



Mobilizing Occurrence data of alien and endemic plant species of Nepal

Brief report of Inception workshop

(Prepared by Dr. Bharat Babu Shrestha, Project Coordinator)

Background

The Central Department of Botany (CDBTU, Tribhuvan University) and the Department of Plant Resources (DPR, Ministry of Forest and Environment), in collaboration with Royal Botanic Garden Edinburgh (RBGE, UK), are implementing a research project entitled '**Mobilizing occurrence data of alien and endemic plant species of Nepal**' with financial support from Biodiversity Information Fund for Asia (BIFA) program of the Global Biodiversity Information Facility (GBIF), Denmark. The major funding agency for BIFA program is the Ministry of the Environment of the Government of Japan. The main objective of the project is to digitize herbarium specimens of the alien and endemic plants of Nepal deposited at National Herbarium and Plant Laboratories (KATH) and Tribhuvan University Central Herbarium (TUCH), and publish occurrence data in open access GBIF publishing network. In addition, a herbarium collection field work has been planned in September with co-funding from RBGE. The project has started from May 2018 and will complete in March 2019 with total duration of 11 months.

The project team includes Prof. Mohan Siwakoti (Head, CDBTU; Principle investigator of the project), Mr. Sanjeev Kumar Rai (Director General, DPR; Co-principle investigator), Dr. Bharat Babu Shrestha (Associate Professor, CDBTU; Project Coordinator), Dr. Suresh Kumar Ghimire (Associate Professor, CDBTU; Plant taxonomist), Ms. Kalpana Sharma-Dhakal (Scientific Officer, DPR; Expert) and Mr. Tirtha Raj Pandey (Research Officer, KATH; Expert). Dr. Mark Watson and Dr. Bhaskar Adhikari are participants from RBGE. Two Research Assistants Mr. Yagya Raj Paneru and Mr. Ganesh Dutt Joshi have been appointed for six months.

Workshop objectives

An inception workshop of a research project was organized on July 6, 2018, Friday (Asadh 22, 2075 according to Nepali calendar) at the Department of Plant Resources, Thapathali, Kathmandu. The objectives of the workshop were as follows:

- 1) To inform the stakeholders about state of Nepalese biodiversity data publication in GBIF network
- 2) To inform the objectives, activities and output/outcome of the BIFA funded project in Nepal and seek feedbacks/comments from all stakeholders involved in biodiversity conservation and management
- 3) To share experiences of biodiversity data management in Nepal

Inaugural session

The entire program was divided into inaugural and technical sessions. The inaugural session, chaired by Prof. Mohan Siwakoti, started at 10.30 with welcome speech by Mr. Sanjeev Kumar Rai, Director General of the Department of Plant Resources. Highlighting the project objectives and activities, he emphasized the need of publishing biodiversity database and express commitment of the Department of Plant Resources to collaborate with national and international organizations to prepare and publish database related to Nepalese plant diversity. Second speaker of this session was Dr. Deepak Kharal, Director General of the Department of Forest Research and Survey (DFRS) who informed that the DFRS has drafted the national strategy for the management of invasive species and trying to approve this from the Government of Nepal. In his remarks, Professor Emirates Pramod Kumar Jha (Tribhuvan University) highlighted the importance of geographic distribution data of plant species that will be generated from the project for species distribution modelling. Professor Ram Narayan Jha, Assistant Dean, Institute of the Science and Technology (Tribhuvan University) praised the collaborative researches between university departments and government organizations. The inaugural session ended with the remarks from Prof. Mohan Siwakoti, Head of the Central Department of Botany (Tribhuvan University) and Principle Investigator of this BIFA funded project. Prof. Siwakoti emphasized on the need of mobilizing occurrence data of endemic and invasive alien plants of Nepal for meeting long-term goals of biodiversity conservation and environmental management. Mr. Pramesh Lakhey, Scientific Officer at DPR, conducted the program.

Technical session

The technical session was chaired by Prof. Mohan Prasad Panthi of the Central Department of Botany, Tribhuvan University. There were four presentations during the technical session. First presentation was made by Dr. Bharat Babu Shrestha (coordinator of the BIFA funded project) on 'Mobilizing occurrence data of alien and endemic plant species of Nepal'. First he highlighted the value of 'big' data published in GBIF to address 'big' problems such as the increasing problems of biological invasion in the world. He also highlighted BIFA funded, both past and current, projects in Asia. Then, he reviewed Nepalese biodiversity data availability in GBIF and revealed that, in spite of 256,269 occurrence data in GBIF on Nepalese biodiversity published by 175 publisher from 35 countries, there was no publisher from Nepal. After these background information, Dr. Shrestha presented the objectives, activities, deliverables and potential impacts of the project.

