

# I. INTRODUCTION

## 1.1 Background

Pig-Tailed macaques (*Macaca nemestrina*) is a primate species commonly known in Sumatra, especially West Sumatra. This species is better known than other primates because they can be trained for helping human work in harvesting coconuts (Yuli, 2016). Training and employing pig-tailed macaques in West Sumatra are traditional practices and it is unknown when those begun. These traditional practices are also common in Malay Peninsula and Thailand. In Thailand training and employing pig-tailed macaques for picking up coconut have developed into a show for tourists (Richard et al., 1989; Schmidt-Burbach et al., 2015). Traditional monkey training in West Sumatra has also been packaged to provide tourist attractions, such as training for macaques in Nagari Apar, Pariaman, West Sumatra. Furthermore, training methods and employing *M. nemestrina* to pick coconut fruits has attracted attention to the animal welfare communities. They consider people should terminate these practices because they violate the animal's right.

Training pig-tailed macaques to pick up coconut fruit is a unique practice since such training and using primate in helping people very rare. It is not clear how the trainer acquired the skills to train the macaques, but there is a piece of information that the trainer's skills were taught from generation to generation by a close relative (Maulana, 2017). Trainers usually sell trained macaques at reasonable prices depending upon the skill and performance of the macaques. There is no document on whether training methods have similarities among different locations and cultures such as Thailand, Malay Peninsula, and West Sumatra. We assume that the trainers buy naive macaques from wild catches although we do not know the pathway between supplies and demands. Estimating

the number of traded macaques is also useful to look at the potential threats to the sustainability of the macaque population in the wild.

Report on the traditional practice of employing pig-tailed macaques has been found in several press media and scientific journals such as training phases for coconut-picking macaques, *Macaca nemestrina*, traditional pig-tailed macaques training in several countries, the method used to train the pig-tailed macaques and media sentiments of pig-tailed macaques training. Those reports might provide various information about the efficiency of using the macaques, training methods, maintenance and origin of the trained macaques. By gathering such information, we expect to find a general pattern of training methods across the regional distribution of the macaques. This knowledge of training macaques could provide an understanding of how cognitive abilities increase along with the training process. At this point, it is not clear what methods the trainer uses. From a behavioral perspective, there are three possible methods applied, that is learning through models (observation learning), directional instruction, and trial-and-error (Zentall, 2012; Laule et al., 2003; Shettleworth, 2011).

Observation learning is a method by providing opportunities as often as possible for those trained (naive macaque) to observe skilled macaques (models) who have been successfully trained (Zentall, 2012). The directional instruction method is a training method combining spoken orders and gestures to the macaques. It is often facilitated using several tools to strengthen the orders. Trainers could apply rewards for correct responses or punishments to the incorrect ones (Laule et al., 2003). The third is the trial-and-error method. Here trainer provides opportunities to the macaques using a training apparatus that enable them to develop exploration skills (Shettleworth, 2011). Such apparatus may consist of ripe coconut fruits hanging on a pole where the macaques are usually kept and trained. By this method, the trainer expects the pig-tailed macaques could analogize the fruit pole with a coconut tree. However, these three training methods may be combined in their practice by trainers.

In addition to the use of training methods, it is important to know the procedure, schedules, intensity and duration of the training to evaluate its effectiveness.

## 1.2 Research Questions

Based on the situation described above, there are three research questions as follow:

1. What and how are the methods applied in training pig-tailed macaques as coconut pickers?
2. How such methods vary across regional and human cultures?
3. What is the media sentiments on the use of non-human primates as coconut pickers?

## 1.3 Objectives

The objectives of this study were:

1. To clarify methods and procedures applied in training monkeys
2. To describe variation in training methods and their effectiveness across regional and human cultures.
3. To discuss the public's perception of the use of coconut pickers affecting animal welfare and conservation.

## 1.4. Benefits

Although using pig-tailed macaques as coconut pickers might occur along with the regional distribution of the monkeys, much scientific information is still unavailable. This study will bring knowledge of how primates develop their skills through artificial learning. We could formulate a scientific recommendation to the conservationist and animal welfare communities based on the training methods and their practice effectiveness.

