

Strengthening mitigation measures to protect the Sulawesi crested black macaques in a time of crisis

Final project report



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ASAP species: Sulawesi crested black macaque (*Macaca nigra*)

Project title: Strengthening mitigation measures to protect the Sulawesi crested black macaques in a time of crisis

Period of project implementation: From 10/2020 to 04/2022

1. Brief Executive Summary (max. 300 words)

The crested macaque (*Macaca nigra*) is an endemic primate from North Sulawesi, Indonesia. The species is Critically Endangered due to habitat loss and hunting and the Tangkoko Reserve represents one of the last crucial habitats.

The Covid-19 pandemic has had severe impacts on conservation activities and may have contributed to endangering the monkeys' survival. Local communities must adapt to a lack of income, expanding their agricultural areas and increasingly exploiting the forest resources. Concomitantly, a rise in the number of agricultural crops being foraged by monkeys is reported, increasing the number of encounters, and affecting local attitudes towards the monkeys.

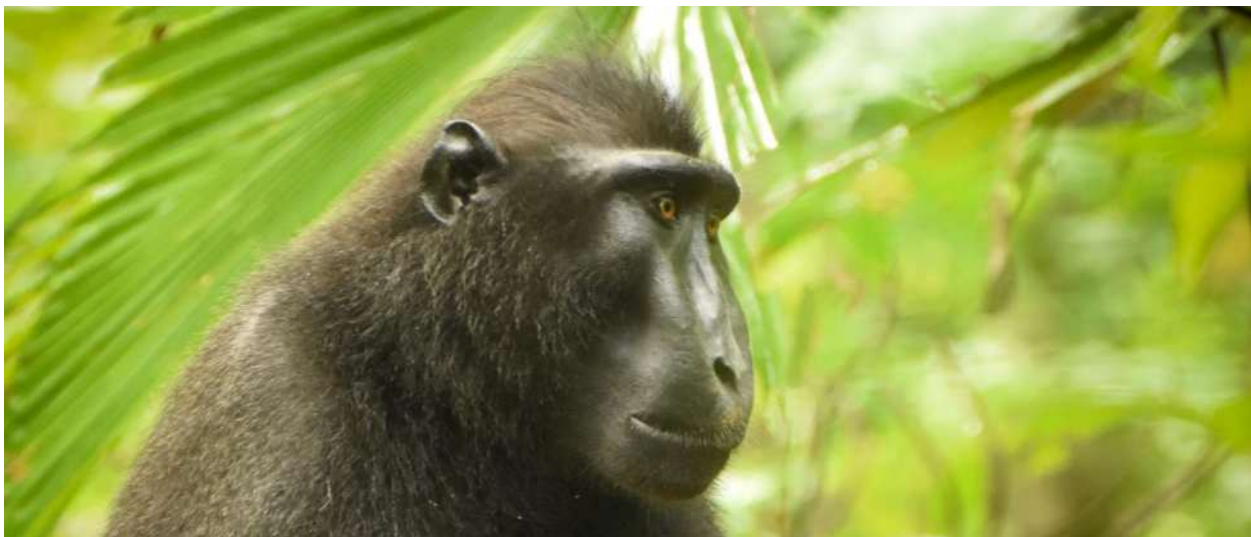


Figure 1. The charismatic Sulawesi crested black macaque (*Macaca nigra*).

The project tackled these issues by working directly with the local communities through the following:

1. **Regular forest patrols and sentinel guarding around key villages were established:** one permanent conservation officer patrols all year round at the border of the Batu Putih village and the Tangkoko reserve with official rangers supporting on site.
2. **24 trails in six different areas were patrolled** at least three times each by two teams of six people in the Tangkoko reserve.
3. **Community-led outreach and social events were organised** in five villages surrounding the Tangkoko reserve (17-20 people involved in focus-group discussions, about 25 to 45 people attending social events) to empower villagers about human-wildlife coexistence, monitor the patrol teams' impact in terms of nature protection and foster pride in the unique local wildlife.

Project activities were challenging to implement due to a combination of pandemic restrictions and local leadership issues though actions were very well appreciated and welcomed by the community. This enthusiasm will hopefully remain and lead to a long-term structuration of the local community for facing together challenges linked to wildlife-human interactions, sustainable living and biodiversity protection.



