GBIF in Central Asia: new aspects of development

Programme: CESP
Project ID: CESP2023-007
Project page: https://www.gbif.org/project/CESP2023-007/gbif-in-central-asia-new-aspects-of-development
Project lead organization: Institute of Botany of the Academy of Science of the Republic of Uzbekistan
GBIF Participant Represented: Uzbekistan
Project implementation period: 1/10/2023 - 30/9/2024
Report approved: 6/2/2025

Declaration: The information provided in this report has been provided by and is the responsibility of the project lead.

Narrative Final report

Executive Summary

Such a project was implemented for the first time in Uzbekistan. The goal of this initiative is to improve bioinformatics and data publication in Tajikistan and Uzbekistan. Our primary objective was to digitize and publish 300,000 records from the National Herbarium of Uzbekistan (TASH) as part of an ambitious digitization program. So far, all the data preparation steps for GBIF have been mastered, and we have digitized and published 17,735 records. We provided capacity-building workshops on digitization techniques, data publication, and data cleaning, co-creating Russian language resources. As an integral part of this project, Uzbekistan IPT was established to publish local information aimed at strengthening the infrastructure of GBIF nodes in Uzbekistan. We worked with the Norwegian GBIF node, sharing knowledge between Tajikistan and Uzbekistan. Several higher education institutions in Uzbekistan were involved in the project. During the project, Uzbekistan became a voting member of GBIF, and a Memorandum of Understanding was signed. This project will serve as a platform in order to participate in future major projects announced by GBIF in the Republic of Uzbekistan. The project facilitated the acquisition of numerous practical skills. Within the framework of the project, the activities of GBIF were widely promoted at the national level, which accelerated the preparation and uploading of existing biodiversity data in the format of GBIF to the portal in Uzbekistan's higher education institutions and other organizations. Both practical and theoretical skills were developed in the preparation, grouping, and posting of data for GBIF in general.

Report on Activities

Activity progress summary

Organizations maintaining sample collections in Uzbekistan were identified and inventoried according to the list and contact information of potential data publication partners, thereby identifying the potential for communication and support at the Uzbekistan GBIF node.
Together with data publishing from GBIF Norway and GBIF Uzbekistan with one-on-one digital support, we held one physical workshop with optional digital participation by engaging key regional organizations to increase capacity to support data publishing at the Uzbekistan GBIF node.
Technical equipment and digitization of specimens in the herbarium for the process of imaging specimens, and most importantly, great potential in the Uzbekistan node for digitizing the collection and publishing data, increasing more knowledge and capacity, and digitizing the biodiversity heritage dataset of Uzbekistan configured to start the process.
GBIF data publication delayed, which means data publication of approximately 300 000 records should be delivered. We set up our own Uzbek IPT and published only 17,735 records. Because of some mismatches between Excel databases and Herbarium sheet scanners, we delayed submitting the full 300,000 records. The impact on the project is that for a region with limited data, increased coverage of important biodiversity data is delayed. Currently, we are trying to fix all mismatches and submit records.
Useful documents were translated into Russian. In this activity, we translated useful documents into Russian instead of Uzbek and Tajik because the Russian language is understandable for all participants of organizations that want to publish information. We translated brochures or books we have published and also posted the PDF version of the host institution on the official website.

Due to the establishment of the Uzbek IPT, the information was not published using ttps://tajik.ipt.gbif.no.

Completed activities

Activity name: Identifying andinventorying theorganizations inUzbekistan that holdspecimen collections

Description: A list of potential datapublication partnersand contact details
Start Date - End Date: 1/10/2023 - 3/11/2023
Verification Sources: https://scientific-collections.gbif.org/institution/88fb8288-ea03-4e27-9ee0-356fff1a68c1 https://scientific-collections.gbif.org/institution/148dc353-e24f-4d20-a8cd-551ca175a49d

Activity name: Engaging key regionalorganizations

Description: We plan one physicalworkshop orconference withoptional digitalparticipation.
Start Date - End Date: 22/4/2024 - 24/4/2024
Verification Sources: https://www.gbif.no/events/2024/2024-04-cesp-workshop-uzbekistan.html https://www.gbif.org/event/3d0432-4941-46f1-8ee9-7ea904c/capacity-building-workshop-on-digitization-techniques

Activity name: Digitization of legacy biodiversity datasets in Uzbekistan

Description: A digitization workflow.This will include thesetup for technicalequipment andspecimen imaging
Start Date - End Date: 22/4/2024 - 24/4/2024
Verification Sources: https://botany.uz/uz/2024/04/26/ozbekiston-va-gbif-hamkorligi-bioxilma-xilikni-saqlashda-muhim-strategiya/

Activity name: Translation useful documentation in Tajik, Uzbek, and Russian

Description: In this activity we willtranslate usefuldocumentation in Tajik,Uzbek and Russian fororganizations whichgoing to publish data
Start Date - End Date: 14/4/2024 - 24/4/2024
Verification Sources: https://botany.uz/uz/2024/04/22/markaziy-osiyoda-global-bioxilma-xillikning-axborot-portali-gbif-rivojlanishning-yangi-aspektlari/

