GBIF - Capacity Enhancement Support Programme

GBIF | Global Biodiversity Information Facility

FINAL ACTIVITY REPORT

Guidelines on how to complete the activity report are included in italics. Please include sources of verification as links or annexes.

Remember that this report will be made available on your project page on the GBIF website and therefore should not include email addresses, unless you have permission from all mentioned in the report that their email information can be published.

Contents

1. Project overview

Please insert text in the table

Project title	Increasing capacities to develop National Species Checklists in the Latin America and the Caribbean Region	
Project ID	CESP2018_011	
Project period	**Start date (dd/mm/yy):** 01/06/18	**End date (dd/mm/yy):** 01/08/19
Project lead		
Name of the main contact person	Name: **Anabela Plos** Email: plos@macn.gov.ar // anabelaplos@gmail.com Phone: +54 11 4982-8370 (interno 141) Cell phone: +54 221 476 2592	
Name of institution	Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" MACN-CONICET	
GBIF Participant represented	GBIF Argentina	

Role(s) in this project	Main contact and activities coordination	
Project partner(s)		
Name and institution of the representative	**GBIF Participant represented (if applicable)**	**Role(s) in the project**
Leonardo Buitrago, SiB Colombia, albuitrago@humboldt.org.co	Colombia	Participant
Dairo Escobar, SiB Colombia, descobar@humboldt.org.co	Colombia	Participant
Francisco Pando de la Hoz, CyTeD, pando@rjb.csic.es	CyTeD	Participant
José Clavijo, AndinoNet, pepeclavijoa@gmail.com	AndinoNet	Participant
Vilma Savini, AndinoNet, vsgioia@gmail.com	AndinoNet	Participant
Diana Hernández Robles, CONABIO, dhernand@conabio.gob.mx	Mexico	Participant
Andrea Ferreira Portela Nunes, SiBBr, aportela@mctic.gov.br	Brazil	Participant
Rafaela Campostrini Forzza, JBRJ, rafaela@jbrj.gov.br	Brazil	Participant
Leisy Amaya Montano, GBIF Chile, LAmaya@mma.gob.cl	Chile	Participant
Néstor A. Acosta Bueñano, GBIF Ecuador, naacosta@gmail.com	Ecuador	Participant
Harol Gutiérrez Peralta, GBIF Perú, hgutierrez@minam.gob.pe	Peru	Participant
Hugo Ignacio Coitiño Banquero, GBIF Uruguay, hcoitino@gmail.com	Uruguay	Participant
Leslie Melisa Ojeda Cabrera, CONAP, megadiversidad@gmail.com	Guatemala (No-GBIF)	Participant

2. Executive summary

Provide a brief explanation of the project and its implementation, the main capacity enhancement objectives achieved, the approach taken for the final evaluation, lessons learned and conclusions.

From the beginning of CESP, monthly meetings were held via Skype, in order to begin to outline the problems that we would face in the development of the project. We also send an invitation to the node manager of the LAC nodes that are participants of GBIF and that we could not contact in time for the CESP presentation. Invitations were sent to the nodes of Costa Rica, Ecuador, Peru and Uruguay, being accepted by all the nodes, except Costa Rica (we have no answer).

We carry out the workshop "*Increasing capacities to develop National Species Checklists in the Latin America and the Caribbean Region*" in the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires (March 12-14, 2019) with the following participants: Leonardo Buitrago, Leisy Amaya Montano, Hugo Coitiño, Rafaela Campostrini Forzza, Harol Gutiérrez, Néstor Acosta, Vilma Savini, Diana Hernández, Francisco Pando, Leslie Melisa Ojeda Cabrera, Paula Zermoglio and John Wieczorek. For affiliation details, please see on the Annex 1 "Workshop Participant List"

After the workshop we continue remotely working on the documentation and on the publication of the checklist committed by node (even Guatemala). We work in the development of the documentation of the project, as well as in the publication of the committed checklists by node. All documentation was translated in English and Portuguese by contract and controlled by the CESP participants.

Lessons learned: Is not easy to get a consensus definition of the different types and subtypes of checklist. For a better understanding on the GBIF community (nodes, providers, governments) we strongly recommend a classification. If the CESP Team approves the use of the checklist classification by type and subtype generated by this project, we will be more than happy that it is disseminated for its use.

