default/files/EndingDigitalExclusion\_dig.pdf

 $<sup>^{10}\</sup> https://a4ai.org/meaningful-connectivity-a-new-standard-to-measure-internet-access/research and the connectivity and the conne$ 

education, health, or other areas.<sup>11</sup> As part of an established and existing infrastructure in many countries, libraries can offer a cost-effective way to provide public access.

In light of this potential, libraries feature in broadband plans and policies of many countries. The *Broadbandpolicy.org* project, which uses artificial intelligence and natural language processing solutions to analyse different national broadband policy documents, shows that broadband policies in at least 38 countries (out of 92 countries analysed) refer to "library" or "libraries".

## Why National Broadband Plans?

This brings us back to the point made by the Broadband Commission: it is important to include public access solutions – in this case, public access in libraries – into national broadband plans and universal access initiatives.

The importance of national broadband plans and strategies was emphasised when, in 2011, the Broadband Commission set a target for all countries to have a broadband plan (an updated target calls for funded broadband plans). <sup>12</sup> Such a plan outlines a country's vision for broadband development, often on both supply and demand sides, and can take many forms: a Broadband, ICT or Communication policy, strategy, or plan, a Digital vision or agenda, or others. <sup>13</sup> <sup>14</sup>

Each year, more countries adopt new broadband plans or update existing ones. These policies can have a significant impact: the progress of the two most improved countries in the most recent A4AI Affordability Report/Affordability Drivers Index, for example, is linked to the adoption of new national broadband plans.<sup>15</sup>

# What is the role of libraries and public access in national Broadband Plans?

Broadband plans can therefore be a powerful tool for broadening and supporting public internet access, particularly in libraries. Analysing and comparing how libraries have been included in broadband plans to date can show the range of goals they have been recognised as fulfilling, and the support they would need to carry out these roles.

The goal of this project is to map out how current national broadband plans engage and implicate libraries, and to highlight examples of enabling policy environments which support public access in libraries (as well as other library roles which support meaningful internet access).

Using the 2019 *State of Broadband* list of national broadband plans and the *Broadband Policy* project, tool, we have examined broadband policy documents which contain references to libraries. Analysing and comparing these references across different national contexts highlights the different roles policymakers envision for libraries in providing broader internet access, the types of support libraries can receive, and the functions they are expected to carry out.

The full methodology for selecting national policy documents and scanning the content is spelled out in Annex I. Annex II contains the list of policy documents examined to date.

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<sup>&</sup>lt;sup>11</sup> See, for instance, the Dynamic Coalition on Public Access' submission to the Internet Governance Forum's "Connecting and Enabling the Next Billion(s)" process: https://www.ifla.org/files/assets/hq/topics/info-society/documents/cenb\_iv\_ifla-eifl\_contribution.pdf

<sup>&</sup>lt;sup>12</sup> One of the five target set by the Broadband Commission in 2011 was initially phrased as follows: "By 2015, all countries should have a national broadband plan or strategy or include broadband in their Universal Access / Service Definitions" (https://www.broadbandcommission.org/Documents/publications/BD-BBLS-report-2012.pdf). The updated 2025 target reads: "By 2025, all

<sup>(</sup>https://www.broadbandcommission.org/Documents/publications/BD-BBLS-report-2012.pdf). The updated 2025 target reads: "By 2025, all countries should have a funded National Broadband Plan or strategy or include broadband in their Universal Access and Service (UAS) Definition" (https://www.broadbandcommission.org/Documents/publications/wef2018.pdf).

<sup>&</sup>lt;sup>13</sup> https://www.broadbandcommission.org/documents/reportNBP2013.pdf

<sup>14</sup> https://www.itu.int/dms\_pub/itu-s/opb/pol/S-POL-BROADBAND.20-2019-PDF-E.pdf

<sup>15</sup> https://a4ai.org/affordability-report/report/2019/

#### Part 1: The Different Roles of Libraries

The first takeaway from comparing the national broadband strategies was that libraries come into play in several distinct contexts. The public access function of libraries, as expected, was highlighted in many plans. However, there was a variety of other roles that different libraries were seen as being ready to take on in an information society – from creating local content to promoting digital literacy. Below is an overview of the different contexts where libraries come into play in broadband strategies.

