

Final Evaluation Report

Your Details	
Full Name	Fitra Arya Dwi Nugraha
Project Title	DNA Barcoding, Morphology and Ecology of Anuran Tadpoles Inhabiting Lembah Anai Nature Preserve, Province of Sumatera Barat, Indonesia: an initial step for conservation
Application ID	35307-1
Date of this Report	23 December 2022

1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
Collection and documentation of tadpoles				An updated checklist of tadpoles, adult frogs and reptiles in Lembah Anai Nature Reserve was provided: Five tadpoles were obtained (<i>Megophrys</i> sp., <i>Odorrana hosii</i> , <i>Pulchrana debussyi</i> , <i>Limnonectes</i> sp. and <i>Leptobrachium waysepuntiense</i>), 21 species of adult frogs and 10 species of reptiles.
DNA extraction				We have successfully extracted DNA and sequenced the 16S gene from five tadpoles and one adult of <i>Leptobrachium</i> ; three adults and one tadpole of <i>Pulchrana debussyi</i> ; and one adult of <i>Zhangixalus prominanus</i> . From those data we currently write the report about the extension range of <i>L. waysepuntiense</i> to central Sumatra and about the taxonomic status of <i>P. debussyi</i> which is most likely will be transferred to the genus <i>Abavorana</i> .
Morphological assessment				We have completed morphological assessment of tadpole of <i>P. debussyi</i> and <i>L. waysepuntiense</i> .
Habitat parameter assessment				Two tadpoles inhabit rocky streams (<i>L. waysepuntiense</i> and <i>O. hosii</i>), two tadpoles inhabit medium sized streams (<i>Megophrys</i> sp. and <i>Limnonectes</i> sp.), and one tadpole inhabits small streams (<i>P. debussyi</i>). They all inhabit the water with temperature 20-21.9°C and with pH 6.8-7.4.
Seminar and poster publication			Yes	We presented the results to various audiences (university students, local people, staff of LANR, chief of village, conservation agencies staff). Poster is given to LANR office and Nyarai Waterfall office.

2. Describe the three most important outcomes of your project.

- a) Research achievements:** This project fills the gap of knowledge in herpetofaunal diversity in a very important nature reserve. We will be publishing our achievements in an academic journal to spread the

information of herpetofaunal diversity and its conservation. Firstly, we will publish an article about the genus revision of *P. debussyi* based on adult and tadpole morphology and molecular 16S gene sequence. Secondly, we will publish an article about the range distribution of *L. waysepuntiense* which previously reported only from southern part of Sumatra. We report morphological variation between central population and southern population.

b) Capacity building for local staff: During this project we involved the local staff in surveying and assessing habitat parameter of tadpoles. They learned some fundamental skills in conducting survey such as locating species based on the type of habitat (leaf litter dwellers, canopy dwellers, fast-flowing stream dwellers, slow-flowing stream dwellers, pool dwellers and generalists), capturing and handling tadpoles and adult frogs, analysing habitat types and parameters. We also trained them to evaluate the threat causing the decrease of tadpole and frog populations. We are also built-up collaboration with Conservation Agency of Sumatera Barat, sub-unit Lembah Anai Nature Reserve for future work on tadpole and frog conservation within the area. The formal collaboration now is waiting for agreement from the Ministry of Life Environment.

c) Conservation of tadpole: We found five species of tadpoles in this project, presented them in the talk and in the form of posters. It increases local staff and stakeholders' awareness and knowledge about tadpoles and frogs. We found the tadpole of *P. debussyi* which is likely to be the first report in the region. The species previously only known from its type locality (northern Sumatra, Medan). We discussed with the local stakeholders (chief of village and management team of waterfall tourism object) about the relevant factors threatening tadpole and frog population in the wild.

3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

Unpredictable weather. During our survey, the rain was quite heavy. To tackle this, we were always kept update to rain prediction provided by several platforms on the internet two days before the field work.

Local society believe to not going to the forest at night. Traditional belief here is to not enter forest at night. We appreciated that cultural belief and discussed with the local society leader that we come into the forest with good purpose.

4. Describe the involvement of local communities and how they have benefited from the project.

Since the start of the project, we involved a staff of LANR in conducting field work and species identification. We also regularly surveyed with local communities such as chief of village, or chief of local youth association. They gained knowledge about the tadpole and frog, its habitat and how to find them in the wild. They are glad to

know about the tadpole and frog which are very diverse in term of species and habitat.

In the end of the project, I shared with them about the result in the form of talk and poster so that their awareness and knowledge increase.

5. Are there any plans to continue this work?

Field studies and conservation: additional field work will be conducted in surrounding tourism object areas. We intend to invent the actual herpetofaunal diversity within and around the area. Conservation campaign will be always presented on many occasions such as in the elementary school and local stakeholder.

Molecular work: we will sequence additional unknown species resulted from the project. This work is an important step in knowing the species composition within the project area.