Figure 2. Collaborative co-development of mitigation approaches in Pinangunian village, North Sulawesi.

2. Objectives. Please list your project's objectives and report progress against each.

Objective 1: By October 2021, indicators will show a 25% decrease in anthropogenic pressures (as measured by e.g. number of wildlife traps found and destroyed, number and size of areas disturbed by human activities, number and estimated size of monkey groups encountered, number and types of biodiversity observed) on the forest and the species.

We collated data over 18 months, from December 2020 to April 2022. During this period, we organised 24 patrols in six locations in the Greater Tangkoko Area. Many types of data were collected but we focus here on reporting about logging activities (including trail opening), non-timber forest product harvest and use of protected forest areas (for gardening for instance), animal hunting (e.g. traps) and traces of human activities such as presence of tools or huts in the forest (See table 1 in appendix). Overall, 127.51 km of trails were walked and surveyed, in 24 patrols by two teams of six people. 52 counts of illegal logging, i.e. logging inside protected areas of trees from 15cm to 100cm in diameter-at-breast (about 6 trees with diameter from 80cm to 100cm, mostly interesting for construction, were found) were recorded; 6 trails newly opened specifically for penetrating new areas of the forest were counted; 32 counts of non-timber forest product collections (i.e. sap water of *Arenga pinnata* (used as a main ingredient for making palm sugar) or harvested *Gnetum gnemon* trees, whose young leaves are consumed as vegetables) were recorded; 19 counts of illegal usage of protected area (for plantation, mostly for herbs, cassava, taro, or other vegetables and coconuts) were recorded; 35 counts of areas with traps were recorded, all but one as string traps for pigs, rats or birds, all dangerous for macaques too (the different one was a trap for bats, which requires people to stay on site to activate it so it also showed further human activities); 18 counts of human activity traces such as tools or huts left on site were recorded; finally, 18 sightings of macaque groups along the way were recorded.



Figure 3. Indicators of disturbance within protected areas highlight the need for effective patrols and community awareness of environmental issues.

It is challenging to measure increasing or decreasing trends in illegal activities in such a short time period and it might not be relevant without comparing to long-term data from previous patrols carried out by the authorities in the same areas. Nevertheless, we can see that the longer the distance walked along the surveyed trails the more traces of illegal logging are spotted, which speaks in favour of increased efforts in patrolling the areas; however, distance walked does not seem to impact the number of macaque groups that are sighted along the trails (Fig. 4).

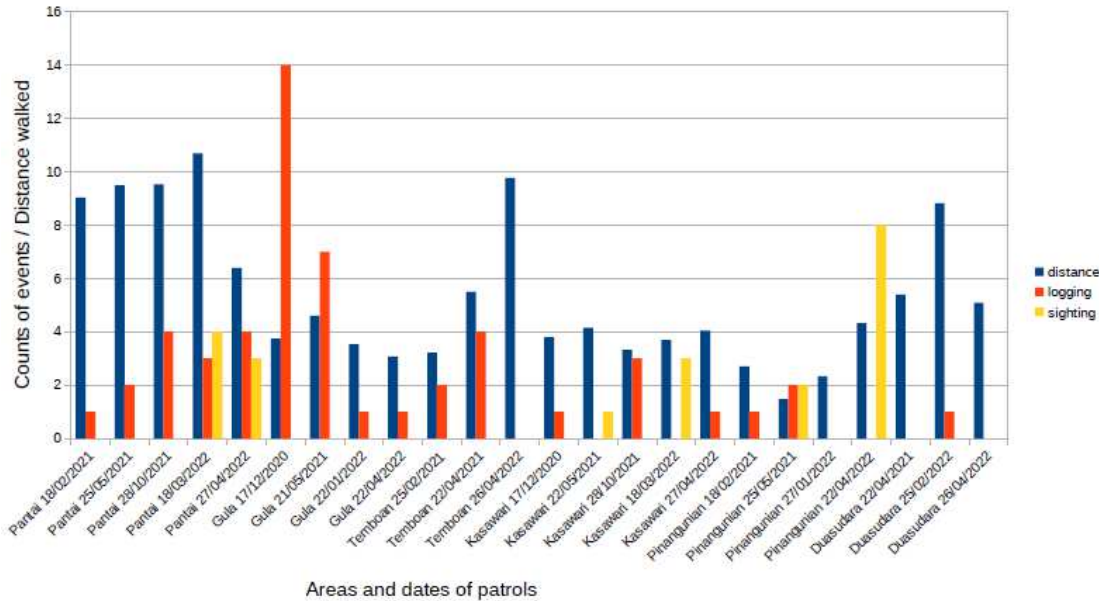


Figure 4: distance walked along the trails (blue), number of traces of illegal logging (orange) and number of sightings of crested macaques (yellow) recorded while walking the trails by areas and dates of patrols.