#### 1. Public access

Many national broadband plans highlighted the role of libraries as public access facilities – for example, in Zambia, Kenya and Nigeria, among others. Public access in libraries can help bridge the digital divide within countries, even in cases where individual connectivity is the policy priority (as it is, for instance, in the Broadband plan of Mauritius). The policy in Nigeria emphasises the use of established and pre-existing infrastructure to ensure broader access, libraries being one of the key available facilities.

In some cases, public access was framed as a response to affordability challenges on an individual level: the costs of access devices and/or internet services (e.g. in Angola or Nigeria). A different perspective on digital exclusion focuses on broader patterns, and emphasises the needs of different vulnerable groups: disadvantaged families, unemployed people, older people, and others (for instance, in Hungary). A third perspective on digital exclusion focuses on under- or unserved areas (rural areas, for instance) and emphasises the need to ensure availability of public access facilities in these locations (e.g. in Botswana).

As an additional function of public access, some plans and policies also highlight its role in improving access to e-government and public services, or e-commerce (e.g. in Zambia, Bulgaria or Canada).

### 2. Digital literacy and ICT skills

Digital literacy and ICT skills are key to supporting the demand for broadband and enabling meaningful access. Many broadband plans engage libraries in digital literacy efforts – for instance, in Hungary, Turkey, Botswana and elsewhere.

In some cases, concerted educational efforts in libraries (often among other anchor institutions or public access centres) are envisioned - for instance, in Turkey or Botswana. The broadband strategy of Botswana, for instance, discusses a "train-the-trainers" model, where the staff members in public access facilities funded by the government are trained to deliver a basic ICT skills curriculum.

Libraries can also serve as a location for digital literacy initiatives carried out by other entities: the Digital Literacy Exchange program described in Canada's Innovation and Skills Plan, for example, envisions digital literacy initiatives carried out by non-profit organisations in pre-existing facilities such as libraries.

In a different case in Hungary, the broadband plan points out the role of libraries when discussing the need to develop ICT skills and digital literacy of public service employees and educators. The need for ICT skills training of library professionals themselves is acknowledged, for example, in the Bulgarian broadband plan, which proposes developing a system of educational courses for the staff of libraries, community centres, theatres and related institutions).

#### 3. Supporting educational institutions

Several broadband plans refer to libraries with an emphasis on broader educational goals. The broadband policy of Mauritius, for example, links improved connectivity for both libraries and schools to fostering efficiency and innovation in e-learning, digital educational content and personalised

learning. Similarly, in Ethiopia's Policy and Strategy, the goal of increasing the use of ICT in public libraries is linked to e-learning and educational goals.

A reference to digital educational materials appears in Cameroon's strategic plan: libraries (academic, research and school libraries specifically) are encouraged to digitise educational materials and make those available online.

Meanwhile, in Ethiopia the strategy includes establishing electronic links between academic institutions and libraries to ensure broader access to learning materials for students and teachers. In other cases, measures envisioned in broadband plans target formal educational institutions (schools and/or universities) and encourage them to build digital libraries (e.g. in Bangladesh or Cambodia). Such measures can encourage more school and academic libraries to be established and supported.

## 4. Heritage digitisation and local content creation

Other broadband strategies highlight the role of libraries in digitising and providing access to heritage materials – for example, in Slovenia, Turkey or Switzerland. To this end, some plans and policies engage many libraries in such initiatives – e.g. in Turkey or Gambia – while in Qatar or Mali, for example, it is only the National Libraries that are involved in these efforts.

Local content creation can be particularly important for non-English speaking countries. The need to generate content in local languages though both digitisation and content creation is highlighted, for example, in broadband plans in both Portugal and Turkey.

Finally, some plans and policy documents referred to library connectivity in broader situational analyses and assessments of national strengths, weaknesses and opportunities for internet adoption growth. For example, libraries feature in such assessments in the policy documents of both Hungary and Colombia.

To summarise, different national policies highlight several roles that libraries play in broadband strategies. They can act as public access points (supporting underserved and vulnerable populations and ensuring access to government and public e-services and e-commerce), carry out and assist digital literacy initiatives, support educational institutions and e-learning, and create local content through digitisation of heritage materials.