An inconvenient that we found, when it comes to relieving the download events of the checklists, is that the GBIF portal does not provide this information (unless the checklist mentions some reference material, which is interpreted as presence data). Due to this and in order to report activity of the checklists, a search was carried out in DataCite and it is available for each checklist in Section 5 Evaluation: lessons learned and best practices. It would be welcome to have available the download events for checklists, since they involve a lot of work and the publisher lacks reports on their consultation. This could slow down and relegate the publication of this type of dataset.

Conclusions: This documentation will not be the last to be generated around the species lists, but we consider that it represents an advance to date. Although many workshops and projects have been developed around the presence data, the checklists had been relegated, simplified, giving the wrong idea of how much information includes and how robust they can be. It is interesting to remember that in many countries, national lists constitute a legal document for the management, trade, import and export of species; therefore, urging participating nodes to publish their national checklist on the GBIF portal will increase the quality of the current information. Another result that we envision is that the improvement of the quality of the published national checklists results in the possibility of using these lists in the taxonomic backbone of the national portals. Also, when a region uses the same theoretical base to build its species lists, we will be able to generate regional lists of taxa, in a simpler and more robust way.

3. Project objectives

Provide the list of the objectives included in your original project proposal, and a description of how your project activities contributed to meeting them. Also include any additional objectives that were defined during the implementation of the project. In the event of unexpected challenges which prevented you to reach a planned project objective, please provide detailed explanations and indicate how you plan to reach these objectives post project.

1. Define consensual procedures and requirements supported by existing and proven tools (e.g. Darwin Core, IPT) that allow the integration of different checklists built with a shared methodology and homogeneous quality standards. Also, the validation of other data sets and support the generation of value-added data products (GBIF Implementation Plan 2017-2021, Task 2.b.iii)

A consensual procedure was generated, a type and subtype classification of checklist (with the DwC fields and relevant IPT extensions), as well as a document to facilitate the organization of workshops (desired participants profiles, list of benefits for the node by training their suppliers to publish checklist). In addition, a case study was generated, with all the necessary material for the effective checklist publication. All these documents are available in Spanish, English and Portuguese.

2. Identify all the activities concerning checklist development within the LAC region and their convergence points.

We carry out a survey and the results are available here:

https://docs.google.com/forms/d/1IDJEWsB4WF1BXpa7rgUjlpGNIZiU8E_vq_yDWogfTtg/edit#responses

But we want to highligh some of the responses,

2. La experiencia de los miembros del nodo en la consolidación de listas de especies bajo el estándar Darwin Core es [The experience of the me...of checklists under the Darwin Core standard is]
14 responses

- Suficiente [Sufficient]
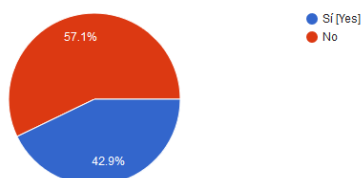- Insuficiente [Insufficient]
- Nula [Null]

35.7%
57.1%
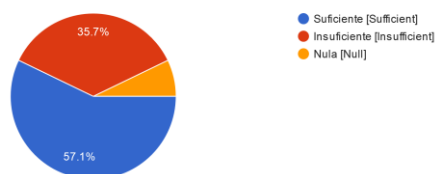
3. ¿Ha organizado su nodo algún evento relacionado con la consolidación de listas de especies nacionales? [Has your node organized any event related to the consolidation of national checklists?]
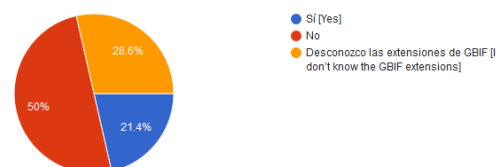14 responses

- Sí [Yes]
- No

64.3%
35.7%
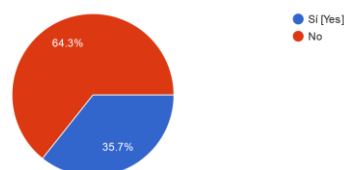
As evidenced by these responses, prior to the workshop, at least half of the participants consider that they possess enough information to advise their publishers on the publication of the checklist. But only 35% of the nodes have carried out some training activity with their publishers. Ideally we expect 90 or 100% of nodes to have sufficient training to facilitate the publication of checklists. In the same way, it is desirable that activities be carried out in all the nodes to promote the publication of checklists.