6. How do you plan to share the results of your work with others?

Technical report was submitted to LANR office, local stakeholder office as well as the poster. We are willing to provide further work in LANR and surrounding area. Two articles will be submitted in the academic journal to spread information to a wider range of people. I also give talk about the tadpole and frog in the guest lecturer event in Bangka Belitung University

7. Looking ahead, what do you feel are the important next steps?

Based on our result, the most important next step is to ensure the taxonomic status of several cryptic species. By doing this, we can know the actual distribution and its conservation implication. For example, if we know that a species only distributed in a narrow range habitat, we can further decide the conservation action that needs to be taken soon. Another vital step is to constantly give talk about the tadpole and frog conservation to various level of society.

8. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?

I used the RF logo in the poster, book and in oral presentation materials in Bangka Belitung University on 18 October 2022.

9. Provide a full list of all the members of your team and their role in the project.

Yunico Amardi (Student): conducting fieldwork, morphological assessment.

Malvino Kentino (Student): conducting fieldwork.

Katon Agusdi (Student): conducting field work, public relation (communicating with local people)

Mahesa Rafi (Student): conducting field work.

Fadhil Raid (Student): conducting fieldwork.

Fachrul Rozi (Student): conducting fieldwork.

Robby Susilo (LANR staff): conducting fieldwork.

Wulandari (Student): conducting fieldwork, project administration.

Reza Sapitri (Reza): conducting fieldwork.

Shinta (Student): conducting fieldwork.

Imam Wahyudi (Student): conducting fieldwork.

Ferix (Student): Conducting fieldwork.

Yogi Saputra (student): Conducting fieldwork.

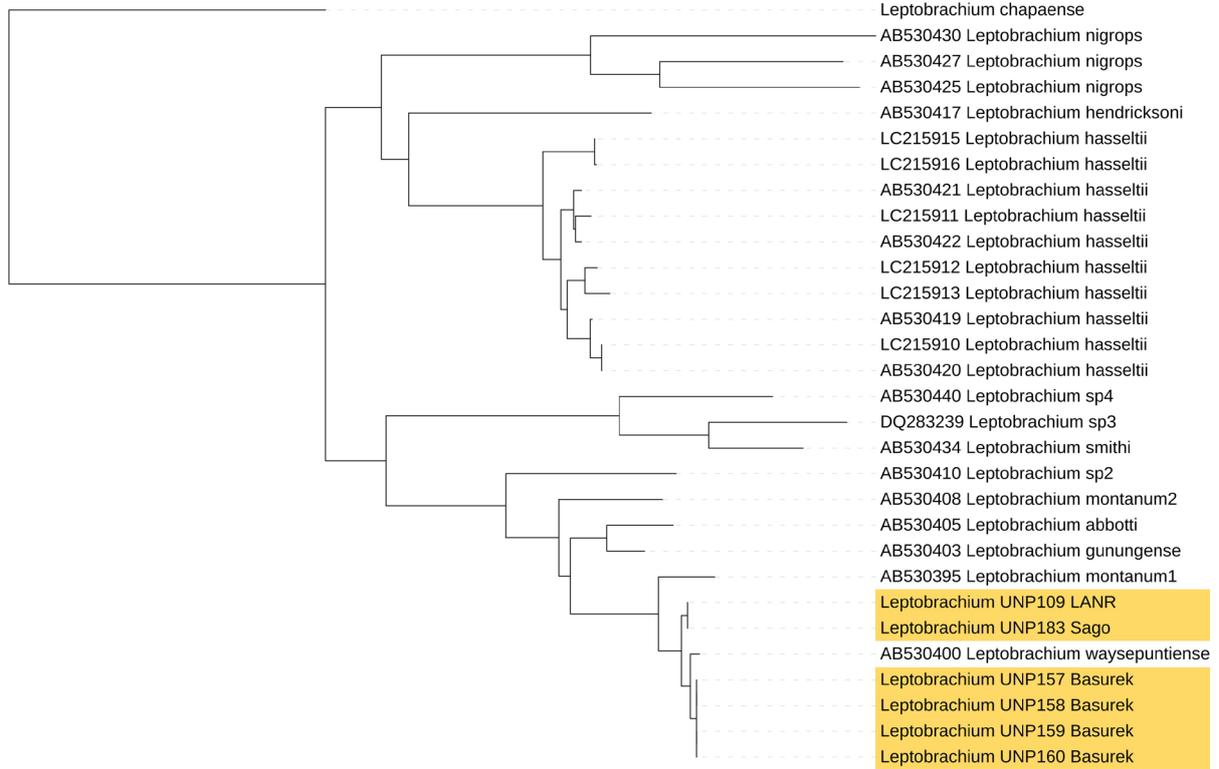
Rafazen (student): Conducting fieldwork.

Aisyah (Student): Conducting fieldwork, molecular work.

10. Any other comments?

We thank the Rufford Foundation for support of our biodiversity research and conservation in Sumatera Barat, Indonesia.

Tree scale: 0.1



Leptobrachium sp.