Naturally, libraries can take on more than one of these roles within a single plan or strategy. In Turkey's Strategy and Action Plan, for example, libraries are referred to in both public access, literacy and digitisation contexts, while the plan of Botswana emphasises the combination of public access and digital literacy initiatives.

#### **Part 2: Policy Interventions**

For libraries to fulfil the roles outlined above successfully, the majority of broadband plans include policy interventions and strategies to support them. Naturally, the approaches that different nations take vary, and the policy interventions aimed at libraries differ in focus, scope and content. However, across the 32 countries examined, there were commonalities and recurring elements. Below is an overview of key similarities and differences across the policy interventions.

## Policy focus: defining library connectivity needs

To deliver on their potential as public access facilities, digital literacy or e-learning facilitators or providers of digital content, libraries need to be equipped with sufficient connectivity themselves. For that reason, the policy focus of many interventions targeting libraries aims to improve their connectivity. This can entail different elements:

- Connectivity infrastructure. In many broadband plans, the starting point is making sure that libraries are connected to the broadband network. This goal is put forward, for example, in the policy documents of Jamaica, Egypt, Czechia or Mauritius.
  - Electricity supply can be defined as a sub-category of infrastructural needs. The plans in both Kenya and Botswana point out the need to ensure electricity supply to libraries.
- Internet subscription costs. Alongside connectivity infrastructure, several broadband policies seek to address the ongoing costs of internet service subscriptions for libraries. A number of policies envision partial subsidies or pledge to develop strategies to offer lower-cost subscriptions for libraries for example, in the United States or Mauritius.
- Computers and hardware. Some broadband plans focus on providing connectivity hardware, computers or other communications technologies to libraries (such as those in Nigeria, Jamaica, Kenya, Bahamas or Bangladesh). Such interventions are usually integrated with internet connectivity and infrastructure efforts.
- *Library staff skills*. Finally, in rarer cases, the need to equip library staff with necessary ICT skills has also been recognised one example is the Broadband Infrastructure Plan in Bulgaria.

Notably, when it comes to infrastructure and internet services, some policies put emphasis on connecting more libraries, while others also raise the question about the quality of connectivity. Mauritius, for example, discusses setting a minimum speed threshold for libraries, Kenya's Strategy discusses the need to improve broadband speed and reliability, and both Belgium and Canada make the case for connecting libraries to ultrafast internet.

The Canadian Connectivity Strategy particularly sets out the reasons for prioritising ultrafast connectivity for libraries, among other anchor institutions. It explains that the connectivity needs of such facilities are greater because (a) more people use the shared connection simultaneously and (b) the connection could be used for more sophisticated and intensive applications.

Meeting these library connectivity needs is crucial to ensure library e-services, as well as to meet the goals of public access, digital literacy and e-learning. For the policies focused on digitisation, the focus has often been broadly defined either in terms of the amount of digitised content (e.g. in Mali), organising and coordinating digitisation activities (e.g. in Turkey), or on creation of digital platforms and e-libraries (e.g. in Qatar or Cameroon). Plans in Rwanda and Cameroon, for instance, mention the creation of national digital libraries.

## **Policy Mechanisms**

Having defined the areas of intervention – connectivity infrastructure, subscription costs, digital platform creation or others – many plans spell out or indicate how these should be carried out.

Subsidies and direct interventions targeting libraries at large.

Such interventions as connectivity cost subsidies, provision of ICT equipment or connecting libraries to broadband networks are often set to target libraries in general or public libraries at large (e.g. Bahamas or Bangladesh).

Among such broad interventions, financial mechanisms are not uncommon: for example, subsidies or internet service discount rates for libraries at large. Several plans include commitments to develop a mechanism which would deliver discount subscription rates for libraries (e.g. in Egypt or Botswana).

Financial support is also sometimes made available for ICT technology procurement (e.g. in the US). Some of the policy documents do not specify the procurement mechanism for ICT hardware or other technologies, but a goal or commitment to equip libraries with necessary technologies is included.

Similarly, financial assistance can be employed for digitisation efforts – for example, the policy in Slovenia suggests co-financing the process of heritage digitisation.