Mr. Tirtha Raj Pandey (Research officer at KATH and expert in this project) presented on 'Digitization at National Herbarium and Plant Laboratories (KATH): Preservation and Utilization'. He started presentation highlighting various targets of the Global Strategy for Plant Conservation 2011-2020 and initiatives taken by KATH to meet targets related to publishing online flora. He, then, presented the facilities at KATH and progress of herbarium digitization

and database management. He also reviewed various methods of image capturing used by different international herbaria.

The third presentation was made by Dr. Suresh K Ghimire (Associate professor at the Central Department of Botany, TU and Senior expert in this project) on 'Databasing and digitization of Herbarium at Tribhuvan University Central Herbarium (TUCH)'. He informed that the TUCH has about 30,000 herbarium specimens of vascular plants and lichens collected primarily by graduate students and some project-funded field works. About 300 specimens of monocotyledons have been digitized using camera and published a catalogue of herbarium specimens at TUCH: monocotyledons.

The last presentation was on 'Bioinformatics: The changing landscape for decision making in conservation' by Dr. Nakul Chettri, Senior Biodiversity Specialist at the International Center for Integrated Mountain Development (ICIMOD), Kathmandu. The presentation started with significance of biodiversity of the Hindu Kush Himalayan (HKH) region, followed by the highlight of the roles of bioinformatics in biodiversity conservation planning. He also informed that ICIMOD has been 'Observer' in GBIF since 2009 and presented initiatives taken by ICIMOD in publishing biodiversity data of the HKH region.

Mr. Pramesh Lakhey, Scientific Officer at DPR, conducted the program.

Overall reflection and feedbacks

Presentation of technical papers were followed by open discussion among participants. Some of the participants informed various sources of occurrence data that need to be consulted for occurrence data. There was also brief discussion on the benefit and risk of publishing occurrence data, particularly of threatened mammals. But, it was generally agreed that publishing occurrence data of plant species would not harm the efforts to conserve them. Representative from government organizations expressed commitments to support the efforts like this (BIFA funded project) for preparing and mobilizing biodiversity databases of Nepal. Some of the participants requested for formal collaboration among stakeholders for biodiversity data basing irrespective of the external financial supports for these works. Prof. Mohan Siwakoti and Mr. Sanjeev Kumar Rai responded some of the queries from the participants. The technical session ended with the remarks from the chair Prof. Mohan Prasad Panthi. Prof. Panthi requested all the stakeholders to lend support for initiative jointly taken by the Central Department of Botany TU and the Department of Plant Resources for mobilizing occurrence data of endemic and alien species. He also remarked that, though the project was small in term of budget, its value is vital and will have long-term positive impacts towards biodiversity conservation and environmental management in Nepal.

Participants

The workshop was participated by 53 participants from government Ministries (Ministry of Forest and Environment, Ministry of Agriculture), Departments (Department of Forest Research and Survey, Department of National Park and Wildlife Conservation, Department of Forest), Central Department of Tribhuvan University (Botany, Zoology, Environment), Natural History Museum of Tribhuvan University, research institutions (Nepal Academy of Science and Technology, National Gene Bank), INGOs (IUCN Nepal, ICIMOD, Biodiversity International), NGO (Forest Action), etc. Table 1 below has details of the participants.

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Some glimpses of meeting in photographs



Participants of the workshop (Photo: ShishirPanthi, DPR)



Mr. Sanjeev Kumar Rai, Director General of the Department of Plant Resources, addressing the workshop. (Photo: ShishirPanthi, DPR)



Prof. Mohan Siwakoti, Head of the Central Department of Botany, Tribhuvan University, addressing the workshop. (Photo: ShishirPanthi, DPR)



Dr. Deepak Kharal, Director General of the Department of Forest Research and Survey, addressing the workshop. (Photo: Bharat B Shrestha, CDBTU)



Remarks by Dr. Ram Narayan Jha, Assistant Dean, Institute of Science and Technology, Tribhuvan University. (Photo: Bharat B Shrestha, CDBTU)



Presentation by Dr. Nakul Chettri, Senior Biodiversity Specialist at the International Center for Integrated Mountain Development (ICIMOD), Kathmandu. (Photo: Bharat B Shrestha, CDBTU)