7. ¿Considera que los lineamientos para la publicación de listas de especies nacionales por parte de GBIF son claros? [Do you consider that the guidelines for the publication of checklists by GBIF are clear?]
14 responses

- Sí [Yes]
- No

57.1%
42.9%

8. ¿Cree que las extensiones de GBIF para el IPT (https://tools.gbif.org/dwca-validator /extensions.do) son suficientes para ampliar la documentación sobre listas de especies nacionales? [Do you think that the GBIF extensions for the IPT (https://tools.gbif.org/dwca-validator/extensions.do) are sufficient to expand the documentation on checklists?]
14 responses

- Sí [Yes]
- No
- Desconozco las extensiones de GBIF [I don't know the GBIF extensions]

28.6%
50%
21.4%

In these responses we can see why, if there are checklists in national portals, they have not been published in the GBIF portal. On one hand there is a demand from the community for clear guidelines for the publication of the checklist and on the other hand, there is some disagreement in the use of extensions for the IPT.

Even with all the aforementioned drawbacks, all the representatives of the nodes consider the checklists as an additional necessary input for the management of biodiversity data from the node.

Other suggestions / comments / requests on the survey (the only available English translation is below):

- *There is no clarity from GBIF in the way the extensions used in the IPT are launched, nor in the mechanism to provide new possible extensions or improve existing ones.*
- *It is necessary to find the mechanism to include the national checklist within the GBIF Taxonomic Backbone in order to fill information gaps, with emphasis on endemic species.*
- *Clarity is needed both in the IPT extensions and in the mechanisms used to form the GBIF backbone. In addition there is a certain neglect in how the taxon lists are named and the methodologies that are used, even more so if we add "automatic" systems such as the one used by Plazi, where neither the nodes nor the authors are informed and which are usually riddled with bugs (undermining publishers' trust with their nodes and with GBIF).*
- *IPT training would be necessary for the creation of lists of potential national checklist to publish in the short term through GBIF*
- *Both nationally and globally, it is necessary to establish a minimum guide for the construction of checklists, as well as to strengthen and consolidate national groups of the Global Taxonomy Initiative (GTI), to give support and reliability to the lists that will be published. More capacity building workshops are needed, for trainers, taxonomists, researchers and public officials, to build quality lists, and to know how to interpret and use them in the management and decision-making on biodiversity. To improve the quality of listings it is also necessary to increase support for technology transfer, including the identification of species such as DNA barcoding.*

- *We think that the "backbones" should have a broad regional scope and not be limited to a political / territorial division.*

3. Document the procedures in Spanish, Portuguese and English.

As we already mentioned in the fulfillment of objective 1, all the documentation generated in this project in Spanish has been translated into English and Portuguese.

- A consensual procedure,
- a type and subtype classification of checklist (with the DwC fields and relevant IPT extensions),
- guidelines for mentoring activities,
- a study case for the effective checklist publication.

4. Carry out capacity dissemination events under a "train the trainers" scheme, supporting the replication of these in more specific contexts (national, sectorial, etc.)

In Argentina, a training was carried out for the personnel of the Ministry of Environment and Sustainable Development of the Nation - MAyDS (June 2019). This institution is the one that regulates and promotes the generation and publication of national species lists. Likewise, with MAyDS, from GBIF Argentina we are promoting the compilation and publication of the National Biodiversity Inventory on our national biodiversity portal, for which it has been essential to have the information generated in this CESP project and joint action with the MAyDS to generate national lists. officers.

We hope that, once the documents resulting from this project are published, we will be able to help organize events in different nodes of the GBIF Community.

5. Generate a pilot checklist data set per participant based on the defined procedures and aimed at their interoperability.

The list, by node / institution of the pilot checklist is below.

* AndinoNet: Checklist of the Spilomeninae (Lepidoptera, Crambidae) of Venezuela.
https://www.gbif.org/dataset/d1b86ae5-e4a2-4539-9d57-1ffd768d1558

* Argentina: Lista de Mamíferos de Argentina // Checklist of Mammals from Argentina
https://www.gbif.org/dataset/dfae77f6-2e10-45ee-a9ee-b006e1c49bac

* Brazil: Catálogo de Plantas das Unidades de Conservação do Brasil - Parque Nacional do Itatiaia (PNI)
https://www.gbif.org/dataset/021cf0d3-aae6-417d-8682-ae535d17de89/project

* Chile: Lista de las especies de Nereididae (Polychaeta) registradas en el Pacífico suroriental a lo largo de la costa de Chile, fiordos y canales australes *https://www.gbif.org/dataset/97ff233a-606c-4fc5-9eaa-bf4f3e9f0299* and Lista de las especies de Orbiniidae (Polychaeta) registradas en el Pacífico suroriental a lo largo de la costa de Chile, fiordos y canales australes *https://www.gbif.org/dataset/51110943-8c1a-4a24-8178-bcd4c3e026d1*