Report on Deliverables

Deliverables progress summary

We published approximately 4183 collection specimens of plants that belong to the Herbarium of Namangan State University, the Herbarium of Bukhara State University, the Herbarium of the National University of Uzbekistan, and the Herbarium of the Institute of Botany, Academy of Science of Uzbekistan. In addition, there are 130 new deliverables from Samarkand State University. However, the data publishing process has started for approximately 300,000 alreadydigitized specimens, which are currently in an Excel database, and some of these records have been georeferenced.
GBIF data publication delayed, which means data publication of approximately 300 000 records should be delivered. We set up our own Uzbek IPT and published only 16356 records. Because of some mismatches between Excel databases and Herbarium sheet scanners, we delayed submitting the full 300,000 records. The impact on the project is that for a region with limited data, increased coverage of important biodiversity data is delayed. Currently, we are trying to fix all mismatches and submit records.
Useful documents were translated into Russian. In this activity, we translated useful documents into Russian instead of Uzbek and Tajik because the Russian language is understandable for all participants of organizations that want to publish information. We translated brochures or books we have published and also posted the PDF version of the host institution on the official website.
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Completed deliverables

Title: Herbarium of Institute of Botany, Academy of Science of Uzbekistan

Type: Dataset
Description: Data publication of 1001 collection specimens for Gagea Salib.
DOI: https://doi.org/10.15468/tsryfw

Title: Herbarium of Institute of Botany, Academy of Science of Uzbekistan

Type: Dataset

Description: Data publication of 401 collection specimens for Parrya R. Br.
DOI: https://doi.org/10.15468/6kfxuc

Title: Herbarium of Institute of Botany, Academy of Science of Uzbekistan

Type: Dataset
Description: Data publication of approximately 308 collection specimens for type of plants: Parrya R. Br. -23; Lagochilus Bunge ex Benth. – 100; Phlomis L. – 100; Moluccella L. – 30; Ferula L. – 30; Colchicum(Tourn.) L. – 20; Eremogone Fenzl –20.
DOI: https://doi.org/10.15468/taasmp

Title: Herbarium of Institute of Botany, Academy of Science of Uzbekistan

Type: Dataset
Description: Data publication of 414 collection specimens for Elymus L.
DOI: https://doi.org/10.15468/y5b8hu

Title: Herbarium of National University of Uzbekistan

Type: Dataset
Description: Data publication of 299 collection specimens for type of plants: Cousinia-200; Stipagrostispennata-11; Stipagrostis karelinii - 9; Fritillaria karelinii-41; Eremosparton aphyllum-20; Ammodendronconollyi-6; Convolvulus erinaceus-10; Artemisia-2.
DOI: https://doi.org/10.15468/f48fsj

Title: Herbarium of National University of Uzbekistan

Type: Dataset
Description: Data publication of 72 collection specimens for type of plants: Stipagrostis pennata (Trin.) deWinter - 9; Stipagrostis karelinii - 11; Eremosparton aphyllum (Pall.) Fisch. et C. A. Mey - 10;Ammodendron conollyi Bunge ex Boiss.- 14; Convolvulus erinaceus Ledeb-10; Artemisia diffusa-18.
DOI: https://doi.org/10.15468/zjv8df

Title: National Herbarium of Uzbekistan (TASH)

Type: Dataset
Description: Data publication of approximately 2225 collection specimens for type of plants
DOI: https://doi.org/10.15468/7dj3zu

Title: National Herbarium of Uzbekistan (TASH)

Type: Dataset
Description: Data publication of approximately 156 collection specimens for type of plants: Salsola paulsenii –28; Caroxylon scleranthum (C.A.Mey.) Akhani & Roalson.–52; Turania aperta (Pauls.) Akhani.–8; Caroxylon turkestanicum (Litv.) Akhani & Roalson.–38; Nitrosalsola incanescens (C.A.Mey.) Theodorova–30.
DOI: https://doi.org/10.15468/kxpdca

Title: National Herbarium of Uzbekistan (TASH)

Type: Dataset
Description: Data publication of approximately 2900 collection specimens for type of plants
DOI: https://doi.org/10.15468/ruscek

Title: National Herbarium of Uzbekistan (TASH)

Type: Dataset
Description: Data publication of approximately 912 collection specimens for type of plants: Iris L. - 807; Crocus L. - 57; Gladiolus - 22; Morea Mill. - 26.