Objective 2: By December 2020, minimum of 20 community patrol personnel trained and actively participating in collaborative patrols in the reserve.

The means to achieve this objective were enabled as soon as we received funding from ASAP. The objective was proficiently achieved by the team on the ground with 60 people (villagers, volunteers from local NGOs, ect) trained by mid-December 2020. Patrols started right after the training session in December 2020 and were carried out until April 2022.

Objective 3: By September 2021, 10+ months of SMART patrol data collected by routine patrols throughout the entire reserve area.

Five patrols were organised from December 2020 until May 2021. In May 2021, several factors, mainly on-going Covid-19 pandemic and local conservation agency management disruption, forced us to stop our main activities until October 2021. By the time of the mid-term report, we had thus achieved half of our objective. The extra time (until April 2022) allocated to the project by ASAP allowed us to achieve 100% of this objective.

Objective 4: By June 2021, minimum of 120 households reached and actively engaged in protecting the local biodiversity, even if "only" by stopping exploiting local resources. In addition, a 25% improvement in the knowledge and positive attitudes/behaviour scores (extracted from questionnaires distributed before/after events) of the people regarding their local environment (especially the crested macaques and their habitat).

Until early 2022, it had not been possible to organise any of the community events and focus group discussions that we had planned due to meeting restrictions related to the on-going Covid-19 pandemic and local conservation agency management disruption. We nevertheless managed to organise the following activities as planned throughout February-March 2022 in the five targeted villages.

Focus-group discussions

Focus-group discussions were organised to bring together villagers concerned by human-wildlife encounters and local authorities and organisations in order to take stock on problems and issues specific to the areas and the people and to discuss solutions together. Between 17 and 20 people participated at each event, including between 3 and 5 from our organisations and local authorities. The head of the local conservation agency BKSDA, responsible for managing the nature reserve, was present at all 5 events. People were very engaged and committed to the discussions. Issues raised and discussed related mostly to the need of more patrols to prevent traps and other illegal activities, to the necessity to define the borders of the nature reserve better in order to install gardens in proper areas, and to the necessity to deal with acute issues with rubbish and conflicts with wildlife (mostly macaques but also wild pigs). The head of BKSDA agreed to set up more regular meetings like these focus-group discussions in the future (planning and funding is under discussion), to work on scheduling more patrols in more areas, and to ask the forest office management to come and mark nature reserve borders properly. In one village where human-wildlife encounters were most prevalent, villagers agreed to structure themselves into "protection teams" to help our permanent conservation officer on site (planning and funding here as well under discussion with BKSDA).

Social events

We had to downscale the social events we had planned because villages were still under heavy restrictions. We installed photo exhibitions and a few creative festival stands with documentation of field conservation and wildlife, posters and small-scale activities like mask drawing, or painting. In two of the villages, schools organised a visit for their pupils. Between 25 and 45 people attended. We set up a video camera and interviewed between one and three people visiting our stand during the event. We asked them where they came from, the reasons they came and to state their opinion / understanding / knowledge of the macaques, the forest and their overall ecological environment. People could answer freely. Analyses of these data are ongoing.

Overall, people were enthusiastic about participating in the focus-group discussions, including the key staff and head of the BKSDA. It opened a direct channel of communication between the different stakeholders that rarely have the opportunity to meet and discuss properly. The dialog was constructive. It remains to be seen if it leads to any follow-up actions or decisions but we will be monitoring this carefully and are exploring opportunities to leverage further funding for the organisation of such events. Concerning the social events, while the impact on the broader community may be more limited due to the small-scale and restriction in scope and actions, we are confident those attending found it engaging and beneficial. The

events allowed the team to communicate conservation and environmental education messages to populations that are not often participating in such events because they live in rural areas without many outside visitors or extra activities. The team is already involved in schools or community activities in these villages in the long-term, which has more significant impact and is associated with this project.