* Colombia: Mamíferos de Colombia *https://www.gbif.org/dataset/e8b9ed9b-f715-4eac-ae24-772fbf40d7ae*

* CyTED: Lista nacional (National Checklist) de Myxomycetes (Ceratiomyxales, Echinosteliales, Liceales y Trichiales) de la Península Ibérica *https://www.gbif.org/dataset/23c3d525-b630-4690-82b2-e9c53cf75739*

* Ecuador: Amphibians of Ecuador/Anfibios de Ecuador
https://www.gbif.org/dataset/7b1ab46e-b03e-47db-b0fb-2ae856a0ce2b

* Guatemala: Lista actualizada de los murciélagos (Mammalia, Chiroptera) de Guatemala
https://www.gbif.org/dataset/f6cdf322-c67f-406d-afd1-1dba97209ec0 (Published through IPT-LAC)

*Mexico: Catálogo de autoridades taxonómicas de platyhelmithes y acanthocephala parásitos de vertebrados silvestres de México *https://www.gbif.org/dataset/9222e07a-d3fd-4a1f-8ec9-98e83487b080* and Catálogo de autoridades taxonómicas de las aves con distribución en México *https://www.gbif.org/dataset/c6846748-a99f-4de3-bec5-51cff7272f3b*

* **Peru:** Anfibios del Perú *https://www.gbif.org/dataset/d2bc2a7f-2a1a-4721-89db-4887d770e0dc*

* **Uruguay:** Lista de Anfibios de Uruguay *https://www.gbif.org/dataset/e5ee77ad-627f-440f-a9b5-b87fb78e1aaa* (Published through IPT-LAC)

### 6. Promote the publication of national and regional checklists in the GBIF network.

On the survey, some points was related with the amount of potential publication of more national checklist.

The complete survey is available here: *https://docs.google.com/forms/d/1IDJEWsB4WF1BXpa7rgUjlpGNIZiU8E_vg_yDWogfTtg/edit#responses*

4. ¿Tiene su nodo listas de especies nacionales potenciales para publicar a corto plazo a través de GBIF? [Does your node have potential national checklists to publish in the short term through GBIF?] 14 responses
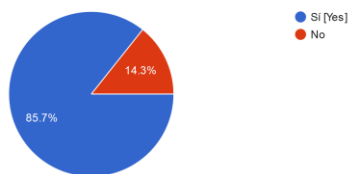
Cuántas aproximadamente? [How many (approx.)?] 11 responses
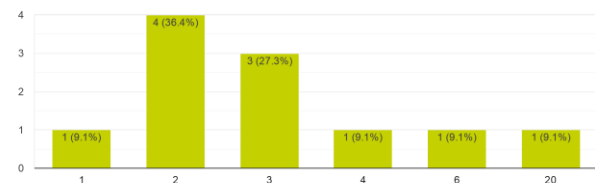
In these two responses we can see the amount (between 1 and 20) of potential checklists to be published in GBIF. Certain nodes, such as Mexico, have a large number of species listings published on their national portal, but absent on the GBIF portal, a situation that is desirable.

11. ¿Tiene identificadas asociaciones, sociedades o agremiaciones de expertos dispuestos a colaborar en la construcción de listas de especies desde su nodo? [Do you have societies or expert associations that are willing to collaborate in the construction of checklists from your node?] 14 responses
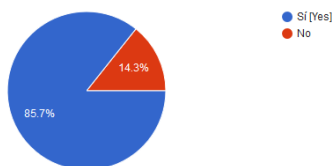
Número aproximado de organizaciones identificadas [Approximate number of organizations identified] 11 responses
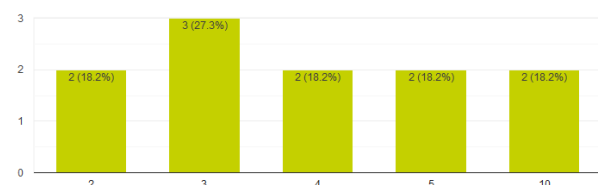
As seen in both graphs, the nodes have already identified institutions that can provide the national lists to be published, both on the national and GBIF portals. It is expected to be able to call them for a training workshop in the necessary / desirable fields to generate a high quality checklist. But this will already depend on future work in the participating nodes.