DOI: https://doi.org/10.15468/ha4umz

Title: National Herbarium of Uzbekistan (TASH)

Type: Dataset
Description: Data publication of approximately 2178 collection specimens for type of plants
DOI: https://doi.org/10.15468/6pyr8a

Title: National Herbarium of Uzbekistan (TASH)

Type: Dataset
Description: The database created on the basis of 457 herbarium specimens of 10 species belonging to the Fritillaria L. genus distributed in Uzbekistan
DOI: https://doi.org/10.15468/9c79ns

Title: National Herbarium of Uzbekistan (TASH)

Type: Dataset
Description: In 2020–2023, 160 species of ephemeral plants belonging to 20 families and 83 genera were identified as a result of targeted field research and herbarium samples conducted on the flora of the Fergana Valley.
DOI: https://doi.org/10.15468/c27g3s

Events

Workshop in Yangiobod

Dates: 22/4/2024 - 24/4/2024
Organizing institution: Institute of Botany of the Academy of Sciences of the Republic of Uzbekistan
Country: Uzbekistan
Number of participants: 30
Comments: https://botany.uz/en/2024/04/15/yevropaning-global-bioxilma-xillikning-axborot-portali-gbif-markaziy-kotibiyati-hamda-earthcape-tashkiloti-hamda-tojikiston-respublikasidan-bir-guruh-olimlarining-botanika-institut/
Website or sources of verification: https://botany.uz/en/2024/04/22/markaziy-osiyoda-global-bioxilma-xillikning-axborot-portali-gbif-rivojlanishning-yangi-aspektlari/

Communications and visibility

The workshop has been organized but will be held on April 22–24, 2024, after the midterm report deadline. After the workshop, we will publish publications on the Web sites of the hosting institutions in Uzbekistan and Tajikistan about how the workshop was held and its achievements, and we will open official social channels like Facebook, Twitter, etc. for both Uzbek and Tajik in order to advertise during conversations during coffee breaks and send by email materials for the workshop in three languages: Uzbek, Tajik, and Russian. We are tweeting from the workshop (currently ongoing), see report attachment.

Monitoring and evaluation

Monitoring, evaluation and lessons learned

Final Evaluation:
This project aims to enhance data publication and bioinformatics in Uzbekistan and Tajikistan. In Uzbekistan, the digitization of biodiversity heritage datasets and the publication of GBIF data have begun, and so far 17,735 records have been uploaded to GBIF through the Uzbekistan IPT, 4216 of them belong to deliverables of the Herbarium of Namangan State University, the Herbarium of Bukhara State University, the Herbarium of the National University of Uzbekistan, and the Herbarium of the Institute of Botany, Academy of Science of Uzbekistan.
We had planned to hold one physical workshop or conference with optional digital participation, but this workshop has been postponed to April 22-24, 2024 due to lack of availability of workshop participants.It is currently in progress at the time of this report submittal.
The project implementation has been effective, the workshop is well run and well organised and the participants were engaged. Of particular significance is the signing of a Memorandum of Understanding for Uzbekistan to become a voting member of GBIF during the workshop. The ties between Tajikistan and Uzbekistan have been strengthened, and the networking opportunities in the workshop have

allowed us to formulated plans to spearhead the GBIF data publication movement throughout central Asia, incorporating our neighbouring countries in the future.
The workshop was condensed slightly in order to accomodate the transport requirements of the Tajik delegation - flights between Tashkent and Dushanbe are somewhat irregular.
The digitisation of images of specimens will be continued after the workshop, and has also been made available to the Tajik participants.

Best Practices and Lessons Learned:
Uzbekistan IPT was founded as a crucial component of this project in order to disseminate local data with the goal of enhancing the GBIF nodes' infrastructure in Uzbekistan. In order to share information between Tajikistan and Uzbekistan, we collaborated with the Norwegian GBIF node. The project involved a number of Uzbek higher education institutions. Throughout the project, a Memorandum of Understanding was formed and Uzbekistan was admitted as a voting member of GBIF. This project will act as a springboard for involvement in other significant initiatives that GBIF in the Republic of Uzbekistan has announced. The initiative made it easier to pick up a lot of useful skills. The GBIF operations were extensively publicized at the national level as part of the project, which sped up the preparation and uploading of biodiversity data that was already available in the GBIF format to the portal in Uzbekistan's higher education institutions and other organizations. The preparation, organization, and publishing of data for GBIF in general resulted in the development of both theoretical and practical abilities.

Post Project Activity(ies):
The post-project activities are as follows:
- Based on the knowledge and experience gained during the project, steadily preparing and uploading data to GBIF, increasing the volume of biodiversity data, participating in internships in cooperation with GBIF in order to gain new experiences in higher educational institutions and scientific institutions of the Republic, and popularizing data preparation and placement in GBIF in research institutions.
- Regular participation in small and large grant competitions announced by GBIF.
- Dynamically increasing data volume.

Sustainability plans

Based on common curriculum resources available in the Workshop Course GBIF modifications, new learning materials have been translated into Russian and shared with GBIF for inclusion in the Common Learning Resource Library. Training resources were provided to participating herbaria to replicate similar training for local herbarium staff and Central Asian countries. Capacity building in Uzbek and Tajik nodes on data publishing and GBIF node management procedures enabled Uzbek and Tajik nodes to create an effective GBIF node in accordance with GBIF guidelines and effectively participate in the GBIF node community.

The Capacity Support Enhancement Programme (CESP) is funded by GBIF