

Using innovation and Citizen Science to meet RSPO biodiversity monitoring requirements

RSPO membership and certification requires that growers identify and maintain high conservation values. What does it really mean to maintain these values? Is it enough to just ensure that a threatened species is present? Does it matter, for example, if you have one orangutan in your plantation, or one hundred? Most would agree that it is important to know how many individuals you have of a species, but how do you **monitor population size and trends**? No growers are currently able to answer this question adequately because they lack quantitative data.



Understanding species population trends is technically challenging and expensive, leading many growers to take the path of least attrition, which is using simple species presence lists to determine areas of high conservation value. **Citizen science** is a method which offers a **cheap, practical, and feasible solution** to this conundrum. For the last four years, ANJ has been piloting its pioneering citizen science program called **Pendaki** (*Peduli Keanekaragaman Hayati – Care for Biodiversity*).

Since its introduction in 2019, Pendaki has been implemented in all our estates. Through a smart system of incentives ranging from key performance indicators, senior management instructions, and small rewards, more than **1680 company staff** have voluntarily collected and contributed biodiversity information in the form of wildlife sightings during their work. Through the program, a remarkable database of more than **75,000 reliable records with over 1,700 species** has been developed. The data provide us with the tools to determine the population trends of important species such as the Critically Endangered orangutans in our West Kalimantan estate, tarsiers in Belitung, or birds of paradise in West Papua.

In the next phase we will introduce new app and database systems, which will provide us with the means to quantify progress towards **time-bound biodiversity targets** against baseline population estimates. As a cost-effective and technologically simple approach, Pendaki can be introduced to

smallholder suppliers for whom biodiversity monitoring is an even more challenging task. We aim to expand our system to smallholders this year.

We strongly believe that these new approaches to biodiversity management will set a trend towards **greater accountability and transparency** within the palm oil sector regarding the impact of oil palm management on threatened and protected wildlife. Our **innovative biodiversity monitoring** will set an example for others by demonstrating the positive role that the sector can play in maintaining viable wildlife populations in multi-functional landscapes. This work is **cutting edge**, not just in oil palm but in the broader context of tropical agriculture.



Palm oil companies need to report on how their management impacts wildlife in their estates.



Detecting reliable species trends requires a lot of data. This is expensive and often requires outside expertise. (e.g. camera trap analysis; line transects.)



Few companies, therefore, have species trend data.



Oil palm estates often have thousands of workers who see wildlife on a regular basis, but normally this information is not collected.



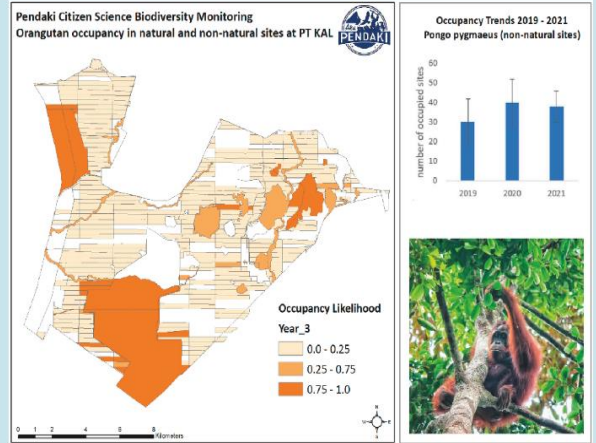
Involving oil palm workers as citizen scientist wildlife observers can provide companies with reliable species trends.

Once companies know whether species increase or decrease, they can adapt their management.



Citizen science provides a cheap method for reliable biodiversity monitoring in oil palm.

CITIZEN SCIENCE PILOT PROGRAM IN OIL PALM



Data Collection

Tailor-made method for each client or estate (language, location, etc.)



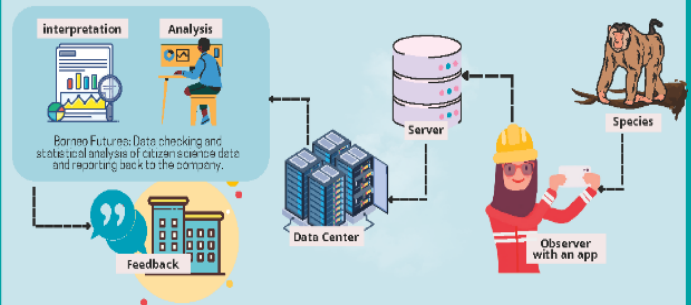
User-friendly interface



Convenient for people who are not tech-savvy.

- Work with companies to develop new technologies, such as apps and citizen science techniques to improve data collection and increase buy-in from company staff for biodiversity management.
- Special tools for involving smallholders in citizen science.

Data Checking & Statistical Analysis



- Assist in quality control and data analysis and data management.
- Develop Biodiversity Indices for companies (combinations of occupancy data for a wide range of species > measurable, time-bound biodiversity targets).
- Public engagement and promotion.