4. Project implementation

4.1. Activities completed

Describe the activities that have been completed at the time of writing the report. Explain how the different partners in the project have contributed to their implementation.

All the activities proposed in the project were carried out successfully. The **monthly virtual meetings** via Skype were convened by Anabela Plos, in her role as coordinator of the project. All participants maintained their attendance to the calls, actively participating in them. In the same way, A. Plos took care of the **logistical details** to carry out the workshop "*Increasing capacities to develop National Species Checklists in the Latin America and the Caribbean Region*" in the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires (March 12-14, 2019). The development of the **workshop** was according to the agenda, interspersing expository sessions with collaborative work sessions and debate. We were able to interact with Federico Mendez, from the GBIF Secretariat, in order to understand how the Catalog of Life + is being carried out. After the workshop, we continued to work remotely, with periodic Skype meetings to **develop the documentation** that we considered necessary: Anabela Plos coordinated the writing of the Consensus Procedure; Nestor Acosta led the development of the Study Case and its associated documentation; Leonardo Buitrago

and Francisco Pando were in charge of coordinating, compiling and summarizing all the information in the Checklist type and subtypes classification; L. Buitrago led the creation of the survey "Capacity assessment of the GBIF-LAC nodes in the construction and publishing of checklists"; Harol Gutiérrez coordinated the development of the document "Mentoring Activities". Together and according to the queries made by other project members, all the participants resolved queries and supported the project members to carry out the compilation, correction and publication of the **committed checklists** by node.

Once the writing and correction of the documents completed was completed, they were sent for translation. After which they were reviewed by the project participants.

4.2. Post-project activities

Describe post-project activities if any (e.g. longer-term evaluation, follow-up projects/meetings/training events) and your plans for their completion.

At the time of this report (April 2020) all participants nodes are involved within the ALA Community, with an interest in installing, improving, publishing more information on their national portals. The need to generate their own taxonomic backbones, for which national checklists are essential, has become relevant. Therefore, we hope to continue working, both within and between the nodes, in the development and publication of national and regional checklist. Although we do not have estimated times yet, and the current pandemic has destroyed our potential agendas, it is a topic that we continue to work at a distance and that we will resume as soon as the health situation allows.

4.3. Project deliverables – final status

Provide updates on the status of the planned deliverables at the time of final reporting, listing the activities related to these and providing explanatory notes.

For any deliverables that have not yet been completed, please provide detailed explanatory notes and indicate planned completion date after the end of the project.

In the event of any additional deliverables having being completed during the implementation of the project, please add rows as required.

Please provide links to any documents or webpages in the "Sources of verification" column. Add as many rows as needed. Alternatively the deliverables can be attached to the report in the Annex.

Deliverable	Related activity	Status of deliverable at final reporting Completed? Yes/No	Explanatory notes, inc. planned completion date if necessary.	Sources of verification
Document of the consensual procedures and requirements in Spanish.	**Skype calls Workshop**	Yes	The documents are (Spanish): * Consensus procedure (txt) * Table type/subtype (xls)	Attached * SP-Procedimiento consensuado + SP-Tabla Tipo-Subtipo-CheckList
Translation in English and Portuguese of the procedures.	**Skype calls Workshop Translation**	Yes	The documents are (English + Portuguese): * Consensus procedure (txt) * Table type/subtype (xls)	Attached * EN-Consensus procedure + EN-Table Type-Subtype-CheckList.xlsx * PT-Procedimiento acordado + PT-Tabela Tipo-Subtipo-CheckList.xlsx

Deliverable	Related activity	Status of deliverable at final reporting Completed? Yes/No	Explanatory notes, inc. planned completion date if necessary.	Sources of verification
Validation and evaluation of other species checklist data sets available in the region using the agreed procedure and requirements (see deliverable #1).	**Skype calls Workshop**	Yes	All the checklist published by the participants nodes until May 2019.	https://docs.google.com/spreadsheets/d/1pIetrwptdHOzZ2OX2ySgxIJiFRCZaH4RCWRGIq2B-U8/edit#gid=474362415
Survey on the ongoing activities related to national checklists in the participant countries (in Spanish)	**Skype calls**	Yes	The survey was released on Spanish + English	https://docs.google.com/forms/d/1IDJEWsB4WF1BXpa7rgUjlpGNIZiU8E_vq_yDWogfTtg/edit#responses
Translation in English and Portuguese of the survey.	**Skype calls**	Yes	The survey was released on Spanish + English	https://docs.google.com/forms/d/1IDJEWsB4WF1BXpa7rgUjlpGNIZiU8E_vq_yDWogfTtg/edit#responses
Documentation and exercises prepared for the workshop, and to make them available later on for the wider community.	**Skype calls Workshop**	Yes	The documents are (Spanish + English + Portuguese): * Mentoring activities (tx) * Study case checklist (txt) * 4 files for the exercises (xls)	Attached *SP-Actividades de entrenamiento *SP-casoEstudio_checkList-GTyGL *lstAnfibiosEcuador-CJ.xlsx *casoEstudio_checkList-GTyGL.xlsx *anfibiosEC-checkList-CJ-occurGBIF.xlsx *anfibiosEC-checkList-CJ.xlsx *EN -Mentoring activities.docx *EN-studyCase_checkList-GTyGL.docx *lstAnfibiosEcuador-CJ.xlsx *casoEstudio_checkList-GTyGL.xlsx *anfibiosEC-checkList-CJ-occurGBIF.xlsx