Figure 5. Despite limitations and challenges, awareness raising events brought the importance of conservation across the key villages surrounding Tangkoko Nature Reserve.

3. Outcomes and impacts.

a. Please describe how your project contributed to the conservation outcome(s) you included in your application.

In the project proposal, we proposed that by acting at several levels of local community empowerment through integrated collaborative governance principles, our actions would provide the following outcomes:

1. A decrease in the anthropogenic pressures on the Greater Tangkoko Reserve area

While this is better measured over a longer timescale, this project indicates that patrols are efficient at least at reporting and thus monitoring the environment and its disturbances. There is a demand within the local communities for more or improved patrol efforts, indicating a concern for their environment and livelihoods.

2. An improvement in the local community involvement in protecting their environment

The focus-group discussions opened a channel of communication between the different stakeholders who enthusiastically participated and expressed interest in repeating these events regularly. The community patrols enabled direct action and participation in key protected area activities.

3. An improvement in the knowledge, attitudes, and behaviour of local communities towards the forest and the crested macaques

As outlined below, the focus-group discussions and social events, conducted under such social restrictions, were somewhat limited to be able to measure an improvement or lack thereof of these indicators. However, the focus-group discussions indicated widespread concern about their environment (pollution by rubbish, human-wildlife conflicts) and the balance between protecting the forest (borders of the nature reserve) and ensuring their own livelihood (where and how to establish agricultural crops, ecotourism etc). More robust mechanisms to measure and monitor these important variables will be sought in future endeavours with the communities.

4. A decrease in the number of human-wildlife encounters (“conflict”) events by increasing active sentinel patrol deterrents while empowering the local farmers to avoid lethal action toward crop pests

We did not observe a decrease in human-wildlife conflict events during the project period. This may possibly be due to the interventions of the conservation officer being reactive instead of proactive, i.e., monkeys are chased from conflicting areas when they are already present or nearby though are not redirected inside the forest upon a certain threshold close to the village for instance. However, it is important to consider the following, counterfactual situations: a. Given the increasing pressure on natural resources during this time, one may infer that there may have been more negative encounters without the interventions; and b) That without the interventions, the severity of impact may well have been higher (i.e. more time to impact crops through foraging). The focus groups have revealed how villagers feel they need to structure themselves better to react more efficiently to crop-foraging. They have also made clear that the BKSDA needs to be more involved and engaged at tackling these issues, especially working towards preventing monkeys to arrive at the village-reserve border either by setting up buffer zones or more patrols inside the reserve. Everybody agreed to continue exploring the most effective actions.

5. An increase in the local communities’ awareness about protected area management and conservation

The focus-group discussions and social events brought to light central issues surrounding human-macaque coexistence, and for those involved provided a rare opportunity to learn about protected area management, and also engage with key officials from the government agencies responsible for the protection of the areas.

b. How were your project’s results or successes measured? Please refer back to section B7 in application.

The application stated that we would measure the conservation success of the project by:

a. monitoring illegal activities in the forest (targeting a decrease over the year), through a systematic SMART data collection system, comparative with national level trends

This was achieved through contribution to local and national SMART patrol databases. We have reported here the findings specific to the patrols we helped fund and organise. Long term data and local and national trends are the prerogative of the BKSDA and these data were not made available.

b. evaluating knowledge, attitude and behaviour scores extracted from questionnaires distributed before and after the outreach events (targeting a 25% improvement between before and after an event)

Although questionnaires are an excellent way to evaluate our activities and we use them regularly, for example to evaluation programs in schools, they were difficult to set up given the social restrictions and the limited scale of the events. We thus decided to do short video interviews of people spontaneously

participating in the social events, which are still under analysis to explore any meaningful conclusions. We will later use text and semantic analysis to uncover people's perceptions and attitudes towards nature.

c. creating an anthropogenic disturbance map of the Greater Tangkoko Conservation area, updated after 3 months of patrols, which would give a dynamic outlook on the anthropogenic situation of the reserve

This remains in ongoing co-development with the BKSDA, and will be supported internally by training people in geographic and ecological data analyses and with external help (from a student or a company).

d. collaborative review of the project, assessing progress towards key performance indicators and all available evaluation data, while planning for long-term continuation of patrols and community interventions where capacity and social conditions permit.