## Public Access Point projects.

In other policy documents, instead of tackling an entire category of institutions, the starting point is the need to establish public access facilities for communities. Such initiatives aim to select various community or public institutions in specific locations and fully equip them to function as free or low-cost public access points (e.g. Puntos Vive Digital in Colombia)

Libraries are often listed among institutions which can accommodate such initiatives; other commonly referenced facilities. In some cases – for instance, in Turkey and Botswana– the Public Access Points are also set to deliver digital literacy education.

## o The role of Universal Service (Access) Funds

In some of the plans, the suggested mechanisms for improving library connectivity involves a Universal Service/Universal Service and Access Fund. In the Botswana Broadband strategy, for instance, the Universal Service Fund is intended to subsidise internet connectivity and access for libraries. In Jamaica, the Fund is intended to provide libraries with hardware and software; and the definition of universal service/access in Jamaica includes connectivity services to public libraries. <sup>16</sup>

Similarly, the USPF in Nigeria is used for the *E-library* intervention, which targets existing public libraries to establish digital libraries and databases.

## o The role of Public-Private Partnerships

A number of plans also intend to make use of public-private partnerships to achieve the goals they set out. Zambia's policy, for instance, plans to transform public libraries into Public Access Points with the help of both private sector and civil society. Similarly, Jamaica's Sector Plan sets out a goal to encourage public-private partnerships to establish connectivity and internet access to community access points.

<sup>&</sup>lt;sup>16</sup> https://www.itu.int/itu-d/apis/clients/res/pdf/country\_profile/report\_JAM.pdf

An interesting example is the Colombian Puntos Vive Digital project, where the PAPs in libraries (among other anchor organisations) were subsidised for several years, after which government support ended and libraries were expected to form PPPs with internet service providers.

Angola, meanwhile, also calls on PPPs to subsidise equipment and services for digital inclusion infrastructures, but the policy leans towards building a network of "Media Libraries" – new entities, as opposed to drawing on the existing infrastructure.

Public-private partnerships can also be utilised for infrastructure rollout – Canada's Connect to Innovate program, for instance, deploys high-capacity network infrastructure to connect both households and anchor institutions such as libraries through a public-private partnership. Similarly, Jamaica's Plan to accelerate connectivity to such public institutions as libraries and post offices is set to be achieved by strategic cooperation with public and private sector actors, as well as sponsors.

## Soft instruments and other mechanisms

In other plans, the approaches to achieving digitisation goals at times relied on softer instruments and/or mechanisms. The policy in Turkey, for instance, aims to coordinate digitisation efforts; and, similarly to the Portuguese Digital Agenda, discusses the need to adopt interoperable formats and open standards which would facilitate digitisation efforts.

## **Policy Scope and Specificity**

The identified mechanisms differed in their scope: in some cases, the policies target all libraries (or all libraries of a specified type), or select libraries. For example, targets related to e-learning at times were specifically focused on academic and school libraries (e.g. in Cameroon); meanwhile, Qatar's digitisation initiative only involved the National Library.

Finally, a broad distinction between policies can be made based on the level of specificity of proposed interventions and targets. Some plans indicated support for library connectivity as a broad objective, while others set out specific targets and/or time frames – for instance, the Bangladesh National Broadband Plan includes a goal of 100% broadband connectivity goal for public libraries, while Botswana sets a deadline to provide WiFi access in "100% of strategic public areas (bus ranks, shopping malls, airports, hospitals, stadia, libraries)".

Another example of specified targets is Nigeria's "E-library" project, which aims to cover 10 public libraries a year. Similarly, some of the interventions focused on digitisation have set out concrete targets: these are present, for example, in both Mali and Hungary's policies.

To summarise, policy interventions aimed at libraries most frequently focused on different aspects of library connectivity needs: infrastructure, ICT equipment, software and hardware, and broadband services;

The mechanisms to deliver these objectives often entailed direct interventions aimed at libraries at large; in other cases, a number of libraries could be involved in a specific project or programme among other anchor institutions.

In some cases, broadband plans relied on Universal Service Funds or public-private partnerships to implement the proposed activities;

For digitisation and e-learning objectives, soft instruments were employed at times: endorsements, standards adoption, coordination of activities or similar.