Deliverable	Related activity	Status of deliverable at final reporting Completed? Yes/No	Explanatory notes, inc. planned completion date if necessary.	Sources of verification
				*anfibiosEC-checkList-CJ.xlsx *PT- Procedimento acordado.docx *PT-Estudo de Caso.docx *lstAnfibiosEcuador-CJ.xlsx *casoEstudio_checkList-GTyGL.xlsx *anfibiosEC-checkList-CJ-occurGBIF.xlsx *anfibiosEC-checkList-CJ.xlsx
Pilot checklist data sets (one by participant as minimum) uploaded to the GBIF data network.	**Skype calls Workshop**	Yes	-	See links below this table

1. **AndinoNet:** https://www.gbif.org/dataset/d1b86ae5-e4a2-4539-9d57-1ffd768d1558

2. **Argentina:** https://www.gbif.org/dataset/dfae77f6-2e10-45ee-a9ee-b006e1c49bac

3. **Brazil:** https://www.gbif.org/dataset/021cf0d3-aae6-417d-8682-ae535d17de89/project

4. **Chile**: https://www.gbif.org/dataset/97ff233a-606c-4fc5-9eaa-bf4f3e9f0299,

   https://www.gbif.org/dataset/51110943-8c1a-4a24-8178-bcd4c3e026d1

5. **Colombia:** https://www.gbif.org/dataset/e8b9ed9b-f715-4eac-ae24-772fbf40d7ae

6. **CyTED** : https://www.gbif.org/dataset/23c3d525-b630-4690-82b2-e9c53cf75739

7. **Ecuador:** https://www.gbif.org/dataset/7b1ab46e-b03e-47db-b0fb-2ae856a0ce2b

8. **Guatemala:** https://www.gbif.org/dataset/f6cdf322-c67f-406d-afd1-1dba97209ec0

9. **Mexico**: https://www.gbif.org/dataset/9222e07a-d3fd-4a1f-8ec9-98e83487b080 ,

   https://www.gbif.org/dataset/c6846748-a99f-4de3-bec5-51cff7272f3b

10. **Peru:** https://www.gbif.org/dataset/d2bc2a7f-2a1a-4721-89db-4887d770e0dc

11. **Uruguay**: https://www.gbif.org/dataset/e5ee77ad-627f-440f-a9b5-b87fb78e1aaa

4.4. Project calendar

The calendar should be updated from the status at mid-term to reflect the project implemenation at the project's close. Please provide justifications for any changes in the notes column.

Activity	2018							2019					Notes
	J	J	A	S	O	N	D	J	F	M	A	M	
Project starts, basic infrastructure for online collaboration deployed. Key document list defined: That involves selecting sources and people in charge of delivering them (that may imply identifying documents, or translating, adapting or writing them).	X	X	X										
Skype calls for: documentation review, generation of new documentation, workshop planning and organization	X	X	X	X	X	X	X	X	X	X	X	X	
Key documents initial versions available for internal review, consensus and refinement.			X	X									
Interim versions of key documents delivered.				X	X	X							
Test/pilot checklist dataset preparation. Testing and evaluation of key documents.						X	X						
Deadline for mid-term reporting							X						
Pre-workshop activities.								X	X				
Workshop to include: Lessons learnt session. Review of key documents. Capacity building session (train the trainers)										X			

Project wrap-up: Pilot checklist datasets published. Documentation published.											X	X		
Deadline for final reporting												X	The date of the final report was delaying for the coordinator

4.5. Project communications and visibility

Describe the way the results of your project have been and will continue to be communicated and shared with the project stakeholders and broader GBIF community. Please also review the page describing your project available from https://www.gbif.org/programme/82219/capacity-enhancement-support-programme#projects. Highlight any additional documents, events, news items or links that you would like to add to your page and provide links/attachment in the Annex.