We have remained in constant communication regardless of the difficulties encountered, whether it was restrictions due to the pandemic or local authority management problems. There has been genuine enthusiasm for tackling problems together and we will do our best to help the communities to organise themselves and to achieve their goals.

4. Please describe any barriers or challenges you had when implementing this project, and if you were able to overcome these, what you did.

All projects experience barriers and challenges during implementation. Sharing these, and how you managed them, can be extremely helpful for others facing similar situations and can allow future conservation interventions for the species in question to be more effective and efficient. Therefore, please be open and transparent and provide as much detail as you can.

First and foremost, as in 2020, in 2021, Indonesia was hit by a severe wave of the Covid-19 pandemic and authorities drastically limited collective activities. Our organisations and collaborators did not feel like pushing collective activities and we respected the limitations and stopped organising patrols and meetings. Furthermore, the main agency responsible for managing all conservation activities and events in the area, BKSDA, encountered several difficulties regarding staffing and management, so we had to be patient and wait until they were ready to work fully on the ground with us again. This is mainly why many of the planned activities were conducted later in the project timeframe. The teams were not inactive during this time, with the appointed conservation officer patrolling the border area between the village where we carry out our main activities, Batu Putih, and the Tangkoko reserve and we continued carrying out our regular - albeit in alternative forms - environmental education and conservation programmes and actions. A key aspect of the ongoing important collaboration was that the MNP-PKT and SY liaison officers kept a continuously open line of discussion between the local community and authorities with regular formal and informal meetings.

5. Were any components of your project not achieved or not completed? If so, how has this affected the overall impact of the project?

We had initially planned to hire help on a 2-days per week basis supporting the permanently hired conservation officer patrolling the reserve-village border area to sustain an increased effort in mitigating human-wildlife conflict. However, we quickly realised that this would not be possible to implement as it brought up several issues: on the one hand, it would have really helped in the field to have more eyes and hands to survey and watch the border; on the other hand, in the eyes of the local community, it was reported there were concerns that it could release the local authority from their responsibility towards the local community as it is their job to protect both humans and wildlife against harm. We therefore dedicated this part of the budget to continue paying Ferdi, the permanently hired conservation officer, during the extension of the project granted until April 2022. Thus, the impact on the project was minimal but this is a sustained effort from the part of one organisation, the Macaca Nigra Project. The focus-group discussion organised in Batu Putih village where this sentinel guarding takes place helped people to realise the importance of these efforts and to increase the proactive and reactive efforts of both the community and BKSDA.

6. What are your next steps or future plans for the ASAP species this project targeted?
For example, include details if the project will be continuing, long-term needs (funding, resources etc.), and whether the right threats were addressed or additional ones have been identified.

The Macaca Nigra Project-Tangkoko Conservation Education and Selamatkan Yaki are local organisations with long term projects and commitments, especially regarding environmental education and awareness. Our existing programs and actions will continue and have been supported and bolstered by this important project during a challenging time. We will also continue to help the local communities and authorities to structure themselves into action teams with regards to human-wildlife interactions. Ideally between 5000 (our conservation office salary) and 10,000 euros (for salary + events + patrols) per year will be dedicated to this for a sustained effort.

7. Based on the results of your project, what are your recommendations for conserving your project's focal ASAP species? These may be general or specific, reflecting the insight you gained since submitting your proposal to ASAP: anything which might help others working to conserve the species, or yourself in future, be more effective.

It has certainly not been a simple endeavour to achieve what we have given the restrictions of the pandemic in the area throughout the project period. Considering this, we are all extremely proud of the hard work that the team have collectively put in to maximize the opportunity to protect the species and its habitat with this project. We are confident that the activities undertaken have helped secure the protection of the macaques, and indeed landowners' awareness, livelihoods, and wellbeing, and has initiated important discourse between community members and key stakeholders regarding human-macaque coexistence.

We are actively seeking the provision of sustained funding for patrols and focus-group discussions as we believe that these actions, in addition with environmental education and awareness that we implement

already, hold the potential for the most impact on the conservation of the species. We hope to further develop the recommendations and structured best practice shared with local community members in terms of human-wildlife coexistence and build on contemporary findings in this area, along with accessible materials for landowners. Overall, we have learned how important it has been to sustain activities through times of crisis, and to facilitate authentic participation with local communities and protected area managers to help protect highly endangered species such as the Sulawesi crested black macaques and their forest homes.