Finally, the documents varied in their scope and specificity. The scope ranges from covering all libraries to a few selected ones. Some broadband plans broadly described the intention to provide connectivity to libraries and encourage digitisation, while others have set concrete targets and/or timeframes.

Having analysed the policy documents on the basis of these criteria, a few conclusions can be drawn:

Most country policies in this set pursue two or three policy targets in relation to libraries simultaneously. This could imply an understanding that basic connectivity needs of libraries are multifaceted. Understandably, specific library needs can depend on the local context, and should be prioritised accordingly.

For example, Slovenia's assessment of current digitisation activities, including those carries out by libraries, leads to a conclusion that ICT tools and optimised business processes are needed; and Zambia's ICT policy includes a note on the current state of libraries, process made to improve library connectivity to date and prescribes further action.

In some cases, libraries at large were the lead beneficiaries of specific policy interventions (e.g. subsidies or infrastructure development projects) and/or could also participate in PAP-type projects. There were also cases where PAP projects were introduced alongside library connectivity targets, and libraries were not intended to be included in such projects, but rather offered standalone public access solutions.

In the given dataset, public libraries were frequently the lead beneficiaries, but several strategies made no such distinction and targeted libraries in general. In addition, some policies focused on national, academic or school libraries specifically.

#### Part 3: Conclusion and further research

Based on the inclusion of various policy elements in national broadband plans, several broad types of approaches towards libraries can be suggested:

- Policies to improve connectivity of all (or most libraries) in the country.
  - A subcategory of this type could include policies which leverage a Universal Service Fund towards this objective.
- Public Access Point projects, where selected libraries (among other institutions and facilities)
  are transformed into public access facilities through provision of ICT and internet
  connectivity.
- Projects and policies that include digital literacy initiatives either uniquely in libraries, or in libraries amongst other providers.
- Digitisation initiatives and other soft instruments.

These categories reflect the most common ways libraries are engaged in broadband plans and strategies. As the Broadband Commission's latest report recommends that public access be included in broadband plans, it is useful to reflect on how libraries have already been included in broadband plans and strategies to date. Such an overview reveals the scope of activities libraries can carry out, and the types of support they may need to do so.

Moving forward, the suggested next step is to see the effects and impacts of including libraries in broadband plans. Comparing the impacts across and within the categories outlined above would offer more information on how different approaches play out and what results they have achieved, as a basis for identifying good practices for making the most of the potential of libraries in support of digital policy goals. Such insights could then be useful for policy-makers who are considering Broadband Commission's recommendation and including public access in libraries in Broadband Plans.

For more information or any questions about the working document, please feel free to contact Valensiya Dresvyannikova at: valensiya.dresvyannikova@ifla.org



## **Annex I: Methodology**

The initial sample is a set of 38 countries and 41 policies highlighted by the *Broadbandpolicy.org* project keyword search for "library" and "libraries".

The key broadband policy documents for these 38 countries were assembled based on the list of national Broadband Plans published in Broadband Commission's 2019 *State of Broadband* report.

If the policy document(s) indicated in Broadband Commission's list did not contain the quote highlighted by Broadbandpolicy project's tool, an exact phrase search was used to identify the policy document that contains the reference(s).

- o If the identified document was:
  - (a) a national policy document with a focus on broadband, ICT, communications or digital development (or if the section of the document containing the reference was dedicated to any of those themes);
  - (b) issued by a national authority or agency, and
  - (c) the latest available version of the document (i.e. no newer versions of the document have been published), then the policy document was included in the sample.

Several policy documents were excluded from the sample if: (a) the references to libraries were not substantial (e.g. did not contain policy goals, targets, objectives, initiatives, or actions; or feature as part of a situational analysis), or (b) if the document could not be located in a translatable format.

Two broadband policies that have been released recently and contained references to libraries – the broadband plans of Kenya and Cameroon – have been added to the sample manually. If you are aware of any other national broadband policies that contain references to libraries, please let us know.

This resulted in a sample of 32 countries.

All policy documents were then scanned for the following keywords:

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"library", "libraries";
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"public access", "access point"; ("public", "community" OR "anchor") AND ("institutions" OR "organisations")

"school", "universit\*", "hospital", "post\*", "museum" – to see if policy actions focused on various anchor institutions can apply to libraries as well (if the list of eligible institutions is open-ended).