The information on the development of the project was made through the GBIF website (https://www.gbif.org/project/1tM8FmqzIyGMmUiIMaaSsI/increasing-capacities-to-develop-national-species-checklists-in-the-latin-america-and-the-caribbean-region#about). We hope with the dissemination of the documentation generated as well as the results of the project on that website. We also hope to be able to continue working with our publishers and other nodes to continue publishing and improving national and regional checklists.

The project involved a unique face-to-face activity, which was the regional workshop "Increasing capacities to develop National Species Checklists in the Latin America and the Caribbean Region" hosted by the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" MACN-CONICET, on March 12-14, 2019. communication of the event was made from the website of the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" MACN-CONICET (http://www.macnconicet.gob.ar/workshop-increasing-capacities-to-develop-national-species-checklists-in-the-latin-america-and-the-caribbean-region/) and from the project page on GBIF website (https://www.gbif.org/project/1tM8FmqzIyGMmUiIMaaSsI/increasing-capacities-to-develop-national-species-checklists-in-the-latin-america-and-the-caribbean-region#news). The workshop was not of a public nature, which is why it was not promoted through more channels than what was previously mentioned. The list of participants, agenda, notes, presentation are available on the Annex 1.

5. Evaluation: lessons learned and best practices

An assessement of the overall outcomes and impacts of your project, including strengths and weaknesses in its implementation and results. Try to identify your experiences that could help others to design and implement projects more effectively, including the best practices to adopt and the pitfalls to avoid.

The **strengths** of this project are found in the diversity of profiles of the participants, since the necessity for an interdisciplinary group to resolve technical, taxonomic, management and even administrative problems. As for the **weaknesses**, a national checklist does not depend solely on the node or the institution that wants to publish it. Many times, it depends on large groups of taxonomists, categorizations, consensus and even legal aspects, depending on the country involved. The only way to overcome all these stages and their associated times and problems is to include in national agendas the need to generate a national checklist. Fostering work in interdisciplinary teams with the support of the relevant institutions in each country.

To help on the organization of workshops for training in the generation and publication of checklists, we compiled a series of suggestions in the document "Mentoring Activities". That short document includes some benefits that can be achieved by conducting this type of workshops, as well as suggestions in the selection of profiles of the participants and their evaluation. It is available in Spanish, English and Portuguese.

Lessons learned: Is not easy to get a consensus definition of the different types and subtypes of checklist. For a better understanding on the GBIF community (nodes, providers, governments) we strongly recommend a classification (if the CESP Team believes that the present list is OK, we will be grateful for its use).

About the checklist published by Plazi, we agree that is a practical product, but is difficult to find inside the GBIF Portal. Because of that, we suggest a shortcut for the Plazi checklist on each country page (like now we can find the GRIIS checklist). Another issue with the Plazi checklist is some inconsistencies with the original data (i.e. co-authors appear as authors), facts that tarnish the work done when publishing those checklists. Checklist quality can be improved by working together with the national GBIF nodes

An inconvenient that we found, when it comes to relieving the download events of the checklists, is that the GBIF portal does not provide this information (unless the checklist mentions some reference material, which is interpreted as presence data). Due to this and in order to report activity of the checklists, a search was carried out in DataCite (table below this paragraph). It would be welcome to have available the download events for checklists, since they involve a lot of work and the publisher lacks reports on their consultation. This could slow down and relegate the publication of this type of dataset.