In addition, if the paragraphs containing those keywords included references to specific projects or programmes, further information about these initiatives was sought.

Annex II: List of Broadband Plans, Policies and Strategies Included in the Analysis

| Angola         | Livro Blanco das Tecnologias da Informação e Comunicação 2019-2022; "The          |
|----------------|---|
|                | commitment of Angola in the Communications and IT sector according to the         |
|                | Recommendations of the World Summit on the Information Society."                  |
| Bahamas        | Electronic Communications Sector Policy (2014); Policy Statement on Electronic    |
|                | Commerce and the Bahamian Digital Agenda (2003); Framework for the                |
|                | Clarification and Implementation of Existing Universal Service Obligations (USO)  |
|                | (2013)  |
| Bangladesh     | National ICT Policy (2009); National Broadband Policy (2009)                      |
| Dalaium        | Digital Dalajum Dlan for Ultrafact Internat in Dalajum 2015 2020                  |
| Belgium        | Digital Belgium - Plan for Ultrafast Internet in Belgium 2015-2020                |
| Benin          | eNNOV Benin (Atelier sur la stratégie de éveloppement de l'économie numérique     |
|                | au Bénin Cotonou - Rapport de Synthèse) (2016)                                    |
| Botswana       | National Broadband Strategy (2018)  |
|                | <b>9</b>  |
| Bulgaria       | National Broadband Infrastructure Plan for Next Generation Access; Roadmap for    |
|                | the implementation of the National Infrastructure Plan for Next-Generation Access |
|                | Plan  |
| Cambodia       | Cambodian ICT Master Plan 2020 (2014 – Summary by the Korean International        |
|                | Cooperation Agency)   |
| Cameroon       | Strategic Plan for a Digital Cameroon by 2020 (2016)                              |
| Canada         | Digital Canada 150.2; High-speed Access for All: Canada's Connectivity Strategy   |
| Canada         | (2019); Canada's Innovation and Skills Plan (2017)                                |
| Colombia       | Plan Vive Digital 2014-2018   |
| Coloniola      | 1 mil 11/2 Digital 2014 2010  |
| Czechia        | National Plan for the Development of Next Generation Networks (2016)              |
| Dominican Rep. | Agenda Digital 2016-2020 (2015)   |
| Egypt          | eMisr National Broadband Plan Phase 1 (2011)                                      |
| Ethiopia       | The National Information and Communication Technology (ICT) Policy and            |
| •              | Strategy (2016)   |
| Gambia         | The Gambian ICT4D-2012 Plan (2008)  |
| Germany        | Digital Agenda 2014 – 2017 (2014)   |
| Hungary        | National Infocommunication Strategy 2014-2020 (2014)                              |
| Jamaica        | Vision 2030 Jamaica - Information and Communications Technology (ICT) Sector      |
|                | Plan 2009-2030 (2009); Information and Communications Technology (ICT)            |
|                | Policy (2011)   |
| Kenya          | National Broadband Strategy 2018-2023   |
| Mali           | Plan Mali Numariana 2020 (2015)   |
| Mali           | Plan Mali Numerique 2020 (2015)   |
| Mauritius      | National Broadband Policy 2012 –2020 (2012)                                       |
| Nigeria        | National Information and Communication Technology (ICT) Policy (2012);            |
|                | Universal Service Provision Fund Strategic Management Plan 2018-2022              |
| Portugal       | Agenda Portugal Digital (2012)  |
| Qatar          | National Broadband Plan for the State of Qatar                                    |
|                |   |

| Rwanda      | SMART Rwanda Master Plan 2015-2020  |
|-------------|---|
| Serbia      | Strategy of Broadband Network and Service Development in the Republic of Serbia by 2016                     |
| Slovenia    | Digital Slovenia 2020 – Development Strategy for The Information Society Until 2020 (2016)                  |
| Switzerland | Digital Switzerland Strategy (2018)   |
| Turkey      | Information Society Strategy and Action Plan 2015-2018 (2015); National Broadband Strategy 2017-2020 (2017) |
| USA         | Connecting America: The National Broadband Plan (2010)  |
| Zambia      | National Information and Communication Technology Policy (2006)   |