Node	Checklist uploaded to the GBIF Portal	Citations GBIF	Citations DataCite	Data Cite Search
AndinoNet	10.15468/nc2ztp	0	0	https://search.datacite.org/works?query=10.15468%2Fnc2ztp
Argentina	10.15468/6d8o48	0	0	https://search.datacite.org/works?query=10.15468%2F6d8o48
Brazil	10.15468/afdpuk	0	0	https://search.datacite.org/works?query=10.15468%2Fafdpuk
Chile	10.15468/qvz3el	0	0	https://search.datacite.org/works?query=10.15468%2Fqvz3el
Chile	10.15468/zfswer	0	0	https://search.datacite.org/works?query=10.15468%2Fzfswer
Colombia	10.15472/kl1whs	11	24	https://search.datacite.org/works?query=10.15472%2Fkl1whs
CyTED	10.15470/xpzkxb	0	0	https://search.datacite.org/works?query=10.15470%2Fxpzkxb
Ecuador	10.15468/pb8rmn	0	0	https://search.datacite.org/works?query=10.15468%2Fpb8rmn
Guatemala	10.1016/j.rmb.2015.10.005	0	¡!*	* The search on DataCite was null, but the list was publicated as a paper on 2020 (http://revista.ib.unam.mx/index.php/bio/article/view/1287)
Mexico	10.15468/fpvvnz	0	0	https://search.datacite.org/works?query=10.15468%2Ffpvvnz
Mexico	10.15468/mtwckw	0	0	https://search.datacite.org/works?query=10.15468%2Fmtwckw
Peru	10.15468/rh88bo	0	0	https://search.datacite.org/works?query=10.15468%2Frh88bo
Uruguay	10.15468/8qpzdt	0	0	https://search.datacite.org/works?query=10.15468%2F8qpzdt

6. Future plans and sustainability

A description of how the partners involved will build on the results of this project in their future work. This could include future collaborative activities, such as plans to complete any unfinished project activities, and how the future impact of the project could be monitored or measured.

Although all the objectives set out in the project were met, a series of needs arose in all the project participants, which may be met in future years:

- Holding workshops to train national publishers in the generation of a checklist.
- Continue with the development and publication of national checklists at nodes level.
- Regional checklist publication (when several nodes have the necessary information) .

As for how to measure the suggested activities, we could mention:

- If you are going to hold a workshop, make a prior release of the checklists by publisher / node, ask a question about how many they plan to publish and carry out the relay again 3 months after the end of the workshop. It is crucial to have good communication with the publisher during the workshop and the publication process.
- Periodically relay the amount of checklist available on the portals.

- For the regional checklists, once several nodes have achieved their national checklists, the regional checklist will be generated and it can be published using the IPT-LAC.

It is desirable to have feedback on the documents generated in this project for improvement or expansion after a consistent time of use.

Annex 1 – Additional sources of verification

Please use this section to provide any additional sources of verification, for example links to relevant digital documents, news/newsletters, brochures, copies of agreements with data holding institutions, workshop related documents, pictures, etc.

Workshop participant list

	Name	Country	Institution / GBIF Node or associate party
1	Leonardo Buitrago	Colombia	SiB Colombia
2	Francisco Pando de la Hoz	España	CyTED
3	Vilma Savini	Venezuela	AndinoNet
4	Rafaela Campostrini Forzza	Brasil	JBRJ – SiBBr
5	Leisy Amaya Montano	Chile	GBIF Chile
6	Néstor A. Acosta Bueñano	Ecuador	GBIF Ecuador
7	Harol Gutiérrez Peralta	Peru	GBIF Peru
8	Hugo I. Coitiño Banquero	Uruguay	GBIF Uruguay
9	Anabela Plos	Argentina	GBIF Argentina
10	Leslie Melisa Ojeda Cabrera	Guatemala	CONAP (remote)
11	Paula Zermoglio	Argentina	VertNet (remote)

12	John Wieczorek	Argentina	VertNet (remote)

New published on the institutional website of the Museo Argentino de Ciencias Naturales:
http://www.macnconicet.gob.ar/workshop-increasing-capacities-to-develop-national-species-checklists-in-the-latin-america-and-the-caribbean-region/

Workshop agenda (only Spanish): https://drive.google.com/drive/folders/1rP_VuSlgaoJlNDXzwqh5YXKktZcbosRl

Workshops notes (only Spanish): https://docs.google.com/document/d/1_bCBlZJgwSmw740TcfNMzEwBbh-g1fuQlvGSLu92J8g/edit

Workshop presentations:

- Francisco Pando de la Hoz (CyTED): https://drive.google.com/open?id=1DU4bJSIiJrfezZeTc5dcDNrD-BOEDxi3
- Federico Méndez (GBIF Secretariat): https://drive.google.com/drive/folders/1j55Bw0Y2M0LvKRiWQjdB9SX_LkTaJun8

Relevant and pre-existing documentation:
https://drive.google.com/open?id=1eQWhcviM0rk_AGHWrSx6MrOI1gLDCZtQ

Documents of the new participants (Ecuador, Peru and Uruguay), after the invitation to another's participants nodes of the region: https://drive.google.com/open?id=1YH9K3qa3D-Gs-Ya6igPxjfgIgMClKLFr